

Specifications for:

2025 Interior Renovations to the Gloucester Township
Black Box Community Center
3 S. Black Horse Pike
Blackwood, NJ

for

Gloucester Township

Laurel Springs, New Jersey 08021



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Project No. 1016H

January, 2025

TABLE OF CONTENTS

DIVISION 0 - BID DOCUMENTS

Specification Data Sheet..... SPECDATA 1
Gloucester Township Bid Documents1-25
Certification of Non-Involvement in Prohibited Activities in Russia or Belarus 1
Community Development Block Grant Program (CBDG)1- 50
Prevailing Wage WH 1- 2
Approved Apprenticeship FormAAF 1- 3
Instruction to Bidders (AIA-A 701)..... Insert 1-8
Supplementary Instruction to Bidders SIB 1-7
Bid - General Construction.....BID 1-4
AIA A101-2017 Contract Owner / Contractor Insert 1-8
General Conditions (AIA-A 201)Insert 1-39
Supplementary General Conditions..... SC 1-7
Release of Liens (AIA-G 706A)..... Insert 1
Consent of Surety (AIA-G 707) Insert 1
Certificate of Substantial Completion (AIA-G 704)..... Insert 1

DIVISION 1 - GENERAL REQUIREMENTS

011000 Summary of Work 011000 1
012100 Allowances012100 1-3
012300 Alternates..... 012300 1
012500 Substitutions012500 1-2
012600 Modification Procedures.....012600 1-2
012900 Application for Payment.....012900 1-4
013100 Coordination013100 1-2
013200 Project Meetings013200 1-2
013300 Submittals013300 1-4
014000 Quality Control.....014000 1-2
015000 Construction Facilities and Temporary Controls.....015000 1-5
016000 Materials and Equipment.....016000 1-2
017000 Contract Closeout017700 1-4
017740 Warranties.....017740 1-2

DIVISION 2 – EXISTING CONDITIONS

024119 Selective Demolition024119 1-4

DIVISION 3 - CONCRETE

033000 Cast in Place Concrete.....033000 1-10

DIVISION 4 – MASONRY

048100 Unit Masonry Assemblies.....048100 1-13

DIVISION 5 - METALS

055000 Metal Fabrications055000 1-6
055210 Pipe and Tube Railings.....055210 1-8

DIVISION 6 – WOOD AND PLASTICS

061050 Miscellaneous Carpentry061050 1-4
061600 Sheathing061600 1-3

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

072100 Building Insulation072100 1-4
072119 Open-Cell Spray Foam Insulation072119 1-6
079200 Joint Sealants079200 1-5

DIVISION 8 – OPENINGS

080671 Door Hardware Schedule.....080671 1-6
081113 Hollow Metal Doors and Frames.....081113 1-9
081416 Flush Wood Doors.....081416 1-5
085200 Wood Windows085200 1-7
087100 Door Hardware087100 1-11

DIVISION 9 – FINISHES

090561 Floor Leveling Compound.....090561 1-5
092900 Gypsum Board Assemblies.....092900 1-6
095113 Acoustical Panel Ceiling.....095113 1-5
096519 Resilient Tile Flooring096519 1-6
098439 Acoustical Ceiling Clouds098439 1-4
099000 Painting.....099000 1-5

DIVISION 10 – SPECIALTIES

102800 Toilet Accessories.....102800 1-5

DIVISION 26 – THEATRICAL SYSTEMS

265561 Theatrical Systems.....265561 1-17

ALTERNATE 1

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

073126 Slate Roof073126 1-14

END OF TABLE OF CONTENTS

SPECIFICATION DATA SHEET

Project:

Name: 2025 Interior Renovations to the Old Bank Building /
Black Box Community Center
Location: 3 S. Black Horse Pike, Blackwood, NJ
Project No.: 1016H

Owner:

Name: Gloucester Township
Address: 1261 Chews Landing-Clementon Road, Laurel Springs, New Jersey 08021
Representative: Office of the Township Clerk
Phone: (856) 374-3534

Architect:

Name: Joseph F. McKernan Jr., Architect & Associates
Address: 100 Dobbs Lane, Suite 204, Cherry Hill, New Jersey 08034
Representative: Mr. Michael Clarke, Project Manager
Phone: (856) 616-2960 Fax: (856) 616-2963
Email: mclarke@mckernanarchitects.com

Bidding & Contract Documents:

Contract Documents Dated: January 2025
Bid Documents: Digital drawing and specification documents available Tuesday, January 14, 2025.
Pre-Bid Conference: Thursday, January 16, 2025 at 10:00 a.m. at 3 S. Black Horse Pike, Blackwood, NJ
Questions due in writing by: Thursday, January 23, 2025 by 4:00 pm. Attn: Michael Clarke, RA, McKernan Architects, LLC Email: mclarke@mckernanarchitects.com
Final Addendum issued (if necessary) by Thursday, January 30, 2025
Bid Due Date: Thursday, February 13, 2025 at 10:00 a.m.
Location of Bid Opening: 1261 Chews Landing-Clementon Road, Laurel Springs, NJ 08021
Projected Construction kick-off Meeting: Tuesday, March 11, 2025
General Construction Project Substantial Completion: Thursday, August 7, 2025
Theater Systems Substantial Completion: Thursday, August 14, 2025
Gloucester Township Ribbon Cutting Ceremony: To be scheduled for August 26-28, 2025 (NO EXCEPTIONS!)

2025 SPECIFICATIONS FOR
INTERIOR RENOVATIONS AT 3 S. BLACK HORSE PIKE
FOR THE TOWNSHIP OF GLOUCESTER
COUNTY OF CAMDEN

MAYOR – DAVID MAYER

DEPARTMENT HEAD

BUSINESS ADMINISTRATOR

SOLICITOR

BID OPENING DATE: **February 13, 2025, 10:00 am**

SPECIFICATION: 1016H

TOWNSHIP OF GLOUCESTER, CAMDEN COUNTY

NOTICE TO BIDDERS

NOTICE is hereby given that sealed proposals for the:

Interior Renovations at 3 S. Black Horse Pike

BID SPECIFICATION NUMBER: 1016H 2025

will be received no later than **10:00 AM prevailing time on February 13, 2025**, at the Municipal Building, Chews-Clementon Road, Chews Landing, New Jersey

PROPOSALS must be addressed to the Office of the Township Clerk, 1261 Chews Landing Road, Laurel Springs, New Jersey, 08021 and will be opened and read publicly at the above time and date, and should be in a sealed envelope marked:

2025 Interior Renovations at 3 S. Black Horse Pike

DO NOT OPEN UNTIL: THURSDAY, FEBRUARY 13, 2025, at 10 a.m.

PROPOSAL forms, instructions to bidders, specifications and other bidding documents may be examined or obtained at the office of the Township Clerk, 1261 Chews Landing Road, Laurel Springs, New Jersey, during normal business hours on / after Wednesday January 7, 2025.

The Township Council reserves the right to reject any or all proposals in whole or in part, and to waive such informalities as may be permitted by law.

BIDDERS are required to comply with the requirements of P.L. 1975, Chapter 127, and P.L. 1977, Chapter 33.

Information on Affirmative Action Program requirements is available at the office of the Township Clerk, Municipal Complex, Chews Landing Road, Laurel Springs, New Jersey.

Nancy Power

INSTRUCTION TO BIDDERS

QUALIFICATION OF BIDDERS

All bidders must be prepared to present suitable evidence of their financial standing and to furnish a list of similar work recently completed.

No verbal instructions or information to bidders will be binding. The specifications will be considered as clear and complete unless written attention is called to any discrepancies or incompleteness before the opening of bids. Should any written inquiries be received by the Business Administrator, these inquiries will be answered in the form of bulletins and issued to all bidders. These bulletins shall be considered a part of these specifications.

Bids will be considered as conclusive evidence of complete examination of specifications and samples. It is understood that parties making bids accept all the terms and conditions expressed and contain in the specifications attached to the proposal submitted.

A proposal Form/Signature Page is provided in these specifications. This form must be used in submitting a proposal and all pages of the form must be completely filled out and signed by the bidder.

PRESENTATION OF BIDS

Each bid must be enclosed in a sealed envelope and clearly marked on the outside:

"**BID PROPOSAL – 2025 Interior Renovations at 3 S. Black Horse Pike**
" (see advertisement, page 1), and delivered to the Office of the Township Clerk, 1261 Chews Landing Rd., Laurel Springs, New Jersey 08021.

WITHDRAWALS

No proposal may be withdrawn later than 4:30 p.m. prevailing time on the day of the opening of the bids. No modifications or explanations of any bid will be allowed after the same is sealed and delivered to the Township Clerk. The proposal will be opened and read publicly by the Township Council.

The Township Council reserves the right to reject any or all bids or parts thereof as deemed to be in the best interest of the Township and to waive any immediate information as maybe permitted by law.

FORM OF CONTRACT

The successful bidder will be required to execute a written contract with the Township Council within ten (10) days after notice of the acceptance of their proposal.

WE ARE REQUIRING A BID BOND

AND REQUIRING

THE SURETY BOND

BID BOND

Each bid shall be accompanied by a certified check, cashier's check or bid bond duly executed by the bidder as the principal and having as surety thereon a surety company approved by the Township of Gloucester in the amount not less than ten percent (10%), but in no case in the excess of \$20,000.00 or the amount of bid. Any such bid bond shall be without endorsement or conditions. Bid shall be accompanied with a certified letter from a surety company stating that it will provide the bidder with the completion bond.

SURETY BOND

The successful bidder will be required to furnish a surety bond in the amount of one hundred percent (100%) of the contract price, the condition of which shall be in full and complete execution and performance of each and all of the terms contained in the contract, proposal, specifications and instructions to bidders. The bond shall meet all requirements of the Township Council.

NOTE: Surety bond is automatically required when the contract price exceeds nine hundred ninety nine dollars and ninety nine cents, (\$999.99); when the contract price is under \$999.99, surety bond may be required by the Township Council if they deem it necessary and in the best interest of the Township.

Entire cost of bond(s) shall be paid for by the individuals, firms, or corporations with whom the contract(s) are entered into for the execution of any other purchases, or the furnishing or hiring of any materials or supplies.

CONSENT OF SURETY

A performance bond will be required from the successful contractor on this project, and consequent, all bidders shall, with their bid, a certificate in substantially the following form:

TO: _____
(Owner)

RE: _____
(Contractor)

2025 INTERIOR RENOVATIONS @ 3 S. BLACK HORSE PIKE, BLACKWOOD, NJ
(Project Description)

This is to certify that the

(Surety Company)

will provide to _____ a performance bond

in the full amount of awarded contract in the event that said contractor is awarded a contract for the above project.

(CONTRACTOR)

(Authorized Agent of Surety Company)

Date: _____

CERTIFICATE OF SURETY MUST BE SIGNED BY AN AUTHORIZED AGENT OR REPRESENTATIVE OF A SURETY COMPANY AND NOT BY THE INDIVIDUAL OR COMPANY REPRESENTATIVE SUBMITTING THE BID.

SPECIFICATIONS

These specifications are intended to cover the furnishing of all materials and the performance of all work that may be required or necessary for the complete compliance of the contract and the contractor will be required to do all things. Where plans, drawings or schematics accompany certain sections of the specifications, these shall be considered as a part of these specifications.

INTERPRETATION OF SPECIFICATIONS

Should the contractor discover discrepancies in the specifications, the matter shall be immediately brought to the attention of the Township of Gloucester and the discrepancies corrected by written agreement before proceeding further.

All explanation, interpretations and instructions required under these specifications will be given by the Township upon written request from bidders.

Equipment to be furnished (if applicable) shall be new, first-class, or as specifications stipulated in the detailed specifications and shall meet with the approval of the Township Council or their designated representative.

All equipment if applicable shall conform to the requirements of these specifications and any equipment rejected by the Council as not complying with these specifications shall be immediately removed and replaced with acceptable equipment.

EXTRA WORK

No extras or additional work will be allowed or paid for unless such extras or additional work is ordered in writing by the Township and the price fixed and agreed before such work is performed.

ADDITIONS OR DEDUCTIONS

The Council of the Township of Gloucester shall have the right, without invalidating the contract to make additions to or deductions from the work covered by these specifications and in case such deductions in cost shall be made between the Council and the contractor, but must be agreed to in writing.

PROTECTION BY CONTRACTOR

The contractor agrees to indemnify and save harmless the Township and their representatives from all suits or actions of every nature and description brought against them or either of them or on account of the use of patented or copyrighted material, appliances, products, or processes, with legal protection. The contractor shall not transfer or sublet any portion of the work covered by these specifications without written consent of the Township.

GENERAL CLAUSE

SECTION I

PROPOSAL FORMS

As noted under "Instructions to Bidders", attached to these specifications is a "Proposal Form/Signature Form" which must be completely filled out and signed by each bidder.

As these Instructions to Bidders, Specifications, Form of Proposal, Signature Page, General and Special Clauses, etc. all refer to each other and together constitute a whole legal binding agreement and must be returned together as when delivered to bidder.

NO BID WILL BE ACCEPTED UNLESS SUBMITTED ON THESE FORMS FURNISHED HEREIN.

All bids must be sealed, marked and delivered in accordance with the Instructions in paragraph 5, and 6. Bids will be opened and read publicly by the Public Works Director at the time and day specified in the Advertisement for Bids. Reading of the bids will take place at the Municipal Hall, 1261 Chews Landing-Clementon Road, Laurel Springs, New Jersey 08021.

DELIVERY

In general, deliveries shall be in such time and place as much be fixed by Council and shall not be made except upon definite instructions. See "Specifications" for delivery required under these present specifications.

DISPOSAL OF MATERIALS, SUPPLIED, ETC., NOT APPROVED

Bidders shall understand that when materials, supplies, etc. have been delivered *to* the job which do not comply with the specifications and have not been approved, shall be immediately removed upon notification to the contractor and replaced with material, supply, etc., in full accordance with the specifications.

PAYMENTS

Payment shall be made to the contractor within sixty (60) days of receipt of invoice, after inspection and acceptance of the material and/or work and approval of the invoice by the Township Council unless otherwise stipulated by the Township in **form** of a contract.

NUMBER OF WORKING DAYS

The contract shall contain the date which the work shall be completed or shall specify the number of working days to be allowed for its completion and/or delivery of materials, equipment and supplies.

EXEMPTION FROM FEDERAL EXCISE AND NEW JERSEY SALES TAX

The Township of Gloucester is exempt from Federal Excise Taxes and the New Jersey Sales Tax. Net prices as shown in the proposal shall exclude said Federal and State Tax amounts.

NOTE: This provision shall not apply to construction, repair and/or maintenance contracts where bidder purchases supplies, materials, and/or equipment and includes costs thereof in computation of his bid or proposal.

NEW JERSEY PREVAILING WAGE ACT

All work on this Project shall comply with the requirements under the 1963 Revised Statutes of New Jersey Chapter 150, "Prevailing Rate of Wages on Public Contracts". Current applicable Wage Rate Determination of the State of New Jersey Department of Labor shall become part of the contract.

QUALITY, DELIVERY, AND APPROPRIATION

Unless otherwise specified on the Form of Proposal or in the Special Instructions for an individual class of commodity, the quantities listed on the Form of Proposal are estimate only, and the Township does not guarantee to purchase any definite quantities. The amount purchased however, shall be all of the Township requirements during the term of the contract, whether they be more or less than the estimate given. Also, the quantities purchased by the Township are limited to the amount of monies budgeted and appropriated for the same under New Jersey Statutes. In the case of all awards made on the basis or price at F.O.B. delivered to the Township, the supplier shall be required to make deliveries to the locations and in the quantities designated by the Township.

DOMESTIC PRODUCTS

Only manufactured products of the United States, wherever available, shall be used in connection with this undertaking, pursuant to 40A:11-18 of the Revised Statutes of the State of New Jersey.

**SEE ATTACHED DRAWINGS AND SPECIFICATIONS FOR
2025 INTERIOR RENOVATIONS @ 3 S. BLACK HORSE PIKE, BLACKWOOD, NJ**

BID PROPOSAL FORM

(Contract Title and Bid Number, if applicable)

(Description of goods/services being bid)

The undersigned proposes to furnish and deliver the above goods/services pursuant to the bid specification and made part hereof:

Base Bid (Interior Renovations @ 3 S. Black Horse Pike, Blackwood, NJ) Amount in words

\$ _____
Base Bid Amount in numbers

Alternate #1 (Remove existing slate roof and install new slate roof, etc.) Amount in words

\$ _____
Alternate #1 Amount in numbers

Company Name

Federal I.D. # or Social Security#

Address

Signature of Authorized Agent

Type or Print Name

Title

Telephone Number

Date

PROPOSAL FORM/SIGNATURE PAGES

To: Township Council
Gloucester Township
1261 Chews Landing Road
Laurel Springs, NJ 08021

Date: _____

Council:

This proposal is submitted in accordance with your advertisement inviting proposals to be received for the project identified as: **2025 INTERIOR RENOVATIONS @ 3 S. BLACK HORSE PIKE, BLACKWOOD, NJ**

Having carefully examined the “Advertisement for Bids”, “Bidding Instruction”, “General Clauses”, “Plans”, etc. hereinafter, bulletins applying thereto, and being familiar with the various conditions affecting the work, the undersigned hereby agrees to furnish all materials, perform all labor, and all else necessary to complete the work in strict accordance with the specifications for prices as follows:

In case this proposal is accepted, the undersigned is hereby bound to enter into contract within ten (10) days after receipt of notice of acceptance for above mentioned work, in accordance with such specifications.

Subscribed and Sworn
Before me this _____ day
of _____, 2025

(Type or Print Name)

Notary Public of _____

(Signature)

Notary Signature _____

(Seal)

PUBLIC DISCLOSURE

Chapter 33 of the Public Laws of 1977 provides that no Corporation or Partnership shall be awarded any State, County, Municipal, or School District contract for the performance of any work or the furnishing of any materials or supplies, unless prior to the receipt of the bid or accompanying the bid of said Corporation or Partnership there is submitted a statement. The statement shall set forth the names and addresses of all stockholders in the Corporation or Partnership who own ten percent (10%) or more of its stock or any class, or of all individual partners in the Partnership who owns a ten percent (10%) or greater interest therein.

FAILURE TO SUPPLY THIS INFORMATION WITH FORM OF PROPOSAL WILL BE
CAUSED TO REJECT THE BID

NAME

ADDRESS

_____	_____
_____	_____
_____	_____
_____	_____

No Individual Stockholder or Partner owns ten percent (10%) or more of this Corporation or Partnership.

Use reverse side of sheet for additional Stockholders.

Company's Name

Signature

Title

Title

Attachment III

(REVISED 4/10)

EXHIBIT A

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

N.J.S.A. 10:5-31 et seq. (P.L. 1975, C. 127)

N.J.A.C. 17:27

GOODS, PROFESSIONAL SERVICE AND GENERAL SERVICE CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement. A notice, to be provided by the agency contracting officer, advertising the labor union of the contractor's commitment under this chapter and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to meet targeted county employment goals established in accordance with N.J.A.C. 17-27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, and labor unions, that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principals of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the targeted employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decision of the State of New Jersey, and applicable Federal law and applicable Federal court decision.

The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the office from time to time in order to carry out the purpose of these regulations, and public agencies shall furnish such information as may be requested by the Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code at N.J.A.C. 17:27.**

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the three following documents:

- 1. Letter of Federal Affirmative Action Plan Approval**
- 2. Certificate of Employee Information Report**
- 3. Employee Information Report Form AA302 (electronically provided by the Division and distributed to the public agency through the Division's website at www.state.nj.gov/treasury/contract-compliance)**

Company: _____

Signature: _____

Print Name: _____

Title: _____

Date: _____

AFFIDAVIT FOR AFFIRMATIVE ACTION

(This Affidavit is part of the Proposal)

STATE OF: _____

COUNTY OF: _____

being duly sworn, deposes and says that he resides at:

and that he/she is the _____ of _____
who signed the foregoing Proposal of Bids, that during the course of this contract, he will agree
to the Plan for Affirmative Action.

Subscribed and Sworn to
before me on this ____ day
of _____, 20____.

(Notary Public)

(Signature)

(Type or Print Name)

(Seal)

(Exhibit B)

CONSTRUCTION CONTRACT

During the performance of his contract, the contractor agrees as follows:

1. The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, marital status, or sex. The contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status or sex. Such actions shall include, but not limited to the following: employment, upgrading, demotions, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Equal Employment Opportunity Officer setting forth provisions of this non-discrimination clause.
2. The contractor or subcontractor, where applicable, will in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status or sex.
3. The contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Public Agency Equal Employment Opportunity Officer advising the labor union or worker's representative of the contractor's commitment under this act and shall post copies of this notice in a conspicuous place available to employees and applicants for employment.
4. The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to P.L. 1975, C127, as amended and supplemented from time-to-time.
5. When hiring workers in each construction trade, the contractor or subcontractor agrees to attempt in good faith to employ minority workers in each construction trade consistent with applicable employment go prescribe Section 7.3 of said Regulations; provided however, that the Affirmative Action Office may, in its discretion, exempt a contractor or subcontractor from compliance with the good-faith procedures prescribed by the following Provisions 1, 2, and 3 as long as the Affirmative Action Office is satisfied that the contractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Affirmative Action Office, that is percentage of active "card-carrying" members are who are minority workers is equal to or greater

than the applicable employment goal prescribed by section 7.3 of the Regulations promulgated by the treasure pursuant to pee. L. 1975, letter c. 1 to 7, as amended and supplemented from time-to-time. The contractor or subcontractor agrees that a good-faith effort shall include compliance with the following procedures:

- A. If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall within three (3) days of the contractor award, seek assurance from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the regulations promulgated by the Treasurer pursuant to P.L. 1975, C. 127, as it is supplemented and amended from time-to-time. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five (5) days prior to the commencement of the construction work, the contractor or subcontractor agrees directly to attempt to hire minority workers consistent with the applicable employment goal. If the contractors are subcontractor's prior experience with a construction trade union, regardless of whether the union provided said assurance indicates a significant possibility that the trade union will not refer sufficient minority workers consistent with the applicable employment goal by complying with the following hiring procedures prescribed under (2); and the contractor or subcontractor further agrees immediately to take said action if its determines or is so notified by the Affirmative Action Office that the union is not referring minority workers consistent with the applicable employment goal.

- B. If the hiring of a work force consistent with the employment goal has not or cannot be achieved by each construction trade by adhering to the procedures of the preceding provision (1), or if the contractor or subcontractor does not have a referral agreement or arrangement with the union for a construction trade, the contractor or subcontractor agrees to take the following actions consistent with the applicable county employment goal:
 - 1. to notify the public agency compliance officer, affirmative action office and at least one minority referral organization of its Manpower needs and requests the referral of minority workers;
 - 2. to notify any minority workers who have been listed with it as awaiting available vacancies;
 - 3. prior to commencement of work, to request the local construction trade union, if the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, to refer a workers to fill job openings;
 - 4. to leave standing request for additional referral of minority workers with the local construction trade union, if the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State training and employment service and the other approved referral sources until

such time as the work force is consistent with the employment goal;

5. if it is necessary to lay off some of the workers in a given trade on the construction site, to a short consistency with the applicable state and federal statutes and Court decisions, that sufficient minority employees remain on the site consistent with the employment goal, and to employ any minority workers laid off by the contractor or any other construction site in the area on which its work force composition if not consistent with any employment goal establish pursuant to the Regulations implementing P.L.1975, C127;
6. to adhere to the following procedure when minority workers apply or are referred to the contractor or subcontractor:
 - i. if said individuals have never previously received any document or certification signifying a level of qualification lower than that required, the contractor or subcontractor shall determine the qualifications of such individuals and if the contractor's or subcontractor's work force in each construction trade is not consistent with the applicable employment goal, it shall employ such persons which satisfy appropriate qualifications standards; provided however, that a contractor or subcontractor shall determine that the individual at least possesses the skills and experience recognized by any workers skills and experience classification determination which may have been made by a Public Agency Compliance Officer, union, apprentice program or a referral agency, provided the referral agency is acceptable to the Affirmative Action Office and provided further, that if necessary, the contractor shall hire minority workers who qualify as trainees pursuant to subsection 2 (k) of these regulations. All of the requirements of this paragraph, however, are limited by the provisions of paragraph (c) below.
 - ii. if the contractor's or subcontractor' s work force is consistent with the applicable employment goal, the name of said minority group individual she'll be maintained on a waiting list for first consideration in the event the contractor's or subcontractor's workforce is no longer consistent with the applicable employment goal.
 - iii. if for any reason said contractor or subcontractor determines said minority group individual is not qualified or if said individual qualifies as an advanced training or apprentice, said contractor or subcontractor shall inform said individual in writing with the reasons for the determination and maintain copy in its files, and send a copy to the Public Agency Compliance Officer and to the Affirmative Action Office.
7. To keep a complete and accurate record of all requests made for the referral of works in any trade covered by the contract, and said records shall be kept on forms made available by the Affirmative Action Office and shall be submitted

promptly to that office upon request.

- A. The contractor or subcontractor agrees that nothing contained in the preceding provisions (3) shall preclude the contractor or subcontractor from complying with hiring hall or apprenticeship provisions in any applicable collective bargaining agreement or hiring hall agreement, and where required by customer or agreement, it shall send Journeymen and trainees to the union for referral, or to the apprentice program for admission, pursuant to such agreement or arrangements; provided, however, that where the practices of a union apprenticeship program will result in the exclusion of minority persons or the failure to refer minority group persons consistent with the county employment goal, the contractor or subcontractor shall not be required to employ minority advanced trainees and trained and numbers which results in employment of advanced trainees as percentage of the total work force for construction, trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for construction said construction trade. Also the contractor or subcontractor agree that, in implementing the procedures of the preceding provision (b), it shall, where practicable, employ minority workers residing within the geographical jurisdiction of the residing unions.
- B. The contractor agrees to complete monthly project Manning Reports on forms provided by the Affirmative Action Office or in the form prescribed by the Affirmative Action Office and submit a copy of said form no later than three (3) days after signing a construction contract and said form once a month thereafter for the duration of this contract to the Affirmative Action Office and to the Public Agency Compliance Officer. The contractor agrees to cooperate with the Public Agency in the payment of budgeted funds, as if necessary, for on-the-job and off-the-job programs for outreach and training of minority trainees employed on the construction projects.

Provisions 4 and 5 not required for contractors or subcontractors with four or fewer employees or contractor who has presented evidence of a federally approved or sanctioned affirmative action program.

NON-COLLUSION AFFIDAVIT

State of New Jersey

County of _____ SS: _____

I, _____ residing in _____
(Name of Affiant) (Name of Municipality)

in the County of _____ and State of _____ of full age,

being duly sworn according to law on my oath depose and say that:

I am _____ of the firm of _____

The bidder making this Proposal for the bid entitled _____, and that I
(Title of Bid Proposal)

executed the said proposal with full authority to do so that said bidder has not, directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named project; and that all statements contained in said proposal and in this affidavit are true and correct, and made with full knowledge that the _____ relies upon the truth of the statements
(Name of contracting unit)

contained in said Proposal and in the statements contained in this affidavit in awarding the contract for the said project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by _____.

Subscribed and sworn
Before me this _____
of _____, 2025

(Type or Print Name)

Notary Public of _____

(Signature)

(Seal)

CERTIFICATE OF BIDDER SHOWING ABILITY TO PERFORM CONTRACT

I, _____ of the (City, Town, Township, Borough, etc.)
of _____ in the County of _____ and the State of _____
_____ of full age, being duly sworn according to law on my oath depose and say
that:

1. I am a(n) owner, partner, shareholder or officer of the company set forth below and am duly authorized to execute this affidavit on its behalf.

(Check Appropriate Statements(s))

_____ I own, lease or control all necessary equipment required by plans, specifications, and advertisements under which bids are asked for.

_____ I do not own, lease or control all the necessary equipment required by plans specifications, and advertising under which bids are asked for.

If the bidder is not the actual owner or lessee of all the necessary equipment provide the source from which the equipment will be obtained (Attach additional sheets if necessary.)

Attach certification from the owner or person in control of the equipment definitely granting to the bidder the control of the equipment required during such time as may be necessary for the completion of that portion of the contract for which it is necessary.)

(Title)

(Name of Company)

Subscribed and sworn
Before me on this _____ day of _____,
_____, 2025 _____

Notary Public of New Jersey _____

Signature

(Seal)

PROOFOF BUSINESS REGISTRATION

N.J.S.A. 52:32-44 required that each contractor submit proof of business registration with the bid proposal. Proof of registration shall be a copy of the bidder's Business Registration Certificate (BRC). A BRC is obtained from the New Jersey Division of Revenue. Information on obtaining a BRC is available on the internet at www.nj.gov/dca/lgs/lpcl/busregis/bus or by phone at (609) 292-1730. N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that knowingly provide goods or perform services for a contractor fulfilling this contract:

1. The contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the contractor;
2. Prior to receipt of final payment from a contracting agency, a contractor must submit to the contracting agency an accurate list of all subcontractors or attest that none was used;
3. During the term of this contract, the contractor and its affiliates shall collect and remit and shall notify all subcontractors and their affiliates that they must collect and remit to the Director, New Jersey Division of Taxation, the Use Tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into this state.

A contractor, subcontractor or supplier who fails to provide proof of business registration or provides false business registration information shall be liable to a penalty of \$25 for each day of violation, not to exceed \$50,000 for each business registration not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements is available by calling (609) 292-9292.

NEW JERSEY "BUSINESS REGISTRATION CERTIFICATE" FORM
FOR GENERAL AND SUB-CONTRACTORS

P.L. 2004 Ch. 57 requires that Business Organizations, be registered with the New Jersey Department of Treasury, Division of Revenue. The definition in the law is as follows:

"Contractor" means a business organization that seeks to enter or has entered into a contract with a contracting agency, to provide goods, services, or a construction project, the cost of which exceeds 15% of the contracting unit's bid threshold.

Please indicate below, for the bidder and all subcontractors listed on the "Subcontractor Declaration" herein, as to their registration with the NJ Department of Treasury, Division of Revenue in accordance with P.L. 2004, Ch57.

Proof of registration is required for all contractors and named subcontractors. Proof of registration means a copy of the organization's "Business Registration Certificate". No other form can be substituted to fulfill this requirement.

Copies of the Business Registration Certificate shall be submitted and attached to this form.

Name _____ Registration Number _____

Bidder
(Subcontractor)
(Subcontractor)
(Subcontractor)
(Subcontractor)
(Subcontractor)

Subscribed and Sworn
before me this _____ day
of _____ 20 _____

Notary Public of

Signature

My Commission Expires _____

(Type or Print Name)

(Seal)

STATE OF NEW JERSEY - DIVISION OF PURCHASE AND PROPERTY
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

Quote Number: _____

Bidder/Offeror: _____

Part1: CERTIFICATION
BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BQX.

FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at <http://www.starte.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Bidders must review this list prior to completing the below certification. Failure to complete the certification will render a bidder's proposal non-responsive. If the Director finds a person or entity to be in violation of law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

PLEASE CHECK THE APPROPRIATE BOX.

I certify, pursuant to Public Law 2012, c. 25, that neither the bidder listed above nor any of the bidder's parents, subsidiaries, or affiliates is listed on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 (Chapter 25 List") further certify that I am the person listed above, or I am an officer complete the Certification below.

OR

I am unable to certify as above because the bidder and/or more its, subsidiaries or affiliates is listed on the Department's Chapter 26 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the certification below Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines, and/or sanctions will be assessed as provided by law.

Part 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging the investment in Iran outlined above by completing the boxes below.

EACH BOX WILL PROMPT YOU TO PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES. CLICK THE "ADD AN ADDITIONAL ACTIVITIES ENTRY" BUTTON.

Name: _____ Relationship to Bidder/Offeror: _____

Description of Activities: _____

Duration of Engagement: _____ Anticipated Cessation Date: _____

Bidder/Offeror Contact Name: _____ Contact Phone Number: _____

ADD AN ADDITIONAL ACTIVITIES ENTRY

Certification: I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any Part1: hereto to the best of my knowledge are true and complete. I attest that I am authorized to execute the certification on behalf of the above referenced person or entity. I acknowledge that the State of New Jersey is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the state to notify the State in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will constitute material breach of my agreement(s) with the State of New Jersey and that the State at its option may declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): _____ Signature _____

Title: _____ Date: _____



**CERTIFICATION OF NON-INVOLVEMENT IN PROHIBITED ACTIVITIES
IN RUSSIA OR BELARUS PURSUANT TO P.L.2022, c.3**

CONTRACT / BID SOLICITATION TITLE _____

CONTRACT / BID SOLICITATION No. _____

CHECK THE APPROPRIATE BOX

I, the undersigned, am authorized by the person or entity seeking to enter into or renew the contract identified above, to certify that the Vendor/Bidder is not engaged in prohibited activities in Russia or Belarus as such term is defined in [P.L.2022, c.3](#),¹ section 1.e, except as permitted by federal law.

I understand that if this statement is willfully false, I may be subject to penalty, as set forth in P.L.2022, c.3, section 1.d.

OR

I, the undersigned am unable to certify above because the person or entity seeking to enter into or renew the contract identified above, or one of its parents, subsidiaries, or affiliates may have engaged in prohibited activities in Russia or Belarus. A detailed, accurate and precise description of the activities is provided below.

Failure to provide such description will result in the Quote being rendered as non-responsive, and the Department/Division will not be permitted to contract with such person or entity, and if a Quote is accepted or contract is entered into without delivery of the certification, appropriate penalties, fines and/or sanctions will be assessed as provided by law.

Description of Prohibited Activity

Attach Additional Sheets If Necessary.

If you certify that the bidder is engaged in activities prohibited by P.L. 2022, c. 3, the bidder shall have 90 days to cease engaging in any prohibited activities and on or before the 90th day after this certification, shall provide an updated certification. If the bidder does not provide the updated certification or at that time cannot certify on behalf of the entity that it is not engaged in prohibited activities, the State shall not award the business entity any contracts, renew any contracts, and shall be required to terminate any contract(s) the business entity holds with the State that were issued on or after the effective date of P.L. 2022, c. 3.

Signature of Vendor's Authorized Representative

Date

Print Name and Title of Vendor's Authorized Representative

Vendor Name

Vendor Phone Number

Vendor Address (Street Address)

Vendor Fax Number

Vendor Address (City/State/Zip Code)

Vendor Email Address for Authorized Representative

¹ Engaged in prohibited activities in Russia or Belarus" means (1) companies in which the Government of Russia or Belarus has any direct equity share; (2) having any business operations commencing after the effective date of this act that involve contracts with or the provision of goods or services to the Government of Russia or Belarus; (3) being headquartered in Russia or having its principal place of business in Russia or Belarus, or (4) supporting, assisting or facilitating the Government of Russia or Belarus in their campaigns to invade the sovereign country of Ukraine, either through in-kind support or for profit.

Community Development Block Grant Program (CDBG) Federal Requirements for Bid Documents.

The following information/documentation is required as part of the bid documents to ensure compliance with the following listed CDBG program regulations established by the U.S. Department of Housing and Urban Development (HUD) and related federal statutes.

- **Davis/Bacon Prevailing Wages** - The Davis-Bacon Act (40 USC, Chapter 3, Section 276a-276a-5; and 29 CFR Parts 1, 3, 5, 6 and 7) is triggered when any construction work over \$2,000 is financed in whole or in part with CDBG funds. It requires that workers receive no less than the prevailing wages being paid for similar work in the same area.
- The **Copeland Anti-Kickback Act** (40 USC, Chapter 3, Section 276c and 18 USC, Part 1, Chapter 41, Section 874; and 29 CFR Part 3) requires that workers be paid weekly, that deductions from workers' pay be permissible, and that contractors maintain and submit weekly payrolls.
- The **Contract Work Hours and Safety Standards Act** (40 USC, Chapter 5, Sections 326-332; and 29 CFR Part 4, 5, 6 and 8; 29 CFR Part 70 to 240) applies to contracts over \$100,000 and requires that workers receive overtime compensation (time and one-half pay) for hours they have worked in excess of 40 hours in one week. Violations under this Act carry a liquidated damages penalty (\$10 per day per violation).
- **Section 3 Economic Opportunities** (24 CFR 135.3) - Section 3 is a provision of the Housing and Urban Development Act of 1968. It is intended to ensure that when employment or contracting opportunities generated from federally-funded projects necessitates the employment of additional persons, or when contract work is awarded, preference must be given to low and very low-income persons or business concerns residing or doing business in the community where the project is located. Capital projects in excess of \$200,000 funded in whole or in part with CDBG funds are subject to Section 3.
- **Equal Employment Opportunity** - Contracts over \$10,000 are subject to Executive Order 11246 which prohibits employment discrimination by Federal contractors and subcontractors and federally-assisted construction contractors and subcontractors.

A. Bid Advertisement

The following language is recommended:

“Prevailing wages established under the Davis-Bacon Act will apply to this contract. The contract documents contain requirements addressing prevailing labor wage rates, labor standards, nondiscrimination in hiring practices, goals for minority and female participation, MBE and WBE participation, participation by Section 3 residents and businesses, and related matters.

The bidders/offerors must submit documentary evidence of minority and women business enterprises and of Section 3 businesses (low and moderate income businesses) who have been contacted and to whom commitments have been made. Documentation of such solicitations and commitments shall be submitted concurrently with the bid.

The provisions of the Federal Government Department of Labor's current wage rate determinations and the State's Prevailing Wage Act are requirements of this project. The higher of the Federal or State Wage Rate and the higher of the Federal or State Fringe Benefit Rate shall prevail."

B. MBE/WBE and Section 3 Forms

M/WBE - The Contractor shall utilize, to the maximum extent feasible, eligible, MBE/WBE business concerns located in the area and contracting for work to be performed in connection with the completion of the contract.

- Contractor Bidder Instructions
- Contractor Action Plan for Business Utilization MBE/WBE * *Submit After Award and Prior to Construction (At Preconstruction conference)*
- Contractor Minority and Women's Business Enterprise Bidder Certification * *Submit After Award and Prior to Construction (At Preconstruction conference)*
- Contractor Minority and Women's Business Utilization Report * *Submit Prior to Final Payment*

SECTION 3 (Section 3 only applies to Contracts \$200,000.00 or more) - It is the responsibility of the Prime Contractor to make a good faith effort to utilize lower income residents of the project area with opportunities for training and employment and that contracts for work in connection with the project be awarded to business concerns which are located in, or owed in substantial part by persons residing in the area of the project.

- Contractor Section 3 Plan **Submit After Award/Prior to Construction*
- Contractor Section 3 Business and Employment Notice * *Submit Prior to construction*
- Contractor Section 3 Worker Certification Form * *Submit Prior to Final Payment*
- Contractor Targeted Section 3 Worker Tracking Form * *Submit Prior to Final Payment*
- Contractor Section 3 Targeted Section 3 Worker Certification Form * *Submit Prior to Final Payment*
- Contractor Section 3 Labor Hours Summary Report * *Submit Prior to Final Payment*

C. Federal Prevailing Wage Requirements

The following forms must be included in their entirety.

Prevailing Wage Compliance
Fact Sheet #66
Federal Labor Standards Provisions Form4010
US Department of Labor Payroll Form WH-347
Davis Bacon Wage Determinations

If the project requires State Prevailing Wages be paid then the requirement is that the contractor pay the higher of the Federal or State Wage Rate and the higher of the Federal or State Fringe Benefit Rate. The package must also include the Federal Wage Determination in effect at time of bid.

D. General Conditions - Federal Requirements: To Be Included in Bid Packet

M/WBE & SECTION 3 FORMS

MBE/WBE CONTRACT SOLICITATION AND COMMITMENT STATEMENT

(1) Name of Bidder	(2) IFB Number
Address	Bid Opening Date
Telephone Number	Contact Person

(8) NOTE: List those certified minority/women owned businesses from which you solicited quotes or which contacted you and gave you quotes in regard to this invitation for bid. Bidder's contract with subcontractors and suppliers should be at least five days prior to the bid opening date.

*(3) COMPANY NAME EIN/SSN TELEPHONE NUMBER	(4) MBE (X)	(4) WBE (X)	(5) TYPE OF CONSTRUCTION, EQUIPMENT, SERVICES AND/OR SUPPLIES TO BE PROVIDED TO THE PROJECT	(6) TOTAL DOLLAR AMOUNT OF QUOTE RECEIVED	*(7) TOTAL COMMITMENT DOLLAR AMOUNT

(9) NOTE Minimum Levels (MPL): MBE-5%, WBE-3%

A presumption of responsibility may be made if the dollar commitment of MBE/WBE reflects this minimum participation level.

(10) Prepared By	Telephone Number/E-mail Address:
------------------	----------------------------------

Use additional sheets if necessary.

EXPLANATION OF COLUMN ITEMS
(MBE/WBE Contract Solicitation and Commitment Statement)

1. Provide your company name, address, telephone number.
2. Provide the Invitation for Bid (IFB) number, if available, bid opening date and bidder's contact person.
3. Enter the subcontractor's company name, Employer Identification Number (EIN), Social Security Number (SSN) and telephone number with area code. Only the company's name is a mandatory item.
4. Indicate whether or not the firm is an MBE/ WBE firm. Place a check mark in either the MBE column or the WBE column.
5. Indicate type of work to be performed and/or material to be supplied.
6. Enter the total dollar amount of the quote received.
7. Enter the dollar amount of the commitment which you have made to the MBE or WBE firm. If no amount is provided in this space, it will be presumed that your firm made no commitment to the MBE or WBE firm.
8. NOTE: You must include information on both solicited and unsolicited quotes. Failure to include a firm providing solicited or unsolicited quotes may result in the rejection of the bid. Five days is a guide. However, adequate time must be provided for subcontractors and suppliers to respond to bids.
9. NOTE: If the minimum participation levels for this project are not achieved, you must provide a written explanation on this or a separate sheet explaining the failure to achieve the MPL for either MBE or WBE. Failure to provide this explanation will result in rejection of the bid as non-responsive.
10. Indicate the name and title of the person(s) who prepared the form, along with an e-mail address.

***KEY NOTE: Mandatory Items: Failure to provide mandatory items will result in rejection of the bid as non-responsive. These items appear in Columns 3 and 7. Only the company name is a mandatory item in Column 3.**

MINORITY AND WOMEN'S BUSINESS ENTERPRISE BIDDER INSTRUCTIONS

This Project is funded in part with Community Development Block Grant (CDBG) funds. In accordance with CDBG rules and regulations, municipalities must uphold the conditions of the Minority/Women's Business Enterprise (MBE/WBE) Action Plan.

The minimum participation level of five percent (5%) for Minority Business Enterprises and three percent (3%) for Women Business Enterprises MBE/WBE has been established. The successful bidder will be required to submit evidence that these goals have been met either through his/her own employment practices or through the use of MBE/WBE subcontractors and vendors. Failure to comply may result in the bidder being determined not responsible.

In preparation of your bid, you shall contact MBE/WBE firms made available by the NJSAVI N.J. Selective Assistance Vendor Information Database) at https://www20.state.nj.us/TYTR_SAVI/vendorSearch.jsp and State Contracting with Small, Minority, and/or Women Business Enterprises (SMWBE's) at <http://www.state.nj.us/njbusiness/contracting/>

You may also contact other MBE/WBE firms of which you are aware.

As part of your bid, you are expected to complete and submit the *MBE/WBE Contract Solicitation and Commitment Statement form*. This form will be used during bid review to ascertain your level of MBE/WBE utilization. Your efforts and success in utilizing these firms will be one of the tests of bidder responsibility. Failure to meet this Project's MBE/WBE goal does not automatically disqualify your bid; however, the MBE/WBE Bidder Certification must be submitted with the bid. At the Township's discretion, elements of the MBE/WBE may be waived, provided the bidder can submit adequate evidence of an effort to enlist MBE/WBE subcontractors and suppliers for the Project.

If you are the successful bidder you will be expected to document, at the pre-construction conference, your efforts to solicit MBE/WBE business enterprises, and to confirm the percentage of participation you will achieve.

Finally, at the completion of the Project and before final payment, you will be required to furnish to the municipality a completed *Minority/Women Business Enterprise Utilization Report* for yourself and your subcontractors along with a *Minority/Women Business Certification* form, if applicable.

**CONTRACTOR'S
ACTION PLAN FOR BUSINESS UTILIZATION
MBE/WBE**

- A. The Contractor shall utilize, to the maximum extent feasible, eligible, MBE/WBE business concerns located in the area and contracting for work to be performed in connection with the completion of the contract. Eligible MBE's have Ownership by minority individuals and the business is at least 51% owned by such individuals or, in the case of a publicly-owned business, at least 51% of the stock is owned by one or more such individuals. Further, the management and daily operations are controlled by those minority group members. Eligible WBE's must be at least 51% or more women-owned, managed, and controlled, must be open for six months, and owner must be a US citizen or legal resident alien. All MBE/WBE's must be registered with the State of New Jersey.
- B. The Contractor has established a goal of _____% for MBE (Minimum Goal is 5%) and a goal of _____% for WBE (Minimum Goal is 3%) for the total contract amount which he expects to award to eligible MBE/WBE business concerns.
- C. To achieve the goal specified in paragraph "B", the contractor shall:
1. **To identify MBE/WBEs in NJ, refer to the following websites:**
State Contracting with Small, Minority, and/or Women Business Enterprises (SMWBE's)
<http://www.state.nj.us/njbusiness/contracting/>

Services and Information: NJSAVI Database
https://www20.state.nj.us/TYTR_SAVI/vendorSearch.jsp
 2. Take steps to insure that subcontracts which are typically let on a bid rather than a negotiated basis are also let on a negotiated basis, whenever feasible.
- D. The Contractor will report to the Township on a monthly, quarterly, or per project basis, the results of the affirmative efforts undertaken per paragraphs A, B, and C above, including the efforts of its subcontractors.

Signature/ Contractor

Date

**CONTRACTOR
MINORITY AND WOMEN BUSINESS ENTERPRISE BIDDER CERTIFICATION**

The submittals of each bidder are subject to review to determine whether the bidder has discriminated in the selection of manufacturers, subcontractors and suppliers. If a bidder has met the goals for MBE/WBE participation, the bidder will be presumed not to have discriminated in their selections.

Where the goals are not met, the below statements, if accurate, shall be certified by the bidder:

1. The limited number or no commitment to MBEs/WBEs was not motivated by consideration of race or gender.
2. MBEs/WBEs were not treated less favorably than other businesses in the contract solicitation and commitment process.
3. Solicitation and commitment decisions were not based upon policies which disparately affect MBEs/WBEs.

By signing below, I certify that the above statements are true and accurate.

Company Name

Signature

Date

**CONTRACTOR
MINORITY & WOMEN'S BUSINESS ENTERPRISE
UTILIZATION REPORT
(SHALL BE SUBMITTED PRIOR TO FINAL PAYMENT)**

Project Name:

Prime Contractor's Name:

Address:

EIN No.

Telephone:

Contact Person:

Total All Lower Tier Subcontract(s) \$

Total MBE/WBE Lower Tier Subcontract(s) \$

List MBE/WBE businesses from which you have purchased services and/or supplies in reference to this contract. This document is to be completed and submitted with request for final payment.

Company Name	Address/Telephone	MBE* <small>(see Ethnic Code Below)</small>	WBE <small>(X)</small>	Trade	Date Paid	Dollar Amount of Contract(s)
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Ethnic Code: A-Asian-Pacific Americans; B-African Americans; H-Hispanic Americans; N-Native Americans

SECTION 3 PLAN
(Subrecipient / Developer and General Contractor)
 (HUD Regulation, 24 CFR Part 75)

Construction Project	
Name of Project	
Address of Project	
Name of Neighborhood Where Project Resides <i>(Primary focus area for outreach attempts)</i>	

Submitted by			
Name of Subrecipient or Developer			
Business Address, City, State, & Zip			
Business Phone Number		Business Website	
Primary Contact Name			
Primary Contact Phone Number		Email	
For Federal Government Reporting Purposes – Principal Owner (51% or more) (Check ALL applicable boxes)			
<input type="checkbox"/> For-profit business	<input type="checkbox"/> Non-profit business	<input type="checkbox"/> Certified Section 3 business	
<i>If business is controlled with a board of directors, then check applicable boxes of board at 51% or more</i>			
<input type="checkbox"/> Female	<input type="checkbox"/> African American / Black	<input type="checkbox"/> Caucasian / White	<input type="checkbox"/> Hispanic
<input type="checkbox"/> Male	<input type="checkbox"/> Asian / Pacific	<input type="checkbox"/> Hasidic Jews	<input type="checkbox"/> Native American / Eskimo

Name of General Contractor			
Business Address, City, State, & Zip			
Business Phone Number		Business Website	
Primary Contact Name			
Primary Contact Phone Number		Email	
For Federal Government Reporting Purposes – Principal Owner (51% or more) (Check ALL applicable boxes)			
<input type="checkbox"/> For-profit business	<input type="checkbox"/> Non-profit business	<input type="checkbox"/> Certified Section 3 Business	
<i>If business is controlled with a board of directors, then check applicable boxes of board at 51% or more</i>			
<input type="checkbox"/> Female	<input type="checkbox"/> African American / Black	<input type="checkbox"/> Caucasian / White	<input type="checkbox"/> Hispanic
<input type="checkbox"/> Male	<input type="checkbox"/> Asian / Pacific	<input type="checkbox"/> Hasidic Jews	<input type="checkbox"/> Native American / Eskimo

Project Section 3 Contact Person	
The Developer and General Contractor's Section 3 contact person will serve as the main point of contact for all Section 3 related information and issues on behalf of the developer, general contractor, and subcontractors.	
Section 3 Coordinator Name	
Section 3 Coordinator Contact Number	
Section 3 Coordinator Email Address	

For Internal Use Only			
CDBG \$	HOME \$	Other (please specify):	
CPO#	CPA#	Other Amount \$	

General Statement

_____ and _____
(subrecipient or developer) (general contractor)

will review and are committed to comply with the Section 3 Regulation policy, guidelines and all companion documents. It is our desire to work together to ensure compliance, to the greatest extent feasible, through the awarding of any contracts for work and services to Section 3 companies, and to provide employment and training to Section 3 workers and Targeted Section 3 workers. We commit to include Section 3 language in all construction contracts and subcontracts. All subcontractors interested in submitting bids for contracts will be informed of the Section 3 requirements.

Compliance and Benchmarks

The above recipients will be considered to have complied with the Section 3 requirements, if prioritization can be verified via the outreach efforts and met (or exceeded) the benchmarks. If the benchmarks are not met, then a qualitative report must be submitted regarding the outreach activities per project. Such activities are listed under "Outreach Efforts".

Employment and Training

To demonstrate compliance with Section 3 Program, the best efforts to provide employment and training opportunities to Section 3 workers residing in the priority order listed below, where feasible:

1. Section 3 workers residing within the service area or the neighborhood of the project, and
2. Participants in Youthbuild programs.

Contracting

To demonstrate compliance with Section 3 Program, the best efforts to award contracts and subcontracts to business concerns that provide economic opportunities to Section 3 workers residing in the Township in the following order or priority, where feasible:

1. Section 3 business concerns that provide economic opportunities to Section 3 workers residing within the service area or the neighborhood of the project, and
2. Youthbuild programs.

Note – Service area or the neighborhood of the project means an area within one mile of the Section 3 project or, if fewer than 5,000 people live within one mile of a Section 3 project, within a circle centered on the Section 3 project that is sufficient to encompass a population of 5,000 people according to the most recent U.S. Census (§75.5).

Section 3 Workers Benchmark

Twenty-five (25) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Section 3 workers; and

Targeted Section 3 Workers Benchmark

Five (5) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Targeted Section 3 workers.

Outreach Efforts *(both Outreach tables must be completed)*

Indicate the efforts that will be made to notify Section 3 workers and Targeted Section 3 workers for training and employment opportunities and Section 3 business concerns for contracting opportunities generated by this HUD financial assistance project. **All efforts must be documented.** Submit copies of all publications, notices, pictures of posted notices, and any other outreach material utilized. Also, include informational lists of all Section 3 workers, Targeted Section 3 workers and Section 3 business concerns that responded to your outreach efforts.

Efforts to offer training and employment opportunities to individuals that may meet the Section 3 worker and Targeted Section worker requirements	Yes	No	Projected Timing
1. Notify the Township Section 3 Program office when training opportunities are available			
2. Engage in outreach efforts to generate job applicants			
3. Provide training or apprenticeship opportunities and prepare information to be distributed			
4. Clearly indicate Section 3 eligibility on all job postings with the following statement: "This job is a Section 3 eligible job opportunity. We encourage applications from individuals that are low income and/or live in Public Housing and/or receive a Section 8 voucher."			
5. Include the Section 3 worker and Targeted Section 3 worker certification form in all job postings			
6. Contact, coordinate, and advertise with unions and local community organizations, provide them with job postings for Section 3 eligible applicants and request their assistance in notifying residents of available training and employment opportunities			
7. Coordinate and advertise job opportunities via social media – LinkedIn, Facebook, Instagram, TikTok, etc.			
8. Coordinate and advertise job opportunities via flyer distributions, mass mailings and posting ad in common areas of housing developments and all public housing management offices			
9. Utilize the Section 3 Opportunity Portal to find qualified candidates, https://hudapps.hud.gov/OpportunityPortal/			
10. Establish a current list of Section 3 eligible applicants			
11. Provide technical assistance to help Section 3 workers and Targeted Section 3 workers compete for jobs (e.g., resume assistance, coaching)			
12. Provide or connect Section 3 workers and Targeted Section 3 workers with assistance in seeking employment including: drafting resumes, preparing for interviews, and finding job opportunities connecting residents to job placement services			
13. Held one or more job fairs.			
14. Provide or refer Section 3 workers and Targeted Section 3 workers to services supporting work readiness and retention (e.g., work readiness activities, interview clothing, test fees, transportation, child care)			
15. Provided assistance to apply for/or attend community college, a four-year educational institution, or vocational/technical training			
16. Assisted Section 3 workers to obtain financial literacy training and/or coaching			

Further explain the above outreach efforts and any additional outreach efforts not listed:

Place initials here to affirm the outreach efforts: (Owner/Developer) _____ (General Contractor) _____

Efforts to offer contracting opportunities to businesses that may meet the Section 3 business concern requirements	Yes	No	Projected Timing
17. Engage in outreach efforts to identify and secure bids from Section 3 business concerns			
18. Advertise contracting opportunities in local community paper and notices that provide general information about work to be contracted and where to obtain additional information			
19. Provide written notice of contracting opportunities to all known Section 3 business concerns with sufficient time to enable business concerns the opportunity to respond to bid invitations			
20. Utilize the Section 3 business registry to find potential Section 3 business concerns, http://hud.gov/Sec3Biz			
21. Coordinate with all business assistance agencies and contractor associations to inform them of contracting opportunities and request their assistance in identifying Section 3 business concerns including local community development organizations, business development agencies, and minority contracting associations			
22. Add Section 3 language to all RFPs, procurement documents, bid offerings and contracts			
23. Notify the Section 3 Program office upcoming pre-bid meetings			
24. Coordinate mandatory pre-bid meetings to inform Section 3 business concerns of upcoming contracting opportunities			
25. Divide contracts into smaller jobs to facilitate participation by Section 3 business concerns			
26. Contact businesses with resources to support business development to assist in obtaining contract opportunities			
27. Provide bonding assistance, guaranties, or other efforts to support viable bids from Section 3 business concerns			

Further explain the above outreach efforts and any additional outreach efforts not listed:

Place initials here to affirm the outreach efforts: (Owner/Developer) _____ (General Contractor) _____

All Subrecipients & Contract Awardees - Required Information and HUD Section 3 Language

All subrecipients and contract awardees are required to meet at least the minimum HUD Section 3 benchmark goals. As a subrecipient and contract awardee, Section 3 is a requirement regardless of the Section 3 language included in agreements, program regulatory agreements, or contracts (§75.27). All parties are encouraged to review the Section 3 information and documentation on the Housing and Revitalization Department Section 3 Program web page, <https://detroitmi.gov/departments/housing-and-revitalization-department/hud-programs-and-information/section-3-program>.

Section 3 Language – 24 CFR Part 75

All HUD Section 3 covered contracts shall include the following language:

- A.** The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very-low income persons.
- B.** The Parties to this contract agree to comply with HUD’s regulation in 24 CFR Part 75, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediments that would prevent them from complying with the Part 75 regulation.
- C.** The contractor agrees to include this Section 3 language in every subcontract subject to compliance with HUD’s regulation in 24 CFR Part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 language, upon a finding that the subcontractor is in violation of HUD’s regulation in 24 CFR Part 75 and HRD’s policy and guidelines. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulation, 24 CFR Part 75.
- D.** Noncompliance with HUD’s regulation in 24 CFR Part 75 and HRD’s policy and guidelines may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

If we do not feel it is feasible to meet the minimum goals set forth above, we will be prepared to demonstrate why it was not possible. We understand failure to follow our Section 3 Plan outreach efforts could result in the HUD-Detroit office finding us non-compliant with the Section 3 regulation.

I/We, being a duly authorized representative of the applicant, do hereby attest that the statements, documents, and responses provided in and with this Section 3 Plan are true and correct to the best of my knowledge. I understand that I am making this statement subject to the penalties of perjury. I/We further understand that the Township reserves the right to request additional information in order to clarify and verify any information related to the Section 3 process.

Name of Applicant (Business): _____

Print Name of Authorized Representative: _____

Signature of Authorized Representative: _____

Authorized Representative’s Title: _____ Date of Signature: _____

Sample Section 3 Business and Employment Notice

(Instructions: Publish as a display advertisement in the local paper's non-legal section or post at the local government and other Section 3 area locations.)

(Insert Locality's name) is preparing to carry out the *(insert Name of Project)* through the use of Community Development Block Grant Funds. In the implementation of this project the following job types may be available:

(Insert List of Job Classifications to be used during project)

All job openings will be posted at *(local government office or list other posting locations)*. To the greatest extent feasible, employment and training positions will be made available to qualified persons who permanently reside in *(Insert the County's or local municipality name as Section 3 area)*. Persons qualified for the jobs listed should register at the following location:

(Insert Name and Address of posting locations and/or Other Locations)

Additionally, the following contracts and procurements will/may be made and to the greatest extent feasible, businesses located in and owned by persons residing in *(Insert the County's name as Section 3 area)* will be utilized:

(Insert list of construction, non-construction, and service contracts to be procured during the project. Also, insert list of construction subcontracts, major, specific equipment and general types of materials to be used during the project.)

All above-referenced procurements will be made on a competitive basis. The names of businesses who respond to this notice will be included on procurement lists for this project. Names of job seekers will be given to contractors.

Any person residing or firm located in the above-named areas may request to participate in procurement opportunities associated with this project by contacting *(Insert local contact information)* within ten (10) days of this notice.

SECTION 3 BUSINESS SELF-CERTIFICATION

To Self-Certify as a Section 3 Business your company/firm per 24 CFR 75, must meet one of the listed categories below. You must provide that supporting documentation with this form to be properly and completely confirmed as a Section 3 business.

Section 3 Business Category	Additional Required Data	Mark an "X" on Your Election
It is at least 51 percent owned by low- or very low-income persons;	Proof of ownership showing all owners and their percentages and a completed Section 3 Individual Self-Certification form for all low- and very low-income owners	
Over 75 percent of the labor hours performed for the business are performed by low- or very low-income persons; or	Provide the last 90 days full payrolls for the entire company, make a list of the names from the payrolls of the Section 3 workers, and provide a completed Section 3 Individual Self-Certification for all low- and very low-income workers you list	
It is a business at least 51 percent owned by current public housing residents or residents who currently live in Section 8-assisted housing.	Proof of ownership showing all owners and their percentages and a Section 3 Individual Self-Certification form for all public housing and/or Section 8 owners	

I hereby certify to the US Department of Housing and Urban Development (HUD) that all of the information on this form is true and correct. I attest under penalty of perjury that my business meets the elected definition and understand proof of this information may be requested. If found to be inaccurate, I understand that I may be disqualified as a certified Section 3 business

Signature:		Date Signed:
Print Name:	Title:	
Company Name:		
Type of Business: (Check One): <input type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Other		
Address		
Telephone Number		

Section 3 Worker Certification Form

A Section 3 Worker seeking the preference in training and employment provided by this part shall certify or submit evidence to the recipient contractor or subcontractor that the person is a Section 3 Worker, as defined in Section 24 CRF 75.

I _____ (Print Name)

_____ My income for the previous year is below the income limit established by HUD.

_____ I am employed by a Section 3 business concern.

_____ A YouthBuild participant

The status of a Section 3 worker shall not be negatively affected by a prior arrest or conviction. Nothing in this part shall be construed to require the employment of someone who meets this definition of a Section 3 worker. Section 3 workers are not exempt from meeting the qualifications of the position to be filled.

FY (year) – HOUSEHOLD INCOME GUIDELINES

Place a Check on the line that is applicable	Family Size	Low Income *
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

* Circle the appropriate column based on household size and income – income limits are attached and/or can be downloaded from the www.hud.gov website.

I hereby certify that the information provided by me to be true and correct and understand any falsification of any of the information could subject me to disqualification from participation and punishment under the law.

Signature

Date

TARGETED SECTION 3 AND SECTION 3 WORKER TRACKING FORM

*This form must be submitted with each weekly payroll

Name of Employee INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER)	Worker Classification	Targeted Section 3 Workers Yes or No	Section 3 Workers Yes or No	Labor Hours Worked

Targeted Section 3 Worker Certification Form

A Targeted Section 3 Worker seeking the preference in training and employment provided by this part shall certify or submit evidence to the recipient contractor or subcontractor that the person is a Section 3 Worker, as defined in Section 24 CRF 75.

I _____ (Print Name)

_____ I am employed by a Section 3 business concern

_____ I am a section 3 worker living within the service area of the project: or

_____ A YouthBuild participant

The status of a Targeted Section 3 worker shall not be negatively affected by a prior arrest or conviction. Nothing in this part shall be construed to require the employment of someone who meets this definition of a Section 3 worker. Section 3 workers are not exempt from meeting the qualifications of the position to be filled.

FY (year) – HOUSEHOLD INCOME GUIDELINES

Place a Check on the line that is applicable	Family Size	Low Income *
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

* Circle the appropriate column based on household size and income – income limits are attached and/or can be downloaded from the www.hud.gov website.

I hereby certify that the information provided by me to be true and correct and understand any falsification of any of the information could subject me to disqualification from participation and punishment under the law.

Signature

Date

Section 3 Labor Hours Summary Report (regulation 24 CFR Part 75)

Economic Opportunities for Low - and Very Low-Income Persons

1. Submitting Business Name:		2. Project Name:		3. Project Address / Location		
4. Contact Person		5. Contact Number:		6. Contact Email Address		
7. Reporting Period (Month & Year):		8. Date Report Submitted:		9. Project Dates: (Start Date - End Date)		
10. Total Awarded Amount:		11. Funding Program Name and Amount: (HOME, CDBG, & CDBG-CV)				
		HOME:		CDBG:		CDBG-CV:

Part I: Employment and Training (Columns B, C and F are mandatory fields. Include New Hires in E &F)**

	A	B	C	D	E	F	
	Worker Name	All Workers Labor Hours	Section 3 Workers Labor Hours	% of Section 3 Worker Labor Hours	Targeted Section 3 Workers Labor Hours	% of Targeted Section 3 Worker Labor Hours	Section 3 Trainees (If yes, enter "1")
1	Worker Name 1						
2	Worker Name 2						
3	Worker Name 3						
4	Worker Name 4						
5	Worker Name 5						
6	Worker Name 6						
7	Worker Name 7						
8	Worker Name 8						
9	Worker Name 9						
10	Worker Name 10						
11	Worker Name 11						
12	Worker Name 12						
13	Worker Name 13						
14	Worker Name 14						
15	Worker Name 15						
16	Worker Name 16						
17	Worker Name 17						
18	Worker Name 18						
19	Worker Name 19						
20	Worker Name 20						
	TOTAL	0	0	#DIV/0!	0	#DIV/0!	0
	Worker Name	All Workers Labor Hours	Section 3 Workers Labor Hours	% of Section 3 Worker Labor Hours	Targeted Section 3 Workers Labor Hours	% of Targeted Section 3 Worker Labor Hours	Section 3 Trainees (If yes, enter "1")

General Conditions
Federal Requirements
(must be included in bid documents)

GENERAL CONDITIONS

FEDERAL REQUIREMENTS

All bidders must comply with the following Federal requirements:

1. Title VI of the Civil Rights Act of 1964 (P.L. 88-352) as stated in 24 CFR 570.601

"No person in the United States shall on the grounds of race, color, sex, sexual orientation, gender identity, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this Title."

2. Executive Order 11063, as amended.

"No person in the United States shall on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin, be discriminated against in housing (and related facilities) provided with Federal assistance and in lending practices with respect to residential property when such practices are connected with loans insured or guaranteed by the Federal Government."

3. Executive Order 11246

- A. If the contract amount is less than ten thousand (\$10,000) dollars) the following conditions shall apply:

During the performance of this contract, the contractor agrees as follows:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such actions shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Local Public Agency setting forth the provisions of this nondiscrimination clause.
- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this contract so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

- B. If the contract amount exceeds ten thousand (\$10,000) dollars, the following conditions shall apply:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965; and the rules, regulations and relevant orders of the Secretary of Labor.
- (5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Contracting Agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
- (6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulations, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) The Contractor will include the portion of the sentence immediately preceding paragraph (B-1) and the provisions of paragraphs (B-1) through (B-6) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Contracting Agency may direct as a means of enforcing such provisions, including sanctions for non-compliance: Provided, however, that in the event a Contractor becomes involved in, or is threatened with,

litigation with a subcontractor or vendor as a result of such direction by the Contracting Agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

Notice of Requirements for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246):

- (1) The Offerors or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth therein.
- (2) The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals and Timetables for Minority Participation in Each Trade: 17.3%	Goals and Timetables for Female Participation in Each Trade: 6.9%
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These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR Part 60-4, paragraph 3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

- (3) The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of ten thousand (\$10,000) dollars at any tier of construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
- (4) As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the _____.

**Standard Federal Equal Employment Opportunity Construction Contract Specifications
(Executive Order 11246)**

- (1) As used in these specifications:
 - (a) "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - (b) "Director" means Director, Office of Federal Contract Compliance Program, United States Department of Labor, or any person to whom the Director delegates authority;
 - (c) "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - (d) "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, and the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable affiliations through membership and participation or community identification).
- (2) Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of ten thousand (\$10,000) dollars the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
- (3) If the Contractor is participating (pursuant to 41 CFR Part 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO Clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

- (4) The Contractor shall implement the specific affirmative action standards provided in paragraphs (7a) through (7p) of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization, the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
- (5) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
- (6) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
- (7) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - (a) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - (b) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - (c) Maintain a current file of names, addresses, and telephone numbers of each minority and female off-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
 - (d) Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when

the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

- (e) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under (7)b above.
- (f) Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- (g) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and in disposition of the subject matter.
- (h) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
- (i) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one (1) month prior to the date for the acceptance of applications for apprenticeship or other training by and recruitment sources, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- (j) Encourage present minority and female employees to recruit other minority persons and women, and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
- (k) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- (l) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

- (m) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - (n) Ensure that all facilities and company activities are non-segregated except that separate or single-user toilets and necessary changing facilities shall be provided to assure privacy between the sexes.
 - (o) Document and maintain a record of all solicitation of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - (p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
- (8) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a) through (7p). The efforts of a contractor association, Joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under (7a) through (7p) of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
- (9) A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
- (10) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (11) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
- (12) The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246 as amended, and its implementing regulations

by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246 as amended.

- (13) The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph (7) of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR Part 60-4-8.
- (14) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
- (15) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application or requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

4. Contract Work Hours and Safety Standards Act (40 U.S.C. 327 et. seq.)

The Contractor, if the contract is in excess of \$2,000, and any of his subcontractors, shall comply with Section 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor Regulations contained in 29 CFR Part 5.

Under Section 103 of the Act, the Contractor and any of his subcontractors, shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of forty (40) hours. Work in excess of the standard work week is permissible, provided the worker is compensated at a rate not less than one and one-half (1 1/2) times the basic rate of pay for all hours worked in excess of forty (40) hours in any week. Section 5 of the Federal Labor Standards Provisions, as shown in below sets forth in detail the Section 103 requirements.

Section 107 of the Act provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to his health and safety, as determined under construction, safety and health standards promulgated by the Secretary of Labor. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market.

5. Federal Labor Standards

Provisions Applicability

The Project or Program to which the work covered by this Contract pertains is being assisted by the Federal Community Development Block Grant Program and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

I. Minimum Wages

- (1) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers and mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon posted (WH- 3121) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible space where it can be easily seen by the workers.

- (2) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

- (2) The classification is utilized in the area by the construction industry; and
 - (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (b) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and DCA or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate) a report of the action taken shall be sent by DCA or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within thirty (30) days of receipt and so advise DCA or its designee within the thirty (30) day period that additional time is necessary.
 - (c) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and DCA or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), DCA or its designee shall refer the questions, including the views of all interested parties and the recommendations of DCA or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within thirty (30) days of receipt and so advise DCA or its designee with the 30-day period that additional time is necessary.
 - (d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
 - (4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act has been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- b. Withholding: HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally- assisted contract

subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the Contractor or any subcontractors the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due.

c. Payrolls and Basic Records:

- (1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of work preserved for a period of three (3) years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- (2) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of

copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee.

- (b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5(a)(3)(i) and that such information is correct and complete;
 - (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;
 - (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification or work performed, as specified in the applicable wage determination incorporated into the contract.
- (c) The weekly submission of properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by 29 CFR Part 5.5, paragraph A.3(ii)(b).
- (d) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.
- (3) The Contractor or subcontractor shall make the records required under 29 CFR Part 5.5, paragraph A.3(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make

such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

d. Apprentices and Trainees:

- (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first ninety (90) days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize the apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at

not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (3) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- e. Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in the contract.
- f. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs a through k in this paragraph and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.
- g. Contract termination; debarment. A breach of the contract clauses in 29 CFR Part 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- h. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- i. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

j. Certification of Eligibility:

- (1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act of 29 CFR 5.12(a)(1) or to be awarded contracts or participate in HUD programs pursuant to 24 CFR Part 24.
- (2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis- Bacon Act or 29 CFR 5.12(a)(1) or to be awarded contracts or participate in HUD programs pursuant to 24 CFR Part 24.
- (3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration Transaction ", provides in part; "Whoever, for the purpose of . . . influencing in any way the action of such Administration. . . makes, utters or publishes any statement, knowing the same to be false. . . shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

k. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceedings or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

II. Contract Work Hours and Safety Standards Act. The provisions of Paragraph 3 are applicable where the amount of the Prime contract exceeds \$100,000. As used in this paragraph the terms "laborers" and "mechanics" include watchmen and guards.

A. Overtime requirements. No contractor or subcontractor contracting for any part of the Contract Work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any work week in which he or she is employed on such work to work in excess of forty (40) hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half (1/2) times the basic rate of pay for all hours worked in excess of forty (40) hours in such work week.

B. ~~Violation: liability for unpaid wages; liquidated damages.~~ In the event of any violation of the clause set forth in subparagraph (a) of this paragraph, the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchman and guards, employed in violation of the clause set forth in subparagraph (A) of this paragraph, in the sum of ten (\$10) dollars for each calendar day on which such individual was required or permitted to work

in excess of the standard work week of forty (40) hours without payment of the overtime wages required by the clause set forth in subparagraph

(A) of this paragraph.

B. Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (B) of this paragraph.

C. Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (A) through (D) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by the subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (A) through (D) of this paragraph.

III. Health and Safety:

A. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

B. The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly Part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).

C. The Contractor shall include the provisions of this Article in every subcontractor so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Labor shall direct as a means of enforcing such provisions.

6. Section 3 Covered Contracts Shall Include The Following Clause (Referred To As The Section 3 Clause):

A. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR 75, which implement Section 3. As evidenced by their execution of this contract, the

parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.

C. The contractor agrees to send to each labor organization or representative or workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR 75. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR 75.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR 75 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR 75.

F. Noncompliance with HUD's regulations in 24 CFR 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

7. Lead Based Paint Requirements.

Title IV of the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4831) prohibits the use of lead-based paint in residential structures constructed or rehabilitated with Federal Assistance in any form.

8. Clean Air and Clean Water Acts.

This Agreement is subject to the requirements of the Clean Air Act, as amended, 42 U.S.C. 1857 et.seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.

The Contractor and any of its subcontractors for work funded under the Agreement which is in excess of one-hundred thousand (\$100,000) dollars agree to the following requirements:

- (1) A stipulation by the Contractor or subcontractors that any facility to be utilized in the performance of any nonexempt contract or subcontract is not listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR Part 15.20.
- (2) Agreement by the Contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended (42 U.S.C. 1857c-8) and (33 U.S.C. 1318) relating to

the inspection, monitoring, entry reports and information as well as all other requirements specified in said Section 114 and Section 308, and all regulations, and guidelines issued thereunder.

- (3) A stipulation that as a condition for the award of the contract prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized or to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
- (4) Agreement by the Contractor that he/she will include or cause to be included the criteria and requirements in paragraph (1) through (4) of this section in every nonexempt subcontract and requiring that the Contractor will take such action as the Government may direct as a means of enforcing such provision.

9. Energy Conservation Provisions

Contractors must recognize mandatory standards and policies relating to energy efficiency contained in the Cost Effective Energy Conservation Measures.

10. Section 109 of the Housing and Community Development Act of 1974.

"No person in the United States shall on the grounds of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this Title."

11. Age Discrimination Act of 1975.

"No person in the United States shall be on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

12. Section 504 of the Rehabilitation Act of 1973.

"No qualified individual with handicaps shall, solely on the basis of handicaps, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity that receives Federal financial assistance."

**FEDERAL PREVAILING
WAGE
REQUIREMENTS**

PREVAILING WAGE COMPLIANCE

The Contractor hereby agrees to comply in all respect with the New Jersey Prevailing Wage Act, Chapter 150, P.L. 1963 as amended, the Davis-Bacon Act, and the Copeland "Anti-Kickback" Act. Additional information on Davis-Bacon and Related Acts is provided herein.

Pursuant to N.J.S.A. 34:11-56.37 and 34.11-56.38 -Prevailing Wage Act, no public works contract may be awarded to any contractor and subcontractor or to any firm, corporation or partnership in which they have an interest on the disbarred list, until expiration date given.

The State of New Jersey disbarred list is available at following web address:

<https://www.sam.gov/portal/SAM/>

The Federal disbarred list is available at following web address:

<https://www.epls.gov/>

Workmen shall be paid not less than such prevailing wage rate. In the event it is found that any workman employed by the Contractor or any Subcontractor covered by the contract herein has been paid a rate of wages less than the prevailing rate required to be paid by such contract, the Owner may terminate the Contractor's or Subcontractor's right to proceed with the work or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The Contractor and his sureties shall be liable to the Owner for any excess costs occasioned thereby.

Before final payment is made by or on behalf of the Owner of any sum or sums due to the work, the Contractor or Subcontractor shall file with the treasurer of the Owner, written statements in form satisfactory to the Commissioner of Labor and Industry certifying to the amounts then due and owing from such contractor or subcontractor filing such statement to any and all workmen for wages due on account for the work, setting forth therein the names of the persons whose wages are unpaid and the amount due to each respectively which statement shall be certified by the oath of the Contractor or Subcontractor as the case may be in accordance with the said New Jersey Prevailing Wage Act.

The prevailing wage rate shall be the higher of those determined by the New Jersey Commissioner of Labor and Industry or his duly authorized deputy or representative and the Davis Back Act Wage Rate Determinations for New Jersey as determined by the United States Department of Labor.

Contractor must utilize prevailing wage rates that are current to within ten (10) days of the signing of the construction contract.

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

Fact Sheet #66: The Davis-Bacon and Related Acts (DBRA)

This fact sheet provides general information concerning DBRA.

Coverage

DBRA requires payment of prevailing wages on federally funded or assisted construction projects. The [Davis-Bacon Act](#) applies to each federal government or District of Columbia contract in excess of \$2,000 for the construction, alteration, or repair (including painting and decorating) of [public buildings or public works](#). Many federal laws that authorize federal assistance for construction through grants, loans, loan guarantees, and insurance are Davis-Bacon “related Acts.” The “related Acts” include provisions that require Davis-Bacon labor standards apply to most federally assisted construction. Examples of “related Acts” include the Federal-Aid Highway Acts, the Housing and Community Development Act of 1974, and the Federal Water Pollution Control Act.

Basic Provisions/Requirements

Contractors and subcontractors must pay [laborers and mechanics employed](#) directly upon the [site of the work](#) at least the locally prevailing wages (including fringe benefits), listed in the Davis-Bacon wage determination in the contract, for the work performed. [Davis-Bacon labor standards clauses](#) must be included in covered contracts.

The Davis-Bacon “prevailing wage” is the combination of the basic hourly rate and any fringe benefits listed in a Davis-Bacon wage determination. The contractor’s obligation to pay at least the prevailing wage listed in the contract wage determination can be met by paying each laborer and mechanic the applicable prevailing wage entirely as cash wages or by a combination of cash wages and employer-provided bona fide fringe benefits. Prevailing wages, including fringe benefits, must be paid on all hours worked on the site of the work.

Apprentices or trainees may be employed at less than the rates listed in the contract wage determination only when they are in an apprenticeship program registered with the Department of Labor or with a state apprenticeship agency recognized by the Department.

Contractors and subcontractors are required to pay covered workers weekly and submit weekly certified payroll records to the contracting agency. They are also required to post the applicable Davis-Bacon wage determination with the [Davis-Bacon poster \(WH-1321\)](#) on the job site in a prominent and accessible place where they can be easily seen by the workers.

Davis-Bacon Wage Determinations

Davis-Bacon wage determinations are published on the Wage Determinations On Line ([WDOL](#)) website for contracting agencies to incorporate them into covered contracts. The “prevailing wages” are determined based on wages paid to various classes of laborers and mechanics employed on specific types of construction projects in an area. Guidance on determining the type of construction is provided in All Agency Memoranda [Nos. 130](#) and [131](#).

Penalties/Sanctions and Appeals

Contract payments may be withheld in sufficient amounts to satisfy liabilities for underpayment of wages and for liquidated damages for overtime violations under the Contract Work Hours and Safety Standards Act (CWHSSA). In addition, violations of the Davis-Bacon contract clauses may be grounds for contract termination, contractor liability for any resulting costs to the government and debarment from future contracts for a period up to three years.

Contractors and subcontractors may challenge determinations of violations and debarment before an Administrative Law Judge (ALJ). Interested parties may appeal ALJ decisions to the Department's Administrative Review Board. Final Board determinations on violations and debarment may be appealed to and are enforceable through the federal courts.

Typical Problems

(1) Misclassification of laborers and mechanics. (2) Failure to pay full prevailing wage, including fringe benefits, for all hours worked (including overtime hours). (3) Inadequate recordkeeping, such as not counting all hours worked or not recording hours worked by an individual in two or more classifications during a day. (4) Failure of to maintain a copy of bona fide apprenticeship program and individual registration documents for apprentices. (5) Failure to submit certified payrolls weekly. (6) Failure to post the Davis-Bacon poster and applicable wage determination.

Relation to State, Local, and Other Federal Laws

The [Copeland "Anti-Kickback" Act](#) prohibits contractors from in any way inducing an employee to give up any part of the compensation to which he or she is entitled under his or her contract of employment, and requires contractors to submit a weekly statement of the wages paid to each employee performing DBRA covered work.

Contractors on projects subject to DBRA labor standards may also be subject to additional prevailing wage and overtime pay requirements under State (and local) laws. Also, overtime work pay requirements under CWHSSA) and the [Fair Labor Standards Act](#) may apply.

Under [Reorganization Plan No. 14 of 1950](#), (5 U.S.C.A. Appendix), the federal contracting or assistance-administering agencies have day-to-day responsibility for administration and enforcement of the Davis-Bacon labor standards provisions and, in order to promote consistent and effective enforcement, the Department of Labor has regulatory and oversight authority, including the authority to investigate compliance.

Where to Obtain Additional Information

For additional information, visit our Wage and Hour Division Website: <http://www.wagehour.dol.gov> and/or call our toll-free information and helpline, available 8 a.m. to 5 p.m. in your time zone, 1-866-4USWAGE (1-866-487-9243).

This publication is for general information and is not to be considered in the same light as official statements of position contained in the regulations.

U.S. Department of Labor
Frances Perkins Building
200 Constitution Avenue, NW
Washington, DC 20210

1-866-4-USWAGE
TTY: 1-866-487-9243
[Contact Us](#)

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)



Rev. Dec. 2008

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

OMB No.: 1215-0149
Expires: 12/31/2011

NAME OF CONTRACTOR		OR SUBCONTRACTOR		ADDRESS																
PAYROLL NO.		FOR WEEK ENDING		PROJECT AND LOCATION								PROJECT OR CONTRACT NO.								
(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT OR ST.	(4) DAY AND DATE							(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS					(9) NET WAGES PAID FOR WEEK	
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

Date _____

I, _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____;
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,
all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

— in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

— Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE
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THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

Gloucester Township
1261 Chews Landing Road
Laurel Springs, NJ 08021

CONTRACTOR(S) - SUBCONTRACTOR(S)
FOR GLOUCESTER TOWNSHIP,
CAMDEN COUNTY, STATE OF NEW JERSEY

As required by law, you must pay prevailing wages. In addition, any sub-contractor you employ must also pay prevailing wages. It is your responsibility to make sure your subcontractors are paying prevailing wages.

A representative will periodically interview your employees on this project to confirm that they are, in fact, receiving the New Jersey prevailing wages and benefits.

In addition, immediately upon beginning the project, you must provide a certified copy of your weekly/bi-weekly payroll records and your subcontractors. Also your certified payroll must show hourly benefits and gross benefits that are paid each employee as set forth by New Jersey prevailing rates.

Hourly rate
Total hours
Hourly benefits
Gross benefits
Gross pay

Should any apprentice from another state presently be working in the State of New Jersey, they must now be paid the full journeyman's rate, unless they are a member of a collective bargaining unit whose jurisdiction, according to the agreement, covers territory within New Jersey.

Payrolls must be sent to the Wage and Hour Compliance Office Representative, to be determined / engaged by the Owner, Gloucester Township, 1261 Chews Landing Road, Laurel Springs, NJ 08021, within ten (10) days of payment of wages.

Should this be a non-union contractual firm, your employees are to receive the New Jersey prevailing rates plus all benefits in their weekly/bi-weekly wages.

Should contractor(s)/subcontractor(s) be from another state, the New Jersey prevailing wage determination and benefits must be paid.

You are to forward to the Wage and Hour Compliance Office Representative the initial manning report and the Monthly Project Manning Report. Copies to be sent as designated. Failure to comply and submit certified payrolls and manning reports could result in a stop payment order on any monies due. Additionally, any forms to be completed by the primary or subcontractors must be returned to the Wage and Hour Compliance Office Representative prior to the start of any project.

Signed: _____
(Contractor)

Date: _____
(Contractor T/A)

(Telephone and Address)

(Construction Location)

Please return to Wage and Hour Compliance Office Representative, located at:

1261 Chews Landing Road, Laurel Springs, NJ 08021, Attention: Wage and Hour Compliance Office Representative. Payrolls must be sent to the office within ten (10) days of payment of wages. This is a State statute.

Failure to comply and submit certified payrolls and manning reports could result in a stop payment of any monies due.

APPROVED APPRENTICESHIP FORM
FOR CONSTRUCTION PROJECTS

Apprenticeship is training in occupations that require a wide and diverse range of skills and knowledge, as well as maturity and independence of judgement. It involves planned, day-by-day training on the job and experience under proper supervision, combined with related technical instruction.

As practiced by modern industry, apprenticeship is a business-like system designed to provide workers entering industry with comprehensive training by exposing them to the practical and theoretical aspects of the work required in a highly skilled occupation. This is accomplished through structured training on the job and related theoretical instruction.

Under the National Apprenticeship Act, the Bureau of Apprenticeship and Training (BAT) is responsible for providing service to existing apprenticeship programs and technical assistance to organizations that would like to establish an apprenticeship program. The Bureau works very closely with State Apprenticeship Councils (SAC) and the educational system to deliver support services at the National, State and local level.

Approved Apprenticeship programs are usually available through local County Vocational Schools, through various Union Locals, and/or through the U.S. Department of Labor.

The U.S. Department of Labor for New Jersey may be reached at:
US Department of Labor
Bureau of Apprenticeship & Training
485 Route 1 South
Bldg. "E," Room 300
Iselin, New Jersey 08830

Gloucester Township has determined that it would be in the best interest of this particular project, and reasonably related to the specific work to be performed, that all bidders be required to participate in an approved apprenticeship program pursuant to standards established under the Department of Wage and Industry Act of 1948 (N.J.S.A. 34:1A-34 et. seq.). This requirement may be met by either showing a written agreement with a Union (**Which must be attached with your bid submission**) with an appropriate apprenticeship program, or by maintaining an in-house program that materially follows the guidelines for apprenticeship set forth by the Union of the same trade:

All subcontractors used by the bidder shall also have an approved apprenticeship program (**Which must be attached with your bid submission**).

The firm participates in a Class A Apprenticeship Training Program, as defined below, for each separate trade or classification in which it employs craft employees.

- A. For purposes of this section, a Class A Apprenticeship Program is an apprenticeship program registered with and approved by the U.S. Department of Labor or a state apprenticeship agency and has graduated apprentices to journey person status for at least three of the past five years. This may be an apprenticeship program subject to the Employee Retirement Income Security Act of 1974, 29 U.S.C. § 1001 et seq. (“ERISA”), or a non-ERISA program.
 - B. To demonstrate compliance with this section, the firm shall provide, with this certification, a list of all trades or classifications of craft employees it will employ on the project and documentation verifying it participates in a Class A Apprenticeship Program for each trade or classification listed.
 - C. The requirements of this section and Section 3(c)12 of this Ordinance help ensure that the bulk of the craft labor workforce employed on the project will have sufficient skills and training to correctly perform work assigned to them.
- (12) The construction manager, general contractor or other lead or prime contractor responsible for the project shall ensure that at least 70 percent of the craft labor workers employed on the project shall be comprised of either journey person workers who have successfully completed a Class A Apprenticeship Program as defined in Section 3(c)10 of this ordinance or apprentices registered in such programs. The apprenticeship participation of specified by this section must be in the same trade or craft for which the workers are employed on the project.

To effectuate the purpose of selecting responsible contractors for these public contracts and to protect the **Gloucester Township’s** investments in such contracts, prospective contractors and sub-contractors should be required to meet pre-established, clearly defined, minimum qualification standards regarding past project performance in terms of competency, safety and law compliance, technical abilities, experience, and adequacy of resources.

Further, due to the critical impact that skilled craft labor has on the execution of public works projects, and the increasingly limited availability of such labor, it is necessary to require contractors and subcontractors to participate in proven apprenticeship training programs as a condition of bidding to promote successful project delivery and help ensure future workforce development.

Therefore, Gloucester Township shall require compliance with the provisions of this ordinance by business entities seeking to provide services as specified herein. The requirements of this ordinance are intended to supplement, not replace, existing contractor qualification standards or other criteria currently required by Gloucester Township. However, in the event that this ordinance conflicts with any law, public policy or contracting documents of Gloucester Township, the requirements of this ordinance shall prevail.

LIST OF TRADES FOR THIS PROJECT
SUBMITTED BY THE VENDOR

APPRENTICESHIP PROGRAM
ATTENDED

(Certificate or Signatory Page must be attached)



AIA[®] Document A701[™] – 2018

Instructions to Bidders

for the following Project:

(Name, location, and detailed description)

THE OWNER:

(Name, legal status, address, and other information)

THE ARCHITECT:

(Name, legal status, address, and other information)

TABLE OF ARTICLES

- 1 DEFINITIONS
- 2 BIDDER'S REPRESENTATIONS
- 3 BIDDING DOCUMENTS
- 4 BIDDING PROCEDURES
- 5 CONSIDERATION OF BIDS
- 6 POST-BID INFORMATION
- 7 PERFORMANCE BOND AND PAYMENT BOND
- 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612[™]-2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter “No Change” or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder’s refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent’s authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning _____ days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- 1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- 2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- 3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- 4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

.7 Addenda:

Number	Date	Pages
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.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017.)

The Sustainability Plan:

Title	Date	Pages
-------	------	-------

Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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.9 Other documents listed below:

(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

SUPPLEMENTARY INSTRUCTION TO BIDDERS

The Instruction to Bidders of the American Institute of Architects, AIA-A701, 2018 Edition; hereinbefore attached as follows, inclusive is hereby supplemented amended or changed for this project as follows:

ARTICLE 3 – BIDDING DOCUMENTS

3.2.4 PLANS AND SPECIFICATIONS

The project shall be performed in accordance with the requirements of the plans and specifications which are intended to complement and supplement each other. Any work required by either of them and not by the other shall be performed as if denoted both ways. Any conflict between drawings and specifications or drawings themselves or specifications themselves, or addenda or other contract documents not fully resolved by written addendum shall be bid on the more expensive material and method of work. It shall be impressed upon the bidder to attempt to contact the Architects for all interpretations as promptly as possible during the bidding period.

ARTICLE 4 – BIDDING PROCEDURE

4.2 BID SECURITY

- 4.2.1 Each proposal shall be accompanied by a Proposal Guarantee in the form of a Certified Check, Bid Bond, or Cashier's Check made payable to the Owner in the sum of Ten Percent (10%) of the Proposal, but in no case in excess of Twenty Thousand Dollars (\$20,000.00). Attorneys-in-fact who sign bonds must file with each bond a certificate and effectively dated copy of their power of attorney.
- 4.2.2 Form of Bid Bond to be provided by contractor.
- 4.2.3 All bid security except the security of the three apparent lowest responsible bidders shall, if requested, be returned after ten (10) days from the openings of the bids, Sundays and holidays excepted and the bids of such bidders shall be considered as withdrawn. Within three (3) days after the awarding of the contract and the approval of the Contractor's performance bond, the bid security of the remaining unsuccessful bidders shall be returned to them forthwith, Sundays and holidays excepted.

4.3 SUBMISSION OF BIDS

- 4.3.5 In accordance with Notice of Bids, proposals will be received for the performance of the project, on the items stated in the Form of Proposal for the project. The price bid shall cover all cost of any nature growing out of the work. In explanation but not in limitation thereof, these costs shall include the cost of all work, labor, material, equipment, transportation and all else necessary to perform and complete the project in the manner and within the time required, all incidental expenses in connection therewith, all costs on account of loss by damage or destruction of the project, and any additional expenses for unforeseen defective work or materials. Conditions, limitations or provisions attached by the bidder to the Proposal will not be accepted.
- 4.3.6 Bidders are cautioned to acquaint themselves with any requirements therein necessitating installation work by one Contractor of materials or equipment furnished by another Contractor as required to complete the entire project. Bidders shall also note all cases where it is specified that all work or material or both are to be omitted by one contractor and are to be furnished by another identified therein.

- 4.3.7 Proposals shall be submitted on the Form of Proposal furnished by the Architects properly filled out and shall be duly executed. When the Proposal is made by any individual, his post office shall be stated, and he shall sign the Proposal; when made by a firm or partnership, its name and post office address shall be stated and the Proposal shall be signed by one or more of the partners; when made by a corporation, its name and the principal post office shall be stated, and the Proposal shall be signed by an authorized official of the corporation. Before award is made to a bidder not a resident of the State of New Jersey, such bidder shall designate a proper agent on the State of New Jersey on whom service can be made in event of litigation.
- 4.3.8 The Contractors shall submit with their bid a Certificate of Surety from a bonding company, licensed in New Jersey, stating that they will provide a 100% Payment and Performance Bond for the Contractor.
- 4.5 NEW JERSEY OWNERSHIP STATEMENT
- 4.5.1 BE IT ENACTED by the State and General Assembly of the State of New Jersey:
- a. No corporation or partnership shall be awarded any contract nor shall any agreement be entered into for the performance of any work or the furnishing of any materials or supplies, the cost of which is to be paid with or out of any public funds, by the State of any county, municipality or school district, or by any authority, board or commission which exercises governmental functions, unless prior to the receipt of the bid or accompanying the bid, of said corporation or said partnership, there is submitted a statement setting forth the names and addresses of all stockholders in the corporation or partnership who own 10% or more of its stock, of any class, or of all individual partners in the partnership who own a 10% or greater interest therein, as the case may be. If one or more such stockholder or partner is itself a corporation or partnership, the stockholders holding 10% or more of that corporation's stock, or the individual partners owning 10% or greater interest in that partnership, as the case may be, shall also be listed. The disclosure shall be continued until names and addresses of every noncorporate stockholder, and individual partner, exceeding the 10% ownership criteria established in this act, has been listed.
- 4.6 CONTRACTOR'S PRE-QUALIFICATION STATEMENT
- 4.6.1 Pursuant to Public Laws 1962, Chapter 105, for work exceeding \$20,000.00 the bidder shall submit with his bid a notarized affidavit setting forth the type and amount of work for which he has been qualified and that this qualification is current, and the extent of his uncompleted contracts at the time, and the date of classification. Forms for this purpose are available from the Division of Building and Construction, Taxation Building, 8th Floor, West State and Willow Streets, Trenton, New Jersey 08625.
- 4.6.2 Bidder shall also submit an Affidavit stating that there have been no material adverse changes in the qualification information submitted to obtain the classification from the State. All bidders shall include a "No Material Change of Circumstances Affidavit" with their bid.
- 4.7 Bidders shall comply with "The Public Works Contractor Registration Act". Bidders must apply for registration before bidding on this project. A copy of the Certificate or Registration OR a completed and submitted registration application must be included in the bid package.

ARTICLE 5 – CONSIDERATION OF BIDS

5. ACCEPTANCE OF BID (AWARD)

- 5.3.3 Proposals shall be in effect for a period of sixty (60) days from the date bids are opened. Owner shall have the right to award any or all contracts during that period of time.
- 5.3.4 Award, if made, will be to the lowest responsible bidder whose proposal is complete in all respects with the requirements stated herein. Owner reserves the right to reject any or all bids. Any change or omission from the required proposal will be the basis for rejecting the proposal.

- 5.3.5 The Owner reserves the right to reject, in good faith, any bid, if the evidence submitted by, or investigation of such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work within the specified time.

ARTICLE 8 – FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

8.1 FORM TO BE USED

- 8.1.1 Form of Agreement shall be in the Owner and Contractor Agreement as bound in this specification.

ARTICLE 9 – SUPPLEMENTARY INSTRUCTIONS

9.1. NON-DISCRIMINATION STATEMENTS

- 9.1.1 The Owner states that they will not discriminate against any bidder on the basis of race, religion, sex, national origin, length of hair, style of dress, or social status.
- 9.1.2 The Contractor or Subcontractor, where applicable, will not discriminate against any employee of applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, or sex. The Contractor will take affirmative action to ensure that such applicants are recruited and employed and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, or sex. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rate of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous place, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause:
- 9.1.3 The Contractor or Subcontractor, where applicable, will in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, or sex.
- 9.1.4 The Contractor or Subcontractor, where applicable, will send to each labor union or representative or workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or worker's representative of the Contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

9.2 AFFIRMATIVE ACTION

- 9.2.1 During the performance of this contract, the contractor agrees as follows:
- i. The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, material status or sex. The contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, material status or sex. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause;

- ii. The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractors state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, sex or affectional or sexual orientation;
 - iii. The contractor or subcontractor, where applicable will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - iv. The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to P.L. 1975, c.127, as amended and supplemented from time to time.
- (b) When hiring workers in each construction trade, the contractor or subcontractor agrees to attempt in good faith to employ minority and female workers in each construction trade consistent with the applicable employment goal prescribed by N.J.A.C. 17:27-7.3; provided, however, that the Affirmative Action Office may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by 1, 2, and 3 below, as long as the Affirmative Action Office is satisfied that the contractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Affirmative Action Office, that its percentage of active "card carrying" members who are minority and female workers is equal to or greater than the applicable employment goal prescribed by N.J.A.C. 17:27 – 7.3 promulgated by the Treasurer pursuant to P.L. 1974, c.127, as amended and supplemented from time to time. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:
- 1. If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to P.L. 1975, c.127, as supplemented and amended from time to time. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five days prior to the commencement of construction work, the contractor or subcontractor agrees to attempt to hire minority and female workers directly, consistent with the applicable employment goal. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicated a significant possibility that the trade union will not refer sufficient minority and female workers consistent with the applicable employment goal, the contractor or subcontractor agrees to be prepared to hire minority and female workers directly, consistent with the applicable employment goal, by complying with the hiring procedures prescribed under (c) below; and the contractor or subcontractor further agrees to take said action immediately if it determines or is so notified by the Affirmative Action Office that the union is not referring minority and female workers consistent with the applicable employment goal.
- (c) If the hiring of a workforce consistent with the employment goal has not or cannot be achieved for each construction trade by adhering to the procedures of (b) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions consistent with the applicable county employment goals:

1. To notify the Public Agency compliance Officer, Affirmative Action Office, and at least one approved minority referral organization of its manpower needs, and request referral of minority and female workers;
2. To notify any minority and female workers who have been listed with its as awaiting available vacancies;
3. Prior to commencement of work, to request the local construction trade union, if the contractor or subcontractor has a referral agreement or arrangement with the union for the construction trade, to refer minority and female workers to fill job openings;
4. To leave standing requests for additional referral to minority and female workers with the local construction trade union, if the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State training and employment service and other approved referral sources in the area until such time as the workforce is consistent with the employment goal.
5. If it is necessary to lay off some of the workers in a given trade on the construction site, to assure, consistent with the applicable State and Federal statutes and court decisions, that sufficient minority and female employees remain on the site consistent with the employment goal; and to employ any minority and female works so laid off by the contractor or any other construction site in the area on which its workforce composition is not consistent with an employment goal established pursuant to rules implementing P.L.. 1975, c. 127;
6. To adhere to the following procedure when minority and female workers apply or are referred to the contractor or subcontractor:
 - i. If said individuals have never previously received any document or certification signifying a level of qualification lower than that required, the contractor or subcontractor shall determine the qualifications of such individuals and if the contractor's or subcontractor's workforce in each construction trade is not consistent with the applicable employment goal, it shall employ such persons which satisfy appropriate qualification standards; provided however, that a contractor or subcontractor shall determine that the individual at least possess the skills and experience recognized by any worker skills and experience classification determination which may have been made by a Public Agency Compliance Officer, union, apprentice program or a referral agency, provided the referral agency is acceptable to the Affirmative Action Office and provided further, that, if necessary, the contractor or subcontractor shall hire minority and female workers who qualify as trainees pursuant to these rules. All of these requirements, however, are limited by the provisions of (d) below.
 - ii. If the contractor's or subcontractor's workforce is consistent with the applicable employment goal, the name of said female or minority group individual shall be maintained on a waiting list for the first consideration, in the event the contractor's or subcontractor's workforce is no longer consistent with the applicable employment goal.
 - iii. If, for any reason, said contractor or subcontractor determines that a minority individual or a female is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing with the reasons for the determination, maintain a copy in its files, and send a copy of the Public Agency Compliance Officer and to the Affirmative Action Office.
7. To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Affirmative Action Office and submitted promptly to that office upon request.

- (d) The contractor or subcontractor agrees that nothing contained in (c) above shall preclude the contractor or subcontractor from complying with the hiring hall or apprenticeship provisions in any applicable collective bargaining agreement or hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement; provided, however, that where the practices of a union or apprenticeship program will result in the exclusion of minorities and females or the failure to refer minorities and females consistent with the county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (c) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ female and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (c) above, it shall where applicable, employ minority and female workers residing within the geographical jurisdiction of the union.
- (e) The contractor agrees to complete an Initial Project Manning Report on forms provided by the Affirmative Action Office or in the form prescribed by the Affirmative Action Office and submit a copy of said form no later than three days after signing a construction contract; provided, however, that the public agency may extend in a particular case the allowable time for submitting the form to no more than 14 days; and to submit a copy of the Monthly Project Manning Report once a month thereafter for the duration of this contract to the Affirmative Action Office and to the Public Agency Compliance Officer. The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and off-the-job programs for outreach and training of minority and female trainees employed on the construction projects.
- (f) The contractor and its subcontractors shall furnish such reports or other documents to the Affirmative Action Office as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the affirmative action office for conducting a compliance investigation pursuant to subchapter 10 of the Administrative Code (NJAC 17:27).

9.2.2 Each contractor shall submit and Initial Manning Report (AA201) within seven (7) days of award of contract or notification of intent to award by the Owner.

9.3 NON-COLLUSION

9.3.1 All bidders shall include a “Non-Collusion Affidavit” with their bid.

9.4 SCOPE OF PROPOSALS

9.4.1 The work under this contract or contracts include all work within the areas bounded by contract limit lines on the drawings, together with work beyond contract limit lines where shown on the drawings, specifications and other contract documents pertinent to the project available from the Architect, during the period.

9.4.2 Sealed Bids will be received for the following:

Contract I - INTERIOR RENOVATIONS AT 3 S. BLACKHORSE PIKE

9.4.3 All bids will be submitted on one standard proposal form provided by the Architect (or and exact duplicate) and shall be in one sealed envelope from each Contractor with the name of the Contractor and division of work bid upon marked in the outside.

9.4.4 Refer to each Division of the Specification and Drawings and state amount of add or deduct from the Base Bid for the alternates listed there.

END OF SECTION SIB

BID – GENERAL CONSTRUCTION

PROJECT IDENTIFICATION: *INTERIOR RENOVATIONS @
3 S. BLACKHORSE PIKE
BLACKWOOD, NEW JERSEY*

THIS BID IS SUBMITTED TO: *GLOUCESTER TOWNSHIP
1261 CHEWS LANDING ROAD
LAUREL SPRINGS, NJ 08021
ATTN: OFFICE OF THE TOWNSHIP CLERK*

BID DATE: Thursday, February 13, 2025 at 10:00 am.

BIDDER’S NAME:

1. The undersigned Bidder proposes and agrees, if the Bid is accepted, to enter into an Agreement with OWNER, in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance as stated in Paragraph 15 of the Instructions to Bidders. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of OWNER’s Notice of Award.

3. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement:

- (a) Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Number	Date	Number
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

- (b) Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
- (c) Bidder has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in Paragraph 4.2 of the General Conditions, and accepts the determination set forth in Paragraph GC-4.2.2 of the General Conditions, as may be amended by the Supplemental Conditions, of the extent the technical data contained in such reports and drawings upon which Bidder is entitled to rely.
- (d) Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, and studies (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise which may affect the cost, progress, performance or furnishing of the Work as Bidder considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.

- (e) Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- (f) Bidder has given ARCHITECT written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ARCHITECT is acceptable to Bidder.
- (g) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

4. Bidder will complete the Work for the price(s) shown.

The bidders shall note their prices in both words and numbers, in case of any discrepancy the price listed in words will govern.

CONTRACT 1 –Interior Renovations to the Gloucester Township Blackbox Community Center

BASE BID _____
 _____ Dollars (\$ _____).

ALTERNATE 1 – Remove existing slate roof and install new slate roof, etc.

COST _____
 _____ Dollars (\$ _____).

5. Bidder will provide substitute equipment and/or materials (if any) as listed below in lieu of the specified equipment and/or materials in accordance with the General Requirements in Specification Section 01600 – Materials and Equipment.
- a. OWNER may select items of any manufacturer or supplier listed in the following tabulation. Bidder will furnish and install such items selected for a Contract Price equal to the lump sum Contract Price, adjusted by the amount of deduction for the substituted item(s).
 - b. In the following tabulations, the name of the manufacturer or supplier entered on line (a) is the name of the manufacturer or supplier named in the Specifications for that item and the cost for providing that specified item is included in the lump sum Contract Price. If the name of the manufacturer or supplier is not shown on line (a), it is understood that the lump sum Contract Price includes the cost for providing the item furnished by the manufacturer or supplier first named in that portion of the Specification pertaining to the equipment and/or materials being substituted.
 - c. Names of alternative manufacturers and suppliers are shown on lines (b) and (c) with the respective prices to be deducted from the lump sum Contract Price should the OWNER elect to accept the alternative item.

ALTERNATIVE EQUIPMENT AND/OR MATERIALS

Spec. Section	Item and Manufacturer of Supplier	Deduct from Base Bid
_____	(a) _____	_____
	(b) _____	_____
_____	(a) _____	_____
	(b) _____	_____
_____	(a) _____	_____
	(b) _____	_____
_____	(a) _____	_____
	(b) _____	_____

6. The following documents are to be attached to and made a condition of this Bid:

- (a) Required Bid Security in the form of Bid Bond.
- (b) Form of Corporate-Ownership Disclosure
- (c) Apprentice program list
- (d) Non-Collusion Affidavit
- (e) Addendum acknowledgement
- (f) Information describing the proposed alternative equipment and/or materials
- (g) Bidder's Contractor License Number if required by the State where the project is to be constructed.
- (h) List of Prime Subcontractors (Can be submitted on the Contractor Registration form)
- (i) Any other documents as required by the Township's legal sections of the specifications.

7. The terms used in this Bid which are defined in the General Conditions of the Contract Documents have the meanings assigned to them in the General Conditions.

SUBMITTED on _____, 20____.

If Bidder is:

AN INDIVIDUAL

By _____ (SEAL)
(Individual's Name)

doing business as: _____
Business address: _____
Phone No.: _____

A PARTNERSHIP

By _____ (SEAL)
(Firm Name)

(General Partner)
Business address: _____
Phone No.: _____

A CORPORATION

By _____ (SEAL)
(Corporation Name)

(State of incorporation)

By _____
(Name of person authorized to sign)

(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business address: _____
Phone No.: _____

A JOINT VENTURE

By _____
(Name)

(Address)

By _____
(Name)

(Address)

(Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above).

 **AIA**[®] Document A101[™] – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

The Architect:
(Name, legal status, address and other information)

The Owner and Contractor agree as follows.

Init.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS**
- 2 THE WORK OF THIS CONTRACT**
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- 4 CONTRACT SUM**
- 5 PAYMENTS**
- 6 DISPUTE RESOLUTION**
- 7 TERMINATION OR SUSPENSION**
- 8 MISCELLANEOUS PROVISIONS**
- 9 ENUMERATION OF CONTRACT DOCUMENTS**

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

Init.

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User Notes:

(3B9ADA22)

(Check one of the following boxes and complete the necessary information.)

[] Not later than () calendar days from the date of commencement of the Work.

[] By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
-----------------	-----------------------------

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
------	-------

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
------	-------	---------------------------

§ 4.3 Allowances, if any, included in the Contract Sum: (Identify each allowance.)

Item	Price
------	-------

§ 4.4 Unit prices, if any: (Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.5 Liquidated damages, if any: (Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other: (Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than () days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Init.

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

%

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

Init.

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:
(Name, address, email address, and other information)

§ 8.3 The Contractor’s representative:
(Name, address, email address, and other information)

Init.

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

.7 Addenda, if any:

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

Init.

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

Title	Date	Pages
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Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

Init.

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

THE OWNER:

(Name, legal status and address)

THE ARCHITECT:

(Name, legal status and address)

TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME
- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

Init.

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User Notes:

(3B9ADA2B)

INDEX

(Topics and numbers in bold are Section headings.)

- Acceptance of Nonconforming Work
 - 9.6.6, 9.9.3, 12.3
- Acceptance of Work
 - 9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3
- Access to Work
 - 3.16, 6.2.1, 12.1
- Accident Prevention
 - 10
- Acts and Omissions
 - 3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.3.2, 14.1, 15.1.2, 15.2
- Addenda
 - 1.1.1
- Additional Costs, Claims for
 - 3.7.4, 3.7.5, 10.3.2, 15.1.5
- Additional Inspections and Testing
 - 9.4.2, 9.8.3, 12.2.1, 13.4
- Additional Time, Claims for
 - 3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, 15.1.6
- Administration of the Contract
 - 3.1.3, 4.2, 9.4, 9.5
- Advertisement or Invitation to Bid
 - 1.1.1
- Aesthetic Effect
 - 4.2.13
- Allowances
 - 3.8
- Applications for Payment
 - 4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10
- Approvals
 - 2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10.1, 4.2.7, 9.3.2, 13.4.1
- Arbitration
 - 8.3.1, 15.3.2, 15.4
- ARCHITECT
 - 4
- Architect, Definition of
 - 4.1.1
- Architect, Extent of Authority
 - 2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1
- Architect, Limitations of Authority and Responsibility
 - 2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2
- Architect's Additional Services and Expenses
 - 2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4
- Architect's Administration of the Contract
 - 3.1.3, 3.7.4, 15.2, 9.4.1, 9.5
- Architect's Approvals
 - 2.5, 3.1.3, 3.5, 3.10.2, 4.2.7
- Architect's Authority to Reject Work
 - 3.5, 4.2.6, 12.1.2, 12.2.1
- Architect's Copyright
 - 1.1.7, 1.5
- Architect's Decisions
 - 3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.4.2, 15.2
- Architect's Inspections
 - 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4
- Architect's Instructions
 - 3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2
- Architect's Interpretations
 - 4.2.11, 4.2.12
- Architect's Project Representative
 - 4.2.10
- Architect's Relationship with Contractor
 - 1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2
- Architect's Relationship with Subcontractors
 - 1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3
- Architect's Representations
 - 9.4.2, 9.5.1, 9.10.1
- Architect's Site Visits
 - 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
- Asbestos
 - 10.3.1
- Attorneys' Fees
 - 3.18.1, 9.6.8, 9.10.2, 10.3.3
- Award of Separate Contracts
 - 6.1.1, 6.1.2
- Award of Subcontracts and Other Contracts for Portions of the Work
 - 5.2
- Basic Definitions
 - 1.1
- Bidding Requirements
 - 1.1.1
- Binding Dispute Resolution
 - 8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1
- Bonds, Lien
 - 7.3.4.4, 9.6.8, 9.10.2, 9.10.3
- Bonds, Performance, and Payment
 - 7.3.4.4, 9.6.7, 9.10.3, 11.1.2, 11.1.3, 11.5
- Building Information Models Use and Reliance
 - 1.8
- Building Permit
 - 3.7.1
- Capitalization
 - 1.3
- Certificate of Substantial Completion
 - 9.8.3, 9.8.4, 9.8.5

Init.

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User Notes:

(3B9ADA2B)

Certificates of Payment
4.2.1, 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval
13.4.4

Certificates of Insurance
9.10.2

Change Orders
1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2

Change Orders, Definition of
7.2.1

CHANGES IN THE WORK
2.2.2, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.5

Claims, Definition of
15.1.1

Claims, Notice of
1.6.2, 15.1.3

CLAIMS AND DISPUTES
3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4

Claims and Timely Assertion of Claims
15.4.1

Claims for Additional Cost
3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, 15.1.5

Claims for Additional Time
3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, 15.1.6

Concealed or Unknown Conditions, Claims for
3.7.4

Claims for Damages
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3, 11.3.2, 14.2.4, 15.1.7

Claims Subject to Arbitration
15.4.1

Cleaning Up
3.15, 6.3

Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, 15.1.5

Commencement of the Work, Definition of
8.1.2

Communications
3.9.1, 4.2.4

Completion, Conditions Relating to
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 14.1.2, 15.1.2

COMPLETION, PAYMENTS AND
9

Completion, Substantial
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2

Compliance with Laws
2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3

Concealed or Unknown Conditions
3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract
1.1.1, 6.1.1, 6.1.4

Consent, Written
3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2, 15.4.4.2

Consolidation or Joinder
15.4.4

CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
1.1.4, 6

Construction Change Directive, Definition of
7.3.1

Construction Change Directives
1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, 7.3, 9.3.1.1

Construction Schedules, Contractor's
3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Contingent Assignment of Subcontracts
5.4, 14.2.2.2

Continuing Contract Performance
15.1.4

Contract, Definition of
1.1.2

CONTRACT, TERMINATION OR SUSPENSION OF THE
5.4.1.1, 5.4.2, 11.5, 14

Contract Administration
3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to
3.7.1, 3.10, 5.2, 6.1

Contract Documents, Copies Furnished and Use of
1.5.2, 2.3.6, 5.3

Contract Documents, Definition of
1.1.1

Contract Sum
2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, 9.1, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3, 14.2.4, 14.3.2, 15.1.4.2, 15.1.5, 15.2.5

Contract Sum, Definition of
9.1

Contract Time
1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5, 7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5

Contract Time, Definition of
8.1.1

CONTRACTOR
3

Contractor, Definition of
3.1, 6.1.2

Contractor's Construction and Submittal Schedules
3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2

Contractor's Employees

Init.

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User Notes:

(3B9ADA2B)

2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.3, 14.1, 14.2.1.1

Contractor's Liability Insurance
11.1

Contractor's Relationship with Separate Contractors and Owner's Forces
3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

Contractor's Relationship with Subcontractors
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7, 9.10.2, 11.2, 11.3, 11.4

Contractor's Relationship with the Architect
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1

Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents
3.2

Contractor's Right to Stop the Work
2.2.2, 9.7

Contractor's Right to Terminate the Contract
14.1

Contractor's Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3

Contractor's Superintendent
3.9, 10.2.6

Contractor's Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4

Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications
1.5, 2.3.6, 3.11

Copyrights
1.5, 3.17

Correction of Work
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2, 12.3, 15.1.3.1, 15.1.3.2, 15.2.1

Correlation and Intent of the Contract Documents
1.2

Cost, Definition of
7.3.4

Costs
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14

Cutting and Patching
3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2, 11.3, 14.2.4, 15.1.7

Damages for Delay
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

Date of Commencement of the Work, Definition of
8.1.2

Date of Substantial Completion, Definition of
8.1.3

Day, Definition of
8.1.4

Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2, 14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification
9.4.1, 9.5, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1

Delays and Extensions of Time
3.2, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

Digital Data Use and Transmission
1.7

Disputes
6.3, 7.3.9, 15.1, 15.2

Documents and Samples at the Site
3.11

Drawings, Definition of
1.1.5

Drawings and Specifications, Use and Ownership of
3.11

Effective Date of Insurance
8.2.2

Emergencies
10.4, 14.1.1.2, 15.1.5

Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.3, 14.1, 14.2.1.1

Equipment, Labor, or Materials
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2, 10.4, 14.3, 15.1.6, 15.2.5

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(3B9ADA2B)

Failure of Payment
9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work
(See Defective or Nonconforming Work)

Final Completion and Final Payment
4.2.1, 4.2.9, 9.8.2, 9.10, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's
2.2.1, 13.2.2, 14.1.1.4

GENERAL PROVISIONS
1

Governing Law
13.1

Guarantees (See Warranty)

Hazardous Materials and Substances
10.2.4, 10.3

Identification of Subcontractors and Suppliers
5.2.1

Indemnification
3.17, 3.18, 9.6.8, 9.10.2, 10.3.3, 11.3

Information and Services Required of the Owner
2.1.2, 2.2, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,
9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,
14.1.1.4, 14.1.4, 15.1.4

Initial Decision
15.2

Initial Decision Maker, Definition of
1.1.8

Initial Decision Maker, Decisions
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority
14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Injury or Damage to Person or Property
10.2.8, 10.4

Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 12.2.1, 13.4

Instructions to Bidders
1.1.1

Instructions to the Contractor
3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

Instruments of Service, Definition of
1.1.7

Insurance
6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5,
11

Insurance, Notice of Cancellation or Expiration
11.1.4, 11.2.3

Insurance, Contractor's Liability
11.1

Insurance, Effective Date of
8.2.2, 14.4.2

Insurance, Owner's Liability
11.2

Insurance, Property
10.2.5, 11.2, 11.4, 11.5

Insurance, Stored Materials
9.3.2

INSURANCE AND BONDS
11

Insurance Companies, Consent to Partial Occupancy
9.9.1

Insured loss, Adjustment and Settlement of
11.5

Intent of the Contract Documents
1.2.1, 4.2.7, 4.2.12, 4.2.13

Interest
13.5

Interpretation
1.1.8, 1.2.3, 1.4, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written
4.2.11, 4.2.12

Judgment on Final Award
15.4.2

Labor and Materials, Equipment
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,
10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes
8.3.1

Laws and Regulations
1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,
9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,
15.4

Liens
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of
12.2.5, 15.1.2, 15.4.1.1

Limitations of Liability
3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,
4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,
11.3, 12.2.5, 13.3.1

Limitations of Time
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,
5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,
15.1.2, 15.1.3, 15.1.5

Materials, Hazardous
10.2.4, 10.3

Materials, Labor, Equipment and
1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,
10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and
Procedures of Construction
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien
2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Mediation
8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, 15.3, 15.4.1,
15.4.1.1

Minor Changes in the Work
1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, 7.4

MISCELLANEOUS PROVISIONS
13

Init.

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(3B9ADA2B)

Modifications, Definition of	Separate Contracts
1.1.1	6.1
Modifications to the Contract	Owner's Right to Stop the Work
1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7, 10.3.2	2.4
Mutual Responsibility	Owner's Right to Suspend the Work
6.2	14.3
Nonconforming Work, Acceptance of	Owner's Right to Terminate the Contract
9.6.6, 9.9.3, 12.3	14.2, 14.4
Nonconforming Work, Rejection and Correction of	Ownership and Use of Drawings, Specifications and Other Instruments of Service
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2	1.1.1, 1.1.6, 1.1.7, 1.5, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3
Notice	Partial Occupancy or Use
1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1	9.6.6, 9.9
Notice of Cancellation or Expiration of Insurance	Patching, Cutting and
11.1.4, 11.2.3	3.14, 6.2.5
Notice of Claims	Patents
1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, 15.1.3, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1	3.17
Notice of Testing and Inspections	Payment, Applications for
13.4.1, 13.4.2	4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3
Observations, Contractor's	Payment, Certificates for
3.2, 3.7.4	4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4
Occupancy	Payment, Failure of
2.3.1, 9.6.6, 9.8	9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2
Orders, Written	Payment, Final
1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1	4.2.1, 4.2.9, 9.10, 12.3, 14.2.4, 14.4.3
OWNER	Payment Bond, Performance Bond and
2	7.3.4.4, 9.6.7, 9.10.3, 11.1.2
Owner, Definition of	Payments, Progress
2.1.1	9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4
Owner, Evidence of Financial Arrangements	PAYMENTS AND COMPLETION
2.2, 13.2.2, 14.1.1.4	9
Owner, Information and Services Required of the	Payments to Subcontractors
2.1.2, 2.2, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4	5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2
Owner's Authority	PCB
1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7	10.3.1
Owner's Insurance	Performance Bond and Payment Bond
11.2	7.3.4.4, 9.6.7, 9.10.3, 11.1.2
Owner's Relationship with Subcontractors	Permits, Fees, Notices and Compliance with Laws
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2	2.3.1, 3.7, 3.13, 7.3.4.4, 10.2.2
Owner's Right to Carry Out the Work	PERSONS AND PROPERTY, PROTECTION OF
2.5, 14.2.2	10
Owner's Right to Clean Up	Polychlorinated Biphenyl
6.3	10.3.1
Owner's Right to Perform Construction and to Award	Product Data, Definition of
	3.12.2
	Product Data and Samples, Shop Drawings
	3.11, 3.12, 4.2.7
	Progress and Completion
	4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.4
	Progress Payments
	9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4
	Project, Definition of
	1.1.4
	Project Representatives

Init.

4.2.10
 Property Insurance
 10.2.5, 11.2
 Proposal Requirements
 1.1.1
 PROTECTION OF PERSONS AND PROPERTY
 10
 Regulations and Laws
 1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1,
 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8,
 15.4
 Rejection of Work
 4.2.6, 12.2.1
 Releases and Waivers of Liens
 9.3.1, 9.10.2
 Representations
 3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1
 Representatives
 2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1
 Responsibility for Those Performing the Work
 3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
 Retainage
 9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
 Review of Contract Documents and Field Conditions
 by Contractor
 3.2, 3.12.7, 6.1.3
 Review of Contractor's Submittals by Owner and
 Architect
 3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
 Review of Shop Drawings, Product Data and
 Samples by Contractor
 3.12
 Rights and Remedies
 1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,
 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2,
 12.2.4, 13.3, 14, 15.4
 Royalties, Patents and Copyrights
 3.17
 Rules and Notices for Arbitration
 15.4.1
 Safety of Persons and Property
 10.2, 10.4
 Safety Precautions and Programs
 3.3.1, 4.2.2, 4.2.7, 5.3, 10.1, 10.2, 10.4
 Samples, Definition of
 3.12.3
 Samples, Shop Drawings, Product Data and
 3.11, 3.12, 4.2.7
 Samples at the Site, Documents and
 3.11
 Schedule of Values
 9.2, 9.3.1
 Schedules, Construction
 3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
 Separate Contracts and Contractors
 1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
 Separate Contractors, Definition of

6.1.1
 Shop Drawings, Definition of
 3.12.1
 Shop Drawings, Product Data and Samples
 3.11, 3.12, 4.2.7
 Site, Use of
 3.13, 6.1.1, 6.2.1
 Site Inspections
 3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
 Site Visits, Architect's
 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
 Special Inspections and Testing
 4.2.6, 12.2.1, 13.4
 Specifications, Definition of
 1.1.6
 Specifications
 1.1.1, 1.1.6, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
 Statute of Limitations
 15.1.2, 15.4.1.1
 Stopping the Work
 2.2.2, 2.4, 9.7, 10.3, 14.1
 Stored Materials
 6.2.1, 9.3.2, 10.2.1.2, 10.2.4
 Subcontractor, Definition of
 5.1.1
 SUBCONTRACTORS
 5
 Subcontractors, Work by
 1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4,
 9.3.1.2, 9.6.7
 Subcontractual Relations
 5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
 Submittals
 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3,
 9.8, 9.9.1, 9.10.2, 9.10.3
 Submittal Schedule
 3.10.2, 3.12.5, 4.2.7
 Subrogation, Waivers of
 6.1.1, 11.3
 Substances, Hazardous
 10.3
 Substantial Completion
 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,
 12.2, 15.1.2
 Substantial Completion, Definition of
 9.8.1
 Substitution of Subcontractors
 5.2.3, 5.2.4
 Substitution of Architect
 2.3.3
 Substitutions of Materials
 3.4.2, 3.5, 7.3.8
 Sub-subcontractor, Definition of
 5.1.2
 Subsurface Conditions
 3.7.4
 Successors and Assigns

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13.2
 Superintendent
 3.9, 10.2.6
 Supervision and Construction Procedures
 1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,
 7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4
 Suppliers
 1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6,
 9.10.5, 14.2.1
 Surety
 5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2,
 15.2.7
 Surety, Consent of
 9.8.5, 9.10.2, 9.10.3
 Surveys
 1.1.7, 2.3.4
 Suspension by the Owner for Convenience
 14.3
 Suspension of the Work
 3.7.5, 5.4.2, 14.3
 Suspension or Termination of the Contract
 5.4.1.1, 14
 Taxes
 3.6, 3.8.2.1, 7.3.4.4
 Termination by the Contractor
 14.1, 15.1.7
 Termination by the Owner for Cause
 5.4.1.1, 14.2, 15.1.7
 Termination by the Owner for Convenience
 14.4
 Termination of the Architect
 2.3.3
 Termination of the Contractor Employment
 14.2.2

TERMINATION OR SUSPENSION OF THE
 CONTRACT
 14
 Tests and Inspections
 3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
 9.9.2, 9.10.1, 10.3.2, 12.2.1, 13.4
 TIME
 8
 Time, Delays and Extensions of
 3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7,
 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5
 Time Limits

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,
 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14,
 15.1.2, 15.1.3, 15.4
 Time Limits on Claims
 3.7.4, 10.2.8, 15.1.2, 15.1.3
 Title to Work
 9.3.2, 9.3.3
 UNCOVERING AND CORRECTION OF WORK
 12
 Uncovering of Work
 12.1
 Unforeseen Conditions, Concealed or Unknown
 3.7.4, 8.3.1, 10.3
 Unit Prices
 7.3.3.2, 9.1.2
 Use of Documents
 1.1.1, 1.5, 2.3.6, 3.12.6, 5.3
 Use of Site
 3.13, 6.1.1, 6.2.1
 Values, Schedule of
 9.2, 9.3.1
 Waiver of Claims by the Architect
 13.3.2
 Waiver of Claims by the Contractor
 9.10.5, 13.3.2, 15.1.7
 Waiver of Claims by the Owner
 9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, 15.1.7
 Waiver of Consequential Damages
 14.2.4, 15.1.7
 Waiver of Liens
 9.3, 9.10.2, 9.10.4
 Waivers of Subrogation
 6.1.1, 11.3
 Warranty
 3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,
 15.1.2
 Weather Delays
 8.3, 15.1.6.2
 Work, Definition of
 1.1.3
 Written Consent
 1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,
 13.2, 13.3.2, 15.4.4.2
 Written Interpretations
 4.2.11, 4.2.12
 Written Orders
 1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

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

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent

consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

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

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

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§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements,

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assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

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

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

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

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

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

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§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

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

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

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

Init.

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

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

§ 3.5 Warranty

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

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 Superintendent

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the

Init.

Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

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

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

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

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

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

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

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

§ 4.2 Administration of the Contract

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

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the

Init.

Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations

Init.

and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

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

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

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

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

§ 5.3 Subcontractual Relations

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

prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

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

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

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

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

Init.

promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.2 Change Orders

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

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

§ 7.3 Construction Change Directives

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

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

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

Init.

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

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

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

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

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

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

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will

Init.

affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

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

Init.

unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

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

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

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

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

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

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

Init.

§ 9.5 Decisions to Withhold Certification

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

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

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

§ 9.6 Progress Payments

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

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

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

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

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

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

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

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

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

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

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

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

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

§ 9.9 Partial Occupancy or Use

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

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

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

§ 9.10 Final Completion and Final Payment

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

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

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

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

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

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

§ 10.2 Safety of Persons and Property

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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

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

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

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

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

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

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

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§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

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

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

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

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

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

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

§ 10.4 Emergencies

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

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

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 **Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

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§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

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the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

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

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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

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

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

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

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

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

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§ 13.2 Successors and Assigns

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

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

§ 13.3 Rights and Remedies

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

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

§ 13.4 Tests and Inspections

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

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

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

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

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

§ 13.5 Interest

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

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

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

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the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

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

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

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

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

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

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

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§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

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

§ 15.1.7 Waiver of Claims for Consequential Damages

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

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

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Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

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

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

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

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

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

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

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

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

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

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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

§ 15.4 Arbitration

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

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

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

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

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

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

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

SUPPLEMENTARY GENERAL CONDITIONS

The General Conditions of the Contract for Construction Standard Form of the American Institute of Architects, AIA-A-201-2007, Edition, hereinbefore attached as Pages 1 to 38 inclusive, is hereby supplemented, amended or changed for this Project as follows:

ARTICLE 1 – GENERAL PROVISIONS

1.2 Correlation and Intent of the Contract Documents

- 1.2.1 Add the Following: Failure to Execute Contract – Failure to comply with any of the requirements of these specifications; to execute the contract within ten days after formal notification, or to furnish security as required, shall be just cause for the annulment of the award, the amount of the proposal guarantee shall become the property of the Owner, not as a penalty, but as liquidated damages. Award may be to the next qualified bidder or the work re-advertised or handled as the Owner may elect.
- 1.2.4 Add the following: Source of Supply and Quality of Materials: Wherever on the Plans or in the detailed Specifications, a particular brand or make of material, device or equipment is shown or specified, such material, device, or equipment is to be regarded merely as a standard. Any other brand or make, which in the opinion of the Architect is equal to that specified, will be accepted, conditional to Architect’s written approval to the Contractor’s written request for substitution. Such request shall be made through the Contractor, not from the supplier or Subcontractor.

ARTICLE 3 – CONTRACTOR

3.1 General

- 3.1.1 Add the following at the end of this Article: Wherever the words “General Contractor” are used, it shall mean the “Contractor for General Construction”. Whenever the work “Contractors” is used, it shall mean each and every Contractor engaged on the building.

3.3 Supervision and Construction Procedures

- 3.3.2 Add the following: There shall be no drinking of alcoholic beverages, etc., allowed on the premises. No person shall be allowed to remain on the job site under the obvious influence of alcohol or the like.
- 3.3.4 Add: Measurements – Field – Before ordering any material or doing any work, each Contractor or Subcontractor shall verify all measurements at the building and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of difference between actual dimensions and the measurements indicated on the drawings: any difference which may be found, shall be submitted to the Architect for consideration and clarification before proceeding with the work.
- 3.3.5 Add: Laying out of the Building – General Contractor shall employ an experienced and competent professional land surveyor, cause him to establish a permanent bench or benches to which easy access may be had during the progress of the work to determine all lines and grades for the work, and to verify same from time to time during the progress of the work. This Contractor shall use the land surveyor to determine the building lines and the exact location of the building.

3.5 WARRANTY –

- 3.5.1 Add to this article: No work by any contractor shall be performed so as to void any warranties held by the Owner or another contractor.

- 3.6 Taxes – Add to this article:
- 3.6.2 New Jersey Sales Tax – Contractors and Subcontractors purchasing materials to be used on public projects will NOT be subject to New Jersey Sales Tax. Contractor shall file an exemption certificate from the State of New Jersey, supplied by the Owner.
- 3.8.2.5 Add: Surplus from allowances may be used by the Contractor, when approved in writing by the Architect, for labor and materials required for extra work. No additional overhead shall be allowed on monies spent out of this “general allowance”.
- 3.9.1 Add the following: The Contractor for General Construction shall be charged with the duty of coordinating the work of the several contractors involved. He shall advise them when the work at the site will be ready for their installations and cooperate with each to expedite the work.
- 3.10 Contractor’s Construction Schedules
- 3.10.4 Add: Within ten (10) calendar days after the award of the contract, a progress schedule shall be submitted by the General Contractor, after conference with all other contractors, and shall be a detailed construction progress schedule, and shall be prepared in the form of a bar diagram drawn to a suitable scale to indicate both estimated and actual progress at any one time of each division of the work and part thereof.
- 3.10.5 Add: After the progress schedule has been submitted to the Architect and been approved, the General and other contractors shall furnish sufficient forces, construction plant and equipment to insure the prosecution and completion of the work in accordance with the approved progress schedule.
- 3.10.6 Add: The General Contractor shall indicate on the progress schedule diagram the rate of progress of all contractors, and shall promptly deliver to the Architects two (2) black and white prints of the same, whenever requested by the Owner or Architect.
- 3.12 Shop drawings, Product Data, and Samples
- 3.12.7 Add the following: Architect assumes no responsibility for field dimensions.
- 3.12.8 Add the following: In reviewing shop drawings, the Architect assumes no responsibility for quantities, or for dimensional errors that may be present in the drawings. Final responsibility for dimensional assemblies to be installed in the building shall belong to the Contractor providing and installing same.
- 3.14 Cutting and Patching
- 3.14.2 Add: Consult the various divisions for specific requirements. Generally, all prime contractors shall either erect their work ahead of the General Contractor, or shall provide reasonably in advance of a set of shop drawings indicating the required location and sized of all openings, sleeves and chaises required. The General Contractor shall place all sleeves, anchors, and bearing plates supplies to him according to these drawings.

ARTICLE 4 – ARCHITECT

- 4.2 Administration of the Contract
- 4.2.3 Add: The Architect will not be expected to expedite the job for the Contractor.

- 4.2.15 Add: The Architect shall be the sole interpreter of the plans and specifications and the Contractor's performance therewith. It is the intent of these plans and specifications to provide materials of a quality consistent with the average of those provided under similar circumstances in the same general geographical area. The quality of the workmanship shall be determined in relation to the average of workmanship provided by Union tradesmen in the same geographical area. The Architect shall be the sole authority in making such determination.

ARTICLE 6 – CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

- 6.1 Owners Right to Perform Work and to Award Separate Contracts
- 6.1.3 Delete the words “and of each separate Contractor” in the first sentence.
- 6.2 Mutual Responsibility
- 6.2.3 Add: If the Contractor does not defend such action, the Owner may, and charge the costs thereof to the Contractor.

ARTICLE 7 – CHANGES IN THE WORK

- 7.2 Change Orders
- 7.2.1.4 Overhead and profit are hereby fixed at ten percent (10%).
- 7.2.2 Add: No change orders shall be valid until signed by the Owner.

ARTICLE 9 – PAYMENTS AND COMPLETION

- 9.3 Applications for Payment
- 9.3.1 Add: For this contract, partial monthly payments shall be made as work progresses to cover the amount of work completed as of the time specified in the Contractor's application for payment less a retainage, as follows: Contract up to \$100,000 – 10%, Contract up to \$500,000 – 5%, Contract over \$500,000 – 2%. In lieu of the retainage, a Contractor may agree to deposit with the Owner negotiable bearer bonds of the State of New Jersey or negotiable bearer bonds or notes of any particular subdivision of the State of New Jersey, the value of which is equal to the amount necessary to satisfy the amount that otherwise would be withheld as specified above. The nature and amount of bonds or notes to be deposited shall be subject to the approval of the Owner. “Value” shall mean par value or current market value, whichever is lower. If bonds or notes are deposited, they shall, together with any interest accruing on them, be returned to the Contractor upon successful completion of the terms of the Contract.
- 9.3.2 Add: Materials delivered but not installed shall be paid for on the basis of 75% of the invoice, and may be contingent upon insurance by the Contractor against theft and vandalism.
- 9.8 Substantial Completion
- 9.8.1 Add: The Contractor shall allow access by the Owner to any portion of such building substantially completed, when all bills approved by the Architect have been paid.
- 9.10 Final Completion and Final Payment
- 9.10.1 Add: The monies withheld (retainage) by the Owner from monthly payments to the Contractor shall constitute the final payment, to be paid upon final completion and Architect's certification.

9.10.2 Add: A proof of payment and affidavit shall be delivered to the surety company and the surety company, after examination as called for in the statement form, shall complete and deliver to the Owner, prior to Contractor's final payment, the Statement of Surety Company as attached to these specifications. With the request for final payment, the Contractor shall provide all required special guarantees, warranties, and certificates of approval.

ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY Add:

10.5 Security

10.5.1 The General Contractor shall provide all temporary doors and closures to obtain building security from vandals or burglars as soon as practicable during the course of construction.

ARTICLE 11 – INSURANCE AND BONDS

11.1 Contractor's Liability Insurance

11.1.1 Expand as follows:

- a. The Contractor is to provide any pay for a comprehensive liability policy with minimum limits: \$1,000,000 per person per accident and \$1,000,000 aggregate per accident and \$1,000,000 aggregate property damage per accident. The limits are to be uniform for each of the following categories:
 1. Automobile – Owner and Non-Owner Liability
 2. Comprehensive General Operation Liability
 3. Contractual Liability including general or specific hold-harmless agreements (refer to NJ Statutes 2A:40A-1 and 2).
 4. Liability for completed Operations
 5. Personal Defamation of Character with limits of \$25,000.00 per person occurrence and \$75,000.00 aggregate.
- b. Workman's Compensation Insurance shall be provided and paid for by each Contractor in accordance with the laws of the State of New Jersey and shall be sufficient to secure the benefits of the New Jersey Workman's Compensation Law: provide \$100,000.00 minimum limits under the employer's liability endorsement.
- c. The Subcontractor shall provide insurance for Workman's Compensation and comprehensive liability for the same exposures as the Prime Contractor and as detailed in Paragraphs (2) and (b).

11.3 Property Insurance

11.3.1. Add: The contractors and subcontractors are responsible for any and all loss (for any reason whatsoever) that may be sustained to materials stored on the project site before they become an integral part of the building. The contractors and subcontractors shall also be responsible for any loss (for any reason whatsoever) that may be sustained to contractor's or subcontractor's tools or equipment. The contractors and subcontractors shall also be responsible for all damage or loss to glass (installed or otherwise).

11.3.3 Add: Neither approval by the Owner nor a failure to disapprove insurance furnished by a Contractor shall release the Contractor of full responsibility for liability for bodily injury or death, and damage and accidents as set forth herein.

11.4 Performance Bond and Payment Bond

11.4.1 Add: The several prime contractors will each be required to furnish surety company bonds from an approved surety company in the full amounts of their respective contracts for the faithful performance of the Contract and to guarantee the payment of all labor, materials, subcontracts and incidental work in connection therewith. This shall be in such form as will be approved by the Attorney for the Owner.

ARTICLE 12 – UNCOVERING AND CORRECTION OF WORK

12.2 Correction of Work

12.2.1 Add: The Architect’s services shall be charged at \$175.00 per man hour.

ARTICLE 13 – MISCELLANEOUS PROVISIONS

13.1 Governing Laws

13.1.2 Add the following: Attention is called to the following State Laws which apply to Public Work in the State of New Jersey.

CHAPTER 9, TITLE 34, Revised Statutes, providing that the citizens of the State of New Jersey who have resided in the State not less than one (1) year be given preference in employment on public works, Contractors shall employ local labor to the extent that qualified employees are available.

CHAPTER 10, TITLE 34, Revised Statutes, providing in the contract for establishment of an eight-hour working day for laborers, workmen, and mechanics.

CHAPTER 150, LAWS OF 1963, The New Jersey Prevailing Wage Act stipulation of minimum prevailing wages applies to all public projects as they apply in this locality. See Wage Rate Statement which is on file with the Secretary of the Board of Education or the local governing body where applicable. All contractors shall submit payroll records with request for payment as per requirements of the NJ Department of Labor

CHAPTER 2, TITLE 10, Revised Statutes, the Contractor as a condition of the Contract shall and hereby does agree that the following shall be part of the contract.

That no Contractor or Subcontractor, nor any person on his behalf shall discriminate against any employee hired for the performance of work under this contract on account of race, creed, color, or sex.

That there may be deducted from the amount payable to the Contractor by the Owner a penalty of Five Dollars (\$5.00) for each person for each calendar day during which such person is discriminated against in violation of the provisions of the Contract.

CHAPTER 15, TITLE 40, and CHAPTERS 32, and 33 TITLE 52, Revised Statutes and whereby the Contractor as a condition of the Contract shall and hereby does agree, that in the performance of the Project, only domestic materials and manufactured and farm products of the United States will be used whenever available.

13.5 Tests and Inspections

13.6 Interest

13.6.1 Delete and substitute in lieu of: Any monies authorized by the Architect not paid within 35 days of that time noted in the Agreement shall bear interest at the rate of one (1) point over Prime, from that date of payment established in the Agreement.

ARTICLE 14 – TERMINATION OR SUSPENSION OF THE CONTRACT

14.2 Termination by the Owner for Cause – Add:

14.2.5 The expense of finishing the work shall include compensation for additional architectural, at \$175.00 per man per hour, managerial and administrative services, including legal charges, as well as any additional financial expense incurred. The expenses incurred by the Owner as herein provided, and the damage incurred through Contractor’s default, shall be certified by the Architect, whose certificate thereof shall be conclusive. A strike of over twenty (20) working days shall be cause for termination of contract under these conditions. “Strikes” in this instance shall mean local type jurisdictional or “wild-cat” strikes, and not Union-wide contract connected strikes.

ARTICLE 15 – CLAIMS AND DISPUTES

15.4 Arbitration

15.4.1 Add: The scope of the arbitration shall include both the facts and the issues of the dispute, and its award shall be binding on all parties.

ARTICLE 16 – SUPPLEMENTARY PROVISIONS

16.1 Temporary Offices

Each Contractor has the right to provide his own office on the premises and remove same when directed. The General Contractor shall have installed a pay telephone until the completion of the project. The General Contractor shall also make available the office and telephone for the Architect’s representative, and allow space for use by a testing laboratory when on-site control is required.

16.2 Job Site Meetings

Regularly stated job site meetings shall be held as determined by the Construction Manager. Each Contractor, or his authorized representative, who shall be authorized to speak for and/or make decisions for the Contractor, shall attend.

16.3 Temporary Services (also see Section 01500)

- a. Water: The General Contractor must provide water for construction purposes.
- b. Heat: Each Contractor shall furnish temporary heat as required. When the permanent heating system is completed, including controls, the Owner shall operate it and provide heat for the project at the Owner’s expense.
- c. Electric: The Electrical Contractor shall provide temporary electrical service and panels. The Electrical Contractor will provide necessary connections and temporary lighting as required. The General Contractor will pay electric bills and meter deposit. If the Owner agrees, the Electrical Contractor will be permitted to use electricity from the adjacent existing building and install a sub-meter to compensate the Owner for electricity used.

16.4 Sanitation

The General Contractor shall provide and maintain in clean working order at all times portable enclosed latrines in the quantity to accommodate all the workmen on the job, separate facilities for men and women.

16.5 Time of Completion

The substantial completion date for the contract or contracts shall be August 7, 2025 for General Construction and August 14, 2025 for Theater Systems.

16.6 Liquidated Damages

- a. Should the contractor fail to substantially complete the work included under his contract, the Owner may retain \$500.00 per calendar day for each and every day the entire work under his contract remains in default after the stipulated time of completion. This sum shall be agreed upon in the contract, not as a penalty, but as liquidated and ascertained damages, and shall represent a fair approximation of the additional expenses of the Owner because of non-completion by the original date. Refer to Article 8 in the AIA General Conditions.
- b. A deduction shall be made from the contract price by the Owner for any wages paid by the Owner to any inspector(s) necessarily employed by the Owner on the work, for any number of days in excess of the number allowed in the specifications (see Time of Completion).

AIA[®] Document G706A[™] – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT
NUMBER:

OWNER:

ARCHITECT:

TO OWNER: *(Name and address)*

CONTRACT FOR:
CONTRACT DATED:

CONTRACTOR:

SURETY:

OTHER:

STATE OF:
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:



AIA® Document G707™ – 1994

Consent Of Surety to Final Payment

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER:

CONTRACT FOR:

ARCHITECT:

TO OWNER: *(Name and address)*

CONTRACT DATED:

CONTRACTOR:

SURETY:

OTHER:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

on bond of
(Insert name and address of Contractor)

, SURETY,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety
of any of its obligations to
(Insert name and address of Owner)

, CONTRACTOR,

as set forth in said Surety's bond.

, OWNER,

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

Attest:
(Seal):

(Printed name and title)



AIA[®]

Document G704™ – 2017

Certificate of Substantial Completion

PROJECT: *(name and address)*

CONTRACT INFORMATION:

Contract For:

Date:

CERTIFICATE INFORMATION:

Certificate Number: 001

Date:

OWNER: *(name and address)*

ARCHITECT: *(name and address)*

CONTRACTOR: *(name and address)*

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.
(Identify the Work, or portion thereof, that is substantially complete.)

ARCHITECT *(Firm Name)*

SIGNATURE

PRINTED NAME AND TITLE

DATE OF SUBSTANTIAL COMPLETION

WARRANTIES

The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

WORK TO BE COMPLETED OR CORRECTED

A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:
(Identify the list of Work to be completed or corrected.)

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within () days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected: \$

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:

(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

CONTRACTOR *(Firm Name)*

SIGNATURE

PRINTED NAME AND TITLE

DATE

OWNER *(Firm Name)*

SIGNATURE

PRINTED NAME AND TITLE

DATE

SECTION 011000 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORKED COVERED BY CONTRACT DOCUMENTS

- A. The Project consists of Interior Renovations to the Old Bank / Blackbox Community Center Building located at 3 S. Black Horse Pike, Blackwood, New Jersey.
 - 1. Location: 3 S. Black Horse Pike, Blackwood, New Jersey
 - 2. Owner: Gloucester Township
- B. Contract Documents (drawings and specifications), dated January 2025, were prepared for the Project by Joseph F. McKernan, Jr., Architects and Associates, 100 Dobbs Lane, Suite 204, Cherry Hill, New Jersey 08034.
- C. The Work will be bid under a single prime contract as follows:
 - 1. Contract -1 General Construction
- D. The scope of work consists of all labor, materials, and equipment for Interior renovations to the Old Bank building located at 3 S. Black Horse Pike, Blackwood, NJ. Prior to bidding, the contractors are to inspect the building site to become familiar with all conditions.

1.3 CONTRACTOR USE OF PREMISES

- A. General: **During the construction period the Contractors shall be restricted to areas of work only.** The Contractor's use of the premises is limited only by the Owner's right to perform work or to retain other contractors on portions of the Project.
- B. **Limited parking on-site at 5, 7 S. Black Horse Pike if ground conditions permit.**

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
 - 1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Testing and inspecting allowances.
- C. Related Sections include the following:
 - 1. Division 1 Section "Modification Procedures" for procedures for submitting and handling Change Orders.
 - 2. Division 1 Section "Unit Prices" for procedures for using unit prices.
 - 3. Division 1 Section "Quality Control" for procedures governing the use of allowances for testing and inspecting.

1.3 SELECTION AND PURCHASE

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

1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 LUMP SUM ALLOWANCES

- A. Use the lump sum allowances only as per schedule for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the lump sum allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- C. At Project closeout, credit unused amounts remaining in the lump sum allowance to Owner by Change Order.

1.6 TESTING AND INSPECTING ALLOWANCES

- A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.
- B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure.
- C. Costs of services not required by the Contract Documents are not included in the allowance.
- D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.7 UNUSED MATERIALS

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 SCHEDULE OF ALLOWANCES

- A. Provide \$75,000 allowance for unforeseen conditions, etc. and general work to an existing building for the Black Box Community Center.
- B. Provide \$15,000 allowance for testing and inspections, etc. for the Black Box Community Center. This may include but not be limited to concrete testing, etc.
- C. Provide \$8,000.00 for pediment clock restoration / replacement.
- D. Note, if the allowances have a balance, they may be applied to other costs incurred during the project as per the direction of the Architect and / or Owner.

END OF SECTION 012100

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing Alternates.

1.3 DEFINITIONS

- A. Definition: An alternate is an amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.
- B. Notification: Immediately following the award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other Work of this Contract.
- D. Alternates shall be as listed in the Bid Form and detailed on drawings.

1.5 LIST OF ALTERNATES

- A. GENERAL CONSTRUCTION:

Alternate #1 – Remove existing slate roof and install a new slate roof with new required components such as building felt, roof edge, etc. as per manufacture’s recommendations.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
 - 2. Division 1 Section "Submittals" specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.
 - 3. Division 1 Section "Materials and Equipment" specifies requirements governing the Contractor's selection of products and product options.

1.3 SUBMITTALS

- A. Substitution Request Submittal: The Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
 - 1. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for change-order proposals.
 - 2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
 - 3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the proposed substitution.
 - b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
 - c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
 - d. Samples, where applicable or requested.
 - e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
 - h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

4. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: The Architect will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.
 1. Extensive revisions to the Contract Documents are not required.
 2. Proposed changes are in keeping with the general intent of the Contract Documents.
 3. The request is timely, fully documented, and properly submitted.
 4. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 5. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
 6. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
 7. Where a proposed substitution involves more than one prime contractor, each contractor shall cooperate with the other contractors involved to coordinate the Work, provide uniformity and consistency, and assure compatibility of products.
- B. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012500

SECTION 012600 - MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Division 1 Section "Submittals" for requirements for the Contractor's Construction Schedule.
 - 3. Division 1 Section "Applications for Payment" for administrative procedures governing Applications for Payment.
 - 4. Division 1 Section "Product Substitutions" for administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 MINOR CHANGES IN THE WORK

- A. The Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions.

1.4 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal requests issued by the Architect are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
 - 2. Within 7 days of receipt of a proposal request, submit an estimate of cost necessary to execute the change to the Architect for the Owner's review.
 - a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.
- B. Contractor-Initiated Proposals: When latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.

1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
 2. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Comply with requirements in Section "Product Substitutions" if the proposed change requires substitution of one product or system for a product or system specified.
- C. Proposal Request Form: Use AIA Document G709 for Change Order Proposal Requests or Owner's Forms, if applicable.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: When the Owner and the Contractor disagree on the terms of a Proposal Request, the Architect may issue a Construction Change Directive on AIA Form G714. The Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. The Construction Change Directive contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.6 CHANGE ORDER PROCEDURES

- A. Upon the Owner's approval of a Proposal Request, the Architect will issue a Change Order for signatures of the Owner and the Contractor on AIA Form G701CMA.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012600

SECTION 012900 - APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.
- B. Related Sections: The following Sections contain requirements that relate to this Section.
 - 1. Schedules: The Contractor's Construction Schedule and Submittal Schedule are specified in Division 1 Section "Submittals."

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors.
 - d. List of products.
 - e. List of principal suppliers and fabricators.
 - f. Schedule of submittals.
 - 2. Submit the Schedule of Values to the Construction Manager and Architect at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Construction Manager.
 - c. Name of the Architect.
 - d. Project number.
 - e. Contractor's name and address.
 - f. Date of submittal.
 - 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of Work.

- c. Change Orders (numbers) that affect value.
- d. Dollar value.
 - 1) Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
- 3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.
- 4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
- 5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
- 6. Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 7. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Construction Manager and Architect and paid for by the Owner.
 - 1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment-Application Times: Each progress-payment date is indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment-Application Forms: Use AIA Document G702CMA and Continuation Sheets G703 as the form for Applications for Payment or forms provided by the Owner
- D. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Construction Manager and/or Architect will return incomplete applications without action.
 - 1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- E. Transmittal: Submit three (3) signed and notarized original copies of each Application for Payment to the Architect by a method ensuring receipt within 24 hours. One copy shall be complete, including waivers of lien and similar attachments, when required.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Architect.
- F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application.

1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - a. Submit final Applications for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 4. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.
- G. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:
1. List of subcontractors.
 2. List of principal suppliers and fabricators.
 3. Schedule of Values.
 4. Contractor's Construction Schedule (preliminary if not final).
 5. Schedule of principal products.
 6. Submittal Schedule (preliminary if not final).
 7. Copies of building permits.
 8. Copies of authorizations and licenses from governing authorities for performance of the Work.
 9. Initial progress report.
 10. Certificates of insurance and insurance policies.
 11. Performance and payment bonds.
 12. Data needed to acquire the Owner's insurance.
 13. Initial settlement survey and damage report, if required.
- H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 2. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Occupancy permits and similar approvals.
 - b. Warranties (guarantees) and maintenance agreements.
 - c. Test/adjust/balance records.
 - d. Maintenance instructions.
 - e. Meter readings.
 - f. Startup performance reports.
 - g. Changeover information related to Owner's occupancy, use, operation, and maintenance.
 - h. Final cleaning.
 - i. Application for reduction of retainage and consent of surety.
 - j. Advice on shifting insurance coverages.
 - k. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.
- I. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Ensure that unsettled claims will be settled.
 4. Ensure that incomplete Work is not accepted and will be completed without undue delay.

5. Transmittal of required Project construction records to the Owner.
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations were paid.
8. Removal of temporary facilities and services.
9. Removal of surplus materials, rubbish, and similar elements.
10. Issue of Release of Liens
11. Warranties for material products / equipment
12. Equipment manuals

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012900

SECTION 013100 - COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:
 - 1. General project coordination procedures.
 - 2. Conservation.
 - 3. Coordination Drawings.
 - 4. Administrative and supervisory personnel.
 - 5. Cleaning and protection.

1.3 COORDINATION

- A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
 - 3. Make provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of schedules.
 - 2. Installation and removal of temporary facilities.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Project closeout activities.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. All Prime Contractors shall submit a complete daily report to the Construction Manager daily. Report form is attached. Submit requests for information to the CM for distribution to the Design Team. The CM will distribute the Design Team's answer to all Prime Contractors. RFI form is attached.

3.2 CLEANING AND PROTECTION

- A. Each Prime Contractor shall clean and protect construction in progress and adjoining materials in place, during handling and installation of material installed by their own forces. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.
- B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.
- C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- D. All Prime shall remove all trash and debris generated by their forces to trash container provided by General Contractor daily. Trash container to be located on-site within 150 feet of entrance. General contractor to provide trash containers for all Prime Contractors.
- E. General Contractor to broom clean all floors as required, weekly as a minimum.

END OF SECTION 013100

SECTION 013200 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:
 - 1. Preconstruction conferences.
 - 2. Preinstallation conferences.
 - 3. Progress meetings.
 - 4. Coordination meetings.
- B. Related Sections: The following Sections contain requirements that relate to this Section:

1.3 PRECONSTRUCTION CONFERENCE

- A. The Construction Manager will schedule a preconstruction conference after execution of the Agreement to review responsibilities and personnel assignments.

1.4 PREINSTALLATION CONFERENCES

- A. The Construction Manager shall conduct a preinstallation conference at the Project Site or other designated location before each construction activity that requires coordination with other construction.
- B. Attendees: The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Architect of scheduled meeting dates.
 - 1. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.5 PROGRESS MEETINGS

- A. Progress meetings will be held at the Project Site at regular intervals as scheduled by the Construction Manager.
- B. Attendance is required by all Prime Contractors.
- C. All Prime Contractors to submit Two Week Look Ahead Plan at the bi-weekly progress meeting.

1.6 COORDINATION MEETINGS

- A. The Construction Manager shall conduct project coordination meetings at regular intervals convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special preinstallation meetings.
- B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
- C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting within 5 business days of meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013200

SECTION 013300 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Shop Drawings.
 - 3. Product Data.
 - 4. Samples.
 - 5. Quality assurance submittals.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Applications for Payment" specifies requirements for submittal of the Schedule of Values.
 - 2. Division 1 Section "Coordination" specifies requirements governing preparation and submittal of required Coordination Drawings.
 - 3. Division 1 Section "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.
 - 4. Division 1 Section "Quality Control" specifies requirements for submittal of inspection and test reports.
 - 5. Division 1 Section "Contract Closeout" specifies requirements for submittal of Project Record Documents and warranties at project closeout.

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Retain subparagraph below where one submittal has an impact on another.
 - 3. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to with hold action on a submittal requiring coordination with other submittals until all related submittals are received.
 - 4. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.

- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block. Each copy of the submittal is to have a complete submittal data sheet, form is attached.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor's construction schedule. Submit within 30 days after the date established for "Commencement of the Work."
 - 1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values."
 - 2. Revise percentage increments and time requirements below to suit Project.
 - 3. Within each time bar, indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 - 4. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
 - 5. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.
- B. Work Stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.
- C. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
- D. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SHOP DRAWINGS

- A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
 - 1. Dimensions.
 - 2. Identification of products and materials included by sheet and detail number.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurement.
- C. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

1.6 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

1.7 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
 1. Include identification on each sample with full project identification.
 2. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1.8 QUALITY ASSURANCE SUBMITTALS

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- B. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Quality Control."

1.9 ARCHITECT'S ACTION

- A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.
- B. Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:
 1. "Reviewed Only" – There are no notations or comments on the submittal and, in our opinion, the submittal meets the requirements of the Contract Documents and the CONTRACTOR may release the equipment for production.
 2. "Reviewed with Comments" – Notations have been made on the submittals to insure conformance with the Contract Documents. The CONTRACTOR may release the equipment for production in accordance with the notations.
 3. "Review and Resubmit" – When the material submitted is incorrect or insufficient to review properly and it is necessary to see the complete package again.

4. "Rejected" – The submittal does not meet the requirements of the Contract Documents. The CONTRACTOR must submit the specified product.
- C. Unsolicited Submittals: The Architect will return unsolicited submittals to the sender without action.
- D. Submit all requirements directly to the Architect and submit a copy to the CM. Architect will return submittals directly to the Prime Contractor. Submit ten (10) copies of all required submittal forms.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013300

SECTION 014000 - QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality-control services.
- B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Architect.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- E. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.

1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: Contractor shall employ and pay a testing agency selected by the Owner to perform inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum as the Inspection and Testing Allowance.
 - 1. Where individual Sections specifically indicate that certain inspections, tests, and other quality control services are the Contractor's responsibility, the Owner /Architect shall select the testing agency and Contractor shall employ and pay the qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum.

2. Where individual Sections specifically indicate that certain inspections, tests, and other quality control services are the Owner's responsibility, the contractor will employ and pay a qualified independent testing agency to perform those services at the direction of the owner.
- B. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.
1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.
- C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:
1. Provide access to the Work.
 2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
 3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
 4. Provide facilities for storage and curing of test samples.
 5. Deliver samples to testing laboratories.
 6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 7. Provide security and protection of samples and test equipment at the Project Site.
- D. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.
- C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 014000

SECTION 015000 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Temporary heat and air conditioning.
 - 4. Sanitary facilities, including drinking water.
 - 5. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
 - 1. Field offices and storage sheds.
 - 2. Temporary enclosures.
 - 3. Temporary project identification signs.
 - 4. Waste disposal services.
 - 5. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, and lights.
 - 3. Environmental protection.

1.3 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Environmental protection regulations.
- B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
- B. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- C. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- D. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- E. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- F. Temporary Offices: Provide prefabricated or mobile units with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on supports adequate for normal loading. Provide separate mobile unit for the owner's Construction Manager with electrical and telephone connections. CM trailer is to be on site for the duration of construction and be large enough to accommodate two employees and occasional meetings.
- G. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- H. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner, CM or Architect. Neither the Owner nor Architect will accept cost or use charges as a basis of claims for Change Orders.
- B. Water Service: Contractor will be permitted to use the existing water service in the building, connect to an exterior hopes bib.
- C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switch gear.
- D. Temporary Lighting: If the contractor performs any work prior to sunrise or after sunset he must provide any temporary lighting adequate to perform the task.
- E. Temporary Telephones: Provide temporary telephone service throughout the construction period for all personnel engaged in construction activities. Install telephone on a separate line for each temporary office and first-aid station.
- F. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
- G. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 1. Provide separate facilities for male and female personnel.

3.2 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.
 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Field Offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small progress meetings.
- C. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
 1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 3. Where required make enclosures secure against break-in or out.

- D. Project Identification and Temporary Signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.
- E. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Separate and recycle metals, glass, plastics, clean paper and building materials. Dispose of material lawfully.

3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.
- B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 - 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
 - 1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- E. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.4 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 - 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when 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 the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.
 - 2. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.
 - 3. Coordinate restoration of permanent construction and site with sitework contractor at completion of project.
 - 4. Restore all area to pre-construction condition.

END OF SECTION 015000

SECTION 016000 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Submittals" specifies requirements for submittal of the Contractor's Construction Schedule.
 - 2. Division 1 Section "Substitutions" specifies administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - 3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.4 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.
- B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 3. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 4. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, new at the time of installation.
 - 1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
- B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:
 - 1. Proprietary Specification Requirements: Where Specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
 - 2. Semi-proprietary Specification Requirements: Where Specifications name 2 or more products or manufacturers, provide 1 of the products indicated. No substitutions will be permitted.
 - 3. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

END OF SECTION 016000

SECTION 017000 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Operation and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
 - a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise the Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
 - 6. Deliver tools, spare parts, extra stock, and similar items.
 - 7. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
 - 8. Complete final cleanup requirements, including touchup painting.
 - 9. Touch up and otherwise repair and restore marred, exposed finishes.

- B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
 - 1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
 - 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
 - 1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
 - 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 - 3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
 - 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
 - 5. Submit consent of surety to final payment.
 - 6. Submit a final liquidated damages settlement statement.
 - 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection Procedure: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.
 - 1. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 - 2. If necessary, reinspection will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 - 1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
 - 2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
 - 3. Note related change-order numbers where applicable.

4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.
1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 3. Note related record drawing information and Product Data.
 4. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.
- D. Record Product Data: Maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.
1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
 2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
 3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.
- E. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch (51-mm), 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. Emergency instructions.
 2. Spare parts list.
 3. Copies of warranties.
 4. Wiring diagrams.
 5. Recommended "turn-around" cycles.
 6. Inspection procedures.
 7. Shop Drawings and Product Data.
 8. Fixture lamping schedule.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:
1. Maintenance manuals.
 2. Record documents.
 3. Cleaning.
 4. Warranties and bonds.
 5. Maintenance agreements and similar continuing commitments.

3.2 FINAL CLEANING

- A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section "Construction Facilities and Temporary Controls."
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
 - 1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION 017000

SECTION 017740 – WARRANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

- 1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

- 1. Division 1 Section "Submittals" specifies procedures for submitting warranties.
 - 2. Division 1 Section "Contract Closeout" specifies contract closeout procedures.
 - 3. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.
 - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

- D. Separate Prime Contracts: Each prime contractor is responsible for warranties related to its own contract.

1.3 DEFINITIONS

- A. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

- B. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

- D. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.
- B. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
- C. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
 - 1. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- D. Form of Submittal: At Final Completion compile 2 copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.
 - 2. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

END OF SECTION 017740

SECTION 024119 - SELECTIVE DEMOLITION

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. Section Includes:
 - 1. Demolition and removal of selected portions of building or structure.

1.3 DEFINITIONS

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

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 INFORMATIONAL SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

1.6 FIELD CONDITIONS

- A. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work since hazardous materials have been removed with a previous project.
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

1.7 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding.

1.8 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off utilities with utility companies.
 - 2. Disconnect, demolish HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Equipment to Be Removed: Disconnect and cap services and remove equipment.

3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

3. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, 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.
 1. Strengthen or add new supports when required during process of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 3. Do not use cutting torches.
 4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 5. Dispose of demolished items and materials promptly.
- B. 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.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
- D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
 1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3.7 CLEANING

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

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

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 specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.4 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mix water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
- D. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
 - 1. Cementitious materials and aggregates.
 - 2. Steel reinforcement and reinforcement accessories.
 - 3. Admixtures.
 - 4. Curing materials.
 - 5. Floor and slab treatments.
 - 6. Bonding agents.
 - 7. Vapor retarders.
 - 8. Joint-filler strips.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
 - 1. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.
- C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.
- E. ACI Publications: Comply with the following, unless more stringent provisions are indicated:
 - 1. ACI 301, "Specification for Structural Concrete."
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.
- D. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of the exposed concrete surface.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

- B. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

2.3 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete.
- B. Joint Dowel Bars: Plain-steel bars, ASTM A 615/A 615M, Grade 60 (Grade 420). Cut bars true to length with ends square and free of burrs.

2.4 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II.
- B. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:
 - 1. Class: Severe weathering region, but not less than 3S.
 - 2. Nominal Maximum Aggregate Size: 3/4 inch (19 mm).
- C. Water: Potable and complying with ASTM C 94.

2.5 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range Water-Reducing Admixture: ASTM C 494, Type F.
- E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.6 VAPOR RETARDERS

- A. Vapor Retarder: polyethylene sheet, not less than 10 mils (0.25 mm) thick.

2.7 FLOOR AND SLAB TREATMENTS

- A. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, non-glazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery with emery aggregate containing not less than 50 percent aluminum oxide and not less than 25 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

- B. Penetrating Liquid Floor Treatment: Chemically reactive, waterborne solution of inorganic silicate or silicate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.
- C. Products: Subject to compliance with requirements, provide the following penetrating liquid floor treatment products or equal:
 - 1. Day-Chem Sure Hard; Dayton Superior Corporation
 - 2. Euco Diamond Hard; Euclid Chemical Co.
 - 3. Seal Hard; L&M Construction Chemicals, Inc.

2.8 CURING MATERIALS

- A. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
- B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound:
 - a. Klear-Kote Cure-Sealer-Hardener, 30 percent solids; Burke Group, LLC (The).
 - b. Polyseal WB; ChemMasters.
 - c. UV Safe Seal; Lambert Corporation.
 - d. Lumiseal WB Plus; L&M Construction Chemicals, Inc.

2.9 RELATED MATERIALS

- A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy-Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:
 - 1. Type II, non-load bearing, for bonding freshly mixed concrete to hardened concrete.
 - 2. Type I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
 - 3. Type IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.10 CONCRETE MIXES

- A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:
 - 1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
- B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.
- C. Slab-on-Grade: Proportion normal-weight concrete mix as follows:
 - 1. Compressive Strength (28 Days): 4000 psi (27.6 MPa).
 - 2. Maximum Slump: 4 inches (100 mm).

- D. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.
- E. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content of 5 percent +/- 1 percent, unless otherwise indicated.
- F. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- G. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing admixture, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Construct forms tight enough to prevent loss of concrete mortar.
- D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.
 - 1. Do not use rust-stained steel form-facing material.
- E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- F. Chamfer exterior corners and edges of permanently exposed concrete.
- G. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

- H. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- I. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- J. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor bolts, accurately located, to elevations required.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.
- B. Leave formwork, for beam soffits, joists, slabs, and other structural elements, that supports weight of concrete in place until concrete has achieved the following:
 - 1. 28-day design compressive strength.
- C. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

- E. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form from preformed galvanized steel, plastic keyway-section forms, or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
 - 3. Use a bonding agent or epoxy-bonding adhesive, as required, at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groove tool marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
- E. Dowel Joints: Install dowel sleeves and dowels or dowel bar and support assemblies at joints where indicated.
 - 1. Use dowel sleeves or lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Before placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

- D. Deposit concrete in forms in horizontal layers no deeper than 24 inches (600 mm) and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.
1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Scream slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
- G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.

3.8 FINISHING SLABS

- A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Trowel and Fine-Broom Finish: All slabs and walks shall receive the following surface finish; apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.
- C. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.9 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

3.10 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.
- B. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, as follows:
 - 1. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.11 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 - 1. Defer joint filling until concrete has aged at least six months. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid epoxy joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.12 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article. The scheduling and costs for all testing shall be the responsibility of the contractor.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mix placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mix, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard cylinder specimens for each composite sample.
 - a. Cast and field cure one set of four standard cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C 39; test two laboratory-cured specimens at 7 days and two at 28 days.
 - a. Test two field-cured specimens at 7 days and two at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.
- C. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
- D. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
- E. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.
- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Architect.

END OF SECTION 033000

SECTION 048100 - UNIT MASONRY ASSEMBLIES

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 unit masonry assemblies consisting of the following:
 - 1. Concrete masonry units.
 - 2. Brick
 - 3. Mortar and grout.
 - 4. Masonry joint reinforcement.
 - 5. Embedded flashing.
 - 6. Miscellaneous masonry accessories.
- B. Related sections include the following:
 - 1. Division 7 Section "Sheet Metal Flashing and Trim" for exposed sheet metal flashing.
- C. Products installed, but not furnished, under this Section include the following:
 - 1. Steel lintels for unit masonry, furnished under Division 5 Section "Metal Fabrications."
 - 2. Manufactured reglets in masonry joints for metal flashing, furnished under Division 7 Section "Sheet Metal Flashing and Trim."
 - 3. Hollow-metal frames in unit masonry openings, furnished under Division 8 Section "Steel Frames."

1.3 PERFORMANCE REQUIREMENTS

- A. Provide unit masonry that develops the following net-area compressive strengths (f_m) at 28 days. Determine compressive strength of masonry from net-area compressive strengths of masonry units and mortar types according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
- B. Provide unit masonry that develops the following net-area compressive strengths (f_m) at 28 days. Determine compressive strength of masonry by testing masonry prisms according to ASTM C 1314.
 - 1. For Concrete Unit Masonry: $f_m = 1500 \text{ psi (10.3 MPa)}$.

1.4 SUBMITTALS

- A. Product Data: For each different masonry unit, accessory, and other manufactured product specified.
- B. Samples for Verification: For the following:

1. Full-size units for each different exposed masonry unit required, showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction.
 2. Accessories embedded in the masonry.
- C. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
- D. Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for compliance with requirements indicated:
1. Each type of masonry unit required.
 2. Mortar complying with property requirements of ASTM C 270.
- E. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
1. Each type of masonry unit required.
 - a. Include test data, measurements, and calculations establishing net-area compressive strength of masonry units.
 2. Each cement product required for mortar and grout, including name of manufacturer, brand, type, and weight slips at time of delivery.
 3. Each type and size of joint reinforcement.
 4. Each type and size of anchor, tie, and metal accessory.
- F. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1093 to conduct the testing indicated, as documented according to ASTM E 548.
- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.
- D. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Payment for these services will be made from the Inspection and Testing Allowance, as authorized by Change Orders. Retesting of materials failing to meet specified requirements shall be done at Contractor's expense.
1. Concrete Masonry Unit Test: For each concrete masonry unit indicated, per ASTM C 140.
 2. Prism Test: For each type of wall construction indicated, per ASTM C 1314.
 3. Mortar Test: For mortar properties per ASTM C 270.
- E. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
 - 1. Protect Type I concrete masonry units from moisture absorption so that, at the time of installation, the moisture content is not more than the maximum allowed at the time of delivery.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by coverings spread on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- E. Hot-Weather Requirements: Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required.

1. When ambient temperature exceeds 100 deg F (38 deg C), or 90 deg F (32 deg C) with a wind velocity greater than 8 mph (13 km/h), do not spread mortar beds more than 48 inches (1200 mm) ahead of masonry. Set masonry units within one minute of spreading mortar.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. General: Provide shapes indicated and as follows:

1. Provide special shapes for lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions as necessary.
2. Provide bullnose units for outside corners, unless otherwise indicated.

B. Concrete Masonry Units: ASTM C 90 and as follows:

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi (13.1 MPa).
2. Weight Classification: Lightweight or Medium weight , unless otherwise indicated.
3. Provide Type I, moisture-controlled units.
4. Size (Width): Manufactured to the following dimensions:
 - a. 6 inches (152 mm) nominal; 5-5/8 inches (143 mm) actual.
 - b. 8 inches (203 mm) nominal; 7-5/8 inches (194 mm) actual.
 - c. 10 inches (254 mm) nominal; 9-5/8 inches (244 mm) actual.
 - d. 12 inches (305 mm) nominal; 11-5/8 inches (295 mm) actual.
5. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.

2.2 BRICK

A. General: Provide shapes indicated and as follows for each form of brick required:

1. Provide units without cores or frogs and with exposed surfaces finished for ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces.

B. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.

1. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
2. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

C. Face Brick: ASTM C 216, Grade SW , Type FBS, and as follows:

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3000 psi (20.7 MPa).
2. Initial Rate of Absorption: Less than 20 g/30 sq. in. (20 g/194 sq. cm) per minute when tested per ASTM C 67.
3. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
4. Size: Manufactured to the following actual dimensions:

- a. Modular Size: 3-1/2 to 3-5/8 inches (89 to 92 mm) wide by 2-1/4 to 2-3/8 inches (57 to 60 mm) high by 7-1/2 to 7-5/8 inches (190 to 194 mm) long.
 - b. Shapes: Provide shapes as indicated on the drawings.
5. Application: Use where brick is exposed, unless otherwise indicated.
 6. Color and Texture: Brick shall match the existing size, texture and color.

2.3 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.
- D. Mortar Cement: ASTM C 1329.
- E. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch (6.5 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
- F. Aggregate for Grout: ASTM C 404.
- G. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with concrete masonry units, containing integral water repellent by same manufacturer.
- H. Water: Potable.
- I. Color additive as selected by Architect .

2.4 REINFORCING STEEL

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or ASTM A 617/A 617M, Grade 60 (Grade 400).
 1. Install all vertical wall reinforcing steel rods as detailed on the structural drawings, grout cores solid, especially at the holding cells.

2.5 MASONRY JOINT REINFORCEMENT

- A. General: ASTM A 951 and as follows:
 1. Wire Size for Side Rods: W2.8 or 0.188-inch (4.8-mm) diameter.
 2. Wire Size for Cross Rods: W2.8 or 0.188-inch (4.8-mm) diameter.
 3. Provide in lengths of not less than 10 feet (3 m), with prefabricated corner and tee units where indicated.
- B. For single-wythe masonry, provide either ladder or truss type with single pair of side rods and cross rods spaced not more than 16 inches (407 mm) o.c.

2.6 TIES AND ANCHORS, GENERAL

- A. General: Provide ties and anchors, specified in subsequent articles, made from materials that comply with this Article, unless otherwise indicated.
- B. Hot-Dip Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating.
- C. Steel Sheet, Galvanized after Fabrication: ASTM A 366/A 366M cold-rolled, carbon-steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153.
- D. See Structural Steel Drawings for masonry anchors to steel frame.

2.7 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Fabricate from the following metal complying with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim" and below:
 - 1. Stainless Steel: 0.0156 inch (0.4 mm) thick.
 - 2. Fabricate through-wall metal flashing embedded in masonry from sheet metal indicated above and with ribs at 3-inch (75-mm) intervals along length of flashing to provide an integral mortar bond.
 - 3. Fabricate metal expansion-joint strips from sheet metal indicated above, formed to shape indicated.
 - 4. Fabricate metal drip edges from sheet metal indicated above. Extend at least 3 inches (75 mm) into wall and 1/2 inch (13 mm) out from wall, with a hemmed outer edge bent down 30 degrees.
 - 5. Fabricate metal flashing terminations from sheet metal indicated above. Extend at least 3 inches (75 mm) into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch (19 mm) and then down into joint 3/8 inch (10 mm) to form a stop for retaining sealant backer rod.
- B. Contractor's Option for Concealed Flashing: For flashing partly exposed to the exterior, use metal flashing specified above. For flashing not exposed to the exterior, use one of the following, unless otherwise indicated:
 - 1. Elastomeric Thermoplastic Flashing: Manufacturer's standard composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy 0.040 inch (1.0 mm) thick with a 0.015-inch- (0.4-mm-) thick layer of rubberized-asphalt adhesive.
 - a. Provide flashing as a complete system with preformed corners, end dams, other special shapes, and seaming materials; all produced by flashing sheet manufacturer.
 - 2. EPDM Flashing: Manufacturer's standard flashing product formed from a terpolymer of ethylene-propylene diene, complying with ASTM D 4637, 0.040 inch (1.0mm) thick.
- C. Solder and Sealants for Sheet Metal Flashings: As specified in Division 7 Section "Sheet Metal Flashing and Trim."
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by the flashing manufacturer for bonding flashing sheets to each other and to substrates.
- E. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Metal Flashing:
 - a. Cheney Flashing (Sawtooth); Cheney Flashing Company, Inc.
 - b. Keystone 3-Way Interlocking Thruwall Flashing; Keystone Flashing Co.

- 2. Elastomeric Thermoplastic Flashing:
 - a. Hyload Flashing Membrane; Hyload Cloaked Flashing System.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.
- B. Plastic Weep Hole/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, designed to fill head joint with outside face held back 1/8 inch (3 mm) from exterior face of masonry, in color selected from manufacturer's standard.
- C. Cavity Drainage Material: 1 1/2-inch- (38-mm) thick, free-draining mesh; made from polyethylene strands and shaped to avoid being clogged by mortar droppings.
- D. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Cavity Drainage Material:
 - a. Mortar Net; Mortar Net USA, Ltd.

2.9 MASONRY CLEANERS

- A. Job-Mixed Detergent Solution: Solution of 1/2-cup (0.14-L) dry measure tetrasodium polyphosphate and 1/2-cup (0.14-L) dry measure laundry detergent dissolved in 1 gal. (4 L) of water.
- B. No acid or acid based solutions shall be used.
 - 1. 202V Vana Stop.
 - 2. Sure Klean No. 600 Detergent; ProSoCo, Inc.

2.10 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
- B. Mortar for Unit Masonry: Comply with ASTM C 270.
 - 1. Extended-Life Mortar for Unit Masonry: Mortar complying with ASTM C 1142 may be used instead of mortar specified above, at Contractor's option.
 - 2. Limit cementitious materials in mortar to portland cement, mortar cement, and lime.
 - 3. For masonry below grade, in contact with earth, and where indicated, use Type S.
 - 4. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type S.
- C. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 5 of ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C 143.

2.11 SOURCE QUALITY CONTROL

- A. Owner will engage a qualified independent testing agency to perform source quality-control testing indicated below:
 1. Payment for these services will be made from the Inspection and Testing Allowance, as authorized by Change Orders.
 2. Retesting of materials failing to meet specified requirements shall be done at Contractor's expense.
- B. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

3.2 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this Section and in other Sections of the Specifications.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to the opening.
- D. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide a continuous pattern and to fit adjoining construction. Where possible, use full-size units without cutting. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 1. Mix units from several pallets or cubes as they are placed.

3.3 CONSTRUCTION TOLERANCES

- A. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following:

- B. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.
- C. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), nor 1/2 inch (12 mm) maximum.
- D. For conspicuous horizontal lines, such as exposed lintels, sills, parapets, and reveals, do not vary from level by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.
- E. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm). Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
- F. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
 - 1. Brick – One-half running bond with vertical joint in each course at third point on units in courses above and below.
 - 2. CMU – One-half running bond with vertical joints centered on units above and below.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches (50 mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: In each course, rack back one-half-unit length for one-half running bond or one-third-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly if required, and remove loose masonry units and mortar before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
- F. Fill space between hollow-metal frames and masonry solidly with mortar, unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.
- H. Fill cores in hollow concrete masonry units with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
- I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.
 - 1. Install compressible filler in joint between top of partition and underside of structure above.

2. At fire-rated partitions, install firestopping in joint between top of partition and underside of structure above to comply with Division 7 Section "Firestopping."

J. Install all vertical steel bar reinforcing as detailed and grout solid, especially at the holding cells.

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.
2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
3. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas under cells.

B. Lay solid brick-size masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

1. At cavity walls, bevel beds away from cavity, to minimize mortar protrusions into cavity. As work progresses, trowel mortar fins protruding into cavity flat against the cavity face of the brick.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.

3.6 MASONRY JOINT REINFORCEMENT

A. General: Provide continuous masonry joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).

1. Space reinforcement not more than 16 inches (406 mm) o.c.
2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings.
 - a. Reinforcement above is in addition to continuous reinforcement.

B. Do not cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

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

3.7 CONTROL AND EXPANSION JOINTS

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

B. Form control joints in concrete masonry as follows:

1. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake joint.

2. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete.
- C. Form expansion joints in brick made from clay or shale as follows:
1. Form open joint of width indicated, but not less than 3/8 inch (10 mm) for installation of sealant and backer rod specified in Division 7 Section "Joint Sealants." Keep joint free and clear of mortar.
- D. Build in horizontal, pressure-relieving joints where indicated; construct joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 7 Section "Joint Sealants."

3.8 FLASHING, WEEP HOLES, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- B. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Unless otherwise indicated, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
- C. Install flashing as follows:
1. At masonry-veneer walls, extend flashing from exterior face of veneer, through veneer, up face of sheathing at least 8 inches (200 mm), and behind air-infiltration barrier or building paper.
 2. At lintels and shelf angles, extend flashing a minimum of 4 inches (100 mm) into masonry at each end. At heads and sills, extend flashing 4 inches (100 mm) at ends and turn flashing up not less than 2 inches (50 mm) to form a pan.
 3. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 7 Section "Joint Sealants" for application indicated.
 4. Extend sheet metal flashing 1/2 inch (13 mm) beyond face of masonry at exterior and turn flashing down to form a drip.
 5. Install metal drip edges beneath flashing at exterior face of wall. Stop flashing 1/2 inch (13 mm) back from outside face of wall and adhere flashing to top of metal drip edge.
 6. Install metal flashing termination beneath flashing at exterior face of wall. Stop flashing 1/2 inch (13 mm) back from outside face of wall and adhere flashing to top of metal flashing termination.
 7. Cut flashing off flush with face of wall after masonry wall construction is completed.
- D. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashing and as follows:
1. Use plastic weep hole/vents or open head joints to form weep holes.
 2. Space weep holes 16 inches o.c.
 3. Place cavity drainage material immediately above flashing in cavities.
- E. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

3.9 FIELD QUALITY CONTROL

- A. Contractor will engage a qualified independent testing agency to perform field quality-control testing indicated below.
- B. Testing Frequency: Tests and Evaluations listed in this Article will be performed during construction for each 5000 sq. ft. (465 sq. m) of wall area or portion thereof.
- C. Mortar properties will be tested per ASTM C 780.
- D. Grout will be sampled and tested for compressive strength per ASTM C 1019.
- E. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.
- F. Prism-Test Method: For each type of wall construction indicated, masonry prisms will be tested per ASTM C 1314, and as follows:
 - 1. Prepare 1 set of prisms for testing at 7 days and 1 set for testing at 28 days.

3.10 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Clean brick by the bucket-and-brush hand-cleaning method described in BIA Technical Notes No. 20, using job-mixed detergent solution.
 - 4. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

3.11 MASONRY WASTE DISPOSAL

- A. Recycling: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Disposal as Fill Material: Dispose of clean masonry waste, including broken masonry units, waste mortar, and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.

1. Crush masonry waste to less than 4 inches (100 mm) in each dimension.
 2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Division 2 Section "Earthwork."
 3. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
- C. Excess Masonry Waste: Remove excess, clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property. Recycling of masonry waste is preferred.

END OF SECTION 048100

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. Loose steel lintels.
- B. Related Sections include the following:
 - 1. Division 5 Section "Structural Steel" for structural-steel framing system components.

1.3 SUBMITTALS

- A. Shop Drawings: Detail fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
 - 1. Provide templates for anchors and bolts specified for installation under other Sections.
- B. Samples for Verification: For each type and finish of extruded nosing and tread.
- C. Mill Certificates: Signed by manufacturers of stainless-steel sheet certifying that products furnished comply with requirements.
- D. Welding Certificates: Copies of certificates for welding procedures and personnel.
- E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Welding: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1, "Structural Welding Code--Steel."
 - 2. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions 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 dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting.

1.6 COORDINATION

- A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: For metal fabrications 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.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.3 PAINT

- A. Shop Primers: Provide primers that comply with Division 9 Section "Painting."
- B. Shop Primer for Ferrous Metal: Organic zinc-rich primer, complying with SSPC-Paint 20 and compatible with topcoat.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Carboline 621; Carboline Company.
 - b. Aquapon Zinc-Rich Primer 97-670; PPG Industries, Inc.
 - c. Tneme-Zinc 90-97; Tnemec Company, Inc.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

2.4 FASTENERS

- A. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.
- C. Anchor Bolts: ASTM F 1554, Grade 36.
- D. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Material: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.

2.5 GROUT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Shear and punch metals cleanly and accurately. Remove burrs.
- C. Ease exposed edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. 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.
- E. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- F. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

- G. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.
- H. Allow for thermal movement resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- I. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- J. Remove sharp or rough areas on exposed traffic surfaces.
- K. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

2.7 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.

2.8 LOOSE STEEL LINTELS

- A. Fabricate loose structural-steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Size loose lintels to provide bearing length at each side of openings equal to one-twelfth of clear span, but not less than 8 inches (200 mm), unless otherwise indicated.
- C. Galvanize loose steel lintels located in exterior walls.

2.9 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

2.10 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize is required for all steel products exposed to the exterior, to comply with applicable standard listed below:
 - 1. ASTM A 123, 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): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- C. 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," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors.
- B. 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.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- E. 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.

3.2 SETTING 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.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed 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. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 05500

SECTION 055210 - PIPE AND TUBE RAILINGS

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. Aluminum tube handrails.
 - 2. Steel guard railing systems.

1.3 PERFORMANCE REQUIREMENTS

- A. General: In engineering handrails and railings to withstand structural loads indicated, determine allowable design working stresses of handrail and railing materials based on the following:
 - 1. Aluminum: AA 30, "Specifications for Aluminum Structures."
 - 2. Steel: ASTM A36/A36M.
- B. Structural Performance of Handrails and Railings: Provide handrails and railings complying with requirements of ASTM E 985 for structural performance, based on testing performed according to ASTM E 894 and ASTM E 935.
 - 1. Top Rail of Guards: Capable of withstanding the following loads applied as indicated:
 - a. Concentrated load of 200 lbf (890 N) applied at any point and in any direction.
 - b. Uniform load of 50 lbf/ft. (730 N/m) applied horizontally and concurrently with uniform load of 100 lbf/ft. (1460 N/m) applied vertically downward.
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 2. Handrails Not Serving As Top Rails: Capable of withstanding the following loads applied as indicated:
 - a. Concentrated load of 200 lbf (890 N) applied at any point and in any direction.
 - b. Uniform load of 50 lbf/ft. (730 N/m) applied in any direction.
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 3. Infill Area of Guards: Capable of withstanding a horizontal concentrated load of 200 lbf (890 N) applied to 1 sq. ft. (0.09 sq. m) at any point in system, including panels, intermediate rails, balusters, or other elements composing infill area.
 - a. Load above need not be assumed to act concurrently with loads on top rails in determining stress on guard.
 - b. Guard shall be ¾" spindles spaced at 4 ½" centers.

- C. Thermal Movements: Provide handrails and railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
- D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 SUBMITTALS

- A. Product Data: For the following:
 - 1. Manufacturer's product lines of mechanically connected handrails and railings.
 - 2. Grout, anchoring cement, and paint products.
- B. Shop Drawings: Show fabrication and installation of handrails and railings. Include plans, elevations, sections, component details, and attachments to other Work.
 - 1. For installed handrails and railings indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Product Test Reports: From a qualified testing agency indicating products comply with requirements, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- B. Source Limitations: Obtain each type of handrail and railing through one source from a single manufacturer.
- C. Welding: Qualified procedures and personnel according to the following:
 - 1. AWS D1.1 "Structural Welding Code – Steel".
 - 2. Certify that each welder has passed AWS qualification tests.

1.6 STORAGE

- A. Store handrails and railings in a dry, well-ventilated, weathertight place.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify handrail and railing dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.8 COORDINATION

- A. Coordinate installation of anchorages for handrails and railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.9 SCHEDULING

- A. Schedule installation so handrails and railings are mounted only on completed walls. Do not support temporarily by any means that does not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 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:
 - 1. Aluminum Tube Railings:
 - a. Alumaguard.
 - b. Aluminum Tube Railings, Inc.
 - c. Braun: J.G. Braun Co.
 - d. Superior Aluminum Products, Inc.
 - 2. Steel Guard Railing Systems:
 - a. Fabricator approved by the Architect.

2.2 METALS

- A. General: Provide metal free from pitting, seam marks, roller marks, stains, discolorations, and other imperfections where exposed to view on finished units.
- B. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.
 - 1. Extruded Bar and Tube: ASTM B 221 (ASTM B 221M), alloy 6063-T5/T52.
 - 2. Extruded Structural Pipe and Tube: ASTM B 429, alloy 6063-T6.
 - 3. Castings: ASTM B 26/B 26M, alloy A356-T6.

- C. Steel (Ferrous Metal):
 - 1. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500
 - 2. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.
 - 3. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- D. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.3 WELDING MATERIALS, FASTENERS, AND ANCHORS

- A. Welding Electrodes and Filler Metal: Provide type and alloy of filler metal and electrodes as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.
- B. Fasteners for Anchoring Handrails and Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring handrails and railings to other types of construction indicated and capable of withstanding design loads.
 - 1. For aluminum handrails and railings, use fasteners fabricated from Type 304 or Type 316 stainless steel.
- C. Fasteners for Interconnecting Handrail and Railing Components: Use fasteners fabricated from same basic metal as fastened metal, unless otherwise indicated. Do not use metals that are corrosive or incompatible with materials joined.
 - 1. Provide concealed fasteners for interconnecting handrail and railing components and for attaching them to other work, unless otherwise indicated.
 - 2. Provide Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.
- D. Cast-in-Place and Postinstalled Anchors: Anchors of type indicated below, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
 - 1. Cast-in-place anchors.
 - 2. Chemical anchors.
 - 3. Expansion anchors.

2.4 GUARD RAILING

- A. Spindles shall be $\frac{3}{4}$ " spaced at $4\frac{1}{2}$ " centers and welded to the guard railing system; see details on the drawings.

2.5 GROUT AND ANCHORING CEMENT

- A. Non-shrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

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

2.6 FABRICATION

- A. General: Fabricate aluminum handrails and steel guard railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Assemble handrails and railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Form changes in direction of railing members as follows:
 - 1. By bending.
 - 2. By inserting prefabricated flush-elbow fittings.
- D. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.
- E. Welded Connections: Fabricate guard railings for connecting members by welding. Cope components at perpendicular and skew connections to provide close fit, or use fittings designed for this purpose. Weld connections 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 flux immediately.
 - 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- F. Nonwelded Connections: Fabricate aluminum handrails by connecting members with concealed mechanical fasteners and fittings, unless otherwise indicated. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
 - 1. Fabricate splice joints for field connection using an epoxy structural adhesive where this is manufacturer's standard splicing method.
- G. Install the wire mesh panels in the guard rail system, weld and grind smooth.
- H. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect handrail and railing members to other work, unless otherwise indicated.
- I. Provide inserts and other anchorage devices for connecting handrails and railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by handrails and railings. Coordinate anchorage devices with supporting structure.

- J. For railing posts set in concrete, provide preset sleeves of steel not less than 6 inches (150 mm) long with inside dimensions not less than 1/2 inch (12 mm) greater than outside dimensions of post, and steel plate forming bottom closure.
- K. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.
- L. Ease exposed edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing the Work.
- M. Cut, reinforce, drill, and tap components, as indicated, to receive finish hardware, screws, and similar items.
- N. Close exposed ends of handrail and railing members with prefabricated end fittings.
- O. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns, unless clearance between end of railing and wall is 1/4 inch (6 mm) or less.

2.7 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Provide exposed fasteners with finish matching appearance, including color and texture, of handrails and railings.

2.8 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with system established by the Aluminum Association for designating aluminum finishes.
- B. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: non-specular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 607.1.

2.9 STEEL FINISHES

- A. Steel guard railing assemblies shall be prefinished, powder coated, color as selected by Architect.
- B. Product to be Tiger Dryloc Series 38, TGIC polyester powder coating.
- C. After installation of systems, any marks, nicks, etc., shall be repaired.
- D. Contractor shall have the option to field paint the finished installation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.

- B. Perform cutting, drilling, and fitting required to install handrails and railings. Set handrails and railings accurately in location, alignment, and elevation; measured from established lines and levels and free from rack.
 - 1. Do not weld, cut, or abrade surfaces of handrail and railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of 1/16 inch in 3 feet (2 mm in 1 m).
 - 3. Align rails so variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet (5 mm in 3 m).
- C. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.
- D. Adjust handrails and railings before anchoring to ensure matching alignment at abutting joints. Space posts at interval indicated, but not less than that required by structural loads.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing handrails and railings and for properly transferring loads to in-place construction.

3.2 RAILING CONNECTIONS

- A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of handrails and railings.
- B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.

3.3 ANCHORING POSTS

- A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's written instructions:
- B. Form or core-drill holes not less than 5 inches (125 mm) deep and 3/4 inch (20 mm) larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's written instructions:
 - 1. Non-shrink, nonmetallic grout.
- C. Leave anchorage joint exposed; wipe off surplus anchoring material; and leave 1/8-inch (3-mm) build-up, sloped away from post.

3.4 ANCHORING RAILING ENDS

- A. Anchor railing ends into concrete and masonry with round flanges connected to railing ends and anchored into wall construction with post installed anchors and bolts.

3.5 ATTACHING HANDRAILS TO WALLS

- A. Attach handrails to wall with wall brackets. Provide bracket with 1-1/2-inch (38-mm) clearance from inside face of handrail and finished wall surface.
- B. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- C. Secure wall brackets to building construction as follows:
 - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.

3.6 CLEANING

- A. Clean aluminum and stainless steel by washing thoroughly with clean water and soap and rinsing with clean water.

3.7 PROTECTION

- A. Protect finishes of handrails and railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at the time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 055210

SECTION 061050 - MISCELLANEOUS CARPENTRY

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. Framing with dimension lumber.
 - 2. Wood furring, grounds, nailers, and blocking.
 - 3. Plywood panels.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials:
 - 1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
 - 2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.
- C. Warranty of chemical treatment manufacturer for each type of treatment.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings.
 - 1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

- B. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:
1. NELMA - Northeastern Lumber Manufacturers Association.
 2. SPIB - Southern Pine Inspection Bureau.
 3. WCLIB - West Coast Lumber Inspection Bureau.
 4. WWPA - Western Wood Products Association.
- C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece.
- D. 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.
1. Provide dressed lumber, S4S, unless otherwise indicated.
 2. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. General: Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWPAC2 (lumber) and AWPAC9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
1. Do not use chemicals containing chromium or arsenic.
 - a. Chemical shall be Amine (ACQ)
 2. For exposed items indicated to receive stained finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
- B. Pressure treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m). After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 and 15 percent, respectively. Treat indicated items 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 members less than 18 inches (460 mm) above grade.
 4. Wood floor plates installed over concrete slabs directly in contact with earth.
- C. Pressure treat wood members in contact with ground or freshwater with waterborne preservatives to a minimum retention of 0.40 lb/cu. ft. (6.4 kg/cu. m).

2.3 DIMENSION LUMBER

- A. General: Provide dimension lumber of grades indicated according to the ALSC National Grading Rule (NGR) provisions of the inspection agency indicated.

- B. All framing lumber for use in the exterior walls, interior bearing partition and floor joists shall have a fiber stress certification of 1200 psi. All lumber delivered to the project shall be stamped with the grade of fiber stress rating.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members.
- B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated and into shapes shown.
- C. Moisture Content: 19 percent maximum for lumber items are not specified to receive wood preservative treatment.
- D. Grade: For miscellaneous lumber sizes, provide No. 3 or Standard grade lumber per ALSC's NGRs of any species. For board-size lumber, provide No. 3 Common grade per NELMA, NLGA, or WWPA; No. 2 grade per SPIB; or Standard grade per NLGA, WCLIB or WWPA of any species.

2.5 WOOD-BASED STRUCTURAL-USE PANELS

- A. Structural-Use Panel Standards: Provide either all-veneer, mat-formed, or composite panels complying with DOC PS 2, "Performance Standard for Wood-Based Structural-Use Panels," unless otherwise indicated. Provide plywood panels complying with DOC PS 1, "U.S. Product Standard for Construction and Industrial Plywood," where plywood is indicated.
- B. Trademark: Factory mark structural-use panels with APA trademark evidencing compliance with grade requirements.
 - 1. Span Ratings: Provide panels with span ratings required to meet "Code Plus" provisions of APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial."
- C. Plywood Floor Decking: (Courtroom raised platforms).
 - 1. Span Rating: Not less than 32/0
 - 2. Thickness: Not less than 3/4" (16 mm) Tongue and groove.
- D. Miscellaneous Concealed Panels: APA-rated sheathing, Exposure 1, span rating to suit framing in each location.
- E. Plywood Backing Panels: For mounting electrical or telephone equipment, provide thirty (30) fire-retardant-treated plywood panels with grade, C-D Plugged Exposure 1, in thickness indicated or, if not otherwise indicated, not less than 15/32 inch (11.9 mm) thick.

2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where miscellaneous carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.

- B. Nails, Wire, Brads, and Staples: FS FF-N-105.
- C. Power-Driven Fasteners: CABO NER-272.
- D. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
- C. Fit carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.
- E. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.
- F. Countersink nail heads on exposed carpentry work and fill holes with wood filler.
- G. Use fasteners of appropriate type and length. Pre-drill members when necessary to avoid splitting wood.

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install where shown and where required for screeding or attaching other work. Cut and shape to required size. Coordinate locations with other work involved.
- B. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.
- C. Install all required blocking for: pay phones, toilet accessories, signs, lockers, projection screens, appliances, detention equipment, acoustical wall panels, louvers, window casework, window shades, clocks, and any other items requiring wood blocking.

3.3 INSTALLATION OF STRUCTURAL-USE PANELS

- A. General: Comply with applicable recommendations contained in APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.
 - 1. Comply with "Code Plus" provisions of the above referenced guide.

END OF SECTION 061050

SECTION 061600 - SHEATHING

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. Section Includes:

1. Wall sheathing.
2. Sheathing joint and penetration treatment.

B. Related Requirements:

1. Division 6 Section Miscellaneous Carpentry for plywood backing panels.
2. Division 7 Section "Weather Barriers" for water-resistive barrier applied over wall sheathing.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1.4 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project Site to comply with the requirements in Division 1 Section "Project Management and Coordination."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WALL SHEATHING

- A. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.
 1. Basis of Design: Subject to compliance with the requirements, provide products by G-P Gypsum Corporation:
 - a. G-P Gypsum Corporation; Dens-Glass Gold.

2. Type and Thickness: Type X, 5/8 inch (15.9 mm) thick.
3. Size: 48 by 96 inches (1219 by 2438 mm) for vertical installation.

2.2 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
- B. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.
 1. For steel framing less than 0.0329 inch (0.835 mm) thick, use screws that comply with ASTM C 1002.
 2. For steel framing from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick, use screws that comply with ASTM C 954.
- C. Screws for Fastening Oriented-Strand-Board-Surfaced, Polyisocyanurate-Foam Sheathing to Metal Roof Deck: Steel drill screws, in type and length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117. Provide washers or plates if recommended by sheathing manufacturer.

2.3 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS

- A. Sealant for Glass-Mat Gypsum Sheathing: Silicone emulsion sealant complying with ASTM C 834, compatible with sheathing tape and sheathing and recommended by tape and sheathing manufacturers for use with glass-fiber sheathing tape and for covering exposed fasteners.
 1. Sheathing Tape: Self-adhering glass-fiber tape, minimum 2 inches (50 mm) wide, 10 by 10 or 10 by 20 threads/inch (390 by 390 or 390 by 780 threads/m), of type recommended by sheathing and tape manufacturers for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing and with a history of successful in-service use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
 1. NES NER-272 for power-driven fasteners.
 2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."

- D. Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- F. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions.
 - 1. Fasten gypsum sheathing to cold-formed metal framing with screws.
 - 2. Install boards with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.
 - 3. Install boards with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
- B. Apply fasteners so heads bear tightly against face of sheathing, but do not cut into facing.
- C. Horizontal Installation: Install sheathing with V-grooved edge down and tongue edge up. Interlock tongue with groove to bring long edges in contact with edges of adjacent boards without forcing. Abut ends of boards over centers of studs, and stagger end joints of adjacent boards not less than one stud spacing. Attach boards at perimeter and within field of board to each steel stud.
 - 1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of boards.
 - 2. For sheathing under stucco cladding, boards may be initially tacked in place with screws if overlying self-furring metal lath is screw-attached through sheathing to studs immediately after sheathing is installed.
- D. Vertical Installation: Install board vertical edges centered over studs. Abut ends and edges of each board with those of adjacent boards. Attach boards at perimeter and within field of board to each stud.
 - 1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of boards.
 - 2. For sheathing under stucco cladding, boards may be initially tacked in place with screws if overlying self-furring metal lath is screw-attached through sheathing to studs immediately after sheathing is installed.
- E. Seal sheathing joints according to sheathing manufacturer's written instructions.
 - 1. Apply elastomeric sealant to joints and fasteners and trowel flat. Apply sufficient amount of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings.
 - 2. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel silicone emulsion sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

END OF SECTION 061600

SECTION 072100 - BUILDING INSULATION

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. Insulation at the perimeter foundation and slab.
 - 2. Concealed building insulation.
 - 3. Sound attenuation insulation
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 9 Section "Gypsum Board Assemblies" for insulation installed as part of framed wall and partition assemblies.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each type of insulation product specified.
- C. Product test reports from and based on tests performed by a qualified independent testing agency evidencing compliance of insulation products with specified requirements including those for thermal resistance, fire-test-response characteristics, water-vapor transmission, water absorption, and other properties, based on comprehensive testing of current products.

1.4 QUALITY ASSURANCE

- A. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products complying with requirements indicated without delaying the Work.
- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated on Drawings or specified elsewhere in this Section as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 1. Surface-Burning Characteristics: ASTM E 84.
 - 2. Fire-Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect plastic insulation as follows:
 - 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
 - 3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide insulation products by one of the following:
 - 1. Extruded-Polystyrene Board Insulation:
 - a. Amoco Foam Products Company.
 - b. Dow Chemical Co.
 - c. UC Industries, Inc.; Owens-Corning Co.
 - 2. Glass-Fiber Insulation:
 - a. CertainTeed Corporation.
 - b. Owens-Corning Fiberglas Corporation.
 - c. Schuller International, Inc.
 - 3. Mineral-Fiber Insulation, Sound attenuation and Fire stopping
 - a. Roxul, Inc.

2.2 INSULATING MATERIALS

- A. General: Provide insulating materials that comply with requirements and with referenced standards.
 - 1. Preformed Units: Sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths, and lengths.
- B. Extruded-Polystyrene Board Insulation: Rigid, cellular polystyrene thermal insulation formed from polystyrene base resin by an extrusion process using hydro chlorofluorocarbons as blowing agent to comply with ASTM C 578 for type and with other requirements indicated below:
 - 1. Type IV, 1.60-lb/cu. ft. (26-kg/cu. m) minimum density, unless otherwise indicated.
 - 2. Surface-Burning Characteristics: Maximum flame-spread and smoke-developed indices of 75 and 450, respectively.
 - 3. Use extruded polystyrene board insulation for under slab, cavity wall insulation and at the adhered stone veneer.

- C. Faced Glass-Fiber Blanket Insulation: Thermal insulation combining glass fibers of type described below with thermosetting resins to comply with ASTM C 665, Type III, Class A (blankets with reflective vapor-retarder membrane facing and flame spread of 25 or less); with scrim-kraft.
 - 1. Glass-Fiber Type: Fibers manufactured from glass, FSK, formaldehyde free, 25% recycled material content.
 - 2. Flanged Units: Provide blankets fabricated with facing incorporating 5-inch- (127-mm-) wide flanges along edges for attachment to framing members.
 - 3. "R" value as noted on the plans.

- D. Mineral-Fiber Insulation: Thermal and non-combustible insulation made from Stone Wool to meet ASTM E136 and ASTM E83 for fire and smoke development.
 - 1. Product to be supplied in both batts and rigid boards as noted on the details for the various locations in the exterior and interior walls.
 - 2. Thicknesses and "R" values shall be as noted on the drawings.
 - 3. Sound attenuation rigid boards shall be 3" (3inches) thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements of Sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulations or vapor retarders, including removing projections capable of puncturing vapor retarders or that interfere with insulation attachment.

3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
- B. Install insulation that is undamaged, dry, unsoiled, and has not been exposed at any time to ice and snow.
- C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Apply single layer of insulation to produce thickness indicated.

3.4 INSTALLATION OF PERIMETER AND UNDER-SLAB INSULATION

- A. On vertical surfaces, set units in adhesive applied according to manufacturer's written instructions. Use adhesive recommended by insulation manufacturer.

3.5 INSTALLATION OF GENERAL BUILDING INSULATION

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Seal joints between closed-cell (nonbreathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.
- C. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
 - 1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.
- D. Set reflective, foil-faced units with not less than 0.75-inch (19-mm) air space in front of foil as indicated.
- E. Install mineral-fiber blankets in cavities formed by framing members according to the following requirements:
 - 1. Use blanket widths and lengths that fill cavities formed by framing members. Where more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
 - 2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
- F. Install the sound attenuating boards in the walls as noted, to be full width between framing members and full height of the partition, mechanically support as needed to assure they stay in position.

3.6 PROTECTION

- A. General: Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 072119 - OPEN-CELL SPRAY FOAM INSULATION

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 RELATED WORK

- A. The following items are not included in this Section and are specified under the designated Sections:
1. Section 04 20 00 - UNIT MASONRY assemblies: Cavity wall assemblies.
 2. Section 06 10 00 - ROUGH CARPENTRY: Wood framing.
 3. Section 07 21 16 - FIBERGLASS BUILDING INSULATION: Supplemental blanket, batt and roll insulation.
 4. Section 07 26 00 - VAPOR RETARDERS: Vapor retarder materials.
 5. Section 07 27 00 - AIR BARRIERS: Air seal materials to adjacent insulation.
 6. Section 07 62 00 - SHEET METAL FLASHING AND TRIM: Requirements for flashings.
 7. Section 07 92 00 - JOINT SEALANTS: Rod and sealant at control and expansion joints.
 8. Section 07 80 00 - FIRE AND SMOKE PROTECTION: Insulation installed in conjunction with firestopping or smoke containment systems.
 9. Section 09 20 00 - PLASTER AND GYPSUM BOARD: Wall and ceiling finish and thermal barrier.

1.3 PERFORMANCE REQUIREMENTS

- A. Conform to applicable code for flame and smoke, concealment, and over coat requirements.
- B. JM ocSPF Spray Applied Polyurethane Insulation is approved for use as a nonstructural thermal insulating material in Type I and V construction under IBC and dwellings under IRC when installed in accordance with ICC ES Report ESR-1655. Insulation is for use in wall cavities, floor assemblies, ceiling assemblies or attics and crawl spaces when installed in accordance with Section 4. Insulation may be used in wall assemblies in fire-resistive rated-construction as described in Sections 3.6 and 4.4.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
- B. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product.
- C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing urethane foam products and systems of this section with minimum ten years documented experience.
- B. Installer Qualifications: A current Johns Manville Qualified Applicator specializing in performing Work of this section with minimum three years documented experience.

- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging, clearly marked with the manufacturer's name, brand name, product identification, type of material, safety information, manufacture date, and lot numbers until ready for installation.
- B. Store spray foam materials between 65 degrees F (18 degrees C) and 85 degrees F (29 degrees C) with careful handling to prevent damage to products.
- C. Protect all materials from freezing and other damage during transit, handling, storage, and installation.

1.7 PRE-INSTALLATION MEETINGS

- A. Convene pre-installation meeting prior to commencing work of this section.
 - 1. Attendance: Architect, Contractor, manufacturer's representative and spray insulation applicator.
 - 2. Agenda: Review installation sequence and scheduling.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Do not apply the polyurethane foam when substrate or ambient air temperatures are below 40 degrees F (4.4 degrees C) or above 120 degrees F (49 degrees C) and relative humidity is greater than 85 percent unless advance means and methods are recommended by the manufacturer.
- C. Do not apply polyurethane foam when wind velocity exceeds 15 miles per hour unless advance means and methods are recommended by the manufacturer. Use precautions to prevent damage to adjacent areas from fugitive overspray.

PART 2 - PRODUCTS

2.1 OPEN-CELL SPRAY FOAM INSULATION

- A. Basis-of-Design: JM ocSPF by Johns Manville, 717 17th Street, Denver, CO 80202. Tel (800) 654-3103. www.specJM.com.
- B. Open Cell Spray Foam Insulation: Two-component, polyurethane cellular foam with a nominal density of 0.5 pcf, as manufactured by Johns Manville. JM ocSPF foam shall have the following minimum physical properties when cured:
 - 1. Apparent Density: 0.5 pcf when tested in accordance with ASTM D 1622.
 - 2. R-Value (aged) when tested in accordance with ASTM C 518: 3.9 at 1 inch, 13 at 3.5 inches, 19 at 5.5 inches.
 - 3. Oxygen Index: 25 when tested in accordance with ASTM D 2863.
 - 4. Compressive Strength: 0.5 psi when tested in accordance with ASTM D 1621.

5. Fungi Resistance: Zero Rating when tested in accordance with ASTM G 21.
 6. Air Leakage: Less than 0.02 (L/s)/m² when tested in accordance with ASTM E 283.
 7. Sound Transmission Coefficient: 51 (STC) when tested in accordance with ASTM E 90.
 8. Noise Reduction Coefficient: 0.7 (NRC) when tested in accordance with ASTM C 423.
 9. Open Cell Content: Greater than 90 percent when tested in accordance with ASTM D 2846.
 10. Tensile Strength: Less than 5 psi when tested in accordance with ASTM D 1623.
 11. Shear Strength: 1.4 psi when tested in accordance with ASTM C 273.
 12. Permeability: 21 perm-inch when tested in accordance with ASTM E 96.
 13. Dimensional Stability: Less than 15 percent change in volume when tested in accordance with ASTM D 2126.
 14. Surface Burning Characteristics:
 - a. Flame Spread/Smoke Developed: At maximum 4 inch (102 mm) thickness, flame spread index of less than 25 and a smoke developed index of less than 450 when tested in accordance with ASTM E 84.
 - b. Corner Test: Thickness up to 12 inches (305 mm) for wall cavities and 16 inches for ceiling cavities meets NFPA 286 when covered with 1/2 inch (13 mm) gypsum board or equivalent thermal barrier.
- C. Primer as Applicable to Substrate: A water based epoxy primer to achieve superior adhesion and penetration on concrete, masonry, metal, wood, etc. as supplied by Johns Manville or approved equal.

2.2 ACCESSORIES

- A. Intumescent coating for spray foam insulation in attic and crawlspace applications, as manufactured by Johns Manville.
- B. Vapor retarder is specified in Section 07 26 00.
- C. Gypsum board assemblies providing a 15 minute fire separation thermal barrier rating are specified in Section 09 20 00.
- D. Gypsum board assemblies providing a 1 hour fire resistant rating are specified in Section 09 20 00.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that all surfaces to receive polyurethane foam insulation are clean, dry and free of dust, dirt, debris, oil, solvents and all materials that may adversely affect the adhesion of the polyurethane foam.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Mask and protect adjacent surfaces from over spray.
- C. Prepare surfaces using the methods recommended by the spray foam manufacturer for achieving the best result for the substrate under the project conditions.

- D. Wood:
 - 1. Plywood shall contain no more than 18 percent water, as measured in accordance with ASTM D 4449 and ASTM D 4444.
 - 2. Most untreated and unpainted wood surfaces need not be primed. The spray polyurethane foam can be applied directly to the dry wood. Priming may be required under certain conditions as recommended by the manufacturer.
- E. Steel:
 - 1. Primed: Clean primed metal surfaces free of loose scale, rust, weathered or chalking paint. Remove grease, oil, or other contaminants with proper cleaning solutions.
 - 2. Previously Painted: Clean painted metal surface using hand or power tools to remove loose scale and dirt. Remove grease, oil, and other surface contaminants using a power wash technique or proper cleaning solutions.
 - 3. Galvanized: Clean galvanized steel as recommended by manufacturer. Steel should be primed with primer at the rate of 1 gallon per 300 square feet.
 - 4. Unpainted Steel: Clean as recommended by manufacturer to prepare the steel surface for the primer. Prime with primer at the rate of 1 gallon per 300 square feet.
- F. Concrete and Masonry: Must be cured and loose dirt and any other contaminants, including asphaltic materials removed. If primer is required, prime at the rate of one gallon per 300 square feet.
- G. Sheathing Board: Most sheathing boards need not be primed prior to the application of sprayed-in-place polyurethane foam.

3.3 PRIMER APPLICATION

- A. Prepare surfaces and apply primer in accordance with manufacturer's instructions.
- B. Apply primer to the properly prepared substrates in accordance with the manufacturer's instructions to achieve a minimum thickness of dry film thickness. Allow primer to cure 24 hours prior to application of spray polyurethane foam or other products.

3.4 INSTALLATION

- A. Install in spray foam in accordance with manufacturer's instructions.
- B. Spray polyurethane foam components (A) and (B) shall be processed in accordance with instructions found on the manufacturers product datasheet.
- C. Schedule application to anticipate climatic conditions prior to application to ensure highest quality foam and to maximize yield. All substrates to be sprayed must be dry at the time of application. Moisture in the form of rain, fog, frost, dew, or high humidity greater than 85 percent R.H is not permitted unless Contractor reviews means and methods of spraying with manufacturer's representative prior to installation. Use screens, masking and other precautions to prevent damage to adjacent areas from fugitive overspray.
- D. Where spray foam system is installed within attics or crawl spaces where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC Section 2603.4.1.6 and IRC Section R314.5.4, as applicable. The ignition barrier must be installed in a manner so that the foam plastic insulation is not exposed. JM ocSPF, as described in these sections, may be installed in unvented attics in accordance with IRC Section R806.4.
- E. Application in attics and crawlspaces with Intumescent Coating:

1. JM ocSPF insulation may be installed in unvented conditioned attics in accordance with IRC Section R806.4.
2. In attics, spray foam insulation may be spray-applied to the underside of roof sheathing and roof rafters.
3. In crawlspaces, spray foam insulation may be spray-applied to the underside of floors as described in this section.
4. Thickness of JM ocSPF open-cell foam applied to the underside of the top space must not exceed 10 inches (254 mm).
5. Thickness of JM ocSPF open-cell foam applied to vertical surfaces must not exceed 12 inches (300 mm).
6. JM ocSPF must be coated uniformly coated with JM intumescent coating at a coverage rate of 0.6 gallons per 100 square feet in accordance with manufacturer's instructions.
7. Surfaces to be coated must be dry, clean, and free of dirt, loose debris, and any other substances that could interfere with the adhesion of the coating.
8. Coating must be applied when ambient and substrate temperatures are above 50 degrees F (10 degrees C) and requires a 24-hour curing time after application.

F. Application in attics and crawlspaces with Minimum 1/2 inch (12.7 mm) Gypsum Board.

1. In attics, spray foam insulation may be spray-applied to the underside of roof sheathing and roof rafters.
2. In crawlspaces, spray foam insulation may be spray-applied to the underside of floors as described in this section.
3. Thickness of JM ocSPF open-cell foam applied to horizontal surfaces must not exceed 16 inches (406 mm).
4. When applied to vertical surfaces, the thickness of JM ocSPF open-cell foam must not exceed 12 inches (305 mm).

G. Application on Attic Floors:

1. JM ocSPF must be separated from the area beneath the attic by an approved 15 minute rated coating.
2. JM ocSPF maximum height is 12 (305 mm) inches.
3. JM ocSPF must be coated with 0.6 gallons per square foot of JM intumescent coating.
4. JM ocSPF insulation may be installed to a maximum thickness of 12 inches (254 mm) between joists in attic floors. JM ocSPF insulation must be separated from the area beneath the attic by an approved thermal barrier. The ignition barrier in accordance with IBC Section 2603.4.1.6 and IRC Section R314.5.3 may be omitted when installed in accordance with this Section.

H. One-hour Fire-Resistance Rated Wall Assemblies (Limited Load Bearing):

1. Interior Face: One layer of 5/8-inch-thick (15.9 mm) Type X gypsum wallboard must be applied parallel to the interior face of 2-by-6 wood studs space a maximum of 16 inches (406 mm) on center and fastened with Type S, 1-5/8 inch (41 mm) long screws spaced 8 inches (203 mm) on center. The interior cavity is filled with 3 inches of JM ocSPF spray- applied foam insulation.
2. Exterior or Opposite Face: Another layer of 5/8 inch (15.9 mm) thick Type X gypsum wallboard must be applied in the same manner as the interior face.
3. Axial Load Design: Axial loads applied to the wall assembly must be limited to the least of the following:
 - a. 2,756 pounds (122 642 N) per stud.
 - b. A maximum of 51 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the ANSI/AF&PA NDS.

I. Exothermic Caution:

1. Polyurethane foam shall be sprayed in minimum 1/2 inch (12.7 mm) thick passes or lifts. Overall thickness applied in one pass shall be limited to a maximum of 6 inches for JM ocSPF open cell foam to avoid fire hazards resulting from excessive heat generation. When applying SPF on chlorinated polyvinyl chloride the pass thickness for JM ocSPF must be limited to 6 inches. If additional thickness is required it must be applied within 15 minutes.
2. If a second pass is needed, wait 10 to 15 minutes between passes to allow reaction heat to dissipate. If more passes are needed, wait 30 minutes between passes to allow reaction heat to dissipate.
3. The exothermic reaction can cause temporary substrate thermal rises in excess of 150 degrees F, which may result in substrate thermal expansion. If the substrate then contracts when the reaction heat dissipates, substrate deformation can occur.
4. The full thickness of spray polyurethane foam to be applied within any given area should be completed in one day.

J. Vapor Retarder Application:

1. When required, a vapor retarder shall be applied to the substrate to be insulated or to the finished spray polyurethane foam insulation. The predominant direction of the vapor drive determines the location of the vapor retarder relative to the spray polyurethane foam.
2. Apply thermal barriers and vapor retarder (if required) according to ICC recommendations.

3.5 ACCESSORY APPLICATION

- A. Joint Filler Foam and Caulk: Use joint filler foam and/or caulk to seal around windows, doors, chimneys, electrical raceways, sill plates, multiple studs, etc. Expansion of joint filler foam in a confined space can tighten window frames and door jambs. Use care in these areas to avoid distortion of these members.

3.6 FIELD QUALITY CONTROL

- A. Protect installed products until completion of project.
- B. Field inspection and testing will be performed under provisions of Section 01 40 00. Inspection will include verification of insulation and overcoat thickness and density.

3.7 PROTECTION

- A. Protect installed products until completion of project.
- B. After completing work, clean glass and spattered surfaces.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

3.8 SCHEDULES

- A. For the following locations, apply the average cured open-cell SPF thickness indicated:
1. Interior surface of exterior walls: 5.5 inches.
 2. Unvented roof spaces: 11 inches.

END OF SECTION 072119

SECTION 079200 - JOINT SEALANTS

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 sealants for the following applications, including those specified by reference to this Section:
- B. This Section includes sealants for the following applications:
 - 1. Exterior joints in the following vertical surfaces and nontraffic horizontal surfaces:
 - a. Joints in exterior masonry.
 - b. Perimeter joints around the doors and windows frames as noted.
 - c. Other joints as indicated.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Product Test Reports: From a qualified testing agency indicating sealants comply with requirements, based on comprehensive testing of current product formulations.
- F. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. **Installer Qualifications:** An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. **Source Limitations:** Obtain each type of joint sealant through one source from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

- A. **Environmental Limitations:** Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
 - 2. When joint substrates are wet.
- B. **Joint-Width Conditions:** Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- C. **Joint-Substrate Conditions:** Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.8 WARRANTY

- A. **General Warranty:** Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. **Special Installer's Warranty:** Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. **Warranty Period:** Two years from date of Substantial Completion.
- C. **Special Manufacturer's Warranty:** Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. **Warranty Period:** 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products indicated for each type in the sealant schedules at the end of Part 3.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant in the Elastomeric Joint-Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified in the Elastomeric Joint-Sealant Schedule to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

2.4 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:
1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:
 - a. Concrete.
 - b. Masonry.
 3. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
 - a. Metal.
- B. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability. Install backer rods in all joints of the dimensional stone cladding.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints.
- E. Install sealants by proven techniques to comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses provided for each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants 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 sealants immediately so installations with repaired areas are indistinguishable from the original work.

3.6 ELASTOMERIC JOINT-SEALANT SCHEDULE

- A. Low-Modulus Nonacid-Curing Silicone Sealant: Joints in masonry walls, around window and door frames and other joints as indicated, provide products complying with the following:
 - 1. Products: Provide one of the following or equal:
 - a. 864; Pecora Corporation.
 - b. Spectrem 1; Tremco
 - c. 790; Dow Corning.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25.
 - 4. Additional Movement Capability: 50 percent movement in extension and 50 percent movement in compression for a total of [100] percent movement.
 - 5. Use Related to Exposure: NT (nontraffic).
 - 6. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 - 7. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.
- B. Medium-Modulus Neutral-Curing Silicone Sealant: In joints between the cast iron roof panels, where indicated on the plans, provide products complying with the following:
 - 1. Products: Provide one of the following or equal:
 - a. 895; Pecora Corporation
 - b. 756 H.P.; Dow Corning.
 - c. Silglaze II; GE Silicones.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25.
 - 4. Additional Movement Capability: 50 percent movement in extension and 50 percent movement in compression for a total of 100 percent movement.
 - 5. Use[s] Related to Exposure: NT (nontraffic)
 - 6. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

END OF SECTION 079200

SECTION 080671 – DOOR HARDWARE SCHEDULE

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 references specification sections relating to commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding Doors.
 - 3. Other doors to the extent indicated.
- B. Commercial door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical and access control door hardware.
 - 3. Electromechanical and access control door hardware power supplies, back-ups and surge protection.
 - 4. Automatic operators.
 - 5. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section “Door Hardware”.
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: Reference Related Sections for requirements regarding compliance with applicable industry standards.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware

Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: Prepared under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.
- D. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.
- F. Warranties and Maintenance: Special warranties and maintenance agreements specified in the Related Sections.
- 1.4 DELIVERY, STORAGE, AND HANDLING
- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
 - B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.5 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

1.6 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 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Refer to "PART 3 – EXECUTION" for required specification sections.

PART 3 - EXECUTION

3.1 DOOR HARDWARE SETS

- A. The door hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
 - 1. Quantities listed are for each pair of doors, or for each single door.
 - 2. The supplier is responsible for handing and sizing all products.
 - 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
 - 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.
- B. Products listed in the hardware sets shall be supplied by and in accordance with the requirements described in the specification section as noted for each item.
 - 1. Section 08 71 00 – Door Hardware.
- C. Manufacturer's Abbreviations:
 - 1. MK - McKinney

- 2. SC - Schlage
- 3. YA - ASSA ABLOY ACCENTRA
- 4. RF - Rixson
- 5. NO - Norton
- 6. RO - Rockwood
- 7. PE - Pemko

Hardware Sets

Set: 1.0

Doors: 1

3 Hinge, Full Mortise, Hvy Wt	T4A3386	US32D	MK	087100
1 Storeroom Lock	ND Series x RHO x SFIC Temp Core	.626	SC	087100
1 Permanent Core - SFIC	Compatible with Facility's Existing System	.626	SC	087100
1 Door Closer	UNI7500	689	NO	087100
1 Gasketing	290APK x 2891APK		PE	087100
1 Sweep	3452AV		PE	087100
1 Threshold	253x3AFG MSES10SS-2		PE	087100

Set: 2.0

Doors: 6

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Storeroom Lock	ND Series x RHO x SFIC Temp Core	.626	SC	087100
1 Permanent Core - SFIC	Compatible with Facility's Existing System	.626	SC	087100
1 Door Stop	RM850 / RM860	US26D	RO	087100
3 Silencer	608		RO	087100

Set: 3.0

Doors: 10, 8, 9

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Storeroom Lock	ND Series x RHO x SFIC Temp Core	.626	SC	087100
1 Permanent Core - SFIC	Compatible with Facility's Existing System	.626	SC	087100
1 Concealed Overhead Stop	2-X36	630	RF	087100
3 Silencer	608		RO	087100

Set: 4.0

Doors: 2

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Entrance/Office Lock	ND Series x RHO x SFIC Temp Core	.626	SC	087100
1 Permanent Core - SFIC	Compatible with Facility's Existing System	.626	SC	087100
1 Door Closer	7500 / P7500	689	NO	087100
1 Door Stop	RM850 / RM860	US26D	RO	087100
1 Gasketing	S773BL		PE	087100

Set: 5.0

Doors: 4

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Classroom Lock	ND Series x RHO x SFIC Temp Core	.626	SC	087100
1 Permanent Core - SFIC	Compatible with Facility's Existing System	.626	SC	087100
1 Concealed Overhead Stop	2-X36	630	RF	087100
3 Silencer	608		RO	087100

Set: 6.0

Doors: 5

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Classroom Lock	ND Series x RHO x SFIC Temp Core	.626	SC	087100
1 Permanent Core - SFIC	Compatible with Facility's Existing System	.626	SC	087100
1 Door Closer	7500 / P7500	689	NO	087100
1 Door Stop	RM850 / RM860	US26D	RO	087100
1 Gasketing	S773BL		PE	087100

Set: 7.0

Doors: 7

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Privacy	AU YPL02	626	YA	087100
1 Surface Closer	2800ST	689	NO	087100
1 Door Stop	RM850 / RM860	US26D	RO	087100
3 Silencer	608		RO	087100

Set: 8.0

Doors: 3

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Passage Latch	ND Series x RHO	.626	SC	087100
1 Door Closer	7500 / P7500	689	NO	087100
1 Door Stop	RM850 / RM860	US26D	RO	087100
1 Gasketing	S773BL		PE	087100

END OF SECTION 080671

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Louvers installed in hollow metal doors.
4. Light frames and glazing installed in hollow metal doors.

B. Related Sections:

1. Division 01 Section "General Conditions".
2. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
3. Division 08 Section "Flush Wood Doors".
4. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
5. Division 08 Section "Door Hardware".
6. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.

14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".
- C. 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 positive pressure according to UL10C (neutral pressure at 40" above sill) or UL 10C.
 1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
 2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
 3. Smoke Control Door Assemblies: Comply with NFPA 105.
 - a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
- D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.
- E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.4 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 non-vented plastic.
- 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. Door and frames to be stacked in a vertical upright position.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.6 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.
- B. Building Information Modeling (BIM) Support: Utilize designated BIM software tools and obtain training needed to successfully participate in the Project BIM processes. All technical disciplines are responsible for the product data integration and data reliability of their Work into the coordinated BIM applications.

1.7 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.
- B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:
 - 1. CECO Door Products (C).
 - 2. Curries Company (CU).
 - 3. Or approved equal.

2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.
- C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 HOLLOW METAL DOORS

- A. General: Provide 1-3/4 inch 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 and ANSI/NAAMM HMMA 867.

B. Exterior Doors: Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60. 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. Design: Flush panel.
2. Core Construction: Manufacturer's thermally enhanced QMax core. Where indicated provide doors fabricated as thermal-rated assemblies with a minimum thermal rating of 0.41 BTU/hr-ft²-F.
3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053-inch - 1.3-mm) thick steel, Model 2.
4. Vertical Edges: Vertical edges to have the face sheets spot welded and filled full height with an epoxy filler. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

C. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. 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. Design: Flush panel.
2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
 - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
4. Vertical Edges: Vertical edges to have the face sheets spot welded and filled full height with an epoxy filler. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

D. Manufacturers Basis of Design:

1. Curries Company (CU) - Polystyrene Core - 707 Series.
2. Curries Company (CU) - QMax Core - 707 Series.

2.4 HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

- B. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.
 - 1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
 - 2. Frames: Minimum 14 gauge (0.067-inch -1.7-mm) thick steel sheet.
 - 3. Manufacturers Basis of Design:
 - a. Curries Company (CU) - M Series.
- C. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.
 - 1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
 - 2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
 - 3. Manufacturers Basis of Design:
 - a. Curries Company (CU) - C Series.
 - b. Curries Company (CU) - M Series.
- D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.
- E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.5 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, 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 and not less than 0.042 inch thick.
 - 3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.
- B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.
- C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.6 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.7 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. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Doors:

1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.

D. Hollow Metal Frames:

1. Shipping Limitations: 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.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 - a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.
3. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
4. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
5. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
6. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
7. 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 on-center 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. Stud Wall 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) Three anchors per jamb up to 60 inches high.
 - 2) Four anchors per jamb from 60 to 90 inches high.
 - 3) Five anchors per jamb from 90 to 96 inches high.
 - 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - 5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
8. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".
9. Bituminous Coating: Where frames are fully grouted with an approved Portland Cement based grout or mortar, coat inside of frame throat with a water based bituminous or asphaltic emulsion coating to a minimum thickness of 3 mils DFT, tested in accordance with UL 10C and applied to the frame under a 3rd party independent follow-up service procedure.

- E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 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 non-template, 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 26 Sections.

2.8 STEEL FINISHES

- A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.
 - 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; and compatible with substrate and field-applied coatings.

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 the Work.
- B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 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 square, level, twist, and plumb condition.
- C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.
- E. Verify tolerances against manufacturers installations instructions for tornado and hurricane storm shelter openings.

3.3 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 and NFPA 80 at fire rated openings.
 - 1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
 - 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
 - 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
 - 4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.
- 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. Jamb 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.
- D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.4 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 and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

3.5 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Solid-core doors with wood-veneer faces.
 - 2. Factory finishing flush wood doors.

1.3 SUBMITTALS

- A. Product Data: For each type of door. Include details of core and edge construction, trim for openings, and louvers.
 - 1. Include factory-finishing specifications.
- 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 doors to be factory finished and finish requirements.
- C. Samples for Initial Selection: Color charts consisting of actual materials in small sections for the following:
 - 1. Faces of factory-finished doors with transparent finish. Show the full range of colors available for stained finishes.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer.
- B. Quality Standard: Comply with the following standard:
 - 1. NWWDA Quality Standard: NWWDA I.S.1-A, "Architectural Wood Flush Doors."
 - 2. AWI Quality Standard: AWI's "Architectural Woodwork Quality Standards" for grade of door, core, construction, finish, and other requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standard and manufacturer's written instructions.
 - 1. Individually package doors in plastic bags or cardboard cartons.
- B. Mark each door with individual opening numbers used on Shop Drawings. Use removable tags or concealed markings.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during the remainder of the construction period to comply with requirements of the referenced quality standard for Project's geographical location.

1.7 WARRANTY

- A. General Warranty: Door manufacturer's warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Door Manufacturer's Warranty: Submit written agreement on door manufacturer's standard form, signed by manufacturer, Installer, and Contractor, agreeing to repair or replace defective doors that have warped (bow, cup, or twist) more than 1/4 inch (6.35 mm) in a 42-by-84-inch (1067-by-2134-mm) section or that show telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 75-mm) span, or do not comply with tolerances in referenced quality standard.
 - 1. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 2. Warranty shall be in effect during the following period of time after the date of Substantial Completion:
 - a. Solid-Core Interior Doors: Lifetime of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Flush Wood Doors:
 - a. VT Industries, Inc.
 - b. Eggers Industries; Architectural Door Division.
 - c. Weyerhaeuser Co.

2.2 DOOR CONSTRUCTION, GENERAL

A. Doors for Transparent Finish: Comply with the following requirements:

1. Grade: Custom, with Grade AA faces.
2. Faces: Select White Birch, stain finish to be selected.
3. Match between Veneer Leaves: Slip match.
4. Match within Door Faces: Running match.
5. Pair and Set Match: Provide for pairs of doors and for doors hung in adjacent sets.
6. Stiles: Applied wood edges of same species as faces and covering edges of faces.

2.3 SOLID-CORE DOORS

A. Particleboard Cores: Comply with the following requirements:

1. Particleboard: ANSI A208.1, Grade LD-2.
2. Blocking: Provide wood blocking at particleboard-core doors as follows:
 - a. 5-inch (125-mm) top-rail blocking, at doors indicated to have closers.
 - b. 5-inch (125-mm) bottom-rail blocking, at exterior doors and doors indicated to have kick, mop, or armor plates.
 - c. 5-inch (125-mm) midrail blocking, at doors indicated to have exit devices.

B. Interior Veneer-Faced Doors: Comply with the following requirements:

1. Core: Particleboard core.
2. Construction: Five plies with stiles and rails bonded to core, then entire unit abrasive planed before veneering.

C. Fire Rated Doors: Comply with the following requirements:

1. Construction: Construction and core specified above for type of face indicated or manufacturer's standard mineral core construction as required to provide fire rating as indicated.
2. Blocking: For mineral core doors, provide composite blocking with improved screw-holding capability approved for use in doors of fire ratings indicated and as follows:
 - a. 5-inch (125mm) top-rail blocking.
 - b. 5-inch (125mm) bottom-rail blocking, at doors indicated to have kick, mop, or armor plates.
 - c. 4 ½ by 10 inch (114 by 250mm) lock blocks.
 - d. 5-inch (125mm) midrail blocking, at doors indicated to have exit devices.
 - e. As necessary to eliminate need for through-bolting hardware.
3. Edge Construction: At hinge stiles, provide manufacturer's standard laminated edge construction with improved screw-holding capability and split resistance and with outer stile matching face veneer.
4. Pairs: Provide fire rated pairs with fire retardant stiles that are labeled and listed for kinds of applications indicated without formed steel edges and astragals.

2.4 LITE FRAMES

A. Wood Frames for Lite Openings: As follows:

1. Wood Species: Same species as door faces.

2. Profile: Recessed tapered beads.
3. Profile: Manufacturer's standard shape.
4. Frames for Openings in Fire Doors: Wood frames and metal glazing clips approved for use in 45 & 90-minute fire-rated wood-core doors.

2.5 FABRICATION

- A. Fabricate flush wood doors in sizes indicated for Project site fitting.
- B. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels, unless otherwise indicated:
 1. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements of NFPA 80 for fire-rated doors.
- C. 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 measurements of hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 2. Hardware templates for roughing-in will be supplied by the hardware supplier/manufacturer.

2.6 FACTORY FINISHING

- A. General: Comply with referenced quality standard's requirements for factory finishing.
- B. Finish wood doors at factory.
- C. Transparent Finish: Comply with requirements indicated for grade, finish system, staining effect, and sheen.
 1. Grade: Premium.
 2. Finish: Manufacturer's standard finish with performance requirements comparable to AWI System TR-6 catalyzed polyurethane.
 3. Staining: Clear or color as selected.
 4. Sheen: Satin.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine 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 plumb jambs and level heads.
 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Division 8 Section "Door Hardware."
- B. Manufacturer's Written Instructions: Install wood doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated.
 - 1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.
- C. Job-Fit 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 with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.
 - 1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold.
 - a. Comply with NFPA 80 for fire-rated doors.
 - 2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) at lock and hinge edges.
 - 3. Bevel fire-rated doors 1/8 inch in 2 inches (3-1/2 degrees) on 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.

3.3 ADJUSTING AND PROTECTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Refinish or replace doors damaged during installation.
- C. Protect doors as recommended by door manufacturer to ensure that wood doors are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 081416

SECTION 085200 - WOOD WINDOWS

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 unfinished wood-framed window product types:
 - 1. Sliding windows.

1.3 DEFINITIONS

- A. C: Commercial.
- B. HC: Heavy Commercial.
- C. LC: Light Commercial.
- D. Performance grade number, included as part of the AAMA/NWWDA product designation code, is actual design pressure in pounds force per square foot (pascals) used to determine structural test pressure and water test pressure.
- E. Structural test pressure, for uniform load structural test, is equivalent to 150 percent of design pressure.
- F. Minimum test size is smallest size permitted for performance class (gateway test size). Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide wood windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified and that are of test size indicated below:
 - 1. Minimum size required by AAMA/NWWDA 101/I.S.2.
- B. AAMA/NWWDA Performance Requirements: Provide wood windows of the performance class and grade indicated that comply with AAMA/NWWDA 101/I.S.2.
 - 1. Performance Class: H-LC.
 - 2. Performance Grade: 35.
- C. Wood windows shall withstand the following positive or negative uniform static air pressure difference without damage when testing according to ASTM E 330-90.

1. Design Pressure: 45 lbf/sq. ft. (720 Pa)]
- D. Air Infiltration: Maximum rate not more than indicated when tested according to AAMA/NWWDA 101/I.S.2, Air Infiltration Test.
1. Maximum Rate: 0.3 cfm/sq. ft. (5 cu. m/h x sq. m) of area at an inward test pressure of 1.57 lbf/sq. ft. (75 Pa).
- E. Water Resistance: No water leakage penetration shall occur when tested according to ASTM E 547-93.
1. Test Pressure: 4.5 lbf/sq. ft..
- F. Sliding Windows: Comply with AAMA/NWWDA 101/I.S.2 for the following tests:
1. Operating Force.
 2. Deglazing: When tested according to ASTM E 987.
- 1.5 SUBMITTALS
- A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of wood window indicated.
- B. Shop Drawings: Include plans, elevations, sections, details, hardware, attachments to other Work, operational clearances, and the following:
1. Mullion details, including reinforcement and stiffeners (as necessary).
 2. Joinery details.
 3. Expansion provisions.
 4. Flashing and drainage details.
 5. Weather-stripping details.
 6. Thermal-break details.
 7. Glazing details.
- C. Samples: For wood window components required, prepared on Samples of size indicated below.
1. Main Framing Member: 12-inch- (300-mm-) long, full-size sections of extrusions with factory-applied color finish.
 2. Hardware: Full-size units with factory-applied finish.
 3. Weather Stripping: 12-inch- (300-mm-) long sections.
 4. Architect reserves the right to require additional samples that show fabrication techniques, workmanship, and design of hardware and accessories.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed[within the last four years] by a qualified testing agency, for each type, grade, and size of wood window. Test results based on use of down-sized test units will not be accepted.
- E. Maintenance Data: For [operable window sash] [operating hardware] [weather stripping] [and] finishes to include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An installer acceptable to wood window manufacturer for installation of units required for this Project.
- B. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- C. Source Limitations: Obtain wood windows through one source from a single manufacturer.
- D. Product Options: Drawings indicate size, profiles, and dimensional requirements of wood windows and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."
 - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- E. Fenestration Standard: Comply with AAMA/NWDA 101/I.S.2, "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors," for minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
- F. Glazing Publications: Comply with published recommendations of glass manufacturers and GANA's "Glazing Manual" unless more stringent requirements are indicated.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify wood window openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
 - 1. Failure to meet performance requirements.
 - 2. Structural failures including excessive deflection.
 - 3. Water leakage, air infiltration, or condensation.
 - 4. Faulty operation of movable sash and hardware.
 - 5. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 6. Insulating glass failure.
- B. Warranty Period: 10 years from date of Substantial Completion.
- C. Warranty Period for Insulating Glass: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 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:
 - 1. Unfinished Wood Windows:
 - a. Sliding Windows:
 - 1) Marvin Windows and Doors.
 - 2) Pella Corporation (Note, This type installed in Phase 1).
 - 3) Equal approved
- B. Products: The following product is used as a basis for required level of quality, materials and standards.
 - 1. Wood windows to be Wood Magnum sliding windows as manufactured by Pella Corporation.

2.2 MATERIALS, GENERAL

- A. Wood: Clear ponderosa pine or another suitable fine-grained lumber; kiln-dried to a moisture content of 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch (0.8 mm) deep by 2 inches (51 mm) wide; water-repellent preservative treated.
- B. Wood Trim and Glazing Stops: Material and finish to match frame members.
- C. Fasteners: Aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with wood window members, cladding, trim, hardware, anchors, and other components.
 - 1. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.
- D. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- E. Reinforcing Members: Aluminum, nonmagnetic stainless steel, nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- F. Compression-Type Weather Stripping: Provide compressible weather stripping designed for permanently resilient sealing under bumper or wiper action, and completely concealed when wood window is closed.
 - 1. Weather-Stripping Material: Manufacturer's standard system and materials complying with AAMA/NWWDA 101/I.S.2.

2.3 GLAZING

- A. Glazing System: [Manufacturer's standard factory-glazing insulated system that produces weathertight seal as follows:

1. ¾" insulated Low E II glass unit with 1/8" exterior and interior panes and ½" air space.

2.4 HARDWARE

- A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with wood; designed to smoothly operate, tightly close, and securely lock wood windows and sized to accommodate sash or ventilator weight and dimensions. Do not use aluminum in frictional contact with other metals. Where exposed, provide [solid bronze] [extruded, cast, or wrought aluminum] [die-cast zinc with special coating finish] [or] [nonmagnetic stainless steel].

- B. Counterbalancing Mechanism: Comply with AAMA 902.

1. Sash-Balance Type: Concealed spring-loaded, block-and-tackle type of size and capacity to hold sash stationary at any open position.

- C. Locks and Latches: Designed to allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.

- D. Roller Assemblies: Low-friction design.

- E. Push-Bar Operators: Provide telescoping-type, push-bar operator designed to open and close ventilators with fixed screens.

- F. Four- or Six-Bar Friction Hinges: Comply with AAMA 904.

1. Locking mechanism and handles for manual operation.

2. Friction Shoes: Provide friction shoes of nylon or other nonabrasive, nonstaining, noncorrosive, durable material.

2.5 FABRICATION

- A. General: Fabricate wood windows, in sizes indicated, that comply with AAMA/NWWDA 101/I.S.2 for performance class and performance grade indicated. Include a complete system for assembling components and anchoring windows.

- B. Fabricate wood windows that are reglazable without dismantling sash or ventilator framing.

- C. Weather Stripping: Provide full-perimeter weather stripping for each operable sash and ventilator, unless otherwise indicated.

- D. Factory machine windows for openings and hardware that is not surface applied

- E. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.

- F. Factory-Glazed Fabrication: Except for light sizes in excess of 100 united inches (2500 mm width plus length), glaze wood windows in the factory where practical and possible for applications indicated. Comply with ASTM C 1036-91.
- G. Glazing Stops: Provide nailed or snap-on glazing stops coordinated with glazing system indicated. Provide glazing stops to match sash and ventilator frames.
- H. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

2.6 WOOD FINISHES

- A. Factory-Primed Windows: Provide manufacturer's standard factory-prime coat on exposed exterior wood surfaces.
 - 1. Interior of window to be treated wood painted to match existing.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings, vapor retarders, and other built-in components; and other conditions affecting performance of work.
 - 1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
 - 2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches (76 mm) of opening.
 - 3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components; Drawings; and Shop Drawings.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Set sill members in bed of sealant or with gaskets, as indicated, for weathertight construction.
- D. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified in "Dissimilar Materials" Paragraph in Appendix B in AAMA/NWWDA 101/I.S.2.

3.3 ADJUSTING

- A. Adjust operating sashes and ventilators, screens, hardware, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.4 PROTECTION AND CLEANING

- A. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.
- B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.
- D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION 085200

SECTION 087100 - DOOR HARDWARE

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 commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding doors.
 - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 06 Section "Rough Carpentry".
 - 2. Division 06 Section "Finish Carpentry".
 - 3. Division 08 Section "Door Hardware Schedule".
 - 4. Division 08 Section "Hollow Metal Doors and Frames".
 - 5. Division 08 Section "Flush Wood Doors".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series.
 - 2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
 - 3. ANSI/UL 294 - Access Control System Units.
 - 4. UL 305 - Panic Hardware.
 - 5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 - 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- D. Informational Submittals:
 - 1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

- A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.
- B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

1.5 QUALITY ASSURANCE

- A. **Manufacturers Qualifications:** Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. **Certified Products:** Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. **Installer Qualifications:** A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. **Door Hardware Supplier Qualifications:** Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. **Source Limitations:** Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
- F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.
- G. **Keying Conference:** Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- H. **Pre-Submittal Conference:** Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.

5. Review the required inspecting, testing, commissioning, and demonstration procedures

- I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.8 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BUTT HINGES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. 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.
 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.
 5. Basis of Design:
 - a. McKinney (MK) - TA/T4A Series, 5-knuckle.

2.2 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
1. Threaded mortise cylinders with rings and cams to suit hardware application.
 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
 4. Tubular deadlocks and other auxiliary locks.
 5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 6. Keyway: Match Facility Standard.
- C. Small Format Interchangeable Cores: Provide small format interchangeable cores (SFIC) as specified, core insert, removable by use of a special key; usable with other manufacturers' cylinders.
- D. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

E. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Three (3).
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).
4. Construction Control Keys (where required): Two (2).
5. Permanent Control Keys (where required): Two (2).

F. Construction Keying: Provide temporary keyed construction cores.

G. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.3 CYLINDRICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed cylindrical locksets. Listed manufacturers shall meet all functions and features as specified herein.

1. Basis of Design:
 - a. Schlage (SC) - ND Series.

B. Cylindrical Indicator Locksets, Grade 1 (Commercial Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:
 - a. Visual status indicators in rose, displaying bold visuals for vacant or occupied lock status.
 - b. Meets ANSI/BHMA A156.41 for single motion egress.
 - c. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
 - d. Three-year limited warranty.
2. Basis of Design:
 - a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - YPL Series.

2.4 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.5 SURFACE DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Heavy duty surface mounted door closers shall have a 30-year warranty.
2. Basis of Design:
 - a. Norton Rixson (NO) - 7500 Series.

C. Door Closers, Surface Mounted (Cam Action): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, high efficiency door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be of the cam and roller design, one piece cast aluminum silicon alloy body with adjustable backcheck and independently controlled valves for closing sweep and latch speed.

1. Basis of Design:
 - a. Norton Rixson (NO) - 2800ST Series.

2.6 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 1. Basis of Design:
 - a. Rockwood (RO).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
 1. Basis of Design:
 - a. Norton Rixson (RF).

2.7 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. 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 perimeter gasketing at all smoke labeled openings.
- C. 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 UL-10C.
 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Basis of Design:

1. Pemko (PE).

2.8 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.9 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, 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. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically 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. DHI TDH-007-20: Installation Guide for Doors and Hardware.
 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and 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.
- D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 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.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
 - 1. Quantities listed are for each pair of doors, or for each single door.
 - 2. The supplier is responsible for handing and sizing all products.
 - 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
 - 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.
- B. Refer to Section 080671, Door Hardware Sets, for hardware sets.

END OF SECTION 087100

SECTION 090561- FLOOR LEVELING COMPOUND

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. This section applies to all floors identified in the contract documents as to receive the following types of floor coverings:
 - 1. Resilient tile and sheet.
 - 2. Broadloom carpet.
 - 3. Carpet tile.
 - 4. Thin-set ceramic tile and stone tile.
- B. Removal of existing floor coverings.
- C. Preparation of new and existing concrete floor slabs for installation of floor coverings.
- D. Testing of concrete floor slabs for moisture and alkalinity (pH).

1.02 REFERENCES

- A. ASTM F710 - "Standard Practice for Preparing Concrete Floors To Receive Resilient Flooring".
- B. ASTM C1708 - "Standard Test Method for Self-Leveling Mortars Containing Hydraulic Cements".
- C. ASTM 2170 - "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes".
- D. ASTM F1869 - "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride".
- E. ASTM C150 - "Standard Specification for Portland Cement".
- F. ASTM C472 - "Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete".
- G. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute; October 2011.

1.03 SUBMITTALS

- A. Visual Observation Report: For existing floor coverings to be removed.
- B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
 - 1. Moisture and alkalinity (pH) limits and test methods.
 - 2. Manufacturer's required bond/compatibility test procedure.
- C. Adhesive Bond and Compatibility Test Report.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store all products indoors in original unopened packaging. Keep all materials dry and away from direct sun exposure in moderate conditions between temperatures of 50 °F to 90 °F (10 °C to 32 °C).

1.05 FIELD CONDITIONS

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F (18 degrees C) or more than 85 degrees F (30 degrees C).
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

1.06 WARRANTY

- A. All UZIN Classic materials are provided with our limited 10-year warranty. Additionally, approved UZIN product systems are eligible for our Classic + Plus 10 warranty. Please visit our website at us.uzin.com for additional information and downloadable literature.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. UZIN, a brand of Uzin Utz North America, Inc. www.us.uzin.com

2.02 MATERIALS

- A. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
 - 1. Thickness: As required for application and in accordance with manufacturer's installation instruction.
 - 2. Products:
 - a. UZIN, a brand of Uzin Utz North America, Inc.; PE 460 Moisture Vapor Retarder with PE 280 Primer and NC 150 Leveling Compound: www.us.uzin.com
- B. Third Party Testing:
 - 1. UZIN self-leveling compounds are regularly tested for compliance regarding their VOC emissions as well as their performance in accordance with ASTM C1708-16 Standard Test Method for Self-leveling Mortars Containing Hydraulic Cements. Please visit our website at us.uzin.com for additional information and downloadable literature.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
 - 1. Moisture vapor emission tests; 3 tests in the first 1000 square feet (100 square meters) and one test in each additional 1000 square feet (100 square meters), unless otherwise indicated or required by flooring manufacturer.
 - 2. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 - 3. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 - 4. Other preparation specified.
 - 5. Adhesive bond and compatibility test.
 - 6. Protection.
- B. Remediations:
 - 1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.

3.02 REMOVAL OF EXISTING FLOOR COVERINGS

- A. Comply with local, State, and federal regulations and recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to floor covering being removed.
- B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 and as follows.
- D. Report: Report the information required by the test method.

3.04 INTERNAL RELATIVE HUMIDITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 Procedure A and as follows.

- D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
- F. Report: Report the information required by the test method.

3.05 ALKALINITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
- C. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
- D. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch (25 mm) in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.06 PREPARATION

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Do not fill expansion joints, isolation joints, or other moving joints.

3.07 APPLICATION

- A. Install epoxy, primer, and underlayment in accordance with manufacturer's instructions. Always refer to the most current product information at us.uzin.com.

3.08 ADHESIVE BOND AND COMPATIBILITY TESTING

- A. Comply with requirements and recommendations of floor covering manufacturer.

3.09 APPLICATION OF REMEDIAL FLOOR COATING

- A. Comply with requirements and recommendations of coating manufacturer.

3.10 PROTECTION

- A. Cover prepared floors with building paper or other durable covering.

END OF SECTION 090561

SECTION 092900 - GYPSUM BOARD ASSEMBLIES

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. Nonload-bearing steel framing members for gypsum board assemblies.
 - 2. Gypsum board assemblies attached to steel framing.
 - 3. Tile backing gypsum board.

1.3 DEFINITIONS

- A. Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA-505 for definitions of terms for gypsum board assemblies not defined in this Section or in other referenced standards.

1.4 ASSEMBLY PERFORMANCE REQUIREMENTS

- A. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.

1.5 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each type of product specified.
- C. Shop Drawings showing locations, fabrication, and installation of control and expansion joints including plans, elevations, sections, details of components, and attachments to other units of Work.
- D. Product certificates signed by manufacturers of gypsum board assembly components certifying that their products comply with specified requirements.

1.6 QUALITY ASSURANCE

- A. Single-Source Responsibility for Steel Framing: Obtain steel framing members for gypsum board assemblies from a single manufacturer, unless otherwise indicated.

- B. Single-Source Responsibility for Panel Products: Obtain each type of gypsum board and other panel products from a single manufacturer.
- C. Single-Source Responsibility for Finishing Materials: Obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to gypsum board manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.

1.8 PROJECT CONDITIONS

- A. Environmental Conditions, General: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 requirements or gypsum board manufacturer's recommendations, whichever are more stringent.
- B. Room Temperatures: For non-adhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg F (10 deg C) for 48 hours before application and continuously after until dry. Do not exceed 95 deg F (35 deg C) when using temporary heat sources.
- C. Ventilation: Ventilate building spaces as required to dry joint treatment materials. Avoid drafts during hot, dry weather to prevent finishing materials from drying too rapidly.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
 - 1. Gypsum Board and Related Products:
 - a. Georgia-Pacific Corp.
 - b. National Gypsum Co.; Gold Bond Building Products Division.
 - c. United States Gypsum Co.

2.2 GYPSUM BOARD PRODUCTS

- A. General: Provide gypsum board of types indicated in maximum lengths available that will minimize end-to-end butt joints in each area indicated to receive gypsum board application.
 - 1. Widths: Provide gypsum board in widths of 48 inches (1219 mm).
 - 2. Shaft wall panels shall be 16" wide installed in CH Studs.

- B. Gypsum Wallboard: ASTM C 36 and as follows:
1. Type: Moisture and impact resistant for all vertical surfaces, unless otherwise indicated.
 2. Type: Water-Resistant Gypsum Backing Board for tiled walls.
 3. Type: 1" shaft wall liner panels.
 4. Edges: Tapered.
 5. Thickness: 1/2 inch (12.7 mm), for ceilings and soffits.
 6. Thickness: 5/8 inch (15.9 mm) unless otherwise indicated.

2.3 TRIM ACCESSORIES

- A. Accessories for Interior Installation: Cornerbead, edge trim, and control joints complying with ASTM C 1047 and requirements indicated below:
1. Material: Formed metal or plastic, with metal complying with the following requirement:
 - a. Steel sheet zinc coated by hot-dip process or rolled zinc.
 2. Shapes indicated below by reference to Fig. 1 designations in ASTM C 1047:
 - a. Cornerbead on outside corners, unless otherwise indicated.
 - b. L-bead with face flange only; face flange formed to receive joint compound. Use L-bead where indicated.
 - c. One-piece control joint formed with V-shaped slot and removable strip covering slot opening.
 - d. Reveal Bead in ceiling, "Reveal" Stock # 5110, 1/2"x 1/2", or equal, refer to ceiling plan.

2.4 JOINT TREATMENT MATERIALS

- A. General: Provide joint treatment materials complying with ASTM C 475 and the recommendations of both the manufacturers of sheet products and of joint treatment materials for each application indicated.
- B. Joint Tape for Gypsum Board: Paper reinforcing tape, unless otherwise indicated.
1. Use pressure-sensitive or staple-attached, open-weave, glass-fiber reinforcing tape with compatible joint compound where recommended by manufacturer of gypsum board and joint treatment materials for application indicated.
- C. Drying-Type Joint Compounds for Gypsum Board: Factory-packaged vinyl-based products complying with the following requirements for formulation and intended use.
1. Ready-Mixed Formulation: Factory-mixed product.
 - a. Taping compound formulated for embedding tape and for first coat over fasteners and face flanges of trim accessories.
 - b. Topping compound formulated for fill (second) and finish (third) coats.
 - c. All-purpose compound formulated for both taping and topping compounds.

2.5 MISCELLANEOUS MATERIALS

- A. General: Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.

- B. Laminating Adhesive: Special adhesive or joint compound recommended for laminating gypsum panels.
- C. Spot Grout: ASTM C 475, setting-type joint compound recommended for spot-grouting hollow metal door frames.
- D. Fastening Adhesive for Metal: Special adhesive recommended for laminating gypsum panels to steel framing.
- E. Steel drill screws complying with ASTM C 1002 for the following applications:
 - 1. Fastening gypsum board to steel members less than 0.033 inch (0.84 mm) thick.
- F. Sound-Attenuation Blankets: Unfaced mineral-fiber blanket insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing).
 - 1. Mineral-Fiber Type: Fibers manufactured from glass.
- G. Thermal Insulation: See Section 07210 for Thermal Insulation
 - a. Mineral-Fiber Type: Fibers manufactured from glass.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, cast-in-anchors, and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Ceiling Anchorages: Coordinate installation of ceiling suspension systems with installation of overhead structural assemblies to ensure that inserts and other provisions for anchorages to building structure have been installed to receive ceiling hangers that will develop their full strength and at spacing required to support ceilings.

3.3 APPLYING AND FINISHING GYPSUM BOARD, GENERAL

- A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C 840 and GA-216.
- B. Install gypsum panels with face side out. Do not install imperfect, damaged, or damp panels. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.
- C. Locate both edge or 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. Avoid joints other than control joints at corners of framed openings where possible.

- D. Attach gypsum panels to existing studs so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- E. Attach gypsum panels to framing provided at openings and cutouts.
- F. Spot grout hollow metal door frames for solid-core wood doors, hollow metal doors, and doors over 32 inches (813 mm) wide. Apply spot grout at each jamb anchor clip and immediately insert gypsum panels into frames.
- G. Form control and expansion joints at locations indicated and as detailed, with space between edges of adjoining gypsum panels, as well as supporting framing behind gypsum panels.
- H. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases that are braced internally.
 - 1. Except where concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect joists, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffers, joists, and other structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.
- I. Where STC-rated gypsum board assemblies are indicated, seal construction at perimeters, behind control and expansion joints, openings, and penetrations with a continuous bead of acoustical sealant including a bead at both faces of the partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.
- J. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.
 - 1. Space screws a maximum of 12 inches (304.8 mm) o.c. for vertical applications.

3.4 GYPSUM BOARD APPLICATION METHODS

- A. Single-Layer Application: Install gypsum wallboard panels as follows:
 - 1. On ceilings, apply gypsum panels prior to wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless parallel application is required for fire-resistance-rated assemblies. Use maximum-length panels to minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of board.
- B. Single-Layer Fastening Methods: Apply gypsum panels to supports as follows:
 - 1. Fasten with screws and glue.
- C. Multiple Layer Application:
 - 1. Install multiple layers by alternating horizontal and vertical panels.
 - 2. Screws shall be long enough to penetrate the metal stud a minimum of 3/4".

3.5 INSTALLING TRIM ACCESSORIES

- A. General: For trim accessories with back flanges, fasten to framing with the same fasteners used to fasten gypsum board. Otherwise, fasten trim accessories according to accessory manufacturer's directions for type, length, and spacing of fasteners.
- B. Install corner bead at external corners.
- C. Install edge trim where edge of gypsum panels would otherwise be exposed. Provide edge trim type with face flange formed to receive joint compound, except where other types are indicated.
 - 1. Install L-bead where edge trim can only be installed after gypsum panels are installed.
 - 2. Install aluminum trim and other accessories where indicated.
- D. Install control joints according to ASTM C 840 and manufacturer's recommendations, with a maximum spacing of 30', or as shown in specific locations by the Architect for visual effect.

3.6 FINISHING GYPSUM BOARD ASSEMBLIES

- A. General: Treat gypsum board joints, interior angles, flanges of corner bead, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration.
- B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.
- C. Apply joint tape over gypsum board joints and to flanges of trim accessories as recommended by trim accessory manufacturer.
- D. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214.
 - 1. Level 4 for gypsum board surfaces, unless otherwise indicated.
- E. Use the following joint compound combination as applicable to the finish levels specified:
 - 1. Embedding and First Coat: Ready-mixed, drying-type, all-purpose or taping compound. Fill (Second) Coat: Ready-mixed, drying-type, all-purpose or topping compound. Finish (Third) Coat: Ready-mixed, drying-type, all-purpose or topping compound.
- F. For Level 4 gypsum board finish, embed tape in joint compound and apply first, fill (second), and finish (third) coats of joint compound over joints, angles, fastener heads, and accessories. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects and ready for decoration.

3.7 CLEANING AND PROTECTION

- A. Promptly remove any residual joint compound from adjacent surfaces.
- B. Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure gypsum board assemblies are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 092900

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

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 ceilings consisting of standard acoustical panels and exposed suspension systems.

1.3 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Samples: Submit product samples for each material specified.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels and suspension system components to Project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, 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.

1.5 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.

1.6 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.

1.7 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. Acoustical Ceiling Units: One carton of each size and pattern.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated for each designation in the Acoustical Panel Ceiling Schedule at the end of Part 3.

2.2 ACOUSTICAL PANELS, GENERAL

- A. 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 Noise Reduction Coefficient: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches (400 mm) away from test surface per ASTM E 795.
- B. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
- C. Antimicrobial Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial solution consisting of a synergistic blend of substituted ammonium salts of alkylated phosphoric acids admixed with free alkylated phosphoric acid that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria.
- D. Panel Characteristics: Comply with requirements indicated in the Acoustical Panel Ceiling Schedule at the end of Part 3, including those referencing ASTM E 1264 classifications.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635 requirements.
- B. Metal Suspension System Characteristics: Comply with requirements indicated in the Acoustical Panel Ceiling Schedule at the end of Part 3.
- 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.
- D. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated. System installation shall comply with all local seismic requirements.
- 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 three 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- (2.69-mm-) diameter wire.

- F. Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that fit acoustical panel edge details and suspension systems indicated; formed from sheet metal of same material and finish as that used for exposed flanges of suspension system runners.
 - 1. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and 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 other conditions affecting performance of acoustical panel ceilings.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with publications referenced below per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
 - 1. Standard for Ceiling Suspension System Installations: Comply with ASTM C 636.
- 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, counter-splaying, or other equally effective means. Bracing shall meet seismic standards for the area.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
 - 4. 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; that are appropriate for substrate; and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, powder-actuated fasteners, or drilled-in anchors that extend through forms into concrete.
 - 6. Do not attach hangers to steel deck tabs.
 - 7. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - 8. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise indicated; and provide hangers not more than 8 inches (200 mm) from ends of each member.
- C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3 mm in 3.6 m). Miter corners accurately and connect securely.
 2. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- D. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- E. Install acoustical panels with undamaged edges and fitted 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.
 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. Paint cut panel edges remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
- F. Install hold-down clips in the areas of the building as noted on the Room Finish Schedule. Clips shall be as recommended by the suspension system manufacturer and shall fit tightly over the “Tee” members of the system.

3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified independent testing agency to perform field quality-control testing.
- B. Extent and Testing Frequency: Testing will take place in successive stages in areas described below. Proceed with installation of acoustical panel ceilings only after test results for previously installed hangers comply with requirements.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Remove and replace those fasteners and anchors that test results indicate do not comply with specified requirements.
- E. Additional Testing: Where fasteners and anchors are removed and replaced, additional testing will be performed to determine compliance with specified requirements.

3.4 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.

3.5 ACOUSTICAL PANEL CEILING SCHEDULE

- A. Water-Felted, Mineral-Base Acoustical Panels with Membrane-Faced Overlay for Acoustical Panel Ceiling - APC-B: Where 2' by 4' panels are indicated, provide acoustical panels complying with the following:
1. Products: Provide the following or approved equal:
 - a. Dune – Square Lay-in by Armstrong – Item #1772
 2. Classification: Panels fitting ASTM E 1264 for Type III, mineral base with painted-faced overlay; Form 2, water felted.
 3. Pattern: Panels fitting ASTM E 1264 pattern designation CE
 4. Color: White.
 5. Light Reflectance Coefficient: Not less than 0.83.
 6. Noise Reduction Coefficient: NRC 0.50.
 7. Ceiling Attenuation Class: CAC 35.
 8. Edge Detail: Square.
 9. Thickness: 5/8 inch (15 mm).
 10. Size: 24 by 24 inches (600 by 600 mm).
- B. Suspension Systems for Acoustical Panel Ceilings: Where this designation is indicated, provide acoustical panel ceiling suspension system complying with the following:
1. Products: Provide one of the following or approved equal:
 - a. Prelude exposed tee system
 2. Wide-Face, Single-Web, Steel Suspension System for all locations unless otherwise noted: Main and cross runners roll formed from cold-rolled steel sheet electrolytically zinc coated, with prefinished 15/16-inch- (24-mm-) wide flanges; other characteristics as follows: (Reference Product: Armstrong Prelude ML). Equal system: Chicago Metal suspension tee system.
 - a. Structural Classification: Heavy-duty system.
 - b. Face Finish: Painted white.

END OF SECTION 095113

SECTION 096519 - RESILIENT TILE FLOORING

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. Luxury Vinyl composition floor tile (LVT).
 - 2. Resilient wall base and accessories.
 - 3. Rubber Stair Treads.

1.3 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Maintenance Data: For resilient floor tile to include in the maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer to perform work of this Section who has specialized in installing resilient products similar to those required for this Project and with a record of successful in-service performance.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to Project site in manufacturer's original, unopened cartons and containers, each bearing names of product and manufacturer, Project identification, and shipping and handling instructions.
- B. Store products in dry spaces protected from the weather, with ambient temperatures maintained between 50 and 90 deg F (10 and 32 deg C).
- C. Store tiles on flat surfaces.
- D. Move products into spaces where they will be installed at least 48 hours before installation, unless longer conditioning period is recommended in writing by manufacturer.

1.6 PROJECT CONDITIONS

- A. Maintain a temperature of not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C) in spaces to receive products for at least 48 hours before installation, during installation, and for at least 48 hours after installation, unless manufacturer's written recommendations specify longer time periods. After postinstallation period, maintain a temperature of not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

- B. Do not install products until they are at the same temperature as the space where they are to be installed.
- C. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by manufacturer.
- D. Install tiles and accessories after other finishing operations, including painting, have been completed.
- E. Do not install flooring over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive, as determined by flooring manufacturer's recommended bond and moisture test.

1.7 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. Furnish one box for each color selected.
 - 2. Deliver extra materials to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated in the Resilient Tile Flooring Schedule at the end of Part 3.

2.2 RESILIENT ACCESSORIES

- A. Rubber Wall Base: Products complying with FS SS-W-40, Type I and with requirements specified in the Resilient Tile Flooring Schedule.
- B. Rubber Stair Treads: Products complying with FS RR-T-650, Composition A.
- C. Rubber Accessory Moldings: Products complying with requirements specified in the Resilient Tile Flooring Schedule.

2.3 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by flooring manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.
- C. Metal Edge Strips: Extruded Aluminum with mill finish of width shown, or height required to protect exposed edges of tiles, and in maximum lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where installation of resilient products will occur, with Installer present, for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified.
- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
 - 1. 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 flooring manufacturer.
 - 2. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving resilient flooring.
- C. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with resilient product manufacturer's written installation instructions for preparing substrates indicated to receive resilient products.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
 - 1. All existing floors where the covering has been removed shall be flash patched prior to the installation of the new resilient tile.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- D. Broom and vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 TILE INSTALLATION

- A. General: Comply with tile manufacturer's written installation instructions.
- B. Lay out 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 of a tile at perimeter.
 - 1. Lay tiles square with room axis, unless otherwise indicated.
- C. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Cut tiles neatly around all fixtures. Discard broken, cracked, chipped, or deformed tiles.
 - 1. Lay tiles with grain running in one direction.

2. Lay tiles in pattern of colors and sizes indicated on Drawings.
- D. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures, including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.
 - E. Extend tiles into toe spaces, door reveals, closets, and similar openings.
 - F. 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 chalk or other nonpermanent, nonstaining marking device.
 - G. Install tiles on covers for telephone and electrical ducts, and similar items in finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on covers. Tightly adhere edges to perimeter of floor around covers and to covers.
 - H. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to comply with tile manufacturer's written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.
 1. Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
 - I. Hand roll tiles according to tile manufacturer's written instructions.

3.4 RESILIENT ACCESSORY INSTALLATION

- A. General: Install resilient accessories according to manufacturer's written installation instructions.
- B. Apply resilient wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
 1. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
 2. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
 3. Do not stretch base during installation.
 4. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
 5. Form outside corners on job from straight pieces of maximum lengths possible, without whitening at bends. Shave back of base at points where bends occur and remove strips perpendicular to length of base that are only deep enough to produce a snug fit without removing more than half the wall base thickness.
 6. Form inside corners on job, from straight pieces of maximum lengths possible, by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.
- C. Place resilient accessories so they are butted to adjacent materials and bond to substrates with adhesive. Install reducer strips at edges of flooring that would otherwise be exposed.

3.5 CLEANING AND PROTECTING

- A. Perform the following operations immediately after installing resilient products:

1. Remove adhesive and other surface blemishes using cleaner recommended by resilient product manufacturers.
 2. Sweep or vacuum floor thoroughly.
 3. Do not wash floor until after time period recommended by flooring manufacturer.
 4. Damp-mop floor to remove marks and soil.
- B. Protect flooring against mars, marks, indentations, and other 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 flooring manufacturer.
1. Apply protective floor polish to floor surfaces that are free from soil, visible adhesive, and surface blemishes, if recommended in writing by manufacturer.
 - a. Use commercially available product acceptable to flooring manufacturer.
 - b. Coordinate selection of floor polish with Owner's maintenance service.
 2. Cover products installed on floor surfaces with undyed, untreated building paper until inspection for Substantial Completion.
 3. Do not move heavy and sharp objects directly over floor surfaces. Place plywood or hardboard panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.
- C. Clean floor surfaces not more than 4 days before dates scheduled for inspections intended to establish date of Substantial Completion in each area of Project. Clean products according to manufacturer's written recommendations.
1. Before cleaning, strip protective floor polish that was applied after completing installation only if required to restore polish finish and if recommended by flooring manufacturer.
 2. After cleaning, reapply polish to floor surfaces to restore protective floor finish according to flooring manufacturer's written recommendations. Coordinate with Owner's maintenance program.

3.6 RESILIENT TILE FLOORING SCHEDULE

- A. Luxury Vinyl Tile (LVT): Where this designation is indicated, provide luxury vinyl composition floor tile complying with the following:
1. Products: As follows:
 - a. Reference Product: Tarkett True to Form Commercial 32 mil LVT (Wood / Stone) with Tectonic Protection
 2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns produced for tile complying with requirements indicated.
 3. Wearing Surface: 32 mil
 4. Thickness: 0.12" (3.0 mm)
 5. Size: 6" x 48"
- B. Rubber Wall Base RWB: Where this designation is indicated, provide rubber wall base complying with the following:
1. Products: As follows:
 - a. Reference Product: Type TS extruded rubber cove base by Roppe Corp.

2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns produced for rubber wall base complying with requirements indicated.
3. Style: [Cove with top-set toe.]
4. Minimum Thickness: 1/8 inch (3.2 mm).
5. Height: 4 inches (101.6 mm). 6 inches (152.4 mm where indicated)
6. Lengths: Cut lengths 48 inches (1219.2 mm) long
7. Outside Corners: Job formed.
8. Inside Corners: Job formed.
9. Surface: Smooth.

C. Rubber Stair Treads: FS RR-T-650.

1. Referenced Product: Raised Design Treads by Roppe Corporation; #40 Heavy-Duty Abrasive Strip Square Nose Tread.
2. Material: Rubber, Composition A.
3. Surface Design: Type 2 design – Raised Diamond Pattern.
4. Nosing Style: Square.
5. Nosing Height: 1-1/2 inches (38 mm).
6. Thickness: 3/16" tapering to 1/8".
7. Size: Lengths and depths to fit each stair tread in one piece.

END OF SECTION 096519

SECTION 098439 - ACOUSTICAL CEILING CLOUDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Cloud Suspension System
2. Acoustical Panels

B. Related Sections:

1. Section 095113 – Acoustical Panel Ceiling
2. Section 092900 – Gypsum Board Assemblies

C. Alternates

1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products which have not been approved by Addenda, the specified products shall be provided without additional compensation.
2. Submittals which do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Panel design, size, composition, color, and finish; suspension system component profiles and sizes; compliance with the referenced standards.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
2. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
3. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
4. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
5. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
6. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.

7. ASTM E 1264 Classification for Acoustical Ceiling Products.
8. ASTM E 1477 Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
9. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

B. National Fire Protection Agency (NFPA):

1. NFPA 286: Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each type of cloud system required.
- B. Installation Instructions: Submit manufacturer's installation instructions.
- C. Shop Drawings: Layout and details of clouds. Show locations of items which are to be coordinated with clouds.
- D. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide cloud suspension system and panels by a single manufacturer.
- B. Fire Performance Characteristics: The fire performance of Infusions Lay-In Panels meets the requirements for light transmitting plastics in Chapter 26 of the International Building Code. Infusions panels have been tested according to NFPA 286 and are equivalent to Class A Interior Finish as defined in Chapter 8 of the International Building Code.
- C. Coordination of Work: Coordinate cloud work with installers of related work including, but not limited to suspended ceilings, building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.
- D. Ceiling clouds, as with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern, or possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cloud system and panels to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing clouds, permit them to reach room temperature and a stabilized moisture content.
- C. Handle components carefully to avoid damaging units in any way.

1.7 PROJECT CONDITIONS

A. Space Enclosure:

Building areas to receive clouds shall be free of construction dust and debris. Products can be installed up to 100°F (38°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the canopy.

1.8 WARRANTY

A. Formations: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to:

1. Panels: Sagging and warping as a result of defects in materials or factory workmanship.
2. Grid System: Rust and manufacturer's defects
3. Acoustical Panels with BioBlock Plus or designated as Inherently resistive to the growth of micro-organisms installed with Armstrong suspension systems: Visible sag and will resist the growth of mold/mildew and bacterial growth.

B. Warranty Period::

1. Formations with panels designated as HumiGuard Plus: Ten (10) years from date of substantial completion.
2. Formations with metal panels, fabric panels and Infusions panels – one year (1) year from date of substantial completion.

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Cloud Suspension System:

1. Armstrong World Industries, Inc.

B. Acoustical Panels:

1. Armstrong World Industries, Inc.

2.2 ACOUSTICAL PANEL UNITS

A. Application Consideration: Extra panels may be required, Item # _____.

B. Formations Squares Acoustical Cloud Panel Options:

1. Surface Texture: Smooth for all but fabric faced.
2. Composition: (Mineral fiber) (Fiberglass) (Galvanized Steel) (Polycarbonate)
3. Surface finish: (DuraBrite acoustically transparent membrane) (Powder-coated finish) (Fabric) (Translucent)
4. Color: To be chosen from manufacturer's list of available colors.

5. Cloud Size: 6 feet x 6 feet to 14 feet x 14 feet (available in 2 foot increments)
6. Panel Size: Full size panels, 2 feet x 2 feet
7. Thickness: (Varies per panel selection)
8. Edge Detail: Tegular edge for interface with Prelude 15/16" Exposed Tee Grid System
9. Flame Spread: (Class A per ASTM E 84) (Class A per NFPA 286)
10. Light Reflectance (ASTM E 1477): White, (DuraBrite Finish 0.90) (Unperforated metal 0.77) Perforated metal 0.61)
11. Acoustical Absorption (ASTM C423), Sabins/square foot _____ (Varies per panel selection)
12. Acceptable Product: Formations Squares, Panel Item # _____, as manufactured by Armstrong World Industries.

2.3 CLOUD SUSPENSION SYSTEM

A. Formations Squares Acoustical Clouds Suspension Kit:

1. All main beams and cross tees shall be commercial quality hot-dipped galvanized steel as per ASTM A 653. Main beams and cross tees are double-web steel construction with type 15/16 inch exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
 - a. Structural Classification: ASTM C 635, Heavy Duty.
 - b. Main Beam, #7301
 - c. Cross Tee, 2 foot, XL8320
 - d. Color: To be chosen from manufacturer's list of available colors.
- 2, Axiom – Formations Options:
 - a. Axiom Vector: 4" height, extruded aluminum alloy 6063 trim channel with pre-mitered corners.
 - b. Axiom Vector Color: To be chosen from manufacturer's list of available colors.
 - c. Knife Edge: Six inch wide horizontal face, extruded aluminum alloy 6063 trim channel
 - d. Color: White
3. Installation Hardware:
 - a. Axiom Splices and connection clips
 - b. StrongBack – Hot dipped galvanized cold rolled steel
 - c. Cable Hardware – 2-1/16 inch x 1 inch x 3/8 inch quick loop wire rope clamp for 1/16 inch diameter cable
 - d. Cable – 7x7 aircraft cable, 1/16 inch x 120 inch galvanized with loop at one end.
4. Acceptable Product: Formations Squares Suspension Kit, Item # _____, as manufactured by Armstrong World Industries.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Measure each ceiling area and establish layout of clouds. Comply with reflected ceiling plans. Coordinate panel layout with mechanical, electrical and sprinkler fixtures.

3.2 INSTALLATION

- A. Install clouds in accordance with the manufacturer's instructions and in compliance with the authorities having jurisdiction.

3.3 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. Clean exposed surfaces of canopies per manufacturer's instructions.

END OF SECTION 098439

SECTION 099000 - PAINTING

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 surface preparation and field painting of the following: Adjust list below to suit the Project.

- 1. Exposed interior items and surfaces.
- 2. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

- B. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.

- 1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.

- C. Related Sections include the following:

- 1. Division 9 Section "Gypsum Board Assemblies" for surface preparation for gypsum board.

1.3 SUBMITTALS

- A. Product Data: For each paint system specified. Include block fillers and primers.

- 1. Submit manufacturer's literature including descriptive and performance data.
- 2. Submit application instructions and methods, including mixing, surface preparation, compatible primers and topcoats, recommended wet and dry film thickness.
- 3. Submit material safety data sheets (MSDS) for each product.
- 4. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

- B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated, if not indicated on Color Schedule.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 PROJECT CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F (10 and 32 deg C).
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 deg F (7.2 and 35 deg C).
- C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.7 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.
 - 1. Quantity: Furnish the Owner with 1 qt. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products by Sherwin-Williams, Inc. are the basis of design and set the standard of quality required.

- B. Substitutions: Equivalent products of other manufacturers may be submitted for approval providing the products submitted are of the same types, have label analyses similar to those specified, meet or exceed the performance criteria, and are suitable for the use intended.
- C. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
- C. Colors: Match colors indicated by reference to manufacturer's color designations.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.
 - 1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 - 2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - 1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.
 - 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

2. Floors to receive the heavy-duty epoxy floor coating shall be thoroughly cleaned and prepped in accordance with the manufacturer's specifications. Particular attention shall be taken on the existing concrete slab where old flooring has been removed, clean off all old adhesive and flash patch as necessary. The floor surface must be acceptable to the manufacturer and installer prior to start of application, any problems must be brought to the attention of the general contractor and the Architect, and corrected before work can start
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
- D. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.
- E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 2. Omit primer on metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- E. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.
- F. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- G. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.6 INTERIOR PAINT SCHEDULE

- A. Gypsum Wall Board:
1. Epoxy Paint:
 - a. Primer: 1coat ProMar 200 Zero VOC Interior Latex Primer.
 - b. 2nd & 3rd coat: 2 coats Pro Industrial Waterbased Catalyzed Epoxy Egshel.

END OF SECTION 099000

SECTION 102800 - TOILET ACCESSORIES

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. Toilet accessories.
 - 2. Underlavatory guards.

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions and thicknesses, dimensions, profiles, fastening and mounting methods, specified options, and finishes for each type of accessory specified.
- B. Samples: For each accessory item to verify design, operation, and finish requirements.
 - 1. Approved full-size Samples will be returned and may be used in the Work.
- C. Setting Drawings: For cutouts required in other work; include templates, substrate preparation instructions, and directions for preparing cutouts and installing anchoring devices.
- D. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required. Use designations indicated in the Toilet and Bath Accessory Schedule and room designations indicated on Drawings in product schedule.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise approved by Architect.
- B. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the Toilet and Bath Accessory Schedule.
 - 1. Products of other manufacturers with equal characteristics, as judged solely by Architect, may be provided.

1.4 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by disabled persons, 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.

1.5 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Manufacturer's Mirror Warranty: Written warranty, executed by mirror manufacturer agreeing to replace mirrors that develop visible silver spoilage defects within minimum warranty period indicated.
 - 1. Minimum Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide accessories by one of the following:
 - 1. Toilet Accessories:
 - a. American Specialties, Inc.
 - b. Bobrick Washroom Equipment, Inc.
 - c. Bradley Corporation.
 - 2. Underlavatory Guards:
 - a. Brocar Products, Inc.
 - b. Truebro, Inc.
- B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated in the Toilet and Bath Accessory Schedule at the end of Part 3.

2.2 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.
- B. Brass: ASTM B 19, leaded and unleaded flat products; ASTM B 16 (ASTM B 16M), rods, shapes, forgings, and flat products with finished edges; ASTM B 30, castings.
- C. Sheet Steel: ASTM A 366/A 366M, cold rolled, commercial quality, 0.0359-inch (0.9-mm) minimum nominal thickness; surface preparation and metal pretreatment as required for applied finish.

- D. Galvanized Steel Sheet: ASTM A 653/A 653M, G60 (Z180).
- E. Chromium Plating: ASTM B 456, Service Condition Number SC 2 (moderate service), nickel plus chromium electrodeposited on base metal.
- F. Baked-Enamel Finish: Factory-applied, gloss-white, baked-acrylic-enamel coating.
- G. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.
- H. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.
- I. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.3 FABRICATION

- A. General: One, maximum 1-1/2-inch- (38-mm-) diameter, unobtrusive stamped manufacturer logo, as approved by Architect, is permitted on exposed face of accessories. On interior surface not exposed to view or back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.
- B. General: Names or labels are not permitted on exposed faces of accessories. On interior surface not exposed to view or on back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.
- C. Surface-Mounted Toilet Accessories: Unless otherwise indicated, fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with continuous stainless-steel hinge. Provide concealed anchorage where possible.
- D. Recessed Toilet Accessories: Unless otherwise indicated, fabricate units of all-welded construction, without mitered corners. Hang doors and access panels with full-length, stainless-steel hinge. Provide anchorage that is fully concealed when unit is closed.
- E. Framed Glass-Mirror Units: Fabricate frames for glass-mirror units to accommodate glass edge protection material. Provide mirror backing and support system that permits rigid, tamper-resistant glass installation and prevents moisture accumulation.
 - 1. Provide galvanized steel backing sheet, not less than 0.034 inch (0.85 mm) and full mirror size, with nonabsorptive filler material. Corrugated cardboard is not an acceptable filler material.
- F. Mirror-Unit Hangers: Provide mirror-unit mounting system that permits rigid, tamper- and theft-resistant installation, as follows:
 - 1. One-piece, galvanized steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
 - 2. Heavy-duty wall brackets of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.
- G. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 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. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.
- C. Install grab bars to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.3 TOILET ACCESSORY SCHEDULE (See Architectural drawings for reference) (Product design based on Bobrick Classic Series Products.

- A. Towel Dispenser/Waste Receptacles: Provide recessed paper towel and waste receptacle as shown on the drawings. Bobrick B-3942
- B. Grab Bar: Provide stainless-steel grab bars complying with the following:
 - 1. Products: Provide the following:
 - 2. Stainless-Steel
 - a. Reference Product: B-6806 Series by Bobrick
 - b. Sizes as indicated on the plans.
 - 3. Mounting: Concealed with manufacturer's standard flanges and anchors.
 - 4. Gripping Surfaces: Smooth, satin finish.
 - 5. Outside Diameter: 1-1/2 inches (38 mm) for heavy-duty applications.
- C. Mirror Unit: Provide full length mirrors with metal frames in 1st floor toilet rooms.
-Provide 18" x 36" mirror with metal frame in the toilet room in the basement.
- D. Underlavatory Guard: Provide underlavatory guard complying with the following:
 - 1. Products: Provide the following for the public toilet rooms and the handicapped accessible units:
 - 2. Insulating Piping Coverings: White, antimicrobial, molded-vinyl covering for supply and drain piping assemblies intended for use at accessible lavatories. Provide components as required for

applications indicated with flip tops at valves that allow service access without removing coverings.

a. Reference Product: Model 103 Lav-Guard by TrueBro Inc.

3. Coordinate with plumbing contractor.

E. Toilet Tissue Dispenser:

1. Bobrick, Model B-2888
2. Surface mounted in each bathroom.

F. Soap Dispenser:

1. Bobrick, Model number B-2111
2. Wall mounted dispenser
3. Stainless steel finish

G. Sanitary Napkin Dispenser:

1. Bobrick, Model number B-254

H. Robe & Coat Hook:

1. Bobrick, Model number B-76717

END OF SECTION 102800

SECTION 26 55 61 – THEATRICAL SYSTEMS

PART 1 - GENERAL

1.1 INTENT

- A. The specification section covers the fabrication, furnishing, delivery, installation, coordination, and operation of the Theatrical Systems and related equipment.
- B. The project drawings are to be considered part of these specifications. Drawings are diagrammatic, unless detailed dimensioned drawings are included. Drawings show approximate locations of equipment. Exact locations are subject to the approval of the Architect/Owner's Representative.
- C. Typical details are shown for the installation of various devices. The details do not apply to all situations.

1.2 DEFINITIONS:

- A. For this project, the following entities are referenced:

- 1. Owner: Gloucester Township
- 2. Consultant: Hewshott
- 3. Contractor: Prime Contractor
- 4. Theatrical Contractor (TC): Theatrical Subcontractor to the Prime Contractor
- 5. Electrical Contractor (EC): Electrical Subcontractor to the Prime Contractor

- B. For this project, the following terms are defined as:

- 1. Furnish, shall mean that the appropriate Contractor or TC is responsible for acquisition and delivery of equipment and the installation shall be by others.
- 2. Install, shall mean that the appropriate Contractor or TC shall install items or equipment furnished by others.
- 3. Provide, shall mean that the appropriate Contractor or TC is responsible for furnishing and installing said item or equipment.
- 4. By Others, shall mean work that is not part of the trade's scope of work.
- 5. By Owner, shall mean work that will be performed by the Owner or Owner's agents at Owner's cost.
- 6. Not in contract (N.I.C.), shall mean work that is not part of this contract.
- 7. As Required, shall mean as required by regulatory bodies, by referenced standard, by existing conditions, by generally accepted construction practice, or by the contract documents.

8. Equal, Accepted Equal, Approved Equal, shall mean as accepted in writing, by Architect/Consultant as being of equivalent quality, utility, function, efficiency, and appearance.
9. Low-voltage, Cabling, Wiring, shall mean low-voltage power or signal cabling and/or wiring to include single or multiple conductor, twisted pair, coaxial, fiber optic, category, power over Ethernet, and the like.

1.3 RELATED SECTIONS AND DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions of Division 1, apply to the work of this section.
- B. The Contractor and TC shall examine the full set of construction drawings and specifications and ascertain all aspects of the scope of work described within this specification.

1.4 SCOPE

- A. Provide all materials, items, engineering, labor, and work necessary for complete, safe, fully functional professionally installed system as specified, including:
 1. Tools, scaffolding, equipment, labor, and supervision, even though they may not be specifically enumerated.
 2. Verification of dimensions and conditions at the job site.
 3. Coordination of the work with the work of any other trade Contractors who also may be working in the project space in a manner which will avoid conflict or interference and which will ensure proper sequence and avoid delay in the completion of any part or the entire Project.
 4. Notification to the Architect/Engineer of any conditions, measurements, quantities, or other data, as required for proper execution, fit and completion of all work, and for safe and proper operating clearances.
 5. Shipment of equipment to job site and the secured storage of all non-fixed equipment.
 6. Installation and completion, in accordance with these specifications, related drawings, the equipment manufacturer's recommendations, established trade criteria, and all applicable code requirements.
 7. Inspection, demonstration, and necessary adjustment of the completed installation by the Contractor's and TC's installation personnel.
 8. Preparation and submission of complete submittal drawings, as-built drawings, and operational and maintenance manuals.
- B. Work Included (Theatrical Contractor): The work of this section shall include, but not be limited to the following:
 1. See Responsibility Matrix on TS- drawings.
 2. Provide rigging system including pipe grid, curtain tracks, curtains.
 3. Furnish specialty back boxes, pipe grid mounts, and power receptacles.

4. Provide custom I/O plates.
 5. Provide theatrical lighting fixtures and controls.
 6. Provide loudspeakers, pendant subwoofers, amplification, processing, and controls.
 7. Provide audio mixer, stage box, assistive listening system, and network.
 8. Provide custom rigging safety signage and assistive listening system signage.
 9. Provide bright colored vinyl batten caps on all pipe battens and rotodrapeer pipes. Fill in lineset number and batten capacity.
 10. Provide comprehensive interactive “magic sheet” in the lighting console program.
 11. Hang and focus all lighting fixtures, existing and new, under direction of the Owner/Consultant.
 12. Provide all wiring necessary for a complete system.
 13. Install new lighting control keypads. Provide programming.
 14. Provide all rack mount hardware, screws, blanks, cable management, rack rails, connectors, and interconnecting wiring for a complete professional system.
 15. Provide Owner training, manuals, and as-built drawings as described herein.
 16. Provide new equipment as listed in bill of materials and/or shown on drawings.
 17. Provide all compiled & un-compiled software and software files for electronic systems.
 18. This Project requires all incidental or related items necessary to complete the Work as described herein, even though they may not be specifically enumerated. The extent of Work of this section is indicated by the drawings, sketches, specifications and schedules. Contractor shall provide all fixtures, devices, tools, materials, accessories, labor, and other items to deliver a complete job in all aspects.
- C. Work Included (Electrical Contractor): The work of this section shall include, but not be limited to the following:
1. See Responsibility Matrix on TS- drawings.
 2. Demolition of unused electrical boxes, conduit, and receptacles.
 3. Temporary lighting until installed building lighting is complete and programmed.
 4. Install specialty back boxes and power receptacles.
 5. Provide all power including branch circuit wiring. See TS-dwgs and E-dwgs.
 6. Connection to new fire alarm interface.

7. Provide all conduit, wiring, breakers, back boxes and junction boxes (not specifically provided by TC), and terminations providing line voltage to all dimmer racks, receptacles, disconnects, connector strips, and power distribution equipment.
 8. Provide all low-voltage pathways required. See “Low Voltage Conduit Requirements” on Device Schedule, drawing TS6.1. See TS0.0 for additional requirements.
- D. Related Work: Related work, which is not included in this section:
1. All specifications and drawings in this contract are considered related work including Lighting, Audio/Visual, Telecommunications, Structural, and Electrical.
- 1.5 ERRORS AND OMISSIONS:
- A. Any errors, omissions, or ambiguities found in these documents does not relieve the Contractor or TC of the responsibility of providing all items necessary for a complete, safe, fully functional system. The TC shall provide complete working systems within the intent and meaning of the contract documents. All items of labor, material, and equipment not specifically described herein or detailed on the drawings but incidental to or necessary for the completion of the work shall be considered as included without extra cost. Any errors, omissions, or ambiguities shall be brought to the attention of the Owner and Consultant for clarification.
 - B. Where discrepancies occur between drawings, specification, and/or bill of materials, the bidder shall seek clarification, otherwise, the greater quantity shall prevail.
- 1.6 GENERAL REQUIREMENTS
- A. Field Conditions: This project consists of work in an existing venue. All bidders are strongly encouraged to survey and inform themselves of the areas where the work is to be performed prior to bid. No additional compensation or time extension will be given for conditions of which bidder could have been fully aware prior to bid.
 - B. Safety: The system shall conform to all applicable code requirements and shall be provided in conformance to the highest industry standards of operation and practices. All materials, arrangements, and procedures shall comply with applicable code requirements, allowing the end user to arrange and operate a safe assembly and working environment for audience and user’s personnel.
- 1.7 CONTRACTOR QUALIFICATIONS
- A. All equipment shall be the responsibility of a single TC who shall own and operate a full-time, staffed shop for the fabrication, assembly, and installation of theatrical equipment. This TC shall assume complete responsibility for the fabrication, transportation, and installation of the work in this section and shall hold the Owner, Architect, and all their employees and Consultants harmless for any costs for errors or omissions associated with the work of this section and any action arising there from.
 - B. The TC shall have at least ten (10) years’ experience in the installation of similar equipment and systems for professional and educational theaters. The TC shall provide references of at least (3) installations of comparable scope performed by the contractor, including location, description, name, address, and telephone numbers of the architects, consultants, and owners with contact persons for each. Comparable scope requires projects of including similar system topology and complexity of audio, video, lighting, & rigging systems.

- C. The TC shall be located within one hundred (100) mile radius from the project location. Furthermore, the TC must have a staffed office/warehouse to fully support the project.
- D. The TC and all persons performing theatrical rigging system or related work shall be under the direct supervision of an ETCP Certified Theater Rigger (Entertainment Technician Certification Program) in good standing for the duration of the project.
- E. The TC and all persons performing theatrical lighting system or related work shall be under the direct supervision of an ETCP Certified Entertainment Electrician (Entertainment Technician Certification Program) in good standing for the duration of the project.
- F. The TC and all persons performing audio/visual system or related work shall be under the direct supervision of a CTS-I or CTS-D (Certified Technology Specialist) in good standing for the duration of the project.
- G. The TC and all persons performing programming of equipment or related work shall be under the direct supervision of a Certified Programmer from manufacturers of each type of equipment.
- H. The TC must have a SMAART, SysTune, or SIM analysis equipment and a trained authorized operator for this equipment for final set up.
- I. The TC is a dealer or authorized agent for the major equipment listed.

1.8 SUBMITTALS:

A. Shop Drawings:

1. Drawings of the audio, video, lighting, rigging, curtain, and control system shall be submitted to document the primary elements of the integrated theatrical system and to show all information necessary to fully explain the design features, appearance, function, fabrication and the integrated use of the system.
2. Drawings or screen shots of the proposed layouts of all graphical user interface (GUI) for all touch panels.
3. Detailed written narratives of the control system, integration and communication of equipment, typical operation, and control feedback methods for keeping the system synchronized.
4. Control system button/fader station labeling, color, functionality, indicator color, on status, off status, locked status, and feedback.
5. Riser/functional diagrams shall be provided to explain the power and control wiring, wire selection, wiring numbering, patch points, and termination requirements.
6. Proposed rack and desk layouts, panel layouts and locations, and labeling of panels.
7. Drawings of proposed mounting methods for all equipment, including rigging details, final locations with all focus information, section drawings with mounting heights and weights for all equipment.
8. Structural attachment details and all rigging shall be reviewed, signed and sealed, and stamped by a New Jersey State licensed Professional Engineer. This should include attachment details, rigging details, suspension details, mounting details, pipe splice details, etc.

9. Drawings shall be approved before any fabrication or installation may begin.
 10. The drawings shall be no less detailed than as provided in the contract documents.
 11. Reproductions of contract documents are not acceptable as shop drawings and will be rejected. The TC must submit his own original drawings. Architectural backgrounds will be provided.
 12. System plans, elevations, and sections shall be submitted on minimum D-size (24" x 36") sheets, and shall be drawn in no less than 1/4" = 1'0" scale.
 13. Submit in quantities as required by the front end documents.
- B. Product Data Sheets: In addition to drawings, the TC shall submit Manufacturer Product Data Sheets for all standard equipment.
1. All data sheets shall contain full information on dimensions, construction, applications, load ratings, etc.
 2. Data sheets shall be properly identified as to their intended use. Any options or variations shall be clearly noted.
 3. Submit in quantities as required by the front end documents.
- C. Other Documents
1. Submit TC Qualifications and proof of certifications as listed above in Section 1.7.
 2. Submit color swatches and options to owner for selection.
 3. Submit lighting console patch sheet (channel schedule), magic sheet screen shot, and show file.
 4. Submit proposed IP addressing scheme with network settings.
- D. Approvals: All submissions must be approved per the requirements of the project's general conditions prior to the beginning of any fabrication, installation, or erection. Such approval does not relieve the Contractor nor TC of the responsibility of providing equipment in accordance with the specifications or of providing full operational and safe systems.

1.9 WARRANTY & INSPECTIONS

- A. Special Warranty: The TC shall provide a two (2) year written guarantee against defects in materials and workmanship. Within this period, the TC shall provide any required replacement within 30 days of written notification by the Owner, except for safety related items that shall be corrected within 24 hours of notification. Subsequent to the expiration of the guarantee period, the TC agrees to furnish repair and maintenance service, at the Owner's expense, within 30 days of request for such service.
- B. Post Installation Inspection: After installation is complete, the TC shall engage a qualified and insured (w/ \$1MM professional liability policy min.) third party to fully inspect the rigging portions of the Theatrical System and provide a detailed written report with pictures. Inspection shall comply with ANSI E1.47.

1.10 SYSTEM DESCRIPTIONS

- A. **Mixing Console:** The primary mixing console will be located on the movable control desk countertop. The mixing console will be connected to a digital stage box in the equipment racks located in the equipment closet which is upstage off the stage. The digital stage box will have microphone/line level inputs extended to input and output (I/O) plates located at the two corners of downstage, stage ceiling, and center front edge of the stage. Also connected to the stage box will be the wireless microphone receivers and audio from video sources.
- B. **Wireless Microphones:** Wireless microphones are connected to the network via RJ45 (Dante). This allows for the microphones to be visible at the console for patching.
- C. **DSP & Modes:** Tuning, equalization, time alignment of the sound system shall be programmed in the DSP. The Digital Signal Processor will be connected to the digital stage box as well as two of the wireless microphone receivers, wired microphone connections around the stage, and audio from video sources. The DSP will be programmed to have two modes for the AV system: Simple Mode & Console Mode.
 - 1. Simple Mode will provide all controls of audio volume, video sources, etc. on the Touch Screen Controllers for events where only a few audio sources are needed, such as Assemblies, Meetings, etc...
 - 2. Console Mode will still use the Touch Screen Controller for video source control but utilize the Mixing Console for the audio sources. Console mode is intended to be used for larger events where a multitude of audio inputs will be used or there will be many changes happening during the event, such as Plays, Musicals, Concerts, etc.
- D. **Loudspeakers:** The sound system will operate as an distributed mono via 2-way powered loudspeakers on the pipe grid with pendant subwoofers for low-frequency response. Portable powered loudspeakers and subwoofers are to be used for movies and stage use by connecting to line outputs on TIP plates. There are multiple line outputs for use with powered monitor loudspeakers. All line outputs are patched in the equipment rack audio patch panel to the stage box.
- E. **Audio Recording:** The Denon DN-900R, which is in the control booth rack, has the option to record a simple stereo recording of the current show. The memory of the recording can be recorded via USB drive or SD Cards. It is connected to the audio mixer via Dante.
- F. **Fire Alarm:** When activated, it must shunt (mute) the audio and video, raise the projection screen, and turn on the house lights. When the fire alarm is de-activated, house lights shall restore to previous levels. Crestron CP4N processor to send messages to CueServer about fire alarm state.
- G. **Hearing Assistance:** A WiFi assistive listening system is for those requiring hearing assistance. Hearing assistance is available in all system modes. Patrons can access an open SSID for hearing assistance with their personal devices via Wi-Fi. Receivers are also available.
- H. **Projection:** There will be a HD video projector at the back of the seating area to project onto a motorized projection screen on stage. HDMI inputs are located on stage right and pit. There is a multi-format memory/disc player in the AV Rack in the closet on stage. Source selection for the video system will be done via the Touch Panels.
- I. **Streaming/Video Recording:** The camera is located overhead in the control booth and facing the stage. It is connected to and powered by an RJ45 cable that goes to the main network managed switch. Users should be able to connect to the camera with a computer via the network ports that are throughout the house and stage. There you can choose the streaming service you would like to use (YouTube, Facebook,

etc..) via using the IP Address made when camera was installed. Go to Chrome web browser and enter the IP address of the camera. It will take you to where you will be able to make changes to the camera and send out your stream. It is also connected to the Pearl Nano and can be easily connected, and the stream can be recorded and controlled via the Pearl Nano.

J. Network: Many of the components require network connections for the system to operate. Static IP addresses should be used for all devices. The network is physically a separate network and not connected to any building networks or internet. Switches & Access Points will be configured for all devices requirements to coexist on the Network with use of VLANs to separate types of traffic. Wi-Fi access should be DHCP, password protected, and is intended for wireless control of the Mixing Console, Lighting Controller, and other remote apps for the system. A separate SSID to be available for assistive listening on personal devices.

1. TC to include network configuration and programming to and from lighting controls for UDP control and integration.

K. System Presets & Programming: Program all software and adjust settings as required by the specifications.

1. All Touch Panels will default to a splash screen with school logo on startup. Upon input press, and selection of which mode is needed for the event (Simple/Console) a password page is required.

2. The password must be user changeable via a utility page & there must be a back-door password which cannot be changed.

- a. Simple: access to all of the simple mode selections but cannot go into console mode or change passwords.

- b. Full: Access to everything except password changes.

- c. Admin: Access to everything.

3. Power sequencing of the system will be activated once a mode is selected, and the correct password is entered. System Mode will be changeable back and forth via a utility page without powering down the system.

4. System Off will be selectable from every page and will include a safety pop-up of System Shutdown “Yes” or “No” to avoid accidental shutdowns.

5. Startup and shutdown timers or “hour glasses” will be used to inform the user of the remaining time for the sequence until the system is ready to be used.

6. When the Emergency Mute is triggered by the fire alarm, all system outputs will be muted, and a pop-up will appear on the Touch Screen Controllers Indicating “Emergency Mute has been Triggered. All System Outputs have been Muted.”

7. Simple Mode will minimally have the following controls on the Touch Screen Controllers:

- a. Volume, Mute, EQ presets for Microphone Inputs (Lav, Handheld, Ear, Podium, etc.)

- b. Volume & Mute for Program Audio (Simple Mic A-C)

- c. Monitor 1 Volume, Mute, and individual mutes for sources sent to Monitor 1 Output

- d. Video Source Selection with preview window & ability to make it full screen on the touch panel.

- e. Projector Power
 - f. Screen Controls
 - g. Blu-ray Transport Controls
 - h. Lighting
8. Console Mode will minimally have the following controls:
- a. Subwoofer source selection
 - b. Video Source Selection with preview window & ability to make it full screen on the touch panel.
 - c. Projector Power
 - d. Screen Controls
 - e. Blu-ray Transport Controls
 - f. Lighting
- L. Lighting page to include (8) presets, house light intensity controls, virtual button station controls, and button station lock-out. The (8) presets shall be recordable (snapshot lighting console) and able to be labeled directly from the touch panel. There shall also be a button for the lighting system power on/off. All systems shall work together and provide feedback to each other such that the LED indicators show the correct preset, state, and/or level. Control integration shall be UDP over the network. Indicators shall be as follows: blue = off, green = on, red = locked out.
- A. The following UI screen shots were made with Crestron VTPRO and will be provided to the awarded contract to apply their programming and scripting.
- 1. Built for 10" (1070 series) touch panels with 1920x1200 resolution.
 - 2. Theme: CT Neo.
 - 3. Font on labels: Crestron Sans Pro, with all caps and bold.
 - 4. Header font: 32.
 - 5. Buttons/Background Corner radii: 10.
 - 6. Tab buttons: As Needed x 100 (WxH), font size 48. With the background from their base background package named 11_1920x1200.
 - 7. Create UI for Owner Furnished iPad, confirm exact model and resolution.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Quality Statement: While the equipment specifications contained herein may be based upon the standard equipment of particular approved manufacturers, the individual component specifications are provided solely to set a minimum level of quality. Under no circumstances will equipment of lesser quality be accepted for this project.

- B. Substitutions: May be permitted after contract award, but only with the written permission of the Architect/Consultant. The proposed substitutes must be equal or exceed the specified products in quality, performance, function, and apply to the system concept in the original manner.
1. TC substitution request shall include the item to be substituted, the unit price of each item, the advantages, and product data.
 2. If any of the specified equipment is no longer available, the TC may make recommendations to the Consultant.
- C. It is the responsibility of the Contractor and TC to ensure all equipment meets or exceeds specifications and will be reviewed by the Architect/Consultant.

2.2 STANDARDS

- A. Installation shall conform to the latest federal, state, and local regulations, codes and industry standards. Where conflicts exist, the most stringent code or regulation shall apply.

1. Standards Organizations include:
 - a. AES, ANSI, ASME, ASTM, ASTM E, AVIXA, BICSI, EIA, ESTA, IEC, IEEE, NEC, NEMA, NFPA, OSHA, SAE, SMPTE, TIA, UL, USITT

- B. In order to establish minimum standards of safety, the following factors shall be used:

1. Cables and fittings 10:1 Safety Factor
2. Cable bending ratio Sheave tread diameter is 30 times cable diameter
3. Maximum fleet angle 1.5 degrees
4. Steel 1/5 of yield
5. Bolts SAE J429 Grade 5 (ISO R898 Class 8.8)
6. Threaded Rod ASTM A449

- C. Components:

1. Fasteners shall have a minimum SAEJ429 Grade 5 or ISO R898 Class 8.8 or ASTM A449 rating. Fasteners shall be self-locking or secured by alternate means to prevent loosening including lock washers, metal wire strap, and/or thread locker.
2. If welding shall be required, it must be performed in accordance with current AWS standards.

2.3 RIGGING HARDWARE

- A. Lift Cables (Wire Rope):

1. All lift cables shall be 7 x 19 construction, galvanized aircraft cable, sized as required and with ultimate breaking strengths as follows:
 - a. 1/8" diameter 2,000 lbs
 - b. 3/16" diameter 4,200 lbs

- c. 1/4" diameter 7,000 lbs
- d. 5/16" diameter 9,800 lbs
- e. 3/8" diameter 14,400 lbs

- 2. Damaged or deformed cable shall not be used. All wire rope rigging shall be installed so as to prevent abrasion of the wire rope against any part of the building construction or other equipment.
- 3. Wire rope shall not contact any part of the building structure.
- 4. Lift lines shall be fabricated of continuous un-spliced lengths of material.
- 5. In applications where reverse bends are incorporated, the wire rope service lift shall be decreased as determined by a qualified person.

B. Cable fittings & Terminations

- 1. Swaged sleeve fittings shall be copper Nicopress. Swaged fittings shall be installed per the fitting manufacturer's instructions, using the appropriate tools, and checked with the appropriate Nicopress Go-No-Go gauge. Tape loose ends of wire rope after swage has been installed. No steel wire rope may be secured with threaded compression type fittings (Crosby Clamps), unless noted otherwise.
- 2. All wire rope eyes shall be formed over galvanized metal wire rope thimbles that are sized in accordance with the wire rope diameter.
- 3. All termination hardware shall be load rated and sized for the working load limit of the line it is used on. Shackles, wire rope clips, eyebolts, eye nuts, and turnbuckles shall be of forged steel construction only. Shackles and turnbuckles with screw-pin or threaded body shall be provided with a redundant fixing means after pin insertion. The fixing method shall be performed in accordance with the manufacturer's recommendations.
- 4. All hardware shall be installed and used in accordance with the manufacturer's recommendations.
- 5. All threaded hardware shall be treated with medium strength thread locker, Loc-Tite Blue 242.
- 6. All threaded hardware in critical permanent applications, use high strength thread locker, Loc-Tite Red 262.

C. Other

- 1. All suspended items must have a safety cable as a means of secondary support. In the case which an item is suspended by four or more points, additional safety cables are not required.

2.4 OTHER REQUIREMENTS

- A. All materials used in this project shall be new, unused, and of the latest design. Refurbished and obsolete materials are not permitted.

B. Fabrication:

1. The mechanical fabrication and workmanship shall incorporate best practices for good fit and finish. There shall be no burrs or sharp edges.
2. All moving parts shall have specified tolerances. Sheaves shall run plumb and true and shall not scrape housings.
3. All equipment shall be fabricated to facilitate future maintenance and replacement.

C. Finishes:

1. All finishes are to be black, unless specified otherwise. If the manufacturer offers a choice of color finish, samples/swatches are to be provided to the Owner.
2. All turnbuckles, clips, tracks, chains, and other items of incidental hardware shall be furnished plated or painted. Wire rope in a moving system shall not be painted.
3. All finishes shall be returned to their original finish and condition after any cutting, patching, or other work.
4. Exception 1: where hardware is visible to patrons/audience and/or the general public, it must be painted to blend in with surrounding aesthetics. This includes any rigging or conduit in the house.
5. Exception 2: conduit and boxes mounted to black stage walls, to be painted flat black.

D. Painting:

1. Surface preparation:
 - a. Steel: SSPC-SP2 Hand Tool Cleaning. Removal all loose mill scale, loose rust, loose paint, and other loose detrimental foreign matter by chipping, scraping, sanding, and wire brushing.
 - b. Aluminum & Galvanized Steel: SSPC-SP1 Solvent Cleaning. Removal of all visible oil, grease, soil, drawing and cutting compounds, and other soluble containments from surfaces with solvent.
2. Provide (1) coat of primer and (1) top coat. After installation, touch up any damaged finishes.
3. Primer:
 - a. Steel: Rustoleum High Performance V7400 System Primer (Gray)
 - b. Steel: Rustoleum High Performance V2100 System Enamel Spray Paint
 - 1) Gray: V2182838
 - c. Aluminum & Galvanized Steel: Rustoleum Professional Aluminum Primer
 - 1) Gray: 8781402
4. Topcoat:
 - a. Rustoleum High Performance V7400 System DTM Alkyd Enamel
 - 1) Flat Black: 245387
 - 2) Flat White: 245533
 - b. Rustoleum High Performance V2100 System Enamel Spray Paint

- 1) Flat Black: V2178838
- 2) Flat White: V2190838

5. Basis of design is Rustoleum, or equals by Sherwin Williams, Benjamin Moore, or PPG Industries.

2.5 EQUIPMENT SPECIFICATIONS

A. GENERAL

1. Equipment is specified on a basis of system design. It is specified by manufacturer and model number.
 - a. The current manufacturer's data sheet for each referenced piece of equipment in force at the date of issuance of this specification will be the basis for the specifications of the referenced equipment.
 - b. Any product accessories such as power supplies, rack mount kits, connectors, adapters, network cables, or other small items are the responsibility of TC whether or not they are called out in detail within these specifications.
 - c. All power panels (e.g. panel boards, breaker panels, dimming panels, transfer switches, disconnect switches, transformers):

- 1) Shall have engraved plastic nameplates affixed to panel cover with screws or rivets. Self-adhesive nameplates are not acceptable. White letters on black background containing panel name (1/2" text), description (1/4" text), voltage/phase/amperes (1/4" text), and fed from information (1/4" text). Reference E-drawings for one-line diagram. For example:

AVPP

A/V POWER PANEL

120/208V, 3P, 4W+G, 100A

FED FROM MDP CKT 2/4/6

- 2) Shall have printed panel schedules located in affixed document holders.
- d. The following products/manufacturers indicate the Basis of Design. Substitutions may be submitted after project award for review.

2.6 CURTAINS

A. Fabric

1. All fabric to be inherently flame retardant (IFR).
2. As stated on project drawings, see schedules.

B. Curtain Fabrication

1. Fabric shall be sewn with fullness and linings as stated on project drawings, see schedules.
2. Reinforce the top of each piece with 3" polypropylene webbing and double stitched at the top. Provide machine-set black/white (to match fabric color) anodized No. 3 grommets on 1 foot centers, unless noted otherwise.

3. Provide 36" long, cotton 1/8" (No. 4) tie lines. Tie lines shall be black/white (to match fabric color), except for the one at centerline, which shall be white/black (not to match fabric color). If a tie line is not on center, the two symmetrical about center shall be white/black (not to match fabric color).
4. Pipe Pocket: Hem the bottom of the fabric 5" deep with a 3" deep pipe pocket. Line the pocket with nylon fabric to prevent tearing. Furnish appropriate lengths of pipe, see project drawings and schedules including pipe splice detail for 1" schedule 40 curtain bottom pipe.
5. Chain Hem: Hem the bottom of the fabric 5". Line the pocket with nylon fabric and install continuous chain weight.
6. Legs, Valances, Scrims, Cycloramas, and off-stage side of Traveler Panels: Sew back the face fabric 4 inches on both sides. The sides of the fabric shall hang plumb within 2 inches.
7. Onstage side of Traveler Panels: Sew back the face fabric half width of the fabric. For example, a 54" wide roll of fabric would have a sewn turn back of 27".
8. Label all curtains at both bottom corners with the dimensions of the piece, the manufacturer, the fabric type and weight, the flammability, and the date of manufacture.
 - a. For Traveler and Leg panels, only label the offstage corners.

2.7 PORTABLE CABLE LABELING

A. General

1. All portable cables shall have the following labeling via heat shrink, printed cable, or labels underneath of clear heat shrink:
 - a. Color code for length
 - 1) 3'/5' – Black
 - 2) 10'/15' – Red
 - 3) 25' – Blue
 - 4) 50' – Yellow
 - 5) 75' – Green
 - 6) 100' – White
 - b. Owner/Project Name

2.8 BILL OF MATERIALS – SEE DRAWINGS

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation of this equipment shall only be performed by trained TCs and licensed electrical contractors. Installation shall be performed in a workmanlike manner and shall strictly adhere to the standards of these specifications and manufacturer's installation requirements. Where necessary, the installer may make adjustments to accommodate unforeseen impediments to installation. The completed work must achieve all functional, electrical, safety and appearance requirements as established in these specifications.
- B. Work shall be performed in accordance with OSHA and local codes.

- C. On site welding shall only be performed per current AWS D1.1 standard and with advanced approval from the Architect, Engineer, or Owner's representative.
- D. The Contractor and TC shall each be responsible for storage of stage equipment, tools, and its equipment during the period of installation.
- E. The TC and all persons performing theatrical rigging system or related work shall be under the direct supervision of an ETCP Certified Theater Rigger (Entertainment Technician Certification Program) in good standing for the duration of the project.
- F. The TC and all persons performing theatrical, electrical, system or related work shall be under the direct supervision of an ETCP Certified Electrician (Entertainment Technician Certification Program) in good standing for the duration of the project.
- G. The TC and all persons performing audio/visual system or related work shall be under the direct supervision of a CTS-I or CTS-D (Certified Technology Specialist) in good standing for the duration of the project.
- H. The TC and all persons performing programming of equipment or related work shall be under the direct supervision of a Certified Programmer from manufacturers of each type of equipment.
- I. The Contractor and TC shall be responsible for all clean up related to its work, including the removal of packing materials etc. and the protection of existing surfaces or equipment. Repairs to damage caused by the Contractor and TC to any item or surface are the sole responsibility of the Contractor and TC.
- J. The equipment described in this section is considered to be finished equipment and is to be protected during and after installation from excessive dirt and damage caused by other work.
- K. All equipment and the areas around the equipment shall be cleaned prior to final inspection and acceptance.
 - 1. In the event that a site condition will not allow for visual inspection at final acceptance, TC shall thoroughly document by photograph and submit. For example, rigging installed above a gypsum ceiling or wood blocking inside of a wall.
- L. All circuits, panels, boxes, plates, receptacles, and the like shall be properly labeled in a clear permanent professional manner. Provide engraved faceplates stating circuit number(s) and panel fed from. Alternately, engraved 2-ply plastic plates (lamacoid) may be attached to panels and faceplates. P-touch printed stickers are not acceptable. In addition, all panels must have printed schedules inserted in document holders. Provide document holders for all panels.
 - 1. Colonial Engraving Co., Inc. 17 Route 125, Unit 2, Kingston, NH 03848, 603.347.1749
 - 2. Or Approved Equal
- M. Wiring Methods
 - 1. Splicing of cables is not permitted between terminations.
 - 2. All signal cable shall be combed straight and bundled with nylon cable ties every six to twelve inches and secured as needed. Use proper tooling to ensure nylon cable ties are installed at the proper tension. Do not crush the cable.

3. All data cable shall be combed straight and bundled with hook and loop (Velcro) tie wraps every six to twelve inches and anchored as needed. Do not crush the cable. Do not use nylon tie wraps (Zip Ties).
4. Cable shall be formed in either a vertical or a horizontal relationship to equipment or termination point with proper bending radii, service loop, and support. Provide ample service loops at each termination so that plates, panels, patch bays, and equipment can be removed for service and inspection.
5. All cables are to be permanently identified at each wire and cable end. This applies to interconnecting cables inside the racks.
6. All low-voltage cable ends are to be covered with heat shrink tubing.
7. Wire nuts are not permitted on low-voltage cabling.

N. Conduits and Cable Separation

1. See TS- drawings.

O. Lighting fixture safety cables must be attached to the manufacturer's specified safety point location. Attaching it to, or around, the yoke is only acceptable if the manufacturer does not provide a safety cable attachment point/location.

P. Equipment/devices to have all included removable connectors installed, even if they do not have any wires connecting to them (e.g. terminal block, phoenix-style connector, etc.).

3.2 COMPLETION INSPECTION AND TESTING

A. Upon completing the installation of all equipment specified under this section, the Contractor and TC shall notify the Owner/Architect within 10 business days, who will schedule an inspection from the Consultant.

B. At the time of inspection, the Contractor and TC shall furnish sufficient workers to operate all equipment and to perform such adjustments and tests as may be required by the Architect and/or Owner.

1. All racks must be open and accessible. Tools must be available to remove any plates, panels, boxes, and covers for inspection.
2. Contract documents and approved shop drawings must be available for reference.
3. The system must be completely installed, tested, and all equipment fully operational.
4. Testing shall be in accordance to ANSI 10:2013 and shall include, but not be limited to:
 - a. All circuits are operational and match dimmer/panel schedules. Test with a circuit tester.
 - b. All circuits, panels, boxes, plates, receptacles, and the like are properly labeled in a clear permanent professional manner.
 - c. Verify that the system is free from RF pickup and oscillation with no input as well as normal operating levels.
 - d. Check each loudspeaker with a phase measuring device for proper polarity.

- e. Equalize all systems to conform to the specified initial performance criteria.
 - f. Measure each system to verify adherence to the performance specification frequency response. Measure at least 12 points including extremities within the seating area at 4 KHz for coverage uniformity. Correct any problems.
 - g. Isolated ground circuit integrity.
5. With high quality digital program material set the equalized systems for average levels of 90 dB check for unusual distortions or rattles. Also apply a constant sine wave sweep from 80 Hz – 12,000 Hz at a level providing average levels of 86 dB measured at standing ear height. Walk through all systems and check for unusual distortions or rattles. Correct any problems. If the problem is outside of the system, bring the source to the attention of the Owner.
6. Adjust controls for optimum the signal to noise ratio of all systems relative to the performance requirements of this specification. Adjust all inputs, equalizers, limiters, etc. to provide equal relative loudness of music and voice sources with typical input levels. Adjust all equalizers, delays, etc. for use as called for within the specification.
7. Verify all systems inputs, outputs, wireless equipment for proper operation and functionality.

3.3 OWNER TRAINING AND MANUALS

- A. The TC will provide a training program at the project location for sixteen (16) hours of training in four (4) hour increments. This training may be spread out over a six-month period. This includes proper use, operation, trouble shooting, and instruction of all equipment and features of the system. Training may be split up into different parts of the theatrical system, for example, Audio, Lighting, Rigging, etc... Coordinate with the Owner and his/her Staff on scheduling training and topics to be covered.
- B. Upon completion of the work, the TC shall submit detailed Operation & Maintenance Manuals including as-built shop drawings, equipment descriptions, any required certificates or warranties, SDS sheets, serial numbers, un-complied code and software for all programmable equipment, and parts lists. Submit in quantities as required by the Owner.
- C. Provide an electronic copy of Operation & Maintenance Manuals for the Owner and Consultant. Provide (1) physical hard copy of Operation & Maintenance Manuals and As-built drawings for the Owner.

END OF SECTION 26 55 61

SECTION 073126 - SLATE SHINGLES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions, and Division 0 and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Provide all labor, equipment, materials and services required to perform the work of this Section as indicated on the Drawings and specified herein.
- B. This Section includes, but is not limited to, the following:
 - 1. Removal of existing slate shingles and installation of new slate shingles.
 - 2. Installation of new underlayments.
 - 3. Installation of new hips.
 - 4. Installation of new ridges.
 - 5. Such other Work as specified herein or shown in the Drawings.
- C. Related Sections:
 - 1. Section 061053 – Miscellaneous Rough Carpentry
 - 2. Section 076200 – Sheet Metal Flashing and Trim
 - 3. Section 077253 – Snow Guards
 - 4. Section 264113 – Lightning Protection for Structures

1.3 REFERENCES AND STANDARDS

- A. Comply with applicable requirements of the most recent editions of the following standards and others referenced in this Section. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. National Slate Association – *Slate Roofs: Design and Installation Manual*, 2010 Edition.
 - 2. ASTM C406 – Standard Specification for Roofing Slate.
 - 3. ASTM D226 – Standard Specification for Asphalt-Saturated Organic Felt Used in roofing and waterproofing.
 - 4. ASTM D4869 – Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing.
 - 5. ASTM D1970 – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 - 6. ASTM E108 / UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
 - 7. ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials.
 - 8. ASTM D3161 – Standard Test Method for Wind-Resistance of Steep Slope Roofing Products.

1.4 SUBMITTALS

- A. Submittals shall be made in accordance with Section 013300.

B. Product Data

1. Underlayment(s) and underlayment fasteners. Product data for the roof underlayment must include the ASTM Standard to which it complies.
2. Slate shingles and slating nails.
3. ASTM C406 test results for specified slate (including ASTM C120, *Flexure Testing of Slate* (Breaking Load), ASTM C121, *Water Absorption of Slate*, and ASTM C217, *Weather Resistance of Slate*).
 - a. Testing must be conducted in accordance with the most recent version of these standards.
 - b. Test results must be less than 2-years [3-years] old and be conducted on slate from the quarry from which the slate is to be obtained [from the quarry listed in the Letter of Confirmation - see subparagraph 5, below].
 - c. Testing shall be conducted by and reported on the letterhead of an NSA approved testing laboratory – see NSA’s website, www.slateassociation.org for approved labs.
4. Certificate of Origin for each type of slate to be delivered to the job site, identifying the country in which the slate shingles were quarried.
5. Letter of Confirmation

C. Samples

1. Three to five slate shingles of each color, showing the full, natural range of color variation to be expected in the finished work.
 - a. For uniform slate roofs, submit sample slates of size specified herein, with nail holes drilled.
2. Slating nails
3. Slate hooks.

D. Shop drawings

1. Scaled drawings showing all shapes, sizes, and colors of slate for all patterns, designs, images, figures, numbers, and letters to be incorporated into the slate shingles, including information on method(s) of attachment.

1.5 QUALITY ASSURANCE

- A. Work of this Section shall comply with applicable standards indicated or implied.
- B. Provide products in each color from a single quarry during the course of the Work for consistency of quality and appearance.
- C. Slate roofing contractor shall be a member in good standing of the National Slate Association, www.slateassociation.org.
- D. Slate roofing contractor shall have at least 10-years experience in the installation of new slate roofing/repair of existing slate roofing and shall have successfully completed at least three slate roofing projects within the past five years similar in scope and scale to the Project specified herein. Foreman or superintendent shall have similar experience and shall provide full-time supervision of installers.

1.6 TEST/MOCKUP PANELS

- A. Prepare the following slate roofing test/mockup panels in an area and size designated by the Design Professional, or as indicated below, to verify selections made under sample submittals and to demonstrate aesthetic effects and quality standards of materials and execution.
 - 1. Installation of slate shingles at roof eave (starter, first, second, and third course), including underlayments, drip edge metal, and cant for slate, 5 linear feet.
- B. Modify test panels as required to produce acceptable work in compliance with this specification and meeting the approval of Design Professional.
- C. Do not proceed with remaining work until test panels are approved, in writing, by the Design Professional.
 - 1. Approved test panels shall be left in place and incorporated into the final construction.
- D. Approval of test panels does not constitute approval of deviations from the Contract Documents contained in the panels, unless such deviations are specifically approved, in writing, by the Design Professional.
- E. Coordinate test panels specified herein with each other and with those specified in other sections as required.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Ensure the availability of adequate off-loading equipment and manpower at the job site for the mode of delivery used, and storage space for the quantity of slate shingles to be received.
- B. Deliver slate shingles to project site in quarry crates/pallets with each labelled with the source, country of origin, size, quantity and color contained in each pallet.
- C. Slate shingles shall be packaged on edge and separated by wood lath or other rigid material if rows are stacked vertically in the crate/pallet.
- D. During extended periods of storage on site, tarp or otherwise cover the pallets/crates to keep the shingles clean and prevent them from freezing together during cold weather.
- E. Store crates/pallets at site on a solid, level surface and handle shingles to prevent chipping breakage, soiling or other damage.
- F. Load slate shingles on the building in a manner to avoid damage to the roof deck, structural supporting members, staging and scaffolding.
- G. Store accessory materials including nails, slate hooks, underlayment, and ice dam protection membrane according to the manufacturer's recommended storage instructions.

1.8 PROJECT/SITE CONDITIONS

- A. Prior to beginning work, Contractor shall secure approval from the Owner for the following:
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site and hours for construction activity.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists, and chutes for loading and unloading materials to and from the roof.

- B. Interior stairs or elevators may not be used for removing debris or delivering materials to the roof or ground.
- C. Contractor employee access shall not be permitted to the interior of the building. Building access approval shall be obtained from the Owner.
- D. Exterior sanitary facilities are required and shall be provided by the Contractor.
- E. An exterior water source and electricity shall be provided by the Owner.
- F. During the full course of the Work, the Contractor shall ensure that all pedestrian access points, including all entrances, foot paths, sidewalks, emergency means of egress, and vehicle access routes, shall be protected and display clear signage where barricades and construction fencing are employed. Do not block fire exits or impede ADA access.
- G. If discrepancies are discovered between the existing conditions and those noted on the Drawings, immediately notify the Design Professional in writing and obtain written approval prior to commencing the Work. All necessary steps shall be taken to make the building watertight until the discrepancies are resolved.
- H. Proceed with the Work as weather conditions permit and/or as required by manufacturer's installation instructions or warranty requirements.
- I. Proceed with slate shingle roofing installation only after substrate construction, vent stacks, and other roof penetrations are complete, when substrate materials are dry, and weather conditions are appropriate.
- J. The Contractor shall ensure that work areas as well as the entire building are completely protected from water infiltration and remain watertight throughout the course of the project and water does not flow beneath any completed sections of the slate roof system.
- K. The Contractor shall be responsible for replacing all broken slates on the project, prior to project closeout. After project closeout, the slate repair responsibilities of the Contractor shall be as set forth in the project contract and warranty documents.
- L. All means of access required to perform the work of this Section shall be the responsibility of the roofing contractor. All means of roof access shall fully comply with all local, state, and OSHA safety codes and requirements.

1.9 SEQUENCING/SCHEDULING

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Coordinate work of this Section with interfacing, adjoining, and related roofing work for proper sequencing of each installation.
- B. Do not disrupt activities in occupied spaces.
- C. When multiple trades are accessing the same work area, coordinate the work sequence so as not to hinder the project schedule or detract from the quality of the work.

1.10 WARRANTY

- A. Slate Shingle Supplier Warranty: Submit slate shingle supplier warranty, signed by the supplier and covering the slate shingles described in this Section, in which the supplier agrees to replace slate shingles that fail in materials and deliver the replacement slate to the original point of destination. The duration of this warranty shall be 75 years from date of original supply.
- B. Roofing Installer Warranty: Submit roofing installer warranty, signed by roofing installer and covering Work of this Section, in which the roofing installer agrees to repair or replace slate roofing that fails in materials or workmanship within the following warranty period.
 - 1. Warranty Period: Two years from date of substantial completion
- C. Additional Roofing Installer Warranty: The roofing installer agrees to return to the job site one year from the date of substantial completion of the Work one year to 18 months from the date of substantial completion of the work whichever is shorter and allows one full winter season after the date of substantial completion to replace any broken or missing slates created as a result of normal, installation-related, shedding.

1.11 EXTRA MATERIAL

- A. Provide an additional 1 percent of installed field, starter and hip and ridge slates for Owner's use in future roof maintenance.
- B. Place extra material in storage in a location designated by the Owner.

PART 2 – PRODUCTS

2.1 SLATE SHINGLES

- A. Standard: New slate shall comply with ASTM C406, *Standard Specification for Roofing Slate*, Grade S-1; hard, dense, and sound natural stone, with chamfered edges. No broken or cracked slates will be accepted and exposed corners shall be full [and no broken exposed corners exceeding 1" will be allowed]. Broken covered corners shall not prevent the laying of a weathertight roof and the slate shall not be installed when either the base or leg of the right triangle broken off exceeds 2".
 - 1. Breakage of all kinds, including broken upper and lower corners exceeding the dimensions specified above, shall not exceed 1% in the shipment delivered to the site.
- B. Source and Color of Slate:
 - 1. Vermont & New York
 - a. Semi-Weathering Gray (Vermont Gray)
 - b. Semi-Weathering Black (Vermont Black)
- C. Shape of slate:
 - 1. Rectangle

D. Size:

1. Length
 - a. Single length 16”
2. Width
 - a. Uniform width 8”
 - b. Wider slates as needed for approach slates and slates adjacent to valleys, hips, vertical walls, rakes, etc. Wider slates shall measure 20” and 8” in width.
3. Thickness:
 - a. Single thickness: nominal 1/4”

E. Nail Holes:

1. Punch or drill two nail holes in each slate, located one-quarter to one-third down the slate length, measured from the head of the slate, and 1/4” to 1/2” in from each side edge. Nail holes shall be located on the thinner end of the slate.
2. Hip, ridge, and approach slates shall may be supplied unpunched. These slates shall be punched or drilled on site.
3. Starter slates shall be supplied unpunched. These slates shall be punched or drilled on site.

F. Texture of Slate:

1. Smooth

2.2 SLATING NAILS

A. Slating Nails shall be sharp-pointed with a 3/8-inch diameter flat head.

1. Material: Solid copper.
2. Thickness/Shank Diameter: 11-gauge (.120”)
3. Length: Of sufficient length to penetrate a minimum of 3/4-inch into sheathing/thru plywood sheathing (typically twice the thickness of the slate plus 1-inch). (For example: for 1/4”-3/8” thick slate, specify 1-3/4” long nails.)
4. Shank: Smooth, annular ring
5. Hip and Ridge Slates: Use longer nails as per manufacturer’s recommendations.
6. Underside of Roof Deck Exposed to View: Use nails that will not penetrate through visible overhangs.

2.3 UNDERLAYMENTS

A. Felt: No. 30 unperforated asphalt-saturated organic felt, 36”-wide rolls complying with ASTM D226 Type II or ASTM D4869 Type IV.

1. Products
 - a. “Gorilla Guard Spec 30,” Atlas Roofing Corporation, Atlanta, GA 30328, (800) 251-2852
 - b. “#30 ASTM,” Warrior Roofing Manufacturing, Chambersburg, PA 17201, (717) 709-0323
 - c. “No. 30 ASTM” or “No. 30 UL,” Tamko Building Products, Joplin, MO 64802, (800) 641-4691

2. Underlayment Accessories

- a. Corrosion resistant, large head fasteners of sufficient length to prevent wind event blow-off, or as recommended by underlayment manufacturer.
- B. Ice Dam Protection Membrane Self-Adhering Underlayment, polyethylene faced for ice dam protection at eaves and where shown in the Detail Drawings: ASTM D 1970, minimum of 30 mils thick; slip-resistant, polyethylene-film or granule surfaced laminated to SBS-modified asphalt adhesive, with release-sheet backing; cold applied.
 1. Products
 - a. "Grace Ice & Water Shield HT," GCP Applied Technologies, Inc., Cambridge, MA 02140, (617) 876-1400 or (877) 423-6491
 - b. "WeatherLock G," Owens Corning, Toledo, OH 43659, (800) 438-7465

2.4 ACCESSORIES

- A. Slate hooks for slate repair work: For slates with a 3" headlap and measuring up to 3/4" thick, 3" long, 10-gauge, solid copper, Type 304 stainless steel, or Type 304 stainless steel powder coated black or bronze with 3/8" hook or 3/4" hook.
 1. Custom slate hooks for headlaps greater than 3" shall be same material as specified above, fabricated to required length. Consult vendors for availability.
- B. Nail head covers (bibs) for slate repair work: 16 oz. or 20 oz. copper, Grade H00 (cold rolled), complying with ASTM B370, or lead coated copper complying with ASTM B101, Type 1, Class A. Bibs shall measure 3" to 4" wide by 8" long. Snip bibs along their long sides to form barbs and/or bend to a slightly concave or S-shape prior to insertion to help prevent the bibs from sliding out.
- C. Cants for starter course of slate shingles: Wood cants, standard 3/16"-1/4" thick plaster lath, tapered horse feather shims, or ripped rot-resistant lumber. Fabricate to height and width required to permit first and subsequent courses of slate to lie flat atop underlying courses.
- D. Wire used for hanging slates to avoid nailing thru underlying flashings: 99.99% pure copper wire conforming to ASTM B3, 0.051" diameter, minimum.
- E. Sealant adhesive for use as adhesive dabs below hip and ridge slates: Exterior, non-sag, gun grade, single-component, sealant adhesive complying with ASTM C 920, Type S, Grade NS, Class 12.5, use group NT, I, M, and O, or Design Professional approved alternate sealant adhesive. Color shall be manufacturer's standard color matching that of the slate as closely as possible.
- F. Sealant for exposed nail heads (e.g., last ridge slate to be installed): Exterior, non-sag, gun grade, single-component, urethane sealant complying with ASTM C 920, Type S, Grade NS, Class 25, use group NT, M, A and O, or Design Professional approved alternate sealant. Color shall be manufacturer's standard color matching that of the slate as closely as possible.

2.5 SLATER'S TOOLS

- A. The following traditional slating tools shall be used for installation of the slate shingles:
 1. Slate hammer for punching and nailing slate shingles.
 2. Ripper for removing slate shingles.
 3. Slate cutter or a slater's stake and slate hammer for trimming and cutting slate shingles.
 4. Steel punch or drill with masonry bit for forming holes in delicate or small pieces of slate.

- B. Slates trimmed or cut on site shall have a bevel-edge similar to that produced at the quarry. Note that a grinder or saw shall not be used for cutting/trimming field slates as they will not produce a beveled edge similar to that produced at the quarry.
- C. The use of nail guns for installing slate shingles shall not be permitted.

PART 3 – EXECUTION

3.1 GENERAL

- A. Examine the roof deck and verify that it is satisfactory condition and ready to receive the new roof underlayment and slate shingle system.
 - 1. Verify that the roof deck is well secured to the roof framing, free of warping or cupping, free of projecting fasteners, and the edges between boards are flush.
 - 2. Verify that the roof deck is clean, dry, and free of dew, frost, or other contaminants that might interfere with the laying or long-term durability of the slate roof system.
 - 3. Report deficiencies in the roof deck to the Design Professional prior to commencing work.
- B. Slating shall begin at the roof eave and progress toward the ridge/top of the roof slope.
- C. Sorting: Sort slate shingles for thickness prior to installation on the roof. Sort shingles by hand into three thicknesses as follows:
 - 1. Thin: For use in slate courses closest to the ridge.
 - 2. Thicker: For use in slate courses in “middle” courses.
 - 3. Thickest: For use in the slate courses closest to the eave.
 - 4. The goal is to create a roof of smooth, uniform appearance. Slate of different thicknesses shall not be used adjacent to each other.
 - 5. To the extent possible, transitions between the different thicknesses of slate should occur at hips, ridges, vertical walls, and other non-conspicuous locations, rather than in the field of the roof, to preclude obvious discontinuities in thickness.
- D. Blending: To help account for the natural variation in the coloration of the slate shingles, blend slates from several different pallets as it is brought to the roof surface to help provide for a more uniform overall appearance.
 - 1. Blending may occur prior to, or in association with sorting.
- E. Culling: No broken or cracked slate shall be used. Sound each slate for defects by tapping with a slate hammer or other metal object as it is being installed. Reject and dispose of all slates that do not emit a sharp, clear ring when tapped, or set aside for potential review by Supplier.
 - 1. Cull and discard, or set aside for potential review by Supplier, warped and cupped slate shingles, those that are out of square, those with knots, knurls, or cramps on their unexposed faces, and slates with visible inclusions of iron pyrite.
 - 2. Cull and discard, or set aside for potential review by Supplier, slates that are unusually thin or thick (i.e., slates that will be subject to breakage, cause excessive shadow lines, or cause the butt ends of overlying slates to stick up) as well as those with curvature or twist greater than 1/8” in 12” across the width of the slate.
- F. Nail holes made on site in slates shall be punched or drilled from the back of the slate to produce a small recess, or countersink, on the exposed face of the slate to accept the nail head.

1. Drill nail holes in slates where a nail used to secure a clip, cleat, or lock strip associated with a flashing must pass through an underlying slate. Similarly, drill nail holes in slates that taper to a point or have a small nailing area, such as hip slates.
- G. Slates cut on site shall be cut from the back of the slate to maintain a beveled edge on the exposed face.
- H. Slate Order: As work progresses, check that the quantity of slate remaining on site is sufficient to complete the Project. Order additional quantities of slate in a timely manner, as required, so as not to delay final completion of the project and to allow proper blending of the slate.

3.2 REMOVAL OF EXISTING SLATE SHINGLES

A. Slate Roof Replacement - Disposal

1. Remove all slate shingles and associated underlayments down to the roof deck.
 - a. Pull/remove (do not drive-in) all slating nails and fasteners associated with existing underlayments.
 - b. Deck irregularities: Identify broken, warped, cracked, rotted, or otherwise deteriorated or irregular roof decking and framing that would make the substrate unsuitable as a substrate for new underlayments and new slate roofing, and report to the Design Professional.
 - c. During the course of the Work, protect from damage all roofing, flashings, rainwater conduction systems, and other building and site elements scheduled to remain. Protect interior finishes and contents from moisture damage during the course of the Work.
 - d. Lower demolition debris to grade using enclosed chutes or other means. Plan method of removal from elevated heights. Remove in a controlled manner. Do not throw demolition debris off of the roof.
 - e. Clean work area and surrounding areas at grade to remove all slate chips, roofing nails, and other debris on a daily basis and at the end of project. The site shall be left clean.
 - f. Remove no more slate than can be reinstalled or made weathertight by the end of the day.
 - g. Comply with the requirements of Section 024119 – Selective Demolition.

B. Verify that the roof deck is ready to accept the roof underlayment. Notify Design Professional in writing of any unsuitable conditions, such as voids, damage, or unsupported areas.

1. Mechanical fasteners used to secure the roof decking shall be set flush with the surface of the decking and fastened into solid blocking or framing members.
2. All surfaces shall be clean, dry, and free of oil, grease, dirt, frost, dew, and other contaminants that could cause damage to the roof underlayment.
3. Decking shall be smooth, planar, continuous, and have adjacent edges set flush.

C. Ice Dam Protection Membrane: Install ice dam protection membrane at eaves, extending up slope at least 2 feet beyond interior side of exterior wall line, measured in a horizontal plane, or as indicated in the Detail Drawings.

1. Install ice dam protection membrane full length of valleys and in crickets as shown in the Detail Drawings, lapping bottom end on top of ice dam protection membrane installed at the roof eave.
2. Install ice dam protection membrane stripping along the top edge of metal gutter liners and crickets as shown in the Detail Drawings.
3. At vertical walls, dormer cheek walls, party walls, chimneys, etc., extend ice dam protection membrane up the vertical surface 4 inches, minimum, or as shown in the Detail Drawings.
 - a. See Paragraph C., below, for flashing of pipe penetrations.

4. Prior to installation of ice dam protection membrane, vacuum roof deck to remove all dust and debris. Install ice dam protection membrane directly to the roof deck in accordance with membrane manufacturer's instructions. Lap sides 3-1/2", minimum, in direction to shed water. Lap ends 6" minimum. Roll all laps with roller.
 - a. Prime roof deck as recommended by the ice dam protection membrane manufacturer if good adhesion is not obtained and when temperatures fall below 50 degrees Fahrenheit.
5. Cover ice dam protection membrane with roof underlayment as outlined below.

D. Felt Underlayment

1. Install double layer of specified felt underlayment in horizontal courses in shingle fashion to shed water, beginning at eave line and covering entire roof area. Install an 18" wide starter course of underlayment at the roof eave and completely cover with full-width first course. Install the second course such that it laps the first course 20". Install succeeding courses laid 17" to the weather (lapping previous courses 19", providing for a 2" headlap). Lap ends of felt 6", minimum. Stagger end laps of each layer a minimum of 6 feet. Secure felt along laps, ends, and in field of felt with specified fasteners as necessary to properly hold the felt in place and protect the building from water infiltration until covered with slate shingles. Fasteners placed along laps shall be spaced at no more than 36" on center.
2. Felt shall lap hips and ridges 12" to form double thickness.
3. At vertical walls, extend felt underlayment up the vertical surface 4" minimum, unless otherwise shown in the Detail Drawings.
4. Flash penetrations through the roof using specified ice dam protection membrane to provide for a secure and watertight assembly. Ensure ice dam protection membrane target flashing is large enough to permit top edge of metal flashing to be installed to be stripped-in with ice dam protection membrane (i.e., stripping to be centered on top edge of metal flashing and be installed directly to the metal flashing and directly to previously installed ice dam protection membrane).
5. At roof eaves, the first layer of felt underlayment shall lap below the metal drip edge and the second layer of felt shall lap on top of the metal drip edge. At rakes, both layers of felt underlayment shall extend below metal drip edge.
6. Cover roof underlayment with slate shingles as soon as possible. Remove and replace felts that have become wrinkled or damaged, or that have been exposed on the roof for more than 30 days. Maximum length of exposure for felts shall be 30 days.

E. Replace damaged roof underlayments immediately. Do not install slate shingles over damaged underlayment.

F. Upon completion roof underlayment shall be smooth and free of punctures, holes, gashes, wrinkles, deep scuffs, and other defects that could compromise the underlayment's ability to serve as a temporary roof and secondary water shedding membrane.

3.3 SLATE INSTALLATION

A. Protection of Roof Surfaces

1. The roof is to be properly staged to allow safe work surfaces, such as brackets and planks, that prevent unnecessary foot traffic on the slates.
2. Where foot traffic is unavoidable, roof ladders, hook ladders, chicken ladders, foam pads, or other such devices shall be used to protect the slates.
3. Workers are to avoid walking on the slate surfaces during, and after, installation.

B. Laying Out the Roof

1. Check that the eave is straight and level, the ridge is parallel to the eave, and that the gable ends are square with the eave.

2. Snap a line for locating the starter course equal to the vertical dimension of the starter slate minus the specified overhang (1½"). Set the starter course parallel to the eave. If the eave is not straight, make small adjustments in successive courses until the course lines are straight and parallel.
3. Chalk the line for the first course by measuring up from the eave the length of the slate, minus the specified overhang.
4. Chalk the line for the last full course at the ridge (finishing course), making sure it has an exposure of ___", Adjust the exposure of the courses approaching the ridge in small increments to obtain the required exposure of the finishing course (see subparagraph 5).
5. Snap horizontal lines based on the exposure of the slate, making small adjustments as needed so the courses end up parallel to the ridge and the exposure remains within ¼" of adjacent courses. When within 5 to 10 feet of the top of the slope, re-measure, and adjust the exposure in the remaining courses in small increments (1/8" to 1/4" per course) as needed for proper coursing. Do not reduce the headlap; always decrease the exposure so as to increase the headlap. (This same procedure applies to the laying out of courses at the bottom and top of dormers to assure that the courses line up.)
6. When laying out a roof with uniform width slates, snap two vertical lines near the center of the roof to establish the slate's bond lines. The space between the two vertical lines should be equal to one-half the width of the slate.
7. If the eave and/or ridge are not horizontal, establish a level line as a reference for snapping the course lines. Slate courses shall run horizontally. Treatment of special conditions shall be incorporated in the Test Panels under Paragraph 1.6, above.

C. Eave

1. The starter course of slates shall be laid horizontally (with the long edge parallel to the roof eave) with the bevel-edged side facing down, and be canted to allow the starter slates to be tilted to the same angle as the field slates.
2. The starter slates shall have nail-holes 1" to 1½" down from the top, long edge of the slate, and approximately 1½" in from each short edge.
3. Eave slates shall be laid to provide the specified overhang (1½") beyond the furthest extent of the fascia, cornice, crown molding, metal drip edge, trim, or other construction material at the eaves.
4. Slates at the eaves shall be doubled by first installing a slate starter course. The first course of slate shall be laid over the starter course so that the butt edges of both courses align. The first course of slate shall break side joints with the starter course side joints by not less than 3". The second course of slates must overlap the starter course by at least the headlap of the field slates along the eaves.

D. Gable Ends

1. Rake edge (gable end) slates shall extend approximately 1" beyond the gable trim, fascia, or drip edge.
2. Adjust the width of field slate as needed to avoid gable end slate of less than 6" width.

E. Field Slates

1. Exposure and Headlap
 - a. All standard field slates shall be installed with a minimum 3" headlap when the roof slope is 8:12 up to 20:12.
 - b. Headlap shall be increased to min. 4" at ice-dam prone or poor-drainage areas.
2. Offset: Slate side joints shall be positioned as near the mid-point of the underlying slates as possible, and not less than 3" from the underlying joints.
3. Joint Spacing: Slates shall be laid nearly touching side-to-side, or with a gap of approximately 1/16" between slates. Small adjustments can be made in joint spacing and/or slate width as needed when approaching rakes or walls to avoid use of excessively narrow slates; no slate shall measure less than 6" in width.

4. Fastening – Nailing and Wiring
 - a. Secure each slate to the roof deck with two nails set in holes pre-punched or drilled at the quarry, or punched by hand on site.
 - b. Slates measuring $\frac{3}{4}$ " or more in thickness and 20-inches or more in length, shall be secured with four nails each. Place the two additional nails approximately 2" above the regular nail holes.
 - c. Set each nail with the head set in the countersink left by the punching of the nail hole; nails must not be over-driven, nor under-driven; nail heads shall touch the slate lightly, without producing strain on the slate and such that the slates hang from the nails.
 - d. Slates located adjacent to flashings shall be nailed to avoid puncturing the flashing material. Move one or both of the nails up, or closer to the center of the slate; secure the slate with a second nail placed one above the other on one side of the slate; or, secure the slate with copper wire fastened to the roof deck upslope of the top edge of the flashing.
5. Shapes: The slate shape shall be rectangular.

F. Penetrations

1. Slate shall be neatly fitted around pipes, ventilators, and other roof penetrations.
 - a. Do not nail through flashings.
 - b. Trim slates neatly.

G. Flashings

1. Integrate flashings as slates are being installed.
 - a. Flashing shall be installed where there are roof plane intersections, where the roof abuts walls, parapets, dormers and chimneys, at roof penetrations, and where shown on the Drawings.
 - b. See *Slate Roofs: Design and Installation Manual*, 2010 Edition for typical flashing installations not shown in the Detail Drawings.

H. Hip and Ridge Slates: See Paragraphs 3.5 and 3.6, below.

I. Slate Repair

1. Where individual slates must be installed in the field of the roof after the installation is complete, such as where a roof bracket has been removed or where a broken slate must be removed and replaced, such installation shall be made in accordance with the slate repair procedures specified in Paragraph 3.7, below.

J. Coordinate slate installation with the installation of snow retention devices specified in Section 077253.

3.4 RIDGE SLATES

- A. Install ridge slates (finishing course slates) in a saddle ridge pattern, laid horizontally in accordance with approved test panels. Coordinate with installation of new copper ridge flashings and associated wood blocking.
 1. Ensure roof underlayment is whole and overlaps the ridge a minimum of 12" in each direction.
- B. Secure each ridge slate with 3 nails set approximately 1-1/2 inches down from the top edge of the slate 3 or 4 nails arranged in a triangular or diamond pattern. In addition, set the bottom edge of each slate in dabs of adhesive flashing cement.

1. Nails holes in ridge slates may be drilled, instead of punched, in order to limit breakage and loss of section around the nail holes. Nail holes through underlying slate shingles shall be drilled, not punched.
- C. Snap chalk lines to provide straight ridge lines. Accommodate lack of trueness in structural framing of ridges by selectively trimming slates or using slightly wider slates in localized areas as required to produce a line that is straight.
- D. Lay ridge slates so as to accommodate the prevailing wind direction.

3.6 HIP SLATES

- A. Install hip slates in a saddle hip pattern in accordance with approved test panels. Coordinate with installation of new copper hip flashings and associated wood blocking.
 1. Ensure roof underlayment is whole and overlaps the hip a minimum of 6” to 12” in each direction.
- B. Secure each hip slate with 3 or 4 nails arranged in a triangular or diamond pattern. In addition, set the bottom edge of each slate in dabs of adhesive flashing cement.
 1. Nails holes in hip slates may be drilled, instead of punched, in order to limit breakage and loss of section around the nail holes. Nail holes through underlying slate shingles shall be drilled, not punched.
- C. Snap chalk lines to provide straight hip lines. Accommodate lack of trueness in structural framing of hips by selectively trimming slates or using slightly wider slates in localized areas as required to produce a line that is straight.

3.7 LIGHTNING PROTECTION SYSTEMS

- A. See Section 264113, Lightning Protection for Structures, for new lightning protection system requirements.
- B. Coordinate installation of new lightning protection system with installation of slate shingles.
 1. Do not permit lightning protection system components to be secured with fasteners set directly through slate shingles or associated flashings.
 2. See Section 264113 for fasteners to be used to secure lightning protection system components in the field of the slate roof. These hook on to the nails used to secure the slate shingles and shall be installed by the slate roof installer. The lightning protection installer must be on site to supervise the work.
 3. Discuss all lightning protection items to be secured to the roof, flashings, and gutters with the Design Professional prior to commencing work.

3.8 CLEAN-UP AND ADJUSTMENT

- A. Work areas shall be left neat and clean at the end of each work day.
- B. Remove debris from gutters and downspouts (if any) at the end of each work day and upon completion of the work to ensure unrestricted flow of water from the roof.
- C. Upon completion of work, remove all roofing equipment, excess material, and debris from all roof surfaces and grounds.

- D. While removing equipment, material, and debris from roof surfaces, inspect all work to ensure completeness, aesthetics, and undamaged workmanship. Broom clean slate shingles as roof jacks and planks (or other means of access) are being removed from the roof.
- E. Dispose of debris in accordance with all local, state, and federal regulations or in the manner as stated elsewhere in the Contract Documents.
- F. Remedy any incomplete work and replace any damaged, broken, poorly lying, or otherwise offending roofing slates using the repair methods specified in Paragraph 3.7, above.
- G. Upon completion of clean up and adjustments, advise the Design Professional that the work is ready for final inspection and punch listing by the Design Professional.

END OF SECTION 073126