



FULTON COUNTY



INVITATION TO BID #09ITB1005K-JD

**Interior Renovation
137 Peachtree Street Building**

VOLUME I

**For
General Services Department**

BID ISSUANCE DATE: Friday, August 28, 2009
PRE-BID CONFERENCE DATE: Thursday, September 10, 2009 10:00 .M.
BID DUE DATE AND TIME: Monday, October 5, 2009 11:00 A.M.
PURCHASING CONTACT: Joyce Daniel, Assistant Purchasing Agent (404) 612-5824
E-MAIL: joyce.daniel@fultoncountyga.gov

**LOCATION: FULTON COUNTY DEPARTMENT OF PURCHASING &
CONTRACT COMPLIANCE
130 PEACHTREE STREET, S.W., SUITE 1168
ATLANTA, GA 30303**

REVISED: SEPTMBER 4, 2009

Table of Contents**Volume I of 2**

<u>Section</u>	<u>Title</u>	<u>Page</u>
00020	Invitation to Bid Description of Project Permits Rights of Way/Easements Bid Documents Term of Contract No Contact Provision Bid Contact Basis of Award Pre-Bid Conference	6
00100	Instructions to Bidders A. Contract Documents B. Bid Preparation and Execution C. Addenda and Interpretations D. Site Examination E. Bidder's Modification and Withdrawal of Bonds F. Bid and Contract Security G. Right to Reject Bids H. Applicable Laws I. Examination of Contract Documents J. Indemnification and Hold Harmless Agreement K. Bid Opening L. Determination of Successful Bidder M. Georgia Utility Contractors License N. General Contractors License O. Professional Licenses P. Wage Clause Q. Notice of Award of Contract R. Execution of Contract Documents S. Joint Venture T. Contractors Compliance with Procurement U. Georgia Security and Immigration Compliance Act V. Bid General Requirements Required Bid Submittal Checklist for ITB	9
00300	Bid Form	22
00410	Bid Bond	27

00420	Purchasing Forms & Instructions	30
	Form A- Non-Collusion Affidavit of Prime Bidder/Offeror	
	Form B - Certificate of Acceptance of Request for Bid Requirements	
	Form C- Contractor's Georgia Utility License Certification	
	Form C1 – Georgia Utility License Contractors License	
	Form C2 – Georgia General Contractors License	
	Form C3 – Georgia Professional License	
	Form D- Certification Regarding Debarment	
	Form E- Disclosure Form & Questionnaire	
	Form F – Declaration of Employee-Number Categories	
	Form G – Georgia Security and Immigration Contractor Affidavit and Agreement	
	Form H – Georgia Security and Immigration Subcontractor Affidavit	
00430	Contract Compliance Requirements	50
	Non-Discrimination in Contracting and Procurement Required Forms and EBO Plan	
	Exhibit A – Promise of Non-Discrimination	
	Exhibit B – Employment Report	
	Exhibit C – Schedule of Intended Subcontractor Utilization	
	Exhibit D – Letter of Intent to Perform As a Subcontractor or Provide Materials or Services	
	Exhibit E – Declaration Regarding Subcontracting Practices	
	Exhibit F – Joint Venture Disclosure Affidavit	
	Exhibit G – Prime Contractor/Subcontractor Utilization Report	
00490	Insurance and Risk Management Provisions	63
00500	Owner –Contractor Agreement	67
00610	Performance Bond Requirements	70
00620	Payment Bond Requirements	74
00700	General Conditions	78

Volume 2 of 2

DIVISION 1	GENERAL REQUIREMENTS	7
Section 1010	Summary of Work	
Section 1320	Schedule of Values	
Section 1320a	Reference	
Section 1320b	Cutting and Patching	
Section 1510	Construction Waste Management	
Section 1520	Temporary Facilities	
Section 1710	Summary of Work	
DIVISION 2	SITE CONSTRUCTION	54
Section 2111	Demolition	
DIVISION 3	CONCRETE	61
Section 3300	Cast-in-Place Concrete	
DIVISION 4	MASONRY	76
	No Sections Required	
DIVISION 5	METALS	77

Section 05500	Metal Fabrications	
DIVISION 6	WOOD, PLASTIC AND COMPOSITES	87
Section 06100	Rough Carpentry	
Section 06200	Finish Carpentry	
DIVISION 7	THERMAL AND MOISTURE PROTECTION	103
Section 07100	Waterproofing and Moisture Proofing	
Section 07840	Fire Stopping	
Section 07900	Sealants and Caulking	
DIVISION 8	DOORS AND WINDOWS	112
Section 08110	Steel Doors and Frames	
Section 08219	Flush Wood Doors	
Section 08311	Access Doors	
Section 08710	Door Hardware	
DIVISION 9	FINISHES	148
Section 09250	Gypsum Board	
Section 09310	Ceramic Tile	
Section 09511	Acoustical panel Ceilings	
Section 09620	Resilient Floor Tile	
Section 09640	Wood Flooring	
Section 09680	Carpet Tiles	
Section 09912	Interior Painting	
DIVISION 10	SPECIALTIES	207
Section 10160	Toilet Compartments	
Section 10261	Wall and Corner Guards	
Section 10431	Signage	
Section 10523	Fire Extinguisher	
Section 10801	Toilet and Bath Accessories	
DIVISION 11	EQUIPMENT	227
	No Sections Required	
DIVISION 12	FURNISHINGS	228
Section 12485	Foot Grilles	
Section 12520	Shades	
DIVISION 13	SPECIAL CONSTRUCTION	237
	No Sections Required	
DIVISION 14	CONVEYING SYSTEM	238
	No Sections Required	
DIVISION 15	MECHANICAL	239
	No Sections Required	
DIVISION 16	ELECTRICAL	240
	No Sections Required	

EXHIBITS

A – 00
 A – 1.1
 A – 1.2
 A – 1.3
 A – 1.4
 A – 1.5
 A – 1.6
 A – 1.7
 A – 1.8
 A – 1.9
 A – 1.10
 A – 1.11
 A – 1.12
 A – 1.13
 A – 1.14
 A – 1.14a
 A – 1.15
 A – 1.16
 A – 1.17
 A – 1.18
 A – 1.19
 A – 1.20
 A – 1.21
 A – 1.22
 A – 2.1
 A – 2.2
 A – 2.3
 A – 3.1

PROJECT DRAWINGS

Specification and Cover Page
 Main Floor Existing
 First Floor Existing
 Second Floor Existing
 Third Floor Existing
 Fourth Floor Existing
 Proposed Main Floor Plan
 Proposed First Floor Plan
 Proposed Second Floor Plan
 Proposed Third Floor Plan
 Proposed Fourth Floor Plan
 First Floor Demolition Plan
 Second Floor Demolition Plan
 Third Floor Demolition Plan
 Fourth Floor Demolition Plan
 Main Floor Reflected Ceiling Plan
 First Floor Reflected Ceiling Plan
 Second Floor Reflected Ceiling Plan
 Third Floor Reflected Ceiling Plan
 Fourth Floor Reflected Ceiling Plan
 First Floor Room Finish Plan
 Second Floor Room Finish Plan
 Third Floor Room Finish Plan
 Fourth Floor Room Finish Plan
 1st & 4th Floor Restrooms
 1st, 2nd & 3rd Floor Break Rooms
 3rd Floor copy and Storage rooms
 Entryway Plan

MECHANICAL

M – 1
 M – 2

Mechanical Schedule and notes
 1st and 4th Floor Restroom Exhaust

PLUMBING

P – 1
 P – 2
 P – 3

Plumbing Schedule and Notes
 Main and First Floor Plumbing Plans
 3rd & 4th Floor Plumbing Plans

END OF TABLE OF CONTENTS

INVITATION TO BID
09ITB1005K-JD 137 PEACHTREE STREET BUILDING

Sealed Bids for furnishing all materials, labor, tools, equipment and appurtenances necessary for the construction of 137 Peachtree Street Building will be received by the Fulton County Department of Purchasing and Contract Compliance at 130 Peachtree Street, S.W. Suite 1168 Atlanta, GA 30303, until **11:00 A.M., local time, on Monday, October 5, 2009** and then at said office publicly opened and read aloud.

Description of Project:

The Project consists of the Interior renovation at the Building located at 137 Peachtree Street, Atlanta, Georgia and shall include, interior wall demolition, new flooring, ceiling and rest rooms addition as noted on the drawings. See summary of work in Volume II, section 01010, for additional information.

Permits:

The contractor shall be responsible for all inspections and ensuring compliance with all Federal, State and County laws and codes. The Contractor shall be solely responsible for obtaining all permits for sidewalk or street closings from the city of Atlanta.

Rights of Way/Easements:

The contractor shall be responsible for all inspections and ensuring compliance with all Federal, State and County laws and codes. The Contractor shall be solely responsible for obtaining all permits for sidewalk or street closings from the city of Atlanta.

Bid Documents:

This document and supporting documents can be downloaded at the Fulton County Website, <http://www.fultoncountyga.gov> under "Bid Opportunities".

The cost for a set of drawing and specifications is **\$131.00**. The non-refundable payment must be made to:

Action Blueprint
2705 Monroe Drive
Atlanta, Georgia 30324
(404) 885-1433
Web site: action@actiondis.com

Payment must be in the form of a company or personal check payable to **Action Blueprint**, checks returned for any reason will result in the bid being deemed non-responsive. Action Blue will not take any orders over the telephone. You have an option of email, fax or in person. This amount includes all fees for printing and distribution and will be used to defray a portion of the printing cost that may have been incurred for the tendering of the Project. Partial sets of the bid document will not be issued.

Term of Contract:

The Bidder agrees hereby to commence work under this Contract, with adequate personnel and equipment, on a date to be specified in a written order of the Contracting Officer and to fully complete all work under this Contract within **45 Consecutive Days** from notice to proceed.

The County will make payments, within **45** days, in response to the Contractor's monthly Applications for Payment, which are accompanied by the Engineer's Certificate for Payment, for

work performed to date plus cost of stored materials, less retainage. Payments, Applications for Payment, Certificates for Payment, and retainage shall be in accordance with the provisions of the Contract Documents.

No Contact Provision:

It is the policy of Fulton County that the evaluation and award process for County contracts shall be free from both actual and perceived impropriety, and that contacts between potential vendors and County officials, elected officials and staff regarding pending awards of County contracts shall be prohibited.

- A. No person, firm, or business entity, however situated or composed, obtaining a copy of or responding to this solicitation, shall initiate or continue any verbal or written communication regarding this solicitation with any County officer, elected official, employee, or designated County representative, between the date of the issuance of this solicitation and the date of the County Manager's recommendation to the Board of Commissioners for award of the subject contract, except as may otherwise be specifically authorized and permitted by the terms and conditions of this solicitation.
- B. All verbal and written communications initiated by such person, firm, or entity regarding this solicitation, if same are authorized and permitted by the terms and conditions of this solicitation, shall be directed to the Purchasing Agent.
- C. Any violation of this prohibition of the initiation or continuation of verbal or written communications with County officers, elected officials, employees, or designated County representatives shall result in a written finding by the Purchasing Agent that the submitted Bid or proposal of the person, firm, or entity in violation is "non-responsive", and same shall not be considered for award.

Bid Contact:

Information regarding the bid or bid requirements, either procedural or technical, may be obtained by submitting questions in writing to:

Fulton County Department of Purchasing and Contract Compliance
Attn: Joyce Daniel, Assistant Purchasing Agent
Fulton County Public Safety Building
130 Peachtree Street, S.W. Suite 1168
Atlanta, GA 30303
Phone: (404) 612-5824
Fax: (404) 335-5806
Reference Bid # 09ITB1005K-JD

Or joyce.daniel@fultoncountyga.gov

Basis of Award:

The Contract, if awarded, will be awarded to the lowest responsive and responsible bidder. No bid may be withdrawn for a period of sixty (60) days after the date of bid opening except as permitted by O.C.G.A., §36-91-41 et seq., as amended. Each Bid must be accompanied by a Bid Bond in accordance with the Bid Bond Requirements provided in the Contract Documents, on a Surety Company's Standard Bid Bond Form acceptable to the County in an amount no less than 5% of the amount bid. The successful bidder will be required to furnish a Performance Bond and Payment Bond, **on or before** the issuance of Notice to Proceed, each in the amount of 100% of the Contract Amount. All other required Contract Documents must be fully completed and executed by the

Contractor and his/her Surety, and submitted to the Owner **on or before** the issuance of the Notice to Proceed.

Pre-Bid Conference:

Date: Thursday, September 10, 2009
Time: 10:00 A.M.
Mandatory Site Visit: Immediately following preconference, 137 Peachtree Street, Atlanta, Georgia, 30303
Location: Fulton County Department of Purchasing and Contract Compliance, Public Safety Building
130 Peachtree Street, S.W. Suite 1168
Atlanta, GA 30303

A pre-bid conference will be held in the Fulton County Department of Purchasing and Contract Compliance Conference Room, located at 130 Peachtree Street, S.W. Suite 1168, Atlanta, Georgia 30303. ***Inquiries regarding the solicitation either technical or otherwise may be submitted in writing prior to the pre-bid conference and will be addressed at the pre-bid conference.*** Any additional questions asked at the pre-bid conference must be submitted in written form at the pre-bid conference and will be responded to in the form of an addendum with the County's official responses.

The Pre-bid conference will be conducted for the purpose of explaining the County's bid process, the specifications/technical documents, and to provide non-binding verbal responses to questions concerning these bid specifications and to discuss issues from the bidders perspective. However, no verbal response provided at the pre-bid conference binds the County. Only those responses to written questions that are responded to by the County in written communications will be official. **The mandatory site visit will be held immediately following preconference on Thursday, September 10, 2009.**

INSTRUCTIONS TO BIDDERS

A. Contract Documents

The Contract Documents include the Contract Agreement, Contractor's Bid (including all documentation accompanying the Bid and any post-Bid documentation required by the County prior to the Notice of Award), Bonds, all Special Conditions, General Conditions, Supplementary Conditions, Specifications, Drawings and addenda, together with written amendments, change orders, field orders and the Construction Manager's written interpretations and clarifications issued in accordance with the General Conditions on or after the date of the Contract Agreement.

Shop drawing submittals reviewed in accordance with the General Conditions, geotechnical investigations and soils report and drawings of physical conditions in or relating to existing surface structures at or contiguous to the site are not Contract Documents.

The Contract Documents shall define and describe the complete work to which they relate.

B. Bid Preparation and Execution

All Bids must be made on the Bid forms contained herein. The original signed Bid with three (3) copies shall be submitted in a sealed envelope, addressed to the Department of Purchasing and Contract Compliance, Fulton County Public Safety Building, 130 Peachtree Street, S.W., Suite 1168 Atlanta, Georgia 30303, and labeled "Bid for **ITB-#09ITB1005K-JD, Interior Renovation 137 Peachtree Street Building**

REQUIRED SUBMITTALS: The bidder **must complete and execute** the following:

1. Bid Form
2. Acknowledgement of each Addendum
3. Bid Bond
4. Purchasing Forms (See Submittal Check List at end of this Section), fully executed
5. Contract Compliance Forms (See Submittal Check List at end of this Section), fully executed
6. Risk Management Insurance Provisions Form

Any bids received after the stated time and date will not be considered. It shall be the sole responsibility of the bidder to have his/her bid delivered to the Fulton County Department of Purchasing and Contract Compliance for receipt on or before the stated time and date (see Section 00020). If a bid is sent by U.S. Mail, the bidder shall be responsible for its timely delivery to the Purchasing Department. Bids delayed by mail will not be considered, shall not be opened, and arrangements shall be made for their return at the bidder's request and expense.

Bid shall be publicly opened, with only the names and total bid price of the bidders disclosed at the opening.

C. Addenda and Interpretations

No interpretations of the meaning of the Drawings, Specifications or other pre-bid documents will be made to any Bidder orally.

Bidders requiring clarification or interpretation of the Contract Documents shall make a request in writing, either by mail, hand delivery, e-mail or fax, to the Purchasing Agent at the address below. To be given consideration, requests must be received no later than **4:00 P.M., Thursday, September 24, 2009.** The County will not respond to any requests, oral or written, received after this date. Telephone inquiries will not be accepted.

Fulton County Department of Purchasing and Contract Compliance
Attn: Joyce Daniel, Assistant Purchasing Agent
Fulton County Public Safety Building
130 Peachtree Street, S.W., 1168
Atlanta, GA 30303
Fax: (404) 335-5806
joyce.daniel@fultoncountyga.gov
Reference Bid # 09ITB1005K-JD

Only communications from firms that are in writing and signed will be recognized by the County as duly authorized expressions on behalf of proposers/bidders. Any and all such interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be mailed, shipped or faxed to all prospective Bidders (at the respective addresses furnished) prior to the date fixed for the opening of Bids.

Failure of Bidders to receive or acknowledge any Addendum shall not relieve them of any obligation under the Bid. All Addenda shall become part of the Contract Documents.

D. Mandatory Site Examination

There will be a mandatory site visit for this project. It will be held immediately following the preconference on Thursday, September 10, 2009. Bidders are required to attend.

E. Bidder's Modification and Withdrawal of Bids

A Bidder may modify or withdraw its bid by written request, provided that the request is received by the County prior to the bid due date and time at the address to which bids are to be submitted. Provided further, that in case of an electronic request (i.e. facsimile, e-mail, etc.) a written confirmation thereof over the authorized signature of the Bidder must be received by the County at the address to which original Bids are to be submitted within three (3) calendar days after issue of the electronic message. Following withdrawal of its bid, the Bidder may submit a new bid, providing delivery is affected prior to the established bid opening date and time. **No bid may be withdrawn after bid due date for sixty (60) calendar days.**

F. Bid and Contract Security

A Bid Bond for an amount equal to five percent (5%) of the bid amount must accompany each Proposal. The bid bond shall be submitted in a separate, sealed envelope marked "Bid Bond".

Bids must be accompanied by a bid bond or certified check in an amount of five percent (5%) of the TOTAL AMOUNT of the base bid. The bid bond or certified check shall apply ONLY TO THIS BID. The bid name and contract number must appear on the security instrument. The bond must remain in full force and effect until the Bidder executes the final Contract. Bids not satisfying the bonding requirements of this project will be declared non-responsive.

Any bid bond, performance bond, payment bond, or security deposit required for public works construction contract shall be approved and filed with purchasing agent. At the option of the County, if the surety named in the bond is other than a surety company authorized by law to do business in this state pursuant to a current certificate of authority to transact surety business by the Commissioner of Insurance, such bond shall not be approved and filed unless such surety is on the United States Department of Treasury's list of approved bond sureties.

A Purchasing Agent shall approve as to form and as to the solvency of the surety any bid bond, performance bond, or payment bond required by this. In the case of a bid bond, such approval shall be obtained prior to acceptance of the bid or proposal. In the case of payment bonds and performance bonds, such approval shall be obtained prior to the execution of the contract.

Whenever, in the judgment of the County:

- (1) Any surety on a bid, performance, or payment bond has become insolvent;
- (2) Any corporation surety is not longer certified or approved by the Commissioner of Insurance to do business in the state; or
- (3) For any cause there are no longer proper or sufficient sureties on any or all the bonds

The County may require the contractor to strengthen any or all of the bonds or to furnish a new or additional bond or bonds within ten days. Thereupon, if so ordered by the County, all work on the contract shall cease unless such new or additional bond or bonds are furnished. If such bond or bonds are not furnished within such time, the County may terminate the contract and complete the same as the agent of and at the expense of the contractor and his or her sureties.

As a condition of responsiveness the bidder must contain a Bid Bond for an amount equal to 5% of the bid amount. The Bid Bond shall be included in a separate envelope marked on the outside "Bid Bond". Checks or letters of credit of any type will not be accepted. A certified cashier's check will be acceptable. Provide a completed and fully executed Bid Bond. When the bidder's package is opened, a purchasing agent will verify the presence of the Bid Bond and remove it from the Proposal Package.

If the bidder withdraws its bid from the competition after the selection of its bid for a reason not authorized by Georgia law, the County will proceed on the Bid Bond, along with any other available remedies.

The Surety of the Bid Bond shall be from a surety company authorized to do business in the State of Georgia, shall be listed in the Department of Treasury Circular 570, and shall have an underwriting limitation in excess of 100% of the bid amount. The Bonds and Surety shall be subject to approval by the County Attorney.

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

G. Right to Reject Bids

The County reserves the right to reject any or all bids and to waive informalities. No bids will be received after the time set for opening bids. Any unauthorized conditions, limitations or provisions attached to the Bid, except as provided herein, will render it informal and may cause its rejection. Unbalanced bids will be subject to rejection. Any bidder may withdraw his/her bid, either personally or by telegraphic or written request, at any time prior to the scheduled closing time for receipt of bids. Telegraphic or written

requests for withdrawal must be in the possession of the County prior to the closing time for receipt of bids.

H. Applicable Laws

All applicable laws and regulations of the State of Georgia and ordinances and regulations of Fulton County shall apply. Protestors shall seek resolution of their complaints in the manner provided in the Fulton County Code of Laws §2-324, which is incorporated by reference herein.

I. Examination of Contract Documents

Prospective bidders shall examine the contract documents and before submitting a bid, shall make a written request to the County for an interpretation or correction of any ambiguity, in consistency or error therein which could be discovered by a bidder. At the bid opening each bidder shall be presumed to have read and be familiar with the contract documents.

J. Indemnification and Hold Harmless Agreement

See Section 00490, Insurance and Risk Management Provisions page 3, Indemnification and Hold Harmless Agreement

K. Bid Opening

Bids will be opened in public and read aloud. All bidders are requested to be present at the opening.

L. Determination of Successful Bidder

Fulton County desires to complete this work in a timely manner. The Contract will be awarded to the lowest responsive, responsible bidder(s), if awarded.

1. **Responsibility:** The determination of the bidder's responsibility will be made by the County based on whether the bidder meets the following minimum requirements:
 - a. The County reserves the right to reject any bid if the evidence submitted by, or investigation of, the bidder fails to satisfy the County that he/she is properly qualified to carry out the obligations of the Contract.
 - b. Maintains a permanent place of business individually or in conjunction with the prime contractor.
 - c. Has the appropriate and adequate technical experience. Designated Project Manager must be proficient in all aspects of contracted work.
 - d. Has adequate personnel and equipment to do the work expeditiously.
 - e. Has suitable financial means to meet obligations incidental to the work.
2. **Responsiveness:** The determination of responsiveness will be made by the County based on a consideration of whether the bidder has submitted a complete Bid form without irregularities, excisions, special conditions, or alternative bids for any item unless specifically requested in the Bid form.

M. Georgia Utility Contractors License (NON-APPLICABLE)

Bidders must have a Utility Contractors License to perform this work in accordance with O.C.G.A. §43-14-8.3 (h). ***Bids for utility contracting projects must be from a licensed utility contractor and that licensed contractor must be the prime on the project.*** It is not permissible for an unlicensed individual/firm to subcontract with a

licensed utility contractor. Bidders must complete Form C1: Georgia Utility License Certification in Section 6, Purchasing Forms. The Bidder shall provide a Georgia Utility License Number on the outside of the sealed envelope. Failure to provide the required license shall deem your bid non-responsive.

N. General Contractors License (APPLICABLE)

Effective July 1, 2008, all general contractors are required to be licensed by the State of Georgia to perform the following work; construction; construction management services; or design-build services as a prime contractor, joint venture partner, or as a subcontractor to a design professional acting as prime contractor as part of a design-build entity or combination, unless exempted from holding such license pursuant to Georgia law (O.C.G.A. 43-41-17). If exempted, Contractor must submit a copy of their Georgia Department of Transportation Certificate of Qualification with their bid submittal.

Bidders must complete Form C2: Georgia General Contractors License Certification in Section 6, Purchasing Forms. Failure to provide the required license shall deem your bid non-responsive.

O. Professional Licenses (APPLICABLE)

The State of Georgia requires that the following professions are required by state law to be licensed:

1. Electricians
2. Plumbers
3. Conditioned Air Contractors
4. Low voltage Contractors

Bidders and any sub-contractors performing any of the above described work must provide a copy of their license for the work they will perform on this project. Bidders must complete Form C3: Georgia Professional License Certification in Section 6, Purchasing Forms Failure to provide the required license may deem your bid non-responsive.

P. Wage Clause

Pursuant to 102-391, Each Contractor shall agree that in the performance of the Contract he will comply with all lawful agreements, if any, which the Contractor had made with any association, union, or other entity, with respect to wages, salaries, and working conditions, so as not to cause inconvenience, picketing, or work stoppage.

Q. Notice of Award of Contract

As soon as possible, and within sixty (60) days after receipt of bids, the County shall notify the successful Bidder of the Award of Contract.

The award shall be made by the Board of Commissioners of Fulton County to the lowest responsive, responsible bidder(s) as soon as possible after receipt of bids, taking into consideration price and the responsiveness to the requirements set forth in the Invitation for Bid. In such case, no claim shall be made by the selected Contractor(s) for loss of profit if the contract is not awarded or awarded for less work than is indicated and for less than the amount of his bid. The total of the awarded contract shall not exceed the available funds allocated for this project.

Should the County require additional time to award the contract, the time may be extended by mutual agreement between the County and the successful bidder. If an Award of Contract has not been made within sixty (60) days from the bid date or within

the extension mutually agreed upon, the Bidder may withdraw the Bid without further liability on the part of either party.

Any award made by the Board of Commissioners as a result of this bid will begin from the date of the notice to proceed. The Bidder agrees hereby to commence work under this Contract, with adequate personnel and equipment, on a date to be specified in a written order from the user department. The contract shall become effective on the Contract Date and shall continue in effect until the end of the term of the contract or until the project has been closed-out unless earlier terminated pursuant to the termination provisions of the contract.

R. Execution of Contract Documents

Upon notification of Award of Contract, the County shall furnish the Contractor the conformed copies of Contract Documents for execution by the Contractor and Contractor's surety.

Within ten (10) days after receipt the Contractor shall return all the documents properly executed by the Contractor and the Contractor's surety. Attached to each document shall be an original power-of-attorney for the person executing the bonds for the surety and certificates of insurance for the required insurance coverage.

After receipt of the documents executed by the Contractor and his surety with the power-of-attorney and certificates of insurance, the County shall complete the execution of the documents. Distribution of the completed documents will be made upon completion.

Should the contractor and/or surety fail to execute the documents within the time specified, the County shall have the right to proceed on the Bid Bond accompanying the bid.

If the County fails to execute the documents within the time limit specified, the Contractor shall have the right to withdraw the Contractor's bid without penalty.

Should an extension of any of the time limits stated above be required, this shall be done only by mutual agreement between both parties.

Any agreement or contract resulting from the acceptance of a bid shall be on a County approved document form. The County reserves the right to reject any agreement that does not conform to the Invitation for Bid and any County requirements for agreements and contracts. The County reserves the right to modify the agreement resulting from this bid upon the recommendation of the County Attorney.

S. Joint Venture

Any Bidder intending to respond to this solicitation as a joint venture must submit an executed joint venture agreement with its offer. The agreement must designate those persons or entities authorized to execute documents or otherwise bind the joint venture in all transactions with Fulton County, or be accompanied by a document, binding upon the venture and its constituent members, making such designation. Offers from joint ventures that do not include these documents will be rejected as being non-responsive.

T. Contractors Compliance with All Assurances and/Or Promises Made In Response To Procurement

Should any Bidder submit a response to the County promising to provide a certain level of service for either the scope of work, MFBE participation, or any other matter, including where such promise or assurance is greater than what is required by the procurement

documents, and should this response containing the promise or assurance be accepted by the County and made a part of the Contract Documents, then this degree or level of service promised by the bidder relating to the scope of work, MFBE participation, or other matter shall be considered to be a material part of the Agreement between the bidder and the County, such that the bidder's failure to provide the agreed upon degree or level of service or participation shall be a material breach of the Agreement giving the County just cause to terminate the Agreement for cause, pursuant to the General Conditions of the Agreement.

U. Georgia Security and Immigration Compliance Act

- (1) Effective as of July 1, 2007, and pursuant to O.C.G.A. 13-10-91, every public employer, every contractor of a public employer, and every subcontractor of a public employer's contractor must register and participate in a federal work authorization program as follows:
 - (a) No public employer shall enter into a contract for the physical performance of services within this state unless the contractor registers and participates in a federal work authorization program to verify the work eligibility information all new employees.
 - (b) No contractor or subcontractor who enters into a contract with a public employer shall enter into such a contract or subcontract in connection with the physical performance of services within this state unless such contractor or subcontractor registers and participates in a federal work authorization program to verify the work eligibility information of all new employees.
- (2) In accordance with O.C.G.A. 13-10-91, the requirements of paragraphs (a) and (b) of paragraph (1) shall apply to public employers, their contractors and subcontractors, as follows:
 - (a) On or after July 1, 2007, to public employers, contractors, or subcontractors of 500 or more employees;
 - (b) On or after July 1, 2008, to public employers, contractors or subcontractors of 100 or more employees; and
 - (c) On or after July 1, 2009, to all other public employers, their contractors, or subcontractors.

See Section 00420, Purchasing Forms & Instructions for declarations and affidavits.

V. Bid General Requirements

The following information pertains to the submission of a Bid to Fulton County, and contains instructions on how Bids must be presented in order to be considered. Listed below are the requirements for all Bidders interested in doing business with Fulton County.

1. The Bid sheets included in this Invitation to Bid ("Bid") must be fully completed and returned with the Bid unless otherwise specified in writing by the Purchasing Department. Type or neatly print the date, company name, and the full legal name and title of the person(s) signing the Bid in the place provided at the bottom of each Bid sheet. Any additional sheets submitted must contain the same signature and Bidder information.

2. All signatures must be executed by person(s) having contracting authority for the Bidder.
3. Absolutely no fax Bids or reproduction Bids will be accepted, except that photocopies may be submitted in addition to the original when multiple copies of the Bid are specifically requested in the solicitation.
4. The envelope in which the Bid response is submitted must be sealed and clearly labeled with the Bid number, project title, due date and time, and the name of the company or individual submitting the proposal. Bids must be received by the opening date and time shown on this Bid in order to be considered. The Purchasing Agent has no obligation to consider Bids which are not in properly marked envelopes. Contract Compliance submittals shall be submitted in a separate sealed envelope or package.
5. The original and the required number of copies of the Bid must be returned to:

Fulton County Purchasing Agent
Fulton County Department of Purchasing and Contract Compliance
130 Peachtree Street, S.W., Suite 1168
Atlanta, Georgia 30303

Any inquiries, questions, clarifications or suggestions regarding this solicitation should be submitted in writing to the Purchasing Contact Person. Contact with any other County personnel in regard to a current solicitation is strictly prohibited in accordance with Fulton County "No Contact Provision" policy outlined in S35 and in Section 00020, Invitation to Bid.

6. Show information and prices in the format requested. Prices are to be quoted F.O.B. Destination, and must include all costs chargeable to the Contractor executing the Contract, including taxes. Unless otherwise provided in the Contract, Fulton County shall have no liability for any cost not included in the price. The Contractor shall provide Fulton County the benefit through a reduction in price of any decrease in the Contractor's costs by reason of any tax exemption based upon Fulton County's status as a tax-exempt entity.
7. All prices Bid must be audited by the Bidder to ensure correctness before the Bid is submitted. The Bidder is solely responsible for the accuracy of information placed on a Bid sheet, including prices. Clerical or mathematical error is insufficient to void a successful Bid but a Bidder may withdraw a sealed Bid prior to opening without a penalty.
8. All prices must be submitted in the format requested and less all trade discounts. When multiple items are being Bid, Bidder must show both the unit price and the total extended price for each item. When applicable, the Bidder must include an additional lump sum Bid for groups or items. In the event a Bidder is offering an additional discount on groups of items, Bidder must indicate the total lump sum Bid for the particular group of items before any extra discount, the amount of extra discount, and the net total for the particular group. In the event of an extension error, unit pricing shall prevail.
9. By submitting a signed Bid, Bidder agrees to accept an award made as a result of that Bid under the terms and conditions spelled out in the Bid documents. In the event of a conflict between the different Bid documents, the County's cover

Contract (if used) shall have precedence, followed in order by the Invitation to Bid, Purchase Order, Bid, Contractor's Warranty Agreement, Maintenance Agreement, and/or other Contractor provided agreements.

10. A Bidder may submit only one (1) Bid response for each specific Bid solicitation unless otherwise authorized in the specifications.
11. All prices submitted by the Bidder to Fulton County must be guaranteed by the authorized person(s) against any price increase for the time period designated in the Bid specifications, and Fulton County must be given the benefit of any price decrease occurring during such designated time period.
12. All items Bid must be new. Used, rebuilt and refurbished items will not be considered unless specifically authorized by Fulton County in the written specifications.
13. All Bidders must specify in the Bid response the earliest actual delivery date for each item unless otherwise specified in writing by Fulton County. The delivery date may be a factor in deciding the Bidder's capability to perform.
14. A successful Bidder's delivery ticket(s) and invoice(s) must list each item separately and must show Fulton County's purchase order number as well as the proper department and address to which delivery was made, as listed on the purchase order or in the Bidder's contract with Fulton County.
15. Unless clearly shown as "no substitute" or words to that effect, any items in this invitation to Bid which have been identified, described or referenced by a brand name or trade name are for reference only. Such identification is intended to be descriptive but not restrictive, and is to indicate the general quality and characteristics of products that may be offered. Each item Bid must be individually identified as to whether it is a specified item or an equivalent item by typing or printing after the item(s): The brand name; model or manufacturer's number, or identification regularly used in the trade. Deviations from the specifications must be clearly and fully listed on the Bid sheet, including photographs or cuts, specifications, and dimensions of the proposed "alternate". Fulton County is the sole judge of "exact equivalent", or "alternate". The factors to be considered are: function, design, materials, construction, workmanship, finishes, operating features, overall quality, local service facilities, warranty terms and service, and other relevant features of item(s) Bid.
16. For all Bids, Fulton County reserves the right to request representative samples. If requested, samples must be delivered at the Bidder's cost within three (3) business days. Samples are submitted at the risk of the Bidder and may be subjected to destructive tests by Fulton County. Samples must be plainly tagged with Fulton County's Bid number, item name, manufacturer, and the name of the Bidder.
17. Item(s) Bid must be complete and ready to operate. No obvious omissions of components or necessary parts shall be made even though the specifications may not detail or mention them. Unit(s) must be furnished with factory installed equipment and must be comparable with the basic form, fit, and functional requirements which are all to be included in the base price as well as any other equipment included as standard by the manufacturer or generally provided to the buying public.

18. All successful Bidders must assume full responsibility for all item(s) damaged prior to F.O.B. Destination delivery and agree to hold harmless Fulton County of all responsibility for prosecuting damage claims.
19. All successful Bidders must assume full responsibility for replacement of all defective or damaged goods within thirty (30) days of notice by Fulton County of such defect or damage.
20. All successful Bidders must assume full responsibility for providing or ensuring warranty service on any and all items including goods, materials, or equipment provided to the County with warranty coverage. If a successful Bidder is not the manufacturer, all manufacturers' warranties must be passed through to Fulton County. The Bidder and not Fulton County is responsible for contacting the manufacturer of the warranty service provided during the warranty period and supervising the completion of the warranty service to the satisfaction of Fulton County.
21. As a successful Bidder providing any equipment which requires fitting and assembly, the Bidder shall be solely responsible for such installation being performed by a manufacturer's authorized or approved servicer or an experienced worker, utilizing workmanship of the highest caliber. The Bidder must verify all dimensions at the site, shall be responsible for their correctness, and shall be responsible for the availability of replacement parts when specified in writing by Fulton County in the specifications, purchase order, or other contract.
22. A successful Bidder is solely responsible for disposing of all wrappings, crating, and other disposable material upon deliver of item(s).
23. All Bidders are required to be authorized distributors or regularly engaged in the sale or distribution of the type of goods, materials, equipment or services for which the Bidder is submitting a Bid response in addition, all Bidders are required to provide Fulton County with three (3) written references documenting the successful completion of Bids or contracts for the types of items including goods, materials, equipment, or services for which the Bidder is submitting a Bid response. In instances where a Bidder has never supplied such goods, material, equipment, or services before, the Bidder must submit with the Bid response a statement and supporting documentation demonstrating such expertise, knowledge, or experience to establish the Bidder as a responsible Bidder, capable of meeting the Bid requirements should an award be made. No exceptions to this provision will be made unless authorized in the Bid specifications.
24. Bidders may be required to furnish evidence that they maintain permanent places of business of a type and nature compatible with their Bid proposal, and are in all respects competent and eligible vendors to fulfill the terms of the specifications. Fulton County may make such investigations as it deems necessary to determine the ability of the Bidder to perform such work, and reserves the right to reject any Bidder if evidence fails to indicate that the Bidder is qualified to carry out the obligation of the Contract and to complete the work satisfactorily.
25. All Bidders must comply with all Fulton County Purchasing laws, policies, and procedures, non-discrimination in contracting and procurement ordinances, and relevant state and federal laws including but not limited to compliance with EEOC hiring guidelines and requirements under the Americans with Disabilities Act. Successful Bidder must obtain all permits, licenses, and inspections as required

and furnish all labor, materials, insurance, equipment, tools, supervision, and incidentals necessary to accomplish the work in these specifications.

26. If a successful Bidder is unable or unwilling to enter into a Contract with Fulton County subsequent to being granted an award, or who fails to perform in accordance with the Bid specifications the Bidder will be subject to damages and all other relief allowed by law.
27. Successful Bidders contract directly with Fulton County and are the party or parties obligated to perform. Contracts may not be assigned and any failure to perform the Contract in accordance with the specifications will constitute a breach of Contract and may result in a Bidder being found to be "non-responsive" in the future.
28. In case of default by the successful Bidder, Fulton County may procure the articles for services from another source and hold the successful Bidder responsible for any resulting excess cost.
29. The County may award any Bid in whole or in part to one or more vendors or reject all Bids and/or waive any technicalities if it is in the best interests of the County to do so. In the event that all Bids are not rejected, Bids for items including goods, materials, equipment, and services will be awarded to the lowest "responsible" Bidder(s) as determined by Fulton County. Submitting the lowest Bid, as published at the Bid opening, does not constitute an award or the mutual expectation of an award of a Contract and purchase order. For purposes of this notice and the attached Bid sheets, a purchase order is a Contract to provide items including goods, materials, equipment, and services and is intended to have the full force and effect of a Contract. A breach of the terms and conditions of a purchase order constitutes a breach of Contract.
30. Bids for projects that are solicited pursuant to the Georgia Local Government Public Works Construction Law (O.C.G.A. § 36-91-1 et seq.) may be withdrawn as follows:

Competitive sealed Bids ("Bid") may not be revoked or withdrawn until 60 days after the time set by the governmental entity for opening of Bids. At the end of this time period, the Bid will cease to be valid, unless the Bidder provides written notice to the County prior to the scheduled expiration date that the Bid will be extended for a time period specified by the County.
31. In the evaluation of the Bids, any award will be subject to the Bid being:
 - a. Compliant to the specification – meets form, fit, and function requirements stated or implied in the specification.
 - b. Lowest cost to the County over projected useful life.
 - c. Administratively Compliant – Including all required bonds, insurance, established quality of work and general reputation, financial responsibility, relevant experience, and related criteria.
32. All proposals and Bids submitted to Fulton County are subject to the Georgia "Open Records Act", Official Code of Georgia, Annotated (O.C.G.A.) §50-18-70 et seq.
33. All proposals and Bids submitted to Fulton County involving Utility Contracting are subject to the Georgia law governing licensing of Utility Contractors,

O.C.G.A. §43-14-8.2(h). The Utility Contractor License number of the person who will perform the utility work shall be written on the face of the Bid envelope.

34. The apparent silence of this specification, and any supplement thereto, as to details, of the omission from it of a detailed description concerning any point, will be regarded as meaning only the best commercial practices are to prevail. Only materials of the highest quality, correct type, size, and design are to be used. All interpretations of this specification will be made upon the basis of this statement, with Fulton County interpretation to prevail.
35. It is the policy of Fulton County that the evaluation and award process for County contracts shall be free from both actual and perceived impropriety, and that contacts between potential vendors and County officials, elected officials and staff regarding pending awards of County contracts shall be prohibited.
 - a. No person, firm, or business entity, however situated or composed, obtaining a copy of or responding to this solicitation, shall initiate or continue any verbal or written communication regarding this solicitation with any County officer, elected official, employee, or designated County representative, between the date of the issuance of this solicitation and the date of the County Manager's recommendation to the Board of Commissioners for award of the subject contract, except as may otherwise be specifically authorized and permitted by the terms and conditions of this solicitation.
 - b. All verbal and written communications initiated by such person, firm, or entity regarding this solicitation, if same are authorized and permitted by the terms and conditions of this solicitation, shall be directed to the Purchasing Agent.
 - c. Any violation of this prohibition of the initiation or continuation of verbal or written communications with County officers, elected officials, employees, or designated County representatives shall result in a written finding by the Purchasing Agent that the submitted Bid or proposal of the person, firm, or entity in violation is "non-responsive", and same shall not be considered for award.
36. Any Bidder intending to respond to this solicitation as a Joint Venture must submit an executed Joint Venture Agreement with this Bid. This agreement must designate those persons or entities authorized to execute documents or otherwise bind the Joint Venture in all transactions with Fulton County, or are accompanied by a document, binding upon the Joint Venture and its constituent members, making such designation. Bids from Joint Ventures that do not include these documents will be rejected as being "non-responsive".
37. Any Bidder intending to respond to this solicitation must complete all of the Procurement Affidavit Forms provided in this solicitation. Bids that do not include these completed documents will be rejected as being "non-responsive".

Required Bid Submittal Check List for Invitation To Bid (ITB)

The following submittals shall be completed and submitted with each bid (see table below "Required Bid Submittal Check List."). Please check to make sure that the required submittals are in the envelope before it is sealed. Failure to submit all required submittals may deem your proposal non-responsive.

Submit one (1) Original bid, signed and dated and (3) complete copies of the Original Bid including all required documents.

Item #	Required Bid Submittal Check List	Check (✓)
1	Bid Form (Section 00300) – All dollar amounts must be both in writing AND figures and represent prices for the published scope of work without exceptions.	
2	Acknowledgement of each Addendum (acknowledged both on the Bid Form, Section 00300, and on the form included with each addendum).	
3	Bid Bond (Section 00410) (separate envelope if Public Works Construction project)	
4	Purchasing Forms (Section 00420) Form A - Non-Collusion Affidavit of Prime Bidder/Offeror Form B - Certificate of Acceptance of Request for Bid/Proposal Requirements Form C1 - Georgia Utility Contractor License (<i>Non- applicable</i>) Form C2 - Georgia General Contractors License (<i>Applicable</i>) Form C3 - Georgia Professional Licenses (<i>Applicable</i>) Form D - Certificate Regarding Debarment Form E - Disclosure Form & Questionnaire Form F - Declaration of Employee-Number Categories Form G - Georgia Security and Immigration Contractor Affidavit and Agreement Form H - Georgia Security and Immigration Subcontractor Affidavit	
5	Office of Contract Compliance Requirements (Section 00430) Exhibit A - Promise of Non-Discrimination (for Prime and each Sub) Exhibit B - Employment Record (for Prime and each Sub) Exhibit C - Schedule of Intended Subcontractor Utilization Exhibit D - Letter of Intent to Perform as Subcontractor Exhibit E - Declaration Regarding Subcontractor Practices Exhibit F - Joint Venture Disclosure Affidavit Exhibit G - Prime Contractor/Subcontractor Utilization Report Equal Business Opportunity Plan (EBO Plan)	
6	Risk Management Insurance Provisions Form (Section 00490) and proof of insurance, either letter from insurer or Certificate of Insurance.	

BID FORM

Submitted To: Fulton County Government

Submitted By: _____

For: 09ITB Interior Renovation 137 Peachtree Street Building

Submitted on _____, 20__.

The undersigned, as Bidder, hereby declares that the only person or persons interested in the Bid as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this Bid or in the Contract to be entered into; that this Bid is made without connection with any other person, company or parties making a Bid; and that it is in all respects fair and in good faith without collusion or fraud.

The Bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the Drawings and Specifications for the work and contractual documents relative thereto, and has read all instructions to Bidders and General Conditions furnished prior to the openings of bids; that he has satisfied himself relative to the work to be performed.

The Bidder proposes and agrees, if this Bid is accepted, to contract with the Board of Commissioners of Fulton County, Atlanta, Georgia, in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary, and to complete the construction of the work in full and complete accordance with the shown, noted, and reasonably intended requirements of the Specifications and Contract Documents to the full and entire satisfaction of the Board of Commissioners of Fulton County, Atlanta, Georgia, with a definite understanding that no money will be allowed for extra work except as set forth in the attached General Conditions and Contract Documents for the following prices.

THE BASE BID TOTAL IS THE AMOUNT UPON WHICH THE BIDDER WILL BE FORMALLY EVALUATED AND WHICH WILL BE USED TO DETERMINE THE LOWEST RESPONSIBLE BIDDER. Please make sure that all line items below are accurately calculated and total up to this inclusive amount.

The bid may not be withdrawn or modified for a period of sixty (60) days following the receipt of bids.

BASE BID TOTAL, ITEMS 1 THROUGH 16 (BELOW), INCLUSIVE, THE AMOUNT OF:

\$ _____
(Dollar Amount In Numbers)

(Dollar Amount In Words)

***PROJECT WILL BE AWARDED ON THE BASE BID AMOUNT.**

Make sure that all line items below are accurately calculated and total up to the inclusive BASE BID TOTAL amount entered on Page 1.

Method of Bidding

The unit or lump sum price for each of the several items in the Bid of each Bidder shall include its pro rata share of overhead and profit so that the sum of the products, obtained by multiplying the quantity shown for each item by the unit price, represents the total Bid. Any Bid not conforming to this requirement may be rejected. Additionally, Unbalanced Bids or conditional Bids will be subject to rejection. The special attention of all Bidders is called to this provision, for should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities nor extra compensation allowed.

ITEM 1 – Furnishing all products, materials and equipment and performing all labor necessary to complete and put into operation the **#09ITB1005K-JD Interior Renovation 137 Peachtree Street Building**, including all work shown on the Drawings and/or Specified, and not included in Items 1 through 16 below, the amount

of: _____
_____ DOLLARS (\$ _____).

COST PROPOSAL FORM

The following form shall be used for submitting Bid Prices:

DIVISION	COMPONENT DESCRIPTION	QUANTITY	DOLLAR UNIT	COST	TOTAL COST
1	General Conditions/Requirements				
2	Site Work & Demolition				
3	Concrete				
4	Masonry/ NA				
5	Structural & Misc. Steel				
6	Wood & Plastic				
7	Moisture Protection				
8	Doors & Windows				
9	Finishes				
10	Specialties				
11	Equipment/NA				
12	Furnishing				
13	Special Construction/NA				
14	Conveying System/NA				
15	Mechanical				
16	Electrical				
	Sub Total				
Contractor Profit					
Contractor Overhead					
County Controlled Contingency				\$ 75,000	\$ 75,000
	Sub Total				
TOTAL BASE BID AMOUNT - NO ALTERNATE					
Alternates					
Alternate 1: Carpet tile					
Alternate 2: Replace on damage Ceiling Tile					

REVISED 9/4/09

ALTERNATES: The project will be awarded on the base bid amount. The following Alternates will be incorporated in the Contract if accepted. Refer to the Specifications for a complete description of Alternates.

Alternate Amount		Deduction Amount	Addition Amount
Alt. 1	Provide carpet tile in lieu of wood flooring where wood flooring is shown on the drawings	\$	\$
Alt. 2	Replace all damaged ceiling tiles in lieu of replacing all ceiling tiles for new.	\$	\$

The Bidder agrees hereby to commence work under this Contract, with adequate personnel and equipment, on a date to be specified in a written order of the Contracting Officer and to fully complete all work under this Contract within **45 Consecutive Days** from and including said date.

The Bidder declares that he understands that the quantities shown for the unit prices items are subject to either increase or decrease, and that should the quantities of any of the items of work be increased, the Bidder proposes to do the additional work at the unit prices stated herein; and should the quantities be decreased, the Bidder also understands that payment will be made on the basis of actual quantities at the unit price bid and will make no claim for anticipated profits for any decrease in quantities; and that actual quantities will be determined upon completion of work, at which time adjustments will be made to the contract amount by direct increase or decrease.

In case of discrepancies between the figures shown in the unit prices and the totals, the unit prices shall apply and the totals shall be corrected to agree with the unit prices. In case of discrepancies between written amounts and figures, written amounts shall take precedence over figures and the sum of all Bid extensions (of unit prices) plus lump sum items shall take precedence over BID TOTAL.

The Bidder furthermore agrees that, in the case of a failure on his part to execute the Contract Agreement and Bonds within ten (10) days after receipt of conformed contract documents for execution, the Bid Bond accompanying his bid and the monies payable thereon shall be paid into the funds of the Owner as liquidated damages for such failure.

Enclosed is a Bid Bond in the approved form, in the sum of: _____ Dollars
(\$ _____) according to the conditions of "Instructions to Bidders" and provisions thereof.

The undersigned acknowledges receipt of the following addenda (list by the number and date appearing on each addendum) and thereby affirms that its Bid considers and incorporates any modifications to the originally issued Bidding Documents included therein.

ADDENDUM # _____ DATED _____

BID BOND

**#09ITB1005K-JD INTERIOR RENOVATION 137 PEACHTREE STREET BUILDING
FULTON COUNTY GOVERNMENT**

KNOW ALL MEN BY THESE PRESENTS, THAT WE _____

_____ hereinafter called the PRINCIPAL, and _____

_____ hereinafter call the SURETY, a corporation chartered and existing under the laws of the State of _____ and duly authorized to transact Surety business in the State of Georgia, are held and firmly bound unto the Fulton County Government (COUNTY), in the penal sum of _____ Dollars and Cents (\$ _____) good and lawful money of the United States of America, to be paid upon demand of the COUNTY, to which payment well and truly to be made we bind ourselves, our heirs, executors, and administrators and assigns, jointly and severally and firmly by these presents.

WHEREAS the PRINCIPAL has submitted to the COUNTY, for **#09ITB1005K-JD Interior Renovation 137 Peachtree Street Building**, a Bid;

WHEREAS the PRINCIPAL desires to file this Bond in accordance with law:

NOW THEREFORE: The conditions of this obligation are such that if the Bid be accepted, the PRINCIPAL shall within ten (10) calendar days after receipt of written notification from the COUNTY of the award of the Contract execute the Contract in accordance with the Bid and upon the terms, conditions and prices set forth therein, in the form and manner required by the COUNTY, and execute sufficient and satisfactory Performance and Payments Bonds payable to the COUNTY, each in the amount of one hundred percent (100%) of the total contract price, in form and with security satisfactory to said COUNTY, then this obligation to be void; otherwise, to be and remain in full force and virtue in law; and the SURETY shall upon failure of the PRINCIPAL to comply with any or all of the foregoing requirements within the time specified above immediately pay to the COUNTY, upon demand the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

In the event suit is brought upon this Bond by the COUNTY and judgment is recovered, the SURETY shall pay all costs incurred by the COUNTY in such suit, including attorney's fees to be fixed by the Court.

Enclosed is a Bid Bond in the approved form, in the amount of _____ Dollars

(\$_____) being in the amount of five percent (5%) of the Contract Sum. The money payable on this bond shall be paid to the COUNTY, for the failure of the Bidder to execute a Contract within ten (10) days after receipt of the Contract and at the same time furnish a Payment Bond and Performance Bond.

(SIGNATURES ON NEXT PAGE)

IN TESTIMONY THEREOF, the PRINCIPAL and SURETY have caused these presents to be duly signed and sealed this _____ day of _____, 2009.

ATTEST:

PRINCIPAL

BY _____

(SEAL)

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the Corporation named as principal in the within bond; that _____, who signed the said bond of said corporation; that I know this signature, and his/her signature thereto is genuine; and that said bond was duly signed, sealed and attested for in behalf of said Corporation by authority of its governing body.

SECRETARY

(CORPORATE SEAL)

SURETY

BY _____

(SEAL)

END OF SECTION

PURCHASING FORMS & INSTRUCTIONS

This section contains the procurement forms that are required to be executed and submitted with the bid package. This section does not contain all forms required to be included with the bid package submittal.

To be deemed responsive to this ITB, Bidders must provide the information requested and complete in detail all Purchasing Forms. The appropriate individual(s) authorized to commit the Bidder to the Project must sign the Purchasing Forms. Bidders should reproduce each Purchasing Form, as required, and complete the appropriate portions of the forms provided in this section.

- Form A: Non-Collusion Affidavit of Prime Bidder/Offeror
- Form B: Certificate of Acceptance of Request for Bid/Proposal Requirements
- Form C: Professional License Certifications
 - Form C1 – Georgia Utility License Contractor License (**Non-applicable**)
 - Form C2 – Georgia General Contractors License (**Applicable**)
 - Form C3 – Georgia Professional License (**Applicable**)
- Form D: Certification Regarding Debarment
- Form E: Disclosure Form and Questionnaire
- Form F: Declaration of Employee-Number Categories
- Form G: Georgia Security and Immigration Contractor Affidavit and Agreement
- Form H: Georgia Security and Immigration Subcontractor Affidavit

FORM A: NON-COLLUSION AFFIDAVIT OF BIDDER/OFFEROR

STATE OF GEORGIA

COUNTY OF FULTON

I, _____ certify that pursuant to Fulton County Code Section 2-320 (11), this bid or proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same work, labor or service to be done or the supplies, materials or equipment to be furnished and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all conditions of this bid or proposal and certify that I am authorized to sign this bid or proposal for the bidder.

Affiant further states that pursuant to O.C.G.A. Section 36-91-21 (d) and (e), _____ has not, by itself or with others, directly or indirectly, prevented or attempted to prevent competition in such bidding or proposals by any means whatsoever. Affiant further states that (s)he has not prevented or endeavored to prevent anyone from making a bid or offer on the project by any means whatever, nor has Affiant caused or induced another to withdraw a bid or offer for the work.

Affiant further states that the said offer of _____ is bona fide, and that no one has gone to any supplier and attempted to get such person or company to furnish the materials to the bidder only, or if furnished to any other bidder, that the material shall be at a higher price.

(COMPANY NAME)

(PRESIDENT/VICE PRESIDENT)

Sworn to and subscribed before me this _____ day of _____, 200__.

(SECRETARY/ASSISTANT SECRETARY)

(Affix corporate seal here, if a corporation)

Notary Public: _____

County: _____

Commission Expires: _____

NOTE:

IF THE OFFEROR IS A PARTNERSHIP, ALL OF THE PARTNERS AND ANY OFFICER, AGENT, OR OTHER PERSON WHO MAY HAVE REPRESENTED OR ACTED FOR THEM IN BIDDING FOR OR PROCURING THE CONTRACT SHALL ALSO MAKE THIS OATH.

IF THE OFFEROR IS A CORPORATION, ALL OFFICERS, AGENTS, OR OTHER PERSONS WHO MAY HAVE ACTED FOR OR REPRESENTED THE CORPORATION IN BIDDING FOR OR PROCURING THE CONTRACT SHALL MAKE THE OATH.

**FORM B: FULTON COUNTY CERTIFICATE OF ACCEPTANCE OF
BID/PROPOSAL REQUIREMENTS**

This Is To Certify That On This Day Bidder/Proposer Acknowledges That He/She Has Read This Bid Document, Pages _____ To _____ Inclusive, Including Addendum(s) ____ To ____, And/Or Appendices ____ To ____, In Its Entirety, And Agrees That No Pages Or Parts Of The Document Have Been Omitted, That He/She Understands, Accepts And Agrees To Fully Comply With The Requirements Therein, And That The Undersigned Is Authorized By The Bidding/Proposing Company To Submit The Bid/Proposal Herein And To Legally Obligate The Bidder/Proposer Thereto.

Company: _____

Signature: _____

Name: _____

Title: _____

Date: _____

(Corporate Seal)

FORM C1: CONTRACTOR'S GEORGIA UTILITY LICENSE CERTIFICATION

Contractor's Name: _____

Utility Contractor's Name: _____

Expiration Date of License: _____

I certify that the above information is true and correct and that the classification noted is applicable to the Bid for this Project.

Signed: _____

Date: _____

(ATTACH COPY OF LICENSE)
(NON-APPLICABLE)

**FORM C2: CONTRACTOR'S GEORGIA GENERAL CONTRACTOR'S
LICENSE CERTIFICATION**

Contractor's Name: _____

General Contractor's License Number: _____

Expiration Date of License: _____

I certify that the above information is true and correct and that the classification noted is applicable to the Bid for this Project.

Signed: _____

Date: _____

(ATTACH COPY OF LICENSE)
(APPLICABLE)

FORM C3: GEORGIA PROFESSIONAL LICENSE CERTIFICATION

NOTE: Please complete this form for the work your firm will perform on this project.

Contractor's Name: _____

Performing work as: Prime Contractor _____ Sub-Contractor _____

Professional License Type: _____

Professional License Number: _____

Expiration Date of License: _____

I certify that the above information is true and correct and that the classification noted is applicable to the Bid for this Project.

Signed: _____

Date: _____

**(ATTACH COPY OF LICENSE)
(APPLICABLE)**

FORM D: CERTIFICATION REGARDING DEBARMENT

- (1) The Offeror certifies that neither it or its subcontractors is presently debarred, suspended, proposed for debarment, declared ineligible, or otherwise excluded from doing business with any government agency. Any such exclusion may cause prohibition of your firm from participating in any procurement by the Fulton County Government.
- (2) If the Offeror is unable to certify to any of the statements in this certification, such Offeror or subcontractor shall attach an explanation to this bid or proposal.

INSTRUCTIONS FOR CERTIFICATION

By signing and submitting this certification, the Offeror is providing the certification set out below:

- (1) The certification in this clause is a material representation of fact upon which reliance will be placed. If it is later determined that the prospective vendor knowingly rendered a false certification, the Purchasing Agent may pursue all available remedies, including suspension and/or debarment, for withdrawal of award or termination of a contract.
- (2) The prospective Offeror shall provide immediate written notice to the Purchasing Agent if at anytime the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (3) Offeror shall be under a continuing duty to immediately inform the Purchasing Agent in writing of any changes, if as a result of such changes, the Offeror certification regarding debarment is affected.

DEBARMENT ORDINANCE

The following Section 2-322 of Fulton County Code of Laws establishes the procedure for the debarment of contractors.

Authority to suspend.

After reasonable notice to the entity involved and reasonable opportunity for that entity to be heard, the Purchasing Agent, after consultation with user department, the County Manager and the County Attorney shall have the authority to suspend an entity for cause from consideration for award of county contracts. As used in this section, the term entity means any business entity, individual, firm, contractor, subcontractor or business corporation, partnership, limited liability corporation, firm, contractor, subcontractor or business structured; provided, further, that any such entity shall also be subject to suspension under this section if any of its constituents, members, subcontractors at any tier of such entity's and the entity, or any constituent or member, knew or should have known of the commission of the act. The suspension shall be for a period not to exceed three (3) years unless cause is based on a felony conviction for an offense related or associated with fraudulent contracting or misappropriation of funds wherein the suspension shall not exceed seven (7) years.

Causes for Suspension. The causes for suspension include:

- (1) Conviction for commission of a criminal offense as an incident to obtain or attempting to obtain a public or private contract or subcontract, or in performance of such contract or subcontract;
- (2) Conviction of state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property or other offense

indicating a lack of business integrity or business honesty which currently, seriously and directly affects responsibility as a county contractor.

- (3) Conviction of state or federal anti-trust statues arising out of the solicitation and submission of bids and proposals;
- (4) Violation of contract provisions, as set forth below, of a character which is regarded by the Purchasing Agent to be so serious as to justify suspension action:
 - a. Failure to perform in accordance with the specifications within a time limit provided in a county contract;
 - b. A recent record of failure to perform or unsatisfactory performance in accordance with the terms of one or more contracts; provided, that failure to perform or unsatisfactory performance caused by acts beyond the control of the contractor shall not be considered to be a basis for suspension;
 - c. Material representation of the composition of the ownership or workforce or business entity certified to the county as a minority business enterprise; or
 - d. Falsification of any documents.
- (5) For violation of the ethical standards set forth in Fulton County Code Chapter 9, Code of Ethics.
- (6) Knowing misrepresentation to the county, of the use which a majority owned contractor intends to make a minority business enterprise (a business entity at least 51 percent of which is owned and controlled by minority persons, as defined in Fulton County Code Chapter 6, Article B, Minority Business Enterprise Affirmative Action Program and certified as such by the County) as a subcontractor or a joint venture partner, in performing work under contract with the County.

Failure to fully and truthfully provide the information required, may result in the disqualification of your bid/proposal from consideration or termination of the Contract, once awarded. This document must be completed and included as a part of the bid/proposal package along with other required documents.

[SIGNATURES ON NEXT PAGE]

Under penalty of perjury, I declare that I have examined this certification and all attachments hereto, if applicable, to the best of my knowledge and belief, and all statements contained hereto are true, correct, and complete.

On this _____ day of _____, 200__

(Legal Name of Offeror) (Date)

(Signature of Authorized Representative) (Date)

(Title)

FORM E: DISCLOSURE FORM AND QUESTIONNAIRE

1. Please provide the names and business addresses of each of the Offeror's firm's officers and directors.

For the purposes of this form, the term "Offeror" means an entity that responds to a solicitation for a County contract by either submitting a proposal in response to a Request for Proposal or a Request for Qualification or a Bid in response to an Invitation to Bid.

Describe accurately, fully and completely, their respective relationships with said Offeror, including their ownership interests and their anticipated role in the management and operations of said Offeror.

2. Please describe the general development of said Offeror's business during the past five (5) years, or such shorter period of time that said Offeror has been in business.
3. Please state whether any employee, agent or representative of said Offeror who is or will be directly involved in the subject project has or had within the last five (5) years: (i) directly or indirectly had a business relationship with Fulton County; (ii) directly or indirectly received revenues from Fulton County; or (iii) directly or indirectly receives revenues from the result of conducting business on Fulton County property or pursuant to any contract with Fulton County. Please describe in detail any such relationship.

LITIGATION DISCLOSURE:

Failure to fully and truthfully disclose the information required, may result in the disqualification of your bid or proposal from consideration or termination of the Contract, once awarded.

1. Please state whether any of the following events have occurred in the last five (5) years with respect to said Offeror. If any answer is yes, explain fully the following:
 - (a) whether a petition under the federal bankruptcy laws or state insolvency laws was filed by or against said Offeror, or a receiver fiscal agent or similar officer was appointed by a court for the business or property of said Offeror;
 - (b) whether Offeror was subject of any order, judgment, or decree not subsequently reversed, suspended or vacated by any court of competent jurisdiction, permanently enjoining said Offeror from engaging in any type of business practice, or otherwise eliminating any type of business practice; and
 - (c) whether said Offeror's business was the subject of any civil or criminal proceeding in which there was a final adjudication adverse to said Offeror, which directly arose from activities conducted by the business unit or corporate division of said Offeror which submitted a bid or proposal for the subject project. If so please explain.

2. Have you or any member of your firm or team to be assigned to this engagement been indicted or convicted of a criminal offense within the last five (5) years?

Circle One: YES NO

3. Have you or any member of your firm or team ever been terminated (for cause or otherwise) from any work being performed for Fulton County or any other Federal, State or Local Government?

Circle One: YES NO

4. Have you or any member of your firm or team been involved in any claim or litigation adverse to Fulton County or any other Federal, State or Local Government, or private entity during the last three (3) years?

Circle One: YES NO

5. Has any offeror, member of offeror's team, or officer of any of them (with respect to any matter involving the business practices or activities of his or her employer), been notified within the five (5) years preceding the date of this offer that any of them are the target of a criminal investigation, grand jury investigation, or civil enforcement proceeding?

Circle One: YES NO

If you have answered "YES" to any of the above questions, please indicate the name(s) of the person(s), the nature, and the status and/or outcome of the information, indictment, conviction, termination, claim or litigation, the name of the court and the file or reference number of the case, as applicable. Any such information should be provided on a separate page, attached to this form and submitted with your proposal.

NOTE: If any response to any question set forth in this questionnaire has been disclosed in any other document, a response may be made by attaching a copy of such disclosure. (For example, said Offeror's most recent filings with the Securities and Exchange Commission ("SEC") may be provided if they are responsive to certain items within the questionnaire.) However, for purposes of clarity, Offeror should correlate its responses with the exhibits by identifying the exhibit and its relevant text.

Disclosures must specifically address, completely respond and comply with all information requested and fully answer all questions requested by Fulton County. Such disclosure must be submitted at the time of the bid or proposal submission and included as a part of the bid/proposal submitted for this project. Disclosure is required for Offerors, joint venture partners and first-tier subcontractors.

Failure to provide required disclosure, submit officially signed and notarized documents or respond to any and all information requested/required by Fulton County can result in the bid/proposal declared as non-responsive. This document must be completed and included as a part of the bid/proposal package along with other required documents.

[SIGNATURES ON NEXT PAGE]

Under penalty of perjury, I declare that I have examined this questionnaire and all attachments hereto, if applicable, to the best of my knowledge and belief, and all statements contained hereto are true, correct, and complete.

On this _____ day of _____, 200__

(Legal Name of Proponent) (Date)

(Signature of Authorized Representative) (Date)

(Title)

Sworn to and subscribed before me,

this _____ day of _____, 200__

(Notary Public) (Seal)

Commission Expires _____
(Date)

FORM F: DECLARATION OF EMPLOYEE-NUMBER CATEGORIES

Please affirmatively indicate by checking the appropriate box the employee-number category applicable to your company:

- 500 or more employees
- 100 or more employees
- fewer than 100 employees

Company Name: _____

I certify that the above classification is true and correct.

Signed: _____

Printed: _____

Title: _____

Date: _____

**FORM G: GEORGIA SECURITY AND IMMIGRATION CONTRACTOR
AFFIDAVIT AND AGREEMENT**

Instructions:

Contractors must attest to compliance with the requirements of O.C.G.A 13-10-91 and the Georgia Department of Labor Rule 300-10-01-.02 by executing the Contractor Affidavit provided. The affidavit should be executed by Contractors who have indicated on Form F, Declaration of Employee-Number Categories, that they have 100 or more employees.

STATE OF GEORGIA

COUNTY OF FULTON

FORM G: GEORGIA SECURITY AND IMMIGRATION CONTRACTOR AFFIDAVIT AND AGREEMENT

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with [insert name of prime contractor] on behalf of Fulton County Government has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services to this contract with Fulton County Government, contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A/ 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Fulton County Government at the time the subcontractor(s) is retained to perform such service.

EEV/Basic Pilot Program* User Identification Number

BY: Authorized Officer of Agent
(Insert Subcontract Name)

Title of Authorized Officer or Agent of Subcontractor

Printed Name of Authorized Officer or Agent

Sworn to and subscribed before me this _____ day of _____, 2009.

Notary Public: _____

County: _____

Commission Expires: _____

NOTE:

*** As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV/Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).**

FORM H: GEORGIA SECURITY AND IMMIGRATION SUBCONTRACTOR AFFIDAVIT

Instructions:

In the event that your company is awarded the contract for this project, and will be utilizing the services of any subcontractor(s) in connection with the physical performance of services pursuant to this contract, the following affidavit must be completed by such subcontractor(s). Your company must provide a copy of each such affidavit to Fulton County Government, Department of Purchasing & Contract Compliance with the proposal submittal.

All subcontractor affidavit(s) shall become a part of the contract and all subcontractor(s) affidavits shall be maintained by your company and available for inspection by Fulton County Government at any time during the term of the contract. All subcontractor(s) affidavit(s) shall become a part of any contractor/subcontractor agreement(s) entered into by your company.

STATE OF GEORGIA

COUNTY OF FULTON

FORM H: GEORGIA SECURITY AND IMMIGRATION SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with **[insert name of prime contractor]** behalf of **Fulton County Government** has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

EEV/Basic Pilot Program* User Identification Number

BY: Authorized Officer of Agent
(Insert Subcontract Name)

Title of Authorized Officer or Agent of Subcontractor

Printed Name of Authorized Officer or Agent

Sworn to and subscribed before me this _____ day of _____, 200__.

Notary Public: _____

County: _____

Commission Expires: _____

NOTE:

*** As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV/Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).**

CONTRACT COMPLIANCE REQUIREMENTS

NON-DISCRIMINATION IN CONTRACTING AND PROCUREMENT

Policy Statement: It is the policy of Fulton County Government that discrimination against businesses by reason of the race, color, gender or national origin of the ownership of any such business is prohibited. Furthermore, it is the policy of the Board of Commissioners ("Board") that Fulton County and all vendors and contractors doing business with Fulton County shall provide to all businesses the opportunity to participate in contracting and procurement paid, in whole or in part, with monetary appropriations of the Board. Similarly, it is the policy of the Board that the contracting and procurement practices of Fulton County should not implicate Fulton County as either an active or passive participant in the discriminatory practices engaged in by private contractors seeking to obtain contracts with Fulton County.

Equal Business Opportunity Plan (EBO Plan): In addition to the proposal submission requirements, each vendor **must** submit an Equal Business Opportunity Plan (EBO Plan) with their bid/proposal. The EBO Plan is designed to enhance the utilization of a particular racial, gender or ethnic group by a bidder/proposer, contractor, or vendor or by Fulton County. The respondent **must** outline a plan of action to encourage and achieve diversity and equality in the available procurement and contracting opportunities with *this solicitation*.

The EBO Plan **must** identify and include:

1. Potential opportunities within the scope of work of *this solicitation* that will allow for participation of racial, gender or ethnic groups.
2. Efforts that will be made by the bidder/proposer to encourage and solicit minority and female business utilization in this solicitation.

Fulton County encourages joint ventures, teaming, partnering and mentor-protégé relationships with minority and female businesses in an effort to achieve contracting and procurement diversity.

Prompt Payment: The prime contractor must certify in writing and must document on the Exhibit G Form (Prime Contractor/Subcontractor Utilization Report) that all subcontractors, sub-consultants and suppliers have been promptly paid for work and materials, (less any retainage by the prime contractor prior to receipt of any further progress payments). In the event the prime contractor is unable to pay subcontractors, sub-consultants or suppliers until it has received a progress payment from Fulton County, the prime contractor shall pay all subcontractors, sub-consultants or suppliers funds due from said progress payments within forty-eight (48) hours of receipt of payment from Fulton County. In no event shall a subcontractor, sub-consultant or supplier be paid later than fifteen (15) days as provided for by state law.

REQUIRED FORMS AND EBO PLAN:

In order to be compliant with the intent and provisions of the Fulton County Non-Discrimination in Purchasing and Contracting Ordinance (99-0960), bidders/proposers must submit the following completed documents. Failure to provide this information shall result in the bid/proposal being deemed non-responsive:

- **Exhibit A** - Promise of Non-Discrimination (for Prime and each Sub-contractor)
- **Exhibit B** - Employment Report (for Prime and each Sub-contractor)
- **Exhibit C** - Schedule of Intended Subcontractor Utilization
- **Exhibit D** - Letter of Intent to Perform As a Subcontractor or Provide Materials or Services
- **Exhibit E** - Declaration Regarding Subcontractor Practices
- **Exhibit F** - Joint Venture Disclosure Affidavit
- **Equal Business Opportunity Plan (EBO Plan)** – This document is not a form. It is a statement created by the bidder/proposer on its company letter head addressing the EBO Plan requirements.

All Contract Compliance documents (Exhibits A – F and EBO Plan) are to be placed in a **separate sealed envelope** clearly marked "Contract Compliance". The EBO Plan must be submitted on company letterhead. These documents are considered part of and should be submitted with the Technical Proposal.

The following document must be completed as instructed if awarded the bid:

- **Exhibit G** - Prime Contractor's Subcontractor Utilization Report

EXHIBIT A – PROMISE OF NON-DISCRIMINATION

"Know all persons by these presents, that I/WE (_____),
Name

Title Firm Name

Hereinafter "Company"), in consideration of the privilege to bid on or obtain contracts funded, in whole or in part, by Fulton County, hereby consent, covenant and agree as follows:

- (1) No person shall be excluded from participation in, denied the benefit of, or otherwise discriminated against on the basis of race, color, national origin or gender in connection with any bid submitted to Fulton County for the performance of any resulting there from,
- (2) That it is and shall be the policy of this Company to provide equal opportunity to all businesses seeking to contract or otherwise interested in contracting with this Company without regard to the race, color, gender or national origin of the ownership of this business,
- (3) That the promises of non-discrimination as made and set forth herein shall be continuing in nature and shall remain in full force and effect without interruption,
- (4) That the promise of non-discrimination as made and set forth herein shall be made a part of, and incorporated by reference into, any contract or portion thereof which this Company may hereafter obtain,
- (5) That the failure of this Company to satisfactorily discharge any of the promises of non-discrimination as made and set forth herein shall constitute a material breach of contract entitling the Board to declare the contract in default and to exercise any and all applicable rights and remedies, including but not limited to cancellation of the contract, termination of the contract, suspension and debarment from future contracting opportunities, and withholding and/or forfeiture of compensation due and owing on a contract; and
- (6) That the bidder shall provide such information as may be required by the Director of Contract Compliance pursuant to Section 4.4 of the Fulton County Non-Discrimination in Purchasing and Contracting Ordinance.

SIGNATURE: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

EXHIBIT B – EMPLOYMENT REPORT

The demographic employment make-up for the bidder **must** be identified and submitted with this bid/proposal. In addition, if subcontractors will be utilized by the bidder/proposer to complete this project, then the demographic employment make-up of the subcontractor(s) must be identified and submitted with this bid.

EMPLOYEES

CATEGORY	NATIVE INDIAN		AFRICAN AMERICAN		ASIAN AMERICAN		HISPANIC AMERICAN		CACUSIAN AMERICAN		OTHER	
	M	F	M	F	M	F	M	F	M	F	M	F
Male/Female												
Mgmt/Official												
Professional (Arch., P.E., etc.)												
Supervisors												
Office/ Clerical												
Craftsmen												
Laborers												
Others (Specify)												
TOTALS												

FIRM'S NAME: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

This completed form is for (Check one) _____ Bidder/Proposer _____ Subcontractor

Submitted by: _____ Date Completed: _____

EXHIBIT C – SCHEDULE OF INTENDED SUBCONTRACTOR UTILIZATION

If the bidder/proposer intends to subcontract any portion of this scope of work/service(s), this form **must be completed and submitted with the bid/proposal**. All prime bidders/proposers **must** include Letter(s) of Intent (Exhibit D) in the bid document for all subcontractors who will be utilized under the scope of work/services.

Prime Bidder/Proposer: _____

ITB/RFP NUMBER: _____

Project Name or Description of Work/Service(s): _____

1. My firm, as Prime Bidder/Proposer on this scope of work/service(s) is _____ is not _____ a minority or female owned and controlled business. (Please indicate below the portion of work, including, percentage of bid amount that your firm will carry out directly):

If the Prime Bidder/Proposer is a Joint Venture, please complete Exhibit F: Joint Venture Disclosure Affidavit and attach a copy of the executed Joint Venture Agreement.

2. Sub-Contractors (Including suppliers) to be utilized in the performance of this scope of work/service(s), if awarded, are:

SUBCONTRACTOR NAME: _____

ADDRESS: _____

PHONE: _____

CONTACT PERSON: _____

ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____

WORK TO BE PERFORMED: _____

DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

*Ethnic Groups: African American (AABE); Asian American (ABE); Hispanic American (HBE); Native American (NABE); White Female American (WFBE);

**If yes, attach copy of recent certification letter.

EXHIBIT C – SCHEDULE OF INTENDED SUBCONTRACTOR UTILIZATION

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____
DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____
DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____
DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____
DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

*Ethnic Groups: African American (AABE); Asian American (ABE); Hispanic American (HBE); Native American (NABE); White Female American (WFBE); **If yes, attach copy of recent certification letter.

EXHIBIT C – SCHEDULE OF INTENDED SUBCONTRACTOR UTILIZATION

Total Dollar Value of Subcontractor Agreements: (\$)

Total Percentage Value: (%)

CERTIFICATION: The undersigned certifies that he/she has read, understands and agrees to be bound by the Bid provisions, including the accompanying Exhibits and other terms and conditions regarding sub-contractor utilization. The undersigned further certifies that he/she is legally authorized by the Bidder to make the statement and representation in this Exhibit and that said statements and representations are true and correct to the best of his/her knowledge and belief. The undersigned understands and agrees that if any of the statements and representations are made by the Bidder knowing them to be false, or if there is a failure of the intentions, objectives and commitments set forth herein without prior approval of the County, then in any such event the Contractor's acts or failure to act, as the case may be, shall constitute a material breach of the contract, entitling the County to terminate the Contract for default. The right to so terminate shall be in addition to, and in lieu of, any other rights and remedies the County may have for other defaults under the contract.

Signature/Title: _____

Firm or Corporate Name: _____

Address: _____

Telephone: () _____

Fax Number: () _____

Email Address: _____

EXHIBIT D

LETTER OF INTENT TO PERFORM AS A SUBCONTRACTOR
OR
PROVIDE MATERIALS OR SERVICES

This form must be completed by ALL known subcontractors/suppliers and submitted with the bid. The Prime Contractor must submit Letters of Intent for ALL known subcontractors/suppliers at time of bid submission.

To: _____
(Name of Prime Contractor Firm)

From: _____
(Name of Subcontractor Firm)

ITB/RFP Number: _____

Project Name: _____

The undersigned is prepared to perform the following described work or provide materials or services in connection with the above project (specify in detail particular work items, materials, or services to be performed or provided):

Description of Work	Project Commence Date	Project Completion Date	Estimated Dollar Amount

(Prime Bidder)

(Subcontractor)

Signature _____ Signature _____

Title _____ Title _____

Date _____ Date _____

EXHIBIT E – DECLARATION REGARDING SUBCONTRACTING PRACTICES

If the bidder/proposer **does not intend to subcontract** any portion of the scope of work services(s), this form **must be** completed and submitted with the bid.

_____ Hereby declares that it is my/our intent to
(Bidder)

Perform 100% of the work required for _____
(IFB/RFP Number)

(Description of Work)

In making this declaration, the bidder/proposer states the following:

1. 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;
2. If it should become necessary to subcontract some portion of the work at a later date, the bidder will comply with all requirements of the County's Non-Discrimination Ordinance in providing equal opportunities to all firms to subcontract the work. The determination to subcontract some portion of the work at a later date shall be made in good faith and the County reserves the right to require additional information to substantiate a bidder's decision to subcontract work following the award of the contract. Nothing contained in this provision shall be employed to circumvent the spirit and intent of the County's Non-Discrimination Ordinances;
3. The bidder will provide, upon request, information sufficient for the County to verify Item Number one.

AUTHORIZED COMPANY REPRESENTATIVE

Name: _____ Title: _____ Date: _____

Signature: _____

Firm: _____

Address: _____

Phone Number: _____

Fax Number: _____

Email Address: _____

EXHIBIT F – JOINT VENTURE DISCLOSURE AFFIDAVIT

IFB No. _____

Project Name _____

This form must be completed and submitted with the bid if a Joint Venture approach is to be undertaken.

The firms listed below do hereby declare that they have entered into a joint venture agreement pursuant to the above mentioned project. The information requested below is to clearly identify and explain the extent of participation of each firm in the proposed joint venture. All items must be properly addressed before the business entity can be evaluated.

1. Firms:

1) Name of Business: _____
Street Address: _____
City/State/Zip: _____
County: _____
Nature of Business: _____

2) Name of Business: _____
Street Address: _____
City/State/Zip: _____
County: _____
Nature of Business: _____

3) Name of Business: _____
Street Address: _____
City/State/Zip: _____
County: _____
Nature of Business: _____

NAME OF JOINT VENTURE (If applicable): _____

OFFICE ADDRESS: _____

PRINCIPAL OFFICE: _____

OFFICE PHONE: _____

EXHIBIT F – JOINT VENTURE DISCLOSURE AFFIDAVIT CONTINUED

Note: Attach additional sheets as required

2. Describe the capital contributions by each joint venturer and accounting thereof. Indicate the percentage make-up for each joint venture partner.
3. Describe the financial controls of the joint venture, e.g., will a separate cost center be established? Which venturer will be responsible for keeping the books? How will the expense therefore be reimbursed? What is the authority of each joint venture to commit or obligate the order?
4. Describe any Ownership, options for Ownership, or loans between the joint ventures. Identify terms thereof.
5. Describe the estimate contract cash flow for each joint venturer.
6. To what extent and by whom will the on-site work be supervised?
7. To what extent and by whom will the administrative office be supervised?
8. Which joint venturer will be responsible for material purchases including the estimated cost thereof? How will the purchase be financed?
9. Which joint venturer will provide equipment? What is the estimated cost thereof? How will the equipment be financed?
10. Describe the experience and business qualifications of each joint venturer.
11. Submit a copy of all joint venture agreements and evidence of authority to do business in the State of Georgia as well as locally, to include all necessary business licenses.
12. Percent of ownership by each joint venture in terms of profit and loss sharing: _____

13. The authority of each joint venturer to commit or obligate the other: _____

14. Number of personnel to be involved in project, their crafts and positions and whether they are employees of the small business enterprise, the majority firm or the joint venture: _____

EXHIBIT F – JOINT VENTURE DISCLOSURE AFFIDAVIT CONTINUED

- 15. Identification of control and participation in venture; list those individuals who are responsible for day-to-day management and policy decision-maker, including, but not limited to, those with prime responsibility for areas designated below; (use additional sheets if necessary)

<u>Name</u>	<u>Race</u>	<u>Sex</u>	<u>Financial Decisions</u>	<u>Supervision Field Operation</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

In connection with any work that these firms, as a joint venture, might be authorized to perform in connection with above captioned contract, we each do hereby authorize representatives of the Fulton County Department of Purchasing and Contract Compliance and Departments of Finance, under the direction of the County Manger’s Office, to examine, from time to time, the books, records and files to the extent that such relate to this County project.

WE DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT WE ARE AUTHORIZED, ON BEHALF OF THE ABOVE FIRMS, TO MAKE THIS AFFIDAVIT AND GRANT THE ABOVE PRIVILEGE.

FOR: _____
(Company)

Date: _____

(Signature of Affiant)

(Printed Name)

(Company)

Date: _____

(Signature of Affiant)

(Printed Name)

State of _____:

County of _____:

On this _____ day of _____, 2009, before me, appeared

_____, the undersigned known to me to be the person described in the foregoing Affidavit and acknowledge that he (she) executed the same in the capacity therein stated and for the purpose therein contained.

**Insurance and Risk Management Provisions
Construction**

It is Fulton County Government’s practice to obtain Certificates of Insurance from our Contractors and Vendors. Insurance must be written by a licensed agent in a company licensed to write insurance in the State of Georgia, with an A.M. Best rating of at least A- VI, subject to final approval by Fulton County. Respondents shall submit with the bid/proposal evidence of insurability satisfactory to Fulton County Government as to form and content. Either of the following forms of evidence is acceptable:

- A letter from an insurance carrier stating that upon your firm/company being the successful Bidder/Respondent that a Certificate of Insurance shall be issued in compliance with the Insurance and Risk Management Provisions outlined below.
- A Certificate of Insurance complying with the Insurance and Risk Management Provisions outlined below (Request for Bid/Proposal number and Project Name, Number and Description must appear on the Certificate of Insurance).
- A combination of specific policies written with an umbrella policy covering liabilities in excess of the required limits is acceptable to achieve the applicable insurance coverage levels.

Upon award, the Contractor/Vendor must maintain at their expense, insurance with policy limits equal to or greater than the limits described below. Proof of insurance must be provided to Fulton County Government prior to the start of any activities/construction as described in the bid document(s). Any and all Insurance Coverage(s) and Bonds required under the terms and conditions of the contract shall be maintained during the entire length of the contract, including any extensions or renewals thereto, and until all work has been completed to the satisfaction of Fulton County Government.

Accordingly the Respondent shall provide a certificate evidencing the following:

1. WORKERS COMPENSATION/EMPLOYER’S LIABILITY INSURANCE – STATUTORY (In compliance with the Georgia Workers Compensation Acts and any other State or Federal Acts or Provisions in which jurisdiction may be granted)

Employer’s Liability Insurance	BY ACCIDENT	EACH ACCIDENT	\$1,000,000
Employer’s Liability Insurance	BY DISEASE	POLICY LIMIT	\$1,000,000
Employer’s Liability Insurance	BY DISEASE	EACH EMPLOYEE	\$1,000,000

2. COMMERCIAL GENERAL LIABILITY INSURANCE (Including contractual Liability Insurance)

Bodily Injury and Property Damage Liability	Each Occurrence	\$1,000,000
(Other than Products/Completed Operations)	General Aggregate	\$2,000,000
Products\Completed Operation	Aggregate Limit	\$2,000,000
Personal and Advertising Injury	Limits	\$1,000,000
Fire Damage	Limits	\$100,000

To Include Per Project/Location Aggregate and Completed Operations for 3 Years after final payment

3. BUSINESS AUTOMOBILE LIABILITY INSURANCE

Combined Single Limits	Each Occurrence	\$1,000,000
(Including operation of non-owned, owned, and hired automobiles).		
Broadened Pollution Endorsement CA9948 and MCS 90		

4. UMBRELLA LIABILITY

(In excess of above noted coverages)	Each Occurrence	\$5,000,000
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5. CONTRACTORS POLLUTION LIABILITY

Each Occurrence	\$2,000,000
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6. BUILDERS' RISK:

To be written on a Builders Risk "All-risk" form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism, malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than caused by flood), and such other perils or causes of loss as may be specifically required by Supplementary Conditions) until Final Completion and Acceptance of the Project. Such policy of insurance shall contain at least the following sub-limits of insurance and deductibles:

Sub-limits:

Property in Transit	\$1,000,000
Property in Offsite Storage	\$1,000,000
Plans & Blueprints	\$25,000
Debris Removal	25% of Insured Physical Loss
Delay in Completion / Soft Cost	TBD
Ordinance of Law (Increased Cost of Construction)	\$1,000,000
Flood and Earthquake	TBD – Full Contract Value
Deductibles:	
Flood and Earthquake	\$25,000
Water Damage other than Flood	\$100,000
All other Perils	\$10,000

Owner and Contractor waive all rights against each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section, or other property insurance applicable to the Work, accept such rights as they have to the proceeds of such insurance.

The policy will name Fulton County, The Contractor and Subcontractors of all tiers as Insureds under the policy.

Certificates of Insurance

Certificates shall state that the policy or policies shall not expire, be cancelled or altered without at least sixty (60) days prior written notice to Fulton County Government. Policies and Certificates of Insurance are to list Fulton County Government as an Additional Insured (except for Workers' Compensation) and shall conform to all terms and conditions (including coverage of the indemnification and hold harmless agreement) contained in the Insurance and Risk Management Provisions. The General Liability Additional Insured language should apply to on-going and completed-operations, using ISO form CG 2010 (11/85 version) or equivalent.

If Fulton County Government shall so request, the Respondent, Contractor or Vendor will furnish the County for its inspection and approval such policies of insurance with all endorsements, or confirmed specimens thereof certified by the insurance company to be true and correct copies.

The Contractor agrees to name the Owner and all other parties required of the Contractor/Vendor shall be included as insureds on the CGL, using ISO Additional Insured Endorsement forms CG 2010 11/85 or its equivalent coverage to the additional insureds. This insurance for the additional insureds shall be as broad as the coverage provided for the named insured Subcontractor. It shall apply as Primary Insurance before any other insurance or self-insurance, including any deductible, non-contributory, and Waiver of Subrogation provided to the Additional Insureds.

Additional Insured under the General Liability, Auto Liability, Umbrella Policies (with exception of Workers Compensation and Professional Liability), with no Cross Suits exclusion.

Important:

It is understood that **Insurance in no way Limits the Liability of the Contractor/Vendor.**

USE OF PREMISES

Contractor/Vendor shall confine its apparatus, the storage of materials and the operations of its workers to limits/requirements indicated by law, ordinance, permits and any restrictions of Fulton County Government and shall not unreasonably encumber the premises with its materials.

PROTECTION OF PROPERTY

Contractor/Vendor will adequately protect its own work from damage, will protect Fulton County Government's property from damage or loss and will take all necessary precautions during the progress of the work to protect all persons and the property of others from damage or loss.

Contractor/Vendor shall take all necessary precautions for the safety of employees of the work and shall comply with all applicable provisions of the Federal, State and local safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where work is being performed.

Contractor/Vendor shall erect and properly maintain at all times as required by the conditions and progress of the work, all necessary safeguards for the protection of its employees, Fulton County Government employees and the public and shall post all applicable signage and other warning devices to protect against potential hazards for the work being performed.

INDEMNIFICATION AND HOLD HARMLESS AGREEMENT

To the fullest extent of the Law, Contractor/Vendor hereby agrees to release, indemnify, defend and hold harmless Fulton County, its Commissioners, officers, employees, subcontractors, successors, assigns and agents, from and against any and all losses (including death), claims, damages, liabilities, costs and expenses (including but not limited to all actions, proceedings, or investigations in respect thereof and any costs of judgments, settlements, court costs, attorney's fees or expenses, regardless

of the outcome of any such action, proceeding, or investigation), caused by, relating to, based upon or arising out of any act or omission by Contractor/Vendor, its directors, officers, employees, subcontractors, successors, assigns or agents, or otherwise in connection (directly or indirectly) with its acceptance, or the performance, or nonperformance, of its obligations under these agreements. Such obligations shall not be construed to negate, abridge or otherwise reduce any other rights or obligations of indemnity which would otherwise exist as to any party or person as set forth in this paragraph.

Contractor/Vendor's obligation to protect, defend, indemnify and hold harmless, as set forth hereinabove, shall also include, but is not limited to, any matter arising out of any actual or alleged infringement of any patent, trademark, copyright, or service mark, or other actual or alleged unfair competition disparagement of product or service, or other tort or any type whatsoever, or any actual or alleged violation of trade regulations.

Contractor/Vendor further agrees to protect, defend, indemnify and hold harmless Fulton County, its Commissioners, officers, employees, subcontractors, successors, assigns and agents from and against any and all claims or liability for compensation under the Worker's Compensation Act, Disability Benefits Act, or any other employee benefits act arising out of injuries sustained by any employees of Contractor/Vendor. These indemnities shall not be limited by reason of the listing of any insurance coverage.

If the bid/quotation involves construction services Contractor/Vendor will be responsible fully for any and all damage to the work during the course of construction, until the point of Final acceptance by Fulton County.

FULTON COUNTY ACKNOWLEDGES THAT ALL PROVISIONS OF THIS INDEMNITY AGREEMENT MAY NOT BE APPLICABLE TO THE CONTRACTOR/VENDOR'S BUSINESS. TO THE EXTENT THAT CONTRACTOR/VENDOR MAY DEMONSTRATE SUCH NONAPPLICABILITY, FULTON COUNTY MAY NEGOTIATE AMENDMENTS TO THIS AGREEMENT AS THE CIRCUMSTANCES DICTATE.

CONTRACTOR/VENDOR ACKNOWLEDGES HAVING READ, UNDERSTANDING, AND AGREEING TO COMPLY WITH THIS INDEMNIFICATION AND HOLD HARMLESS AGREEMENT, AND THE REPRESENTATIVE OF THE CONTRACTOR/VENDOR IDENTIFIED BELOW IS AUTHORIZED TO SIGN CONTRACTS ON BEHALF OF THE RESPONDING CONTRACTOR/VENDOR.

COMPANY: _____ SIGNATURE: _____

NAME: _____ TITLE: _____

DATE: _____

OWNER - CONTRACTOR AGREEMENT
#09ITB1005K-JD INTERIOR RENOVATION 137 PEACHTREE STREET BUILDING

Contractor: _____ Project No. _____
Address: _____ Telephone: _____
Contact: _____ Facsimile: _____

THIS AGREEMENT is effective as of the _____ day of _____, 20 , by and between Fulton County, a political subdivision of the State of Georgia (hereinafter called the "County"), and the above named CONTRACTOR in accordance with all provisions of this Construction agreement, consisting of the following Contract Documents:

- General Conditions
- Special Conditions
- Bid Form
- Scope of Work and Technical Specifications
- Drawings and Specifications
- Exhibits
- Purchasing Forms
- Office of Contract Compliance Forms
- Risk Management Insurance Provisions Forms

WITNESSETH: That the said Contractor has agreed, and by these presents does agree with the said County, for and in consideration of a Contract Price of _____ (\$ _____) and other good and valuable consideration, and under the penalty expressed on Bonds hereto attached, to furnish all equipment, tools, materials, skill, and labor of every description necessary to carry out and complete in good, firm, and substantial, and workmanlike manner, the Work specified, in strict conformity with the Drawings and the Specifications hereinafter set forth, which Drawings and Specifications together with the bid submittals made by the Contractor, General Conditions, Special Provisions, Detailed Specifications, Exhibits, and this Agreement, shall all form essential parts of this Contract. The Work covered by this Contract includes all Work indicated on Plans and Specifications and listed in the Bid entitled:

Project Number: **#09ITB1005K-JD Interior Renovation 137 Peachtree Street Building**

The Contractor shall commence the Work with adequate force and equipment within 10 days from receipt of Notice to Proceed from the County, and shall complete the work within 45 consecutive days from the Notice to Proceed or the date work begins, whichever comes first. The Contractor shall remain responsible for performing, in accordance with the terms of the contract, all work assigned prior to the expiration of the said calendar days allowed for completion of the work even if the work is not completed until after the expiration of such days.

[Insert if applicable For each calendar day that any work remains uncompleted after the time allowed for completion of the work, the Contractor shall pay the County the sum of \$ 500.00 not as a penalty but as liquidated damages, which liquidated damages the County may deduct from any money due the contractor. At the County's convenience and not to it prejudice the County may provide written notice of the commencement of the assessment of liquidated damages].

As full compensation for the faithful performance of this Contract, the County shall pay the Contractor in accordance with the General Conditions and the prices stipulated in the Bid, hereto attached.

It is further mutually agreed between the parties hereto that if, at any time after the execution of this Agreement and the Surety Bonds hereto attached for its faithful performance, the County shall deem the surety or sureties upon such bonds to be unsatisfactory, or, if, for any reason, such bonds cease to be adequate to cover the performance of the Work, the Contractor shall, at his expense, within five days after receipt of notice from the County so to do, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the County. In such event no further payment to the Contractor shall be deemed to be due under this Agreement until such new or additional security for the faithful performance of the Work shall be furnished in manner and form satisfactory to the County.

The Contractor hereby assumes the entire responsibility and liability for any and all injury to or death of any and all persons, including the Contractor's agents, servants, and employees, and in addition thereto, for any and all damages to property caused by or resulting from or arising out of any act or omission in connection with this contract or the prosecution of work hereunder, whether caused by the Contractor or the Contractor's agents, Servants, or employees, or by any of the Contractor's subcontractors or suppliers, and the Contractor shall indemnify and hold harmless the County, the Construction Manager, or any of their subcontractors from and against any and all loss and/or expense which they or any of them may suffer or pay as a result of claims or suits due to, because of, or arising out of any and all such injuries, deaths and/or damage, irrespective of County or Construction Manager negligence (except that no party shall be indemnified for their own sole negligence). The Contractor, if requested, shall assume and defend at the Contractor's own expense, any suit, action or other legal proceedings arising there from, and the Contractor hereby agrees to satisfy, pay, and cause to be discharged of record any judgment which may be rendered against the County and the Construction Manager arising there from.

In the event of any such loss, expense, damage, or injury, or if any claim or demand for damages as heretofore set forth is made against the County or the Construction Manager, the County may withhold from any payment due or thereafter to become due to the Contractor under the terms of this Contract, an amount sufficient in its judgment to protect and indemnify it and the Construction Manager from any and all claims, expense, loss, damages, or injury; and the County, in its discretion, may require the Contractor to furnish a surety bond satisfactory to the County providing for such protection and indemnity, which bond shall be furnished by the Contractor within five (5) days after written demand has been made therefore. The expense of said Bond shall be borne by the Contractor. **[See General Conditions for similar provisions]**

This Contract constitutes the full agreement between the parties, and the Contractor shall not sublet, assign, transfer, pledge, convey, sell or otherwise dispose of the whole or any part of this Contract or his right, title, or interest therein to any person, firm or corporation without the previous consent of the County in writing. Subject to applicable provisions of law, this Contract shall be in full force and effect as a Contract, from the date on which a fully executed and approved counterpart hereof is delivered to the Contractor and shall remain and continue in full force and effect until after the expiration of any guarantee period and the Contractor and his sureties are finally released by the County.

This agreement was approved by the Fulton County Board of Commissioner on [Insert approval date and item number].

[SIGNATURES NEXT PAGE]

IN WITNESS THEREOF, the Parties hereto have caused this Contract to be executed by their duly authorized representatives as attested and witnessed and their corporate seals to be hereunto affixed as of the day and year date first above written.

OWNER:

CONTRACTOR:

FULTON COUNTY, GEORGIA

[Insert Contractor COMPANY NAME]

John H. Eaves, Commission Chair
Board of Commissioners

***[Insert Name & Title of person
authorized to sign contract]***

ATTEST:

ATTEST:

Mark Massey
Clerk to the Commission (Seal)

Secretary/
Assistant Secretary

(Affix Corporate Seal)

APPROVED AS TO FORM:

Office of the County Attorney

APPROVED AS TO CONTENT:

[Insert Department Head Name]
[Insert Department Head Title]

PERFORMANCE BOND

No contract with Fulton County for work to be done shall be valid for any purpose unless the Contractor provides a Performance Bond with good and sufficient surety payable to, in favor of, and for the protection of Fulton County. The Performance Bond shall be in the amount of 100% of the total contract amount, payable by the terms of the Contract, and shall be written on the following form.

Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business as a surety in Georgia.

Attestation for the corporation must be by the corporate officer; for a partnership by another partner; for an individual by a notary with the corporate seal.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that _____
(Insert name of Contractor)
(hereinafter called the "Principal") and _____
(Insert name of Surety)
(hereinafter called the "Surety"), are held and firmly bound unto **FULTON COUNTY**, a political subdivision of the State of Georgia (hereinafter called the "Owner"), its successors and assigns, in the penal sum of _____
[100% of Contract amount], lawful money of the United States of America, for the payment of which the Principal and the Surety bind themselves, their administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written contract with the Owner, dated _____, which is incorporated herein by reference in its entirety (hereinafter called the "Contract"), for construction-type services of a project known as **Interior Renovation 137 Peachtree Street Building**, as more particularly described in the Contract (hereinafter called the "Project");

NOW, THEREFORE, the conditions of this obligation are as follows, that if the Principal shall fully and completely perform all the undertakings, covenants, terms, conditions, warranties, and guarantees contained in the Contract, including all modifications, amendments, changes, deletions, additions, and alterations thereto that may hereafter be made, then this obligation shall be void; otherwise it shall remain in full force and effect.

Whenever the Principal shall be, and declared by the Owner to be, in default under the Construction-Type Contract, the Surety shall promptly remedy the default as follows:

1. Complete the Contract in accordance with its terms and conditions; or, at the sole option of the Owner,
2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the Surety and the Owner of the lowest responsible bidder, arrange for a contract between such bidder and Owner and make available as the work progresses (even though there should be a default or succession of defaults under the Contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the penal sum set forth in the first paragraph hereof, as may be adjusted, and the Surety shall make available and pay to the Owner the funds required by this Paragraph prior to the payment of the Owner of the balance of the contract price, or any portion thereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by the Owner to the Contractor under the Contract, and any amendments thereto, less the amount paid by the Owner to the Contractor; or, at the sole option of the Owner,
3. Allow Owner to complete the work and reimburse the Owner for all reasonable costs incurred in completing the work.

In addition to performing as required in the above paragraphs, the Surety shall indemnify and hold harmless the Owner from any and all losses, liability and damages, claims, judgments, liens, costs and fees of every description, including reasonable attorney's fees, litigation costs and expert witness fees, which the Owner may incur, sustain or suffer by reason of the failure or default on the part of the Principal in the performance of any or all of the terms, provisions, and requirements of the Contract, including any and all amendments and modifications thereto, or incurred by the Owner in making good any such failure of performance on the part of the Principal.

The Surety shall commence performance of its obligations and undertakings under this Bond promptly and without delay, after written notice from the Owner to the Surety.

The Surety hereby waives notice of any and all modifications, omissions, additions, changes, alterations, extensions of time, changes in payment terms, and any other amendments in or about the Contract, and agrees that the obligations undertaken by this Bond shall not be impaired in any manner by reason of any such modifications, omissions, additions, changes, alterations, extensions of time, change in payment terms, and amendments.

The Surety hereby agrees that this Bond shall be deemed amended automatically and immediately, without formal or separate amendments hereto, upon any amendment to the Contract, so as to bind the Principal and the Surety to the full and faithful performance of the Contract as so amended or modified, and so as to increase the penal sum to the adjusted Contract Price of the Contract.

No right of action shall accrue on this Bond to or for the use of any person, entity or corporation other than the Owner and any other obligee named herein, or their executors, administrators, successors or assigns.

This Bond is intended to comply with O.C.G.A. Section 36-91-1 et seq., and shall be interpreted so; as to comply with; the minimum requirements thereof. However, in the event the express language of this Bond extends protection to; the Owner beyond that contemplated by O.C.G.A. Section 36-91-1 et seq. and O.C.G.A. Section 13-10-1, as amended, or any other statutory law applicable to this Project, then the additional protection shall be enforced in favor of the Owner, whether or not such protection is found in the applicable statutes.

IN WITNESS WHEREOF the undersigned have caused this instrument to be executed and their respective corporate seals to be affixed and attested by their duly authorized representatives this _____ day of _____, _____.

_____(SEAL)
(Principal)

By: _____

Attest:

Secretary

_____(SEAL)
(Surety)

By: _____

Attest:

Secretary

(Address of Surety's Home Office)

(Resident Agent of Surety)

PAYMENT BOND

No Contract with Fulton County for work to be done shall be valid for any purpose unless the Contractor provides a Payment Bond with good and sufficient surety payable to Fulton County for the use and protection of all sub-contractors and all persons supplying labor, materials, machinery, and equipment in the prosecution of the work provided for in the Contract. The Payment Bond shall be in the amount of 100% of the total contract amount, payable by the terms of the Contract, and shall be written on the following form.

Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Georgia.

Attestation for the corporation must be by the corporate officer; for a partnership by another partner; for an individual by a notary with the corporate seal.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that _____
(Insert name of Contractor)
(hereinafter called the "Principal") and _____
(Insert name of Surety)
(hereinafter called the "Surety"), are held and firmly bound unto **FULTON COUNTY**, a political subdivision of the State of Georgia (hereinafter called the "Owner"), its successors and assigns as obligee, in the penal sum of _____
[100% of Contract amount], lawful money of the United States of America, for the payment of which the Principal and the Surety bind themselves, their administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written contract with the Owner, dated _____, which is incorporated herein by reference in its entirety (hereinafter called the "Contract"), for construction-type services of a project known as **Interior Renovation 137 Peachtree Street Building**, as more particularly described in the Contract (hereinafter called the "Project");

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to all persons working on or supplying labor or materials under the Contract, and any amendments thereto, with regard to labor or materials furnished and used in the Project, and with regard to labor or materials furnished but not so used, then this obligation shall be void; but otherwise it shall remain in full force and effect.

1. A "Claimant" shall be defined herein as any subcontractor, person, party, partnership, corporation or the entity furnishing labor, services or materials used, or reasonably required for use, in the performance of the Contract, without regard to whether such labor, services or materials were sold, leased or rented, and without regard to whether such Claimant is or is not in privity of contract with the Principal or any subcontractor performing work on the Project, including, but not limited to, the following labor, services, or materials: water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. In the event a Claimant files a lien against the property of the Owner, and the Principal fails or refuses to satisfy or remove it promptly, the Surety shall satisfy or remove the lien promptly upon written notice from the Owner, either by bond or as otherwise provided in the Contract.
3. The Surety hereby waives notice of any and all modifications, omissions, additions, changes, alterations, extensions of time, changes in the payment terms, and any other amendments in or about the Contract and agrees that the obligations undertaken by this Bond shall not be impaired in any manner by reason of any such modifications, omissions, additions, changes, alterations, extensions of time, changes in payment terms, and amendments.
4. The Surety hereby agrees that this Bond shall be deemed amended automatically and immediately, without formal or separate amendments hereto, upon any amendment or modifications to the Contract, so as to bind the Principal and Surety, jointly and severally, to the full payment of any Claimant under the Contract, as amended or modified, provided only that the Surety shall not be liable for more than the penal sum of the Bond, as specified in the first paragraph hereof.
5. This Bond is made for the use and benefit of all persons, firms, and corporations who or which may furnish any materials or perform any labor for or on account of the construction-type services to be performed or supplied under the Contract, and any amendments thereto, and they and each of them may sue hereon.

6. No action may be maintained on this Bond after one (1) year from the date the last services, labor, or materials were provided under the Contract by the Claimant prosecuting said action.
7. This Bond is intended to comply with O.C.G.A. Section 13-10-1, and shall be interpreted so as to comply with the minimum requirements thereof. However, in the event the express language of this Bond extends protection to the Owner beyond that contemplated by O.C.G.A. Section 13-10-1, or any other statutory law applicable to this Project, then the additional protection shall be enforced in favor of the Owner, whether or not such protection is found in the applicable statutes.

IN WITNESS WHEREOF the undersigned have caused this instrument to be executed and their respective corporate seals to be affixed and attested by their duly authorized representatives this _____ day of _____, _____.

_____(SEAL)
(Principal)

By: _____

Attest:

Secretary

_____(SEAL)
(Surety)

By: _____

Attest:

Secretary

(Address of Surety's Home Office)

(Resident Agent of Surety)

GENERAL CONDITIONS

GENERAL CONDITIONS:

00700-1 FAMILIARITY WITH SITE

Execution of this agreement by the Contractor is a representation that the Contractor has visited the site, has become familiar with the local conditions under which the work is to be performed, and has correlated personal observations with the requirements of this agreement.

00700-2 CONTRACT DOCUMENTS

This agreement consists of Owner's invitation for bid, instructions to bidders, bid form, performance bond, payment bond, acknowledgments, the contract, general conditions, special conditions, specifications, plans, drawings, exhibits, addenda, and written change orders.

A. Notice of Award of Contract:

B. Execution of Contract Documents

Upon notification of Award of Contract, the Owner shall furnish the Contractor the conformed copies of Contract Documents for execution by the Contractor and the Contractor's surety.

Within ten (10) days after receipt the Contractor shall return all the documents properly executed by the Contractor and the Contractor's surety. Attached to each document shall be an original power-of-attorney for the person executing the bonds for the surety and certificates of insurance for the required insurance coverage.

After receipt of the documents executed by the Contractor and his surety with the power-of-attorney and certificates of insurance, the Owner shall complete the execution of the documents. Distribution of the completed documents will be made upon completion.

Should the Contractor and/or Surety fail to execute the documents within the time specified; the Owner shall have the right to proceed on the Bid Bond accompanying the bid.

If the Owner fails to execute the documents within the time limit specified, the Contractor shall have the right to withdraw the Contractor's bid without penalty.

Drawings and Specifications:

The Drawings, Specifications, Contract Documents, and all supplemental documents, are considered essential parts of the Contract, and requirements occurring in one are as binding as though occurring in all. They are intended to define, describe and provide for all Work necessary to complete the Project in an acceptable manner, ready for use, occupancy, or operation by the Owner.

In case of conflict between the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings.

In cases where products or quantities are omitted from the Specifications, the description and quantities shown on the Drawings shall govern.

Any ambiguities or need for clarification of the Drawings or Specifications shall be immediately reported to the Construction Manager in writing. Any such ambiguity or need for clarification shall be handled by the Construction Manager in writing. No clarification of the Drawings and Specifications hereunder by the Construction Manager shall entitle the Contractor to any additional monies unless a Change Order has been processed as provided by "Changes in the Contract" hereof.

Any work done by the Contractor following a discovery of such differing site condition or ambiguity or need for clarification in the Contract Drawings and Specifications prior to a written report to the Construction Manager shall not entitle the Contractor to additional monies and shall be done at the Contractor's risk.

The Construction Manager will furnish the Contractor five (5) copies of the Contract Drawings and the Specifications, one copy of which the Contractor shall have available at all times on the Project site.

00700-3 DEFINITIONS

The following terms as used in this agreement are defined as follows to the extent the definitions herein differ or conflict with those in the Instructions for Bidders, Section 00100, the definitions herein shall control.

Alternate bids – the amount stated in the bid or proposal to be added to or deducted from the amount of the base bid or base proposal if the corresponding change in project scope or alternate materials or methods of construction is accepted.

Base bid – the amount of money stated in the bid or proposal as the sum for which the bidder or proposer offers to perform the work.

Change Order - an alteration, addition, or deduction from the original scope of work as defined by the contract documents to address changes or unforeseen conditions necessary for project completion. A written order to the Contractor issued by the County pursuant to Fulton County Policy and Procedures 800-6 for changes in the work within the general scope of the contract documents, adjustment of the contract price, extension of the contract time, or reservation of determination of a time extension.

Construction Manager or Engineer shall mean Fulton Construction Management Partners, the County authorized representative for this project.

Contractor shall mean the party of the second part to the Contract Agreement or the authorized and legal representative of such party.

Contract Documents include the Contract Agreement, Contractor's Bid (including all documentation accompanying the Bid and any post-Bid documentation required by the County prior to the Notice of Award), Bonds, all Special Conditions, General Conditions, Supplementary Conditions, Specifications, Drawings and addenda, together with written amendments, change orders, field orders and the Construction Manager's written interpretations and clarifications issued in accordance with the General Conditions on or after the date of the Contract Agreement. Shop drawing submittals reviewed in accordance with the General Conditions, geotechnical investigations and soils report and drawings of physical conditions in or relating to existing surface structures at or contiguous to the site are not Contract Documents.

Contract Price - The sum specified in the Agreement to be paid to the Contractor in consideration of the Work.

Contract Time shall mean the number of consecutive calendar days as provided in the Contract Agreement for completion of the Work, to be computed from the date of Notice to Proceed.

Owner or County shall mean Fulton County Government, party of the first part to the Contract Agreement, or its authorized and legal representatives.

Day - A calendar day of twenty-four hours lasting from midnight of one day to midnight the next day.

Design Consultant shall mean the firm or corporation responsible for the detailed design drawings and specifications.

Director - Director of the Department of Public Works of Fulton County, Georgia or the designee thereof.

Final Completion shall mean the completion of all work as required in accordance with the terms and conditions of the contract documents.

Liquidated Damages shall mean the amount, stated in the Contract Agreement, which the Contractor agrees to pay to the Owner for each consecutive calendar day beyond the Contract time required to complete the Project or for failing to comply with associated milestones. Liquidated Damages will end upon written notification from the Owner of Final Acceptance of the Project or upon written notification of from the Owner of completion of the milestone.

Notice to Proceed - A written communication issued by the County to the Contractor authorizing it to proceed with the work, establishing the date of commencement and completion of the work, and providing other direction to the Contractor.

Products shall mean materials or equipment permanently incorporated into the work.

Program Manager - Not used in this contract. Delete all references.

Project Manual - The Contract Documents.

Provide shall mean to furnish and install.

Substantial Completion - The date certified by the Construction Manager when all or a part of the work, as established pursuant to General Condition 0700-81, is sufficiently completed in accordance with the requirements of the contract documents so that the identified portion of the work can be utilized for the purposes for which it is intended.

Work or Project - All of the services specified, indicated, shown or contemplated by the contract documents, and furnishing by the Contractor of all materials, equipment, labor, methods,

processes, construction and manufacturing materials and equipment, tools, plans, supplies, power, water, transportation and other things necessary to complete such services in accordance with the contract documents to insure a functional and complete facility.

00700-4 CODES

All codes, specifications, and standards referenced in the contract documents shall be the latest editions, amendments and revisions of such referenced standards in effect as of the date of the request for proposals for this contract.

00700-5 REVIEW OF CONTRACT DOCUMENTS

Before making its proposal to the County, and continuously after the execution of the agreement, the Contractor shall carefully study and compare the contract documents and shall at once report to the Construction Manager any error, ambiguity, inconsistency or omission that may be discovered, including any requirement which may be contrary to any law, ordinance, rule, or regulation of any public authority bearing on the performance of the work. By submitting its proposal, the Contractor agrees that the contract documents, along with any supplementary written instructions issued by or through the Construction Manager that have become a part of the contract documents, appear accurate, consistent and complete insofar as can be reasonably determined. If the Contractor has timely reported in writing any error, inconsistency, or omission to the Construction Manager, has properly stopped the affected work until instructed to proceed, and has otherwise followed the instructions of the Construction Manager, the Contractor shall not be liable to the County for any damage resulting from any such error, inconsistency, or omission in the contract documents. The Contractor shall not perform any portion of the work without the contract documents, approved plans, specifications, products and data, or samples for such portion of the work. For purposes of this section "timely" is defined as the time period in which the contractor discovers, or should have discovered, the error, inconsistency, or omission, with the exercise of reasonable diligence.

00700-6 STRICT COMPLIANCE

No observation, inspection, test or approval of the County or Construction Manager shall relieve the Contractor from its obligation to perform the work in strict conformity with the contract documents except as provided in General Condition 00700-48.

00700-7 APPLICABLE LAW

All applicable State laws, County ordinances, codes, and rules and regulations of all authorities having jurisdiction over the construction of the project shall apply to this agreement. The Contractor shall comply with the requirements of any Fulton County program concerning non-discrimination in contracting. All work performed within the right of way of the Georgia Department of Transportation and any railroad crossing shall be in accordance with Georgia Department of Transportation regulations, policies and procedures and, where applicable, those of any affected railroad. The Contractor shall comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work as specified and the Contractor agrees to indemnify and hold harmless the County, its officers, agents and employees, as well as the Construction Manager and the Program Manager against any claim or liability arising from or based on the violation of any law, ordinance, regulation, order or decree affecting the conduct of the work, whether occasioned by the Contractor, his agents or employees.

00700-8 PERMITS, LICENSES AND BONDS

All permits and licenses necessary for the work shall be secured and paid for by the Contractor. If any permit, license or certificate expires or is revoked, terminated, or suspended as a result of any action on the part of the Contractor, the Contractor shall not be entitled to additional compensation or time. The Contractor shall obtain and keep in force at all times performance and payment bonds payable to Fulton County in penal amounts equal to 100% of the Contract price.

00700-9 TAXES

- A. The Contractor shall pay all sales, retail, occupational, service, excise, old age benefit and unemployment compensation taxes, consumer, use and other similar taxes, as well as any other taxes or duties on the materials, equipment, and labor for the work provided by the Contractor which are legally enacted by any municipal, county, state or federal authority, department or agency at the time bids are received, whether or not yet effective. The Contractor shall maintain records pertaining to such taxes and levies as well as payment thereof and shall make the same available to the County at all reasonable times for inspection and copying. The Contractor shall apply for any and all tax exemptions which may be applicable and shall timely request from the County such documents and information as may be necessary to obtain such tax exemptions. The County shall have no liability to the Contractor for payment of any tax from which it is exempt.
- B. The Contractor is obligated to comply with all local and State Sales and Use Tax laws. The Contractor shall provide the Owner with documentation to assist the Owner in obtaining sales and/or use tax refunds for eligible machinery and equipment used for the primary purpose of reducing or eliminating air or water pollution as provided for in Chapter 48-8-3 (36) and (37) of the Official Code of Georgia. All taxes shall be paid by the Contractor. All refunds will accrue to the Owner.

Acceptance of the project as complete and final payment will not be made by the Owner until the Contractor has fully complied with this requirement.

00700-10 DELINQUENT CONTRACTORS

The County shall not pay any claim, debt, demand or account whatsoever to any person firm or corporation who is in arrears to the County for taxes. The County shall be entitled to a counterclaim, backcharge, and offset for any such debt in the amount of taxes in arrears, and no assignment or transfer of such debt after the taxes become due shall affect the right of the County to offset any taxes owed against said debt.

00700-11 LIEN WAIVERS

The Contractor shall furnish the County with evidence that all persons who have performed work or furnished materials pursuant to this agreement have been paid in full prior to submitting its demand for final payment pursuant to this agreement. A final affidavit, Exhibit A, must be completed, and submitted to comply with requirements of 00700-11. In the event that such evidence is not furnished, the County may retain sufficient sums necessary to meet all lawful claims of such laborers and materialmen. The County assumes no obligation nor in any way undertakes to pay such lawful claims from any funds due or that may become due to the Contractor.

00700-12 MEASUREMENT

All items of work to be paid for per unit of measurement shall be subject to inspection, measurement, and confirmation by the Construction Manager.

00700-13 ASSIGNMENT

The Contractor shall not assign any portion of this agreement or moneys due there from (include factoring of receivables) without the prior written consent of the County. The Contractor shall retain personal control and shall provide personal attention to the fulfillment of its obligations pursuant to this agreement. Any assignment without the express written consent of the County shall render this contract voidable at the sole option of the County.

00700-14 FOREIGN CONTRACTORS

In the event that the Contractor is a foreign corporation, partnership, or sole proprietorship, the Contractor hereby irrevocably appoints the Secretary of State of Georgia as its agent for service of all legal process for the purpose of this contract only.

00700-15 INDEMNIFICATION [there are two indemnification clauses, the other is in the Contract Cover Sheet]

The Contractor hereby assumes the entire responsibility and liability for any and all injury to or death of any and all persons, including the Contractor's agents, servants, and employees, and in addition thereto, for any and all damages to property caused by or resulting from or arising out of any act or omission in connection with this contract or the prosecution of work hereunder, whether caused by the Contractor or the Contractor's agents, servants, or employees, or by any of the Contractor's subcontractors or suppliers, and the Contractor shall indemnify and hold harmless the County, the Construction Manager and the Program Manager, or any of their subcontractors from and against any and all loss and/or expense which they or any of them may suffer or pay as a result of claims or suits due to, because of, or arising out of any and all such injuries, deaths and/or damage, irrespective of County or Construction Manager or Program Manager negligence (except that no party shall be indemnified for their own sole negligence). The Contractor, if requested, shall assume and defend at the Contractor's own expense, any suit, action or other legal proceedings arising there from, and the Contractor hereby agrees to satisfy, pay, and cause to be discharged of record any judgment which may be rendered against the County, the Construction Manager and the Program Manager arising there from.

In the event of any such loss, expense, damage, or injury, or if any claim or demand for damages as heretofore set forth is made against the County or the Construction Manager or the Program Manager, the County may withhold from any payment due or thereafter to become due to the Contractor under the terms of this Contract, an amount sufficient in its judgment to protect and indemnify it and the Construction Manager and the Program Manager from any and all claims, expense, loss, damages, or injury; and the County, in its discretion, may require the Contractor to furnish a surety bond satisfactory to the County providing for such protection and indemnity, which bond shall be furnished by the Contractor within five (5) days after written demand has been made therefore. The expense of said Bond shall be borne by the Contractor.

00700-16 SUPERVISION OF WORK AND COORDINATION WITH OTHERS

The Contractor shall supervise and direct the work using the Contractor's best skill and attention. The Contractor shall be solely responsible for all construction methods and procedures and shall coordinate all portions of the work pursuant to the contract subject to the overall coordination of the Construction Manager. All work pursuant to this agreement shall be performed in a skillful and workmanlike manner.

The County reserves the right to perform work related to the Project with the County's own forces and to award separate contracts in connection with other portions of the project, other work on the site under these or similar conditions of the contract, or work which has been extracted from the Contractor's work by the County.

When separate contracts are awarded for different portions of the project or other work on the site, the term "separate contractor" in the Contract Documents in each case shall mean the contractor who executes each separate County Agreement.

The Contractor shall cooperate with the County and separate contractors in arranging the introduction and storage of materials and equipment and execution of their work, and shall cooperate in coordinating connection of its work with theirs as required by the Contract Documents.

If any part of the Contractor's Work depends for proper execution or results upon the work of the County or any separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Construction Manager any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results **within fourteen (14) days** of discovery of such discrepancy or defect. Failure of the Contractor to so report in writing shall constitute an acceptance of the County's or separate contractor's work as fit and proper to receive the Work, except as to any defects which may subsequently become apparent in such work by others.

Any costs caused by defective or untimely work shall be borne by the party responsible therefore. Should the Contractor wrongfully cause damage to the work or property of the County or to other work or property on the site, including the work of separate contractors, the Contractor shall promptly remedy such damage at the Contractor's expense.

Should the Contractor be caused damage by any other contractor on the Project, by reason of such other contractor's failure to perform properly his contract with the County, no action shall lie against the County or the Construction Manager inasmuch as the parties to this agreement are the only beneficiaries hereof and there are no third party beneficiaries and neither the County nor the Construction Manager shall have liabilities therefore, but the Contractor may assert his claim for damages solely against such other contractor. The Contractor shall not be excused from performance of the contract by reason of any dispute as to damages with any other contractor or third party.

Where the Work of this Contract shall be performed concurrently in the same areas as other construction work, the Contractor shall coordinate with the Construction Manager and the separate contractors in establishing mutually acceptable schedules and procedures that shall permit all jobs to proceed with minimum interference.

If a dispute arises between the Contractor and separate contractors as to their responsibility for cleaning up, the County may clean up and charge the cost thereof to the Contractor or contractors responsible therefore as the County shall determine to be just.

00700-17 ADMINISTRATION OF CONTRACT

The Program Manager and the Construction Manager shall provide administration services as hereinafter described.

For the administration of this Contract, the Construction Manager shall serve as the County's primary representative during design and construction and until final payment to the Contractor is due. The Construction Manager shall advise and consult with the County and the Program Manager. The primary point of contact for the Contractor shall be the Construction Manager. All correspondence from the Contractor to the County shall be forwarded through the Construction Manager. Likewise, all correspondence and instructions to the Contractor shall be forwarded through the Construction Manager.

The Construction Manager will determine in general that the construction is being performed in accordance with design and engineering requirements, and will endeavor to guard the County against defects and deficiencies in the Work.

The Construction Manager will not be responsible for or have control or charge of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, nor will it be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Construction Manager will not be responsible for or have control or charge over the acts or omissions of the Contractor, its engineers, consultants, subcontractors, or any of their agents or employees, or any other persons performing the Work.

Based on the Construction Manager's observations regarding the Contractor's Applications for Payment, the Construction Manager shall determine the amounts owing to the Contractor, in accordance with the payment terms of the Contract, and shall issue Certificates for Payment in such amount to the County.

The Construction Manager shall render interpretations necessary for the proper execution or progress of the Work. Either party to the Contract may make written requests to the Construction Manager for such interpretations.

Claims, disputes and other matters in question between the Contractor and the County relating to the progress of the Work or the interpretation of the Contract Documents shall be referred to the Construction Manager for interpretation.

All interpretations of the Construction Manager shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in writing or in graphic form.

Except as otherwise provided in this Contract, the Construction Manager shall issue a decision on any disagreement concerning a question of fact arising under this Contract. The Construction Manager shall reduce the decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Construction Manager shall be final and conclusive unless, within thirty (30) days from the date of receipt of such copy, the Contractor files a written appeal with the Director of Public Works and mails or otherwise furnishes the Construction Manager a copy of such appeal. The decision of the Director of Public Works or the Director's duly authorized representative for the determination of such appeals shall be final and conclusive. Such final

decision shall not be pleaded in any suit involving a question of fact arising under this Contract, provided such is not fraudulent, capricious, arbitrary, so grossly erroneous as necessarily implying bad faith, or is not supported by substantial evidence. In connection with any appeal proceeding under this Article, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of Contractor's appeal. Pending any final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract as directed by the Construction Manager.

The Construction Manager shall have authority to reject Work which does not conform to the Contract Documents. Whenever, in the Construction Manager's opinion, it is considered necessary or advisable for the implementation of the intent of the Contract Documents, the County shall have authority to require special inspection or testing of the Work whether or not such Work be then fabricated, installed or completed. The Contractor shall pay for such special inspection or testing if the Work so inspected or tested is found not to comply with the requirements of the contract; the County shall pay for special inspection and testing if the Work is found to comply with the contract. Neither the Construction Manager's authority to act under this Subparagraph, nor any decision made by the Construction Manager in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the Construction Manager to the Contractor, any subcontractor, any of their agents or employees, or any other person performing any of the Work.

The Contractor shall provide such shop drawings, product data, and samples as may be required by the Construction Manager and/or as required by these Contract Documents.

The Construction Manager shall conduct inspections to determine Substantial Completion and Final Completion, and shall receive and forward to the County for review written warranties and related documents required by the Contract Documents and assembled by the Contractor. The Construction Manager shall approve and issue Certificates for Payment upon compliance with Substantial and Final Completion requirements indicated in General Conditions 00700-81, 00700-82, 00700-84 and 00700-85 of this Agreement.

Except as provided in General Condition 00700-48, the Contractor shall not be relieved from the Contractor's obligations to perform the work in accordance with the contract documents by the activities or duties of the County or any of its officers, employees, or agents, including inspections, tests or approvals, required or performed pursuant to this agreement.

00700-18 RESPONSIBILITY FOR ACTS OF EMPLOYEES

The Contractor shall employ only competent and skilled personnel. The Contractor shall, upon demand from the Construction Manager, immediately remove any superintendent, foreman or workman whom the Construction Manager may consider incompetent or undesirable.

The Contractor shall be responsible to the County for the acts and omissions of the Contractor's employees, subcontractors, and agents as well as any other persons performing work pursuant to this agreement for the Contractor.

00700-19 LABOR, MATERIALS, SUPPLIES, AND EQUIPMENT

Unless otherwise provided in this agreement, the Contractor shall make all arrangements with necessary support agencies and utility companies provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the execution and completion of the work.

00700-20 DISCIPLINE ON WORK SITE

The Contractor shall enforce strict discipline and good order among its employees and subcontractors at all times during the performance of the work, to include compliance with the Fulton County Drug Free Work Place Policy. The Contractor shall not employ any subcontractor who is not skilled in the task assigned to it. The Construction Manager may, by written notice, require the Contractor to remove from the work any subcontractor or employee deemed by the Construction Manager to be incompetent.

00700-21 HOURS OF OPERATION

All work at the construction site shall be performed during regular business hours of the Fulton County government, except upon the Construction Manager's prior written consent to other work hours. It is further understood that the Contractor's construction schedule is based on a normal 40 hours, five day work week, less Fulton County-recognized holidays. Contractors work schedule shall not violate Fulton County Noise Ordinance by working hours inconsistent with the Fulton County Noise Ordinance. The County's current noise ordinance or other applicable ordinance shall govern. If the Contractor desires to work in excess of this limit, the Contractor shall submit a written request to the Construction Manager, a minimum of five days prior to the desired work date. The Contractor shall be responsible for any additional expenses incurred by the Owner as a result of the extended work hours, including resident inspection overtime. The cost associated with resident inspector overtime shall be deducted from the Contractor monthly payment request.

00700-22 FAMILIARITY WITH WORK CONDITIONS

The Contractor shall take all steps necessary to ascertain the nature and location of the work and the general and local conditions which may affect the work or the cost thereof. The Contractor's failure to fully acquaint itself with the conditions which may affect the work, including, but not limited to conditions relating to transportation, handling, storage of materials, availability of utilities, labor, water, roads, weather, topographic and subsurface conditions, other separate contracts to be entered into by the County relating to the project which may affect the work of the Contractor, applicable provisions of law, and the character and availability of equipment and facilities necessary prior to and during the performance of the work shall not relieve the Contractor of its responsibilities pursuant to this agreement and shall not constitute a basis for an equitable adjustment of the contract terms. The County reserves the right to perform with its own forces or to contract with other entities for other portions of the project work, in which case the Contractor's responsibility to assure its familiarity with work conditions hereunder shall include all coordination with such other contractors and the County necessary to insure that there is no interference between contractors as will delay or hinder any contractor in its prosecution of work on the project. The County assumes no responsibility for any understandings or representations concerning conditions of the work made by any of its officers, agents, or employees prior to the execution of this agreement.

00700-23 RIGHT OF ENTRY

The County reserves the right to enter the site of the work by such agent, including the Construction Manager, as it may elect for the purpose of inspecting the work or installing such collateral work as the County may desire. The Contractor shall provide safe facilities for such access so that the County and its agents may perform their functions.

00700-24 NOTICES

Any notice, order, instruction, claim or other written communication required pursuant to this agreement shall be deemed to have been delivered or received as follows:

Upon personal delivery to the Contractor, its authorized representative, or the Construction Manager on behalf of the County. Personal delivery may be accomplished by in-person hand delivery or bona fide overnight express service.

Three days after depositing in the United States mail a certified letter addressed to the Contractor or the Construction Manager for the County. For purposes of mailed notices, the County's mailing address shall be 141 Pryor Street, 6th Floor, Atlanta, Georgia 30303, or as the County shall have otherwise notified the Contractor. The Contractor's mailing address shall be the address stated in its proposal or as it shall have most recently notified the Construction Manager in writing.

00700-25 SAFETY

A. SAFETY, HEALTH AND LOSS PREVENTION

The Contractor shall be responsible for implementing a comprehensive project-specific safety, health and loss prevention program and employee substance abuse program for this project. All Sub-Contractors must either implement their own program or follow the Contractor's safety, health and loss prevention program and employee substance abuse program.

The Contractor's safety, health and loss prevention program and employee substance abuse program must meet or exceed all governmental regulations (OSHA, EPA, DOT, State, local), and any other specific Fulton County requirements

B. COUNTY'S SAFETY, HEALTH, AND LOSS PREVENTION PROCESS GUIDELINES AND REQUIREMENTS

The County and its agents reserve the right, but assume no duty, to establish and enforce safety, health, and loss prevention guidelines and to make the appropriate changes in the guidelines, for the protection of persons and property and to review the efficiency of all protective measures taken by the Contractor. The Contractor shall comply with all safety, health, and loss prevention process guidelines and requirements and changes made by the County or its agent(s). The issuance of any such guidelines or changes by the County or its agent(s) shall not relieve the Contractor of its duties and responsibilities under this Agreement, and the County or its agent(s) shall not thereby assume, nor be deemed to have assumed, any such duties or responsibilities of the Contractor.

C. COMPLIANCE OF WORK, EQUIPMENT, AND PROCEDURES WITH ALL APPLICABLE LAWS and REGULATIONS

All Work, whether performed by the Contractor or its Sub-Contractors of any tier, or anyone directly or indirectly employed by any of them, and all equipment, appliances, machinery, materials, tools and like items incorporated or used in the Work, shall be in compliance with and conform to:

1. All applicable laws, ordinances, rules, regulations and orders of any public, quasi-public or other governmental authority relating to the safety of persons and their protection against injury, specifically including, but in no event limited to, the Federal Occupational Safety and Health Act of 1970, as amended, and all rules and regulations now or hereafter in effect pursuant to said Act.
2. All rules, regulations, and requirements of the County or its agent(s) and its insurance carriers relating there to. In the event of a conflict or differing requirements the more stringent shall govern.

D. PROTECTION OF THE WORK

1. The Contractor shall, throughout the performance of the Work, maintain adequate and continuous protection of all Work and temporary facilities against loss or damage from whatever cause, shall protect the property of the County and third parties from loss or damage from whatever cause arising out of the performance of the Work, and shall comply with the requirements of the County or its agent(s) and its insurance carriers, and with all applicable laws, codes, rules and regulations, (as same may be amended) with respect to the prevention of loss or damage to property as a result of fire or other hazards.
2. The County or its agent(s) may, but shall not be required to, make periodic inspections of the Project work area. In such event, however, the Contractor shall not be relieved of its aforesaid responsibilities and the County or its agent(s) shall not assume, nor shall it be deemed to have assumed, any responsibility otherwise imposed upon the assurance of Contractor by this Agreement.

E. SAFETY EQUIPMENT

1. The Contractor shall provide to each worker on the Project work area the proper safety equipment for the duties being performed by that worker and will not permit any worker on the Project work area who fails or refuses to use the same. The County or its agent shall have the right, but not the obligation, to order the removal of a worker from the Project work site for his/her failure to comply with safe practices or substance abuse policies.

F. EMERGENCIES

1. In any emergency affecting the safety of persons or property, or in the event of a claimed violation of any federal or state safety or health law or regulation, arising out of or in any way connected with the Work or its performance, the Contractor shall act immediately to prevent threatened damage, injury or loss and to remedy said violation. Failing such action the County or its agent(s) may immediately take whatever steps it deems necessary including, but not limited to, suspending the Work as provided in this Agreement.
2. The County or its agent(s) may offset any and all costs or expenses of whatever nature, including attorneys' fees, paid or incurred by the County or its agent(s) (whether such fees are for in-house counsel or counsel retained by the County or its agent), in taking the steps authorized by Section 00700-25(G) (1) above against any sums then or thereafter due to the Contractor. The Contractor shall defend, indemnify and hold the County, its officers, agents, and employees harmless against any and all costs or expenses caused by or arising from the exercise by the County of its authority to act in an emergency as set out herein. If the Contractor shall be entitled to any additional compensation or extension of time change order on account of emergency work not due to the fault or neglect of the Contractor or its Sub-Contractors, such additional compensation or extension of time shall be determined in accordance with General Condition 00700-52 and General Condition 00700-87 of this Agreement.

G. SUSPENSION OF THE WORK

1. Should, in the judgment of the County or its agent(s), the Contractor or any Sub-Contractor fail to provide a safe and healthy work place, the County or its agent shall have the right, but not the obligation, to suspend work in the unsafe areas until deficiencies are corrected. All costs of any nature (including, without limitation, overtime pay, liquidated damages or other costs arising out of delays) resulting from the suspension, by whomsoever incurred, shall be borne by the Contractor.
2. Should the Contractor or any Sub-Contractor fail to provide a safe and healthy work place after being formally notified in writing by the County or its agents of such non-compliance, the contract may be terminated following the termination provision of the contract.

H. CONTRACTOR'S INDEMNITY OF THE COUNTY FOR CONTRACTOR'S NON-COMPLIANCE WITH SAFETY PROGRAM

1. The Contractor recognizes that it has sole responsibility to assure its Safety Program is implemented and to assure its construction services are safely provided. The Contractor shall indemnify, defend and hold the County and its agents harmless, from and against any and all liability (whether public or private), penalties (contractual or otherwise), losses, damages, costs, attorneys' fees, expenses, causes of action, claims or judgments resulting, either in whole or in part, from any failure of the Contractor, its Sub-Contractors of any tier or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, to comply with the safety requirements of the contract. The Contractor

shall not be relieved of its responsibilities under the safety requirements of the Contract should the County or its agent(s) act or fail to act pursuant to its rights hereunder.

2. The Contractor shall not raise as a defense to its obligation to indemnify under this Subparagraph I any failure of those indemnified hereunder to assure Contractor operates safely, it being understood and agreed that no such failure shall relieve the Contractor from its obligation to assure safe operations or from its obligation to so indemnify. The Contractor also hereby waives any rights it may have to seek contribution, either directly or indirectly, from those indemnified hereunder.
3. In any and all claims against those indemnified hereunder by any employee of the Contractor, any Sub-Contractor of any tier or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Subparagraph I shall not be limited in any way as to the amount or type of damages, compensation or benefits payable by or for the Contractor or any Sub-Contractor of any tier under any workers' compensation act, disability benefit or other employee benefit acts.

00700-26 BLASTING AND EXCAVATION

The Contractor acknowledges that it is fully aware of the contents and requirements of O.C.G.A. § 25-9-1 through 25-9-12 concerning blasting and excavation near underground gas pipes and facilities and shall fully comply therewith.

00700-27 HIGH VOLTAGE LINES

The Contractor acknowledges that it is fully aware of the contents and requirements O.C.G.A. § 46-3-30 through 46-3-39 concerning safeguards against contact with high voltage lines, and the Contractor shall fully comply with said provisions.

00700-28 SCAFFOLDING AND STAGING

The Contractor acknowledges that it is the person responsible for employing and directing others to perform labor within the meaning of O.C.G.A. § 34-1-1 and agrees to comply with said provisions.

00700-29 CLEAN-UP

The Contractor shall clean up all refuse, rubbish, scrap materials, and debris caused by its operations to the end that the site of the work shall present a neat, orderly and workmanlike appearance at all times.

00700-30 PROTECTION OF WORK

The Contractor shall be responsible for maintenance and protection of the work, which shall include any County-furnished supplies, material, equipment, until final completion of this agreement and acceptance of the work as defined herein. Any portion of the work suffering injury, damage or loss shall be considered defective and shall be corrected or replaced by the Contractor without additional cost to the County.

00700-31 REJECTED WORK

The Contractor shall promptly remove from the project all work rejected by the Construction Manager for failure to comply with the contract documents and the Contractor shall promptly replace and re-execute the work in accordance with the contract documents and without expense to the County. The Contractor shall also bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

00700-32 DEFECTIVE WORK

If the Contractor defaults or neglects to carry out any portion of the work in accordance with the contract documents, and fails within three days after receipt of written notice from the

Construction Manager to commence and continue correction of such default or neglect with diligence and promptness, the County may, after three days following receipt by the Contractor of an additional written notice and without prejudice to any other remedy the County may have, make good such deficiencies and complete all or any portion of any work through such means as the County may select, including the use of a separate Contractor. In such case, an appropriate change order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies. In the event the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the County on demand.

The County may, at its option, accept defective or nonconforming work instead of requiring its removal or correction. In such case, a change order shall be issued reducing the price due the contractor to the extent appropriate and equitable. Such contract price adjustment shall be effected whether or not final payment has been made.

00700-33 WARRANTY OF NEW MATERIALS

The Contractor warrants to the County that all materials and equipment furnished under this contract will be new unless otherwise specified, and the Contractor further warrants that all work will be of good quality, free from faults and defects, and in conformance with the contract documents. The warranty set forth in this paragraph shall survive final acceptance of the work.

00700-34 CONTRACTOR'S WARRANTY OF THE WORK

If within one year after the date of issuance of the certificate of final payment pursuant to General Condition 84, or within such longer period of time as may be prescribed by law or by the term of any applicable special warranty required by the contract documents, any of the work is found to be defective or not in accordance with the contract documents, the Contractor shall correct such work promptly after receipt of written notice from the Construction Manager to do so. This obligation shall survive both final payment for the work and termination of the contract.

00700-35 ASSIGNMENT OF MANUFACTURERS' WARRANTIES

Without limiting the responsibility or liability of the Contractor pursuant to this agreement, all warranties given by manufacturers on materials or equipment incorporated in the work are hereby assigned by the Contractor to the County. If requested, the Contractor shall execute formal assignments of said manufacturer's warranties to the County. All such warranties shall be directly enforceable by the County.

00700-36 WARRANTIES IMPLIED BY LAW

The warranties contained in this agreement, as well as those warranties implied by law, shall be deemed cumulative and shall not be deemed alternative or exclusive. No one or more of the warranties contained herein shall be deemed to alter or limit any other.

00700-37 STOP WORK ORDERS

In the event that the Contractor fails to correct defective work as required by the contract documents or fails to carry out the work in accordance with contract documents, the Construction Manager, in writing, may order the Contractor to stop work until the cause for such order has been eliminated. This right of the County to stop work shall not give rise to any duty on the part of the County or the Construction Manager to execute this right for the benefit of the Contractor or for any other person or entity.

00700-38 TERMINATION FOR CAUSE

If the Contractor is adjudged bankrupt, makes a general assignment for the benefit of creditors, suffers the appointment of a receiver on account of its insolvency, fails to supply sufficient properly skilled workers or materials, fails to make prompt payment to subcontractors or material men, disregards laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, fails to diligently prosecute the work, or is otherwise guilty of a material violation of this agreement and fails within seven days after receipt of written notice to commence and continue correction of such default, neglect, or violation with diligence and promptness, the

County may, after seven days following receipt by the Contractor of an additional written notice and without prejudice to any other remedy the County may have, terminate the employment of the Contractor and take possession of the site as well as all materials, equipment, tools, construction equipment and machinery thereon. The County may finish the work by whatever methods the County deems expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is completed. If the unpaid balance of the contract price exceeds the cost of completing the work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the County on demand. This obligation for payment shall survive the termination of the contract. Termination of this agreement pursuant to this paragraph may result in disqualification of the Contractor from bidding on future County contracts.

00700-39 TERMINATION FOR CONVENIENCE

The County may, at any time upon written notice to the Contractor, terminate the whole or any portion of the work for the convenience of the County. The effective date of the terminations shall be provided in the written notice. Said termination shall be without prejudice to any right or remedy of the County provided herein. In addition, in the event this agreement has been terminated due to the default of the Contractor, and if it is later determined that the Contractor was not in default pursuant to the provisions of this agreement at the time of termination, then such termination shall be considered a termination for convenience pursuant to this paragraph.

00700-40 TERMINATION FOR CONVENIENCE - PAYMENT

If the Contract is terminated for convenience by the Owner as provided in this article, Contractor will be paid compensation for those services actually performed as approved by the Owner or his representative. Partially completed tasks will be compensated for based on a signed statement of completion prepared by the Project Manager and submitted to the Contractor which shall itemize each task element and briefly state what work has been completed and what work remains to be done. Contractor shall also be paid for reasonable costs for the orderly filing and closing of the project.

00700-41 TERMINATION FOR CONVENIENCE - PAYMENT LIMITATIONS

Except for normal spoilage, and except to the extent that the County shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor the fair value, as determined by the Construction Manager, of property which is destroyed, lost, stolen or damaged so as to become undeliverable to the County or to another buyer.

00700-42 COST TO CURE

If the County terminates for cause the whole or any part of the work pursuant to this agreement, then the County may procure upon such terms and in such manner as the Construction Manager may deem appropriate, supplies or services similar to those so terminated, and the Contractor shall be liable to the County for any excess costs for such similar supplies or services. The Contractor shall continue the performance of this agreement to the extent not terminated hereunder.

00700-43 ATTORNEY'S FEES

Should the Contractor default pursuant to any of the provisions of this agreement, the Contractor and its surety shall pay to the County such reasonable attorney's fees as the County may expend as a result thereof and all costs, expenses, and filing fees incidental thereto.

00700-44 CONTRACTOR'S RESPONSIBILITIES UPON TERMINATION

After receipt of a notice of termination from the County, and except as otherwise directed by the Construction Manager, the Contractor shall:

1. Stop work under the contract on the date and to the extent specified in the notice of termination;

2. Place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the work under the agreement as is not terminated;
3. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the notice of termination;
4. Assign to the County in the manner, at the times, and to the extent directed by the Construction Manager, all of the rights, title and interest of the Contractor under the orders and subcontracts so terminated, in which case the County shall have the right, at its discretion, to settle or pay any and all claims arising out of the termination of such orders or subcontracts;
5. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts with the approval or ratification of the Construction Manager, to the extent the Construction Manager may require, which approval or ratification shall be final for all purposes;
6. Transfer title and deliver to the entity or entities designated by the Construction Manager, in the manner, at the times, and to the extent, if any, directed by the Construction Manager, and to the extent specifically produced or specifically acquired by the Contractor for the performance of such portion of the work as has been terminated:
 - a. The fabricated or un-fabricated parts, work, and progress, partially completed supplies, and equipment, materials, parts, tools, dyes, jigs, and other fixtures, completed work, supplies, and other material produced as a part of or acquired in connection with the performance of the work terminated by the notice of termination; and
 - b. The completed or partially completed plans, drawings, information, and other property to the work.
7. Use its best efforts to sell in the manner, at the times, to the extent, and at the prices directed or authorized by the Construction Manager, any property described in Section 6 of this paragraph, provided, however, that the Contractor shall not be required to extend credit to any buyer and further provided that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the County to the Contractor pursuant to this agreement.
8. Complete performance of such part of the work as shall not have been terminated by the notice of termination; and
9. Take such action as may be necessary, or as the Construction Manager may direct, for the protection and preservation of the property related to the agreement which is in the possession of the Contractor and in which the County has or may acquire an interest.

00700-45 RECORDS

The Contractor shall preserve and make available to the County all of its records, books, documents and other evidence bearing on the costs and expenses of the Contractor and any subcontractor pursuant to this agreement upon three days advance notice to the Contractor.

00700-46 DEDUCTIONS

In arriving at any amount due the Contractor pursuant to the terms of this agreement, there shall be deducted all liquidated damages, advance payments made to the Contractor applicable to the termination portion of the contract, the amount of any claim which the County may have against the Contractor, the amount determined

By the Construction Manager to be necessary to protect the County against loss due to outstanding potential liens or claims, and the agreed price of any materials acquired or sold by the Contractor and not otherwise recovered by or credited to the County.

00700-47 REIMBURSEMENT OF THE COUNTY

In the event of termination, the Contractor shall refund to the County any amount paid by the County to the Contractor in excess of the costs properly reimbursable to the Contractor.

00700-48 SUSPENSION, INTERRUPTION, DELAY, DAMAGES

In the event that the Contractor fails to satisfactorily complete the work contemplated and provided for under this contract, on or before November 21, 2009, the County shall deduct from the payments due the Contractor each month, the sum of Five hundred dollars (\$500) plus engineering charges per day for each calendar day of delay, which sum is agreed upon not as a penalty, but as fixed and liquidated damages for each day of such delay, to be paid in full and subject to no deduction. If the payments due the Contractor are less than the amount of such liquidated damages said damages shall be deducted from any other monies due or to become due the Contractor or shall be paid by the Contractor's surety.

Delivery requirements:

- 1) Deliver the complete project before November 21, 2009.
- 2) Complete all installation, and build-out as required for beneficial occupancy on or before November 21, 2009.

Damages shall be cumulative if both deadlines are not met.

The Contractor shall be entitled to only those damages and that relief from termination by the County as specifically set forth in this agreement. The Construction Manager may issue a written order requiring the Contractor to suspend, delay or interrupt all or any part of the work for such period of time as the County may determine to be appropriate for the convenience of the County. If the performance of the work is interrupted for an unreasonable period of time by an act of the County or any of its officers, agents, employees, contractors, or consultants in the administration of this agreement, an equitable adjustment shall be made for any increase in the Contractor's costs of performance and any increase in the time required for performance of the work necessarily caused by the unreasonable suspension, delay, or interruption. Any equitable adjustment shall be reduced to writing and shall constitute a modification to this agreement. In no event, however, shall an equitable adjustment be made to the extent that performance of this agreement would have been suspended, delayed or interrupted by any other cause, including the fault or negligence of the Contractor. No claim for an equitable adjustment pursuant to this paragraph shall be permitted before the Contractor shall have notified the Construction Manager in writing of the act or failure to act involved, and no claim shall be allowed unless asserted in writing to the Construction Manager within ten days after the termination of such suspension, delay or interruption.

00700-49 COMMENCEMENT AND DURATION OF WORK

The County may issue a Notice to Proceed at any time within 120 days following execution of the contract by the County. The Contractor shall commence work pursuant to this agreement within ten days of mailing or delivery of written notice to proceed. The Contractor shall diligently prosecute the work to completion within the time specified therefore in the Agreement. The capacity of the Contractor's construction and manufacturing equipment and plan, sequence and method of operation and forces employed, including management and supervisory personnel, shall be such as to insure completion of the work within the time specified in the Agreement. The Contractor and County hereby agree that the contract time for completion of the work is reasonable taking into consideration the average climatic conditions prevailing in the locality of the work and anticipated work schedules of other contractors whose activities are in conjunction with or may affect the work under this contract.

00700-50 TIME OF THE ESSENCE

All time limits stated in this agreement are of the essence of this contract.

00700-51 IMPACT DAMAGES

Except as specifically provided pursuant to a stop work order or change order, the Contractor shall not be entitled to payment or compensation of any kind from the County for direct or indirect or impact damages including, but not limited to, costs of acceleration arising because of delay, disruption, interference or hindrance from any cause whatsoever whether such delay, disruption, interference or hindrance is reasonable or unreasonable, foreseeable or unforeseeable, or avoidable, provided, however, that this provision shall not preclude the recovery of damages by the Contractor for hindrances or delays due solely to fraud or bad faith on the part of the County, its agents, or employees. The Contractor shall be entitled only to extensions in the time required for performance of the work as specifically provided in the contract.

00700-52 DELAY

The Contractor may be entitled to an extension of the contract time, but not an increase in the contract price or damages, for delays arising from unforeseeable causes beyond the control and without the fault or negligence of the Contractor or its subcontractors for labor strikes, acts of God, acts of the public enemy, acts of the state, federal or local government in its sovereign capacity, by acts of another separate contractor, or by an act or neglect of the County.

00700-53 INCLEMENT WEATHER

The Contractor shall not be entitled to an extension of the contract time due to normal inclement weather. Unless the Contractor can substantiate to the satisfaction of the Construction Manager that there was greater than normal inclement weather and that such greater than normal inclement weather actually delayed the work, the Contractor shall not be entitled to an extension of time therefore. The following shall be considered the normal inclement weather days for each month listed, and extensions of time shall be granted in increments of not less than one half day only for inclement weather in excess of the days set out.

January	10 days
February	10 days
March	7 days
April	6 days
May	4 days
June	3 days
July	4 days
August	2 days
September	2 days
October	3 days
November	6 days
December	9 days

00700-54 DELAY - NOTICE AND CLAIM

The Contractor shall not receive an extension of time unless a Notice of Delay is filed with the Construction Manager within ten days of the first instance of such delay, disruption, interference or hindrance and a written Statement of the Claim is filed with the Construction Manager within 20 days of the first such instance. In the event that the Contractor fails to comply with this provision, it waives any claim which it may have for an extension of time pursuant to this agreement.

00700-55 STATEMENT OF CLAIM - CONTENTS

The Statement of Claim referenced in Article 00700-54 shall include specific information concerning the nature of the delay, the date of commencement of the delay, the construction activities affected by the delay, the person or organization responsible for the delay, the anticipated extent of the delay, and any recommended action to avoid or minimize the delay.

00700-56 WORK BEHIND SCHEDULE, REMEDY BY CONTRACTOR

If the work actually in place falls behind the currently updated and approved schedule, and it becomes apparent from the current schedule that work will not be completed within the contract time, the Contractor agrees that it will, as necessary, or as directed by the Construction Manager, take action at no additional cost to the County to improve the progress of the work, including increasing manpower, increasing the number of working hours per shift or shifts per working day, increasing the amount of equipment at the site, and any other measure reasonably required to complete the work in a timely fashion.

00700-57 DILIGENCE

The Contractor's failure to substantially comply with the requirements of the preceding paragraph may be grounds for determination by the County that the Contractor is failing to prosecute the work with such diligence as will insure its completion within the time specified. In such event, the County shall have the right to furnish, from its own forces or by contract, such additional labor and materials as may be required to comply with the schedule after 48 hours written notice to the Contractor, and the Contractor shall be liable for such costs incurred by the County.

00700-58 SET-OFFS

Any monies due to the Contractor pursuant to the preceding paragraph of this agreement may be deducted by the County against monies due from the County to the Contractor.

00700-59 REMEDIES CUMULATIVE

The remedies of the County under Articles 00700-56, 00700-57, and 00700-58 are in addition to and without prejudice to all of the rights and remedies of the County at law, in equity, or contained in this agreement.

00700-60 TITLE TO MATERIALS

No materials or supplies shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sales contract or other agreement by which any interest is retained by the seller. The Contractor hereby warrants that it has good and marketable title to all materials and supplies used by it in the work, and the Contractor further warrants that all materials and supplies shall be free from all liens, claims, or encumbrances at the time of incorporation in the work.

00700-61 INSPECTION OF MATERIALS

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards and in accordance with the requirements of the contract documents. Additional tests performed after the rejection of materials or equipment shall be at the Contractor's expense.

00700-62 CONSTRUCTION MANAGER'S PRESENCE DURING TESTING

All tests performed by the Contractor shall be witnessed by the Construction Manager unless the requirement therefore is waived in writing. The Construction Manager may perform additional tests on materials previously tested by the Contractor, and the Contractor shall furnish samples for this purpose as requested.

00700-63 MATERIALS INCORPORATED IN WORK

The Contractor shall furnish all materials and equipment to be incorporated in the work. All such materials or equipment shall be new and of the highest quality available. Manufactured materials and equipment shall be obtained from sources which are currently manufacturing such materials, except as otherwise specifically approved by the Construction Manager.

00700-64 STORAGE OF MATERIALS

Materials and equipment to be incorporated in the work shall be stored in such a manner as to preserve their quality and fitness for the work and to facilitate inspection.

00700-65 PAYROLL REPORTS

The Contractor may be required to furnish payroll reports to the Construction Manager as required by the Owner Controlled Insurance Program.

00700-66 CONTRACTORS' REPRESENTATIVE

Before beginning work, the Contractor shall notify the Construction Manager in writing of one person within its organization who shall have complete authority to supervise the work, receive orders from the Construction Manager, and represent the Contractor in all matters arising pursuant to this agreement. The Contractor shall not remove its representative without first designating in writing a new representative. The Contractor's representative shall normally be present at or about the site of work while the work is in progress. When neither the Contractor nor its representative is present at the work site, the superintendent, foreman, or other of the Contractor's employee in charge of the work shall be an authorized representative of the Contractor.

00700-67 SPECIALTY SUB-CONTRACTORS

The Contractor may utilize the services of specialty subcontractors on those parts of the project which, under normal contracting practices, are performed by specialty subcontractors. The Contractor shall not award more than seventy-five percent of the work to subcontractors.

00700-68 INSPECTION BY THE CONSTRUCTION MANAGER

All work pursuant to this agreement shall be subject to inspection by the Construction Manager for conformity with contract drawings and specifications. The Contractor shall give the Construction Manager reasonable advance notice of operations requiring special inspection of a portion of the work.

00700-69 WORK COVERED PRIOR TO CONSTRUCTION MANAGER'S INSPECTION

In the event that work is covered or completed without the approval of the Construction Manager, and such approval is required by the specifications or required in advance by the Construction Manager, the Contractor shall bear all costs involved in inspection notwithstanding conformance of such portion of the work to the contract drawings and specifications.

00700-70 SCHEDULING OF THE WORK

The work of this contract shall be planned, scheduled, executed, and reported as required by the Contract Documents.

00700-71 PROGRESS ESTIMATES

The Contractor shall prepare a written report for the Construction Manager's approval, on County forms, of the total value of work performed and materials and equipment obtained to the date of submission. Such a report must accompany each request for a progress payment and is subject to review and approval by the Construction Manager. Approval of a progress estimate or tendering of a progress payment shall not be considered an approval or acceptance of any work performed, and all estimates and payments shall be subject to correction in subsequent estimates. Progress payments shall be made for all completed activities and for materials suitably stored on-site.

00700-72 PROGRESS PAYMENTS

Upon approval of each monthly estimate of work performed and materials furnished, the Construction Manager shall approve payment to the Contractor for the estimated value of such work, materials, and equipment, less the amount of all prior payments and any liquidated damages. The Contractor will be paid 100 percent, less retainage, of the cost of materials received and properly stored on-site but not incorporated into the work. Payments for materials or equipment stored on the site shall be conditioned upon submission by the Contractor of bills of sale to establish the County's title to such materials or equipment. The Contractor's request for payment shall provide sufficient detail as to the work completed or materials purchased for which payment is requested to permit meaningful review by the Construction Manager.

00700-73 TIME OF PAYMENT

The Contractor will be paid within 45 days following receipt of an approved Progress Estimate. The Contractor expressly agrees that the payment provisions within this Contract shall supersede the rates of interest, payment periods, and contract and subcontract terms provided for under the Georgia Prompt Pay Act, O.C.G.A. §13-11-1 et seq., and that the rates of interest, payment periods, and contract and subcontract terms provided for under the Prompt Pay Act shall have no application to this Contract. The County shall not be liable for any late payment interest or penalty.

00700-74 RETAINAGE

The County shall retain from each progress payment ten percent of the estimated value of the work performed until the progress payments, including retainage, total 50 percent of the contract price. If a contract includes two or more projects or assignments that have been separately priced and have separate budgets, and the performances of such projects or assignments are not related to or dependent upon the performance of any other, the 50 per cent limit shall be based upon the price for each individual project or assignment. Thereafter, no further retainage shall be withheld so long as the Contractor is making satisfactory progress to insure completion of the work within the time specified therefore. The County may reinstate the ten percent retainage in the event the Construction Manager determines that the Contractor is not making satisfactory progress to complete the work within the time specified in this agreement or in the event that the Construction Manager provides a specific cause for such withholding. The County may also withhold retainage upon substantial completion of the work as provided in O.C.G.A. §13-10-81(c). Interest may be paid upon the retainage in accordance with Georgia law.

00700-75 PAYMENT OF SUBCONTRACTORS

The Contractor shall promptly pay each subcontractor upon the receipt of payment from the County. Such payment shall be made from the amount paid to the Contractor pursuant to the subcontractor's work. The Contractor shall also maintain the records of the percentage retained from payments to the Contractor pursuant to such subcontractor's work. The Contractor shall procure agreements from each subcontractor requiring each subcontractor to pay their subcontractors, agents and employees in a similar manner. The County reserves the right to inquire of any subcontractor, supplier, materialmen, or subconsultant, the status of any indebtedness of the Contractor. The County further reserves the right to require the Contractor to designate on each instrument of payment exceeding \$400.00 to subcontractors, suppliers, materialmen, and subconsultants that such payment is on account of the work under this Contract.

00700-76 COUNTY'S RESPONSIBILITIES TO SUBCONTRACTORS

Neither the County nor the Construction Manager shall have any obligation to pay any subcontractor except as otherwise required by law.

00700-77 PROGRESS PAYMENTS - ACCEPTANCE OF WORK

Certification of progress payments, as well as the actual payment thereof, shall not constitute the County's acceptance of work performed pursuant to this agreement.

00700-78 PAYMENTS IN TRUST

All sums paid to the Contractor pursuant to this agreement are hereby declared to constitute trust funds in the hands of the contractor to be applied first to the payment of claims of subcontractors, laborers, and suppliers arising out of the work, to claims for utilities furnished and taxes imposed, and to the payment of premiums on surety and other bonds and on insurance for any other application.

00700-79 JOINT PAYMENTS

The County reserves the right to issue any progress payment or final payment by check jointly to the Contractor and any subcontractor or supplier.

00700-80 RIGHT TO WITHHOLD PAYMENT

The Construction Manager may decline to approve payment and may withhold payment in whole or in part to the extent reasonable and necessary to protect the County against loss due to defective work, probable or actual third party claims, the Contractor's failure to pay subcontractors or materialmen, reasonable evidence that the work will not be completed within the contract time or contract price or damage to the County or any other contractor on the project.

00700-81 CERTIFICATE OF SUBSTANTIAL COMPLETION

Upon the Contractor's submission of a request for a certificate of Substantial Completion, the Construction Manager shall inspect the work and determine whether the work is Substantially Complete. If the work is Substantially Complete, the Construction Manager shall issue a certificate of Substantial Completion of the work which shall establish the date of Substantial Completion, shall state the responsibilities of the County and the Contractor for security, maintenance, heat, utilities, damage to the work and insurance, and shall fix the time within which the Contractor shall complete the items submitted by the Contractor as requiring correction or further work. The certificate of substantial completion of the work shall be submitted to the County and the Contractor for their written acceptance of the responsibilities assigned to them pursuant to such certificate.

If in the sole opinion of the Construction Manager, the work is not substantially complete, the Construction Manager shall notify the Contractor of such, in writing, and outline requirements to be met to achieve Substantial Completion.

00700-82 PAYMENT UPON SUBSTANTIAL COMPLETION

Upon Substantial Completion of the work and upon application by the Contractor and approval by the Construction Manager, the County shall make payment reflecting 100% work completed, less value of work remaining as determined by Construction Manager and any authorized retainage.

00700-83 COMMENCEMENT OF WARRANTIES

Warranties required by this agreement shall commence on the date of final completion of the project as determined under Article 00700-84 unless otherwise provided in the certificate of Substantial Completion.

00700-84 FINAL PAYMENT - WAIVER OF CLAIMS, DISPUTE OF FINAL PAYMENT

The acceptance of the Substantial Completion payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of application for payment at Substantial Completion and except for the retainage sums due at final acceptance. Following the Construction Manager's issuance of the certificate of Substantial Completion and the Contractor's completion of the work pursuant to this agreement, the Contractor shall forward to the Construction Manager a written notice that the work is ready for final inspection and acceptance. If after inspection the Construction Manager certifies that the work is complete and issues written notification of such to the Contractor, the Contractor shall forward to the Construction Manager a final application for payment. The Construction Manager shall issue a certificate for payment, which shall approve final payment to the Contractor and shall establish the date of final completion.

In the event the Contractor timely disputes the amount of the final payment, the amount due the Contractor shall be deemed by the Contractor and the County to be an unliquidated sum and no interest shall accrue or be payable on the sum finally determined to be due to the Contractor for any period prior to final determination of such sum, whether such determination be by agreement of the Contractor and the County or by final judgment of the proper court in the event of litigation between the County and the Contractor. The Contractor specifically waives and renounces any and all rights it may have under O.C.G.A. §13-6-13 and agrees that in the event suit is brought by the Contractor against the County for any sum claimed by the Contractor under the Contract or for any extra or additional work, no interest shall be awarded on any sum found to be due from

- c. By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
 - d. By the method provided in Subparagraph A4 below.
4. If none of the methods set forth in Subparagraphs 3a, 3b, or 3c above is agreed upon, the Contractor, provided a written order signed by the Construction Manager is received, shall promptly proceed with the Work involved. The cost of such Work shall then be determined by the Construction Manager on basis of the reasonable expenditures and savings of those performing the Work attributable to the change. The cost of the change shall include only the items listed in Subparagraph 5a below, and in the case of either a decrease or an increase in the Contract Sum, an allowance for overhead and profit in accordance with the schedules set forth in Subparagraphs 5b and 6 below shall be applied to the cost or credit.
- a. In such case, and also under Subparagraph 3a above, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting of all actual costs expended, together with appropriate supporting data for inclusion in a Change Order.
 - b. All hourly rate charges shall be submitted to the Construction Manager for prior review and approval. All hourly rate charges shall be properly supported as required by the Construction Manager with certified payrolls, or their acceptable equivalent. When authorized to proceed for a given change and actual expenditures have been made prior to execution of a Change Order for the entire change, such actual expenditures may be summarized monthly, and if approved, incorporated into a Change Order. When both additions and credits covering related Work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase or decrease, if any, with respect to that change.
5. In Subparagraphs 3 and 4 above, the items included in "Cost and "Overhead" shall be based on the following schedule:
- a. Unless otherwise provided in the Contract Documents, "Cost" shall be limited to the following: cost of materials incorporated into the Work, including sales tax and cost of delivery; cost of direct labor (labor cost may include a pro rata share of foreman's account of the change) including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; workers' or workmen's compensation insurance; rental value of equipment and machinery; costs for preparing Shop Drawings.
 - b. Unless otherwise provided in the Contract Documents, "Overhead" shall include the following: bond and insurance premiums including increase and decreases from change in the Work, supervision, superintendence, construction parking, wages of timekeepers, watchmen and clerks, small tools, consumable supplies, expendables, incidentals, general office expense, the cost of additional reproduction for the Contractor's subcontractors beyond that agreed upon in the Contract Documents, construction parking, any additional costs of craft supervision by the Contractor's or subcontractors' superintendents, and overhead charges which would be customary and expended regardless of the change in the Work due to other overlapping activities which are included as part of the original Contract, and all other expenses not included in "Cost" above.
 - c. In the event that a change is issued by the County which would require the expenditure of substantial amounts of special supervision (beyond

the foreman level) by the Contractor, the Contractor may, at the sole direction of the Construction Manager, be allowed to incorporate these charges into the agreement cost for the change.

6. In Subparagraphs 3 and 4 above, the allowance for overhead and profit combined, included in the total cost or credit to the County, shall be based on the following schedule:
 - a. For the Contractor, for any work performed by the Contractor's own forces, ten (10) percent of the cost.
 - b. For the Contractor, for any work performed by a Contractor's subcontractor, five (5) percent of the amount due the subcontractor.
 - c. For each subcontractor or sub-subcontractor involved, for any work performed by that subcontractor's or sub-subcontractor's own forces, ten (10) percent of the cost.
 - d. For each subcontractor, for work performed by a sub-subcontractor, five (5) percent of the amount due to the sub-subcontractor.
 - e. Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 5 above unless modified otherwise.
7. In order to facilitate checking of quotations for extras or credits, all proposals or bids, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs, including labor cost, materials and subcontracts. Labor and materials shall be itemized in the manner defined in Subparagraph 4 above. Where major cost items are subcontracts, they shall be itemized also. In no case shall a change be approved without such itemization.
8. No payment shall be made for any changes to the contract that are not included in a fully executed Change Order.

B. CONCEALED, UNKNOWN AND DIFFERING CONDITIONS

1. Should concealed conditions be encountered in the performance of the Work below the surface of the ground, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the Contract Documents, or should unknown physical conditions below the surface of the ground or concealed or unknown conditions in an existing structure of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract, be encountered, the Contract Sum and Contract Time shall be equitably adjusted by Change Order upon request by either party made within twenty (20) days after the first observance of the conditions. No such request for equitable adjustment shall be valid unless the Contractor complies with this (20) days notice and Subparagraph C.1. below.
2. The Contractor shall promptly, and before such conditions are disturbed, notify the Construction Manager in writing of any claim of concealed, unknown or differing conditions pursuant to this paragraph. The Construction Manager shall authorize the Engineer to investigate the conditions, and if it is found that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the Work under this Contract, whether or not changed as a result of such conditions, an equitable adjustment shall be recommended to the Construction Manager.
3. No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above, prior to disturbing the condition.

4. No claim by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this Contract.
5. Any materially differing site condition as between what is shown on the Drawings and Specifications and actually found on site shall be immediately reported to the Construction Manager in writing prior to the commencement of Work at the site. Failure of the Contractor to notify the Construction Manager in writing of the differing site condition prior to performance of Work at the site shall constitute a waiver of any claim for additional monies. Any Change Order necessitated by the differing site condition shall be processed as provided under "Changes in the Contract".

C. REQUESTS FOR ADDITIONAL COST

1. If the Contractor wishes to request an increase in the Contract Sum, the Contractor shall give the Construction Manager written notice thereof within twenty (20) days after the occurrence of the event, or identification of the conditions, giving rise to such request. This notice shall be give by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property in which case the Contractor shall proceed in accordance with Article 00700-25 and Subparagraph A.4 above. No such request shall be valid unless so made within the twenty (20) days specified above. If the County and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined by the Construction Manager. Any change in the Contract Sum resulting from such claim shall be documented by Change Order.
2. If the Contractor claims that addition cost is involved because of, but not limited to (1) any written interpretation pursuant to General Condition 00700-17 of this Agreement, (2) any order by the County to stop the Work pursuant to Articles 00700-25 and 00700-37 of this Agreement where the Contractor was not at fault, or any such order by the Construction Manager as the County's agent, or (3) any written order for a minor change in the Work issued pursuant to Paragraph D below, the Contractor shall submit a request for an increase in the Contract Sum as provided in Subparagraph C.1 above. No such claim shall be valid unless the Contractor complies with Subparagraph C.1 above and approved by the County pursuant to Change Order Policy 800-6.

D. MINOR CHANGES IN THE WORK

The Construction Manager may order minor changes in the Work not involving an adjustment in the Contract Price, extension of the time allowed for performance of the work and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by a written Change Directive issued by the Construction Manager, and shall be binding on the County and the Contractor. The Contractor shall carry out such written orders promptly.

E. BONDS

If any change order results in an increase in the contract price, the contractor shall increase the penal sum of the performance and payment bonds to equal the increased price.

00700-88 DISAGREEMENT WITH ORDERS FOR CHANGE

Contractor's written acceptance of a Change Order or other order for changes shall constitute his final and binding agreement to the provisions thereof and a waiver of all claims in connection therewith, whether direct or consequential in nature. Should Contractor disagree with any order for changes, he may submit a notice of potential claim to the Construction Manager, at such time as the order is set forth in the form of a Change Order. Disagreement with the provisions of an order for changes shall not relieve Contractor of his obligation under Article 00700-87 of this Agreement.

00700-89 NO WAIVER OF REMEDIES

Exercise by the County of any remedy is not exclusive of any other remedy available to County and shall not constitute a waiver of any such other remedies. Failure of the County to exercise any remedy, including breach of contract remedies, shall not preclude the County from exercising such remedies in similar circumstances in the future.

00700-90 LAND AND RIGHTS-OF-WAY

The owner will provide, as indicated in the Contract Documents and prior to Notice to Proceed, the lands upon which the work is to be done, right-of-way for access thereto, and such other lands which are designated for the use of the Contractor. The Contractor shall confine the Contractor's work and all associated activities to the easements and other areas designated for the Contractor's use. The Contractor shall comply with any limits on construction methods and practices which may be required by easement agreements. If, due to some unforeseen reason, the necessary easements are not obtained, the Contractor shall receive an equitable extension of contract time dependent upon the effect on the critical path of the project schedule or the County may terminate the Contract for its convenience.

00700-91 COORDINATION WITH STATE DEPARTMENT OF TRANSPORTATION

No clearing or grading shall be completed by Contractor within the State Department of Transportation (DOT) area under construction. The Contractor must coordinate his construction scheduling with DOT. If the Contractor begins work before DOT's completion date, he must obtain the approval of DOT before starting work in the area. The state DOT has the right to stop the Contractor's work the DOT area. The Contractor shall receive no additional compensation or damages resulting from delay or work stoppage from DOT actions or scheduling. Contractor shall obtain DOT drawings of the DOT, project area for verification of road geometry, storm drains, etc. from Georgia Department of Transportation or Fulton County. The Contractor is responsible for obtaining any pertinent DOT revisions.

<u>SUBJECT</u>	<u>I N D E X</u>	<u>GENERAL CONDITION ARTICLE #</u>
Administration of Contract		17
Applicable Law		7
Assignment		13
Blasting and Excavation		26
Changes		87, 88
Clean Site		29
Codes		4
Commencement of Work		49
Contract Documents		2
Contractor's Representative		66
Defective Work		31, 32
Definitions		3
Delay		51, 52, 54, 55
Extension of Time		52, 53, 54
Familiarity of Time		1, 22
Final Payment		84
Governing Law		86
High Voltage Lines		27
Inclement Weather		53
Indemnification		15
Inspections		23, 61, 62, 68, 69
Interruption		48
Licenses		8
Liquidated Damages		46, 48
New Materials		33, 63
Notices		24
Payment		72, 73, 75
Payment of Subcontractors		75, 76
Payment Upon Substantial Completion		82, 84
Payroll Reports		65
Permits		8
Progress Payments		72, 73, 77, 78, 79, 80
Protection of Work		30, 64
Records Inspection		45
Retainage		11, 74
Safety		25
Scaffolding and Staging		28
Scheduling		70
Service of Process		14
Stop Work Order		37
Subcontractors		67, 76
Substantial Completion		81
Suspension		48
Supervision of Work		16, 66
Surety's Responsibility		17
Taxes		9, 10
Termination for Cause		38, 44, 47
Termination for Convenience		39, 40, 41
Time of the Essence		50
Warranties		33, 34, 35, 36
Work Behind Schedule		56

EXHIBIT B

CONTRACTOR SAFETY AND HEALTH MANAGEMENT PROCESS

CONTRACTOR SAFETY AND HEALTH MANAGEMENT PROCESS**1.0 NOT USED****2.0 REFERENCES**

- 1.1 Occupational Safety and Health Regulations (OSHA) 29CFR1910 and 29CFR1926
- 1.2 Environmental Protection Agency Regulations (EPA) 40CFR
- 1.3 Fulton County Safety and Health and Requirements
- 1.4 Georgia Department of Transportation Regulations and Requirements
- 1.5 US Department of Transportation Requirements
- 1.6 Manual of Uniform Traffic Control Devices for Streets and Highways (ANSI D6.1)
- 1,7 Georgia Department of Natural Resources Environmental Protection Division Regulations

Safety rules and regulations will be followed using federal, state or local regulations in force. Should a Contractor's rule be in use which is more effective, the most stringent rule or regulation will be enforced by the Contractor, Sub-Contractors and Fulton County designated Safety Representative(s).

3.0 RESPONSIBILITY

The Contractor receiving the bid has the ultimate responsibility for the safety and health of all Sub-Contractors, all employees on the project, and the general public and complying with all governmental regulations and requirements (OSHA, EPA, DOT, state, local).

Nothing contained herein shall relieve the Contractor or any Sub-Contractor of such responsibility or liability.

4.0 PROCEDURE

- 4.1 The Contractor and each Sub-Contractor must implement a written safety and health prevention process and program following the guidelines contained in this document and in any other relevant portion of the Contract Documents. This program must be accepted by Fulton County or its Representatives prior to Notice to Proceed.
- 4.2 The Contractor and each Sub-Contractor must implement a drug and alcohol policy following the guidelines contained in this document and in the bid specific actions. This program must be accepted by Fulton County or its Representatives prior to Notice to Proceed.
- 4.3 The Contractor must designate a person responsible for site safety. Each SubContractor must designate a person responsible for site safety.
- 4.4 Not Used.
- 4.5 Contractor is responsible for providing all necessary safety supplies and personal protective equipment required to protect its employees, Sub-Contractors, and the 'general public.
- 4.6 Contractor shall make available certified First-aid services, First-aid supplies, and provisions for medical care for all employees at the construction site prior to beginning work on site.
- 4.7 Contractor shall maintain a competent person at the construction site at all times with an OSHA 10-hour certification, Said person shall have the knowledge to recognize hazards or potential hazards and has the authority to correct such hazards.
- 4.8 The status of project safety shall be included in the Contractor's agenda, which is required in Progress Meetings.

5.0 DRUG AND ALCOHOL POLICY

The Contractor and each Sub-Contractor must implement a drug and alcohol policy in order to maintain a safe and efficient work environment. This policy must include the following elements.

1. Written policy that prohibits the use, transportation, sale and possession of these materials
2. Disciplinary action plan for violations
3. Any treatment or reinstatement reemployment options
4. Drug and alcohol testing schedule that includes pre-employment, periodic for safety sensitive or critical jobs, and for cause

EXHIBIT A
FINAL AFFIDAVIT

TO FULTON COUNTY, GEORGIA

I, _____, hereby certify that all suppliers of materials, equipment and service, subcontractors, mechanic, and laborers employed by _____ or any of his subcontractors in connection with the design and/or construction of _____ at Fulton County have been paid and satisfied in full as of _____, 200____, and that there are no outstanding obligations or claims of any kind for the payment of which Fulton County on the above-named project might be liable, or subject to, in any lawful proceeding at law or in equity.

Signature

Title

Personally appeared before me this _____ day of _____, 200____.
_____, who under Oath deposes and says that he is _____ of the firm of _____, that he has read the above statement and that to the best of his knowledge and belief same is an exact true statement.

Notary Public

My Commission expires

SAFETY POLICY STATEMENT

It is the policy of Fulton County to establish a comprehensive accident and loss prevention process for all Capital Projects implemented by Fulton County or its agents.

The goals of this comprehensive accident and loss prevention process are as follows:

- To prevent personal injury, property damage, and injury to the public.
- To implement safety and loss prevention processes as critical elements in the complete design and build process.
- To establish a proactive safety and health process that complies with all laws, regulations, consensus standards, and good management practices.
- To have the Contractors partner with Fulton County in the implementation of a Safety and Loss Prevention Process Program to minimize loss potential and to minimize risk.

Fulton County requires safety, health and loss prevention requirements and expectations to be included in project design, in the invitation to bid, in bid award and project meetings, and in the post job evaluations. The Contractor is required to develop and submit a project safety and health program for acceptance by Fulton County prior to Notice to Proceed. The Contractor is required to implement these requirements, and develop a management system to ensure compliance following the safety and health process outlined in this document and the bid documents.

The Contractor and other entities placed under contract with Fulton County will be obligated to implement, adhere to and enforce this Policy. The safety and health of the Contractor's employees, Sub-Contractors, and the public are the sole responsibility of the Contractor, The County may use and direct designated Representatives to implement and enforce this policy. **Failure of the Contractor to comply with this policy or any Safety related obligations may be grounds for contract termination.**

Fulton County's designated Representative will periodically inspect all Fulton County construction projects to identify safety hazards and make recommendations to resolve the issues, Contractor will be responsible for abating the identified issues in a timely manner, and submitting written description of corrective action within 48 hours to Fulton County designated Representatives. Failure to bring timely resolution to the issues may result in work stoppage at Contractor's expense.

Prior to commencing work under this contract, Contractor's Project Manager and Project Superintendent shall attend a Pre-Construction Meeting and Safety Pre-Planning meeting to address safety issues/requirements.

news media through the County's designated Representative and the County's Information and Public Affairs Office,

- 8.4 If a work-related injury should occur on this project, Contractor shall perform a thorough investigation of the incident and document the information.
- 8.5 A written accident investigation report containing the following information as a minimum must be forwarded to the Fulton County's designated Representative within 24 hours of incident.
 1. Company Name
 2. Location
 3. Date and Time of incident
 4. Description of incident
 5. Names of all parties involved and all witnesses
 6. Corrective action(s) taken to prevent recurrence
 7. If the incident involves injury or illness, the following information must be provided:
 - a) A medical description of the injury or illness
 - b) OSHA recordability status i.e. first aid, medical treatment, lost time, days of restricted work.
 - c) If the public is involved, information about treatment and treatment location.
 8. Any pictures, site drawings, etc. if they assist in describing the incident.

If the investigation cannot be completed in 24 hours, a preliminary report marked as such shall be forwarded and the report completed and forwarded as soon as possible.

9.0 JOB SAFETY ANALYSIS

- 9.1 The Contractor and each Sub-Contractor must implement a procedure to conduct a written job safety analysis or job hazard analysis for all project work tasks prior to beginning each task. Reference Appendix A.
- 9.2 The job safety analysis should follow National Safety Council, AGC, or other recognized guidelines and address all safety and health hazards for the work, identify personal protective and other safety equipment required, identify potential hazards to the general public if applicable, and identify any safety equipment, training, or controls that must be implemented prior to starting the work.
- 9.3 The Contractor must maintain a file for all job safety analysis forms, which is Accessible for review.

10.0 SAFETY AND HEALTH COMPLIANCE AUDITING

- 10.1 Self Auditing Requirements
 - 10.1.1 The Contractor and each Sub-Contractor must implement a procedure to assure that written safety and health audits or inspections are conducted at least biweekly (every 2 weeks). Safety checklists used by Fulton County's designated Representative may be used. The Contractor may use this checklist or an equivalent approved by Fulton County's designated Representative.
 - 10.1.2 Each written safety audit must be filed on the site and a copy forwarded to Fulton County designated Representative.
- 10.2 NOT USED
- 10.3 INSPECTIONS BY REGULATORY AGENCIES
 - 10.3.1 The Contractor must notify the Fulton County designated Representative whenever an O51-IA compliance officer, health inspector, or EPA or Georgia Environmental Protection Division Representative arrives at the project site to

- conduct an inspection.
- 10.3.2 The Contractor is required to forward a copy of all regulatory citations, notice of violations, or similar for this project to Fulton County's designated Representative.
- 10.3.3 These records will be reviewed with Fulton County designated Representative and included in the Construction Project files.
- 10.4 SAFETY INSPECTION AND AUDIT FOLLOW UP
- 10.4.1 Every safety audit or regulatory inspection conducted per the requirements above may be reviewed by the Fulton County designated Representative. This review may identify serious and repeat safety items, look at trends, identify risks and potential losses, and site safety and loss prevention activities.
- 10.4.2 After this review the findings may identify areas needing improvement.
- 10.4.3 A copy of the audit and any areas identified, as needing improvement will be forwarded to the Contractor's senior management.
- 10.4.4 For findings that indicate major loss potential or serious concerns about site safety, the areas identified as needing improvement and the overall performance may be reviewed by Fulton County's designated Representative. A written action plan to address the Contractor's performance issues may be developed.
- 10.4.5 Fulton County or designated Representative may meet the Contractor's senior management to discuss the findings, contract requirements, and their plans to address the findings.
- 10.4.6 The number and frequency of safety audits and site visits may be increased until improvements are noted.

11.0 SAFETY MEETINGS

- 11.1 The Contractor will conduct weekly safety meetings with all Contractor and Sub--Contractor employees on the site.
- 11.2 The Contractor will keep safety-meeting records that include meeting topic(s), outline of items discussed, and attendance and sign in sheet. At this meeting any accidents or audit findings and corrective actions from the previous week will be discussed.
- 11.3 The Contractor will maintain a job site file that contains copies of the safety meeting records,

12.0 TRAINING, INSPECTION AND CERTIFICATION

- 12.1 Employee Training
- 12.1.1 The Contractor must be able to show when requested the required safety training for all Contractor and Subcontractor employees and competent persons working on the site including any required craft training,
- 12.1.2 The Contractor must be able to show when requested that all employees operating mobile equipment or cranes have met or exceeded training and licensing requirements.
- 12.1.3 The Contractor must be able to show when requested that all scaffolds are erected under the direction of a competent scaffold builder, that all users are properly trained, and that the scaffold is inspected daily.
- 12.1.4 The Contractor shall ensure that each employee is properly trained in the recognition and avoidance of unsafe conditions and the regulations applicable to his or her work environment to control or eliminate any hazards or other exposure to illness or injury.
- 12.1.5 If Contractor or Sub-Contractor employs anyone who cannot effectively communicate using the English language, a translator must be maintained on site who can relay instructions, questions, or concerns in a manner that the non-English and English-speaking employees will understand. The identification of this translator shall be provided to Fulton County's designated Representative.
- 12.1.6 Contractor shall orient all supervision and employees concerning safety

13.9 Fall Protection*

Contractor shall provide an approved fall protection system for all employees working at an elevation of 6 feet or higher on this project, including scaffolding work and steel erection. Employees will be responsible for utilizing the fall protection 100% of the time. Sub-Contractor will be responsible for ascertaining their employees' compliance with this requirement. The plan must address the following items:

- Only full body harnesses with shock absorbing lanyards and double locking hooks shall be use.
- Falls should be limited to less than. 6 feet such than employee can neither fall more than 6 feet nor contact any lower level.
- Fall protection systems must be planned into the job and must be designed to handle loads and forces expected. The project goal is 100% fall protection.
- Employee training and enforcement of these requirements are mandatory to assure an effective program.

13.10 Scaffolding

All scaffolds and work platforms shall be constructed to meet the requirements of OSHA 1926,451 and ANSI A10.8, Some program elements include but are no limited to

- * User training for all employees who may use scaffolds
- Scaffolding is to be designed and erected by competent person(s) following manufacturer's guidelines. Employees must use fall protection when erecting scaffolding.
- * Daily inspection by competent person. Must implement daily tag system to document inspection.
- Must have engineering approval for scaffolds above 100 feet in height.
- Must be able to document competent person credentials,
- Scaffolds must have proper egress (ladder/stairs) and should have guardrails, complete deck, toe boards and netting if anything can fall on people below. If guardrails or decking is not complete, fall protection must be used.

13.11 Cranes and Other Lifting Devices

- Trained and experienced operators shall operate Cranes in accordance with the applicable OSHA and ANSI/ASME.
- * The Contractor is responsible for ensuring that the crane is properly sized for the job and that all required inspections and maintenance required by 051-IA and ANSI/ASME standards have been conducted.
- All cranes should have anti-two block devices installed and operational. Cranes lifting employees in personnel baskets must have an anti-two block device to stops the crane if this condition occurs (positive acting).
- Tag lines are required to secure materials while being moved or handled by cranes.
- All cranes working in the vicinity of overhead power lines shall be grounded and be equipped with proximity guards.
- A lift plan must be submitted for all lifts that exceed 20,000 pounds or 75% of the crane's lift capacity. This plan must be reviewed and approved by the Contractor.
- Slings, hooks, and other lifting devices must be inspected on regular basis and stored properly.

13.12 Use of Personnel Baskets

- Personnel baskets should only be used as the last practical means after documenting that all other means are unacceptable.
- The personnel basket must be manufactured, tested, and used in accordance with OSHA 1926.550. The crane lifting the basket must also meet OSHA

requirements.

13.13 Personal Lifts with Articulating Booms (Jig) and Scissors Lifts

- Operators must be trained in the safe operation of the lift including daily inspection procedures prior to use.
- Operators of JLG lifts must wear a full body harness with shock absorbing lanyard and be tied off while the lift is operation. Operators in a scissors lift must use fall protection anytime the guardrail system removed or altered.

13.14 Ladders*

- Ladders are acceptable means of access when used in compliance with OSHA 1926.1053.
- Ladders must be in good repair, have safety feet and be inspected.
- Extension ladders must be either held by an employee on the ground or tied off at the top.
- Homemade ladders not meeting OSHA requirements should not be used.
- * Non-conducting ladders are required for electrical work.
- Fall protection is encouraged for employees working on ladders especially if they will be leaning and turning in their work activities.

13.15 Tools And Equipment

All tools and equipment used on the project must be in a safe operating condition, with all guards in place, and must meet or exceed all governmental regulations (OSHA, EPA, DOT, etc.). Tools and equipment must be maintained, inspected, tested, and used in accordance with OSHA regulations.

13.16 Compressed Gas Cylinders*

- * Compressed gas cylinders must be used, stored, and transported in accordance with OSHA requirements, DOT requirements, and Compressed Gas Association standards.
- Fuel and oxygen cylinders must be store separately or separated by a % hour rated firewall.
- Compressed gas cylinders are not allowed inside confined spaces.

13.17 Welding, Burning, and Cutting*

- The Contractor's program must meet or exceed OSHA and NFPA requirements.
- All flammables must be removed from work area and a fire watch posted in area until 30 minutes after the job is completed.
- At a minimum a 10 LB ABC rated fire extinguisher must be available in the immediate work area.
- Regulators must be in good working order and must have anti-flash back and check valves.
- Welding shields and burning goggles must be used.

13.18 Sanitation and Housekeeping*

- The project site shall have an adequate number of portable toilets and hand washing facilities.
- The project site must establish a housekeeping plan that includes daily site clean up and trash and debris removal.

13.19 Hearing Conservation*

The Contractor and each Sub-Contractor who has employees exposed to noise levels exceeding 85 dBA must establish a hearing conservation program that meets or

Appendix A Job Safety Analysis Worksheet Example and Information
Job Safety Analysis! Job Pre-Planning Worksheet

Job Name and #:		Completed By:
Date: Phase/Operation:		
Task	Hazard	Control

PRE-OPERATIONAL PLANNING**FACT FINDING GUIDE - GL**

Evaluate present conditions at job site to determine items that could lead to liability claims during work and after completion of the project.

A. PRESENT OCCUPANCY OR USE OF THE SITE

- Demolition to be done?
- Structures will remain (condition)?

B. HISTORY OF THE SITE

- For what was the site used before?
- Underground tanks?
- Underground utilities?

C. GEOLOGY OF THE SITE

- Rock to be blasted?
- Water to be removed/diverted?
- Fill needed? (where and how obtained?)
- * Excavation needed? (where and how disposed of?)

II. Evaluate controls needed in reference to site security and public protection.**A. FENCING NEEDED?****8. ACCESS/GATES**

- Can traffic be routed past office or checkpoint?
- "Non-Vendor" visitors escorted?
- Gate lockable after hours?
- "Hard Hat" signs at entrance?
- Dirt removal/tarping area at exit?
- Ready Mix chute wash area?

C. PEDESTRIANS

- Sidewalk maintained outside fence?
- Covered sidewalk needed?
- Special access requirements for neighboring occupants?
- Special after-hours considerations?

D. ENVIRONMENTAL

- Dust control?
- Silt control?
- Mud control on streets?
- Vibration control?

exceeds OSHA requirements. Minimum program elements include audiometric testing, noise monitoring, use of hearing protectors, and employee training.

13.20 Respiratory Protection

The Contractor and each Sub-Contractor who has employees who wear respiratory protection must implement a respiratory protection program that meets or exceeds OSHA requirements. Minimum program elements include risk based respirator selection, medical surveillance, employee training, respirator fit testing, and written operating procedures.

14. 0 SPECIALIZED SAFETY PROGRAM ELEMENTS

If required by the project scope of work and specific work site or activities, specialized programs listed below shall be included in the Contractor's Safety Program submittal. The Contractor is required to implement the required programs and assure that they meet or exceed all contractual, regulatory and Fulton County's requirements applicable. Details for specific program elements may be included in the contract documents,

- 14.1 Asbestos Removal
- 14.2 Lead Based Paint Removal
- 14.3 Exposure Assessment and Employee Monitoring (Industrial Hygiene)
- 14.4 Hazardous Waste Operations and Training
- 14.5 Overhead Power Lines
- 14.6 Locating underground utilities
- 14.7 Dust Control
- 14.8 Guarding for floor holes and roof openings
- 14.9 Heavy Equipment, Truck and Earth Moving Equipment requirements
- 14.10 Environmental Requirements

15.0 ROAD AND TRANSPORTATION SAFETY REQUIREMENTS

The Contractor shall implement the following into its safety program whether required by the contract or any other authority having jurisdiction if required to perform the work and maintain vehicular and pedestrian traffic safety:

- 15.1 Barricades and Cones
- 15.2 Traffic and Warning Signs
- 15.3 Traffic control devices
- 15.4 Equipment and materials storage
- 15.5 Reflective Clothing and other personal protective equipment
- 15.6 Excavation and road hole protection
- 15.7 Erosion protection
- 15.8 Trained flaggers

16.0 ADDITIONAL REQUIREMENTS TO PROTECT THE GENERAL PUBLIC

Based on the Contractor's scope of work and specific work activities or location the Contractor may be required to implement the following into its safety program to protect the general public:

- 16.1 Fencing and other measures for site security
- 16.2 Warning, direction and no trespassing signs
- 16.3 Alternate public walk ways
- 16.4 Protection of the public from over head and other construction hazards
- 16.5 Site Traffic Control
- 16.6 Barricading off hazardous areas and open pits and holes

operations present potential eye or face injury from physical, chemical, or radiation agents.

- Work boots or work shoes made of leather shall be required. No open toed shoes or canvas shoes are allowed
- Shirts with sleeves at least 4 inches long are required. Tank tops and mesh shirt are not allowed.
- Full Body Safety Harnesses with shock absorbing lanyards for fall protection are required.
- Full body and chemical splash protection is required when handling hazardous chemicals.
- Respirators are required when employees maybe exposed to dust and/or chemicals in excess of the OSHA permissible exposure limits.
- * Long pants are required.

13.5 Confined Space Entry

If the project work involves permit required confined spaces, a permit required confined space entry program that meets 051-iA requirements must be established. This program must include but is not limited to the following elements.

- Confined Space Identification
- Environmental Testing
- Rescue
- Communication with employees in the confined space
- Employee Training
- Permit System for entry

13.6 Excavations

If the Contractor or Sub-Contractor must make a cut, cavity, trench or depression in an earth surface formed by earth removal, the work must comply with the OSHA Regulations on trenching and excavations. A competent person must be assigned for each excavation. Requirements include but are not limited to

- Employee Training
- * Daily inspections
- Soil testing
- Protective or support systems.

13.7 Electrical Tools, Equipment, and Systems

- * The Contractor and each Sub-Contractor must implement Assured Grounding Program or use Ground Fault Circuit Interrupter (GFCI) devices on all electrical tools and extension cords.
- All electrical work must be performed in accordance with the National Electrical Code (NEC) and OSHA,
- All electrical tools and extension cords must be in good repair and the Contractor must establish a written inspection program for all electrical tools. The frequency of inspection shall be at least monthly.

13.8 Lockout/Tagout Procedure

The Contractor and each Sub-Contractor will be required to implement a written Lockout/Tag procedure that meets OSHA requirements if their work requires energy isolation, Program elements include but are not limited to the following:

- Energy isolation lists for each piece of equipment
- Employee training
- Individually keyed locks and danger tags
- Written Procedure that assigns responsibilities

requirements before working on the project site.

12.2 Equipment Certification and Inspection

- 12.2.1 The Contractor must be able to document that all cranes and mobile equipment used on the job site have current inspections and certifications,
- 12.2.2 The Contractor must assure that required daily and weekly equipment inspections are performed and documented in writing per governmental regulations and the requirements of this policy.
- 12.2.3 The Contractor must maintain a job site file for these required inspections and certifications.
- 12.2.4 Equipment identified as having safety problems or not meeting standards or codes shall be tagged as defective and shall not be used until those identified items have been corrected.
- 12.2.5 Contractor shall maintain, and have available for viewing, safety inspection reports for ladder, electrical cords, scaffolds, and trenches/excavations.

13.0 SAFETY AND HEALTH PROGRAM ELEMENTS

Note: Based on the project work activities and scope of work, some program elements may be not applicable to the project work and therefore do not have to be implemented. Elements marked with an asterisk are applicable to all Projects.

13.1 Return to Work Policy*

The Contractor and each Sub-Contractor will be required to establish a transitional work program for employees injured at work, which provides modified duty within the employee's physical limitations.

13.2 Fire Prevention Program*

The Contractor and each Sub-Contractor will be required to submit a temporary fire protection plan to be in effect for the duration of the contract. This plan must be submitted as part of the Contractor's Safety Program submittal. It must include provisions for fire protection systems and equipment, as identified in OSHA Safety and Health for Construction 1926, Sub-Part F, Fire Protection and Prevention.

13.3 Hazard Communication (HAZCOM)*

The Contractor and each Sub-Contractor shall have a written HAZCOM Program. The program shall meet OSHA 1926 Requirements and provide for training so that all employees will be able to:

- Understand the program and identify hazardous chemicals with which they work.
- Understand product-warning labels.
- Have MSDSs for all potentially hazardous materials brought onto, used on, or stored at the job site.
- Know the physical location of the Material Safety Data Sheets (MSDS).

13.4 Personal Protective Equipment (PPE)*

All Contractor and Sub-Contractor employees and other site visitors will be required to wear the PPE necessary to accomplish the work in a safe manner, PPE required will vary from job to job and must be based on a written hazard assessment. A list of PPE that is required is identified below:

- Hard Hats shall be worn at all times on all projects
- Hearing Protection for operations that create noise in excess of 65 dBA is required.
- Contractor shall provide eye or face protection equipment when machines or

E. UTILITIES

- Underground utilities located?
- Overhead power lines in work area relocated, removed, or de-energized?
- Temporary power service away from high traffic areas?

F. SUB-CONTRACTORS

- Method to secure proof of adequate insurance coverage in place?
- List of hazardous materials obtained?
- List of hazardous materials provided?
- Responsibilities established
 - Job site safety meetings
 - Materials delivery
 - Debris removal
 - Access to site
 - Weekly Sub-Contractors' meetings
 - Schedule of safety inspections
 - Emergency Procedures

G. MATERIALS HANDLING

- Crane selection criteria established
 - Maximum weight to be handled
 - Maximum lifting height
 - Maximum horizontal reach needed
 - Amount of travel needed
 - Swing radius available
 - Set-up area available
 - Ground bearing capacity
 - Approximate frequency of lifts
- Crane operations responsibilities established
 - Triangle or leasing company crane to be used?
 - Operator trained and experienced on specific machine?
 - Operator can accurately read and interpret machine load chart?
 - * Critical lift identified (75% of net capacity)?
 - Machine fully inspected by a qualified outside agency?
 - Rigging hardware properly selected?
 - Inspecting and maintaining the crane per owner/manufacture specifications?

III. Start Up.**A. ELECTRICAL**

- Temporary Power
 - Underground service possible?
 - Maintenance responsibilities established?
 - Main circuit panel barricaded?
 - Lighting planned?
- Circuit Protection
 - Ground fault circuit interrupt protection?
 - Assured grounding conductor program?
 - Responsibilities established?

B. FIRE PROTECTION

- ABC extinguishers adequately distributed?
- Properly sized?
- Maintenance of fire extinguishers?
- Stand pipe/hydrant available? Adequate?
- Housekeeping checks/inspections?

C. FALL PROTECTION

- Critical Job Phases Identified?
 - Critical exposures identified by phase? (e.g. "Worker falls into basement excavation")
 - Scheduled start dates for critical phases?
- General Fall Protection Procedures
 - Perimeters
 - * Floor openings
 - Working deck
 - Work area access
 - * Ladders
 - Elevator hatchways

D. PERSONAL PROTECTIVE EQUIPMENT

- General
 - Hard hats
 - Work shoes
- * Specific by Task

E. HAZARD COMMUNICATION PROGRAM ESTABLISHED AND EMPLOYEES TRAINED

F. CONFINED SPACE ENTRY

- Procedures established and task(s) identified requiring use of procedures?

G. TRENCHING

- Procedures established and task(s) requiring procedures identified?

H. PHASE PRE-PLANNING

- Job schedules established?
- Agreed upon target dates for meeting?
- Follow up system

End of Exhibit B

Note: AGC, ABC and/or Fulton County programs may be used as guidance documents.

6.0 OTHER CONTROLLED ITEMS

The Contractor and each Sub-Contractor is required to include in the Project Safety Program a prohibition against the use, possession, concealment, transportation, promotion or sale of the following controlled items

1. Firearms, weapons, and ammunition.
2. Switchblades
3. Unauthorized explosives including fireworks
4. Stolen property or contraband
5. Controlled chemicals or chemicals recognized as being able to be used for improper purposes.

7.0 EMERGENCY PROCEDURES/GUIDELINES

- 7.1 The Contractor is required to establish site specific emergency procedures in the Project Safety Program to manage emergencies that may occur at any time in the following categories:

1. Fire
2. Employee injury
3. Pedestrian injury due to work activity of any kind
4. Property damage and damage to various utilities (i.e., electrical, gas, sewerage,, water, telephone or public roadways)
5. Public demonstrations
6. Bomb threats
7. Flood, Wind, Lightening, Hail
8. Terrorists Threats
9. Work place violence

- 7.2 These Emergency Procedures will be made part of the Contractor's Project Safety Program submittal and shall include but not be limited to the following elements:

1. A list of emergency phone numbers posted at the job site, along with information to be transmitted in such emergencies.
2. An incident command structure defining duties and responsibilities
3. A system to train supervisors and employees on this emergency plan
4. Procedures on how to handle emergencies including access to the site by emergency responders, accounting for workers, and securing the area.
5. Procedures for media releases. These releases must be coordinated through the Fulton County Information and Public Affairs Office in coordination with the County's designated Representative.
6. A plan that addresses serious incidents that includes notification to Fulton County, Fulton County's designated Representative immediately after the incident.
7. A review and updating frequency that includes forwarding a copy to Fulton County and the County's designated Representative.

8.0 ACCIDENT AND INCIDENT INVESTIGATION AND REPORTING

- 8.1 The Contractor is responsible for reporting all accidents and incidents on the project site to the County's designated Representative within (1) business day. Accidents or incidents resulting in a fatality, property loss in excess of \$5,000, or involvement with the general public must be reported immediately to Fulton County's designated Representative and the investigation of the accident or incident coordinated with Fulton County Safety staff.
- 8.2 The Contractor will maintain a log of all injuries that occur on the job site. This log will be current and available for review.
- 8.3 For any incidents such as fires, explosions, fatalities, etc., the Contractor must notify Fulton County's designated Representative immediately and must coordinate any releases to the

the County to the Contractor in the final judgment entered in such suit. All final judgments shall draw interest at the legal rate, as specified by law.

00700-85 DOCUMENTATION OF COMPLETION OF WORK

Neither the final payment nor the remaining retainage shall become due until the Contractor submits the following documents to the Construction Manager:

- a. An affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work have been paid or otherwise satisfied;
- b. The surety's consent to final payment; and
- c. Any other data reasonably required by the County or Construction Manager establishing payment or satisfaction of all such obligations, including releases, waivers of liens, and documents of satisfaction of debts.

In the event that a subcontractor refuses to furnish a release or waiver as required by the County or Construction Manager, the Contractor may furnish a bond satisfactory to the County to indemnify the County against such loss. In the event that any lien or indebtedness remains unsatisfied after all payments are made, the contractor shall refund to the County all moneys that the County may become compelled to pay in discharging such lien or other indebtedness, including all costs and reasonable attorney's fees.

00700-86 GOVERNING LAW

Each and every provision of this agreement shall be construed in accordance with and governed by Georgia law. The parties acknowledge that this contract is executed in Fulton County, Georgia and that the contract is to be performed in Fulton County, Georgia. Each party hereby consents to the Fulton Superior Court's sole jurisdiction over any dispute which arises as a result of the execution or performance of this agreement, and each party hereby waives any and all objections to venue in the Fulton Superior Court.

00700-87 CHANGES IN THE WORK

A. CHANGE ORDERS

1. A Change Order is a written order to the Contractor signed to show the approval and the authorization of the County, issued after execution of the Contract, authorizing a change in the Work and/or an adjustment in the Contract Sum or the Contract Time. Change Orders shall be written using forms designated by the County with Contractor providing supporting documentation as required by the Construction Manager. The Contract Sum and the Contract Time may be changed only by approved Change Order pursuant to Fulton County Procedure 800-6. The amount payable by the Change Order is payment in full for all direct and indirect costs incurred and related to the work under said Change Order, including but not limited to delays, imports, acceleration, disruption and extended overhead. A Change Order signed by the Contractor indicates the Contractor's agreement therewith, including the adjustment in either or both of the Contract Sum or the Contract Time.
2. The County, without invalidating the Contract, may order changes in the Work within the general scope of the Contract as defined herein. The time allowed for performance of the work and the contract price to be paid to the Contractor may be adjusted accordingly.
3. The cost or credit to the County resulting from a change in the Work shall be determined in one or more of the following ways:
 - a. By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
 - b. By unit prices stated in the Contract Documents or subsequently agreed upon;



INVITATION TO BID #09ITB1005K-JD

**Interior Renovation
137 Peachtree Street Building**

VOLUME II

**For
General Services Department**

BID ISSUANCE DATE: Friday, August 28, 2009

PRE-BID CONFERENCE DATE: Thursday, September 10, 2009 10:00 A.M.

BID DUE DATE AND TIME: Monday, October 5, 2009 11:00 A.M.

PURCHASING CONTACT: Joyce Daniel, Assistant Purchasing Agent (404) 612-5824

E-MAIL: joyce.daniel@fultoncountyga.gov

LOCATION: FULTON COUNTY DEPARTMENT OF PURCHASING &
CONTRACT COMPLIANCE
130 PEACHTREE STREET, S.W., SUITE 1168
ATLANTA, GA 30303

REVISED: SEPTEMBER 4, 2009

Table of Contents

Volume I of 2

<u>Section</u>	<u>Title</u>	<u>Page</u>
00020	Invitation to Bid Description of Project Permits Rights of Way/Easements Bid Documents Term of Contract No Contact Provision Bid Contact Basis of Award Pre-Bid Conference	6
00100	Instructions to Bidders A. Contract Documents B. Bid Preparation and Execution C. Addenda and Interpretations D. Site Examination E. Bidder's Modification and Withdrawal of Bonds F. Bid and Contract Security G. Right to Reject Bids H. Applicable Laws I. Examination of Contract Documents J. Indemnification and Hold Harmless Agreement K. Bid Opening L. Determination of Successful Bidder M. Georgia Utility Contractors License N. General Contractors License O. Professional Licenses P. Wage Clause Q. Notice of Award of Contract R. Execution of Contract Documents S. Joint Venture T. Contractors Compliance with Procurement U. Georgia Security and Immigration Compliance Act V. Bid General Requirements Required Bid Submittal Checklist for ITB	9
00300	Bid Form	22
00410	Bid Bond	27

00420	Purchasing Forms & Instructions	30
	Form A - Non-Collusion Affidavit of Prime Bidder/Offeror	
	Form B - Certificate of Acceptance of Request for Bid Requirements	
	Form C - Contractor's Georgia Utility License Certification	
	Form C1 – Georgia Utility License Contractors License	
	Form C2 – Georgia General Contractors License	
	Form C3 – Georgia Professional License	
	Form D – Certification Regarding Debarment	
	Form E –Disclosure Form & Questionnaire	
	Form F – Declaration of Employee-Number Categories	
	Form G – Georgia Security and Immigration Contractor Affidavit and Agreement	
	Form H – Georgia Security and Immigration Subcontractor Affidavit	
00430	Contract Compliance Requirements	50
	Non-Discrimination in Contracting and Procurement	
	Required Forms and EBO Plan	
	Exhibit A – Promise of Non-Discrimination	
	Exhibit B – Employment Report	
	Exhibit C – Schedule of Intended Subcontractor Utilization	
	Exhibit D – Letter of Intent to Perform As a Subcontractor or Provide Materials or Services	
	Exhibit E – Declaration Regarding Subcontracting Practices	
	Exhibit F – Joint Venture Disclosure Affidavit	
	Exhibit G – Prime Contractor/Subcontractor Utilization Report	
00490	Insurance and Risk Management Provisions	63
00500	Owner - Contractual Agreement	67
00610	Performance Bond Requirements	70
00620	Payment Bond Requirements	74
00700	General Conditions	78

Volume 2 of 2

DIVISION 1	GENERAL REQUIREMENTS	7
Section 1010	Summary of Work	
Section 1320	Schedule of Values	
Section 1320a	Reference	
Section 1320b	Cutting and Patching	
Section 1510	Construction Waste Management	
Section 1520	Temporary Facilities	
Section 1710	Summary of Work	
DIVISION 2	SITE CONSTRUCTION	54
Section 2111	Demolition	
DIVISION 3	CONCRETE	61
Section 3300	Cast-in-Place Concrete	
DIVISION 4	MASONRY	76
	No Sections Required	

DIVISION 5	METALS	77
Section 05500	Miscellaneous Metal	
DIVISION 6	WOOD, PLASTIC AND COMPOSITES	87
Section 06100	Rough Carpentry	
Section 06200	Finish Carpentry	
DIVISION 7	THERMAL AND MOISTURE PROTECTION	103
Section 07100	Waterproofing and Moisture Proofing	
Section 07840	Fire Stopping	
Section 07900	Sealants and Caulking	
DIVISION 8	DOORS AND WINDOWS	112
Section 08110	Steel Doors and Frames	
Section 08219	Flush Wood Doors	
Section 08311	Access Doors	
Section 08710	Door Hardware	
DIVISION 9	FINISHES	148
Section 09250	Gypsum Board	
Section 09310	Ceramic Tile	
Section 09511	Acoustical panel Ceilings	
Section 09620	Resilient Floor Tile	
Section 09640	Wood Flooring	
Section 09680	Carpet Tiles	
Section 09912	Interior Painting	
DIVISION 10	SPECIALTIES	207
Section 10160	Toilet Compartments	
Section 10261	Wall and Corner Guards	
Section 10431	Signage	
Section 10523	Fire Extinguisher	
Section 10801	Toilet and Bath Accessories	
DIVISION 11	EQUIPMENT	227
	No Sections Required	
DIVISION 12	FURNISHINGS	228
Section 12485	Foot Grilles	
Section 12520	Shades	
DIVISION 13	SPECIAL CONSTRUCTION	237
	No Sections Required	
DIVISION 14	CONVEYING SYSTEM	238
	No Sections Required	
DIVISION 15	MECHANICAL	239
	No Sections Required	
DIVISION 16	ELECTRICAL	240
	No Sections Required	

EXHIBITS

- A – 00
- A –1.1
- A –1.2
- A –1.3
- A –1.4
- A –1.5
- A –1.6
- A –1.7
- A –1.8
- A –1.9
- A –1.10
- A –1.11
- A –1.12
- A –1.13
- A –1.14
- A –1.14a
- A –1.15
- A –1.16
- A –1.17
- A –1.18
- A –1.19
- A –1.20
- A –1.21
- A –1.22
- A – 2.1
- A – 2.2
- A – 2.3
- A – 3.1

PROJECT DRAWINGS

- Specification and Cover Page
- Main Floor Existing
- First Floor Existing
- Second Floor Existing
- Third Floor Existing
- Fourth Floor Existing
- Proposed Main Floor Plan
- Proposed First Floor Plan
- Proposed Second Floor Plan
- Proposed Third Floor Plan
- Proposed Fourth Floor Plan
- First Floor Demolition Plan
- Second Floor Demolition Plan
- Third Floor Demolition Plan
- Fourth Floor Demolition Plan
- Main Floor Reflected Ceiling Plan
- First Floor Reflected Ceiling Plan
- Second Floor Reflected Ceiling Plan
- Third Floor Reflected Ceiling Plan
- Fourth Floor Reflected Ceiling Plan
- First Floor Room Finish Plan
- Second Floor Room Finish Plan
- Third Floor Room Finish Plan
- Fourth Floor Room Finish Plan
- 1st & 4th Floor Restrooms
- 1st, 2nd & 3rd Floor Break Rooms
- 3rd Floor copy and Storage rooms
- Entryway Plan

MECHANICAL

- M – 1 Mechanical Schedule and notes
- M – 2 1st and 4th Floor Restroom Exhaust

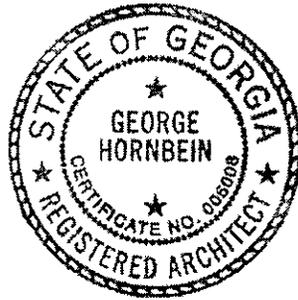
PLUMBING

- P – 1 Plumbing Schedule and Notes
- P – 2 Main and First Floor Plumbing Plans
- P – 3 3rd & 4th Floor Plumbing Plans

END OF TABLE OF CONTENTS

PROJECT MANUAL
For
FULTON COUNTY, GEORGIA
137 PEACHTREE STREET BUILDING RENOVATION
137 Peachtree Street, SW
Atlanta, Georgia 30303

For
THE BOARD OF COMMISSIONERS OF FULTON COUNTY



A handwritten signature in cursive script, appearing to read "George Hornbein".

DIVISION 1

General Requirements

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.1 LOCATION OF WORK

- A. The work of this contract is located within the City of Atlanta, Georgia, at 137 Peachtree Street, SW 30303 as shown on Drawing A-0.0

1.2 DESCRIPTION

- A. Definition: The Work is defined in General Conditions Section 00030
- B. Alternatives:
 - 1. Provide carpet tiles in lieu of wood flooring where wood flooring is shown on the Drawings.
 - 2. Replace damaged ceiling tiles in lieu of replacing all ceiling tiles for new.
- C. Summary: Major areas of the Work consist of, but are not limited to, the following:
 - 1. Exterior:
 - a. Provide entry fence, gate, hardware and call mechanism
 - b. Provide new entry concrete slab as indicated
 - c. Remove existing sealant and backing rods between sidewalk and perimeter building walls and replace with new backing rods and sealant
 - 2. Main Floor
 - a. Replace existing carpet
 - b. Replace existing light fixtures and ceiling tiles
 - c. Replace existing toilets with low-flow toilets
 - d. Replace existing faucets with low-flow fixtures
 - e. Add new finishes as indicated on Drawings
 - f. Add electrical outlets and data
 - g. Add new partition walls as indicated on Drawings
 - h. Add pressure reduction valve
 - 3. First Floor
 - a. Replace walk-off mat
 - b. Demolish walls indicated on Drawings
 - c. Add new partitions walls as indicated on Drawings
 - d. Replace existing carpet
 - e. Replace existing light fixtures and ceiling tiles
 - f. Replace existing toilets with low-flow toilets
 - g. Replace existing faucets with low-flow fixtures
 - h. Add new floor and wall finishes as indicated on Drawings
 - i. Add electrical outlets and data
 - j. Add new rest rooms and accessories as indicated on Drawings
 - k. Replace existing millwork with new as indicated on Drawings
 - l. Add fire extinguishers where missing from cabinets
 - m. Add new doors, frames and hardware where required
 - n. Replace window blinds where damaged
 - o. Match existing signage; add where missing

4. Second Floor
 - a. Demolish walls indicated on Drawings
 - b. Add new partitions walls as indicated on Drawings
 - c. Replace existing carpet
 - d. Replace existing light fixtures and ceiling tiles
 - e. Replace existing toilets with low-flow toilets
 - f. Replace existing faucets with low-flow fixtures
 - g. Add new floor and wall finishes as indicated on Drawings
 - h. Add electrical outlets and data
 - i. Replace existing millwork with new as indicated on Drawings
 - j. Add fire extinguishers where missing from cabinets
 - k. Add new doors, frames and hardware where required
 - l. Replace window blinds where damaged
 - m. Match existing signage; add where missing

5. Third Floor
 - a. Demolish walls indicated on Drawings
 - b. Add new partitions walls as indicated on Drawings
 - c. Replace existing carpet
 - d. Replace existing light fixtures and ceiling tiles
 - e. Replace existing toilets with low-flow toilets
 - f. Replace existing faucets with low-flow fixtures
 - g. Add new floor and wall finishes as indicated on Drawings
 - h. Add electrical outlets and data
 - i. Replace existing millwork with new as indicated on Drawings
 - j. Add fire extinguishers where missing from cabinets
 - k. Add new doors, frames and hardware where required
 - l. Replace window blinds where damaged
 - m. Match existing signage; add where missing

6. Fourth Floor
 - a. Demolish walls indicated on Drawings
 - b. Add new partitions walls as indicated on Drawings
 - c. Replace existing carpet
 - d. Replace existing light fixtures and ceiling tiles
 - e. Replace existing toilets with low-flow toilets
 - f. Replace existing faucets with low-flow fixtures
 - g. Add new floor and wall finishes as indicated on Drawings
 - h. Add electrical outlets and data
 - i. Add new rest rooms and accessories as indicated on Drawings
 - j. Replace existing millwork with new as indicated on Drawings
 - k. Add fire extinguishers where missing from cabinets
 - l. Add new doors, frames and hardware where required
 - m. Replace window blinds where damaged
 - n. Match existing signage; add where missing

1.2 PRODUCTS (Not Required)

1.3 EXECUTION (Not Required)

END OF SECTION 01010

SECTION 01320

SCHEDULE OF VALUES

1.1 GENERAL

A. Description of Work

1. This specification covers the preparation, content and submittal of the schedule of values. The Schedule of Values is an itemized list that establishes the value or cost of each part of the Work. It shall be used as the basis for preparing progress payments.

B. Preparation

1. Schedule shall show breakdown of labor, materials equipment and other costs as directed by the Owner.
2. Costs shall be in sufficient detail to indicate separate amounts for each major subsection of the Work. The Contractor may include an item for bond, insurance, temporary facilities and job mobilization.
3. Schedule of Values shall be prepared on 8-1/2-inch by 11-inch white paper.
4. Use the major subsections of the Detailed Scope of Work as the basis for Schedule format. List sub-items of major products or systems as appropriate or when requested by the Owner.
5. When requested by the Owner, support values with data that will substantiate their correctness.
6. The sum of the individual values shown on the Schedule of Values must equal the total Job Order Price.
7. Schedule shall show the purchase and delivery costs for materials and equipment that the Contractor anticipates he shall request payment for prior to their installation.

- C. Submittal: Submit two copies of Schedule, or any other number of copies as directed by the Owner, to the Owner for approval at least 20 days prior to submitting first application for a progress payment.

After review by the Owner, revise and resubmit Schedule as required until it is approved.

1.2 PRODUCTS (Not Used)

1.3 EXECUTION (Not Used)

END OF SECTION 01320

SECTION 01320a

REFERENCES

1.1 GENERAL

A. Definitions

1. General: Basic Contract definitions are included in the Conditions of the Contract.
2. "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.
3. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
4. "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."
5. "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.
6. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
7. "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.
8. "Provide": Furnish and install, complete and ready for the intended use.
9. "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.

B. Industry Standards

1. 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.
2. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
3. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - a. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

C. Abbreviations and Acronyms

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

AA Aluminum Association, Inc. (The) (703) 358-2960
www.aluminum.org

AAADM American Association of Automatic Door Manufacturers
(216) 241-7333
www.aaadm.com

AABC Associated Air Balance Council (202) 737-02
AAMA American Architectural Manufacturers Association (847) 303-5664
www.aamanet.org

AASHTO American Association of State Highway and Transportation
Officials
(202) 624-5800
www.transportation.org

AATCC American Association of Textile Chemists and Colorists (The)
(919) 549-8141
www.aatcc.org

ABAA Air Barrier Association of America (866) 956-5888
www.airbarrier.org

ABMA American Bearing Manufacturers Association (202) 367-1155
www.abma-dc.org

ACI ACI International (248) 848-3700
(American Concrete Institute)
www.aci-int.org

ACPA American Concrete Pipe Association (972) 506-7216
www.concrete-pipe.org

AEIC Association of Edison Illuminating Companies, Inc. (The) (205) 257-2530
www.aeic.org

AF&PA American Forest & Paper Association (800) 878-8878
www.afandpa.org
(202) 463-2700

AGA American Gas Association (202) 824-7000
www.aga.org

AGC Associated General Contractors of America (The) (703) 548-3118
www.agc.org

AHA American Hardboard Association
(Now part of CPA)

AHAM Association of Home Appliance Manufacturers (202) 872-5955
www.aham.org

AI Asphalt Institute (859) 288-4960
www.asphaltinstitute.org

AIA American Institute of Architects (The) (800) 242-3837
www.aia.org
(202) 626-7300

AISC American Institute of Steel Construction (800) 644-2400
www.aisc.org
(312) 670-2400

AISI American Iron and Steel Institute (202) 452-7100
www.steel.org

AITC American Institute of Timber Construction (303) 792-9559
www.aitc-glulam.org

ALCA Associated Landscape Contractors of America
(Now PLANET - Professional Landcare Network)
ALSC American Lumber Standard Committee, Incorporated (301) 972-1700
www.alsc.org

AMCA Air Movement and Control Association International, Inc.
(847) 394-0150
www.amca.org

ANSI American National Standards Institute (202) 293-8020
www.ansi.org

AOSA Association of Official Seed Analysts, Inc. (405) 780-7372
www.aosaseed.com

APA Architectural Precast Association (239) 454-6989
www.archprecast.org

APA APA - The Engineered Wood Association (253) 565-6600
www.apawood.org

APA EWS APA - The Engineered Wood Association; Engineered Wood
Systems
(See APA - The Engineered Wood Association)
API American Petroleum Institute (202) 682-8000
www.api.org

ARI Air-Conditioning & Refrigeration Institute (703) 524-8800
www.ari.org

ARMA Asphalt Roofing Manufacturers Association (202) 207-0917
www.asphaltroofing.org

ASCE American Society of Civil Engineers (800) 548-2723
www.asce.org
(703) 295-6300

ASCE/SEI American Society of Civil Engineers/Structural Engineering
Institute
(See ASCE)
ASHRAE American Society of Heating, Refrigerating and Air-Conditioning
Engineers
(800) 527-4723
www.ashrae.org
(404) 636-8400

ASME ASME International (800) 843-2763
(The American Society of Mechanical Engineers International) (973) 882-1170
www.asme.org

ASSE American Society of Sanitary Engineering (440) 835-3040
www.asse-plumbing.org

ASTM ASTM International (610) 832-9585
EJMA Expansion Joint Manufacturers Association, Inc. (914) 332-0040
www.ejma.org

ESD ESD Association (315) 339-6937
www.esda.org

FIBA Federation Internationale de Basketball 41 22 545 00 00
(The International Basketball Federation)
www.fiba.com

FIVB Federation Internationale de Volleyball 41 21 345 35 35
(The International Volleyball Federation)
www.fivb.ch

FM Approvals FM Approvals (781) 762-4300
www.fmglobal.com

FM Global FM Global (401) 275-3000
(Formerly: FMG - FM Global)
www.fmglobal.com

FMRC Factory Mutual Research
(Now FM Global)

FRSA Florida Roofing, Sheet Metal & Air Conditioning Contractors
Association, Inc.
(407) 671-3772
www.floridarroof.com

FSA Fluid Sealing Association (610) 971-4850
www.fluidsealing.com

FSC Forest Stewardship Council 49 228 367 66 0
www.fsc.org

GA Gypsum Association (202) 289-5440
www.gypsum.org

GANA Glass Association of North America (785) 271-0208
www.glasswebsite.com

GRI (Now GSI)
GS Green Seal (202) 872-6400
www.greenseal.org

GSI Geosynthetic Institute (610) 522-8440
www.geosynthetic-institute.org

HI Hydraulic Institute (888) 786-7744
www.pumps.org
(973) 267-9700

HI Hydronics Institute (908) 464-8200
www.gamanet.org

HMMA Hollow Metal Manufacturers Association
(Part of NAAMM)

HPVA Hardwood Plywood & Veneer Association (703) 435-2900
www.hpva.org

HPW H. P. White Laboratory, Inc. (410) 838-6550
www.hpwhite.com

IAS International Approval Services
(Now CSA International)
IBF International Badminton Federation (6-03) 9283-7155
www.internationalbadminton.org

ICEA Insulated Cable Engineers Association, Inc. (770) 830-0369
www.icea.net

ICRI International Concrete Repair Institute, Inc. (847) 827-0830
www.icri.org

IEC International Electro technical Commission 41 22 919 02 11
www.iec.ch

IEEE Institute of Electrical and Electronics Engineers, Inc. (The)
(212) 419-7900
www.ieee.org

IESNA Illuminating Engineering Society of North America (212) 248-5000
www.iesna.org

IEST Institute of Environmental Sciences and Technology (847) 255-1561
www.iest.org

IGCC Insulating Glass Certification Council (315) 646-2234
www.igcc.org

IGMA Insulating Glass Manufacturers Alliance (613) 233-1510
www.igmaonline.org

ILI Indiana Limestone Institute of America, Inc. (812) 275-4426
www.iliai.com

ISO International Organization for Standardization 41 22 749 01 11
www.iso.ch

Available from ANSI (202) 293-8020
www.ansi.org

ISSFA International Solid Surface Fabricators Association (877) 464-7732
www.issfa.net
(702) 567-8150

ITS Intertek Testing Service NA (972) 238-5591
www.intertek.com

ITU International Telecommunication Union
www.itu.int/home

KCMA Kitchen Cabinet Manufacturers Association (703) 264-1690
www.kcma.org

LMA Laminating Materials Association
(Now part of CPA)

LPI Lightning Protection Institute (800) 488-6864
www.lightning.org

MBMA Metal Building Manufacturers Association (216) 241-7333
www.mbma.com

MFMA Maple Flooring Manufacturers Association, Inc. (847) 480-9138
www.maplefloor.org

MFMA Metal Framing Manufacturers Association, Inc. (312) 644-6610
www.metalframingmfg.org

MH Material Handling
(Now MHIA)
MHIA Material Handling Industry of America (800) 345-1815
www.mhia.org
(704) 676-1190

MIA Marble Institute of America (440) 250-9222
www.marble-institute.com

MPI Master Painters Institute (888) 674-8937
www.paintinfo.com

MSS Manufacturers Standardization Society of The Valve and Fittings
Industry Inc.
(703) 281-6613
www.mss-hq.com

NAAMM National Association of Architectural Metal Manufacturers
(312) 332-0405
www.naamm.org

NACE NACE International (800) 797-6623
(National Association of Corrosion Engineers International) (281) 228-6200
www.nace.org

NADCA National Air Duct Cleaners Association (202) 737-2926
www.nadca.com

NAGWS National Association for Girls and Women in Sport (800) 213-7193,
ext. 453
www.aahperd.org/nagws/

NAIMA North American Insulation Manufacturers Association (703) 684-0084
www.naima.org

NBGQA National Building Granite Quarries Association, Inc. (800) 557-2848
www.nbgqa.com

NCAA National Collegiate Athletic Association (The) (317) 917-6222
www.ncaa.org

NCMA National Concrete Masonry Association (703) 713-1900
www.ncma.org

NCPI National Clay Pipe Institute (262) 248-9094
www.ncpi.org

NCTA National Cable & Telecommunications Association (202) 775-3550
www.ncta.com

NEBB National Environmental Balancing Bureau (301) 977-3698
www.nebb.org

NECA National Electrical Contractors Association (301) 657-3110
www.necanet.org

NelMA Northeastern Lumber Manufacturers' Association (207) 829-6901
www.nelma.org

NEMA National Electrical Manufacturers Association (703) 841-3200
www.nema.org

NETA InterNational Electrical Testing Association (888) 300-6382
www.netaworld.org
(303) 697-8441

NFHS National Federation of State High School Associations (317) 972-6900
www.nfhs.org

NFPA NFPA (800) 344-3555
(National Fire Protection Association) (617) 770-3000
www.nfpa.org

NFRC National Fenestration Rating Council (301) 589-1776
www.nfrc.org

NGA National Glass Association (866) 342-5642
www.glass.org
(703) 442-4890

NHLA National Hardwood Lumber Association (800) 933-0318
www.natlhardwood.org
(901) 377-1818

NLGA National Lumber Grades Authority (604) 524-2393
www.nlga.org

NOFMA NOFMA: The Wood Flooring Manufacturers Association
(901) 526-5016

(Formerly: National Oak Flooring Manufacturers Association)
www.nofma.com

NRCA National Roofing Contractors Association (800) 323-9545
www.nrca.net
(847) 299-9070

NRMCA National Ready Mixed Concrete Association (888) 846-7622
www.nrmca.org
(301) 587-1400

NSF NSF International (800) 673-6275

(National Sanitation Foundation International) (734) 769-8010
www.nsf.org

NSSGA National Stone, Sand & Gravel Association (800) 342-1415
www.nssga.org
(703) 525-8788

NTMA National Terrazzo & Mosaic Association, Inc. (The) (800) 323-9736
www.ntma.com
(540) 751-0930

NTRMA National Tile Roofing Manufacturers Association
(Now TRI)
NWWDA National Wood Window and Door Association
(Now WDMA)
OPL Omega Point Laboratories, Inc.
(Now ITS)
PCI Precast/Prestressed Concrete Institute (312) 786-0300
www.pci.org

PDCA Painting & Decorating Contractors of America (800) 332-7322
www.pdca.com
(314) 514-7322

PDI Plumbing & Drainage Institute (800) 589-8956
www.pdionline.org
(978) 557-0720

PGI PVC Geomembrane Institute (217) 333-3929
<http://pgi-tp.ce.uiuc.edu>

PLANET Professional Landcare Network (800) 395-2522
(Formerly: ACLA - Associated Landscape Contractors of America)
(703) 736-9666
www.landcarenetwork.org

PTI Post-Tensioning Institute (602) 870-7540
www.post-tensioning.org

RCSC Research Council on Structural Connections
www.boltcouncil.org

RFCI Resilient Floor Covering Institute (301) 340-8580
www.rfci.com

RIS Redwood Inspection Service (888) 225-7339
www.calredwood.org
(415) 382-0662

SAE SAE International (877) 606-7323
www.sae.org
(724) 776-4841

SDI Steel Deck Institute (847) 458-4647
www.sdi.org

SDI Steel Door Institute (440) 899-0010
www.steeldoor.org

SEFA Scientific Equipment and Furniture Association (516) 294-5424
www.sefalabs.com

SEI/ASCE Structural Engineering Institute/American Society of Civil Engineers
(See ASCE)
SGCC Safety Glazing Certification Council (315) 646-2234
www.sgcc.org

SIA Security Industry Association (703) 683-2075
www.siaonline.org

SIGMA Sealed Insulating Glass Manufacturers Association
(Now IGMA)
SJI Steel Joist Institute (843) 626-1995
www.steeljoist.org

SMA Screen Manufacturers Association (561) 533-0991
www.smacentral.org

SMACNA Sheet Metal and Air Conditioning Contractors' (703) 803-2980
National Association
www.smacna.org

SMPTE Society of Motion Picture and Television Engineers (914) 761-1100
www.smpte.org

SPFA Spray Polyurethane Foam Alliance (800) 523-6154
(Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.;
Spray Polyurethane Foam Division)
www.sprayfoam.org

SPIB Southern Pine Inspection Bureau (The) (850) 434-2611
www.spib.org

SPRI Single Ply Roofing Industry (781) 647-7026
www.spri.org

SSINA Specialty Steel Industry of North America (800) 982-0355
www.ssina.com
(202) 342-8630

SSPC SSPC: The Society for Protective Coatings (877) 281-7772
www.sspc.org
(412) 281-2331

STI Steel Tank Institute (847) 438-8265
www.steeltank.com

SWI Steel Window Institute (216) 241-7333
www.steelwindows.com

SWRI Sealant, Waterproofing, & Restoration Institute (816) 472-7974
www.swrionline.org

TCA Tile Council of America, Inc. (864) 646-8453
www.tileusa.com
TIA/EIA Telecommunications Industry Association/Electronic Industries
Alliance (703) 907-7700
www.tiaonline.org

TMS The Masonry Society (303) 939-9700
www.masonrysociety.org

TPI Truss Plate Institute, Inc. (703) 683-1010
www.tpinst.org

TPI Turfgrass Producers International (800) 405-8873
www.turfgrasssod.org
(847) 649-5555

TRI Tile Roofing Institute (312) 670-4177
www.tilerroofing.org

UL Underwriters Laboratories Inc. (877) 854-3577
www.ul.com
(847) 272-8800

UNI Uni-Bell PVC Pipe Association (972) 243-3902
www.uni-bell.org

UAV USA Volleyball (888) 786-5539
www.usavolleyball.org
(719) 228-6800

USGBC U.S. Green Building Council (202) 828-7422
www.usgbc.org

USITT United States Institute for Theatre Technology, Inc. (800) 938-7488
www.usitt.org
(315) 463-6463

WASTEC Waste Equipment Technology Association (800) 424-2869
www.wastec.org
(202) 244-4700

WCLIB West Coast Lumber Inspection Bureau (800) 283-1486
www.wclib.org
(503) 639-0651

WCMA Window Covering Manufacturers Association
(Now WCSC)
WCSC Window Covering Safety Council (800) 506-4636
(Formerly: WCMA - Window Covering Manufacturers
Association)
(212) 297-2109
www.windowcoverings.org

WDMA Window & Door Manufacturers Association (800) 223-2301
(Formerly: NWWDA - National Wood Window and Door
Association)
(847) 299-5200
www.wdma.com

WI Woodwork Institute (Formerly: WIC - Woodwork Institute of (916) 372-9943
California)
www.wicnet.org

WIC Woodwork Institute of California
(Now WI)
WMMPA Wood Moulding & Millwork Producers Association (800) 550-7889
www.wmmpa.com
(530) 661-9591

WSRCA Western States Roofing Contractors Association (800) 725-0333
www.wsrca.com
(650) 570-5441

WWPA Western Wood Products Association (503) 224-3930
www.wwpa.org

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

BOCA BOCA International, Inc.

(See ICC)

IAPMO International Association of Plumbing and Mechanical Officials (909)

472- 4100

www.iapmo.org

ICBO International Conference of Building Officials

(See ICC)

ICBO ES ICBO Evaluation Service, Inc.

(See ICC-ES)

ICC International Code Council (888) 422-7233

www.iccsafe.org

(703) 931-4533

ICC-ES ICC Evaluation Service, Inc. (800) 423- 6587

www.icc-es.org

(562) 699-0543

SBCCI Southern Building Code Congress International, Inc.

(See ICC)

UBC Uniform Building Code

(See ICC)

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

CE Army Corps of Engineers

www.usace.army.mil

CPSC Consumer Product Safety Commission (301) 504-7923

www.cpsc.gov

DOC Department of Commerce (202) 482-2000

www.commerce.gov

DOD Department of Defense (215) 697-6257

<http://dodssp.daps.dla.mil>

DOE Department of Energy (202) 586-9220

www.energy.gov

EPA Environmental Protection Agency (202) 272-0167

www.epa.gov

FAA Federal Aviation Administration (866) 835-5322

www.faa.gov

FCC Federal Communications Commission (888) 225-5322
www.fcc.gov

FDA Food and Drug Administration (888) 463-6332
www.fda.gov

GSA General Services Administration (800) 488-3111
www.gsa.gov

HUD Department of Housing and Urban Development (202) 708-1112
www.hud.gov

LBL Lawrence Berkeley National Laboratory (510) 486-4000
www.lbl.gov

NCHRP National Cooperative Highway Research Program
(See TRB)
NIST National Institute of Standards and Technology (301) 975-6478
www.nist.gov

OSHA Occupational Safety & Health Administration (800) 321-6742
www.osha.gov
(202) 693-1999

PBS Public Building Service
(See GSA)

PHS Office of Public Health and Science (202) 690-7694
www.osophs.dhhs.gov/ophs

RUS Rural Utilities Service (202) 720-9540
(See USDA)

SD State Department (202) 647-4000
www.state.gov

TRB Transportation Research Board (202) 334-2934
<http://gulliver.trb.org>

USDA Department of Agriculture (202) 720-2791
www.usda.gov

USPS Postal Service (202) 268-2000
www.usps.com

4. 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 sites 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) (800) 872-2253
Architectural Barriers Act (ABA) (202) 272-0080
Accessibility Guidelines for Buildings and Facilities
Available from Access Board
www.access-board.gov

CFR Code of Federal Regulations (866) 512-1800
Available from Government Printing Office (202) 512-1800
www.gpoaccess.gov/cfr/index.html

DOD Department of Defense Military Specifications and Standards
(215) 697-2664
Available from Department of Defense Single Stock Point
<http://dodssp.daps.dla.mil>

DSCC Defense Supply Center Columbus
(See FS)

FED-STD Federal Standard
(See FS)

FS Federal Specification (215) 697-2664
Available from Department of Defense Single Stock Point
<http://dodssp.daps.dla.mil>

Available from Defense Standardization Program
www.dps.dla.mil

Available from General Services Administration (202) 619-8925
www.gsa.gov

Available from National Institute of Building Sciences (202) 289-7800
www.wbdg.org/ccb

FTMS Federal Test Method Standard (See FS)
MIL (See MILSPEC)
MIL-STD (See MILSPEC)
MILSPEC Military Specification and Standards (215) 697-2664
Available from Department of Defense Single Stock Point
<http://dodssp.daps.dla.mil>

UFAS Uniform Federal Accessibility Standards (800) 872-2253
Available from Access Board (202) 272-0080
www.access-board.gov

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

CBHF State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation
(800) 952-5210
www.dca.ca.gov/bhfti
(916) 574-2041

CCR California Code of Regulations (916) 323-6815
www.calregs.com

CPUC California Public Utilities Commission (415) 703-2782
www.cpuc.ca.gov

TFS Texas Forest Service (979) 458-6650
Forest Resource Development
<http://txforestservation.tamu.edu>

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01320a

SECTION 01320b

CUTTING AND PATCHING

1.1 GENERAL

A. Description Of Work

1. This specification covers the furnishing and installation of materials for cutting and patching. Products shall be as follows or as directed by the Owner. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

B. Summary

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

C. Definitions

1. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
2. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

D. Submittals

1. 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:
 - a. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - b. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - c. Products: List products to be used and firms or entities that will perform the Work.
 - d. Dates: Indicate when cutting and patching will be performed.
 - e. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
 - f. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 - g. the Owner'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.

E. Quality Assurance

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

2. **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. Operating elements include the following:
 - a. Primary operational systems and equipment.
 - b. Air or smoke barriers.
 - c. Fire-suppression systems.
 - d. Mechanical systems piping and ducts.
 - e. Control systems.
 - f. Communication systems.
 - g. Conveying systems.
 - h. Electrical wiring systems.
 - i. Operating systems of special construction in Division 13.

4. **Miscellaneous Elements:** Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Equipment supports.
 - e. Piping, ductwork, vessels, and equipment.
 - f. Noise- and vibration-control elements and systems.

5. **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.

6. **Cutting and Patching Conference:** 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.

F. Warranty

1. **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.

1.2 PRODUCTS

A. Materials

1. **General:** Comply with requirements specified in other Sections.

2. **In-Place Materials:** Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

- a. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

1.3 EXECUTION

A. Preparation

1. Temporary Support: Provide temporary support of Work to be cut.
2. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
3. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
4. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize OR prevent, as directed, interruption to occupied areas.

B. Performance

1. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - a. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
2. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - a. 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.
 - b. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - c. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - d. Excavating and Backfilling: Comply with requirements in applicable Division 02 where required by cutting and patching operations.
 - e. 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.
 - f. Proceed with patching after construction operations requiring cutting are complete.
3. 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.

- a. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - b. 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.
 - 1) Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - 2) Restore damaged pipe covering to its original condition.
 - c. 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 in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 1) 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.
 - d. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - e. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
4. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01320b

SECTION 01510

CONSTRUCTION WASTE MANAGEMENT

1.1 GENERAL

A. Summary

1. This Section includes administrative and procedural requirements for the following:
 - a. Salvaging nonhazardous demolition and construction waste.
 - b. Recycling nonhazardous demolition and construction waste.
 - c. Disposing of nonhazardous demolition and construction waste.

B. Definitions

1. **Construction Waste:** Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
2. **Demolition Waste:** Building and site improvement materials resulting from demolition or selective demolition operations.
3. **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.
4. **Recycle:** Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
5. **Salvage:** Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
6. **Salvage and Reuse:** Recovery of demolition or construction waste and subsequent incorporation into the Work.

C. Performance Goals or Requirements:

1. **General:** Develop waste management plan that results in end-of-Project rates for salvage/recycling of 75, percent by weight of total waste generated by the Work.
2. **Salvage/Recycle Goals OR Requirements, as directed:** Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible including the following materials: **OR Salvage/Recycle Goals OR Requirements, as directed:** Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible. Owner has established minimum goals for the following materials:
 - a. **Demolition Waste:**
 - 1) Asphaltic concrete paving.
 - 2) Concrete.
 - 3) Concrete reinforcing steel.
 - 4) Brick.
 - 5) Concrete masonry units.
 - 6) Wood studs.
 - 7) Wood joists.

- 8) Plywood and oriented strand board.
 - 9) Wood paneling.
 - 10) Wood trim.
 - 11) Structural and miscellaneous steel.
 - 12) Rough hardware.
 - 13) Roofing.
 - 14) Insulation.
 - 15) Doors and frames.
 - 16) Door hardware.
 - 17) Windows.
 - 18) Glazing.
 - 19) Metal studs.
 - 20) Gypsum board.
 - 21) Acoustical tile and panels.
 - 22) Carpet.
 - 23) Carpet pad.
 - 24) Demountable partitions.
 - 25) Equipment.
 - 26) Cabinets.
 - 27) Plumbing fixtures.
 - 28) Piping.
 - 29) Supports and hangers.
 - 30) Valves.
 - 31) Sprinklers.
 - 32) Mechanical equipment.
 - 33) Refrigerants.
 - 34) Electrical conduit.
 - 35) Copper wiring.
 - 36) Lighting fixtures.
 - 37) Lamps.
 - 38) Ballasts.
 - 39) Electrical devices.
 - 40) Switchgear and panelboards.
 - 41) Transformers.
- b. Construction Waste:
- 1) Site-clearing waste.
 - 2) Masonry and CMU.
 - 3) Lumber.
 - 4) Wood sheet materials.
 - 5) Wood trim.
 - 6) Metals.
 - 7) Roofing.
 - 8) Insulation.
 - 9) Carpet and pad.
 - 10) Gypsum board.
 - 11) Piping.
 - 12) Electrical conduit.
 - 13) Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - a) Paper.
 - b) Cardboard.
 - c) Boxes.
 - d) Plastic sheet and film.
 - e) Polystyrene packaging.
 - f) Wood crates.

g) Plastic pails.

D. Submittals

1. Waste Management Plan: Submit 3 copies of plan within 7 days of date established for commencement of the Work.
2. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include separate reports for demolition and construction waste. Include the following information:
 - a. Material category.
 - b. Generation point of waste.
 - c. Total quantity of waste in tons (tonnes).
 - d. Quantity of waste salvaged, both estimated and actual in tons (tonnes).
 - e. Quantity of waste recycled, both estimated and actual in tons (tonnes).
 - f. Total quantity of waste recovered (salvaged plus recycled) in tons (tonnes).
 - g. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
3. Waste Reduction Calculations: Before request for Substantial Completion, submit three copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
4. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
5. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
6. 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.
7. 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.
8. Qualification Data: For Waste Management Coordinator and refrigerant recovery technician.
9. 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.

E. Quality Assurance

1. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
2. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

3. Waste Management Conference: Conduct conference at Project site. Review methods and procedures related to waste management including, but not limited to, the following:
 - a. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - b. Review requirements for documenting quantities of each type of waste and its disposition.
 - c. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - d. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - e. Review waste management requirements for each trade.

F. Waste Management Plan

1. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Include separate sections in plan for demolition and construction waste if Project requires selective demolition or building demolition. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
2. 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.
3. 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.
 - a. 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.
 - b. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - c. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - d. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - e. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - f. 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.
4. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:
 - a. Total quantity of waste.
 - b. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
 - c. Total cost of disposal (with no waste management).

- d. Revenue from salvaged materials.
- e. Revenue from recycled materials.
- f. Savings in hauling and tipping fees by donating materials.
- g. Savings in hauling and tipping fees that are avoided.
- h. Handling and transportation costs. Include cost of collection containers for each type of waste.
- i. Net additional cost or net savings from waste management plan.

1.2 PRODUCTS (Not Used)

1.3 EXECUTION

A. Plan Implementation

1. General: Implement waste management plan as approved by the Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - a. Comply with Division 01 Section "Temporary Facilities And Controls" for operation, termination, and removal requirements.
2. Waste Management Coordinator: Engage 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.
3. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - a. Distribute waste management plan to everyone concerned within three days of submittal return.
 - b. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
4. 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.
 - a. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - b. Comply with Division 01 Section "Temporary Facilities And Controls" for controlling dust and dirt, environmental protection, and noise control.

B. Salvaging Demolition Waste

1. Salvaged Items for Reuse in the Work:
 - a. Clean salvaged items.
 - b. Pack or crate items after cleaning. Identify contents of containers.
 - c. Store items in a secure area until installation.
 - d. Protect items from damage during transport and storage.
 - e. 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.

2. Salvaged Items for Sale and Donation: Permitted as directed, on Project site.
3. Salvaged Items for Owner's Use:
 - a. Clean salvaged items.
 - b. Pack or crate items after cleaning. Identify contents of containers.
 - c. Store items in a secure area until delivery to Owner.
 - d. Transport items to off-site as designated by the Owner.
 - e. Protect items from damage during transport and storage.
4. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.

C. Recycling Demolition And Construction Waste, General

1. General: Recycle paper and beverage containers used by on-site workers.
2. Recycling Receivers and Processors: List below is provided for information only; available recycling receivers and processors include, but are not limited to, the following:
 - a. **<Insert names and telephone numbers of local recycling receivers and processors of recyclable materials.>**
3. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Owner.
4. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separately cyclable waste by type at Project site to the maximum extent practical.
 - a. 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.
 - 1) Inspect containers and bins for contamination and remove contaminated materials if found.
 - b. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - c. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - d. Store components off the ground and protect from the weather.
 - e. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

D. Recycling Demolition Waste

1. Asphaltic Concrete Paving: Grind asphalt to maximum 1-1/2-inch (38-mm) **OR** 4-inch (100-mm), **as directed**, size.
 - a. Crush asphaltic concrete paving and screen to comply with requirements in Division 02 Section "Earthwork" for use as general fill.
2. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

3. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 - a. Pulverize concrete to maximum 1-1/2-inch (38-mm) **OR** 4-inch (100-mm), **as directed**,
 - b. Crush concrete and screen to comply with requirements in Division 02 Section "Earthwork" for use as satisfactory soil for fill or subbase.
4. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 - a. Pulverize masonry to an as directed, size.
 - 1) Crush masonry and screen to comply with requirements in Division 02 Section "Earthwork" for use as general fill **OR** satisfactory soil for fill or subbase, **as directed**.
 - 2) Crush masonry and screen to comply with requirements in Division 02 Section "Exterior Plants" for use as mineral mulch.
 - b. Clean and stack undamaged, whole masonry units on wood pallets.
5. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
6. Metals: Separate metals by type.
 - a. Structural Steel: Stack members according to size, type of member, and length.
 - b. Remove and dispose of bolts, nuts, washers, and other rough hardware.
7. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories
8. 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.
9. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
 - a. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.
10. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
 - a. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
11. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
12. Plumbing Fixtures: Separate by type and size.
13. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
14. Lighting Fixtures: Separate lamps by type and protect from breakage.
15. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

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

E. Recycling Construction Waste

1. Packaging:
 - a. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - b. Polystyrene Packaging: Separate and bag materials.
 - c. 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.
 - d. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
2. Site-Clearing Wastes: Chip brush, branches, and trees on-site **OR** at landfill facility, **as directed**.
 - a. Comply with requirements in Division 02 Section "Exterior Plants" for use of chipped organic waste as organic mulch.
3. Wood Materials:
 - a. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - b. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
4. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
 - a. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.
 - 1) Comply with requirements in Division 02 Section "Exterior Plants" for use of clean ground gypsum board as inorganic soil amendment.

F. Disposal of Waste

1. 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.
 - a. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - b. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
2. Burning: Do not burn waste materials.
3. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01510

SECTION 01520

TEMPORARY FACILITIES AND CONTROLS

1.1 GENERAL

A. Summary

1. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Definitions

1. Permanent Enclosure: As determined by the Owner, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

C. Use Charges

1. General: Cost or use charges for temporary facilities 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, the Owner, occupants of Project, testing agencies, and authorities having jurisdiction.
2. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
3. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

D. Submittals

1. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

E. Quality Assurance

1. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
2. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

F. Project Conditions

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.

1.2 PRODUCTS

A. Materials

1. Pavement: Comply with Division 02 Section(s) "Asphalt Paving" OR "Cement Concrete Pavement", **as directed**.
2. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails **OR** with galvanized barbed-wire top strand, **as directed**.
3. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch-(60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-
4. Wood Enclosure Fence: Plywood, 6 feet (1.8 m) **OR** 8 feet (2.4 m), **as directed**, high, framed with four 2-by-4-inch (50-by-100-mm) rails, with preservative-treated wood posts spaced not more than 8 feet (2.4 m) apart.
5. Lumber and Plywood: Comply with requirements in Division 06 Section(s) "Rough Carpentry" OR "Miscellaneous Carpentry", **as directed**.
6. Gypsum Board: Minimum 1/2 inch (12.7 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.
7. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
8. Paint: Comply with requirements in Division 09.

B. Temporary Facilities

1. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
2. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as follows:
 - a. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
 - b. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- (1.2-m-) square tack board.
 - c. Drinking water and private toilet.
 - d. Coffee machine and supplies.
 - e. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F (20 to 22 deg C).
 - f. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.

3. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - a. Store combustible materials apart from building.

C. Equipment

1. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
2. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - a. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - b. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 - c. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

1.3 EXECUTION

A. Installation, General

1. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - a. For greenfield sites if reduced site disturbance is required for LEED-NC Credit SS 5.1: Locate facilities to limit site disturbance as specified in General Requirements.
2. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

B. Temporary Utility Installation

1. General: Install temporary service or connect to existing service.
 - a. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
2. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - a. Connect temporary sewers to municipal system **OR** private system indicated, **as directed**, as directed by authorities having jurisdiction.
3. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction. **OR** Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - a. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

4. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - a. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

5. Heating **OR** Heating and Cooling, **as directed**: Provide temporary heating **OR** heating and cooling, **as directed**, 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 that will not have a harmful effect on completed installations or elements being installed.

6. 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 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.

7. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner. **OR** Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - a. Install electric power service overhead **OR** underground, **as directed**, unless otherwise indicated.
 - b. Connect temporary service to Owner's existing power source, as directed by Owner.

8. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - a. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 - b. Install lighting for Project identification sign.

9. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line for each field office.
 - a. Provide additional telephone lines for the following:
 - 1) Provide a dedicated telephone line for each facsimile machine and computer in each field office.
 - b. At each telephone, post a list of important telephone numbers.
 - 1) Police and fire departments.
 - 2) Ambulance service.
 - 3) Contractor's home office.
 - 4) the Owner's office.
 - 5) Owner's office.
 - 6) Principal subcontractors' field and home offices.
 - c. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

10. Electronic Communication Service: Provide temporary electronic communication service, including electronic mail, in common-use facilities.
 - a. Provide DSL **OR** T-1 line, **as directed**, in primary field office.

C. Support Facilities Installation

1. General: Comply with the following:
 - a. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines. Comply with NFPA 241.
 - b. 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.
2. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated **OR** within construction limits indicated, **as directed**, on Drawings.
 - a. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

OR

3. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas in same location as permanent roads and paved areas. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
 - a. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 - b. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 02 Section "Earthwork".
 - c. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
 - d. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 02 Section "Asphalt Paving".
4. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - a. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - b. Maintain access for fire-fighting equipment and access to fire hydrants.
5. Parking: Provide temporary **OR** Use designated areas of Owner's existing, **as directed**, parking areas for construction personnel.
6. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - a. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 - b. Remove snow and ice as required to minimize accumulations.

7. Project Identification and Temporary Signs: Provide Project identification and other signs as indicated on Drawings, **OR as directed**. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 - b. Maintain and touchup signs so they are legible at all times.
 8. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with General Requirements for progress cleaning requirements.
 9. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - a. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
 10. Temporary Elevator Use: Refer to Division 14 for temporary use of new elevators.
 11. Existing Elevator Use: Use of Owner's existing elevators will be permitted, as long as elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
 - a. Do not load elevators beyond their rated weight capacity.
 - b. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
 12. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
 13. Existing Stair Usage: Use of Owner's existing stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - a. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.
 14. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.
- D. Security And Protection Facilities Installation
1. 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.

2. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
 - a. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
4. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
5. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
6. Site Enclosure Fence: Before construction operations begin **OR** When excavation begins, **as directed**, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - a. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations **OR** As indicated on Drawings, **as directed**.
 - b. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with one set of keys, **as directed**.
7. 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.
8. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
9. Covered Walkway: Erect structurally adequate, protective, covered walkway for passage of individuals along adjacent public street(s). Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings, **OR as directed**.
 - a. Construct covered walkways using scaffold or shoring framing.
 - b. Provide wood-plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
 - c. Extend back wall beyond the structure to complete enclosure fence.
 - d. Paint and maintain in a manner approved by Owner and the Owner.
10. 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.

a. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

11. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.

a. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.

b. If containment of airborne particles and dust generated by construction activities is critical to occupants of other spaces in building, e.g., occupied healthcare facilities: Construct dustproof partitions with 2 layers of 3-mil (0.07-mm) polyethylene sheet on each side. Cover floor with 2 layers of 3-mil (0.07-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.

1) Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.

c. Insulate partitions to provide noise protection to occupied areas.

d. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.

e. Protect air-handling equipment.

f. Weather strip openings.

g. Provide walk-off mats at each entrance through temporary partition.

12. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

a. Prohibit smoking in hazardous fire-exposure **OR** construction, **as directed**, areas.

b. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

c. Develop and supervise an overall fire-prevention and -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.

d. Provide temporary standpipes and hoses for fire protection. 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.

E. Operation, Termination, And Removal

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

2. Maintenance: Maintain facilities in good operating condition until removal.

a. 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.

3. Operate Project-identification-sign lighting daily from dusk until 12:00 midnight.

4. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
5. 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.
 - a. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - b. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - c. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in General Requirements

END OF SECTION 01520

SECTION 01710
SELECTIVE DEMOLITION

1.1 GENERAL

A. Description of Work

1. This specification covers the furnishing and installation of materials for selective demolition. Products shall be as follows or as directed by the Owner. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

B. Summary

1. This Section includes the following:
 - a. Demolition and removal of selected portions of building or structure.
 - b. Demolition and removal of selected site elements.
 - c. Salvage of existing items to be reused or recycled.

C. Definitions

1. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
2. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse, **as directed**.
3. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
4. 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.

D. Materials Ownership

1. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.
 - a. Coordinate with Owner's archaeologist or historical adviser, as directed, who will establish special procedures for removal and salvage.

E. Submittals

1. Qualification Data: For demolition firm, professional engineer, refrigerant recovery technician, as directed.
2. Schedule of Selective Demolition Activities: Indicate the following:

- a. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
 - b. Interruption of utility services. Indicate how long utility services will be interrupted.
 - c. Coordination for shutoff, capping, and continuation of utility services.
 - d. Use of elevator and stairs.
 - e. Locations of proposed dust- and noise-control temporary partitions and means of egress, including for other tenants affected by selective demolition operations.
 - f. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
 - g. Means of protection for items to remain and items in path of waste removal from building.
3. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
 4. Predemolition Photographs or Videotapes: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.
 5. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
 - a. Comply with submittal requirements in Division 01 Section "Construction Waste Management".

F. Quality Assurance

1. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
2. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
3. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
4. Standards: Comply with ANSI A10.6 and NFPA 241.
5. Predemolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:
 - a. Inspect and discuss condition of construction to be selectively demolished.
 - b. Review structural load limitations of existing structure.
 - c. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - d. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - e. Review areas where existing construction is to remain and requires protection.

G. Project Conditions

1. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
2. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - a. Before selective demolition, Owner will remove the following items:
 - 1) <Insert items to be removed by Owner.>
3. Notify the Owner of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
4. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - a. Hazardous materials will be removed by Owner before start of the Work or have been removed by Owner under a separate contract, as directed.
 - b. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the Owner and Owner. Owner will remove hazardous materials under a separate contract.
5. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.
 - a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the Owner and Owner. Owner will remove hazardous materials under a separate contract.
6. Hazardous Materials (if asbestos abatement is part of Work of this Contract): 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.
 - a. Hazardous material remediation is specified elsewhere in the Contract Documents.
 - b. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
7. Storage or sale of removed items or materials on-site is not permitted.
8. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - a. Maintain fire-protection facilities in service during selective demolition operations.

H. Warranty

1. 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.

1.2 PRODUCTS (Not Used)

1.3 EXECUTION

A. Utility Services and Mechanical/Electrical Systems

1. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
2. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - a. the Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - b. Arrange to shut off indicated utilities with utility companies.
 - c. 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.
 - d. 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.
 - 1) Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

B. Preparation

1. 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.
2. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - a. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - b. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - c. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - d. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - e. Comply with requirements for temporary enclosures, dust control, heating, and cooling.
3. 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.
 - a. Strengthen or add new supports when required during progress of selective demolition.

C. Selective Demolition, General

1. 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:
 - a. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

- b. 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.
 - c. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - d. 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.
 - e. Maintain adequate ventilation when using cutting torches.
 - f. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - g. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - h. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - i. Dispose of demolished items and materials promptly. Comply with requirements in Division 01 Section "Construction Waste Management".
2. Reuse of Building Elements: Project has been designed to result in end-of-Project rates for reuse of building elements as follows. Do not demolish building elements beyond what is indicated on Drawings without the Owner's approval.
- a. Building Structure and Shell: 75 **OR** 100, **as directed**, percent.
 - b. Nonshell Elements: 50 percent.
3. Removed and Salvaged Items:
- a. Clean salvaged items.
 - b. Pack or crate items after cleaning. Identify contents of containers.
 - c. Store items in a secure area until delivery to Owner.
 - d. Transport items to Owner's storage area on-site **OR** off-site **OR** designated by Owner **OR** indicated on Drawings, **as directed**.
 - e. Protect items from damage during transport and storage.
4. Removed and Reinstalled Items:
- a. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 - b. Pack or crate items after cleaning and repairing. Identify contents of containers.
 - c. Protect items from damage during transport and storage.
 - d. 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.
5. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Owner, items may be removed to a suitable, protected storage location during selective demolition and cleaned, **as directed**, and reinstalled in their original locations after selective demolition operations are complete.

D. Selective Demolition Procedures For Specific Materials

1. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated. **OR** Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
2. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
3. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.
4. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.
 - a. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
5. Roofing: Remove no more existing roofing than can be covered in one day by new roofing and so that building interior remains watertight and weathertight. Refer to Division 07 for new roofing requirements.
 - a. Remove existing roof membrane, flashings, copings, and roof accessories.
 - b. Remove existing roofing system down to substrate.
6. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

E. Disposal of Demolished Materials

1. General: Except for items or materials indicated to be recycled, **as directed**, 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.
 - a. Do not allow demolished materials to accumulate on-site.
 - b. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - c. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - d. Comply with requirements specified in Division 01 Section "Construction Waste Management".
2. Burning: Do not burn demolished materials.
3. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

F. Cleaning

1. 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.

G. Selective Demolition Schedule

1. Existing Items **OR** Construction, **as directed**, to Be Removed: **<Information will be provided by Owner.>**
2. Existing Items to Be Removed and Salvaged: **<Information will be provided by Owner.>**
3. Existing Items to Be Removed and Reinstalled: **<Information will be provided by Owner.>**
4. Existing Items to Remain: **<Information will be provided by Owner.>**

END OF SECTION 01710

DIVISION 2
Site Construction

SECTION 02111

DEMOLITION

1.1 GENERAL

A. Description of Work

1. This specification covers the furnishing and installation of materials for building demolition. Products shall be as follows or as directed by the Owner. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

B. Hazardous Materials: Hazardous material remediation is specified elsewhere in the Contract Documents.

B. Summary

1. This Section includes the following:
 - a. Demolition and removal of interior partitions, ceiling tiles, flooring material, doors, door frames, light fixtures, certain millwork and related items as indicated on the drawings.
 - b. Removal and disposal of hazardous materials
 - b. Disconnecting, capping or sealing, and abandoning in-place or removing, site utilities.
 - d. Salvaging items for reuse by Owner.

C. Definitions

1. Demolish: Completely remove and legally dispose of off-site.
2. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.
3. Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse. Include fasteners or brackets needed for reattachment elsewhere.

D. Materials Ownership

1. Unless otherwise indicated, demolition waste becomes property of Contractor.
2. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - a. Carefully salvage in a manner to prevent damage and promptly return to Owner.

E. Submittals

1. Qualification Data: For refrigerant recovery technician.
2. Schedule of Building Demolition Activities: Indicate the following:

- a. Detailed sequence of demolition work, with starting and ending dates for each activity.
 - b. Temporary interruption of utility services.
 - c. Shutoff and capping or re-routing of utility services.
3. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
 4. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

F. Quality Assurance

1. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
2. Standards: Comply with ANSI A10.6 and NFPA 241.
3. Predemolition Conference: Conduct conference at Project site to review methods and procedures related to building demolition including, but not limited to, the following:
 - a. Inspect and discuss condition of construction to be demolished.
 - b. Review structural load limitations of existing structures.
 - c. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - d. Review and finalize protection requirements.
 - e. Review procedures for noise control and dust control.
 - f. Review items to be salvaged and returned to Owner.

G. Project Conditions

1. Building will be vacated and its use discontinued before start of the Work.
2. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.
 - a. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
 - b. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - 1) Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
3. Owner assumes no responsibility for buildings and structures to be demolished.
 - a. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - b. Before demolition, Owner will remove certain items, as directed by the Owner.
4. Hazardous Materials: Hazardous materials may be present in buildings and material to be 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 may be present.

- a. Remove hazardous materials under procedures specified elsewhere in the Contract Documents.
 - b. Contractor will provide material safety data sheets for materials that are known to be present in buildings and structures to be demolished because of building operations or processes performed there.
5. On-site storage or sale of removed items or materials is not permitted.

H. Coordination

1. Arrange demolition schedule so as not to interfere with Owner's on-site operations or operations of adjacent occupied buildings, as directed.

1.2 PRODUCTS

A. No Products Used

1.3 EXECUTION

A. Examination

1. Verify that utilities have been disconnected and capped before starting demolition operations.
2. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
3. Inventory and record the condition of items to be removed and salvaged. Provide photographs as directed, of conditions that might be misconstrued as damage caused by salvage operations.
4. Perform or engage a professional engineer to perform, as directed, an engineering survey of 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 building demolition operations.
5. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

B. Preparation

1. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.
2. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
 - a. Arrange to shut off indicated utilities with utility companies, as directed.
 - b. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.

- c. Cut off pipe or conduit a minimum of 24 inches (610 mm) below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.

3. Salvaged Items: Comply with the following:
 - a. Clean salvaged items of dirt and demolition debris.
 - b. Pack or crate items after cleaning. Identify contents of containers.
 - c. Store items in a secure area until delivery to Owner.
 - d. Transport items to storage area designated by Owner.
 - e. Protect items from damage during transport and storage.

C. Protection

1. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.
2. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.
 - a. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
 - b. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
 - 1) Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.
3. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction, and as indicated. Comply with requirements in Division 01 Section "Temporary Facilities And Controls".
 - a. Protect adjacent buildings and facilities from damage due to demolition activities.
 - b. Protect existing site improvements, appurtenances, and landscaping to remain.
 - c. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 - d. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - e. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 - f. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 - g. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.
4. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

D. Demolition, General

1. Cutting torches:
 - a. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.

- b. Maintain fire watch during and for at least <Insert number> hours after flame cutting operations.
 - c. Maintain adequate ventilation when using cutting torches.
 - d. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 2. Engineering Surveys: During demolition, perform surveys to detect hazards that may result from building demolition activities.
 - 3. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - a. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
 - b. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- E. Demolition by Mechanical Means
 - 1. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - a. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.
- F. Demolition By Explosives: Use of explosives is not permitted
- G. Site Restoration
 - 1. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials.
 - 2. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.
- H. Repairs
 - 1. Promptly repair damage to adjacent buildings caused by demolition operations.
- I. Disposal of Demolished Materials
 - 1. Remove demolition waste materials from Project site and legally dispose of them in an EPA approved landfill acceptable to authorities having jurisdiction.
 - a. Do not allow demolished materials to accumulate on-site.
 - b. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 2. Do not burn demolished materials.

J. Cleaning

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

END OF SECTION 02111

DIVISION 3

Concrete

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SCOPE

A. General

1. Contractor shall furnish all labor, materials, equipment and incidentals needed to provide form work, reinforcement, concrete including all concrete joints, grout and incidentals required to complete the Work as shown and specified.
2. The Work includes providing concrete consisting of portland cement, fine and coarse aggregate, water, and approved admixtures combined, mixed, transported, placed, finished and cured. The Work also includes:
 - a. Providing openings in concrete to accommodate the Work under this and other Sections and building into the concrete all items such as sleeves, frames, anchor bolts, inserts and all other items to be embedded.

B. Coordination:

1. Review installation procedures under other Sections and coordinate the installation of items that must be installed in the concrete as a prime responsibility of the Contractor.
2. Notify other contractors in advance of the placing of concrete to provide the other contractors with sufficient time for furnishing of items included in their contracts that must be installed in the concrete.
3. Required City formal pour card with all required signatures.

C. Classes of Concrete:

1. Class "B" concrete 3,000 psi compressive strength at 28 days shall be steel reinforced and includes the following:
 - a. Slab on grade.

1.2 SUBMITTALS

A. Shop Drawings: Submit for approval the following:

1. List of concrete materials and concrete mix designs proposed for use. Include the results of all tests performed to qualify the materials and to establish the mix designs.
2. Copies of manufacturer's specifications with application and installation instructions for proprietary materials and items, including admixtures and bonding agents.

1.3 QUALITY ASSURANCE

- ###### A. Reference Standards: Comply with the applicable provisions and recommendations of the latest edition following, except as otherwise shown or specified.

1. ACI 301-81, Specification for Structural Concrete for Buildings, (includes ASTM Standards referred to herein).
2. ACI 304-83, Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
3. ACI 318-89, Building Code Requirements for Reinforced Concrete.
4. ACI 347-78, Recommended Practice for Concrete Formwork.
5. ASTM C94-86a, Standard Specification for Ready-Mixed Concrete.
6. ASTM C143-78, Standard Test Method for Slump of Portland Cement Concrete.
7. ASTM C172-82, Standard Method of Sampling Freshly Mixed Concrete.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. All materials used for concrete must be kept clean and free from all foreign matter during transportation and handling and kept separate until measured and placed in the mixer. Bins or platforms having hard clean surfaces shall be provided for storage. Suitable means shall be taken during hauling, piling and handling to insure that segregation of the coarse and fine aggregate particles does not occur and the grading is not affected.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

A. Cement:

1. Portland cement, ASTM C 150, Type II.
2. Use portland cement made by a qualified, acceptable manufacturer and produced by not more than one plant.

B. Aggregates: ASTM C 33 and as herein specified.

1. Do not use aggregates containing soluble salts or other substances such as iron sulfides, pyrite, marcasite, ochre, or other materials that can cause stains on exposed concrete surfaces. Slag materials are not allowed.
2. Fine Aggregate: Clean, sharp, natural sand free from loam, clay, lumps or other deleterious substances.
 - a. Dune sand, bank run sand and manufactured sand are not acceptable.
3. Coarse Aggregate: Clean granitic, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter as follows:
 - a. Crushed stone, processed from natural rock or stone.
 - b. Coarse Aggregate Size: Size to be ASTM C 33, Nos. 57 or 67, except that No. 467 may be used for footings, foundation mats and walls 16 inches or greater in thickness.

- C. Water: Clean, free from injurious amounts of oils, acids, alkalis, organic materials or other substances that may be deleterious to concrete or steel.

2.2 CONCRETE ADMIXTURES

- A. Provide admixtures produced by established reputable manufacturers, and use in compliance with the manufacturer's printed instruction. Do not use admixtures, which have not been incorporated and tested in the accepted mixes, unless otherwise authorized in writing by the Engineer.
- B. Air-Entraining Admixtures: ASTM C 260.

1. Product and Manufacturer: Provide one of the following:
 - a. MB-VR as manufactured by Master Builders Company.
 - b. Sika AER as manufactured by Sika Chemical corporation.
 - c. Air Entraining Agent as manufactured by W. R. Meadows.
 - d. Or equal.
2. Air entrainment required for all concrete used on this project.

C. Water-Reducing Admixture: ASTM C 494, Type A.

1. Proportion all concrete with non-air entraining, normal setting, water-reducing, aqueous solution of a modification of the salt of polyhydroxylated organic acids. The admixture shall not contain more chloride ions than are contained in municipal drinking water. Provide one of the following:
 - a. WRDA-86 as manufactured by Grace Construction Products.
 - b. Pozzoloth by Master Builders Company.
 - c. Plastocrete 161 as manufactured by Sika Chemical corporation
 - d. Approved Equal.
2. Water-reducing admixture required for all type A and B concrete unless directed otherwise by the Engineer.

D. Calcium Chloride: Do not use calcium chloride in concrete.

2.3 PROPORTIONING AND DESIGN OF MIXES

A. Prepare design mixes of concrete. Use the same design mix for both classes of concrete. Mixes subject to the following limitations:

1. Specified 28-day Compressive Strength:
 - a. Class A - 4,000 psi.
 - b. Class B - 3,000 psi.
2. Maximum Water-Cement Ratio by Weight: .45.

Coarse Aggregate Number	Minimum Cement Content, Pounds Per Cubic Yard	Percent Air Content
57,67	564	6 + 1%
467	517	5 1/2 ± 1%

- B. Use an independent testing facility approved by the Engineer for preparing and reporting proposed mix designs.
 1. The testing facility shall not be the same as used for field quality control testing.
 2. Calibration charts on the lab equipment must be submitted.
- C. Proportion mixes by either laboratory trial batch or field experience methods, using materials to be employed on the Project for concrete required. Comply with ACI 211.1 and report to the Engineer the following data:
 1. Complete identification of aggregate source of supply.

2. Tests of aggregates for compliance with specified requirements.
 3. Scale weight of each aggregate.
 4. Absorbed water in each aggregate.
 5. Brand, type and composition of cement.
 6. Brand, type and amount of each admixture.
 7. Amounts of water used in trial mixes.
 8. Proportions of each material per cubic yard.
 9. Gross weight and yield per cubic yard of trial mixtures.
 10. Measured slump.
 11. Measured air content.
- D. Submit written reports to the Engineer of proposed mix of concrete at least 15 days prior to start of Work. Do not begin concrete production until mixes have been approved by the Engineer.
- E. Field Experience Method: When field experience methods are used to select concrete proportions, establish proportions as specified in ACI 301, Chapter 3, Method 2.
- F. Water-Cement Ratio Methods: If suitable data from field experience or laboratory trial batches cannot be obtained, concrete proportions may be established as specified in ACI 301, Chapter 3, Method 3.
- G. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to the City and as accepted by Engineer. Laboratory test data for revised mix designs and strength results must be submitted to the Engineer for acceptance before using the revised mixes.
- H. Admixtures:
1. Use air-entraining and water reducer admixtures in all concrete. Add air-entraining admixture at the manufacturer's prescribed rate to result in concrete at the point of placement having air content within the prescribed limits.
 2. Use amounts of admixtures as recommended by the manufacturer for climatic conditions prevailing at the time of placing. Adjust quantities and types of admixtures as required to maintain quality control.
- J. Slump Limits:
1. Proportion and design mixes to result in concrete slump at the point of placement as follows:
 - a. For slabs on grade, elevated concrete floor, beams, walls and columns, not less than 1 inch and not more than 4 inches.

2.4 CONCRETE CURING MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 10 ounces per square yard and complying with AASHTO M 182, Class 3.
- B. Moisture-Retaining Cover: One of the following, complying with ASTM C 171:

1. Waterproof paper.
 2. 4 mil polyethylene.
- C. Curing and Sealing Compound: ASTM C-309:
1. Product and Manufacturer: Provide one of the following:
 - a. Res-X curing compound as manufactured by the Burke Company.
 - b. Masterkure as manufactured by Master Builders Company.
 - c. Concrete Curing Compounds as manufactured by W. R. Meadows, Inc.
 - d. Or equal.

PART 3 - EXECUTION

3.1 CONCRETE MIXING

A. General:

1. Concrete may be produced at batch plants or it may be produced by the ready-mixed process. Batch plants shall comply with the recommendations of ACI 304, and shall have sufficient capacity to produce concrete of the qualities specified, in quantities required to meet the construction schedule. All plant facilities are subject to testing laboratory inspection and acceptance of the Engineer.
2. Mixing:
 - a. Mix concrete with an approved rotating type batch machine, except where hand mixing of very small quantities may be permitted.
 - b. Remove hardened accumulations of cement and concrete frequently from drum and blades to assure acceptable mixing action.
 - c. Replace mixer blades when they have lost 10 percent of their original height.
 - d. Use quantities such that a whole number of bags of cement is required, unless otherwise permitted.

B. Ready-Mix Concrete:

1. Comply with the requirements of ASTM C 94, and as herein specified. Proposed changes in mixing procedures, other than herein specified, must be accepted by the Engineer before implementation.
 - a. Plant equipment and facilities: Conform to National Ready Mix Concrete Association "Plant and Delivery Equipment Specification".
 - b. Mix concrete in revolving type truck mixers which are in good condition and which produce thoroughly mixed concrete of the specified consistency and strength.
 - c. Do not exceed the proper capacity of the mixer.
 - d. Mix concrete for a minimum of two minutes after arrival at the job site, or as recommended by the mixer manufacturer.
 - e. Do not allow the drum to sit while in transit.
 - f. Mix at proper speed until concrete is discharged.
 - g. Maintain adequate facilities at the job site for continuous delivery of concrete at the required rates.
 - h. Provide access to the mixing plant for the Engineer at all times.

- C. Maintain equipment in proper operating condition, with drums cleaned before charging each batch. Schedule rates of delivery in order to prevent delay of placing the concrete after mixing, or holding dry-mixed materials too long in the mixer before the addition of water and admixtures.

3.2 TRANSPORTING CONCRETE

- A. Transport and place concrete not more than 60 minutes after water has been added to the dry ingredients.
- B. Take care to avoid spilling and separation of the mixture during transportation.
- C. Do not place concrete in which the ingredients have been separated.
- D. Do not retemper partially set concrete, and do not add any water at the jobsite.
- E. Use suitable and approved equipment for transporting concrete from mixer to forms.

3.3 CONCRETE PLACEMENT

- A. General: Place concrete continuously so that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. Where new concrete is placed next to existing, or a section cannot be placed continuously, provide construction joints as specified in Section 03250 of these Specifications. Apply approved epoxy bonding agent and waterstop as close as possible to time of actual concrete placement. Do not allow epoxy bonding agent to dry. Deposit concrete as nearly as practical in its final location to avoid segregation due to rehandling or flowing. Do not subject concrete to any procedure which will cause segregation.
 - 1. Screed concrete which is to receive other construction to the proper level to avoid excessive skimming or grouting.
 - 2. Do not use concrete which becomes non-plastic and unworkable, or does not meet the required quality control limits, or which has been contaminated by foreign materials. Do not use retempered concrete. Remove rejected concrete from the job site and dispose of it in an acceptable location.
 - 3. Do not place concrete until all forms, bracing, reinforcement, and embedded items are in final and secure position.
 - 4. Unless otherwise approved, place concrete only when Engineer is present.
- B. Concrete Conveying:
 - 1. Handle concrete from the point of delivery and transfer to the concrete conveying equipment and to the locations of final deposit as rapidly as practical by methods which will prevent segregation and loss of concrete mix materials.
 - 2. Provide mechanical equipment for conveying concrete to ensure a continuous flow of concrete at the delivery end. Provide runways for wheeled concrete conveying equipment from the concrete delivery point to the locations of final deposit. Keep interior surfaces of conveying equipment, including chutes, free of hardened concrete, debris, water, snow, ice and other deleterious materials.
 - 3. Do not use chutes for distributing concrete unless approved in writing by the Engineer.
 - a. Provide sketches showing methods by which chutes will be employed when requesting such approval.
 - b. Design chutes, if permitted, with proper slopes and supports to permit efficient handling of the concrete.
 - 4. Pumping of concrete is permitted however, do not use aluminum piping to convey the concrete.

C. Placing Concrete Slabs and Sidewalks:

1. Deposit and consolidate concrete slabs in a continuous operation, within the limits of expansion joints, until the placing of a panel or section is completed.
2. Consolidate concrete during placing operations using mechanical vibrating equipment, so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Bring slab surfaces to the correct level. Smooth the surface, leaving it free of humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations. Coordinate applying contraction joint, per Section 03250, with finishing operations.

E. Bonding for Next Concrete Pour: Comply with Division 03250 and 03300 of these Specifications.

F. Quality of Concrete Work:

1. Make all concrete solid, compact and smooth, and free of laitance, cracks and cold joints.
2. All concrete for liquid retaining structures, and all concrete in contact with earth, water, or exposed directly to the elements shall be watertight.
3. Cut out or chip out and properly replace to the extent ordered by the Engineer, or repair to the satisfaction of the Engineer, surfaces which contain cracks or voids, are unduly rough, or are in any way defective. Thin patches or plastering will not be acceptable.
4. All leaks through concrete, and cracks, holes or other defective concrete in areas of potential leakage, shall be repaired and made watertight by the Contractor.
5. Repair, removal, and replacement of defective concrete as ordered by the Engineer shall be at no additional cost to the City.

G. Cold Weather Placing:

1. Protect all concrete Work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with the requirements of ACI 306 and as herein specified.
2. When the air temperature has fallen to or may be expected to fall below 40 F, provide adequate means to maintain the temperature, in the area where concrete is being placed, at between 50⁰ F and 70⁰ F for at least seven days after placing. Provide temporary housings or coverings including tarpaulins or plastic film. Maintain the heat and protection, if necessary, to insure that the ambient temperature does not fall below 30⁰ F in the 24 hours following the seven-day period. Avoid rapid dry-out of concrete due to overheating, and avoid thermal shock due to sudden cooling or heating.
3. When air temperature has fallen to or is expected to fall below 40 F uniformly. heat all water and aggregates before mixing as required to obtain a concrete mixture temperature of not less than 55⁰ F and not more than 90⁰ F at point of placement.
4. Do not use frozen materials containing ice or snow. Ascertain that forms, reinforcing- steel, and adjacent concrete surfaces are entirely free of frost, snow and ice before placing concrete.
5. Do not use salt and other materials containing anti freeze agents or chemical accelerators, or set-control admixtures, unless approved by the Engineer, in mix designs.

H. Hot Weather Placing:

1. When hot weather conditions exist that would seriously impair the quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90° F when the temperature is rising and below 85° F when the temperature is falling. Mixing water may be chilled, or chopped ice may be used to control the concrete temperature provided the water equivalent of the ice is calculated by the Engineer in the total amount of mixing water.
3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
4. Wet forms thoroughly before placing concrete.
5. Do not place concrete at a temperature so as to cause difficulty from loss of slump, flash set, or cold joints.
6. Do not use set-control admixtures unless approved by the Engineer in mix designs.
7. Obtain ENGINEER'S approval of other methods and materials proposed for use.

3.4 MONOLITHIC SLAB FINISHES

A. Float Finish:

1. After placing concrete slabs, do not work the surface further until ready for floating. Begin floating when the surface water has disappeared or when the concrete has stiffened sufficiently. Use a wood float only. Check and level the surface plane to a tolerance not exceeding 1/4 inch in 10 feet when tested with a 10 foot straightedge placed on the surface at not less than 2 different angles. Cut down high spots and fill all low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat the surface to a uniform, smooth, granular texture.

B. Trowel Finish:

1. After floating, begin the first trowel finish operation using a power-finish trowel. Begin final troweling when the surface produces a ringing sound as the trowel is moved over the surface.
2. Consolidate the concrete surface by final hand troweling. Finish shall be free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8 inch in 10 feet when tested with a 10 foot straight edge, and all edges adjacent to walls will have a struck, tooled intersection joint. Apply to operating floor slab.

C. Non-Slip Broom Finish:

1. Apply non-slip broom finish to exterior concrete platforms, sidewalks, drives, interior drive areas and elsewhere as shown on the Drawings or in schedules.
2. Immediately after trowel finishing, slightly roughen the concrete surface by brooming in the direction perpendicular to the main traffic route. Use fiber-bristle broom unless otherwise directed. Coordinate the required final finish with the Engineer before application.

D. Grind Finish:

1. Where indicated on the Drawings, grind the concrete surface to reveal aggregate. Coordinate the required finish with the Architect.

3.06 CONCRETE CURING AND PROTECTION

A. General:

1. Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for the period of time necessary for hydration of the cement and proper hardening of the concrete.
2. Start initial curing after placing and finishing concrete as soon as free moisture has disappeared from the concrete surface. Keep continuously moist for not less than 72 hours.
3. Begin final curing procedures immediately following initial curing and before the concrete has dried. Continue final curing for at least 7 days and in accordance with ACI 301 procedures. Avoid rapid drying at the end of the final curing period.

B. Curing Methods:

1. Perform curing of all concrete by moist curing or by moisture-retaining cover curing. Use curing compound when approved by the ENGINEER and as herein specified. For curing, use water that is free of impurities which could etch or discolor exposed, natural concrete surfaces.
2. Provide moisture curing by any of the following methods:
 - a. Keeping the surface of the concrete continuously wet by covering with water.
 - b. Continuous water-fog spray.
 - c. Covering the concrete surface with the specified absorptive cover, thoroughly saturating the cover with water, and keeping the absorptive cover continuously wet with sprinklers or porous hoses. Place absorptive cover so as to provide coverage of the concrete surfaces and edges, with a 4-inch lap over adjacent absorptive covers.

3. Provide moisture-retaining cover curing as follows:

Cover the concrete surfaces with the specified moisture-retaining cover for curing concrete, placed in the widest practical width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during the curing period using cover material and waterproof tape.

4. Provide liquid curing compound as follows:

Apply the specified curing and sealing compound to all exposed slabs not receiving chemical hardener or epoxy floor sealer. The compounds shall be applied immediately after final finishing in a continuous operation by power spray equipment in accordance with the manufacturer's directions. Recoat areas which are subjected to heavy rainfall within 3 hours after initial application. Maintain the continuity of the coating and repair damage to the coat during the entire curing period. For concrete surfaces which will be in contact with potable water, the manufacturer shall certify that the curing compound used is nontoxic. Liquid curing compound will only serve as the initial step. Final cure by providing a moisture-retaining cover. Curing compound with petroleum or wax bases are not acceptable.

C. Curing Formed Surfaces:

1. Cure formed concrete surfaces, including the walls, supported slabs and other similar surfaces by moist curing with the forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as approved by the Engineer.

D. Curing Unformed Surfaces:

1. Initially cure unformed surfaces, such as slabs, sidewalks and other flat surfaces by applying the specified curing compound.
2. Final cure unformed surfaces, unless otherwise specified, by moisture-retaining cover curing.
3. Provide moisture curing for surfaces receiving chemical hardener or epoxy floor sealer.

E. Temperature of Concrete During Curing:

1. When the atmospheric temperature is 40⁰ F and below, maintain the concrete temperature between 50⁰ F and 70⁰ F continuously throughout the curing period. When necessary, make arrangement before concrete placing for heating, covering, insulation or housing as required to maintain the specified temperature and moisture conditions continuously for the concrete curing period. Provide cold weather protection complying with the requirements of ACI 306.
2. When the atmospheric temperature is 80⁰ F and above, or during other climatic conditions which will cause too rapid drying of the concrete, make arrangements before the start of concrete placing for the installation of wind breaks or shading, and for fog spraying, wet sprinkling, or moisture-retaining covering. Protect the concrete continuously for the concrete curing period. Provide hot weather protection complying with the requirements of ACI 305, unless otherwise specified.
3. Maintain concrete temperature as uniformly as possible, and protect from rapid atmospheric temperature changes. Avoid temperature changes in concrete which exceed 5⁰ F in any one hour and 50⁰ F in any 24 hour period.

F. Protection from Mechanical Injury:

1. During the curing period, protect concrete from damaging mechanical disturbances including load stresses, heavy shock, excessive vibration, and from damage caused by rain or flowing water. Protect all finished concrete surfaces from damage by subsequent construction operations.

3.7 FIELD QUALITY CONTROL

A. Testing for concrete field quality control shall be performed by R&D Testing & Drilling, Inc., which is under annual contract to the City to provide certain testing services. Engineer will direct the number of slump tests and cylinders required. Contractor shall make standard compression test cylinders and entrained air tests as specified below, under the direct inspection by the Engineer. Contractor shall furnish all necessary assistance required by the Engineer. Contractor shall also furnish all labor, material and equipment required including cones, rods, molds, air tester, thermometer, curing in a insulated storage box that is heated if necessary and all other incidentals required. Above will be subject to approval by Engineer. Contractor shall furnish all necessary storage, curing, and transportation required by the testing.

B. Quality Control Testing During Construction:

1. Perform sampling and testing for field quality control during the placement of concrete, as follows:
 - a. Sampling Fresh Concrete: ASTM C 172.
 - b. Slump: ASTM C 143; one for each set of compressive strength test specimens.
 - c. Air Content: ASTM C 231; one for each set of compression cylinders cast.
 - d. Compressive Strength Tests: ASTM C 39; one set of compression cylinders for each 50 cubic yards of fraction thereof, of each mix design placed in any one day; 1 specimen tested at 3 and 7 days, and 2 specimens tested at 28 days.

1. Adjust mix if test results are unsatisfactory and resubmit for ENGINEER'S approval.
 2. Concrete which does not meet the strength requirements is subject to rejection and removal from the Work, or to other such corrective measures as directed by the Engineer, at the expense of the Contractor.
- e. Compression Test Specimens: ASTM C 1; make one set of 4 standard cylinders for each compressive strength test, unless otherwise directed.
 - f. Concrete Temperature: Test hourly when air temperature is 40 F and below, and when 80 F and above; and each time a set of compression test specimens is made.
2. The testing laboratory shall submit certified copies of test results directly to the Engineer and the Contractor within 24 hours after tests are made.
- C. Evaluation of Quality Control Tests:
1. Do not use concrete delivered to the final point of placement which has slump temperature or total air content outside the specified values.
 2. Compressive strength tests for laboratory-cured cylinders will be considered satisfactory if the averages of all sets of three consecutive compressive strength tests equal or exceed the 28 day design compressive strength of the type or class of concrete; no individual strength test falls below the required compressive strength by more than 500 psi.
 - a. Where questionable field conditions may exist during placing concrete or immediately thereafter, strength tests of specimens cured under field conditions will be required by the Engineer to check the adequacy of curing and protecting of the concrete placed. Specimens shall be molded at the same time and from the same samples as the laboratory cured specimens.
 1. Provide improved means and procedures for protecting concrete when the 28 day compressive strength of field-cured cylinders is less than 85 percent of companion laboratory cured cylinders.
 2. When laboratory-cured cylinder strengths are appreciably higher than the minimum required compressive strength, field-cured cylinder strengths need not exceed the minimum required compressive strength by more than 500 psi even though the 85 percent criterion is not met.
 3. If individual tests of laboratory-cured specimens produce strengths more than 500 psi below the required minimum compressive strength, or if tests of field-cured cylinders indicate deficiencies in protection and curing, provide additional measures to assure that the load-bearing capacity of the structure is not jeopardized. If the likelihood of low-strength concrete is confirmed and computations indicate the load-bearing capacity may have been significantly reduced, tests of cores drilled from the area in question will be required at the CONTRACTOR'S expense.
 - a. If the compressive strength tests fail to meet the minimum requirements specified, the concrete represented by such tests will be considered deficient in strength and subject to replacement, reconstruction or to other action approved by Engineer, and shall be done at the Contractor's expense.
- D. Testing Concrete Structure for Strength:
1. When there is evidence that the strength of the in-place concrete does not meet specification requirements, Contractor shall employ at his expense the services of a concrete testing service to take cores drilled from hardened concrete for compressive strength determination. Tests shall comply with ASTM C 42 and the following:

- a. Take at least 3 representative cores from each member or suspect area at locations directed by Engineer.
 - b. Strength of concrete for each series of cores will be considered satisfactory if their average compressive strength is at least 85 percent and no single core is less than 75 percent of the 28 day required compressive strength, and at least 100% by 56 days.
 - c. Report test results in writing to Engineer on the same day that tests are made. Include in test reports the Project identification name and number, date, name of Contractor, name of concrete testing service, location of test core in the structure, type of class of concrete represented by core sample, nominal maximum size aggregate, design compressive strength, compression breaking strength and type of break (corrected for length-diameter ratio), direction of applied load to core with respect to horizontal plane of the concrete as placed, and the moisture condition of the core at time of testing.
2. Fill core holes solid with patching mortar, and finish to match adjacent concrete surfaces.
 3. Conduct static load test and evaluations complying with ACI 318 if the results of the core tests are unsatisfactory, or if core tests are impractical to obtain, as directed by Engineer.
- E. Testing for Watertightness of Concrete Structures.
1. All concrete structures designed to contain or convey fluid shall be tested for watertightness by the Contractor prior to earth backfilling by filling with water to levels approximating what will be attained during operation and measuring the drop in level due to leakage, if any. These tests shall be made under the direction of the Engineer, and if necessary the tests shall be repeated until watertightness is insured. Perform tests prior to backfilling below grade structures and prior to installations of any coating.
 2. Rate of filling shall be limited to minimize shock-effect to new concrete construction. Water shall be held under each condition long enough to satisfy the Engineer that the structures are watertight. Structures shall be free of internal or external water leakage.
 3. The total loss of water-level in any basin or flume shall not exceed 1/2 in. (13 mm) depth in 24 hours. Leakage shall be located and stopped and the structure again tested until this requirement is met. If the structure does not meet the test, the Contractor shall repair or replace at his own expense, such part of the work as may be necessary to secure the desired results, as approved by the Engineer.
 4. Regardless of the rate of leakage there shall be no visible leakage from any concrete structure.

3.8 MISCELLANEOUS CONCRETE ITEMS

A. Filling-In:

1. Fill-in holes and openings left in concrete structures for the passage of work by other contractors and as indicated on drawings, with non-shrink nonmetallic grout per Section 03250 of this Specifications.
2. Dry packing will be approved by the Engineer on case by case basis.

3.9 CONCRETE REPAIRS

A. Repair of Formed Surfaces:

1. Repair exposed-to-view formed concrete surfaces, that contain defects which adversely affect the appearance of the finish. Surface defects that require repair include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, and holes left by the tie rods and bolts; fins and other projections on the surface; and stains and other discolorations that cannot be removed by cleaning.

2. Repair concealed formed concrete surfaces that may contain defects that adversely affect the durability of the concrete. Surface defects that require repair include cracks in excess of 0.01 inch wide, cracks of any width and other surface deficiencies which penetrate to the reinforcement or completely through non-reinforced sections, honeycomb, rock pockets, holes left by tie rods and bolts, and spalls except minor breakage at corners.
3. Pressure grout structural cracks, and cracks in water-holding structures, using one of the following:
 - a. Sikadur 35, Hi-Mod LV Gel by Sika Chemical Company.
 - b. 881 LPL Epoxy by the Burke Co.
 - c. Or equal.
4. Repair and patch defective areas with sand cement mortar immediately after removal of forms and as directed by Engineer.
5. Cut out or chip out honeycomb, rock pockets, voids over 1/2-inch diameter, and holes left by tie rods and bolts, down to solid concrete but, in no case, to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Before placing the cement mortar, thoroughly clean, dampen with water, and brushcoat the area to be patched with the specified bonding agent.
 - a. For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, the patching mortar color will match the color of the surrounding concrete.
 - b. Contractor shall impart texture to repaired surfaces to match texture of existing adjacent surfaces. Provide test areas at inconspicuous locations to verify mixture, texture and color match before proceeding with the patching. Compact mortar in place and strike off slightly higher than the surrounding surface.
6. Fill holes extending through concrete by means of a plunger-type gun or other suitable device from the least exposed face, using a flush stop held at the exposed face to insure complete filling.
7. Sandblast exposed-to-view surfaces that require removal of stains, grout accumulations, sealing compounds, and other substances marring the surfaces. Use sand finer than No. 30 and air pressure from 15 to 25 psi.

B. Repair of Unformed Surfaces:

1. Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to the tolerances specified for each surface and finish. Correct low and high areas as herein specified.
2. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having the required slope. Correct high and low areas as herein specified.
3. Repair finish of unformed surfaces that contain defects which adversely affect the durability of the concrete. Surface defects, as such, include crazing, cracks in excess of 0.01-inch wide or which penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets, and other objectionable conditions.
4. Grout structural cracks, and cracks in water holding structures, using one of the following:
 - a. Sikadur 35, Hi-Mod LV Gel by Sika Chemical Company.
 - b. 881 LPL Epoxy by the Burke Co.
 - c. Or equal.

5. Correct high areas in unformed surfaces by grinding, after the concrete has cured sufficiently so that repairs can be made without damage to adjacent area.
6. Correct low areas in unformed surfaces during, or immediately after completion of surface finishing operations by cutting out the low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Use one of the following:
 - a. Mastertop MP by Master Builders.
 - b. Sikatop by Sika Chemical Company.
 - c. Or equal.
7. Repair defective areas, except random cracks and single holes not exceeding 1-inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cut, and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen all concrete surfaces in contact with patching concrete and brush with the specified bonding agent. Place patching concrete before grout takes its initial set. Mix patching concrete of the same materials and proportions to provide concrete of the same type or class as the original adjacent concrete. Place, compact and finish as required to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.
8. Repair isolated random cracks, and single holes not over 1-inch diameter, by the dry-pack method. Groove the top of cracks, and cut out holes to sound concrete and clean of dust, dirt and loose particles. Dampen all cleaned concrete surfaces and brush with the specified bonding agent. Place dry-pack before the cement grout takes its initial set. Mix dry-pack, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched areas continuously moist for not less than 72 hours.
9. Repair methods not specified above may be used if approved by the Engineer.

3.10 CONCRETE COATINGS

- A. All areas listed below shall receive concrete coating:
 1. All surfaces between columns D to P and 12 to 18, up to elevation 844.00.
 2. Containment sumps and diked areas for all chemical storage tanks.
 3. Chemical truck unloading area up to elevation 859.00
- B. Surface preparation, application, dry film thickness and curing shall be in strict conformance with the manufacturer's published recommendations

END OF SECTION 03300

DIVISION 4

Masonry

No Sections Required

DIVISION 5

Metals

SECTION 05500

METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

1. Steel framing and supports.
2. Steel framing and supports for mechanical and electrical equipment.
3. Steel framing and supports for applications where framing and supports are not specified in other Sections.
4. Steel braces not supplied by Apparatus Bay doors manufacturer.
5. Shelf angles
6. Steel bollards
7. Steel weld plates and angles for casting into concrete not specified in other Sections.
8. Miscellaneous steel trim including steel angle corner guards and steel edgings.

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

1. Loose steel lintels.
2. Anchor bolts, steel pipe sleeves, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
3. Steel bollards

1.3 SUBMITTALS

The following information shall be provided in accordance with Section 01300.

1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Construction Manager shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined shall signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.3 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304 316L.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304 316L.
- D. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- E. Rolled-Stainless-Steel Floor Plate: ASTM A 793.
- F. Steel Tubing: ASTM A 500, cold-formed steel tubing.
- G. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.

2.4 FASTENERS

- A. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.
- B. Anchor Bolts: ASTM F 1554, Grade 36.
1. Provide hot-dip or mechanically deposited, zinc-coated anchor bolts where item being fastened is indicated to be galvanized.

- C. Eyebolts: ASTM A 489.
- D. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).
- E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- F. Wood Screws: Flat head, ASME B18.6.1.
- G. Plain Washers: Round, ASME B18.22.1 (ASME B18.22M).
- H. Lock Washers: Helical, spring type, ASME B18.21.1 (ASME B18.21.2M).
- I. Cast-in-Place Anchors in Concrete: Anchors capable of sustaining, without failure, a load equal to four times the load imposed, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A 153/A 153M.
- J. Expansion Anchors: Anchor bolt and sleeve assembly with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Material for Anchors in Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material for Anchors in Exterior Locations: Alloy Group 1 (A1) 2 (A4) stainless-steel bolts complying with ASTM F 593 (ASTM F 738M) and nuts complying with ASTM F 594 (ASTM F 836M).

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Division 9 painting Sections.
- C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
 - 1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
 - 1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches (3.2 by 38 mm), with a minimum 6-inch (150-mm) embedment and 2-inch (50-mm) hook, not less than 8 inches (200 mm) from ends and corners of units and 24 inches (600 mm) o.c., unless otherwise indicated.

2.7 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 - 1. Fabricate units from slotted channel framing where indicated.
 - 2. Furnish inserts if units are installed after concrete is placed.
- C. Fabricate supports for operable partitions from continuous steel beams of sizes indicated with attached bearing plates, anchors, and braces as indicated. Drill bottom flanges of beams to

receive partition track hanger rods; locate holes where indicated on operable partition Shop Drawings.

- D. Fabricate steel girders for wood frame construction from continuous steel shapes of sizes indicated.
 - 1. Provide bearing plates welded to beams where indicated.
 - 2. Drill girders and plates for field-bolted connections where indicated.
 - 3. Where wood nailers are attached to girders with bolts or lag screws, drill holes at 24 inches o.c.
- E. Fabricate steel pipe columns for supporting wood frame construction from steel pipe with steel baseplates and top plates as indicated. Drill baseplates and top plates for anchor and connection bolts and weld to pipe with fillet welds all around. Make welds the same size as pipe wall thickness, unless otherwise indicated.
 - 1. Unless otherwise indicated, fabricate from Schedule 40 steel pipe.
 - 2. Unless otherwise indicated, provide 1/2-inch baseplates with four 5/8-inch anchor bolts and 1/4-inch top plates.
- F. Galvanize miscellaneous framing and supports where indicated.
- G. Prime miscellaneous framing and supports with zinc-rich primer where indicated.

2.8 PREFABRICATED BUILDING COLUMNS

- A. General: Provide prefabricated building columns consisting of load-bearing structural-steel members protected by insulating concrete fireproofing encased in an outer non-load-bearing steel shell.
- B. Fire-Resistance Ratings: Provide prefabricated building columns listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for ratings indicated, based on testing according to ASTM E 119.
 - 1. Fire-Resistance Rating: As indicated.
- C. Column Configuration: Provide columns of sizes and shapes indicated. Fabricate connections to comply with details shown or as needed to suit type of structure indicated.
 - 1. Concrete Fill: Manufacturer's standard structural concrete, with minimum compressive strength of 3000 psi (29 MPa), machine mixed and mechanically vibrated during placement to produce concrete core free of voids.
- D. Available Manufacturers:
 - 1. Black Rock Column, Inc.
 - 2. Dean, George H., Inc.
 - 3. Firetrol Division; Dean Lally L. P.

2.9 LOOSE STEEL LINTELS

- A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Weld adjoining members together to form a single unit where indicated.
- B. Size loose lintels to provide bearing length at each side of openings equal to 1/12 of clear span but not less than 8 inches, unless otherwise indicated.
- C. Galvanize loose steel lintels located in exterior walls.
- D. Prime loose steel lintels located in exterior walls with zinc-rich primer.

2.10 SHELF ANGLES

- A. Fabricate shelf angles from steel angles of sizes indicated and for attachment to concrete framing. Provide horizontally slotted holes to receive 3/4-inch bolts, spaced not more than 6 inches from ends and 24 inches o.c., unless otherwise indicated.
 - 1. Provide mitered and welded units at corners.
 - 2. Provide open joints in shelf angles at expansion and control joints. Make open joint approximately 2 inches larger than expansion or control joint.
- B. For cavity walls, provide vertical channel brackets to support angles from backup masonry and concrete.
- C. Galvanize shelf angles located in exterior walls.
- D. Prime shelf angles located in exterior walls with zinc-rich primer.
- E. Furnish wedge-type concrete inserts, complete with fasteners, to attach shelf angles to cast-in-place concrete.

2.11 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.
- B. Galvanize plates after fabrication.
- C. Prime plates with zinc-rich primer.

2.12 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with not less than two integrally welded steel strap anchors for embedding in concrete.

2.13 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
 - 1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.
- C. Galvanize exterior miscellaneous steel trim and interior miscellaneous steel trim, where indicated.
- D. Prime exterior miscellaneous steel trim and interior miscellaneous steel trim, where indicated with zinc-rich primer.

2.14 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 - 1. ASTM A 123/A 123M, for galvanizing steel and iron products.
 - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
- B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
 - 1. Exteriors (SSPC Zone 1B) and Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- C. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2.15 STAINLESS-STEEL FINISHES

- A. Remove tool and die marks and stretch lines or blend into finish.
- B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.
- C. Bright, Directional Satin Finish: No. 4.
- D. Dull Satin Finish: No. 6.

- E. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.
- B. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.
 - 1. Where grout space under bearing plates is indicated for girders supported on concrete or masonry, install as specified in "Installing Bearing and Leveling Plates" Article.
- C. Install pipe columns on concrete footings with grouted baseplates. Position and grout column baseplates as specified in "Installing Bearing and Leveling Plates" Article.

1. Grout baseplates of columns supporting steel girders after girders are installed and leveled.

3.3 INSTALLING PREFABRICATED BUILDING COLUMNS

- A. Install prefabricated building columns to comply with AISC's "Specification for Structural Steel Buildings Allowable Stress Design and Plastic Design with Commentary" and with requirements applicable to listing and labeling for fire-resistance rating indicated.

3.4 INSTALLING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.
 1. Use nonshrink grout, either metallic or nonmetallic, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations, unless otherwise indicated.
 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.5 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 painting Sections.
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 05500

DIVISION 6

Wood, Plastic and Composites

SECTION 06100
ROUGH CARPENTRY

PART 4 - GENERAL

4.1 RELATED DOCUMENTS

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

4.2 SUMMARY

- A. This Section includes the following:
 - 1. Rooftop equipment bases and support curbs.
 - 2. Wood blocking and nailers.
 - 3. Plywood backing panels.

4.3 SUBMITTALS

The following information shall be provided in accordance with Section 01300.

- 1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Construction Manager shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined shall signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

4.4 DEFINITIONS

- A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. WWPA: Western Wood Products Association

4.5 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 3. For fire-retardant treatments specified to be High-Temperature (HT) type, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.
 4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
- B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- C. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
1. Wood-preservative-treated wood.
 2. Fire-retardant-treated wood.
 3. Power-driven fasteners.
 4. Powder-actuated fasteners.
 5. Expansion anchors.
 6. Metal framing anchors.

4.6 QUALITY ASSURANCE

- A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

4.7 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 5 - PRODUCTS

5.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
4. Provide dressed lumber, S4S, unless otherwise indicated.

5.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPA C2 except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- D. Application: Treat all rough carpentry, unless otherwise indicated. Items indicated on Drawings, and the following:
 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 2. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.
 3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawlspaces or unexcavated areas.
 5. Wood floor plates that are installed over concrete slabs-on-grade.

5.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood).
 1. Use Exterior type for exterior locations and where indicated.
 2. Use Interior Type A, High Temperature (HT) for enclosed roof framing, framing in attic spaces, and where indicated.
 3. Use Interior Type A, unless otherwise indicated.

- B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- C. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
- D. Application: Treat all rough carpentry, unless otherwise indicated. items indicated on Drawings, and the following:
 - 1. Framing for raised platforms.
 - 2. Concealed blocking.
 - 3. Plywood backing panels.

5.4 DIMENSION LUMBER FRAMING

- A. Maximum Moisture Content: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness.
- B. Non-Load-Bearing Interior Partitions: No. 2 Standard grade lumber with 19 percent maximum moisture content and the following species:
 - 1. Mixed southern pine; SPIB.
 - 2. Spruce-pine-fir; NLGA

5.5 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
 - 5. Furring.
 - 6. Grounds.
 - 7. Utility shelving.
- B. For items of dimension lumber size, provide No. 2 Standard grade lumber with 19 percent maximum moisture content and the following species:
 - 1. Mixed southern pine; SPIB.
 - 2. Spruce-pine-fir; NLGA.
- C. For exposed boards, provide lumber with 19 percent maximum moisture content and any of following species and grades:
 - 1. Mixed southern pine, No. 2 grade; SPIB.
 - 2. Spruce-pine-fir (south) or spruce-pine-fir, No. 1 grade; NeLMA, NLGA, WCLIB, or WWPA.

- G. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine, No. 2 grade; SPIB.
 - 2. Spruce-pine-fir (south) or spruce-pine-fir, Construction Standard grade; NeLMA, NLGA, WCLIB, or WWPA.
- H. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- I. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- J. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

5.6 PLYWOOD BACKING PANELS

- A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2-inch (13-mm) nominal thickness.

5.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

5.8 METAL FRAMING ANCHORS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Drawings and comparable products by one of the following:
 - 1. Alpine Engineered Products, Inc.
 - 2. Cleveland Steel Specialty Co.
 - 3. Harlen Metal Products, Inc.
 - 4. KC Metals Products, Inc.
 - 5. Simpson Strong-Tie Co., Inc.
 - 6. Southeastern Metals Manufacturing Co., Inc.
 - 7. USP Structural Connectors.
- D. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated and products of manufacturers listed. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- E. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.
 - 1. Use for interior locations where stainless steel is not indicated.
- F. Stainless-Steel Sheet: ASTM A 666, Type 304.
 - 1. Use for exterior locations and where indicated.

5.9 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch; selected from manufacturer's standard widths to suit width of sill members indicated.
- B. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.
- C. Adhesives for Gluing and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
 - 1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- D. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chlorpyrifos as its active ingredient.

PART 6 - EXECUTION

6.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate, nailers, blocking, grounds and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- D. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.
- E. Do not splice structural members between supports, unless otherwise indicated.
- F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- G. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- H. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- I. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 - 3. Table 2306.1, "Fastening Schedule," in SBCCI's Standard Building Code.
 - 4. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
- J. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.
- K. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

1. Comply with indicated fastener patterns where applicable. Before fastening, mark fastener locations, using a template made of sheet metal, plastic, or cardboard.
2. Use finishing nails, unless otherwise indicated. Do not countersink nail heads.

6.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.
- C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

6.3 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
- B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal size furring horizontally and vertically at 24 inches o.c.
- C. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal size furring vertically at 16 inches o.c.

6.4 WALL AND PARTITION FRAMING INSTALLATION

- A. General: Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions and for load-bearing partitions where framing members bearing on partition are located directly over studs. Fasten plates to supporting construction, unless otherwise indicated.
 1. For interior partitions and walls, provide 2-by-4-inch nominal size wood studs spaced 16 inches o.c., unless otherwise indicated.
 2. Provide continuous horizontal blocking at midheight of partitions more than 96 inches high, using members of 2-inch nominal thickness and of same width as wall or partitions.
- B. Construct corners and intersections with three or more studs, except that two studs may be used for interior non-load-bearing partitions.
- C. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Support headers on jamb studs.
 1. For non-load-bearing partitions, provide double-jamb studs and headers not less than 4-inch nominal depth for openings 48 inches and less in width, 6-inch nominal depth for openings 48 to 72 inches in width, 8-inch nominal depth for openings 72 to 120 inches in width, and not less than 10-inch nominal depth for openings 10 to 12 feet in width.

2. Provide triple joists separated as above, under partitions receiving ceramic tile and similar heavy finishes or fixtures.
- D. Provide bridging of type indicated below, at intervals of 96 inches o.c., between joists.
1. Diagonal wood bridging formed from bevel-cut, 1-by-3-inch nominal size lumber, double-crossed and nailed at both ends to joists.
 2. Steel bridging installed to comply with bridging manufacturer's written instructions.

6.5 PROTECTION

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

END OF SECTION 06100

SECTION 06200

FINISH CARPENTRY

1.1 SUMMARY

- A. Related Work specified elsewhere:
 - 1. Section 06100 - Rough Carpentry.
 - 2. Section 07900 - Sealants and Caulking.
 - 3. Section 08710 - Door Hardware.
 - 4. Section 09260 - Gypsum Board Systems.
 - 5. Section 09900 - Painting.

1.2 REFERENCES

- A. Standards of the following as referenced:
 - 1. Architectural Woodwork Institute (AWI).
 - 2. American National Standards Institute (ANSI).
 - 3. National Electrical Manufacturer's Association (NEMA).
- B. Industry standards:
 - 1. AWI: Quality Standards, Guide Specifications and Quality Certification Program, 1985 edition.
- C. Grading rules and standards of the following apply to materials, furnished under this section:
 - 1. American Lumber Standards Committee (ALSC).
 - 2. American Plywood Association (APA).
 - 3. National Hardwood Lumber Association (NHLA).
 - 4. National Bureau of Standards (NBS) Voluntary Product Standards (PS).
 - 5. Southern Forest Products Association (SFPA).
 - 6. Southern Pine Inspection Bureau (SPIB).
 - 7. West Coast Lumber Inspection Bureau (WCLIB).
 - 8. Western Wood Products Association (WWPA).
- D. Preservative treated material: Meet specified standards of:
 - 1. American Wood Preservers Association (AWPA).
 - 2. American Wood Preservers Bureau (AWPB).
 - 3. American Wood Preservers Institute (AWPI).
- E. Plywood grading rules:
 - 1. Softwood plywood: NBS PS-1-83.
 - 2. Hardwood plywood: NBS PS-51-71.

1.3 SUBMITTALS

- A. Shop drawings:
 - 1. Submit for casework, standing and running trim, shelving, and miscellaneous ornamental work.

2. Indicate construction and installation details, species and grades of materials, finishes, plastic laminate selections, and cabinet hardware selections.
- B. Product data: Submit for cabinet hardware and similar manufactured items. Submit with shop drawings.
- C. Samples, submit as follows:
1. Plastic laminate: Manufacturer's standard color and pattern selection for verification by Construction manager.
 2. Finish samples: Indicate selected finishes on samples of species and grade material specified.
 3. Hardware items: Submit, if requested by Construction manager. Samples will be returned to supplier.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery of finish carpentry Work to Project site to coincide with installation but not to cause delay in Work.
- B. Immediately upon delivery to Project site, place materials indoors, under cover, protected from weather.
- C. Store materials minimum 6" above ground on framework or blocking; cover with protective waterproof covering providing for adequate air circulation and ventilation. Store in cool, dry, conditioned space.

1.5 PROJECT CONDITIONS

- A. Field measurements: Take field measurements to determine exact millwork sizes. Indicate exact dimensions on shop drawings.
- B. Installation of interior finish carpentry or millwork until spaces are enclosed, dry, and capable of being heated is prohibited. Maintain temperature between 55⁰ F and 65⁰ F for 72 hours before beginning installation and for Project duration.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. General:
1. Dimensions: Indicated lumber dimensions are nominal. Actual dimensions conform to industry standards established by ALSC and the Rules Writing Agencies.
 2. Moisture content: 12% maximum.
 3. Surfacing: Surface four sides, S4S, unless otherwise indicated.
 4. Grades for exposed and semi-exposed finish carpentry and millwork and plywood are based on AWI Quality Standards. Grades for unexposed Work are based on Rules Writing Agencies grading rules.
- B. Lumber:
1. Species and grades:
 - a. Unexposed millwork framing and blocking:
 - 1) 2" by 4": Standard Grade West Coast Lumber.
 - 2) Members larger than 2" by 4": #2 Grade.
 - b. Semi-exposed millwork components: Custom Grade Poplar.
 - c. Exposed and semi-exposed painted millwork and trim: Custom Grade White Pine, kiln

dried (KD) or as indicated on drawings.

2. Plywood; thicknesses indicated:
 - a. Unexposed and semi-exposed millwork and general carpentry: APA A-C G-1, EXTERIOR
 - b. Exposed painted millwork: APA M.D. OVERLAY, GROUP 1, EXT. exposed sides.
 3. Plastic laminate substrate:
 - a. Particleboard for wall cabinets: ANSI 208.1-87, three-ply, mat formed, manufactured using long fibered cuttings, bonded with water-resistant adhesive; 42.5 pcf, minimum.
 - b. Plywood for base cabinets and countertops: ANSI/HPMA HP 1983; five-ply, rotary cut birch; 1/8" thickness, minimum, Grade 2-2 veneers; sanded face; Technical Type core.
 - c. Thickness: 3/4 - inch, minimum.
 4. Plastic laminates:
 - a. Acceptable manufacturers:
 1. Exxon Chemical Company; Nevamar.
 2. Formica Corp.; Formica.
 3. Lamin-Art Div. of Eagle Picher Inc.; Lamin-Art.
 4. Ralph Wilson Plastics Company; Wilson-Art.
 - b. Conforming to NEMA Standard LD-3.1-1985, as follows:
 1. Horizontal applications: Grade GP-50.
 2. Backing sheet: Grade BK-20.
 3. Horizontal post-forming: Grade PF-42.
 - c. Colors and patterns: Indicated in Finish Schedule on drawings as PL-#.
- C. Hardware:
1. Acceptable manufacturers:
 - a. Grant Hardware Company (Grant).
 - b. The Engineered Products Company (EPCO).
 - c. Knape & Vogt Mfgr. Co. (K&V).
 - d. National Lock Cabinet Hardware (National).
 - e. Stanley Hardware, Div. of the Stanley Works (Stanley).
 2. Closet materials:
 - a. Rod, 1-1/16" dia.: K&V, #660 SS; stainless steel clad tubing with K&V, #769 CR flange end cap assembly at exposed ends; K&V #734 and #735 flanges at wall.
 - b. Closet shelf and rod bracket: K&V, #1195; wrought steel, cream enamel finish; one for each two feet or portion thereof.
 3. Door and drawer pulls: EPCO; 402 Series, 4" centers; satin finished stainless steel wire pulls.
 4. Magnetic catches: EPCO; #560.
 5. Concealed cabinet hinges:
 - a. 100 degrees self-closing 3D type, zinc die cast with cover caps: Grass; #1003, #1004, and #1005.
 - b. 165 degrees self-closing 3D type, zinc die cast with cover caps: Grass; #1203 and #1204.
 6. Drawer slides: Accuride; Model 3837, full extension, 100 lb. capacity.
 7. Cabinet drawer/door lock: National; #8475, nickel plate.
 8. Recessed shelf standards and supports: K&V; #255 Standard with #256 Support.
- D. Fasteners: Provide bolts, nuts, washers: screws toggle bolts and similar fasteners as indicated or required to attach and secure Work under this section.

2.2 FABRICATION

A. Shop assembly:

1. Comply with applicable requirements of AWI.
2. Quality standards for following types of architectural woodwork; comply with indicated standards as applicable:
 - a. Standing trim, running trim, and rails: AWI Section 300, Custom Grade.
 - b. Architectural cabinets, laminate clad: AWI Sections 400 for Flush Overlay and 400B; Premium Grade.
 - c. Architectural cabinets, tops: AWI Sections 400 for High Pressure Decorative Laminate Tops and 400C for Custom Grade.
 - d. Shelving: AWI Section 600: Custom Grade.
 - e. Miscellaneous ornamental items: AWI Section 700.
3. Provide joints at logical break points for items which cannot be manufactured in one piece; note joints on shop drawings.

B. Shop finishing:

1. Finish millwork items in accord with finishing requirements of allowable AWI Grade indicated unless otherwise indicated.
2. Provide finish Work smooth, free from abrasion, tool marks, raised grain, and other Grade prohibited defects on exposed surfaces.

C. Tolerances: Fabricate millwork items for Reception Area and Break Area to AWI Custom Grade unless otherwise indicated.

2.03 SOURCE QUALITY CONTROL

A. Inspection:

1. Grade marks:
 - a. General: Identify lumber and plywood by official grade mark.
 - b. Lumber grade stamp: Contain symbol of grading agency, mill number or name, grade of lumber, species or species grouping or combination designation, rules under which graded, where applicable, and condition of seasoning at time of manufacture.
 - c. Plywood: Appropriate grade trademark of APA. Indicate type, grade, class and identification index, and inspection and testing agency mark.
 - d. Treated lumber and plywood: Identify each piece with appropriate UL stamp indicating compliance with indicated requirements; verify stamp contains treatment name, manufacturer, and location; third party inspection agency: species; flame spread; AWPA classification; 30 minute test characteristics.
 - e. Conceal grade marks on components exposed to view in finished Work.

PART 3 – EXECUTION

3.01 PREPARATION

A. General:

1. Install Work plumb, level, true, and straight without distortions; conceal shims.
2. Provide finish Work smooth, free from abrasion, tool marks, raised grain markings or similar defects on exposed surfaces.
3. Cut Work to fit unless specified to be shop fabricated or shop cut to exact size. Where carpentry and millwork abuts other finished Work, scribe and cut for accurate fit. Drill pilot holes at corners before making cutouts.
4. Distribute defects allowed in quality grade specified to best overall advantage when installing job assembled Work.
5. Install mill fabricated Work in accord with AWI Section 1700.

3.2 INSTALLATION

A. Interior standing and running trim:

1. Trim and moldings: Install in single, un-jointed lengths for openings and for runs less than 10'-0". Use only one piece less than 10' -0" long in longer straight runs Stagger joints in adjacent members. Cope at returns and miter at corners.
2. Attach and secure in place with uniform joints providing for thermal and building movements.
3. Nailing: Blind nail where possible. Use finishing nails where exposed. Set exposed nail heads for filling.
4. Anchoring: Secure Work to anchors or blocking built-in or directly attached to substrate.

B. Millwork:

1. Install in manner consistent with specified quality grade, plumb, level, true, and straight without distortions: shim as required using concealed shims.
2. Secure to grounds, stripping, and blocking with countersunk, concealed fasteners and blind nailing. Scribe and cut for accurate fit to other finished Work.

C. Hardware: Install where indicated in accord with particular hardware specialty manufacturer's installation instructions.

D. Countertops: Install countertops in accord with AWI Custom Grade.

3.3 CLEANING

- #### A. Clean wood, metal, and accessory items using neutral cleaner. Check and correct operating mechanisms for proper operation. Adjust and lubricate hinges, catches, and other operating hardware.

3.4 PROTECTION

- A. Protect finished and prefinished surfaces from Work of other trades.
- B. Prior to Date of Substantial Completion examine Work for damage. Repair or replace damaged areas to original condition.

END OF SECTION 06200

DIVISION 7

Thermal and Moisture Protection

SECTION 07100

WATERPROOFING AND MOISTUREPROOFING

PART 1 - GENERAL

1.1 SCOPE

- A. This section specifies waterproofing and moistureproofing of concrete surfaces and belowgrade masonry surfaces.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Waterproofing and Moistureproofing Coatings: Waterproofing and moistureproofing coating shall be PVC lining where shown on the Drawings or epoxy resin. Acceptable epoxy resin products are Tnemec Series 69, Ameron Amercoat 351, and Porter 7600 Series Magna Coat. Each of these is a polyamidoamine epoxy.
- B. Moistureproofing Underlay:
 - 1. Plastic Membrane: Plastic membrane for moistureproofing underlay shall be polyethylene film with a thickness of 9 mils.
 - 2. Pressure Sensitive Tape: Pressure sensitive tape shall be 2-inch wide polyethylene tape.

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. Waterproofing Coating:
 - 1. Location: Waterproofing coating shall be applied to the water side of walls and bottoms of channels or tanks which are common with rooms, tunnels or galleries to be occupied by equipment, piping, conduit, or personnel.
 - 2. Surface Preparation:
 - a. New concrete to be waterproofed shall have aged at least 28 days and allowed to dry to a moisture content recommended by the coating manufacturer.
 - b. Loose concrete and laitance shall be removed from new concrete surfaces by abrasive blasting. Voids and cracks shall be repaired
 - 3. Application:
 - a. Two or more coats at manufacturer's recommended dry film thickness.
 - b. Total dry film thickness shall be minimum 16 mils, final coat shall be blue (as approved by the construction manager).
 - c. Drying time between coats shall be as recommended by the coating manufacturer.

B. Moistureproofing Underlay:

1. **Location:** Unless otherwise specified, moistureproofing underlay shall be provided under concrete floors or floating slabs-on-grade including those deposited on drain rock.
2. **Surface Preparation:** Backfilled surfaces to receive moistureproofing underlay shall be leveled off and smoothed over to minimize contact with sharp edges.
3. **Application:** At joints, moistureproofing membrane shall be lapped 12 inches and sealed with pressure sensitive tape. Where pipes and conduits pass through the membrane, they shall be wrapped tightly with separate sheets of membrane, which shall then be sealed with tape to the main membrane. Reinforcing steel or wire mesh shall be supported by chairs with flat bases to protect the membrane.

END OF SECTION 07100

SECTION 07840

FIRESTOPPING

1.1 DESCRIPTION OF WORK

- A. This specification covers the furnishing and installation of materials for firestopping. Products shall be as directed by the Owner. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

1.2 GENERAL

A. System Description

- 1. Performance Requirements: Comply with following:
 - a. Firestopping: Consist of material or combination of materials to form effective barrier against spread of flame, smoke, and gases, and maintain integrity of fire-resistance rated walls, partitions, floors, and ceiling-floor assemblies at penetrations.
 - 1) Penetrations: Include annular space around pipes, ducts, chimneys, tubes, conduit, wires, cables, and vents.

B. Submittals

- 1. Product Data:
 - a. Composition and performance characteristics.
 - b. List of FM, UL, or WH classification number of systems installed.
- 2. Quality Assurance/Control Submittals:
 - a. Test Reports: If not FM, UL, or WH listed, submit certified test results for ASTM E 814 tests by UL, FM, WH, or other accredited independent laboratory demonstrating compliance of firestopping with specified requirements.
 - b. Manufacturers installation instructions.

C. Quality Assurance

- 1. Regulatory Requirements: Comply with applicable building-code requirements for firestopping.

D. Delivery, Storage, And Handling

- 1. Packing, Shipping, Handling, and Unloading: Deliver in original, unopened containers with manufacturer's labels.
 - a. Products: FM, UL, or WH labeled and FM, UL, or WHI listed.
- 2. Storage and Protection: Store firestopping materials in accordance with manufacturer's recommendations.

1.3 PRODUCTS

A. Fire-Rated Penetration Sealant Systems

- 1. Firestopping Materials: Commercially manufactured asbestos-free products complying with following minimum requirements:
 - a. Material:

- 1) Flame Spread: ASTM E 84 or UL 723, 25 or less.
 - 2) Smoke Developed Rating: ASTM E 84 or UL 723, 50 or less.
 - 3) Material: Approved firestopping material as listed in UL 05, FM P7825, or WH Certified Listing.
 - b. Material Properties:
 - 1) Contain no flammable or toxic solvents and have no dangerous or flammable outgassing during the drying or curing of products.
 - 2) Non-toxic to human beings at all stages of application and during fire conditions.
 - 3) Water-resistant after drying or curing and unaffected by high humidity, condensation, or transient water exposure.
 - c. Devices and systems requiring heat activation to seal opening created by burning or melting of penetrant shall exhibit demonstrated ability to function as required for floors and walls of construction and thickness similar to those to be firestopped.
2. Firestopping System Requirements: Materials from single manufacturer capable of maintaining effective barrier against flame, smoke, and gases in accordance with ASTM E 814 and UL 1479.
- a. Fire-Resistance Rating: Equal or greater than fire-resistance rating of assembly in which it is being placed.
 - b. F Ratings: Equal to or greater than fire-resistance rating of assembly penetrated.
 - c. T Ratings: Equal to or greater than fire-resistance rating of assembly penetrated at following locations:
 - 1) Penetrations located outside of wall cavities.
 - 2) Penetrations located outside of fire-resistive shaft enclosures.
 - 3) Penetrations located in enclosures with doors required to have temperature-rise rating.
 - 4) Penetrations with penetrating hems larger than 100 mm (4 inch) diameter nominal pipe or 10 320 sq. mm (16 square inches) in cross-sectional area.
 - d. System: Listed in UL 05, FM 7825, or WH Certified Listing, or tested by approved laboratory in accordance with ASTM E 814.
 - e. System: Suitable for firestopping of penetrations made by steel, glass, plastic and insulated pipe.
 - f. Penetration by Insulated Pipe: Does not require removal of insulation.

1.4 EXECUTION

A. Examination

1. Verification of Conditions:
 - a. Existing Conditions: Examine penetrations before beginning installation.
 - b. Do not proceed with installation until conditions are satisfactory.

B. Installation

1. Fire-Rated Penetration Sealant Systems: Install in accordance with UL 05, FM P7825, or WH systems and manufacturers recommendations to maintain required fire-separation rating.
 - a. Preparation: Clean surfaces in contact with firestopping materials that may affect proper fitting or required fire rating. Prime if required. Dam void if required.
 - b. Penetrations: Completely fill void with sealant materials to smooth surface, flush with adjacent surfaces and in contact with surfaces formed by openings and penetrating items ensuring adhesion. Provide sealant in thickness to achieve required fire rating and smoke barrier.
 - c. Firestopping at Voids 100 mm (4 inches) or More in Any Direction: Capable of supporting same load as floor is designed to support or protected by permanent barrier.

- d. Remove any excess sealant from adjacent surfaces.
2. Firestopping: Provide at following locations:
- a. Penetrations of duct, chimney, conduit, tubing, cable, and pipe through floors and through fire-resistance rated walls, partitions, and ceiling-floor assemblies.
 - b. Penetrations of vertical shafts such as pipe chases, elevator shafts, and utility chutes.
 - c. Gaps at intersection of fire-rated floor slabs and walls.
 - d. Gaps at perimeter of fire-rated walls and partitions, such as between top of walls and bottom of floor or roof decks.
 - e. Construction joints in fire-rated floors, walls, and partitions.
 - f. Other locations where required to maintain fire-resistance rating of the construction.
 - g. Other locations as indicated on Drawings (if any).
- C. Field Quality Control
1. Inspection: Examine areas to be firestopped prior to concealing or enclosing to ensure proper installation.
- a. Keep areas of firestopping work accessible until inspection by authorities having jurisdiction over work.

END OF SECTION 07840

**SECTION 07900
CAULKING AND SEALANTS**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all materials, labor, equipment, and incidentals required to perform all caulking, and related work necessary for the proper completion of the project as required by the Drawings and as specified herein.

1.02 APPLICATION SCHEDULE

- A. Caulk all exterior wall joints between walls and adjacent sidewalks.
- B. Caulk all interior joints between masonry and structural concrete and control joints for the completion of the work.

1.03 SUBMITTALS

- A. Submit to the Engineer as provided in the General Conditions for shop drawings, detailed information on materials proposed and installation methods.
- B. Product Data: Manufacturer's technical data for each joint sealer product required, including instructions for joint preparation and joint sealer application.

1.04 QUALITY ASSURANCE

- A. Applicable standards: Standards of the following, as referenced herein:
 - 1. ASTM C 920-87 Standard Specification for Elastomeric Joint Sealants, 1987.
 - 2. ASTM C 962-86 Standard Guide for Use of Elastomeric Joint Sealants, 1986.
- B. Preinstallation Meeting: The contractor shall arrange a meeting with installer, sealer manufacturers' representatives, and other trades whose work affects installation of sealers at project site to review procedures and time schedule proposed for installation of sealers which is coordinated with other related work.

1.05 WARRANTY

- A. Provide a warranty against defective equipment and workmanship in accordance with the requirements of the General Conditions of the Contract Documents.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original unopened containers or bundles with labels showing manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.07 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of sealers under the following conditions:

1. When ambient and substrate temperature conditions are outside the limits permitted by sealer manufacturer or below 40 degrees F (4.4 degrees C).
 2. When substrates are wet due to rain, frost, condensation, or other causes.
- B. Joint Dimension Conditions: Do not proceed with installation of sealers when joint dimensions are less than recommended by joint sealer manufacturer for application indicated.

PART 2 - PRODUCTS

2.01 CAULKING

- A. Caulking Compound: Two component, polysulfide, high performance, non-sag, elastomeric sealant, Thiokol 2235M.. Color to be manufacturer's standard gray.
- B. Primer: As recommended by caulking compound manufacturer.
- C. Back-up Material: As recommended by manufacturer of caulking compound and completely compatible with selected compound.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION AND INSTALLATION

- A. Remove dirt, grease and other foreign matter from substrate.
- B. Require installer to inspect joints indicated to receive joint sealers for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not allow joint sealer work to proceed until unsatisfactory conditions have been corrected.

3.02 CAULKING

- A. Surface Preparation: Scrape or brush masonry and concrete surfaces clean. Apply appropriate primer to contact surfaces.
- B. Joint Preparation: Joints to be caulked having a depth in excess of 3/8-inch shall be packed with back-up material. Round back-up material shall be sized to require 25 percent compression upon insertion. In joints not of sufficient depth to allow packing, install polyethylene bond-breaking tape at back of joint. Avoid lengthwise stretching of back-up material. Cut all corners, avoid wrapping around corners.
- C. Application: Apply compound with a bulk caulk gun with a nozzle of proper size and shape to suit width of joint, promptly after mixing and with sufficient pressure to fill joint. Apply as a continuous operation horizontally in one direction, except joints having excessive widths where compound might sag, the joints shall be built up with successive beads. Finish joints smooth and slightly coved.

3.03 PROTECTION AND CLEANING

- A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of substantial completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

- B. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

END OF SECTION 07900

DIVISION 8
Doors and Windows

SECTION 08110
STEEL DOORS AND FRAMES

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

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

7.2 SUMMARY

A. Section Includes:

1. Standard hollow metal doors and frames.

B. Related Sections

1. Division 4 Section 04300 for embedding anchors for hollow metal work into masonry construction.
2. Division 8 Section 08710 for door hardware for hollow metal doors.
3. Division 9 Sections 09911 and 09912 for field painting hollow metal doors and frames.

7.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings.
- B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.

7.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.
9. Details of conduit and preparations for power, signal, and control systems.

- C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification:

1. For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
2. For the following items, prepared on Samples about 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction:
 - a. Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
 - b. Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow metal panels and glazing if applicable.

E. Other Action Submittals:

1. Schedule: Provide a schedule of hollow metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with door hardware schedule.

F. Oversize Construction Certification: For assemblies required to be fire rated and exceeding limitations of labeled assemblies.

G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

7.5 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252.

1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
2. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.

C. Smoke-Control Door Assemblies: Comply with NFPA 105.

D. Preinstallation Conference: Conduct conference at Project site.

7.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to finish of factory-finished units.

- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- high wood blocking. Do not store in a manner that traps excess humidity.
 - 1. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

7.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

7.8 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 8 - PRODUCTS

8.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
- B.
 - 1. Amweld Building Products, LLC.
 - 2. Benchmark; a division of Therma-Tru Corporation.
 - 3. Ceco Door Products; an Assa Abloy Group company.
 - 4. Curries Company; an Assa Abloy Group company.
 - 5. Deansteel Manufacturing Company, Inc.
 - 6. Firedoor Corporation.
 - 7. Fleming Door Products Ltd.; an Assa Abloy Group company.
 - 8. Habersham Metal Products Company.
 - 9. Karpen Steel Custom Doors & Frames.
 - 10. Kewanee Corporation (The).
 - 11. Mesker Door Inc.
 - 12. Pioneer Industries, Inc.
 - 13. Security Metal Products Corp.
 - 14. Steelcraft; an Ingersoll-Rand company.
 - 15. Windsor Republic Doors.

8.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A60 metallic coating.
- D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- F. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.
- G. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- H. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- I. Glazing: Comply with requirements in Division 8 Section 08800.
- J. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

8.3 STANDARD HOLLOW METAL DOORS

- A. General: Provide doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.
 - 1. Design: Flush panel.
 - 2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.
 - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
 - b. Thermal-Rated (Insulated) Doors: Where indicated, provide doors fabricated with thermal-resistance value (R-value) of not less than 6.0 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.

- 1) Locations: Exterior doors and interior doors where indicated.
3. Vertical Edges for Single-Acting Doors: Manufacturer's standard.
 - a. Beveled Edge: 1/8 inch in 2 inches.
 4. Vertical Edges for Double-Acting Doors: Round vertical edges with 2-1/8-inch radius.
 5. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick, end closures or channels of same material as face sheets.
 6. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
- B. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).
 - a. Width: As indicated on Drawings.
- C. Interior Doors: Face sheets fabricated from cold-rolled steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).
 - a. Width: As indicated on Drawings.
- D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- E. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.

8.4 STANDARD HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Exterior Frames: Fabricated from metallic-coated steel sheet.
1. Fabricate frames with mitered or coped corners.
 2. Fabricate frames as face welded unless otherwise indicated.
 3. Frames for Level 2 Steel Doors: 0.053-inch- thick steel sheet.
- C. Interior Frames: Fabricated from cold-rolled steel sheet.
1. Fabricate frames with mitered or coped corners.
 2. Fabricate frames as face welded unless otherwise indicated.
 3. Frames for Level 2 Steel Doors: 0.053-inch thick steel sheet.
 4. Frames for Wood Doors: 0.053-inch thick steel sheet.
- D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

8.5 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 - 2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
 - 3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
 - 4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

- B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:
 - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
 - 2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

8.6 HOLLOW METAL PANELS

- A. Provide hollow metal panels of same materials, construction, and finish as specified for adjoining hollow metal work.

8.7 STOPS AND MOLDINGS

- A. Moldings for Glazed Lites in Doors: Minimum 0.032 inch thick, fabricated from same material as door face sheet in which they are installed.
- B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.
- C. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch thick, fabricated from same material as frames in which they are installed.

8.8 LOUVERS

- A. Provide louvers for interior doors, where indicated, that comply with SDI 111C, with blades or baffles formed of 0.020-inch-thick, cold-rolled steel sheet set into 0.032-inch-thick steel frame.
 - 1. Sightproof Louver: Stationary louvers constructed with inverted V-shaped or Y-shaped blades.

8.9 ACCESSORIES

- A. Ceiling Struts: Minimum 1/4-inch-thick by 1-inch-wide steel.
- B. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

8.10 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.
- C. Hollow Metal Doors:
 - 1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
 - 2. Glazed Lites: Factory cut openings in doors.
 - 3. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
- D. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 - 4. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 - 5. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Two anchors per jamb up to 60 inches high.
 - 2) Three anchors per jamb from 60 to 90 inches high.
 - 3) Four anchors per jamb from 90 to 120 inches high.
 - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
 - b. Compression Type: Not less than two anchors in each jamb.
 - c. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
 - 6. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- E. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.

- F. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 8 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
 2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
 4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 16 Sections.
- G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
 4. Provide loose stops and moldings on inside of hollow metal work.
 5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

8.11 STEEL FINISHES

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 9 - EXECUTION

9.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

9.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - 3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

9.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.
 - 1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. At fire-protection-rated openings, install frames according to NFPA 80.
 - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - c. Install frames with removable glazing stops located on secure side of opening.
 - d. Install door silencers in frames before grouting.
 - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - g. Field apply bituminous coating to backs of frames that are filled with grout containing antifreezing agents.
 - 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 - 3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames.

4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
 5. Concrete Walls: Solidly fill space between frames and concrete with grout. Take precautions, including bracing frames, to ensure that frames are not deformed or damaged by grout forces.
 6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 7. In-Place Gypsum Board Partitions: Secure frames in place with postinstalled expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 8. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.
 9. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Standard Steel Doors:
 - a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
 3. Smoke-Control Doors: Install doors according to NFPA 105.
- D. Glazing: Comply with installation requirements in Division 8 Section "Glazing" and with hollow metal manufacturer's written instructions.
1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

9.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.

- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 08110

SECTION 08210
FLUSH WOOD DOORS

PART 10 -- GENERAL

10.1 RELATED DOCUMENTS

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

10.2 SUMMARY

- A. Section Includes:

1. Solid-core doors with wood-veneer faces to match existing.
2. Factory fitting flush wood doors to frames and factory machining for hardware.

10.3 SUBMITTALS

- A. Product Data: For each type of door indicated. Include details of core and edge construction and trim for openings.

- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.

1. Indicate dimensions and locations of mortises and holes for hardware.
2. Indicate dimensions and locations of cutouts.
3. Indicate requirements for veneer matching.
4. Indicate doors to be factory finished and finish requirements.
5. Indicate fire-protection ratings for fire-rated doors.

- C. Samples for Verification:

1. Corner sections of doors, approximately 8 by 10 inches, with door faces and edges representing actual materials to be used.
 - a. Provide samples for each species of veneer and solid lumber required.
 - b. Provide samples for each color, texture, and pattern of plastic laminate required.
 - c. Finish veneer-faced door samples with same materials proposed for factory-finished doors.

- D. Warranty: Sample of special warranty.

10.4 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- B. **Source Limitations:** Obtain flush wood doors from single manufacturer.
- C. **Quality Standard:** In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors."
 - 1. **Provide WI-Certified Compliance Certificate** indicating that doors comply with requirements of grades specified.
- D. **Forest Certification:** Provide doors made with all wood products obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
- E. **Fire-Rated Wood Doors:** Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252.
 - 1. **Temperature-Rise Limit:** At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.
- F. **Preinstallation Conference:** Conduct conference at Project site.

10.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons.
- C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

10.6 PROJECT CONDITIONS

- A. **Environmental Limitations:** Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
- B. **Environmental Limitations:** Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.

10.7 WARRANTY

- A. **Special Warranty:** Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:

- a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 11 - PRODUCTS

11.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Algoma Hardwoods, Inc.
 2. Ampco, Inc.
 3. Buell Door Company Inc.
 4. Chappell Door Co.
 5. Eagle Plywood & Door Manufacturing, Inc.
 6. Eggers Industries.
 7. Graham; an Assa Abloy Group company.
 8. Haley Brothers, Inc.
 9. Ideal Architectural Doors & Plywood.
 10. Ipik Door Company.
 11. Lambton Doors.
 12. Marlite.
 13. Marshfield Door Systems, Inc.
 14. Mohawk Flush Doors, Inc.; a Masonite company.
 15. Oshkosh Architectural Door Company.
 16. Poncraft Door Company.
 17. Vancouver Door Company.
 18. VT Industries Inc.

11.2 DOOR CONSTRUCTION, GENERAL

- A. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.
- B. WDMA I.S.1-A Performance Grade: Heavy Duty.
- C. Structural-Composite-Lumber-Core Doors:
 1. Structural Composite Lumber: WDMA I.S.10.
 - a. Screw Withdrawal, Face: 700 lbf.
- D. Fire-Protection-Rated Doors: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
 1. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.

2. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Comply with specified requirements for exposed edges.
3. Pairs: Provide formed-steel edges and astragals.
 - a. Finish steel edges and astragals with baked enamel same color as doors.

E. Mineral-Core Doors:

1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware:
 - a. 5-inch top-rail blocking.
 - b. 5-inch bottom-rail blocking, in doors indicated to have protection plates.
 - c. 5-inch midrail blocking, in doors indicated to have armor plates.
 - d. 4-1/2-by-10-inch lock blocks, in doors indicated to have exit devices.
3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

11.3 VENEERED-FACED DOORS FOR TRANSPARENT FINISH

A. Interior Solid-Core Doors:

1. Grade: Custom Grade A faces.
2. Species: Select white birch.
3. Match between Veneer Leaves: Pleasing match.
4. Assembly of Veneer Leaves on Door Faces: Center-balance match.
5. Pair and Set Match: Provide for doors hung in same opening.
6. Room Match: Provide door faces of compatible color and grain within each separate room or area of building.
7. Core: Glued wood stave.
8. Construction: Five plies. Stiles and rails are bonded to core, then entire unit abrasive planed before veneering. Faces are bonded to core using a hot press.

11.4 LOUVERS AND LIGHT FRAMES

A. Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads as follows unless otherwise indicated.

1. Wood Species: Same species as door faces.
2. Profile: Manufacturer's standard shape.
3. At wood-core doors with 20-minute fire-protection ratings, provide wood beads and metal glazing clips approved for such use.

B. Wood-Veneered Beads for Light Openings in Fire-Rated Doors: Manufacturer's standard wood-veneered noncombustible beads matching veneer species of door faces and approved for use in

doors of fire-protection rating indicated. Include concealed metal glazing clips where required for opening size and fire-protection rating indicated.

11.5 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 - 1. Comply with requirements in NFPA 80 for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
 - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 - 2. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
- C. Openings: Cut and trim openings through doors in factory.
 - 1. Light Openings: Trim openings with moldings of material and profile indicated.
 - 2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Division 8 Section "Glazing."
 - 3. Louvers: Factory install louvers in prepared openings.

11.6 SHOP PRIMING

- A. Doors for Transparent Finish: Shop prime doors with stain (if required), other required pretreatments, and first coat of finish as specified in Division 9 Section 09931. Seal all four edges, edges of cutouts, and mortises with first coat of finish.

PART 12 - EXECUTION

12.1 EXAMINATION

- A. Examine doors and installed door frames before hanging doors.
 - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

12.2 INSTALLATION

- A. Hardware: For installation, see Division 8 Section "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard, and as indicated.
 - 1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.

- C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
 - 1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.
 - a. Comply with NFPA 80 for fire-rated doors.
 - 2. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.
 - 3. Bevel fire-rated doors 1/8 inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.
- D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- E. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

12.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 08210

SECTION 08311

ACCESS DOORS AND FRAMES

PART 13 - GENERAL

13.1 RELATED DOCUMENTS

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

13.2 SUMMARY

- A. This Section includes the following:
 - 1. Access doors and frames for walls and ceilings.
 - 2. Floor access doors and frames.

13.3 SUBMITTALS

- A. Product Data: For each type of access door and frame indicated. Include construction details, materials, individual components and profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation details of access doors and frames for each type of substrate. Include plans, elevations, sections, details, and attachments to other work.
- D. Samples: For each door face material, at least 3 by 5 inches in size, in specified finish.
- E. Access Door and Frame Schedule: Provide complete access door and frame schedule, including types, locations, sizes, latching or locking provisions, and other data pertinent to installation.
- F. Ceiling Coordination Drawings: Reflected ceiling plans, drawn to scale, on which ceiling-mounted items including access doors and frames, lighting fixtures, diffusers, grilles, speakers, sprinklers, and special trim are shown and coordinated with each other.

13.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of access door(s) and frame(s) through one source from a single manufacturer.
- B. Fire-Rated Access Doors and Frames: Units complying with NFPA 80 that are identical to access door and frame assemblies tested for fire-test-response characteristics per the following test method and that are listed and labeled by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:
 - 1. NFPA 252 for vertical access doors and frames.

- C. Size Variations: Obtain Architect's acceptance of manufacturer's standard-size units, which may vary slightly from sizes indicated.

13.5 COORDINATION

- A. Verification: Determine specific locations and sizes for access doors needed to gain access to concealed plumbing, mechanical, or other concealed work, and indicate in the schedule specified in "Submittals" Article.

PART 14 - PRODUCTS

14.1 STEEL MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
 - 1. ASTM A 123/A 123M, for galvanizing steel and iron products.
 - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
- B. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
 - 1. ASTM A 123/A 123M, for galvanizing steel and iron products
 - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
- C. Steel Sheet: Electrolytic zinc-coated, ASTM A 591/A 591M with cold-rolled steel sheet substrate complying with ASTM A 1008/A 1008M, Commercial Steel (CS), exposed.
- D. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS) with A60 zinc-iron-alloy (galvannealed) coating or G60 mill-phosphatized zinc coating; stretcher-leveled standard of flatness; with minimum thickness indicated representing specified thickness according to ASTM A 924/A 924M.
- E. Steel Finishes: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Surface Preparation for Steel Sheet: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
 - 2. Surface Preparation for Metallic-Coated Steel Sheet: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.
 - a. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
 - 3. Factory-Primed Finish: Apply shop primer immediately after cleaning and pretreating.

14.2 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Acudor Products, Inc.
 - 2. Babcock-Davis; A Cierra Products Co.
 - 3. Bar-Co, Inc. Div.; Alfab, Inc.
 - 4. Cendrex Inc.
 - 5. Dur-Red Products.
 - 6. Elmdor/Stoneman; Div. of Acorn Engineering Co.
 - 7. Jensen Industries.
 - 8. J. L. Industries, Inc.
 - 9. Karp Associates, Inc.
 - 10. Larsen's Manufacturing Company.
 - 11. MIFAB, Inc.
 - 12. Milcor Inc.
 - 13. Nystrom, Inc.
 - 14. Williams Bros. Corporation of America (The).
- C. Flush Access Doors and Frames with Exposed Trim: Fabricated from steel sheet.
 - 1. Locations: Wall surfaces.
 - 2. Door: Minimum 0.060-inch thick sheet metal, set flush with exposed face flange of frame.
 - 3. Frame: Minimum 0.060-inch thick sheet metal with 1-1/4-inch wide, surface-mounted trim.
 - 4. Hinges: Continuous piano.
 - 5. Lock: Cylinder.
 - a. Lock Preparation: Prepare door panel to accept cylinder specified in Division 8 Section "08710".

14.3 FABRICATION

- A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.
- B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of supports indicated.
 - 1. Exposed Flanges: Nominal 1 to 1-1/2 inches wide around perimeter of frame.
 - 2. Provide mounting holes in frame for attachment of masonry anchors. Furnish adjustable metal masonry anchors.

- D. Latching Mechanisms: Furnish number required to hold doors in flush, smooth plane when closed.
1. For cylinder lock, furnish two keys per lock and key all locks alike.
 2. For recessed panel doors, provide access sleeves for each locking device. Furnish plastic grommets and install in holes cut through finish.

PART 15 - EXECUTION

15.1 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames.
- B. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finish surfaces.
- C. Install doors flush with adjacent finish surfaces or recessed to receive finish material.

15.2 ADJUSTING AND CLEANING

- A. Adjust doors and hardware after installation for proper operation.
- B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

END OF SECTION 08311

SECTION 08710
DOOR HARDWARE

PART 16 - - GENERAL

16.1 RELATED DOCUMENTS

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

16.2 SUMMARY

- A. This Section includes the following:
1. Commercial door hardware for the following:
 - a. Swinging doors
 - b. Other doors to the extent indicated.
 2. Cylinders for doors specified in other Section
- B. Related Sections include the following:
1. Division 8 Section 08110.
 2. Division 8 Section 08210.
 3. Division 8 Section 08311.
- C. Installation: General types and approximate quantities of door hardware are indicated in the list of door hardware sets to provide a basis for the cost of installation and other Work that is part of the Contract Sum but not included in door hardware allowance.

16.3 SUBMITTALS

- A. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Samples for Verification: Submit minimum Samples of each type of finish required, except primed finish.
- C. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.
- D. Warranty: Special warranty specified in this Section.
- E. Other Action Submittals:
1. Door Hardware Sets: Prepared by or under the supervision of Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures

and diagrams. Coordinate the final door hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

- a. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.
 - b. Content: Include the following information:
 - 1) Identification number, location, hand, fire rating, and material of each door and frame.
 - 2) Type, style, function, size, quantity, and finish of each door hardware item.
 - 3) Complete designations of every item required for each door or opening including name and manufacturer.
 - 4) Fastenings and other pertinent information.
 - 5) Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - 6) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for door hardware.
 - 8) Door and frame sizes and materials.
 - 9) List of related door devices specified in other Sections for each door and frame.
 - c. Submittal Sequence: Submit initial draft of final schedule along with essential Product Data to facilitate the fabrication of other work that is critical in Project construction schedule. Submit the final door hardware sets after Samples, Product Data, coordination with Shop Drawings of other work, delivery schedules, and similar information has been completed and accepted.
2. Keying Schedule: Prepared by or under the supervision of Architectural Hardware Consultant detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

16.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.
 1. Installer's responsibilities include supplying and installing door hardware and providing a qualified Architectural Hardware Consultant available during the course of the Work to consult with Contractor, Construction manager, and Owner about door hardware and keying.
 2. Installer shall have warehousing facilities in Project's vicinity.
 3. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- B. Architectural Hardware Consultant Qualifications: A person who is currently certified by DHI as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
- C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
- D. Fire-Rated Door Assemblies: 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 252.

Test Pressure: After 5 minutes into the test, neutral pressure level in furnace shall be established at 40 inches or less above the sill.

- E. Keying Conference: Conduct conference at Project site to comply with requirements conference participants shall include Installer's Architectural Hardware Consultant and Owner's security consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
 - 1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2. Preliminary key system schematic diagram.
 - 3. Address for delivery of keys.
- F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

16.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final door hardware sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.
- C. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirement
- D. Existing Openings: Where new hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide for proper operation.

16.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of operators and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Two years from date of Substantial Completion, except as follows:
 - a. Exit Devices: Two years from date of Substantial Completion.
 - b. Manual Closers: 10 years from date of Substantial Completion.

16.7 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 17 -- PRODUCTS

17.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in this Section and door hardware sets indicated .
 - 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.
 - 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Sets" Article. Products are identified by using door hardware designations, as follows:
 - 1. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.
- C. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

17.2 HINGES, GENERAL

- A. Quantity: Provide the following, unless otherwise indicated:
 - 1. Two Hinges: For doors with heights up to 60 inches .
 - 2. Three Hinges: For doors with heights 61 to 90 inches.
 - 3. Four Hinges: For doors with heights 91 to 120 inches.
 - 4. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
- B. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- C. Hinge Weight: Unless otherwise indicated, provide the following:
 - 1. Doors with Closers: Antifriction-bearing hinges.
 - 2. Interior Doors: Standard-weight hinges.
- D. Hinge Base Metal: Unless otherwise indicated, provide the following:

1. Exterior Hinges: Stainless steel, with stainless-steel pin
 2. Interior Hinges: Steel, with steel pin
 3. Hinges for Fire-Rated Assemblies: Steel, with steel pin
- E. Hinge Options: Where indicated in door hardware sets or on Drawings:
1. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for outswinging exterior doors
 2. Corners: Square
- F. Fasteners: Comply with the following:
1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
 2. Wood Screws: For wood doors and frames.
 3. Threaded-to-the-Head Wood Screws: For fire-rated wood doors.
 4. Screws: Phillips flat-head; machine screws (drilled and tapped holes) for metal doors wood screws for wood doors and frames Finish screw heads to match surface of hinges.

17.3 HINGES

- A. Butts and Hinges: BHMA A156.1. Listed under Category A in BHMA's "Certified Product Directory."
- B. Template Hinge Dimensions: BHMA A156.7.
- C. Manufacturers:
1. Hager Companies (HAG).
 2. McKinney Products Company; an ASSA ABLOY Group company
 3. Stanley Commercial Hardware; Div. of The Stanley Works (STH).
 4. Ives(IVE)

17.4 SPRING HINGES

- A. Self-Closing Hinges: BHMA A156.17 Listed under Category A in BHMA's "Certified Product Directory."
- B. Manufacturers:
1. Bommer Industries, Inc. (BI).
 2. Hager Companies (HAG).
 3. McKinney Products Company; an ASSA ABLOY Group company (MCK)
 4. Stanley Commercial Hardware; Div. of The Stanley Works (STH).
 5. Ives(IVE)>

17.5 CONTINUOUS HINGES

- A. General: Minimum 0.120-inch- thick, hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.
1. Fire Pins: Steel pins to hold labeled fire doors in place if required by tested listing.

- B. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves; joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.

- 1 Manufacturer
 - a. Pemko Manufacturing Co. (PEM).
 - b. Select Products Limited (SPL).
 - c. Zero International (ZRO).
 - d. Ives(IVE)

17.6 LOCKS AND LATCHES, GENERAL

- A. Accessibility Requirements: Where indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA),
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
- B. Latches and Locks for Means of Egress Doors: Comply with NFPA 101. Latches shall not require more than 15 lbf to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.
 - 1. Dummy Trim: Match lock trim and escutcheons.
 - 2. Lockset Designs: Schlage 93A
- C. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 - 1. Mortise Locks: Minimum 3/4-inch latchbolt throw.
 - 2. Deadbolts: Minimum 1-inch bolt throw.
- D. Backset: 2-3/4 inches, unless otherwise indicated.
- E. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, and as follows:

17.7 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: Function numbers and descriptions indicated in door hardware sets comply with the following:
 - 1. Mortise Locks: BHMA A156.
- B. Mortise Locks: Stamped steel case with steel or brass parts; BHMA A156.13 Grade 1.
 - 1. Manufacturers:
 - a. Best Access Systems; Div. of The Stanley Works (BAS). To conform to County's standard locks.

17.8 AUXILIARY LOCKS AND LATCHES

- A. Auxiliary Locks: BHMA A156.5 Grade 1 .
 - 1. Manufacturers:

- a. Best Access Systems; Div. of The Stanley Works (BAS). To conform to County's standard locks.

17.9 DOOR BOLTS

- A. Bolt Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows
 - 1. Fire-Rated Surface Bolts: Minimum 1-inch throw; listed and labeled for fire-rated doors.
 - 2. Mortise Flush Bolts: Minimum 3/4-inch throw.
- B. Dustproof Strikes: BHMA A156.16, Grade 1.
- C. Manual Flush Bolts: BHMA A156.16, Grade 1 designed for mortising into door edge.
 - 1. Manufacturer
 - a. Door Controls International (DCI).
 - b. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
 - c. Hager Companies (HAG).
 - d. IVES Hardware; an Ingersoll-Rand Company (IVS).
- D. Automatic and Self-Latching Flush Bolts: BHMA A156.3, Grade 1 designed for mortising into door edge.
 - 1. Manufacturers:
 - a. Door Controls International (DCI).
 - b. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
 - c. Hager Companies (HAG).
 - d. IVES Hardware; an Ingersoll-Rand Company (IVE)

17.10 EXIT DEVICES

- A. Exit Devices: BHMA A156., Grade 1
- B. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf
- C. Exit Devices for Means of Egress Doors: Comply with NFPA 101. Exit devices shall not require more than 15 lbf to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.
- D. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
- E. Fire Exit Devices: Devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.
- F. Removable Mullions: BHMA A156.3.

G. Outside Trim: material and finish to match locksets, unless otherwise indicated.

1. Match design for locksets and latchsets, unless otherwise indicated.

H. Through Bolts: For exit devices and trim .

17.11 LOCK CYLINDERS

A. Standard Lock Cylinders: BHMA A156.5, Grade 2,

B. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:

1. Number of Pins: Six

2. Mortise Type: Threaded cylinders with rings and straight- or clover-type cam.

3. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.

C. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

D. Construction Keying: Comply with the following:

1. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.

E. Manufacturers:

1. Best Access Systems; Div. of The Stanley Works (BAS). To conform to County's standard cores.

17.12 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference, and as follows:

1. Master Key System: Cylinders are operated by a change key and a master key.

B. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number .

2. Quantity: In addition to one extra key blank for each lock, provide the following:

a. Cylinder Change Keys: Three.

b. Master Keys: Five.

17.13 KEY CONTROL SYSTEM

A. Key Control Cabinet: BHMA A156.5, Grade 1; metal cabinet with baked-enamel finish; containing key-holding hooks, labels, 2 sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers; with key capacity of 20 keys

1. Wall-Mounted Cabinet: Cabinet with hinged-panel door equipped with key-holding panels and pin-tumbler cylinder door lock.

- B. Cross-Index System: Multiple-index system for recording key information. Include three receipt forms for each key-holding hook. Set up by Owner.

Manufacturers:

- a. Key Control Systems, Inc. (KCS).
- b. Lund Equipment Co., Inc. (LUN).
- c. MMF Industries (MMF).
- d. Sunroc Corporation (SUN).Key Lock Boxes:
- e. Knox Company (KNX).

17.14 CLOSERS

- A. Accessibility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act.

1. Comply with the following maximum opening-force requirements:

- a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
- b. Sliding or Folding Doors: 5 lbf applied parallel to door at latch.
- c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

- B. Door Closers for Means of Egress Doors: Comply with NFPA 101. Door closers shall not require more than 30 lbf to set door in motion and not more than 15 lbf to open door to minimum required width.

- C. Size of Units: Unless otherwise indicated, comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

- D. Surface Closers: BHMA A156.4, Grade 1 Provide type of arm required for closer to be located on non-public side of door, unless otherwise indicated.

1. Manufacturers:

- a. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company (C)
- b. LCN Closers; an Ingersoll-Rand Company (LCN).
- c. Norton Door Controls; an ASSA ABLOY Group company (NDC).
- d. SARGENT Manufacturing Company; an ASSA ABLOY Group company (SGT).

- E. Coordinators: BHMA A156.3.

17.15 PROTECTIVE TRIM UNITS

- A. Size: 1-1/2 inches less than door width on push side and 1/2 inch less than door width on pull side, by height specified in door hardware sets.

- B. Fasteners: Manufacturer's standard machine or self-tapping screws.

- C. Metal Protective Trim Units: BHMA A156.6; beveled top and 2 sides; fabricated from the following material:

1. Material: 0.050-inch- thick stainless steel.
2. Manufacturers:
 - a. Baldwin Hardware Corporation (BH).
 - b. Burns Manufacturing Incorporated (BM)
 - c. Hager Companies (HAG)
 - d. IVES Hardware; an Ingersoll-Rand Company (IVS).
 - e. Rockwood Manufacturing Company (RM)

17.16 STOPS AND HOLDERS

- A. Stops and Bumpers: BHMA A156.16, Grade 1
 1. Provide floor stops for doors unless wall or other type stops are scheduled or indicated. Do not mount floor stops where they will impede traffic. Where floor or wall stops are not appropriate, provide overhead holders.
- B. Mechanical Door Holders: BHMA A156.16, Grade 1.
- C. Silencers for Metal Door Frames: BHMA A156.16, Grade 1; neoprene or rubber, minimum diameter 1/2 inch ; fabricated for drilled-in application to frame.
- D. Manufacturers:
 1. Baldwin Hardware Corporation (BH).
 2. Glynn-Johnson; an Ingersoll-Rand Company (GJ).
 2. Hager Companies (HAG)
 3. IVES Hardware; an Ingersoll-Rand Company (IVS).
 4. Rockwood Manufacturing Company (RM).

17.17 DOOR GASKETING

- A. Standard: BHMA A156.22. Listed under Category J in BHMA's "Certified Product Directory."
- B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
 1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
 3. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- C. Air Leakage: Not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.
- D. Smoke-Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke-control ratings indicated, based on testing according to UL 1784.
 1. Provide smoke-labeled gasketing on 20-minute-rated doors and on smoke-labeled doors.
- E. Fire-Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.

1. Test Pressure: After 5 minutes into the test, neutral pressure level in furnace shall be established at 40 inches or less above the sill
- F. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- G. Gasketing Materials: ASTM D 2000 and AAMA 701/702.
- H. Manufacturers:
1. Hager Companies (HAG).
 2. National Guard Products (NGP).
 3. Pemko Manufacturing Co. (PEM).
 4. Reese Enterprises (REE)

17.18 THRESHOLDS

- A. Standard: BHMA A156.21. Listed under Category J in BHMA's "Certified Product Directory."
- B. Accessibility Requirements: Where thresholds are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA).
1. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.
- C. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch high.
- D. Manufacturers:
1. Hager Companies (HAG).
 2. National Guard Products (NGP).
 3. Pemko Manufacturing Co. (PEM).
 4. Reese Enterprises (RE).

17.19 MISCELLANEOUS DOOR HARDWARE

- A. Boxed Power Supplies: Modular unit in NEMA ICS 6, Type 4 enclosure; filtered and regulated; voltage rating and type matching requirements of door hardware served; and listed and labeled for use with fire alarm systems.
- B. Auxiliary Hardware: BHMA A156.16, Grade 1.
1. Manufacturers:
 - a. Baldwin Hardware Corporation (BH).
 - b. Rockwood Manufacturing Company (RM).
 - c. Stanley Commercial Hardware; Div. of The Stanley Works (STH).
 - d. Ives

17.20 FABRICATION

- A. **Manufacturer's Nameplate:** Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Construction Manager.
 - 1. Manufacturer's identification is permitted on rim of lock cylinders only.
- B. **Base Metals:** Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.
- C. **Fasteners:** Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
 - 1. **Concealed Fasteners:** For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 - 2. **Steel Machine or Wood Screws:** For the following fire-rated applications:
 - a. Mortise hinges to doors.
 - b. Strike plates to frames.
 - c. Closers to doors and frame
 - 3. **Fasteners for Wood Doors:** Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."

17.21 FINISHES

- A. **Standard:** BHMA A156.18, as indicated in door hardware sets.
- B. **Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.**
- C. **Appearance of Finished Work:** Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 18 - EXECUTION

18.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

18.2 PREPARATION

- A. Steel Doors and Frames: Comply with DHI A115 Series.
 - 1. Surface-Applied Door Hardware: Drill and tap doors and frames according to ANSI A250.6.
- B. Wood Doors: Comply with DHI A115-W Series.

18.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated as follows unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

18.4 FIELD QUALITY CONTROL

- A. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

18.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
 - 2. Door Closers: Unless otherwise required by authorities having jurisdiction, adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

18.6 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

18.7 HARDWARE SCHEDULE

END OF SECTION 08710

DIVISION 9

Finishes

SECTION 09250
GYPSUM BOARD

PART 19 - - GENERAL

1.1 DESCRIPTION

A. SCOPE

1. This Section specifies interior gypsum board, exterior gypsum board for ceilings and soffits and tile backing panels.

B. RELATED SECTIONS

1. Division 9 Section 09310 for cementitious backer units installed as substrates for ceramic tile.
2. Division 9 Section 09911 for primers applied to gypsum board surfaces.

1.2 SUBMITTALS

The following information shall be provided in accordance with Section 01300.

1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Construction Manager shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined shall signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

2. Product data for each type of product indicated

1.3 STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.4 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 20 -- PRODUCTS

2.1 PANELS, GENERAL

A. RECYCLED CONTENT

- 1. Provide gypsum panel products with recycled content such that postconsumer recycled content plus one-half of preconsumer recycled content constitutes a minimum of 50 percent by weight.

B. SIZE

- 1. Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

A. GENERAL

- 1. Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
- 2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Gypsum Co.
 - b. BPB America Inc.
 - c. G-P Gypsum.
 - d. Lafarge North America Inc.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. Temple.
 - h. USG Corporation.

C. REGULAR TYPE

- 1. Thickness: 5/8 inch.
- 2. Long Edges: Tapered.

D. TYPE X

- 1. Thickness: 5/8 inch.

2. Long Edges: Tapered.

E. CEILING TYPE

Manufactured to have more sag resistance than regular-type gypsum board.

1. Thickness: 5/8 inch.
2. Long Edges: Tapered.

2.3 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

A. EXTERIOR GYPSUM SOFFIT BOARD

1. ASTM C 931/C 931M or ASTM C 1396/C 1396M, with manufacturer's standard edges.
2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Gypsum Co.
 - b. BPB America Inc.
 - c. G-P Gypsum.
 - d. Lafarge North America Inc.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. Temple.
 - h. USG Corporation.
3. Core: As indicated.

2.4 TILE BACKING PANELS

A. CEMENTITIOUS BACKER UNITS

1. ANSI A118.9.
2. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Custom Building Products; Wonderboard.
 - b. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
 - c. USG Corporation; DUROCK Cement Board.
3. Thickness: 1/2 inch.

2.5 TRIM ACCESSORIES

A. INTERIOR TRIM

1. ASTM C 1047.

2. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
3. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. L-Bead: L-shaped; exposed long flange receives joint compound.
 - d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - e. Expansion (control) joint.

B. EXTERIOR TRIM

1. ASTM C 1047.
2. Material: Hot-dip galvanized steel sheet, plastic, or rolled zinc.
3. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

2.6 JOINT TREATMENT MATERIALS

A. GENERAL

1. Comply with ASTM C 475/C 475M.

B. JOINT TAPE

1. Interior Gypsum Wallboard: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. JOINT COMPOUND FOR INTERIOR GYPSUM WALLBOARD

1. For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
2. Prefilling: At open joints, and damaged surface areas, use setting-type taping compound.
3. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
4. Fill Coat: For second coat, use drying-type, all-purpose compound.
5. Finish Coat: For third coat, use drying-type, all-purpose compound.

D. JOINT COMPOUND FOR EXTERIOR APPLICATIONS

1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
2. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

E. JOINT COMPOUND FOR TILE BACKING PANELS

1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.7 AUXILIARY MATERIALS

A. GENERAL

1. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. LAMINATING ADHESIVE

1. Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
2. Use adhesives that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. STEEL DRILL SCREWS

1. ASTM C 1002, unless otherwise indicated.
2. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
3. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

PART 21 -- EXECUTION

3.1 EXAMINATION

A. AREAS AND SUBSTRATES:

1. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

B. PRIOR TO INSTALLATION:

1. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. INSTALLATION:

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

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. GENERAL:

1. Comply with ASTM C 840.

B. CEILING PANELS:

1. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
2. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

C. JOINTS:

1. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

D. CONTROL JOINTS:

- 1 Form control and expansion joints with space between edges of adjoining gypsum panels.

E. CONCEALED SPACES:

Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

F. ISOLATION:

1. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

G. ATTACHMENT TO STEEL FRAMING:

1. Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. GENERAL:

Install interior gypsum board in the following locations:

1. Regular Type: As indicated on Drawings.
2. Type X: As indicated on Drawings.
3. Ceiling Type: As indicated on Drawings.

B. SINGLE-LAYER APPLICATION:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels horizontally (perpendicular 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 panels.
 - b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. MULTILAYER APPLICATION:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints 1 framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers and face layers separately to supports with screws

3.4 APPLYING EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

A. GENERAL:

1. Apply panels perpendicular to supports, with end joints staggered and located over supports.
2. Install with 1/4-inch open space where panels abut other construction or structural penetrations.
3. Fasten with corrosion-resistant screws.

3.5 APPLYING TILE BACKING PANELS

A. CEMENTITIOUS BACKER UNITS:

1. ANSI A108.11, at showers, tubs, and where indicated locations indicated to receive tile.

B. AREAS NOT SUBJECT TO WETTING:

1. Install regular-type gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive water-resistant panels.

C. ABUTTING PANELS:

1. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.6 INSTALLING TRIM ACCESSORIES

A. GENERAL:

1. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. CONTROL JOINTS:

1. Install control joints at according to ASTM C 840 and in specific locations approved by Construction Manager for visual effect.

C. INTERIOR TRIM:

Install in the following locations:

1. Cornerbead: Use at outside corners.
2. LC-Bead: Use at exposed panel edges.
3. L-Bead: Use where indicated.

D. EXTERIOR TRIM:

Install in the following locations:

1. Cornerbead: Use at outside corners.

3.7 FINISHING GYPSUM BOARD

A. GENERAL:

1. Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. JOINTS:

1. Prefill open joints, beveled edges, and damaged surface areas.

C. TAPING JOINTS:

1. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

D. GYPSUM BOARD FINISH LEVELS

Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 4: At panel surfaces that will be exposed to view.
 - a. Primer and its application to surfaces are specified in other Division 9 Sections.

E. CEMENTITIOUS BACKER UNITS:

1. Finish according to manufacturer's written instructions.

3.8 PROTECTION

A. GENERAL:

1. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. DAMAGED PANELS:

1. Remove and replace panels that are wet, moisture damaged, and mold damaged.
2. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
3. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09250

SECTION 09310

CERAMIC TILE

PART 22 - GENERAL

22.1 RELATED DOCUMENTS

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

22.2 SUMMARY

- A. Section Includes:

1. Ceramic tile.
2. Waterproof membrane.
3. Crack isolation membrane.
4. Tile backing panels.

- B. Related Sections:

1. Division 7 Section 07141 for waterproofing under thickset mortar beds.
2. Division 7 Section 07920 for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
3. Division 9 Section 09250 for cementitious backer units.
4. Division 9 Section "Stone Flooring" for stone thresholds.

22.3 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in "American National Standard Specifications for Installation of Ceramic Tile."
- C. Module Size: As indicated by Architect

22.4 PERFORMANCE REQUIREMENTS

- A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:
 1. Level Surfaces: > .60 Wet, >.70 Dry

22.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.
- D. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required. Make samples at least 12 inches square, but not fewer than 4 tiles. Use grout of type and in color or colors approved for completed Work.
 - 3. Full-size units of each type of trim and accessory for each color and finish required.
 - 4. Stone thresholds in 6-inch lengths.
- E. Qualification Data: For qualified Installer.
- F. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.
- G. Product Certificates: For each type of product, signed by product manufacturer.
- H. Material Test Reports: For each tile-setting and -grouting product.

22.6 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from one source or producer.
 - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer for each product:
 - 1. Stone thresholds.
 - 2. Waterproof membrane.
 - 3. Crack isolation membrane.
 - 4. Joint sealants.
 - 5. Cementitious backer units.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of each type of floor tile installation.
2. Build mockup of each type of wall tile installation.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at Project site.

1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

22.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.
- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

22.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

22.9 EXTRA MATERIALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

PART 23 - PRODUCTS

23.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, 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.
- D. 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.
- E. 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.

23.2 TILE PRODUCTS

- A. Tile Type CT-1 & CT-2: Porcelain floor tile.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following.
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide Daltile CT-1 Artico P196 and CT-2 Diamante P202 or comparable product by one of the following:
 - a. American Marazzi Tile, Inc.
 - b. American Olean; Division of Dal-Tile International Inc.
 - c. Daltile; Division of Dal-Tile International Inc.
 - d. Deutsche Steinzeug America, Inc.
 - e. Florida Tile Industries, Inc.
 - f. Florim USA.
 - g. Laufen.
 - h. Grupo Porcelanite.
 - i. Portobello America, Inc.
 - j. Seneca Tiles, Inc.
 - k.

- I. United States Ceramic Tile Company.
 3. Module Size: 4-1/4 by 4-1/4 inches.
 4. Thickness: 1/4" inch.
 5. Face: Pattern of design indicated, with manufacturer's standard edges.
 6. Finish: Bright, opaque polished.
 7. Tile Color and Pattern: As indicated on drawings.
 8. Grout Color: Black.
 9. Mounting: Factory, back mounted.
 10. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
 - a. Base for Portland Cement Mortar Installations: Coved, module size 4-1/4 by 4-1/4 inches.
 - b. Base for Thin-Set Mortar Installations: Straight, module size 4-1/4 by 4-1/4 inches.
 - c. Wainscot Cap for Portland Cement Mortar Installations: Bullnose cap, module size 4-1/4 by 4-1/4 inches.
 - d. Wainscot Cap for Thin-Set Mortar Installations: Surface bullnose, module size 4-1/4 by 4-1/4 inches.
 - e. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above it, same size as adjoining flat tile.
 - f. External Corners for Portland Cement Mortar Installations: Bullnose shape with radius of at least 3/4 inch unless otherwise indicated.
 - g. External Corners for Thin-Set Mortar Installations: Surface bullnose, same size as adjoining flat tile.
 - h. Internal Corners: Field-buttet square corners. For coved base and cap use angle pieces designed to fit with stretcher shapes.

23.3 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 or ASTM C 1325, in maximum lengths available to minimize end-to-end butt joints.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. C-Cure; C-Cure Board 990.
 - b. Custom Building Products; Wonderboard.
 - c. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
 - d. USG Corporation; DUROCK Cement Board.
 2. Thickness: 1/2 inch.

23.4 WATERPROOF MEMBRANE

- A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Polyethylene Sheet: Polyethylene faced on both sides with fleece webbing; 0.008-inch nominal thickness.

1. Products: Subject to compliance with requirements, provide the following:
 - a. Schluter Systems L.P.; KERDI.
- C. Latex-Portland Cement: Flexible mortar consisting of cement-based mix and latex additive.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Boiard Products; a QEP company; Elastiment 323 Cement Based Waterproofing, Anti-Fracture/Crack Suppression Membrane.
 - b. C-Cure; UltraCure 971.
 - c. MAPEI Corporation; Mapelastic (PRP 315).
 - d. Southern Grouts & Mortars, Inc.; Southcrete 1100.
 - e. TEC; a subsidiary of H. B. Fuller Company; Triple Flex Waterproofing, Crack Isolation Membrane & Mortar.

23.5 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Corrugated Polyethylene: Corrugated polyethylene with dovetail-shaped corrugations and with anchoring webbing on the underside; 3/16-inch nominal thickness.
 1. Products: Subject to compliance with requirements, provide the following:
 - a. Schluter Systems L.P.; DITRA.

23.6 SETTING MATERIALS

- A. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
 1. Cleavage Membrane: Asphalt felt, ASTM D 226, Type I (No. 15); or polyethylene sheeting, ASTM D 4397, 4.0 mils thick.
 2. Reinforcing Wire Fabric: Galvanized, welded wire fabric, 2 by 2 inches by 0.062-inch diameter; comply with ASTM A 185 and ASTM A 82 except for minimum wire size.
 3. Expanded Metal Lath: Diamond-mesh lath complying with ASTM C 847.
 - a. Base Metal and Finish for Interior Applications: Uncoated or zinc-coated (galvanized) steel sheet, with uncoated steel sheet painted after fabrication into lath.
 - b. Base Metal and Finish for Exterior Applications: Zinc-coated (galvanized) steel sheet.
 - c. Configuration over Studs and Furring: Flat.
 - d. Configuration over Solid Surfaces: Self furring.
 - e. Weight: 3.4 lb/sq. yd.

4. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement and aggregate mortar bed.

B. Dry-Set Portland Cement Mortar (Thin Set): ANSI A118.1.

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Boiardi Products; a QEP company.
 - b. Bonsal American; an Oldcastle company.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.
 - h. MAPEI Corporation.
 - i. Southern Grouts & Mortars, Inc.
 - j. Summitville Tiles, Inc.
 - k. TEC; a subsidiary of H. B. Fuller Company.
2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.1.

C. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.

1. Manufacturers: Subject to compliance with requirements,

- a. Boiardi Products; a QEP company.
 - b. Bonsal American; an Oldcastle company.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.
 - h. MAPEI Corporation.
 - i. Mer-Kote Products, Inc.
 - j. Southern Grouts & Mortars, Inc.
 - k. Summitville Tiles, Inc.
 - l. TEC; a subsidiary of H. B. Fuller Company.
2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
 3. Provide prepackaged, dry-mortar mix combined with acrylic resin liquid-latex additive at Project site.
 4. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.

D. Organic Adhesive: ANSI A136.1, Type I[, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bonsal American; an Oldcastle company.

- b. Bostik, Inc.
- c. C-Cure.
- d. Custom Building Products.
- e. DAP Inc.
- f. Jamo Inc.
- g. Laticrete International, Inc.
- h. MAPEI Corporation.
- i. Southern Grouts & Mortars, Inc.
- j. Summitville Tiles, Inc.
- k. TEC; a subsidiary of H. B. Fuller Company.

23.7 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement and white or colored aggregate as required to produce color indicated.
- B. Polymer-Modified Tile Grout: ANSI A118.7.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Boiardi Products; a QEP company.
 - b. Bonsal American; an Oldcastle company.
 - c. Bostik, Inc.
 - d. C-Cure.
 - e. Custom Building Products.
 - f. Jamo Inc.
 - g. Laticrete International, Inc.
 - h. MAPEI Corporation.
 - i. Southern Grouts & Mortars, Inc.
 - j. Summitville Tiles, Inc.
 - k. TEC; a subsidiary of H. B. Fuller Company.
 - 2. Polymer Type: Ethylene vinyl acetate or acrylic additive, in dry, redispersible form, prepackaged with other dry ingredients.
 - 3. Polymer Type: Acrylic resin in liquid-latex form for addition to prepackaged dry-grout mix.
- C. Grout for PregROUTed Tile Sheets: Same product used in factory to pregrout tile sheets.

23.8 ELASTOMERIC SEALANTS

- A. General: Provide sealants, primers, backer rods, and other sealant accessories that comply with the following requirements and with the applicable requirements in Division 7 Section 07920.
 - 1. Use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Use primers, backer rods, and sealant accessories recommended by sealant manufacturer.
- B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.

- C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.

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

- a. DAP Inc.; 100 percent Silicone Kitchen and Bath Sealant.
- b. Dow Corning Corporation; Dow Corning 786.
- c. GE Silicones; a division of GE Specialty Materials; Sanitary 1700.
- d. Laticrete International, Inc.; Latacil Tile & Stone Sealant.
- e. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
- f. Tremco Incorporated; Tremsil 600 White.

23.9 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

- B. Temporary Protective Coating: Either product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.

1. Petroleum paraffin wax, fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg F per ASTM D 87.
2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.

- C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

- D. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints and that does not change color or appearance of grout.

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

- a. Bonsal American; an Oldcastle company; Grout Sealer.
- b. Bostik, Inc.; CeramaSeal Grout & Tile Sealer.
- c. C-Cure; Penetrating Sealer 978.
- d. Custom Building Products; Grout Sealer.
- e. Jamo Inc.; Matte Finish Penetrating Sealer.
- f. MAPEI Corporation; KER 003, Silicone Spray Sealer for Cementitious Tile Grout.
- g. Southern Grouts & Mortars, Inc.; Silicone Grout Sealer.
- h. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
- i. TEC; a subsidiary of H. B. Fuller Company; TA-256 Penetrating Silicone Grout Sealer.

23.10 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 24 - EXECUTION

24.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with bonded mortar bed comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 - 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 - 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

24.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped ¼ inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of 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.

- D. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

24.3 TILE INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile walls in wet areas.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Porcelain Floor Tile: ¼ inch.
 - 2. Porcelain Wall Tile: ¼ inch.
- F. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
2. Prepare joints and apply sealants to comply with requirements in Division 7 Section 07920.

24.4 TILE BACKING PANEL INSTALLATION

- A. Install cementitious backer units and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use latex-portland cement mortar for bonding material unless otherwise directed in manufacturer's written instructions.

24.5 WATERPROOFING INSTALLATION

- A. Install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness and bonded securely to substrate.
- B. Do not install tile or setting materials over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

24.6 CRACK ISOLATION MEMBRANE INSTALLATION

- A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate.
- B. Do not install tile or setting materials over crack isolation membrane until membrane has cured.

24.7 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 1. Remove latex-portland cement grout residue from tile as soon as possible.
 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
- B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

- D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

24.8 INSTALLATION SCHEDULE

A. Interior Floor Installations, Concrete Subfloor:

1. Tile Installation F112: Cement mortar bed (thickset) bonded to concrete;
 - a. Tile Type: As indicated by Architect
 - b. Thin-Set Mortar for Cured-Bed Method: latex portland cement mortar.
 - c. Grout: Standard sanded cement grout.

Tile Installation F113: Thin-set mortar; TCA F113.

 - a. Tile Type: As indicated by Architect
 - b. Thin-Set Mortar: Latex-portland cement mortar.
 - c. Grout: Standard sanded cement grout.
3. Tile Installation F122: Thin-set mortar on waterproof membrane; TCA F122.
 - a. Tile Type: As indicated by Architect
 - b. Thin-Set Mortar: Latex-portland cement mortar.
 - c. Grout: Polymer-modified sanded grout.
4. Tile Installation F125A: Thin-set mortar on crack isolation membrane; TCA F125A.
 - a. Tile Type: As indicated by Architect
 - b. Thin-Set Mortar: Latex-portland cement mortar.
 - c. Grout: Polymer-modified sanded grout.

END OF SECTION 09310

SECTION 09511

ACOUSTICAL PANEL CEILINGS

PART 25 - GENERAL

25.1 RELATED DOCUMENTS

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

25.2 SUMMARY

- A. This Section includes acoustical panels and exposed suspension systems for ceilings.
- B. Related Sections include the following:
- C. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete at ceilings.

25.3 DEFINITIONS

- A. AC: Articulation Class.
- B. CAC: Ceiling Attenuation Class.
- C. LR: Light Reflectance coefficient.
- D. NRC: Noise Reduction Coefficient.

25.4 SUBMITTALS

- A. The following information shall be provided in accordance with the General Conditions.
 - 1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Construction Manager shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined shall signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

- B. Product Data: For each type of product indicated.
- C. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
 - 1. Ceiling suspension system members.
 - 2. Method of attaching hangers to building structure.
 - a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.
 - 3. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
 - 4. Minimum Drawing Scale: 1/8 inch = 1 foot.
- D. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
 - 1. Delete first option in first subparagraph below if size of panels makes requirement impractical.
 - 2. Acoustical Panel: Set of 6-inch- square Samples of each type, color, pattern, and texture.
 - 3. Exposed Suspension System Members, Moldings, and Trim: Set of 12-inch- long Samples of each type, finish, and color.
- E. Maintenance Data: For finishes to include in maintenance manuals.

25.5 QUALITY ASSURANCE

- A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory, with the experience and capability to conduct the testing indicated. NVLAP-accredited laboratories must document accreditation, based on a "Certificate of Accreditation" and a "Scope of Accreditation" listing the test methods specified.
- B. Source Limitations:
 - 1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
 - 2. Suspension System: Obtain each type through one source from a single manufacturer.
- C. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system through one source from a single manufacturer.
- D. Fire-Test-Response Characteristics: Provide acoustical panel ceilings that comply with the following requirements:
 - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.

- b. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 2. Surface-Burning Characteristics: Provide acoustical panels with the following surface-burning characteristics complying with ASTM E 1264 for Class [A] [B] [C] materials as determined by testing identical products per ASTM E 84:
 - a. Smoke-Developed Index: 450 or less.
- E. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
 - 1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.
 - 2. CISCA's Recommendations for Acoustical Ceilings: Comply with CISCA's "Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings--Seismic Zones 0-2."
- F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

25.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

25.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
 - 1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

25.8 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

25.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Ceiling Panels: Full-size panels equal to 2.0 percent of quantity installed.
 - 2. Suspension System Components: Quantity of each exposed component equal to 2.0 percent of quantity installed.
 - 3. Hold-Down Clips: Equal to 2.0 percent of quantity installed.

PART 26 - PRODUCTS

26.1 ACOUSTICAL PANELS, GENERAL

- A. Recycled Content: Provide acoustical panels with recycled content such that postconsumer recycled content plus one-half of preconsumer recycled content constitutes a minimum of 25% percent by weight.
- B. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.
 - 1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches away from test surface per ASTM E 795.
- C. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
 - 1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.
- D. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.
- E. Antimicrobial Fungicide Treatment: Provide acoustical panels with face and back surfaces coated with antimicrobial treatment consisting of manufacturer's standard formulation with fungicide added to inhibit growth of mold and mildew and showing no mold or mildew growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

26.2 ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- B. Products: Subject to compliance with requirements, provide one of the following:

1. Armstrong World Industries, Inc.
 2. BPB USA.
 3. Chicago Metallic Corporation.
 4. Ecophon CertainTeed, Inc.
 5. Tectum Inc.
 6. USG Interiors, Inc.
- C. Basis-of-Design Product: Subject to compliance with requirements, provide Armstrong world Industries, "Dune", #1850 or a comparable product by one of the following:
- D. Classification: Provide fire-resistance-rated panels complying with ASTM E 1264 for type, form, and pattern as follows:
1. Type and Form: Type III, mineral base with painted finish; Form 1, nodular.
 2. Pattern: fine textured, nondirectional.
- E. Color: White.
- F. LR: 0.83.
- G. NRC: 0.50
- H. CAC: 35
- I. AC: NA
- J. Edge/Joint Detail: Square.
- K. Thickness: 5/8 inch.
- L. Modular Size: 24 by 24 inches.
- M. Antimicrobial Treatment: Broad spectrum fungicide and bactericide based.

26.3 METAL SUSPENSION SYSTEMS, GENERAL

- A. Recycled Content: Provide products made from steel sheet with average recycled content such that postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- B. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.
- C. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.
1. High-Humidity Finish: Comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.
- D. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing per ASTM E 488 or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.
 - a. Type: Postinstalled expansion anchors.
 - b. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (0.005 mm) for Class SC 1 service condition.
 - c. Corrosion Protection: Stainless-steel components complying with ASTM F 593 and ASTM F 594, Group 1 Alloy 304 or 316 for bolts; Alloy 304 or 316 for anchor.
 - d. Corrosion Protection: Components fabricated from nickel-copper-alloy rods complying with ASTM B 164 for UNS No. N04400 alloy.
 2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190, conducted by a qualified testing and inspecting agency.
- E. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 2. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch-diameter wire.
- F. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.
- G. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch-thick, galvanized steel sheet complying with ASTM A 653/A 653M, G90 coating designation; with bolted connections and 5/16-inch-diameter bolts.
- H. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.
- I. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- J. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in-place.
- K. Hold-Down Clips: Where indicated, provide manufacturer's standard hold-down clips spaced 24 inches o.c. on all cross tees.
- L. Impact Clips: Where indicated, provide manufacturer's standard impact-clip system designed to absorb impact forces against acoustical panels.
- 26.4 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING
- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

- B. Products: Subject to compliance with requirements, provide one of the following:
1. Armstrong World Industries, Inc.
 2. BPB USA;
 3. Chicago Metallic Corporation.
 4. Ecophon CertainTeed, Inc.
 5. USG Interiors, Inc.
- C. Basis-of-Design Product: Subject to compliance with requirements, provide Armstrong, Prelude XL FireGuard Exposed Tee or a comparable product by one of the following:
- D. Wide-Face, Capped, Double-Web, Fire-Rated, Hot-Dip Galvanized, G60, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, hot-dip galvanized according to ASTM A 653/A 653M, G60 coating designation, with prefinished, cold-rolled, 15/16-inch- wide, aluminum caps on flanges.
1. Structural Classification: Heavy-duty system.
 2. Face Design: Flat, flush.
 3. Face Finish: Painted white.

26.5 METAL EDGE MOLDINGS AND TRIM

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- B. Products: Subject to compliance with requirements, provide one of the following:
1. Armstrong World Industries, Inc.
 2. BPB USA.
 3. Chicago Metallic Corporation;
 4. Fry Reglet Corporation;
 5. Gordon, Inc.;
 6. USG Interiors, Inc.
- C. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.
1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners, unless otherwise indicated.
 2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

PART 27 - EXECUTION

27.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this

and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

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

27.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

27.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
 1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.
- B. Suspend ceiling hangers from building's structural members and as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 3. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 4. Where width of ducts and other construction within ceiling plenum produces hanger spacing that interfere with location of hangers at spacing required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 5. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 6. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both structure to which hangers are attached and type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 7. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 8. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 9. Do not attach hangers to steel deck tabs.
 10. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 11. Space hangers not more than 48 inches o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.

12. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
 - D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
 1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
 - E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
 - F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
 1. Arrange directionally patterned acoustical panels as follows:
 - a. As indicated on reflected ceiling plans.
 - b. Install panels with pattern running in one direction parallel to long axis of space.
 - c. Install panels in a basket-weave pattern.
 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
 3. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
 4. For reveal-edged panels on suspension system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension system surfaces and panel faces flush with bottom face of runners.
 5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
 6. Install hold-down clips in areas indicated, in areas required by authorities having jurisdiction, and for fire-resistance ratings; space as recommended by panel manufacturer's written instructions, unless otherwise indicated.
 7. Install clean-room gasket system in areas indicated, sealing each panel and fixture as recommended by panel manufacturer's written instructions.
 8. Protect lighting fixtures and air ducts to comply with requirements indicated for fire-resistance-rated assembly.

27.4 FIELD QUALITY CONTROL

- A. Special Inspections: Engage a qualified special inspector to perform the following special inspections and prepare reports:

1. Suspended ceiling system.
 2. Hangers, anchors and fasteners.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- C. Tests and Inspections: Testing and inspecting of completed installations of acoustical panel ceiling hangers and anchors and fasteners shall take place in successive stages, in areas of extent and using methods as follows. Do not proceed with installations of acoustical panel ceiling hangers for the next area until test results for previously completed installations of acoustical panel ceiling hangers show compliance with requirements.
1. Extent of Each Test Area: When installation of ceiling suspension systems on each floor has reached 20 percent completion but no panels have been installed.
 - a. Within each test area, testing agency will select 1 of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 200 lbf of tension; it will also select one of every 2 postinstalled anchors used to attach bracing wires to concrete and will test them for 440 lbf of tension.
 - b. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.
- D. Remove and replace acoustical panel ceiling hangers and anchors and fasteners that do not pass tests and inspections and retest as specified above.

27.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09511

SECTION 09620

RESILIENT FLOOR TILE

PART 1.1 GENERAL

A. Description of Work

1. This specification covers the furnishing and installation of materials for resilient floor tile. Products shall be as follows or as directed by the Owner. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

B. Summary

1. Section Includes:
 - a. Solid vinyl floor tile.
 - b. Solid rubber floor tile.

C. Submittals

1. Product Data: For each type of product indicated.
2. Submittals:
 - a. Product Data: For adhesives, sealants and chemical-bonding compounds, including printed statement of VOC content.
3. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
 - a. Show details of special patterns.
4. Samples: Full-size units of each color and pattern of floor tile required.
5. Seam Samples: For seamless-installation technique indicated and for each flooring product, color, and pattern required; with seam running lengthwise and in center of 6-by-9-inch (150-by-230-mm) Sample applied to a rigid backing and prepared by Installer for this Project.
6. Maintenance data.

D. Quality Assurance

1. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
 - a. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

E. Delivery, Storage, and Handling

1. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

F. Project Conditions

1. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive floor tile during the following time periods:
 - a. 48 hours before installation.
 - b. During installation.

- c. 48 hours after installation.
- 2. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).
- 3. Close spaces to traffic during floor tile installation.
- 4. Close spaces to traffic for 48 hours after floor tile installation.
- 5. Install floor tile after other finishing operations, including painting, have been completed.

PART 1.2 PRODUCTS

A. Solid Vinyl Floor Tile

- 1. Tile Standard: ASTM F 1700.
 - a. Class: Class I, monolithic vinyl tile.
 - b. Type: Type A, smooth surface.
- 2. Thickness: 0.125 inch
- 3. Size: 12 by 12 inches (305 by 305 mm)
- 4. Colors and Patterns: As selected from full range of industry colors.

B. Installation Materials

- 1. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.
- 2. Adhesives: Water-resistant type recommended by manufacturer to suit floor tile and substrate conditions indicated.
 - a. Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24)
- 3. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

PART 1.3 EXECUTION

A. Preparation

- 1. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- 2. Concrete Substrates: Prepare according to ASTM F 710.
 - a. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - b. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
 - c. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
 - d. Moisture Testing: Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing.

- 1) Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
 - 2) Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.
3. Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.
 4. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
 5. Do not install floor tiles until they are same temperature as space where they are to be installed.
 - a. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
 6. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

B. Floor Tile Installation

1. Comply with manufacturer's written instructions for installing floor tile.
2. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
 - a. Lay tiles square with room axis.
3. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
 - a. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern).
4. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
5. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
6. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.
7. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
8. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

C. Cleaning and Protection

1. Comply with manufacturer's written instructions for cleaning and protection of floor tile.
2. Perform the following operations immediately after completing floor tile installation:

- a. Remove adhesive and other blemishes from exposed surfaces.
 - b. Sweep and vacuum surfaces thoroughly.
 - c. Damp-mop surfaces to remove marks and soil.
3. Protect floor tile products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
 4. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor tile surfaces before applying liquid floor polish.
 - a. Apply one coat.
 5. Joint Sealant: Apply sealant to resilient terrazzo floor tile perimeter and around columns, at doorframes, and at other joints and penetrations.
 6. Cover floor tile until Substantial Completion.

END OF SECTION 09620

SECTION 09640

WOOD FLOORING

1.1 GENERAL

A. Description Of Work

1. This specification covers the furnishing and installation of materials for wood flooring. Products shall be as follows or as directed by the Owner. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

B. Summary

1. This Section includes factory- and field-finished wood flooring.

C. Submittals

1. Product Data: For each type of product indicated.
2. Samples: For each exposed finish.

D. Quality Assurance

1. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
2. Forest Certification: Provide wood flooring produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
3. Hardwood Flooring: Comply with NOFMA's "Official Flooring Grading Rules" for species, grade, and cut.
 - a. Certification: Provide flooring that carries NOFMA grade stamp on each bundle or piece.

E. Delivery, Storage, And Handling

1. Deliver wood flooring materials in unopened cartons or bundles.
2. Protect wood flooring from exposure to moisture. Do not deliver wood flooring until after concrete, masonry, plaster, ceramic tile, and similar wet work is complete and dry.
3. Store wood flooring materials in a dry, warm, ventilated, weathertight location.

F. Project Conditions

1. Conditioning period begins not less than seven days before wood flooring installation, is continuous through installation, and continues not less than seven days after wood flooring installation.
 - a. Environmental Conditioning: Maintain an ambient temperature between 65 and 75 deg F (18 and 24 deg C) and relative humidity planned for building occupants in spaces to receive wood flooring during the conditioning period.
 - b. Wood Flooring Conditioning: Move wood flooring into spaces where it will be installed, no later than the beginning of the conditioning period.
 - 1) Do not install flooring until it adjusts to relative humidity of, and is at same temperature as, space where it is to be installed.

- 2) Open sealed packages to allow wood flooring to acclimatize immediately on moving flooring into spaces in which it will be installed.
2. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.
3. Install factory-finished wood flooring after other finishing operations, including painting, have been completed.

1.2 PRODUCTS

A. Field-Finished Wood Flooring

1. Solid-Wood, Strip and Plank Flooring: Kiln dried to 6 to 9 percent maximum moisture content, tongue and groove and end matched, and with backs channeled (kerfed) for stress relief.
 - a. Species and Grade: Select red oak
 - b. Cut: Plain sawn
 - c. Thickness: 25/32 inch
 - d. Face Width: 2-1/4 inches
 - e. Lengths: Random-length strips complying with applicable grading rules
 - f. Preservative Treatment: Clear, penetrating, water-repellent wood preservative that protects against mold, mildew, staining, and decay fungi; complying with MFMA's written recommendations and applied by immersion.
2. Urethane Finish System: water-based, system of compatible components that is recommended by finish manufacturer for application indicated.
 - a. VOC Content: When calculated according to 40 CFR 59, Subpart D (EPA Method 24), as follows:
 - 1) Finish Coats and Floor Sealers: Not more than 350 g/L.
 - 2) Stains: Not more than 250 g/L.
 - b. Finish Coats: Formulated for multicoat application on wood flooring.
 - c. Stain: Penetrating and nonfading type.
 - 1) Color: As selected from manufacturer's full range.
 - d. Floor Sealer: Pliable, penetrating type.
5. Wood Filler: Compatible with finish system components and recommended by filler and finish manufacturers for use indicated. If required to match approved Samples, provide pigmented filler.

B. Accessory Materials

1. Existing Wood Underlayment. Remove excess mastic before laying building felt.
2. Asphalt-Saturated Felt: ASTM D 4869, Type II.
3. Fasteners: As recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines: Wood Flooring."
4. Trim: In same species and grade as wood flooring, unless otherwise indicated.
 - a. Base: 5/8 inch (16 mm) thick by 2 inches high.
 - b. Base Shoe Molding: 1/2 by 3/4 inch (13 by 19 mm).
 - c. Threshold: Tapered on each side and routed at bottom of one side to accommodate wood flooring.

1.3 EXECUTION

A. Preparation

1. Machine sand substrates to remove excess mastic remnants and to produce a maximum 1/8-inch (3-mm) deviation in any direction when checked with a 10-foot (3-m) straight edge.
 - a. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
2. Remove coatings, including curing compounds, and other substances on substrates that are incompatible with installation adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Broom or vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Installation

1. Comply with flooring manufacturer's written installation instructions, but not less than applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."
2. Wood Underlayment: Install according to requirements in Division 06 Section "Rough Carpentry".
3. Provide expansion space at walls and other obstructions and terminations of flooring not less than 3/4 inch .
4. Asphalt-Saturated Felt: Where strip or plank flooring is nailed to solid-wood subfloor, install flooring over a layer of asphalt-saturated felt.
5. Solid-Wood, Strip and Plank Flooring: Blind nail or staple flooring to substrate.
 - a. For flooring of face width more than 3 inches (75 mm), do the following:
 - 1) Install countersunk screws at each end of each piece in addition to blind nailing. Cover screw heads with wood plugs glued flush with flooring.
 - 2) Install no fewer than 2 countersunk nails at each end of each piece, spaced not more than 16 inches (406 mm) along length of each piece, in addition to blind nailing. Fill holes with matching wood filler.
6. Wood Trim: Nail baseboard to wall and nail shoe molding or other trim to baseboard; do not nail to flooring

C. Field Finishing

1. Machine-sand flooring to remove offsets, ridges, cups, and sanding-machine marks that would be noticeable after finishing. Vacuum and tack with a clean cloth immediately before applying finish.
 - a. Comply with applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."
2. Fill open-grained hardwood.
3. Fill and repair wood flooring seams and defects.
4. Apply floor-finish materials in number of coats recommended by finish manufacturer for application indicated, but not less than one coat of floor sealer and three finish coats.
 - a. Apply stains to achieve an even color distribution matching approved Samples.
 - b. For water-based finishes, use finishing methods recommended by finish manufacturer to minimize grain raise.

5. Cover wood flooring before finishing.

6. Do not cover wood flooring after finishing until finish reaches full cure, and not before seven days after applying last finish coat.

D. Protection

1. Protect installed wood flooring during remainder of construction period with covering of heavy kraft paper or other suitable material. Do not use plastic sheet or film that might cause condensation.
 - a. Do not move heavy and sharp objects directly over kraft-paper-covered wood flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

END OF SECTION 09640

SECTION 09680

CARPET

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

PART 1. - GENERAL

1.1 SUMMARY

- A. This Section includes the following:

Revise subparagraph below if fusion-bonded or needle-punched carpet is required.

1. Tufted carpet tiles and installation.

1.2 SUBMITTALS

- A. Product Data:

1. For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation recommendations for each type of substrate required. Should carpet manufacturer not publish detailed installation data, installer shall submit detailed proposed procedures for Architect's approval.

- B. Shop Drawings: Indicate the following.

1. Locations where cutouts are required in carpet, i.e. columns, doorways, built-in cabinets, etc.
2. Starting point for carpet tile pattern repeat.
3. Type, color, and location of inserts and borders (if any).
4. Type, location, and location of edge, transition, and other accessory strips required.
5. Transition details to other flooring materials.
6. Use same room and product designations indicated on Drawings and in schedules.

- C. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings.

1. Carpet Tile: Two (2), full-size carpet tiles of each different color and pattern.
2. Submit all exposed edge stripping and accessories with carpet sample submittal.

- D. Maintenance Data: For carpet to include in maintenance manuals Include the following:

1. Methods for maintaining carpet, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
2. Precautions for cleaning materials and methods that could be detrimental to carpet.

- E. Certificates: Carpet shall be certified for compliance with specification requirements. Submit certificates from carpet manufacturer at time of carpet delivery to project site. Each certificate shall be signed by authorized officer of carpet manufacturing company and shall contain the name and address of the Contractor, the project location and the quantities and date or dates of shipment or delivery to which certificates apply.

1.3 QUALITY ASSURANCE

- A. Applicable Standards: Standards of the following, as referenced herein:
1. American Association of Textile Chemists and Colorists (AATCC).
 2. American Society for Testing and Materials (ASTM).
 3. National Fire Protection Association (NFPA).
- B. Design Criteria: Carpet shall meet the following as determined by testing identical products by an independent testing and inspecting agency acceptable to the Architect:
1. Refer to the GSFIC specimen language for Testing of Carpet at the end of PART 3.
 2. Flame spread, fuel contribution and smoke development: Class B when tested in accord with ASTM E84 and NFPA 101.
 3. Critical radiant flux: Class I, when tested in accord with ASTM E648.
 4. Optical density of smoke (flaming): Not more than 250 per ASTM E662-97.
 5. Electrostatic propensity: No greater than 3.0 when tested in per AATCC 134-1991.
 6. Colorfastness to Crocking: Not less than 4, wet and dry, per AATCC-165.
 7. Colorfastness to Light: Not less than 4 after 40 AFU (AATCC fading units) per ATCC-16.
 8. Flammability of carpet: Pass methenamine pill test when tested in accord with ASTM D2859.
 9. Carpet systems shall meet or exceed the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program.
- C. Installer Qualifications:
1. Installer shall provide written documentation from the carpet manufacturer that they are certified to install products indicated.
 2. Installer shall be certified by the Floor Covering Installation Board or can demonstrate compliance with its certification program requirements.
- Delete paragraph below if none of the products listed in Part 2 are required to have a critical radiant flux classification. Revise if authorities having jurisdiction require other fire tests.
- Retain paragraph below if products and manufacturers are named in Part 2 solely to serve as the basis for selecting comparable products. See "Specifying Methods" Article in the Evaluations.

1.4. DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original mill wrappings, with carpet having register tag number attached. Deliver only after building is enclosed and spaces have controlled temperature and humidity.
- B. Store materials under cover, off floor, in ventilated space. Protect from damage, staining and moisture. Stand no roll material on end.

1.5. PROJECT CONDITIONS

- A. General: Comply with CRI 104, Section 6.1, "Site Conditions; Temperature and Humidity."
- B. Environmental Limitations: Do not install carpet 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.

Delete paragraph below if products are not adhesively applied to concrete substrates.
Revise to suit Project.

- C. Do not install carpet over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet manufacturer.
- D. Where furniture or other items are indicated for installation on top of carpet, install carpet before installing these items.

1.6 EXTRA MATERIALS

Extra materials may not be allowed for publicly funded projects.

- 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.

Revise below to suit Project. Replace percentage with a specific number of square yards (square meters).

- B. Carpet Tile: Equal to 5-percent of amount installed.

PART 2. - PRODUCTS

Before editing Part 2, see "Specifying Methods" Article and sample of completed Part 2 in the Evaluations. See Editing Instruction No. 1 in the Evaluations for an explanation of the insert notes in article titles below.

2.1 CARPET TILE

- A. Colors, Textures, and Patterns:

Retain one requirement from options in subparagraph below. If retaining first option, indicate colors, textures, and patterns on Drawings or by inserts into Part 2 "Tile Products," "Thresholds," and "Setting and Grouting Materials" articles or Part 3 tile installation schedules. See Editing Instruction No. 3 in the Evaluations.

1. Refer to Finish Schedule and Finish Legend located on the Drawings for selections and installation locations.
Revise paragraph below to suit Project.

Insert other performance characteristics, such as static resistance, to suit Project.

2.2 INSTALLATION ACCESSORIES

Revise paragraph below to suit Project.

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided by or recommended by the carpet manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, non-staining type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet and that is recommended by the carpet manufacturer. Adhesive shall be release

type, allow removal of carpet without damage to carpet or substrate. Adhesives shall be release type, allow removal of carpet without damage to carpet or substrate.

- C. Seaming Cement: Hot-melt adhesive tape or similar product recommended by carpet manufacturer for taping seams and butting cut edges at backing to form secure seams and to prevent pile loss at seams.
Delete below if resilient edge strips are specified in another Division 9 Section. If retaining, revise finish or description to suit Project and show width requirements on Drawings.
- D. Leveling Compound
 - 1. Acceptable Products
 - a. Euclid EUCO Polypatch
 - b. Flintkote Latex Underlayment
 - c. GAF Leveling and Patching Compound
 - d. TAMMS Floorstone with Latex Liquid
- E. Carpet edge strip shall be resilient base type.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet performance. Verify that substrates and conditions are satisfactory for carpet installation and comply with requirements specified.

Retain paragraph and subparagraphs below if products are adhesively attached to concrete subfloors.

- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
Revise subparagraph below to suit Project.
- C. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by the carpet manufacturer.
- D. Subfloor finishes comply with requirements specified in Division 3 Section Cast-in-Place Concrete for slabs receiving carpet.
- E. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with CR1 104, Section 6.2, "Site Conditions; Floor Preparation," and carpet manufacturer's written installation instructions for preparing substrates indicated to receive carpet installation.

- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.

Retain paragraph below if products are adhesively attached to concrete substrates.

- C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by the carpet manufacturer.
- D. Broom and vacuum clean substrates to be covered immediately before installing carpet. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3. WORKMANSHIP

- A. Maintain edges and seams straight and square with adjacent surfaces.

3.4. INSTALLATION, GENERAL

- A. Comply with carpet manufacturer's written recommendations for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile. At doorways, center seams under the door in closed position.

Retain one of two subparagraphs below for seamed border installation.

- B. Lay out carpeting materials in accord with approved seaming drawings.
- C. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.
- D. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- E. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.
- F. Install pattern, where applicable, parallel to wall and borders.
- G. Direct-Glue-Down Installation: Comply with CRI 104, Section 8, "Direct Glue-Down Installation."

3.5. CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet:
- B. Remove excess adhesive, seam sealer, and other surface blemishes and stains using cleaner recommended by carpet manufacturer.
- C. Remove yarns that protrude from carpet surface.
- D. Thoroughly vacuum carpet using commercial machine with face-beater element.

- E. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.
- F. Just prior to Date of Substantial Completion, remove protective covering and vacuum carpet. Steam clean areas if required to remove stains.
- G. Remove and replace carpet tiles which cannot be cleaned.

END OF SECTION 09680

SECTION 09912
INTERIOR PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

- B. This Section specifies surface preparation and the application of paint systems on the following interior substrates:

Concrete.
Concrete masonry units (CMU).
Steel.
Galvanized metal.
Wood.
Gypsum board

1.2 RELATED DOCUMENTS

- C. Drawings and general provisions of the Contract, including General and Supplementary and Division 1 Specification Sections, apply to this Section.

1.3 SUBMITTALS

- A. The following information shall be provided.

1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Construction Manager shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined shall signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

1.4 PRODUCT DATA:

For each type of product indicated.

1.5 SAMPLES FOR INITIAL SELECTION:

- D. For each type of topcoat product indicated.

1.6 SAMPLES FOR VERIFICATION:

- E. A. For each type of paint system and in each color and gloss of topcoat indicated.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Step coats on Samples to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.

1.7 PRODUCT LIST:

- A. For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.
 - 3. Product Data for Credit EQ 4.2: For paints, including printed statement of VOC content and chemical components.

1.8 QUALITY ASSURANCE

- F. A. MPI Standards:
 - 1) Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

1.9 MOCKUPS:

- G. A. Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
- B. Construction Manager will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
- C. Final approval of color selections will be based on benchmark samples.
- D. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Construction Manager at no added cost to Owner.

1.10 DELIVERY, STORAGE, AND HANDLING

- H. A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
- B. Maintain containers in clean condition, free of foreign materials and residue.
- C. Remove rags and waste from storage areas daily.

1.11 PROJECT CONDITIONS

- I. A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.12 EXTRA MATERIALS

- J. A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
- B. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. AVAILABLE MANUFACTURERS:

- K. 1. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- Benjamin Moore & Co.
- Duron, Inc.
- Envirocoat Technologies Inc.
- ICI Paints.
- Parker Paint Mfg. Co. Inc.
- Porter Paints.
- PPG Architectural Finishes, Inc.
- Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

A. MATERIAL COMPATIBILITY:

- 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. VOC CONTENT OF FIELD-APPLIED INTERIOR PAINTS AND COATINGS:

- 1. Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

- a. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
- b. Nonflat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
- c. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
- d. Floor Coatings: VOC not more than 100 g/L.
- e. Shellacs, Clear: VOC not more than 730 g/L.
- f. Shellacs, Pigmented: VOC not more than 550 g/L.
- g. Flat Topcoat Paints: VOC content of not more than 50 g/L.
- h. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
- i. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
- j. Floor Coatings: VOC not more than 100 g/L.
- k. Shellacs, Clear: VOC not more than 730 g/L.
- l. Shellacs, Pigmented: VOC not more than 550 g/L.
- m. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
- n. Dry-Fog Coatings: VOC content of not more than 400 g/L.
- o. Zinc-Rich Industrial Maintenance Primers: VOC content of not more than 340 g/L.
- p. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.

C. CHEMICAL COMPONENTS OF FIELD-APPLIED INTERIOR PAINTS AND COATINGS:

1. Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
2. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
3. Restricted Components: Paints and coatings shall not contain any of the following:
 - a. Acrolein.
 - b. Acrylonitrile.
 - c. Antimony.
 - e. Benzene.
 - f. Butyl benzyl phthalate.
 - g. Cadmium.
 - h. Di (2-ethylhexyl) phthalate.
 - i. Di-n-butyl phthalate.
 - j. Di-n-octyl phthalate.
 - k. 1,2-dichlorobenzene.
 - l. Diethyl phthalate.
 - m. Dimethyl phthalate.
 - n. Ethylbenzene.
 - o. Formaldehyde.
 - p. Hexavalent chromium.
 - q. Isophorone.

- r. Lead.
- s. Mercury.
- t. Methyl ethyl ketone.
- u. Methyl isobutyl ketone.
- v. Methylene chloride.
- w. Naphthalene.
- x. Toluene (methylbenzene).
- y. 1,1,1-trichloroethane.
- z. Vinyl chloride.

D. COLORS:

- 1. As indicated in a color schedule

2.3 BLOCK FILLERS

A. INTERIOR/EXTERIOR LATEX BLOCK FILLER: MPI #4.

- 1. VOC Content: E Range of E3.

2.4 PRIMERS/SEALERS

A. INTERIOR LATEX PRIMER/SEALER: MPI #50.

- 1. VOC Content: E Range of E3.
- 2. Environmental Performance Rating: EPR 3.

B. INTERIOR ALKYD PRIMER/SEALER: MPI #45.

- 1. VOC Content: E Range of E2.

C. WOOD-KNOT SEALER:

- 1. Sealer recommended in writing by topcoat manufacturer for use in paint systems indicated.

2.5 METAL PRIMERS

A. ALKYD ANTICORROSIVE METAL PRIMER: MPI #79.

- 1. VOC Content: E Range of E2.

B. QUICK-DRYING ALKYD METAL PRIMER: MPI #76.

- 1. VOC Content: E Range of E3.

C. RUST-INHIBITIVE PRIMER (WATER BASED): MPI #107.

- 1. VOC Content: E Range of E3.
- 2. Environmental Performance Rating: EPR 3.

D. CEMENTITIOUS GALVANIZED-METAL PRIMER: MPI #26.

- 1. VOC Content: E Range of E1.
 - E. WATERBORNE GALVANIZED-METAL PRIMER: MPI #134.
 - 1. VOC Content: E Range of E3.
 - 2. Environmental Performance Rating: EPR 3.
 - F. VINYL WASH PRIMER: MPI #80.
 - 1. VOC Content: E Range of E3.
 - G. QUICK-DRYING PRIMER FOR ALUMINUM: MPI #95.
 - 1. VOC Content: E Range of E3.
- 27.6 2.6 WOOD PRIMERS
- A. A. INTERIOR LATEX-BASED WOOD PRIMER: MPI #39.
 - 1. VOC Content: E Range of E3.
 - 2. Environmental Performance Rating: EPR 3.
- 27.7 2.7 LATEX PAINTS
- A. A. INTERIOR LATEX (EGGSHELL): MPI #52 (GLOSS LEVEL 3).
 - 1. VOC Content: E Range of E3.
 - 2. Environmental Performance Rating: EPR 3.
 - B. B. INTERIOR LATEX (SEMIGLOSS): MPI #54 (GLOSS LEVEL 5).
 - 1. VOC Content: E Range of E3.
 - 2. Environmental Performance Rating: EPR 4.
 - 3. Environmental Performance Rating: EPR 4.5.
- 27.8 2.8 QUICK-DRYING ENAMELS
- A. A. QUICK-DRYING ENAMEL (SEMIGLOSS): MPI #81 (GLOSS LEVEL 5).
 - 1. VOC Content: E Range of E3.
- 27.9 2.9 TEXTURED COATING
- A. A. LATEX STUCCO AND MASONRY TEXTURED COATING: MPI #42.
 - 1. VOC Content: E Range of E3.

27.10 2.10 FLOOR COATINGS

- A. A. INTERIOR CONCRETE FLOOR STAIN: MPI #58.
 - 1. VOC Content: E Range of E3.
 - 2. Environmental Performance Rating: EPR 2.
- B. B. INTERIOR/EXTERIOR CLEAR CONCRETE FLOOR SEALER (WATER BASED): MPI #99.
 - 1. VOC Content: E Range of E3.
- C. C. INTERIOR/EXTERIOR CLEAR CONCRETE FLOOR SEALER (SOLVENT BASED): MPI #104.
 - 1. VOC Content: E Range of E2.

PART 3 - EXECUTION

27.11 3.1 EXAMINATION

- A. A. GENERAL:
 - B. 1. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- C. B. MAXIMUM MOISTURE CONTENT OF SUBSTRATES:
 - D. 1. When measured with an electronic moisture meter as follows:
 - a. Concrete: 12 percent.
 - b. Masonry (Clay and CMU): 12 percent.
 - c. Wood: 15 percent.
 - d. Gypsum Board: 12 percent.
- E. C. SUBSTRATE CONDITION:
 - F. 1. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
 - G. 2. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 - 3. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

27.12 3.2 PREPARATION

A. GENERAL:

1. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
2. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
3. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
4. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

B. CONCRETE SUBSTRATES:

1. Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

C. CONCRETE MASONRY SUBSTRATES:

1. Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

D. STEEL SUBSTRATES:

1. Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.

E. GALVANIZED-METAL SUBSTRATES:

1. Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

F. ALUMINUM SUBSTRATES:

1. Remove surface oxidation.

G. WOOD SUBSTRATES:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.

4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

H. GYPSUM BOARD SUBSTRATES:

1. Do not begin paint application until finishing compound is dry and sanded smooth.

27.13 3.3 APPLICATION

A. GENERAL:

1. Apply paints according to manufacturer's written instructions.
2. Use applicators and techniques suited for paint and substrate indicated.
3. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
4. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
5. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
6. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

B. PAINTING MECHANICAL AND ELECTRICAL WORK:

7. Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:

a. Mechanical Work:

Uninsulated metal piping.
Uninsulated plastic piping.
Pipe hangers and supports.
Tanks that do not have factory-applied final finishes.
Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
Mechanical equipment that is indicated to have a factory-primed finish for field painting.

B. Electrical Work:

Panelboards.
Electrical equipment that is indicated to have a factory-primed finish for field painting.

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Construction Manager, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

- C. A. CONCRETE SUBSTRATES, NONTRAFFIC SURFACES:
 - 1. Latex System: MPI INT 3.1E.
 - a. Prime Coat: Interior latex matching topcoat.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (satin).
 - 2. Latex Over Sealer System: MPI INT 3.1A.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (satin).
 - 2. Latex Over Latex Aggregate System: MPI INT 3.1B.
 - a. Prime Coat: Latex stucco and masonry textured coating.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex (semigloss).
 - 3. Institutional Low-Odor/VOC Latex System: MPI INT 3.1M.
 - a. Prime Coat: Institutional low-odor/VOC interior latex matching topcoat.
 - b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
 - c. Topcoat: Institutional low-odor/VOC interior latex (semigloss).
 - 4. High-Performance Architectural Latex System: MPI INT 3.1C.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Intermediate Coat: High-performance architectural latex matching topcoat.
 - c. Topcoat: High-performance architectural latex (satin).
- B. CONCRETE SUBSTRATES, TRAFFIC SURFACES:
 - 1. Alkyd Floor Enamel System: MPI INT 3.2B.
 - a. Prime Coat: Exterior/interior alkyd floor enamel (semigloss).

- b. Intermediate Coat: Exterior/interior alkyd floor enamel (semigloss).
 - c. Topcoat: Exterior/interior alkyd floor enamel (semigloss).
 - 2. Concrete Stain System: MPI INT 3.2E.
 - a. First Coat: Interior concrete floor stain.
 - b. Topcoat: Interior concrete floor stain.
 - 3. Clear Sealer System: MPI INT 3.2F.
 - a. First Coat: Interior/exterior clear concrete floor sealer (solvent based).
 - b. Topcoat: Interior/exterior clear concrete floor sealer (solvent based).
 - 4. Water-Based Clear Sealer System: MPI INT 3.2G.
 - a. First Coat: Interior/exterior clear concrete floor sealer (water based).
 - b. Topcoat: Interior/exterior clear concrete floor sealer (water based).
 - 5. Latex Aggregate System: MPI INT 4.1B.
 - a. Prime Coat: As recommended in writing by topcoat manufacturer.
 - b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
 - c. Topcoat: Latex stucco and masonry textured coating.
- C. CMU SUBSTRATES:
- 1. Latex System: MPI INT 4.2A.
 - a. Prime Coat: Interior/exterior latex block filler.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (semigloss).
- D. STEEL SUBSTRATES:
- 1. Latex Over Alkyd Primer System: MPI INT 5.1Q.
 - a. Prime Coat: Alkyd anticorrosive metal primer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (eggshell).
- E. GALVANIZED-METAL SUBSTRATES:
- 1. Latex System: MPI INT 5.3A.
 - a. Prime Coat: Cementitious galvanized-metal primer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (eggshell).
- F. ALUMINUM (NOT ANODIZED OR OTHERWISE COATED) SUBSTRATES:
- 1. Latex System: MPI INT 5.4H.
 - a. Prime Coat: Quick-drying primer for aluminum.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (eggshell).

2. Aluminum Paint System: MPI INT 5.4D.
 - a. Prime Coat: Vinyl wash primer.
 - b. Intermediate Coat: Aluminum paint.
 - c. Topcoat: Aluminum paint.

- G. DRESSED LUMBER SUBSTRATES: INCLUDING DOORS.
 1. Alkyd System: MPI INT 6.3B.
 - a. Prime Coat: Interior alkyd primer/sealer.
 - b. Intermediate Coat: Interior alkyd matching topcoat.
 - c. Topcoat: Interior alkyd (eggshell).

- H. WOOD PANEL SUBSTRATES: INCLUDING PAINTED PLYWOOD.
 1. Latex System: MPI INT 6.4R.
 - a. Prime Coat: Interior latex-based wood primer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (semigloss).

- I. GYPSUM BOARD SUBSTRATES:
 1. Latex System: MPI INT 9.2A.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Intermediate Coat: Interior latex matching topcoat.
 - c. Topcoat: Interior latex (eggshell).
 - d. Intermediate Coat: High-performance architectural latex matching topcoat.
 - e. Topcoat: High-performance architectural latex (eggshell).

END OF SECTION

DIVISION 10

Specialties

SECTION 10160

TOILET COMPARTMENTS

1.1 GENERAL

A. Description of Work:

1. This specification covers the furnishing and installation of materials for toilet compartments. Product shall be as follows or as directed by the Owner. Installation procedures shall be in accordance with the product manufacturer's recommendations. Demolition and removal of materials shall be as required to support the work.

B. Summary

1. Section Includes:
 - a. Solid-polymer toilet compartments configured as toilet enclosures, entrance screens, and urinal screens.

C. Submittals

1. Product Data: For each type of product indicated.
2. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachments to other work.
3. Samples for each exposed product and for each color and texture specified.
4. Maintenance data.

D. Quality Assurance

1. Comply with requirements in GSA's CID-A-A-60003, "Partitions, Toilets, Complete".
2. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84, or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 2, or less.
 - b. Smoke-Developed Index: 450 or less.
3. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities" and ICC/ANSI A117.1 for toilet compartments designated as accessible.

1.2 PRODUCTS

A. Solid-Polymer Units

1. Toilet-Enclosure Style: Floor and ceiling anchored.
2. Entrance-Screen Style: Floor and ceiling anchored.
3. Urinal-Screen Style: Wall hung

4. Door, Panel, Screen, and Pilaster Construction: Solid, high-density polyethylene (HDPE), panel material, not less than 1 inch thick, seamless, with eased edges, no-sightline system, and with homogenous color and pattern throughout thickness of material.
 - a. Integral Hinges: Configure doors and pilasters to receive integral hinges.
 - b. Heat-Sink Strip: Manufacturer's standard continuous, stainless steel, strip fastened to exposed bottom edges of solid-polymer components to prevent burning.
 - c. Color and Pattern: One color and pattern, as selected from manufacturer's full range.
5. Pilaster Shoes and Sleeves (Caps): Manufacturer's standard stainless steel design.
 - a. Polymer Color and Pattern: Matching pilaster as selected from manufacturer's full range.
6. Brackets (Fittings):
 - a. Stirrup Type: Ear or U-brackets, stainless steel.
 - b. Full-Height (Continuous) Type: Manufacturer's standard design; stainless steel.
7. Overhead Cross Bracing for Ceiling-Hung Units: As recommended by manufacturer and fabricated from solid polymer.

B. Accessories

1. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.
 - a. Material: Stainless steel.
 - b. Hinges: Manufacturer's standard paired, continuous, cam type that swings to a closed or partially open position.
 - c. Latch and Keeper: Manufacturer's standard recessed latch unit designed for emergency access and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
 - d. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent in-swinging door from hitting compartment-mounted accessories.
 - e. Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors and entrance-screen doors.
 - f. Door Pull: Manufacturer's standard unit at out-swinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at compartments designated as accessible.
2. Overhead Bracing: Manufacturer's standard continuous, extruded aluminum head rail with anti-grip profile and in manufacturer's standard finish.
3. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, finished to match the items they are securing, with theft-resistant type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel.

C. Fabrication

1. Floor-and-Ceiling-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment at tops and bottoms of pilasters. Provide shoes and sleeves (caps) at pilasters to conceal anchorage.
2. Door Size and Swings: Unless otherwise indicated, provide 24-inch- (610-mm-) wide, in-swinging doors for standard toilet compartments and 36-inch- (914-mm-) wide, out-swinging doors with a minimum 32-inch- (813-mm-) wide, clear opening for compartments designated as accessible.

1.3 EXECUTION

A. Installation

1. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
 - a. Maximum Clearances:
 - 1) Pilasters and Panels: 1/2 inch (13 mm).
 - 2) Panels and Walls: 1 inch (25 mm).
 - b. Stirrup Brackets: Secure panels to walls and to pilasters with no fewer than two three brackets attached at midpoint and, near top and bottom of panel.
 - 1) Locate wall brackets so holes for wall anchors occur in masonry or tile joints.
 - 2) Align brackets at pilasters with brackets at walls.
2. Floor-and-Ceiling-Anchored Units: Secure pilasters to supporting construction and level, plumb, and tighten. Hang doors and adjust so doors are level and aligned with panels when doors are in closed position.
3. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.

B. Adjusting

1. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors and doors in entrance screens to return doors to fully closed position.

END OF SECTION 10160

SECTION 10261

WALL AND CORNER GUARDS

1.1 GENERAL

- A. **DESCRIPTION OF WORK:** This standard covers interior protection systems including: high impact vinyl corner guards and handrails. Wood blocking and grounds for surface mounting are included in Division 6 - Section Rough Carpentry.
- B. **PERFORMANCE REQUIREMENTS:** Provide wall protection system tested in accordance with ASTM E84, NFPA 255 and UL 723 for fire performance characteristics. Flame spread shall be 25 or less and Smoke Development 450 or less. Wall protection system shall be determined to be self extinguishing in accordance with ASTM D 635.
- C. **QUALITY ASSURANCE:** Furnish all wall protection system components from a single source manufacturer.
- D. **SUBMITTALS:**
 - 1. **Product data:** manufacturer's product specifications, installation and maintenance instructions.
 - 2. **Shop Drawings:** Shall indicate locations, mounting heights, back-up fastening, returns and end caps, color and extent and installation details of each system.
 - 3. **Product samples:** Samples for verification shall be not less than 12" length of each vinyl protection system component including corners and end caps in selected colors, textures and patterns.
 - 4. **Maintenance Manuals:** Manufacturer's instructions for maintenance of installed work.
- E. **MATERIALS:**
 - 1. **Project conditions:** Do not install wall protection systems until the installation area is enclosed and waterproofed and until the ambient temperature within the building is maintained at not less than 70 deg. F for not less than 72 hours prior to installation.
 - 2. **Furnish to Fulton County at least 2% of each type of color and pattern of wall protection system components used on the project over and above the amount installed as "attic stock".**
 - 3. **Deliver "attic stock" to Fulton County at time of Substantial Completion and store as directed.**

1.2 PRODUCTS

A. MANUFACTURER

- 1. **ARDEN Architectural Specialties, Inc. 1947 West County Road C-2, St. Paul, Minnesota 55113, 800/521-1826 or 612/631-1607 (FAX).**

2. Snap-On-Covers: Chemical and stain resistant, high impact vinyl compound with an anti-microbial additive and extruded in the longest lengths practicable for each system. Finish to be embossed pebble grain, matte surface. Color shall be determined from manufacturer's standard colors.
3. Corner Guard System shall be Surface Mounted vinyl snap-on cover and continuous aluminum retainer, Series CGS-@S, 90 degree square corner with 2" wings.

1.3 EXECUTION

A. EXECUTION

1. Install work in accordance with approved shop drawings and manufacturer's printed instruction.
2. Install work plumb and straight, securely attached and adjusted for proper operation as Applicable

END OF SECTION 10261

SECTION 10431

SIGNAGE

PART 28 - GENERAL

28.1 RELATED DOCUMENTS

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

28.2 SUMMARY

- A. This Section includes the following:
 - 1. Plaques.
 - 2. Interior panel signs.
- B. Related Sections include the following:
 - 1. Division 1 Section "Temporary Facilities and Controls" for temporary Project identification signs and for temporary information and directional signs.
 - 2. Division 15 Sections for labels, tags, and nameplates for mechanical equipment.
 - 3. Division 16 Sections for electrical service and connections for illuminated signs.
 - 4. Division 16 Sections for labels, tags, and nameplates for electrical equipment.
 - 5. Division 16 Sections for illuminated Exit signs and LED signs.

28.3 DEFINITIONS

- A. ADA-ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines."

28.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details for signs.
 - 1. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
 - 2. Provide message list, typestyles, graphic elements, including tactile characters and Braille, and layout for each sign.
- C. Sign Schedule: Use same designations indicated on Drawings.
- D. Qualification Data: For Installer and fabricator.
- E. Maintenance Data: For signs to include in maintenance manuals.
- F. Warranty: Special warranty specified in this Section.

28.5 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of products, An employer of workers trained and approved by manufacturer.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- C. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.
- D. Regulatory Requirements: Comply with applicable provisions in ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
- E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

28.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit installation of signs in exterior locations to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify recess openings by field measurements before fabrication and indicate measurements on Shop Drawings.

28.7 COORDINATION

- A. Coordinate placement of anchorage devices with templates for installing signs.

28.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of metal and polymer finishes beyond normal weathering.
 - b. Deterioration of embedded graphic image colors and] sign lamination.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 29 - PRODUCTS

29.1 MATERIALS

- A. Aluminum Castings: ASTM B 26/B 26M, of alloy and temper recommended by sign manufacturer for casting process used and for use and finish indicated.
- B. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32.
- C. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 6063-T5.
- D. Steel Members Fabricated from Plate or Bar Stock: ASTM A 529/A 529M or ASTM A 572/A 572M, 42,000-psi minimum yield strength
 - 1. For steel exposed to view on completion, provide materials having flat, smooth surfaces without blemishes. Do not use materials whose surfaces exhibit pitting, seam marks, roller marks, rolled trade names, or roughness.
- E. Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), Type UVA (UV absorbing).
- F. Polycarbonate Sheet: Of thickness indicated, manufactured by extrusion process, coated on both surfaces with abrasion-resistant coating:
 - 1. Impact Resistance: 16 ft-lbf/in. per ASTM D 256, Method A.
 - 2. Tensile Strength: 9000 lbf/sq. in. per ASTM D 638.
 - 3. Flexural Modulus of Elasticity: 340,000 lbf/sq. in. per ASTM D 790.
 - 4. Heat Deflection: 265 deg F at 264 lbf/sq. in. per ASTM D 648.
 - 5. Abrasion Resistance: 1.5 percent maximum haze increase for 100 revolutions of a Taber abraser with a load of 500 g per ASTM D 1044.
- G. Applied Vinyl: Die-cut characters from vinyl film of nominal thickness of 3 mils with pressure-sensitive adhesive backing, suitable for exterior applications.

29.2 PLAQUES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide product by one of the following:
 - 1. Image Makers Marketing, Inc. (Elaine Gossett, 770-926-9552)
 - 2. ASI Sign Systems (Scott Wheeler, 770-448-2026)
 - 3. The Southwell Co. (Scott Southwell, 210-223-1831)

- C. Cast Plaques: Provide castings free of pits, scale, sand holes, and other defects, as follows:
 - 1. Plaque Material: Aluminum.
 - 2. Background Texture: Manufacturer's standard leatherette texture.
 - 3. Border Style: Plain bevel, polished.
 - 4. Mounting: Concealed studs, noncorroding for substrates encountered.

- D. Plaque Schedule:
 - 1. Plaque Type: Aluminum
 - a. Plaque Size: 22"x34"
 - b. Character Size: Provided by the Owner and Construction Manager.
 - c. Character Finish/Color: Provided by the Owner and Construction Manager.
 - d. Text/Message: Provided by the Owner and Construction Manager.
 - e. Location: Operations Building Lobby
 - f. Room: 1-01
 - g. Quantity: 1

29.3 INTERIOR PANEL SIGNS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. ACE Sign Systems, Inc.
 - 2. Advance Corporation; Braille-Tac Division.
 - 3. Allen Industries Architectural Signage
 - 4. Allenite Signs; Allen Marking Products, Inc.
 - 5. APCO Graphics, Inc.
 - 6. ASI-Modulex, Inc.
 - 7. Best Sign Systems Inc.
 - 8. Bunting Graphics, Inc.
 - 9. Fossil Industries, Inc.
 - 10. Gemini Incorporated.
 - 11. Grimco, Inc.
 - 12. Innerface Sign Systems, Inc.
 - 13. InPro Corporation
 - 14. Matthews International Corporation; Bronze Division.
 - 15. Mills Manufacturing Company.
 - 16. Mohawk Sign Systems.
 - 17. Nelson-Harkins Industries.
 - 18. Seton Identification Products.
 - 19. Signature Signs, Incorporated.
 - 20. Supersine Company (The)

- B. Interior Panel Signs: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner, complying with the following requirements:

1. Acrylic Sheet: 0.080 inch thick.
 2. Laminated Sheet: High-pressure engraved stock with contrasting color face laminated to acrylic core as selected by Construction Manager from manufacturer's full range.
 3. Edge Condition: Square cut.
 4. Corner Condition: Rounded to radius indicated.
 5. Mounting: Unframed.
 - a. Wall mounted with concealed anchors.
 - b. Manufacturer's standard anchors for substrates encountered.
 6. Color: As selected by Construction Manager from manufacturer's full range.
 7. Tactile Characters: Characters and Grade 2 Braille raised 1/32 inch above surface with contrasting colors.
- C. Laminated Interior Signs: Solid polycarbonate panel core with graphic image covered with thermosetting resin face layer.
1. Surface Finish: Mat.
 2. Edge Condition: Square cut.
 3. Corner Condition: Rounded to radius indicated.
 4. Thickness: 1/4 inch.
- D. Tactile and Braille Sign: Manufacturer's standard process for producing text and symbols complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1. Text shall be accompanied by Grade 2 Braille. Produce precisely formed characters with square-cut edges free from burrs and cut marks; Braille dots with domed or rounded shape.
1. Panel Material: Clear acrylic sheet with opaque color coating, subsurface applied.
 2. Raised-Copy Thickness: Not less than 1/32 inch.
- E. Engraved Copy: Machine engrave letters, numbers, symbols, and other graphic devices into panel sign on face indicated to produce precisely formed copy, incised to uniform depth.
1. Engraved Plastic Laminate: Engrave through exposed face ply of plastic-laminate sheet to expose contrasting core ply.
 2. Engraved Metal: Fill engraved copy with enamel.
 3. Face-Engraved Clear Acrylic Sheet: Fill engraved copy with enamel. Apply opaque background color coating to back face of acrylic sheet.
- F. Subsurface Copy: Apply minimum 4-mil- thick vinyl copy to back face of clear acrylic sheet forming panel face to produce precisely formed opaque image. Image shall be free of rough edges.
- G. Subsurface Engraved Acrylic Sheet: Reverse-engrave back face of clear acrylic sheet. Fill resulting copy with enamel. Apply opaque background color coating over enamel-filled copy.
- H. Colored Coatings for Acrylic Sheet: For copy colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and are UV and water resistant for five years for application intended.

I. Panel Sign Schedule:

1. See drawings for panel sign types, sizes and locations.
2. : Pole mounting, noncorroding fasteners for substrates encountered.

29.4 ACCESSORIES

- A. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

29.5 FABRICATION

- A. General: Provide manufacturer's standard signs of configurations indicated.
1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.
 2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
 3. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.
 4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

29.6 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

29.7 ALUMINUM FINISHES

- A. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating, and painting.

1. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils, medium gloss.

29.8 ACRYLIC SHEET FINISHES

- A. Colored Coatings for Acrylic Sheet: For copy and background and frame colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and that are UV and water resistant for five years for application intended.

PART 30 - EXECUTION

30.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Verify that items[, including anchor inserts, and electrical power are sized and located to accommodate signs.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

30.2 INSTALLATION

- A. Locate signs and accessories where indicated, using mounting methods of types described and complying with manufacturer's written instructions.
 1. Install signs level, plumb, and at heights indicated, with sign surfaces free of distortion and other defects in appearance.
 2. Interior Wall Signs: Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls. Locate to allow approach within 3 inches of sign without encountering protruding objects or standing within swing of door.
- B. Wall-Mounted Signs: Comply with sign manufacturer's written instructions except where more stringent requirements apply.
 1. Two-Face Tape: Mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces.
 2. Hook-and-Loop Tapes: Mount signs to smooth, nonporous surfaces.
 3. Magnetic Tape: Mount signs to smooth, nonporous surfaces.
 4. Silicone-Adhesive Mounting: Attach signs to irregular, porous, or vinyl-covered surfaces.
 5. Shim Plate Mounting: Provide 1/8-inch- thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other mounting methods are not practicable. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach panel signs to plate using method specified above.

6. Mechanical Fasteners: Use nonremovable mechanical fasteners placed through predrilled holes. Attach signs with fasteners and anchors suitable for secure attachment to substrate as recommended in writing by sign manufacturer.
 7. Signs Mounted on Glass: Provide matching opaque plate on opposite side of glass to conceal mounting materials.
- C. Dimensional Characters: Mount characters using standard fastening methods to comply with manufacturer's written instructions for character form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish character spacing and to locate holes for fasteners.
1. Flush Mounting: Mount characters with backs in contact with wall surface.
 2. Projected Mounting: Mount characters at projection distance from wall surface indicated.
- D. Cast-Metal Plaques: Mount plaques using standard fastening methods to comply with manufacturer's written instructions for type of wall surface indicated.
1. Concealed Mounting: Mount plaques by inserting threaded studs into tapped lugs on back of plaque. Set in predrilled holes filled with quick-setting cement.

30.3 CLEANING AND PROTECTION

- A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

END OF SECTION 10431

SECTION 10523
FIRE EXTINGUISHERS

PART 31 - GENERAL

1.1 SUMMARY

This section specifies recharging portable, hand-carried fire extinguishers.

A. OWNER-FURNISHED MATERIAL - HAND-CARRIED FIRE EXTINGUISHERS.

B. NFPA COMPLIANCE:

Label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

1.2 SUBMITTALS

A. GENERAL

Information shall be provided in accordance with the General Conditions.

PART 32 - PRODUCTS

2.1 LABELS

A.. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.

PART 33 - EXECUTION

3.1 EXAMINATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective and missing fire extinguishers.

B. Recharge all under-charged fire extinguishers.

3.2 INSTALLATION

A. GENERAL:

Install properly recharged fire extinguishers in locations indicated and in compliance with requirements of authorities having jurisdiction.

1. Bracket mounting height: 54" aff.

END OF SECTION 09912

SECTION 10801

TOILET AND BATH ACCESSORIES

PART 34 - GENERAL

34.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

34.2 SUMMARY

- A. This Section includes the following:
 - 1. Public-use washroom accessories.

34.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include the following:
 - 1. Construction details and dimensions.
 - 2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
 - 3. Material and finish descriptions.
 - 4. Features that will be included for Project.
 - 5. Manufacturer's warranty.
- B. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

34.4 QUALITY ASSURANCE

- A. Source Limitations: For products listed together in the same articles in Part 2, provide products of same manufacturer unless otherwise approved by Architect.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

34.5 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

34.6 WARRANTY

- A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 15 years from date of Substantial Completion.

PART 35 - PRODUCTS

35.1 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, 0.0312-inch minimum nominal thickness, unless otherwise indicated.
- B. Brass: ASTM B 19 flat products; ASTM B 16, rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.
- C. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.0359-inch minimum nominal thickness.
- D. Galvanized Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip zinc coating.
- E. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.
- F. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- G. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).
- H. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.
- I. ABS Plastic: Acrylonitrile-butadiene-styrene resin formulation.

35.2 PUBLIC-USE WASHROOM ACCESSORIES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. A & J Washroom Accessories, Inc.
 - 2. American Specialties, Inc.
 - 3. Bobrick Washroom Equipment, Inc.
 - 4. Bradley Corporation.
 - 5.

D. Toilet Tissue (Roll) Dispenser (TA-2):

1. Basis-of-Design Product: Bobrick B-132.
2. Description: Double-roll dispenser.
3. Mounting: Surface mounted.
4. Operation: Noncontrol delivery with standard spindle. Capacity: Designed for 5 1/2-inch diameter tissue rolls.
5. Material and Finish: Stainless steel, No. 8 finish (polished).
6. Refill Indicator: Pierced slots at front.

E. Paper Towel (Folded) Dispenser (TA-9):

1. Basis-of-Design Product: Bobrick B-359.
2. Mounting: Recessed.
3. Minimum Capacity: 350 C-fold or 475 multifold.
4. Material and Finish: Stainless steel, No. 4 finish (satin).
5. Lockset: Tumbler type.

F. Liquid-Soap Dispenser (TA-1):

1. Basis-of-Design Product: Bobrick B-132.
2. Description: Designed for dispensing soap in liquid form.
3. Mounting: Vertically oriented, surface mounted.
4. Capacity: 32 oz.
5. Materials: Stainless Steel
6. Lockset: Tumbler type.

G. Grab Bar (TA-3):

1. Basis-of-Design Product: Bobrick B6806.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.
 - a. Finish: Smooth, No. 4, satin finish on ends and slip-resistant texture in grip area.
4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 42 inches long.

H. Grab Bar (TA-4):

1. Basis-of-Design Product: Bobrick B6806.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.
 - a. Finish: Smooth, No. 4, satin finish on ends and slip-resistant texture in grip area.
4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 36 inches long.

I. Mirror Unit (TA-6):

1. Basis-of-Design Product: Bobrick B166-1824
 - a. Corners: Manufacturer's standard

2. Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.
 - a. One-piece, galvanized steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
3. Size: 18"x24".
4. Shelf: 5" deep

J. Coat Hook (TA-8):

1. Basis-of-Design Product: Bobrick B-2116.
2. Description: Projecting minimum of 3 7/16" inches from wall surface.
3. Material and Finish: Nickel-plated (satin) brass.

35.3 UNDERLAVATORY GUARDS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 1. Plumberex Specialty Products, Inc.
 2. TCI Products.
 3. Truebro, Inc.
- D. Underlavatory Guard :
 1. Description: Insulating pipe covering for supply and drain piping assemblies, that prevent direct contact with and burns from piping, and allow service access without removing coverings.
 2. Material and Finish: Antimicrobial, molded-plastic, white.

35.4 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six (6) keys to Owner's representative.

PART 36 - EXECUTION

36.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.

36.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 10801

DIVISION 11

No Sections Required

DIVISION 12

Furnishings

SECTION 12485

FOOT GRILLES

PART 37 - GENERAL

37.1 RELATED DOCUMENTS

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

37.2 SUMMARY

- A. This Section includes recessed foot grilles and frames.

37.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide foot grilles and frames capable of withstanding the following loads and stresses:
 - 1. Uniform floor load of 300 lbf/sq. ft.
 - 2. Wheel load of 500 lb per wheel.

37.4 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for foot grilles and frames.
- B. Shop Drawings: Show the following:
 - 1. Items penetrating foot grilles and frames, including the following:
 - 2. Divisions between grille sections.
 - 3. Perimeter floor frames.
- C. Samples for Verification: For each type of product indicated.
 - 1. Foot Grille: 12-inch square assembled sections.
 - 2. Frame Members: 12-inch long Sample of each type and color.
- D. Maintenance Data: For foot grilles and frames to include in maintenance manuals.

37.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain foot grilles and frames through one source from a single manufacturer.
- B. Accessibility Requirements: Provide installed foot grilles that comply with Section 4.5 in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)." and Sections 302 and 303 in ICC A117.1.

37.6 PROJECT CONDITIONS

- A. Field Measurements: Indicate measurements on Shop Drawings.

37.7 COORDINATION

- A. Coordinate size and location of recesses in concrete to receive foot grilles and frames.

PART 38 - PRODUCTS

38.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide C/S Group 3/8" Gridline foot grille with frame and lockdowns or a comparable product by one of the following:
 - 1. ARDEN Architectural Specialties, Inc.
 - 2. Balco, Inc.
 - 3. Cactus Mat Mfg. Co.
 - 4. Crowder, K. N. Manufacturing, Inc.
 - 5. C/S Group.
 - 6. J. L. Industries, Inc.
 - 7. Kadee Industries, Inc.
 - 8. Mats, Inc.
 - 9. Pawling Corporation; Architectural Products Division.
 - 10. Reese Enterprises, Inc.

38.2 MATERIALS

- A. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304.
- B. Stainless-Steel Angles: ASTM A 276 or ASTM A 479/A 479M, corrosion resistant, Type 304.

38.3 FOOT GRILLES

- A. General: Provide manufacturer's foot-grille assemblies consisting of treads of type and profile indicated, interlocked or joined together by cross members, and with support legs (if any) and other components needed to produce a complete installation.
- B. Stainless-Steel Foot Grille: Type 304.
 - 1. Surface Treads: 0.086-by-0.177-inch wire with 0.118-inch wire with 0.118-inch wide openings between wires.
 - 2. Stainless-Steel Finish: No. 4 finish.
 - 3. Grille Size: As indicated on drawings.
- C. Lockdown: Manufacturer's standard.

38.4 FRAMES

- A. Provide specially manufactured frames of size indicated on the drawings. Provide standard style for grille type, for permanent recessed installation in subfloor, complete with installation anchorages and accessories. Fabricate frame of same material and finish as grilles.

38.5 FABRICATION

- A. Shop fabricate foot grilles to greatest extent possible in sizes as indicated. Unless otherwise indicated, provide each grille as a single unit; do not exceed manufacturer's recommended maximum sizes for units that are removed for maintenance and cleaning. Where joints in grilles are necessary, space symmetrically and away from normal traffic lanes.
- B. Fabricate frame members in single lengths or, where frame dimensions exceed maximum available lengths, provide minimum number of pieces possible, with hairline joints equally spaced and pieces spliced together by straight connecting pins.

38.6 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

38.7 STAINLESS-STEEL FINISHES

- A. Mill finish.
- B. Directional Satin Finish: No. 4.
 - 1. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 39 - EXECUTION

39.1 EXAMINATION

- A. Examine substrates and floor conditions for compliance with requirements for location, size, minimum recess depth, and other conditions affecting installation of foot grilles and frames.
- B. Examine roughing-in for drainage piping systems to verify actual locations of piping connections before foot grille and frame and drain pan installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

39.2 INSTALLATION

- A. Install recessed foot grilles and frames with manufacturer's written instructions at locations indicated and with top of foot grilles and frames in relationship to one another and to adjoining finished flooring as recommended by manufacturer. Set foot-grille tops at height for most effective cleaning action. Coordinate top of foot-grille surfaces with doors that swing across grilles to provide clearance under door.

39.3 PROTECTION

- A. After completing frame installations, provide temporary filler of plywood or fiberboard in foot-grille recesses and cover frames with plywood protective flooring. Maintain protection until construction traffic has ended and Project is near Substantial Completion.

END OF SECTION 12485

SECTION 12520

SHADES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. This Section includes Cellular shades.

1.3 SUBMITTALS

- A. Product Data: For each type of shade specified.
- B. Shop Drawings: Show location and extent of shades. Show installation details at and relationship to adjoining work. Include elevations indicating shade units. Indicate location of controls.
- C. Samples for Initial Selection: Manufacturer's color charts consisting of actual units or sections of units showing the full range of colors, textures, and patterns available for each type of shade material indicated.
- D. Samples for Verification: Full-size units of each type of shade material indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics.
 - 1. Shade Material: Manufacturer's standard-size unit, not less than 9 inches square.
- E. Schedule: Use same room designations indicated on Drawings in preparing schedule for shades.
- F. Maintenance Data: For shades and operating hardware to include in the maintenance manuals.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed shade installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Source Limitations: Obtain shades through one source from a single manufacturer.
- C. Fire-Test-Response Characteristics: Provide shades that are identical to products that pass NFPA 701 Small Scale Test for flame-propagation resistance performed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify shades with appropriate markings of applicable testing and inspecting agency.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify shade openings by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating shades without field measurements. Coordinate wall and ceiling construction to ensure actual opening dimensions correspond to established dimensions.

1.6 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.
 - 1. Shade Units: Full-size units equal to 5 percent of amount installed for each size indicated, but not less than 1 unit.

PART 2 - PRODUCTS

2.1 SHADES

- A. Products: Subject to compliance with requirements, provide one of the shades indicated below.
 - 1. Acceptable Manufacturers
 - a. Levolor – Cirrus Cellular
 - b. Graber – Crystal Pleat Cellular
 - c. Bali – Diamond Cell
 - d. Approved equal to

2.2 ACCESSORIES

- A. Side and Sill Closure Channels: Between side of shade and opening jambs, and between hem bar and opening sill.
 - 1. Finish: Manufacturer's standard, to be chosen by Architect.
- B. Installation Fasteners: Fabricated from metal that is non-corrosive to shade hardware and adjoining construction and to support shades as required by manufacturer's written instructions.

2.3 FABRICATION

- A. Components: Noncorrosive, self-lubricating materials.
- B. Shade Units: Fill opening with not more than 1/4-inch clearance at jambs and 3/8-inch clearance at sill.
 - 1. Fabricate end-to-end installations with terminations at mullions or other defined vertical separations.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of shades. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install shades level and plumb, mounted not less than 1 inch from face of exterior glass.
- B. Install metal parts isolated from concrete or mortar to prevent corrosion.
- C. Install mounting brackets with not less than 2 fasteners per bracket.

3.3 CLEANING

- A. Clean shade surfaces after installation, according to manufacturer's written instructions.

3.4 SHADE SCHEDULE

Cellular blinds throughout except as indicated below:

END OF SECTION 12520

DIVISION 13
SPECIAL CONSTRUCTION

No Sections Required

DIVISION 14
CONVEYING SYSTEM

No Sections Required

DIVISION 15

MECHANICAL

No Sections Required

DIVISION 16

ELECTRICAL

No Sections Required

EXHIBITS

Project Drawings

EXHIBITS

A – 00
A – 1.1
A – 1.2
A – 1.3
A – 1.4
A – 1.5
A – 1.6
A – 1.7
A – 1.8
A – 1.9
A – 1.10
A – 1.11
A – 1.12
A – 1.13
A – 1.14
A – 1.14a
A – 1.15
A – 1.16
A – 1.17
A – 1.18
A – 1.19
A – 1.20
A – 1.21
A – 1.22
A – 2.1
A – 2.2
A – 2.3
A – 3.1

MECHANICAL

M – 1
M – 2

PLUMBING

P – 1
P – 2
P – 3

PROJECT DRAWINGS

Specification and Cover Page
Main Floor Existing
First Floor Existing
Second Floor Existing
Third Floor Existing
Fourth Floor Existing
Proposed Main Floor Plan
Proposed First Floor Plan
Proposed Second Floor Plan
Proposed Third Floor Plan
Proposed Fourth Floor Plan
First Floor Demolition Plan
Second Floor Demolition Plan
Third Floor Demolition Plan
Fourth Floor Demolition Plan
Main Floor Reflected Ceiling Plan
First Floor Reflected Ceiling Plan
Second Floor Reflected Ceiling Plan
Third Floor Reflected Ceiling Plan
Fourth Floor Reflected Ceiling Plan
First Floor Room Finish Plan
Second Floor Room Finish Plan
Third Floor Room Finish Plan
Fourth Floor Room Finish Plan
1st & 4th Floor Restrooms
1st, 2nd & 3rd Floor Break Rooms
3rd Floor copy and Storage rooms
Entryway Plan

Mechanical Schedule and notes
1st and 4th Floor Restroom Exhaust

Plumbing Schedule and Notes
Main and First Floor Plumbing Plans
3rd & 4th Floor Plumbing Plans