Hancock County Office Renovations

123 E Main Street Greenfield, Indiana

Addendum No. 01

CONSTRUCTION MANAGER



Envoy, Inc.

116th Street, Suite 250 Indianapolis, Indiana 46038 Phone: 317.594.4600 Fax: 317.594.4601

www.envoy-cm.com

ARCHITECT / ENGINEER



DLZ Indiana, LLC 157 East Maryland Street Indianapolis, Indiana 46204 Phone: 317.633.4120

Project:	Hancock County Office Renovations
Date:	January 19, 2024
Ву:	Envoy, Inc.

ADDENDUM

Number: 01

This addendum is based in accordance with the provisions of "The General Conditions of the Contract for Construction," Article 1, "Contract Documents" and becomes a part of the Contract Documents as provided therein. Bids will be received at the Hancock County Annex in the Commissioner's Court located at 111 South American Legion Place, Suite 101, Greenfield, IN 46140 until 2:00 p.m. (local time) on Thursday January 25, 2024.

Included with this Addendum are the following Notes and Clarifications:

- 1. Technical Plan and Specification changes are per the DLZ Addendum dated January 18, 2024.
- 2. Replace Specification Section 00 52 13 AGREEMENT BETWEEN OWNER AND CONTRACTOR in its entirety with the version attached to this Addendum No. 01.
- 3. Replace Specification Section 00 72 13 GENERAL CONDITIONS in its entirety with the version attached to this Addendum No. 01.
- 4. Pre-bid conference sign-in sheet is attached to this Addendum No. 01 for reference.
- 5. Reminder that all bids need to be submitted in sealed envelopes to the place noted in the Bid Documents. Please follow the checklist for all items required which include the State Form 96, Supplemental Bid Form per Section 004200, Financial Statement, and Bid Bond. 2 copies.
- 6. Do NOT send you bid directly to Envoy. Subs and suppliers can contact Envoy for list of potential/probable bidders.



HANCOCK COUNTY OFFICE RENOVATIONS

SECTION 005213 – AGREEMENT BETWEEN OWNER AND CONTRACTOR

The agreement between the Owner and the Contractor for this Project will be the "Standard Form of Agreement Between Owner and Contractor," AIA Document A132 – 2019 Edition, a copy of which is bound hereinafter.

END OF SECTION 005213

HANCOCK COUNTY OFFICE RENOVATIONS
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Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

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)

Hancock County Board of Commissioners 111 South American Legion Place Suite 219 Greenfield, IN 46140

and the Contractor:

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

TBD

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

Hancock County Office Renovations 123 E Main Street Greenfield, IN 46140

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

Envoy Inc 8890 E 116th Street Suite 250 Fishers, IN 46038

The Architect:

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

DLZ Indiana LLC 138 North Delaware Street Indianapolis, IN 46204

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

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

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

This document is intended to be used in conjunction with AIA Documents A232™-2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™-2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™-2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser. AIA Document A232™-2019 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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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 Modifications, appears in Article 9. The Contractor represents and agrees that it has carefully examined and understands this Agreement and the other Contract Documents, has investigated the nature, locality, and site of the Work and the conditions and difficulties under which it is to be performed, and that it enters into this Agreement on the basis of its own examination, investigation, and evaluation of all such matters and not in reliance upon any opinions or representations of the Owner, the Construction Manager, Architect, or any of their respective officers, agents, servants, or employees.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, and all work incidental or reasonable inferable that is necessary to produce the results intended by the Contract Documents.

ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be: (Check one of the following boxes.)

[X]	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 of the Project or Portions Thereof

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be:

(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)

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

Portion of Work

Substantial Completion Date

(Paragraph deleted)

§ 3.3.3 All times stated in the Contract Documents, including, without limitation, those for the commencement prosecution, interim milestones, and completion of the Work, and for the delivery and installation of materials and equipment, are of the essence of this Agreement.

§ 3.3.4The Contractor shall begin the Work on the Date of Commencement and shall perform the Work diligently, expeditiously, and with adequate resources so as to complete all the Work within the Contract Time. The Contractor shall reschedule or re-sequence the Work, to the extent possible, to avoid or minimize any delay in the Contract Time. The Contractor shall not, without the Owner's prior approval, reschedule or re-sequence the Work so that an action, approval, or activity of the Owner moves onto the critical path or otherwise becomes critical to the Contract Time. Neither the Owner, its representatives, nor its agents shall be obligated or liable to the Contractor for, and the Contractor hereby expressly waives any claims against them, or any of them, on account of, any damages, costs, or expenses of any natures whatsoever that the Contractor, its Subcontractors, or Sub-subcontractors or any other person may incur as a result of any delays, interferences, suspensions, rescheduling, changes in sequences, congestion, disruptions, or the like arising from or out of any act or omission of the Owner, its representatives, or agents, it being understood and agreed that the Contractor's sole and exclusive remedy in such event shall be an extension of the Contract Time but only in accordance with the provisions of the Contract Documents.

§ 3.4When the Work of this Contract, or any Portion Thereof, is Substantially Complete

§ 3.4.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall substantially complete the entire Work of this Contract:

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

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

[X] By the following date: See Schedule Attachment

§ 3.4.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of this Contract are to be substantially complete prior to when the entire Work of this Contract shall be substantially complete, the Contractor shall substantially complete such portions by the following dates:

Portion of Work

Date to be substantially complete

(Table deleted)

(Paragraph deleted)

§ 3.4.3 If the Contractor fails to substantially complete the Work of this Contract, or portions thereof, as provided in this Section 3.4, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICI	E 1	CONTRACT	CHIM
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§ 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 one of the following:
(Check the appropriate box.)
[X] Stipulated Sum, in accordance with Section 4.2 below

[]	K]	Stipulated Sum, in accordance with Section 4.2 below
[]	Cost of the Work plus the Contractor's Fee, in accordance with Section 4.3 below
[1	Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below.)

§ 4.2 Stipulated Sum

§ 4.2.1 The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.2 Alternates

§ 4.2.2.1Alternates, if any, included in the Contract Sum:

Price Item

§ 4.2.2.2 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

(Table deleted) (Paragraphs deleted) (Table deleted) (Paragraph deleted)

§ 4.2.3 Allowances, if any, included in the Contract Sum:

(Identify each allowance.)

Price ltem

§ 4.2.4Unit prices, if any:

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

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

(Paragraphs deleted)

§ 4.2.5 The method of adjustment of the Contractor's Fee for changes in the Work:

Contractor's Fee shall be increased by an amount equal to 5% (five percent) of any subcontractor increase in the Cost of the Work.

Contractor's Fee shall be increased by an amount equal to 10% for work performed by it's own forces

§ 4.2.6 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

Limitation of 10% OH&P

Init.

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§ 4.2.7 Rental rates for Contractor-owned equipment shall not exceed ten percent (10%%) of the standard rental rate paid at the place of the Project.

§ 4.5Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any, to be assessed in accordance with Section 3.4.)

N/A

(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)
(Paragraphs deleted)
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(Table deleted)

§ 4.6 Other:

(Insert provisions for bonus, cost savings or other incentives, if any, that might result in a change to the Contract Sum.)

N/A

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

- § 5.1.1 Based upon Applications for Payment and all supporting documentation submitted to the Construction Manager by the Contractor, and Certificates for Payment issued by the Construction Manager and 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 and all supported documentation is received by the Construction Manager not later than the 25th day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the 30th day of the following month month. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment of the amount certified shall be made by the Owner not later than twenty (20) days after the Construction Manager receives the Application for Payment. (Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

- § 5.1.4.1 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 Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.
- § 5.1.4.2 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 and shall be accompanied by all supporting documents required by the Contract Documents or reasonably required by the Owner, Architect or Construction Manager

§ 5.1.4.3 In accordance with AIA Document A232TM—2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- § 5.1.4.3.1 The amount of each progress payment shall first include:
 - 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
 - That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.
- § 5.1.4.3.2 The amount of each progress payment shall then be reduced by:
 - 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 A232–2019;
 - .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;
 - 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 A232-2019; and
 - .5 Retainage withheld pursuant to Section 5.1.7.

(Paragraphs deleted)

§ 5.1.4.4 Notwithstanding any other provision of the Contract Documents, Contractor agrees and warrants to the Owner that, pursuant to Indiana law, public policy and public necessity prohibit the filing of a mechanic's lien for work performed on a public project, including the Project. Consequently, Contractor agrees and warrants that no claim or lien shall attach to or be filed on the Project or on any other property owned by Owner, Hancock County by the Contractor, or by virtue of Contractor's default in paying any employee, Subcontractor or supplier. Should such claim or lien be filed, payment otherwise due the Contractor will not be due until Contractor delivers to Owner a complete release of such claim or lien, or, at Owner's option, a bond satisfactory to Owner indemnifying Owner against such claim or lien. All references to mechanic's liens in the Contract Documents, or the requirement for releases thereof, are for Owner's protection only, and shall not raise the inference that any liens may be filed relating to the Project by any party. Contractor covenants and agrees that it will include this provision in its agreement with Subcontractors and suppliers of material to the Project.

(Paragraphs deleted)

§ 5.1.4.5If at any time there shall be evidence of a lien or claim for which, if established, the

Owner might become liable, and that is chargeable to the Contractor, or if the Contractor shall incur any liability to the Owner, or the Owner shall have any claim or demand against the Contractor of any kind or for any reason, whether or not reduced to judgment or award, the Owner shall have the right to retain out of any payment due or to become due under this Agreement or any other agreement between the Owner and the Contractor, an amount sufficient to indemnify the Owner against such lien or claim, or to fully satisfy such liability, claim, or demand. The Owner shall also be entitled to charge against or deduct from any such payment all costs of defense or collection with respect thereto, including all of Owner's reasonable attorneys' fees. Should any claim or lien develop after all payments are made hereunder, the Contractor shall refund to the Owner within ten (10) days of demand therefore all monies that Owner may be compelled to pay in discharging such claims or liens and all costs, including reasonable attorneys' fees, incurred in collecting said monies from the Contractor.

(Paragraph deleted)

§ 5.1.4.6No progress payments made under this Agreement shall be conclusive evidence of the performance of this Agreement either in whole or in part, and no such payment shall be construed to be acceptance of defective work or improper materials.

(Paragraph deleted)

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, 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.)

10%

§ 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.)

N/A

§ 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 when the entire Work of this Contract is substantially complete, including modifications for completion of portions of the Work as provided in Section 3.4.2, insert provisions for such modifications.)

N/A

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, when the Work of this Contract is substantially complete, 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 when the Work of this Contract is substantially complete shall not include retainage as follows:

(Insert any other conditions for release of retainage when the Work of this Contract is substantially complete, or upon Substantial Completion of the Work of all Contractors on the Project or portions thereof.)

N/A

§ 5.2 Final Payment

§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum

- § 5.2.1.1 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 A232-2019, and to satisfy other requirements, if any, which extend beyond final payment;
 - .2 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect; and
 - all other conditions to final payment contained in the Contract Documents have been fulfilled.
- § 5.2.1.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

(Paragraphs deleted)

§ 5.3Payments 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.)

This Agreement is subject to the Indiana Prompt Payment statute, Ind. Code §§ 5-16-5.5-0.1 to 5-16-5.5-8. Payments not received within thirty-five (35) days after the date they are due are subject to interest at the rate of one percent (1%) per month until paid.

ARTICLE 6 **DISPUTE RESOLUTION**

§ 6.1 Initial Decision Maker

The Construction Managerwill serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

Init.

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(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

Envoy Inc. 8890 E. 116th Street Suite 250 Fishers, IN 46038

§ 6.2 Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A232–2019, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[]	Arbitration pursuant to Article 15 of AIA Document A232–2019.
[X]	Litigation in a court of competent jurisdiction as provided in Section 8.6.2

[] 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 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019 as modified.

(Paragraphs deleted)

§ 7.1.1.1If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A232–2019, 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.)

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019.

(Paragraphs deleted)

§ 7.2.1.2 Termination by the Owner for Cause

§ 7.2.1.2.1 If the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A232–2019, the Owner shall then only pay the Contractor an amount as follows:

- .1 Take the Cost of the Work incurred by the Contractor to the date of termination;
- .2 Add the Contractor's Fee, computed upon the Cost of the Work to the date of termination at the rate stated in Section 4.3.2 or 4.4.2, as applicable, or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion;
- .3 Subtract the aggregate of previous payments made by the Owner; and
- 4 Subtract the costs and damages incurred, or to be incurred, by the Owner under Article 14 of AIA Document A232–2019.

(Paragraph deleted)

User Notes:

§ 7.2.1.2.3 The Owner shall also pay the Contractor fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Contractor that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 7.2.1.2.1.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Article 7, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders. All Subcontracts, purchase orders and rental agreements entered into by the Contractor will contain provisions allowing for assignment to the Owner as described above.

§ 7.2.1.3 Termination by the Owner for Convenience

If the Owner terminates the Contract for convenience in accordance with Article 14 of AIA Document A232–2019, 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.)

§ 7.3 Suspension

The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019; in such case, the Contract Sum and Contract Time shall be increased as provided in Article 14 of AIA Document A232–2019, except that the term "profit" shall be understood to mean the Contractor's Fee as described in Section 4.3.2 or 4.4.2, as applicable, of this Agreement.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2019 or another Contract Document, the reference refers to that provision as amended or supplemented by Owner and other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

(Name, address, email address, and other information)

TBD Hancock County Board of Commissioners 111 South American Legion Place Suite 219 Greenfield, IN 46140

§ 8.3 The Contractor's representative:

(Name, address, email address, and other information)

§ 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 A132™_2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, 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 A132™_2019, Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A232–2019, may be given in accordance with AIA Document E203TM—2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set

(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 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

§ 8.8 Other provisions:

- § 8.8.1 The Contractor shall comply with all state, federal, and municipal laws, regulations, and standards applicable to its activities pursuant to this Agreement including, but not limited to, the non-discrimination requirements imposed by Indiana Code Section 22-9-1-10 (non-discrimination), Indiana Code Section 5-16-6-1 (non-discrimination), Indiana Code Section 5-22-16.5 (disqualification for dealings with Government of Iran), Indiana Code Section 5-22-5-1.7 (E-verify and prohibiting employment of unauthorized aliens) and the provisions applicable to public works contractors contained in House Enrolled Act 1019 (2015) effective July 1, 2015. By execution this Agreement, Contractor agrees that each of the foregoing provisions are incorporated herein as set forth in full and that the Contractor certifies that it is in compliance with each such provision.
- § 8.8.2 The Agreement and the Contract Documents shall be interpreted according to and governed by the laws of the State of Indiana and any litigation to which the Owner, the Architect, Construction Manager or the Contractor may be a party to shall be brought exclusively in the State Courts in Hamilton County, Indiana, and the parties hereto waive any objections to such jurisdiction or venue.
- § 8.8.3 The Contractor represents and warrants the following to the Owner (in addition to any other representations and warranties contained in the Contract Documents), as an inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement, and the final completion of the Work:
 - that it and its Subcontractors are financially solvent, able to pay all debts as they mature, and possessed of sufficient working capital to complete the Work and perform all obligations hereunder;
 - that it is able to furnish the plant, tools, materials, supplies, equipment, and labor required to complete the Work and perform its obligations hereunder;
 - that it is authorized to do business in the State of Indiana and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Project;
 - (iv) that its execution of this Agreement and its performance thereof is within its duly authorized powers;
 - that its duly authorized representative has visited the site of the Project, familiarized himself with the local and special conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents; and
 - that it possesses a high level of experience and expertise in the business administration, construction, construction management, and superintendence of projects of the size, complexity, and nature of this particular Project, and it will perform the Work with the care, skill, and diligence of such a contractor.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

δ	9.1 This	Agreement	is com	prised o	of the	followi	ng docur	nents

- .1 AIA Document A132TM–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition
- .2 **RESERVED**
- .3 AIA Document A232TM–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as modified by Owner
- .4 AIA Document E203TM-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
See Drawing Attachment E	Drawings	See Attachment E

Specifications

Section	Title	Date	Pages
Volume 1 Specifications	Volume 1 of 3	Dec 21, 2023	374
Volume 2 Specifications	Volume 2 of 3	Dec 21, 2023	452
Volume 3 Specifications	Volume 3 of 3	Dec 21, 2023	1088
Attachment E – Specification Log	Specifications Log	See Exhibit	See Exhibit

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.

Other Exhibits:

Title

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

- AIA Document A132TM–2019, Exhibit B, Determination of the Cost of the Work
- AIA Document E235TM–2019, Sustainable Projects Exhibit, Construction Manager as Adviser Edition, dated as indicated below: (Insert the date of the E235-2019 incorporated into this Agreement.)

Pages

	The	Sustaina	bility	Plan:
--	-----	----------	--------	-------

Date

.9 Other documents, if any, listed below:

User Notes:

(880106064)

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232–2019 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.)

Attachment A – Scope of Work

Attachment B - Insurance Requirement

Attachment C – Billing Procedures

Attachment D –Safety Summary

Attachment E – Drawing & Specification Log

Attachment F - Master Schedule

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

OWNER (Signature)	CONTRACTOR (Signature)
(Printed name and title)	(Printed name and title)

HANCOCK COUNTY OFFICE RENOVATIONS

SECTION 007213 – GENERAL CONDITIONS

The General Conditions for this Project are "General Conditions of the Contract for Construction," AIA Document A232 – 2019 Construction Manager-Adviser Edition, a copy of which is bound hereinafter.

END OF SECTION 007213

GENERAL CONDITIONS 00 72 13-1



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GENERAL CONDITIONS 00 72 13-2

General Conditions of the Contract for Construction, Construction Manager as Adviser Edition

for the following PROJECT:

(Name, and location or address)

Hancock County Office Renovations 123 E Main Street, Greenfield, IN 46140

THE CONSTRUCTION MANAGER:

(Name, legal status, and address)

Envoy Inc 8890 E 116th Street, Suite 250, Fishers, IN 46038

THE OWNER:

(Name, legal status, and address)

Hancock CountyBoard of Commissioners 111 South American Legion Place, Suite 219, Greenfield, IN 46140

THE ARCHITECT:

(Name, legal status, and address)

DLZ Indiana LLC 138 North Delaware Street, Indianapolis, IN 46204

ADDITIONS AND DELETIONS:

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

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

This document is intended to be used in conjunction with AIA Documents A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

User Notes:

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

- § 1.1.1 The Contract Documents. The Contract Documents 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 the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their 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 other Contractors, and by the Owner's own forces and Separate Contractors.
- § 1.1.5 Contractors. Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.
- § 1.1.6 Separate Contractors. Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.
- § 1.1.7 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.
- § 1.1.8 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.
- § 1.1.9 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.
- § 1.1.10 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.

(Paragraph deleted)

§ 1.5.2TheContractor, 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 thecopyright 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 or by electronic transmission including email in which receipt is confirmed.

(Paragraphs deleted)

§ 1.7Digital 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. If the Owner requires it as part of the Contract Documents, the parties will use AIA Document E203TM-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8Building 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 E203TM_2013, Building Information Modeling and Digital Data Exhibit to the extent required by the Owner, and the requisite AIA Document G202TM_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 Construction Manager and the Architect do 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.

(Paragraphs deleted)

- § 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.
- § 2.2.4Where 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, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner shall secure and pay for the building permit. The Construction Manager may assist the Owner in the process as required by the Owner as an additional service.

(Paragraphs deleted)

- § 2.3.2The 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.
- § 2.3.3The Owner shall retain a construction manager adviser lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.
- § 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

(Paragraphs deleted)

- § 2.3.5The 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.
- § 2.3.6The 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.
- § 2.3.7 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.
- § 2.3.8 The Owner shall forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

§ 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 review by the Construction Manager and prior approval of the Architect, and the Construction Manager or 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 reasonablecost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' 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 Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

- § 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.
- § 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.5, 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 Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and 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 Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and 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, the Construction Manager, and the 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. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures. However, at no point shall the Owner, Construction Manager or Architect accept responsibility for the safety of Contractor's, Subcontractor's or suppliers employees or agents working on the Project.

- § 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 the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

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

(Paragraph deleted)

- § 3.5.1The Contractor warrantsto the Owner, Construction Manager, 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 Construction Manager or 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 or portions thereof 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 Owner, assisted by the Construction Manager, shall secure and pay for the building permit. The Construction Manager may assist the Owner in the process as an additional service if required by the Owner. The Contractor shall secure and pay 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, Construction Manager, and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, 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, in consultation with the Construction Manager, 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, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either 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, Construction Manager, 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:
 - 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
 - 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, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the

Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require additional time for review. Failure of the Construction Manager 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, Construction Manager, 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, and the Construction Manager's use in developing the Project schedule, a Contractor's construction schedule for the Work. Theschedule 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. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.
- § 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit as ubmittal schedule for the Construction Manager's and Architect's approval. The Architect and Construction Manager'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 Construction Manager and 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 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 participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating allschedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.
- § 3.10.4 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.

§ 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 Construction Manager, Architect, and Owner, and delivered to the Construction Manager 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 and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are 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 Construction Manager or Architect without action.

- § 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.
- § 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner, Construction Manager, 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 reviewed and 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 Construction Manager and 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.
- § 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 Construction Manager and 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.

(Paragraph deleted)

§ 3.12.10.1If 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, the Architect, and the Construction Manager 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

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expressed in the Contract Documents. The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.

§ 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 Construction Manager and Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

- § 3.13.1 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.
- § 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§ 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, Separate Contractors, or of other Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner, Separate Contractors, or by other Contractors except with written consent of the Construction Manager, Owner, and such other Contractors or Separate Contractors. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Separate Contractors, other Contractors, or the Owner, 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, or Construction Manager with the Owner's approval, 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, Construction Manager, 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, Construction Manager, 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, Architect, or Construction Manager. 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 through the Construction Manager.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and 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), caused in whole or in part 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 AND CONSTRUCTION MANAGER

§ 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 The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.
- § 4.1.3 Duties, responsibilities, and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Construction Manager, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

- § 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and 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. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.
- § 4.2.3 The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work actually observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work. However, despite the continuous presence of the Construction Manager it is agreed and understood that the Construction Manager will not be required to make exhaustive or continuous on-site inspections to check the quantity and quality of the Work. The Contractor remains solely responsible for the Work.
- § 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project schedule.
- § 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and 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, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the

Architect will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

- § 4.2.6 Communications. The Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. Likewise, the Architect will include the Construction Managerin all communications that relate to or affect the Construction Manager's services or responsibilities. The Owner shall promptly notify the Architect and Construction Manager of the substance of any direct communications between the Owner, the Construction Manager and/or Architect relating to the Project and their scope of responsibility. 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 other Contractors shall be through the Construction Manager. Communications by and with the Owner's own forces and Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.
- § 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.
- § 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or notthe Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them either to exercise or not to exercise such authority shall give rise of any kind of duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

(Paragraph deleted)

- § 4.2.9Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.
- § 4.2.10 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractorsuch as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner that the Construction Manager has reviewed and recommended them for approval. However, nothing herein shall release the Architect of its responsibility to review and approve or reject the Submittals. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.
- § 4.2.11 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, for thepurposes 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. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.
- § 4.2.12 Review of the Contractor's submittals by the Construction Manager and Architect 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 Construction Manager and 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 Construction Manager and 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.

- § 4.2.13 The Construction Manager will help prepare Change Orders and Construction Change Directives.
- § 4.2.14 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.
- § 4.2.15 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.
- § 4.2.16 The Construction Manager will assist the Architect in conducting project review and site visits to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.
- § 4.2.17 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 Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.
- § 4.2.18 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of the Construction Manager, Owner, or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.
- § 4.2.19 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions so rendered in good faith.
- § 4.2.20 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.
- § 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation if any. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request 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 other Contractorsor Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

§ 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 Construction Manager, for review by the Owner, Construction Manager 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 Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed person or entityor, (2) requires additional time for review. Failure of the Ownerto 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, Construction Manager 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, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager 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, Construction Manager 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, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager 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
 - 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 with Own Forces and to Award Other Contracts
- § 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and 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 the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.
- § 6.1.3 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's own forces, Separate Contractors, Construction Manager and other 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's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractorto notify the Construction Manager and 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 or other Contractors' 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 Contractors or other Contractors that are not apparent.
- § 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall not be responsible to the Contractor for costs the Contractor incurs because ofdelays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces, Separate Contractors, or other Contractors.
- § 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, Separate Contractors, or other Contractors as provided in Section 10.2.5.
- § 6.2.5 The Owner, Separate Contractors, and other Contractors 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, other 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 Construction Manager, with notice to 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, Construction Manager, Architect and/or Contractor to the extent applicable. 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

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

- 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 with the help of Construction Manager 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:
 - 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;
 - 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 Construction Manager shall reasonably 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 Construction Manager 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 Construction Manager and Architect;

- Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- 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 Construction Manager 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 recommended by the Construction Manager and Architect and agreed to by the Owner. 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 Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The 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 the recommendations made by the Construction Manager and 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 Construction Manager shall 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 affect the Contract Sum or Contract Time, the Contractor shall notify the Construction Managerand Architect and shallnot 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 Construction Manager and Architectthat 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, Architect, Construction Manager, or an employee of any of them, or of the Owner's own forces, Separate Contractors, or other Contractors; (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, after seeking input from the Construction Manager, 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.

(Paragraph deleted)

§ 8.3.3In the event the Contractor is deemed by the Construction Manager as unable to meet the Projection Construction Schedule through no fault of his own, but because of failure of the Contractor's suppler(s) or Subcontractor(s) to timely deliver materials, equipment and labor for the project, the Contractor agrees that the Construction manager shall be authorized, on behalf of the Contractor, to deal directly with such delinquent suppliers and Subcontractors if the Construction Manager deems appropriate. The Contractor shall take such actions as the Construction Manager shall request, to assist the Construction Manager in dealing with such delinquent suppliers and subcontractors in such manner as the Construction Manager shall deem necessary forthe completion of the project, which may include, but shall not be limited to, the termination of such delinquent suppliers and subcontractors and the issuance of replacement order(s) or Subcontract(s) to other suppliers or Subcontractors by the Construction Manager on behalf of the Contractor. The Contractor shall be responsible for all costs associated with the Construction Manager's time and replacement orders and/or Subcontracts.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

(Paragraphs deleted)

- § 9.1.1The 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.
- § 9.1.2If 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 Construction Manager, Owner and 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 Construction Manager, Architect, and Owner. This schedule, unless objected to by the Construction Manager, Architect, or Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Final Schedule of Values shall be disseminated by and among the Architect, Construction Manager, and Contractor. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager,

Architect, or Owner may require, and unless objected to by the Construction Manager, Architect, or Owner 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 fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager an itemized Application for Payment preparedin 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, Construction Manager or Architect require, such as copies of requisitions, and releases of waivers of lien 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.
- § 9.3.4 The Contractor shall submit a sworn statement with each accompanying application for payment.

§ 9.4 Certificates for Payment

- § 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, recommend the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Certificate for Payment, in the full amount of the Application for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager 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 Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.
- § 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and recommend the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) recommend the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

- § 9.4.2.1 Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager 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 Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.
- § 9.4.3 The Construction Manager's recommendations relating to an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's recommendation will constitute a representation that, to the best of the Construction Manager's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work actually observed is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount recommended.
- § 9.4.4 The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation 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, or Contractors are, entitled to payment in the amount certified.
- § 9.4.5 The representations made pursuant to Sections 9.4.3 and 9.4.4 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 Construction Manager, Architect, or Owner.
- § 9.4.6 The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or 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.

§ 9.5 Decisions to Withhold Certification

- § 9.5.1 The Architect may withhold a Certificate for Payment or Project 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 9.4.3 and 9.4.4 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project 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 or Project 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 the acts and omissions described in Section 3.3.2 becauseof
 - defective Work not remedied; .1
 - .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;
 - reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum; .4
 - .5 damage to the Owner or a Separate Contractor or other Contractor;

- 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.

(Paragraph deleted)

- § 9.5.3When 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, 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 Construction Manager, and both will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments

- § 9.6.1 After the Architect has issued a Certificate for Payment or Project 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 Construction Manager and 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 Construction Manager will, on request and with permission from the Owner, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the 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 and the Construction Manager shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner, Construction Manager 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.

(Paragraph deleted)

- § 9.6.5The 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.
- § 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.

(Paragraph deleted)

§ 9.6.8Provided 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 or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within thirtydays of the invoice submitted to the Hancock County Auditor, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner, Construction Manager 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 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 notify the Construction Manager, and the Contractor and Construction Manager shall jointly 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 list, the Architect, assisted by the Construction Manager, 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 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, assisted by the Construction Manager, to determine Substantial Completion.
- § 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Architect shall execute, 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 and Construction Manager shall jointly 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 after consultation with the Construction Manager.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, 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 completion of the Work, the Contractor shall forward to the Construction Manager a notice that the Work is ready for final inspection and acceptance, and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager shall perform an inspection to confirm the completion of Work of the Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors'notices and Application for Payment or Project Application for Payment, to the Architect, who 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 or Project Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the 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 or Project 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 through the Construction Manager (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 Construction Manager and Architect so confirm, 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 through the Construction Manager 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

- 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
- 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. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct or indirect control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager. Any and all of Construction Manager's safety related work on the Project is for the sole and exclusive benefit of the Owner and not for the benefit of any employee or agent of any Contractor, Subcontractor, Sub-subcontractor or Supplier working on the Project. No duty between the Construction Manager and any employee or agent of any Contractor, Subcontractor, Sub-subcontractor or Supplier shall be implied by the Contract Documents, or by virtue of the Construction Manager taking any action or inaction related to safety on the Project.

§ 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;
 - .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; and
 - .4 construction or operations by the Owner, Separate Contractors, or other Contractors.
- § 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, 10.2.1.3 and 10.2.1.4 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, 10.2.1.3 and 10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is solely attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable in any respect 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, Construction Manager and Architect.

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

§ 10.2.8 Injury or Damage to Person or Property

If any Contractor, Subcontractor or Suppliersuffers injury or damage to person or property because of an act or omission of another party working on the Project, 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 and the Construction Manager and Owner within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable all parties to investigate the matter.

§ 10.3 Hazardous Materials

- § 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances and bears the sole responsibility for compliance regarding hazardous materials brought to the jobsite. 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, Construction Manager 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, Construction Manager 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, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager 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 and Construction Manager'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, Construction Manager, Architect, their 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. The Contractor will notify the Construction Manager and Owner of any such activities as soon as reasonably practicable under the circumstances.

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 required by the Owner, 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, Construction Manager and Construction Manager's consultants, and the 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. The Contractor's insurance shall be primary and non-contributary over all other policies of insurance.

If the Contractor's insurance lapses, Owner has immediate right to terminate pursuant to Section 14.2.

§ 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.

(Paragraph deleted)

§ 11.1.3Upon 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 directly to the Owner, and separately to the Construction Manager, 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.

(Paragraphs deleted)

§ 11.5 Adjustment and Settlement of Insured Loss

(Paragraphs deleted)

§ 11.5.1A 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 Construction Manager, Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Construction Manager, Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2Prior to settlement of an insured loss, the Owner shall notify the Contractor and Construction Manager of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor and

Construction Manager shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor or the Construction Manager does not object, the Owner shall settle the loss and the Contractor and Construction Manager 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 and/or Construction Manager shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor and/or Construction Manager 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 and/or Construction Manager 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.

§ 11.6 Performance and Payment Bond

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

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their 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 Construction Manager or Architect has not specifically requested to examine prior to its being covered, the Construction Manager or 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 the Contract Sum and Contract Timeas 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 Construction Manager or 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 Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. However, nothing herein relieves the Owner from its obligation to make payment to the Construction Manager.

§ 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, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5. The Owner is relieved of obligation to make payment if work is defective or incomplete.

- § 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, Separate Contractors, or other 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 governSection 15.4.

§ 13.2 Successors and Assigns

- § 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make 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, Construction Manager, 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 Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and 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 Construction Manager, 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 Construction Manager and 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 Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and 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 Construction Manager's and 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 Construction Manager for transmittal to the Architect.
- § 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or 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 established by statute for prejudgment interest in Indiana.

TERMINATION OR SUSPENSION OF THE CONTRACT ARTICLE 14

§ 14.1 Termination by the Contractor

- § 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 90 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:
 - Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be .1 stopped;
 - .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
 - .3 Because the Construction Manager has not certified or 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, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
 - 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 180 days in any 365-day period.
- § 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, Construction Manager 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 Sub-subcontractor, or their agents or employees, or any other persons 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, Construction Manager and 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.
 - .5 Contractor's insurance lapses or expires
- § 14.2.2 When any of the reasons described in Section 14.2.1 exist, after consultation with the Construction Manager, 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 Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, 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 the 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 this 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 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;
- .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. Any claims for fraud by the Contractors, alleged by the Owner, will not be subject to the ten year time limitation.

§ 15.1.3 Notice of Claims

(Paragraph deleted)

§ 15.1.3.1Claims 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 Construction Manager and 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.

§ 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

(Paragraphs deleted)

§ 15.1.4.1Pending 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.

§ 15.1.4.2The 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.

(Paragraphs deleted)

§ 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 Construction Managerwill 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 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, the Construction Manager, and the Architect, if the Architectis 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 of 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 ((Prevailing parties will receive attorney fees and the costs associated with the claim. Parties will attempt to agree on a mediator within (30) day. Absent an agreement the Hancock County Circuit Court Judge will appoint a striking panel of three mediators.))

§ 15.3.3 ((Laws of the State of Indiana shall be applicable with all of the agreements))

§ 15.3.4 ((If any one provision of any agreement is deemed invalidate, it shall not invalidate other provisions of the agreements.))

§ 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.

(Paragraphs deleted)

§ 15.3.5 To the extent that Construction Manager is requested by the Owner to actively participate in any dispute resolution process, the Construction Manager shall be entitled to reasonable compensation for its efforts, as an additional service.

(1282557289)

User Notes:



NAME (Please Print)	COMPANY NAME	TELEPHONE & FAX NUMBER	E-MAIL ADDRESS
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Joe Charles	Forguson	317-416-4738	jeharte & fargason construction com



NAME (Please Print)	COMPANY NAME	TELEPHONE & FAX NUMBER	E-MAIL ADDRESS
Ryan McGinness	Environmental Demolston Group	859 363 4863	RMe Ginness Cedg/lc.biz
Grey Hochstedler	Holliday Inisulation	317-850-1500	Hosprop 20 @g mail.com
Allison Smith	BCMI	317-450-7159	BIDS@ BCMI.US
Allison Smith	Ambit	765 606 0379	asmith@ambit-enterprises.co
			.3



NAME (Please Print)	COMPANY NAME	TELEPHONE & FAX NUMBER	E-MAIL ADDRESS
Shawn Annandale	C-CAT	317-902-7184	Sannandale@C-CAT.Com
PAILUP WINK	Abbott Controls	3176977102	dave@alboffcontrols.com
THIMP WINK	DLZ	317.532.8287	dave @albott controls.com
~			



NAME (Please Print)	COMPANY NAME	TELEPHONE & FAX NUMBER	E-MAIL ADDRESS
CHUCK THOMBON	SEWARD ASSOCS.	317-979-1400	ctnompsoneseWARD ASSOC
CHUCK THOMBON Grey Gaynor	Seward Assocs,	317-979-2545	ggay non@ saward Associate

ADDENDUM NO. 01

PROJECT: HANCOCK COUNTY OFFICE RENOVATIONS

123 East Main Street Greenfield, IN 46140

DLZ Project Number 2163-1063-90

TO: All Bidders and others to whom Plans and Specifications

for the above referenced Project have been issued.

OWNER: Hancock County Board of Commissioners

111 South American Legion Place, Suite 219

Greenfield, IN 46140

ARCHITECT: DLZ INDIANA, LLC

138 N. Delaware Street. Indianapolis, Indiana 46204

CONSTRUCTION ENVOY CONSTRUCTION

MANAGER: 890 E 116th Street, Suite 250

Fishers, Indiana 46038

DATE: January 18, 2024

The items included in this Addendum are to become a part of the original Drawings and Project Manual dated December 21, 2023 as if included herein. Only these items are to be altered. The remainder of the original Drawings and Project Manual remain valid in their entirety. Bidders must acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

CERTIFIED BY:



Phillip J. Wink, RA Registered Architect State of Indiana

PROJECT MANUAL

ITEM NO. 1. SECTION 055213 – PIPE AND TUBE RAILING

a. Paragraph 2.1A-1.g: Add "g. Superior Aluminum Products".

b. Replace section in its entirety with attached.

ITEM NO. 2. SECTION 093000 - TILING

a. Add Paragraph 2.3D.

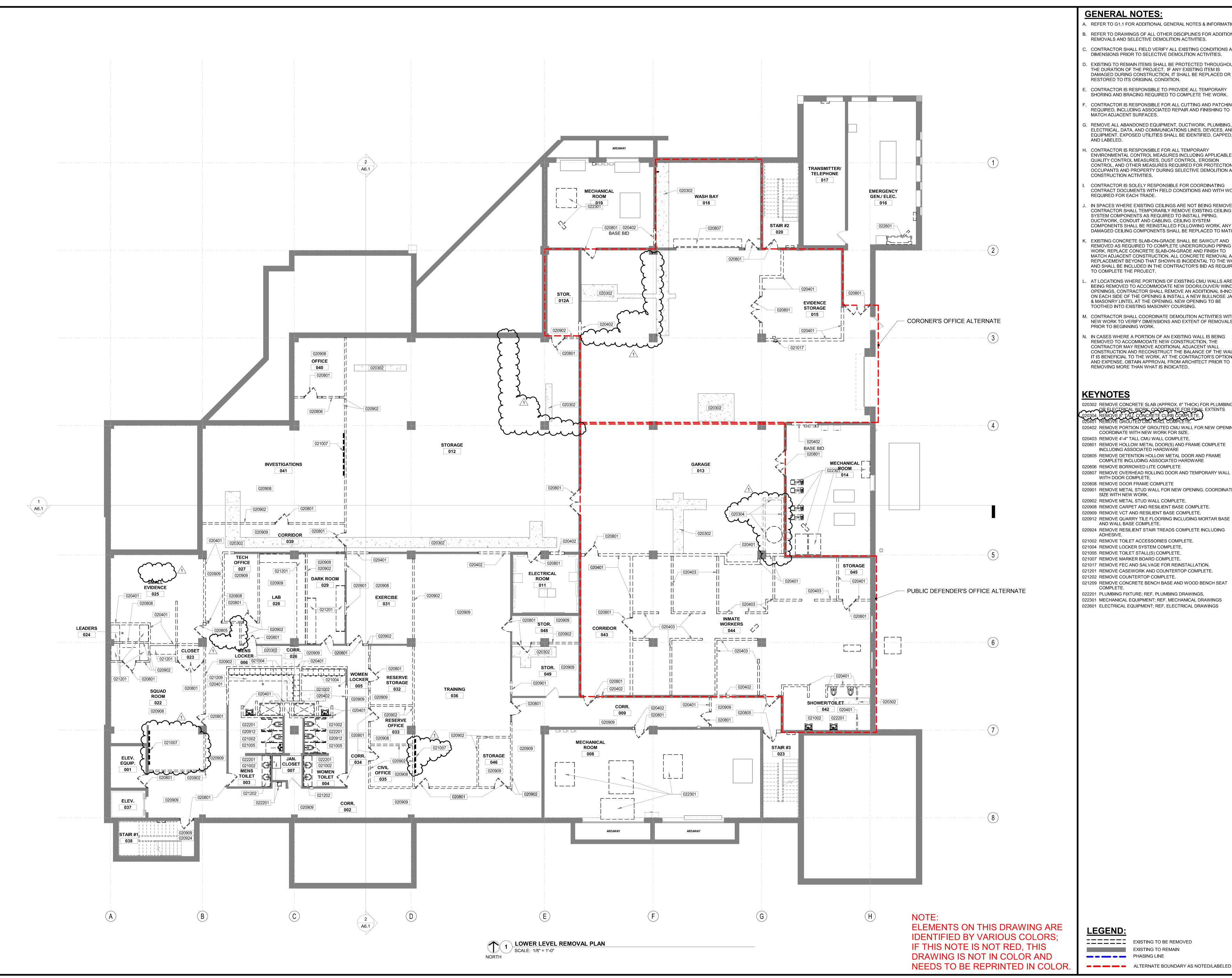
b. Replace section in its entirety with attached.

ITEM NO. 3. SECTION 221119 – Domestic Water Piping Specialties

a. Paragraph 2.8.B.1: Add "h. Sioux Chief".b. Paragraph 2.13.A.1: Add "g. Sioux Chief".

c. Paragraph 2.14.A.1: Add "c. Sioux Chief".

ADDENDUM NO. 01 Page 1



GENERAL NOTES:

- . REFER TO G1.1 FOR ADDITIONAL GENERAL NOTES & INFORMATION . REFER TO DRAWINGS OF ALL OTHER DISCIPLINES FOR ADDITIONAL REMOVALS AND SELECTIVE DEMOLITION ACTIVITIES.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND
- DIMENSIONS PRIOR TO SELECTIVE DEMOLITION ACTIVITIES. . EXISTING TO REMAIN ITEMS SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE PROJECT. IF ANY EXISTING ITEM IS DAMAGED DURING CONSTRUCTION, IT SHALL BE REPLACED OR
- RESTORED TO ITS ORIGINAL CONDITION. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL TEMPORARY SHORING AND BRACING REQUIRED TO COMPLETE THE WORK.
- CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED, INCLUDING ASSOCIATED REPAIR AND FINISHING TO MATCH ADJACENT SURFACES.
- REMOVE ALL ABANDONED EQUIPMENT, DUCTWORK, PLUMBING, ELECTRICAL, DATA, AND COMMUNICATIONS LINES, DEVICES, AND EQUIPMENT. EXPOSED UTILITIES SHALL BE IDENTIFIED, CAPPED, AND LABELED.
- I. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY ENVIRONMENTAL CONTROL MEASURES INCLUDING APPLICABLE AII QUALITY CONTROL MEASURES, DUST CONTROL, EROSION CONTROL, AND OTHER MEASURES REQUIRED FOR PROTECTION OF OCCUPANTS AND PROPERTY DURING SELECTIVE DEMOLITION AND CONSTRUCTION ACTIVITIES.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATING CONTRACT DOCUMENTS WITH FIELD CONDITIONS AND WITH WORK REQUIRED FOR EACH TRADE.
- IN SPACES WHERE EXISTING CEILINGS ARE NOT BEING REMOVED, CONTRACTOR SHALL TEMPORARILY REMOVE EXISTING CEILING SYSTEM COMPONENTS AS REQUIRED TO INSTALL PIPING, DUCTWORK, CONDUIT AND CABLING. CEILING SYSTEM COMPONENTS SHALL BE REINSTALLED FOLLOWING WORK. ANY DAMAGED CEILING COMPONENTS SHALL BE REPLACED TO MATCH.
- EXISTING CONCRETE SLAB-ON-GRADE SHALL BE SAWCUT AND REMOVED AS REQUIRED TO COMPLETE UNDERGROUND PIPING WORK, REPLACE CONCRETE SLAB-ON-GRADE AND FINISH TO MATCH ADJACENT CONSTRUCTION, ALL CONCRETE REMOVAL AND REPLACEMENT BEYOND THAT SHOWN IS INCIDENTAL TO THE WORK AND SHALL BE INCLUDED IN THE CONTRACTOR'S BID AS REQUIRED TO COMPLETE THE PROJECT.
- AT LOCATIONS WHERE PORTIONS OF EXISTING CMU WALLS ARE BEING REMOVED TO ACCOMMODATE NEW DOOR/LOUVER/ WINDOW OPENINGS, CONTRACTOR SHALL REMOVE AN ADDITIONAL 8-INCHES ON EACH SIDE OF THE OPENING & INSTALL A NEW BULLNOSE JAMB & MASONRY LINTEL AT THE OPENING. NEW OPENING TO BE TOOTHED INTO EXISTING MASONRY COURSING.
- M. CONTRACTOR SHALL COORDINATE DEMOLITION ACTIVITIES WITH NEW WORK TO VERIFY DIMENSIONS AND EXTENT OF REMOVALS PRIOR TO BEGINNING WORK.
- . IN CASES WHERE A PORTION OF AN EXISTING WALL IS BEING REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE CONTRACTOR MAY REMOVE ADDITIONAL ADJACENT WALL CONSTRUCTION AND RECONSTRUCT THE BALANCE OF THE WALL IF IT IS BENEFICIAL TO THE WORK, AT THE CONTRACTOR'S OPTION AND EXPENSE. OBTAIN APPROVAL FROM ARCHITECT PRIOR TO REMOVING MORE THAN WHAT IS INDICATED.

020302 REMOVE CONCRETE SLAB (APPROX. 6" THICK) FOR PLUMBING

020402 REMOVE PORTION OF GROUTED CMU WALL FOR NEW OPENING

- COORDINATE WITH NEW WORK FOR SIZE. 020403 REMOVE 4'-4" TALL CMU WALL COMPLETE.
- 020801 REMOVE HOLLOW METAL DOOR(S) AND FRAME COMPLETE INCLUDING ASSOCIATED HARDWARE 20805 REMOVE DETENTION HOLLOW METAL DOOR AND FRAME
- COMPLETE INCLUDING ASSOCIATED HARDWARE 020806 REMOVE BORROWED LITE COMPLETE
- WITH DOOR COMPLETE. 20808 REMOVE DOOR FRAME COMPLETE
- 020901 REMOVE METAL STUD WALL FOR NEW OPENING. COORDINATE SIZE WITH NEW WORK. 20902 REMOVE METAL STUD WALL COMPLETE.
- 020908 REMOVE CARPET AND RESILIENT BASE COMPLETE.
- 20909 REMOVE VCT AND RESILIENT BASE COMPLETE. 020912 REMOVE QUARRY TILE FLOORING INCLUDING MORTAR BASE
- AND WALL BASE COMPLETE. 020924 REMOVE RESILIENT STAIR TREADS COMPLETE INCLUDING
- ADHESIVE. 21002 REMOVE TOILET ACCESSORIES COMPLETE.
- 21004 REMOVE LOCKER SYSTEM COMPLETE. 021005 REMOVE TOILET STALL(S) COMPLETE.
- 021007 REMOVE MARKER BOARD COMPLETE. 021017 REMOVE FEC AND SALVAGE FOR REINSTALLATION.
- 021201 REMOVE CASEWORK AND COUNTERTOP COMPLETE. 021202 REMOVE COUNTERTOP COMPLETE.
- 021209 REMOVE CONCRETE BENCH BASE AND WOOD BENCH SEAT COMPLETE.
- 022201 PLUMBING FIXTURE; REF. PLUMBING DRAWINGS.
- 022301 MECHANICAL EQUIPMENT; REF. MECHANICAL DRAWINGS 022601 ELECTRICAL EQUIPMENT; REF. ELECTRICAL DRAWINGS

DRAWING NUMBER

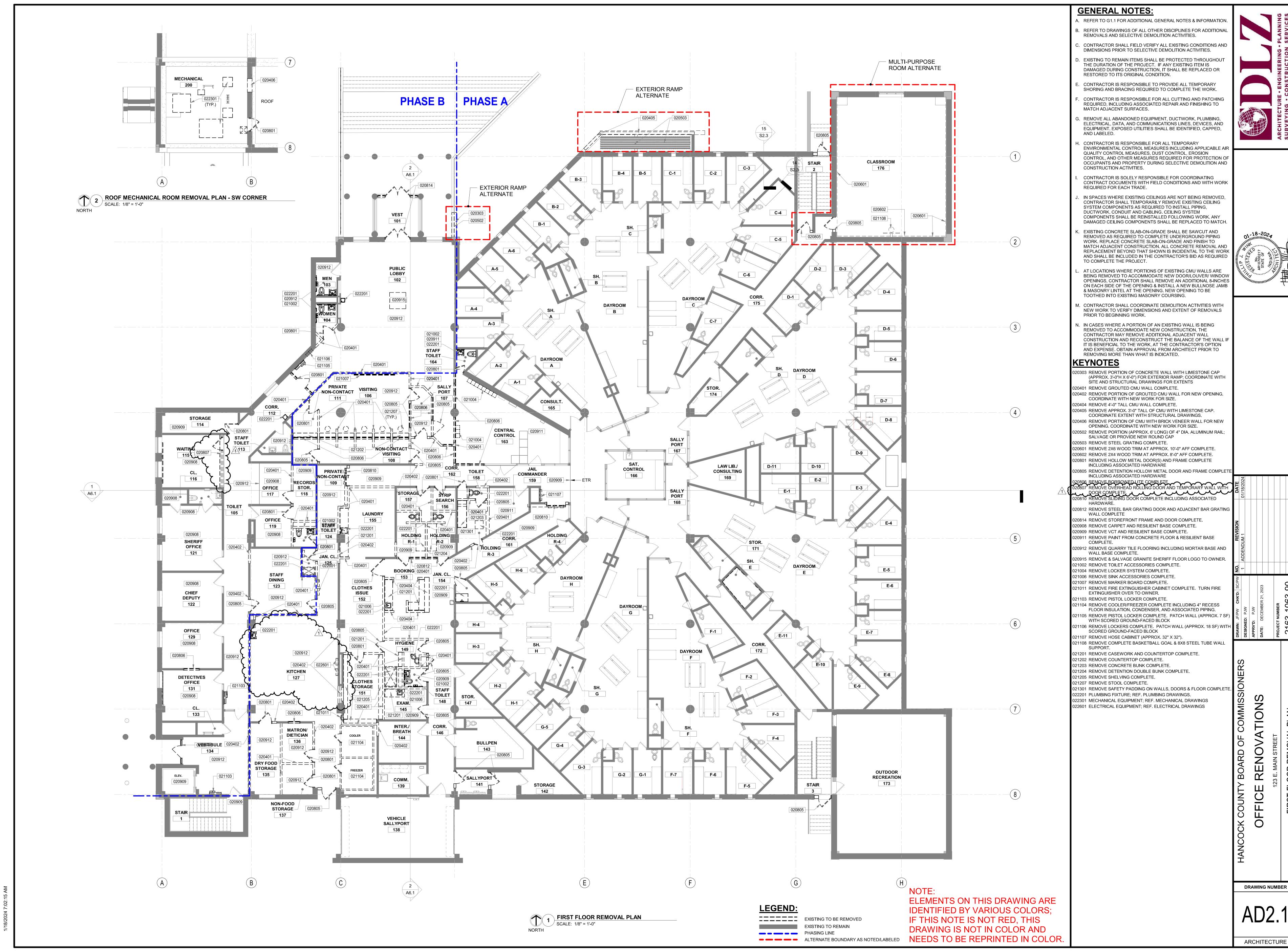
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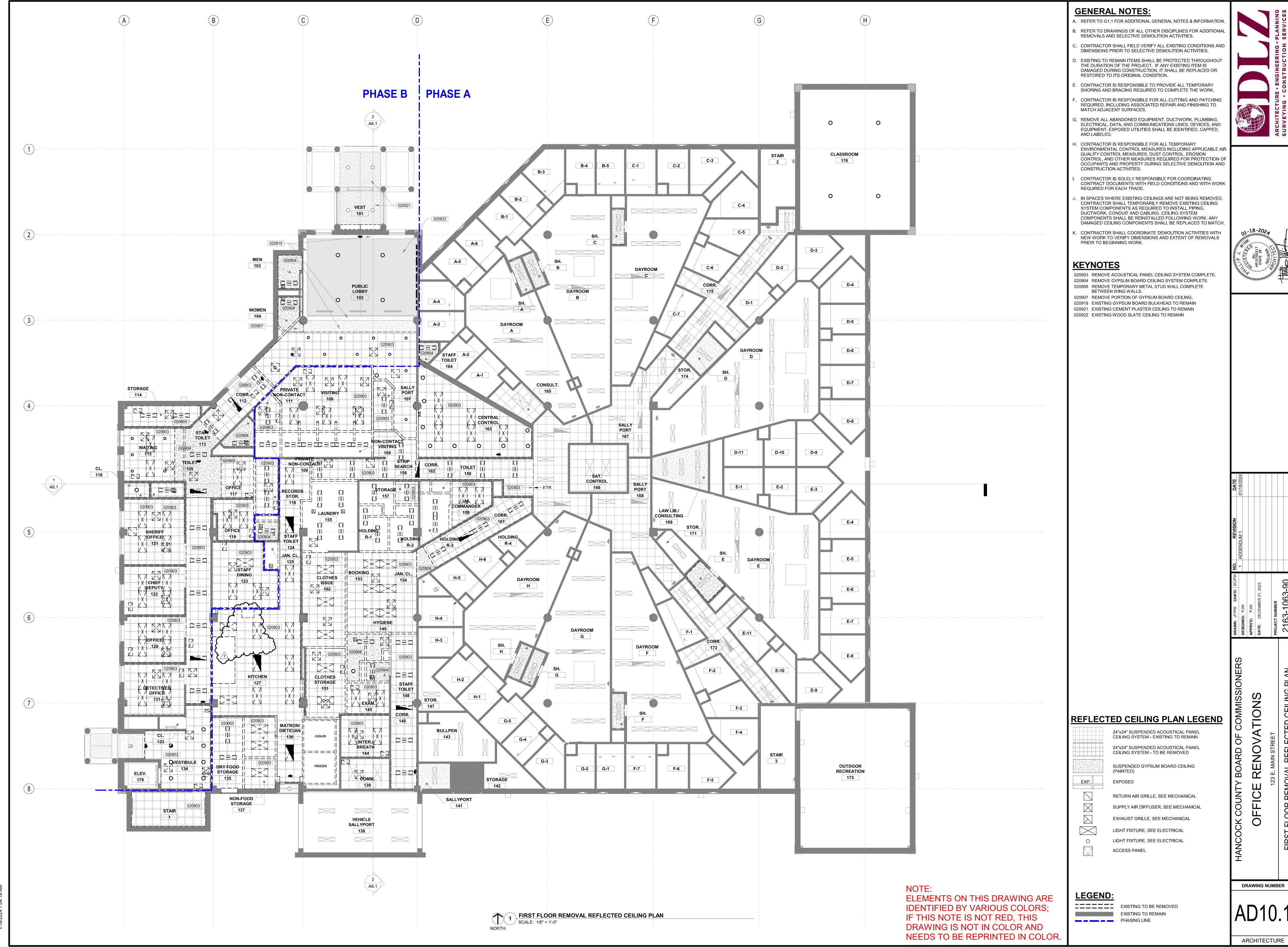
ARCHITECTURE

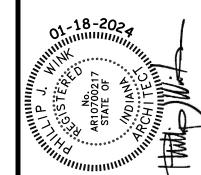
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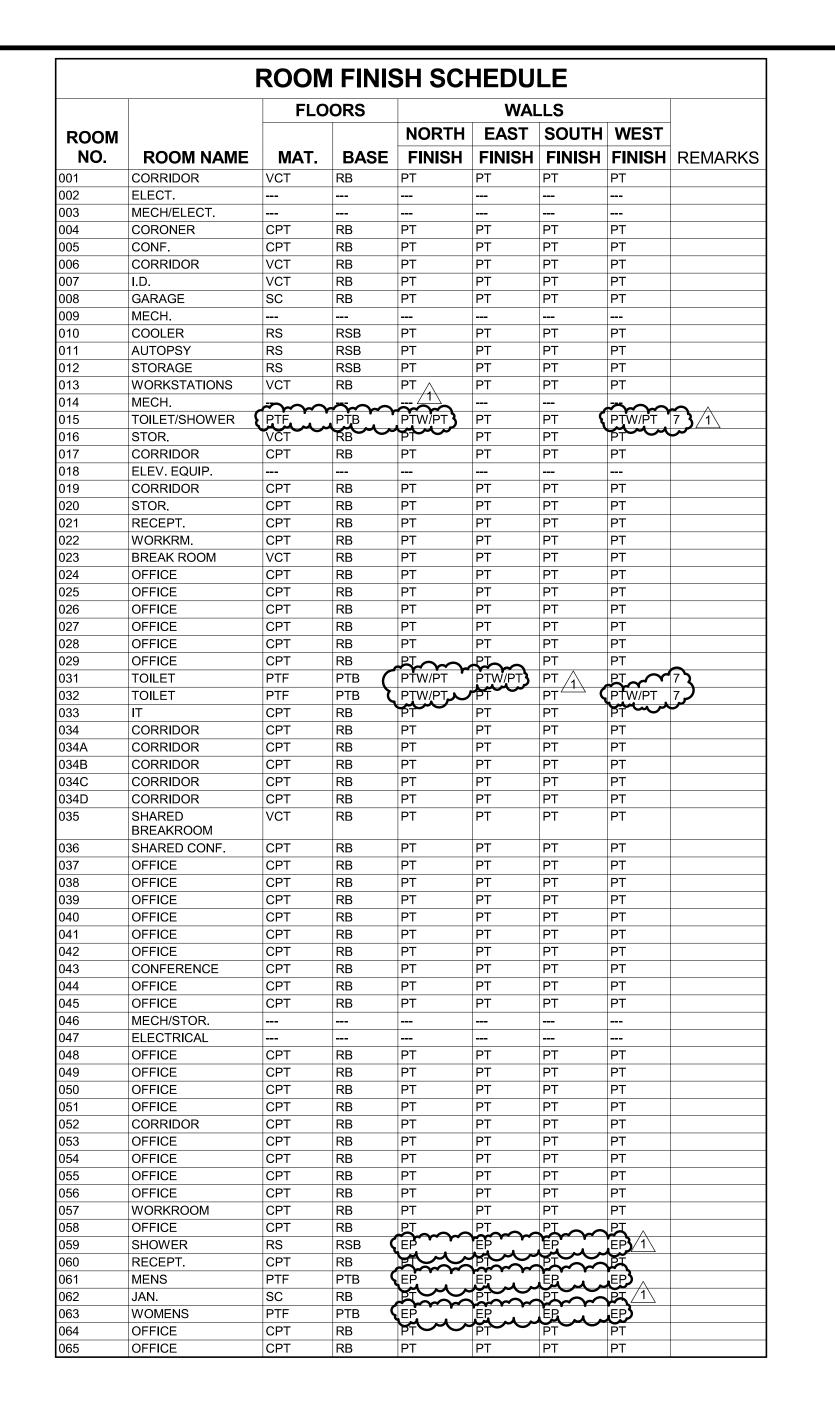
====== EXISTING TO BE REMOVED EXISTING TO REMAIN

PHASING LINE ALTERNATE BOUNDARY AS NOTED/LABELED









				SH SCI				
		FLO	ORS		WAI	LS		
ROOM				NORTH	EAST	SOUTH	WEST	
NO.	ROOM NAME	MAT.	BASE	FINISH	FINISH	FINISH	FINISH	REMARK
066	STORAGE	CPT	RB	PT	PT	PT	PT	
067	OFFICE	CPT	RB A	PT		PT	PT	\sim 1
068	TOILET	PTF	PTB /1	PTW/PT	PTW/PT	PT	PT {	7 3
069	DRUG PROC.	CPT	RB	PT	PT	PT	PT	
071	CORRIDOR	CPT	RB	PT	PT	PT	PT	
072	MECH.	SC	RB	PT	PT	PT	PT	
073	CORRIDOR	CPT	RB	PT	PT	PT	PT	
073A 073B	CORRIDOR CORRIDOR	CPT CPT	RB RB	PT PT	PT PT	PT PT	PT PT	
073Б 073С	CORRIDOR	CPT	RB	PT	PT	PT	PT	
073C 074	MECH.							
074 075	SM. CONF.	CPT	RB	PT	PT	PT	PT	
076	WORKRM.	CPT	RB	PT	PT	PT	PT	
077	OFFICE	CPT	RB	PT	PT	PT	PT	
078	ADMIN.	CPT	RB	PT	PT	PT	PT	
079	OFFICE	CPT	RB	PT	PT	PT	PT	
080	STORAGE	CPT	RB	PT	PT	PIO	PT	
081	TOILET	CPT	PTB		PTW/PT	PTW/PT	PT 🔏	7
082	OFFICE	CPT	RB	PT				
083	TOILET	PTF	PTB	PT	PT /1\	PTW/PT	PTW/PT	7
084	BREAKRM	VCT	RB	PT	PT	PT	PT	
085	OFFICE	CPT	RB	PT	PT	PT	PT	
086	OFFICE	CPT	RB	PT	PT	PT	PT	
087	OFFICE	CPT	RB	PT	PT	PT	PT	
880	RECEPT.	CPT	RB	PT	PT	PT	PT	
089	WAITING	CPT	RB	PT	PT	PT	PT	
090	ADMIN	CPT	RB	PT	PT	PT	PT	
091	OFFICE	CPT	RB	PT	PT	PT	PT	
092 093	OFFICE CONF.	CPT	RB RB	PT PT	PT PT	PT PT	PT PT	
093 094	OFFICE	CPT	RB	PT	PT	PT	PT	
095	LARGE CONF.	CPT	RB	PT	PT	PT	PT	
101	VEST.	WCT	RB	PT	PT	PT	PT	
102	CC LOBBY	PTF	PTB	PT	PT	PT	PT	6
103	TOILET	PTF	РТВ	PT	PT	PT	PT	
104	TOILET	PTF	РТВ	PT	PT	PT	PT	
105	CORRIDOR	CPT	RB	PT	PT	PT	PT	
106	CONF./CLRM.	CPT	RB	PT	PT	PT	PT	
107	BOOKKEEPER	CPT	RB	PT	PT	PT	PT	
108	TOILET	PTF	PTB	PT	PT	PT	PT	
109	STORAGE	VCT	RB	PT	PT	PT	PT	
110	OFFICE	CPT	RB	PT	PT	PT	PT	
111	WORKRM.	CPT	RB	PT	PT	PT	PT	
112	BREAKROOM	VCT	RB	PT	PT	PT	PT	
113	OFFICE	CPT	RB	PT	PT	PT	PT	
114	TOILET	PTF	PTB	PT	PT	PT	PT	
115	STOR.	CPT	RB	PT C	PT	PT DTW//DT		$\overline{}$
116 117	TOILET	PTF	PTB	PT C	PTW/PT	PTW/PT	PT T	1/1/1
117 118	DRUG SCREENING OFFICE	PTF CPT	PTB (PTW/PT	PTW/PT		PT PF	
118 119	OFFICE	CPT	RB	PT	PT	PT	PT	
120	WAITING	CPT	RB	PT	PT	PT	PT	
121	OFFICE	CPT	RB	PT	PT	PT	PT	
122	RECEPT.	CPT	RB	PT	PT	PT	PT	
123	CORRIDOR	PTF	RB	PT	PT	PT	PT	
124	JAN.							
125	VEST.	WCT	RB	PT	PT	PT	PT	
126A	SECURITY	CPT	RB	PT	PT	PT	PT	
126B	VEST.	WCT	RB	PT	PT	PT	PT	
127	VESTIBULE	CPT	RB	PT	PT	PT	PT	
127A	ELECT.			PT	PT	PT	PT	
128	OPEN OFFICES	CPT	RB	PT	PT	PT	PT	
129	OFFICE	CPT	RB	PT	PT	PT	PT	
129A	OFFICE	CPT	RB	PT	PT	PT	PT	
129B	OFFICE	CPT	RB	PT	PT	PT	PT	
130	OFFICE	CPT	RB	PT	PT	PT	PT	
131	OFFICE	CPT	RB	PT	PT	PT	PT	
132	DEP. DIRECTOR	CPT	RB	PT	PT	PT	PT	
133	DIRECTOR	CPT	RB	PT	PT	PT	PT	

		FLC	ORS		WAL	LS		
ROOM				NORTH	EAST	SOUTH	WEST	
NO.	ROOM NAME	MAT.	BASE	FINISH	FINISH	FINISH	FINISH	REMARKS
134	CORRIDOR	VCT	RB	PT	PT	PT	PT	
135	CORRIDOR	VCT	RB	PT	PT	PT	PT	
136	BOOK KEEPER	CPT	RB	PT	PT	PT	PT	
137	RECEPT.	CPT	RB	PT	PT	PT	PT	
138	CORRIDOR	VCT	RB	PT	PT	PT	PT	
139	HOME DET. CHECK-IN	VCT	RB	PT	PT	PT	PT	
140	HOME DET. CHECK-IN	VCT	RB	PT	PT	PT	PT	^ ^
141	STAFF TOILET	PTF (РТВ	EP	EP	EP/PTW	ĚΡ	7 1
142	DRUG SCREENING	PTF	PTB	EP	EP	EP.	EP/PTW.	7)
143	I.T.	CPT	RB			PT	PT	
144	CORRIDOR							
145	CORRIDOR	VCT	RB	PI	PI	PI	PT	$\sqrt{1}$
146	STAFF TOILET	PTF	PTB {	EP/PTW	ĒΡ	ÉP	EP	7
147	HOLDING	SC	RB			PT	pro-	
148	JAN.							
149	CORRIDOR	VCT	RB	PT	PT	PT	PT	
150	STOR.							
151	STORAGE							
152	STORAGE							
153	VEHICLE SALLYPORT							
154	DETOX							
155	VEST.							
156	STORAGE							
158	STOR.							
159	CONTROL							
160	DAYROOM A							
161	DAYROOM B							
162	DAYROOM C							
163	CORRIDOR							
164	STORAGE							
165	CORRIDOR							
166	MULTI-PURPOSE ROOM	CPT	RB	PT	PT	PT	PT	5
167	DAYROOM D							
168	CORRIDOR							
169	STORAGE							
170	DAYROOM E							
171	JAN.							
172	CORRIDOR							
173	OUTDOOR REC							
174	DAYROOM F							
175	DAYROOM G							
176	DAYROOM H							
200	MECHANICAL							
E1	ELEV.	VCT	RB					
 S1	STAIRS	VCT	RB	PT	PT	PT	PT	1, 2, 4
S2	STAIR	VCT	RB	PT	PT	PT	PT	3, 4
S3	STAIR	VCT	RB	PT	PT	PT	PT	3, 4

FINISH ABBREVIATIONS: CPT-1 CARPET TILE EXP. EXPOSED PORCELAIN TILE BASE RESINOUS FLOORING BASE SEALED CONCRETE FLOOR VINYL COMPOSITE TILE WALK-OFF CARPET TILE

FINISH REMARKS:

COLOR THAN WALLS).

SUPPRESSION PIPING.

1. PROVIDE RUBBER TREADS. REFERENCE 096519.

2. PAINT STAIR RISERS AND RAILING (DIFFERENT COLOR

3. PAINT STAIR TREADS, RISERS AND RAILING (DIFFERENT

4. PROVIDE VCT AT LANDING AT FIRST FLOOR AND LOWER

5. PAINT EXISTING PLASTER CEILING AND EXPOSED FIF

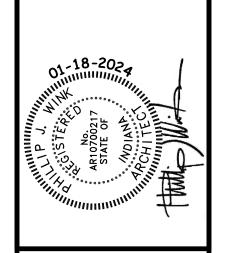
7. PROVIDE PORCELAIN TILE ON WET WALLS AS NOTED

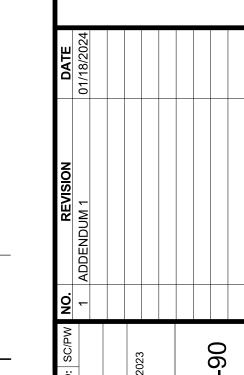
INTERIOR ELEVATIONS.

GENERAL ROOM FINISH NOTES:

- A. REFER TO G1.1 FOR ADDITIONAL GENERAL NOTES AND INFORMATION.
- B. DIFFERENT FLOOR MATERIALS SHALL MEET UNDER THE
- CENTERLINE OF DOORS, UNLESS NOTED OTHERWISE. C. REFER TO SPECIFICATIONS FOR CARPET TILE INSTALLATION
- METHODS. D. PROVIDE VINYL TRANSITION BETWEEN CARPET AND RESILIENT FLOOR FINISH. PROVIDE METAL TRANSITIONS AT EDGES OF
- TILE TO OTHER FLOOR FINISHES.
- E. REFER TO REFLECTED CEILING PLAN FOR CEILING MATERIAL
- F. TOILET AND SHOWER ROOMS SHALL RECIEVE MOLD AND MOISTURE RESISTANT GYPSUM BOARD.

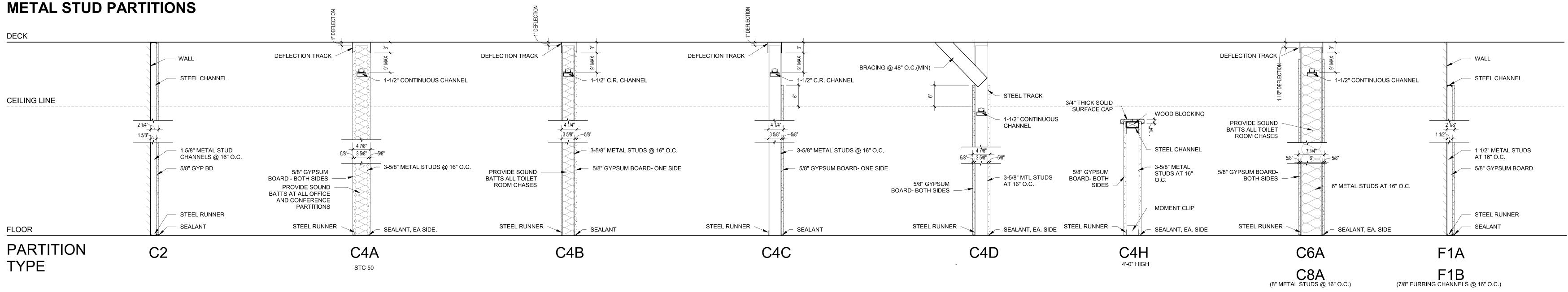


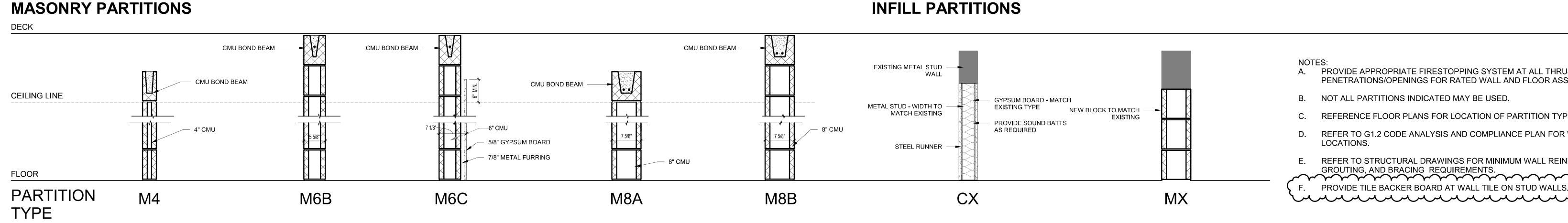




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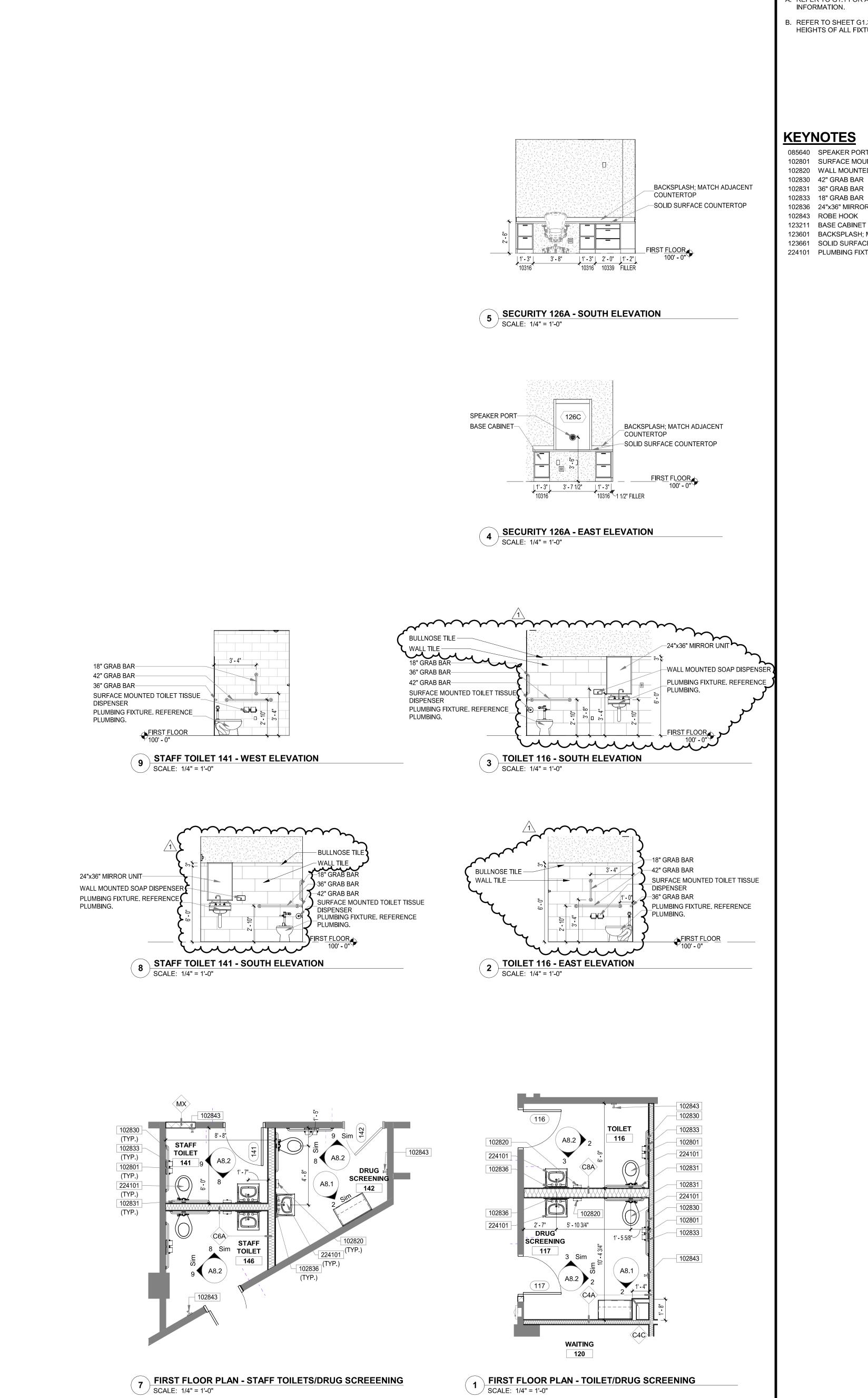
PARTITION SCHEDULE





NOTES: A. PROVIDE APPROPRIATE FIRESTOPPING SYSTEM AT ALL THRU-WALL PENETRATIONS/OPENINGS FOR RATED WALL AND FLOOR ASSEMBLIES.

- B. NOT ALL PARTITIONS INDICATED MAY BE USED.
- C. REFERENCE FLOOR PLANS FOR LOCATION OF PARTITION TYPE.
- D. REFER TO G1.2 CODE ANALYSIS AND COMPLIANCE PLAN FOR WALL TYPE AND
- E. REFER TO STRUCTURAL DRAWINGS FOR MINIMUM WALL REINFORCEMENT, GROUTING, AND BRACING REQUIREMENTS. F. PROVIDE TILE BACKER BOARD AT WALL TILE ON STUD WALLS.



GENERAL NOTES:

A. REFER TO G1.1 FOR ADDITIONAL GENERAL NOTES AND INFORMATION.

B. REFER TO SHEET G1.3 FOR STANDARD ADA MOUNTING HEIGHTS OF ALL FIXTURES, ACCESSORIES, AND SIGNAGE.

085640 SPEAKER PORT 102801 SURFACE MOUNTED TOILET TISSUE DISPENSER

102820 WALL MOUNTED SOAP DISPENSER

102831 36" GRAB BAR

102836 24"x36" MIRROR UNIT

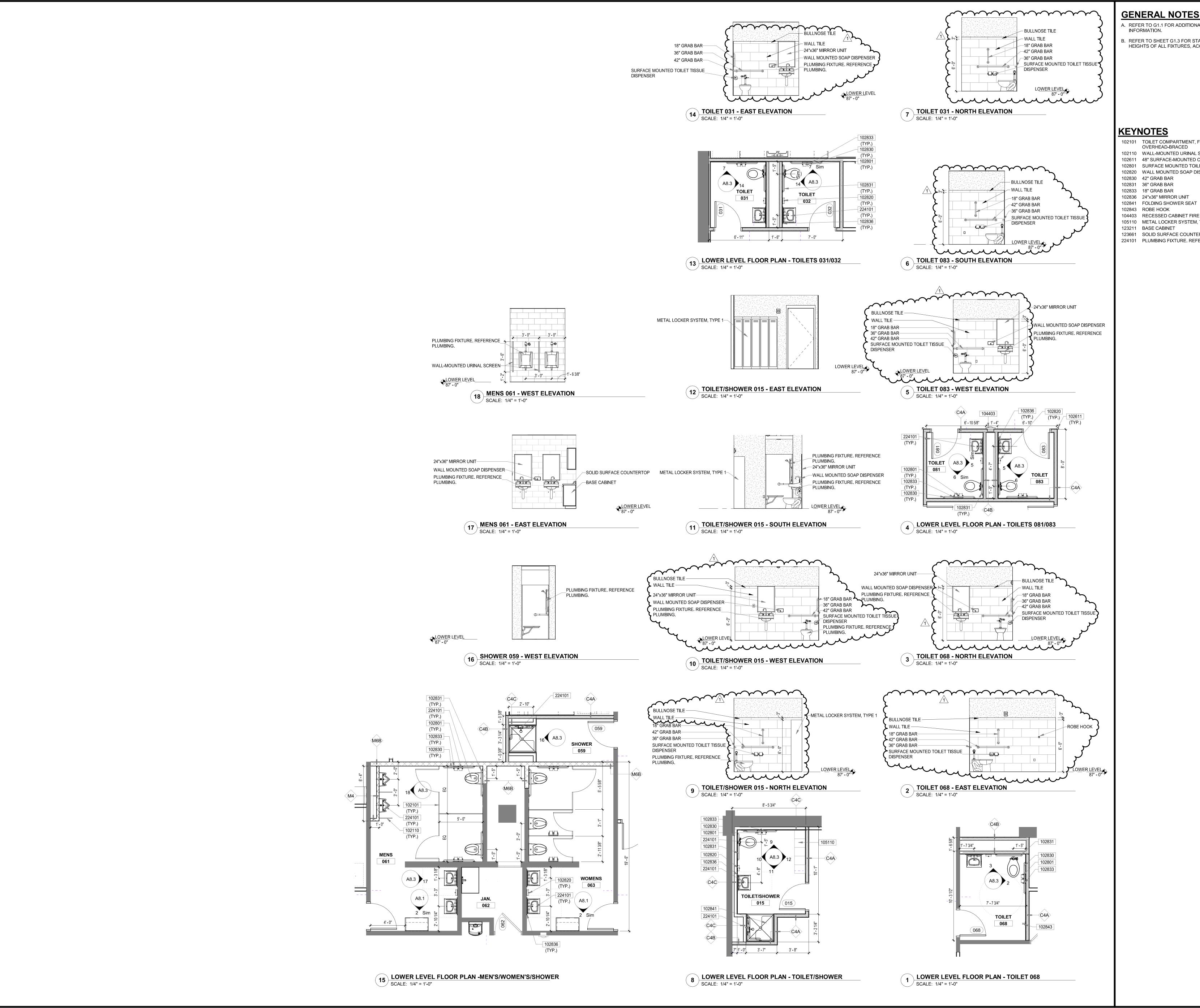
123211 BASE CABINET 123601 BACKSPLASH; MATCH ADJACENT COUNTERTOP

123661 SOLID SURFACE COUNTERTOP 224101 PLUMBING FIXTURE. REFERENCE PLUMBING.

123 E. MAIN STREET
ET PLANS AND INTERIOR ELEVATIONS

DRAWING NUMBER

ARCHITECTURE



GENERAL NOTES:

A. REFER TO G1.1 FOR ADDITIONAL GENERAL NOTES AND

B. REFER TO SHEET G1.3 FOR STANDARD ADA MOUNTING HEIGHTS OF ALL FIXTURES, ACCESSORIES, AND SIGNAGE.

102101 TOILET COMPARTMENT, FLOOR ANCHORED AND

OVERHEAD-BRACED 102110 WALL-MOUNTED URINAL SCREEN 102611 48" SURFACE-MOUNTED CORNER GUARD

102801 SURFACE MOUNTED TOILET TISSUE DISPENSER 102820 WALL MOUNTED SOAP DISPENSER

102830 42" GRAB BAR 102831 36" GRAB BAR

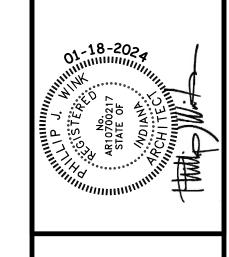
102833 18" GRAB BAR 102836 24"x36" MIRROR UNIT

102843 ROBE HOOK 104403 RECESSED CABINET FIRE EXTINGUISHER, TYPE A-B-C

105110 METAL LOCKER SYSTEM, TYPE 1 123211 BASE CABINET

123661 SOLID SURFACE COUNTERTOP

224101 PLUMBING FIXTURE. REFERENCE PLUMBING.



CHK'D: SC/PW NO.	ÖN	REVISION	DATE
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DRAWING NUMBER

ARCHITECTURE

022202	DOMESTIC EXISTING PIPING SERVING FLOOR ABOVE.	221122	EXISTING DOMESTIC AND SANITARY LINES SERVING MOP SINK
022203	EXISITING PIPING UP TO OUTSIDE HOSE BIB.		AND EWC ABOVE.
022204	REMOVE ALL EXISTING DOMESTIC PLUMBING PIPING AND	221123	EXISTING DOMESTIC AND SANITARY LINES SERVING EWC ABOV
022205	FIXTURES BEYOND THIS POINT FOR ROUTING OF NEW LINES TO FIXTURES. COMPLETELY REMOVE EXISTING SANITARY AND DOMESTIC	221124	PROVIDE 2 1/2" SCW, 1 1/2" DHW, 1" DWHR FOR INFRASTRUCTUF ROUGH-IN ALTERNATE TO SERVICE FUTURE RENOVATED RESTROOM ABOVE. PROVIDE SHUT-OFF VALVE AND CAP ENDS. RUNNING PIPING UP TO FLOOR ABOVE IN LOCATION OF EXISTIN
022208	PIPING. REMOVE ALL EXISTING DOMESTIC AND SANITARY PIPING FOR ON	221126	EXHAUST DUCT PREVIOUSLY DEMOED AND REMOVED. DOMESTIC PIPING SERVICING TOILET 120 ABOVE. PROVIDE
022209	FIRST FLOOR KITCHEN. IF PUBLIC DEFENDER'S OFFICE ALTERNATE IS ACCEPTED,		SHUT-OFF VALVE, CHECK VALVE, AND SHUT-OFF VAVLE IN THE DIRECTION OF WATER FLOW. BALANCE TO FLOW INDICATED.
	RESTROOM PIPING AND FIXTURES SHALL REMAIN OPERATIONAL TILL FUTURE RENOVATION.	221127 221128	INSTALL 3/4" DCW PIPE TO SERVE EXISTING HOSE BIBB. INSTALL 3/4" DCW PIPE TO SERVE EXISTING WALL HYDRANT.
022211	DOMESTIC PIPING SERVING CELLS ON FLOOR ABOVE TO REMAIN.	221136	SET GAS PRESSURE REGULATING VALVE TO 10" W.C.
022212	REMOVE EXISTING WATER HEATERS	221137	ROUTE NEW DCW PIPING TO EXISTING EXTERIOR HOSE BIBB.
022213	REMOVE EXISTING HOT WATER STORAGE TANK	221138	BYPASS VALVE
022214	REMOVE EXISTING FLOOR DRAIN AND CAP SANITARY PIPING.	221139	REINSTALL EASY WATER WIRING TO SERVE RECIRC LINE OF
022215	REMOVE EXISTING FLOOR CLEANOUT AND CAP SANITARY PIPING.		WATER HEATERS.
022216	EXISTING FLUSH VALVE TO BE REMOVED WITH PIPING.	221140	CONNECT L-1 TO EXISTING SANITARY PIPING.
022217	EXISTING FLUSH VALVE TO BE REMOVED AND REPLACED WITH WILLOUGHBY MODEL RFVB OR EQUAL DURING CONSTRUCTION.	221141	MANUAL BYPASS VALVE. TO BE OPENED WHEN DOMESTIC BOOSTER PUMP IS INOPERABLE.
022223	REMOVE ALL PIPING BEYOND WATER ENTRANCE AND PLUMBING EQUIPMENT FROM ROOM. EASYWATER SYSTEM TO BE REUSED IN RENOVATION.	221142	CORONER'S OFFICE ALTERNATE REFERENCED BY ENCLOSED ZONE. IF ALTERNATE IS ACCEPTED, ALL ABOVE GRADE NEW DOMESTIC BRANCES AND FIXTURES WILL NOT BE INSTALLED. PROVIDE PIPE TEES WITH SHUT-OFF VALVES AND CAPS FOR INSTALLATION IN FUTURE CONSTRUCTION. INSTALL BELOW
022226	IF CORONER'S OFFICE ALTERNATE IS ACCEPTED FLOOR DRAIN TO REMAIN.		GRADE DOMESTIC AND SANITARY WITH CAPS AT FLOOR.
022235	REMOVE PLUMBING FIXTURES ASSOCIATED WITH DEMOLISHED PIPING. PATCH WALL/FLOOR TO MATCH ADJACENT CONTDITIONS.	221143	PUBLIC DEFENDER'S OFFICE ALTERNATE REFERENCED BY ENCLOSED ZONE. IF ALTERNATE IS ACCEPTED, ALL ABOVE GRADE NEW DOMESTIC BRANCHES AND FIXTURES WILL NOT BE INSTALLED. PROVIDE PIPE TEES WITH SHUT-OFF VALVES AND CAPS FOR INSTALLATION INFUTURE CONSTRUCTION. INSTALL
022238	EXISTING SANITARY TO RESTROOM ABOVE TO REMAIN FOR NEW FIXTURE. DOMESTIC PIPES TO BE REMOVED FOR NEW PIPING INSTALLTION.		BELOW GRADE DOMESTIC AND SANITARY WITH CAPS AT FLOOI EXISTING SANITARY AND DOMESTIC PIPING SERVING EXISTING FIXTURES TO REMAIN FUNCTIONAL UNTIL FUTURE CONSTRUCTION.
022241	DISCONNECT AND REMOVE 3" SANITARY PIPING FROM 4" EXISTING MAIN.	221146	NEW WATER CLOSETS AND LAVATORIES TO BE CONNECTED TO EXISTING SANITARY PIPING.
022242	DISCONNECT AND REMOVE 4" SANITARY PIPING FROM 4" EXISTING MAIN.	221147	CONNECT EXISTING 3" STORM PIPING TO NEW 6" STORM MAIN.
022244	DISCONNECT AND REMOVE STORM PIPING UP TO POINT INDICATED.	221148	PROVIDE OPEN HUB CONNECTION FOR CONDENSATE LINE FRODS-2. REFER TO M2.0 FOR PIPE ROUTING.
022245	STORM PIPING BEYOND THIS POINT TO REMAIN FOR USE IN RENOVATION.	221151	CONNECT NEW SANITARY FLOOR DRAIN PIPING TO EXISTING SANITARY MAIN. CONTRACTOR TO COORDINATE LOCATION OF DRAIN WITH MECHANICAL EQUIPMENT IN SPACE.
022246	DISCONNECT AND REMOVE 3" STORM PIPING BEYOND THIS POINT AND UP TO POINT SPECIFIED ON SHEET PD1.1.	221155	MAKE-UP WATER LINE FOR HOT WATER SYSTEM. REFER TO MECHANICAL SHEETS FOR CONTINUATION.
022247	DISCONNECT AND REMOVE EXISTING DCW SERVING EWC UP TO POINT INDICATED.	221156	MAKE-UP WATER LINE FOR CHILLED WATER SYSTEM. REFER TO MECHANICAL SHEETS FOR CONTINUATION.
022248	DISCONNECT AND REMOVE 2" VENT PIPING BEYOND POINT INDICATED.	221157	EXISTING DOMESTIC WATER BACKFLOW PREVENTER.
022249	DISCONNECT DCW AND DWH PIPING FROM MAIN FOR RECONNECTION TO NEW MAIN.	221158	EXISTING FIRE PROTECTION BACKFLOW PREVENTER.
022250	DISCONNECT DCW PIPING FROM MAIN FOR RECONNECTION TO NEW MAIN.	221159	COODINATE ROUTING OF DOMESTIC PIPING WITH ELECTRICAL EQUIPMENT IN SPACE.
022251	EXISTING WATER ENTRANCE AND BACK FLOW PREVENTER TO	221160	PROVIDE EMERGENCY GAS SHUTOFF
022252	REMAIN. DISCONNECT AND REMOVE ALL GAS PIPING BEYOND GAS METER.	221161	PROVIDE 1" CW(S) FOR REMOTE FLUSH VALVE. 1" LINE TO BE ROUTED FROM REMOTE FLUSH VALVE TO DT-1.
022253	DISCONNECT AND REMOVE ALL PLUMBING FIXTURES AND	221162	CONNECT NEW 3" GAS PIPING TO EXISTING GAS METER. PROVI PRESSURE REGULATING VALVE TO 14" W.C.
	ASSOCIATED DOMESTIC PIPING IN MEN 103 AND WOMEN 104 RESTROOM. EWC SERVING PUBLIC LOBBY 102 TO BE REMOVED WITH DOMESTIC PIPING. CAP SANITARY FOR REUSE IN	221163	DOMESTIC AND VENT PIPING SERVING AUTOPSY SINK.
	RENOVATION.	221164	REFER TO SHEET 2/P4.1 FOR CONTINUATION.
022254	DEMOLISH PIPING TO THIS POINT	221304	SEAL PIPE AT WALL.
022255	DISCONNECT AND REMOVE ALL PLUMBING FIXTURES.	221305	4" VTR.
022256 022257	REMOVE ALL PIPING FROM KITCHEN. DISCONNECT AND REMOVE ALL PLUMBING FIXTURES IN ROOM	221306	CAP OFF SANITARY LINE TO WALL AND/OR FLOOR AND PATCH MATCH ADJACENT CONDITIONS. PIPING TO BE ABANDONED REFER TO SHEET PD1.0.
221105	WITH ASSOCATED PIPING. HWR SELF-ACTUATING THERMOSTATIC BALANCING VALVE SIMILAR TO CIRCUIT SOLVER OR EQUAL. PROVIDE TWO (2) SHUT-OFF VALVES WITH CHECK AND BALANCE VALVE BETWEEN.	221307	CONNECT NEW SANITARY PIPE TO EXISTING SANITARY PIPE. CONTRACTOR TO VERIFY PIPE DEPTH OF EXISTING MAIN PRIOF TO INSTALLATION AND NOTIFY ENGINEER IF REQUIRED DROP N AVAILABLE.
221107	PIPING UP THROUGH FLOOR ABOVE	221308	CAP EXISITNG SANITARY PIPING THAT IS NOT BEING REUSED.
221108	PIPING DOWN THROUGH FLOOR BELOW	221310	CONNECT NEW VENT PIPING TO EXISITING VENT PIPING.
221109	BALL VALVE	221313	COORDINATE EXACT LOCATION OF FLUSHABLE DRAIN WITH
221110	CONNECT EXISTING 1" DCW PIPING SERVING DETOX TOILET FLUSHVALVE TO NEW DOMESTIC MAIN.	221315	OWNER PROVIDED AUTOPSY TABLE. PROVIDE OPEN HUB CONNECTION WITH TRAP SEAL FOR ROUTI
221111	CONNECT EXISTING ROUTING OF DOMESTIC PIPING SERVING FIRST FLOOR CELLS TO NEW DOMESTIC MAINS.		OF CONDENSATE PIPING FROM DUCTLESS SPLIT. REFER TO SHEET M2.0 FOR CONTINUATION.
221112	PUBLIC DEFENDER'S OFFICE ALTERNATE BID BEYOND POINT.	221316	VENTS TO BE 12" MINIMUM ABOVE ROOF LEVEL.
	DOMESTIC WATER PIPING AND FIXTURES IN BREAKROOM 084, TOILET 081 TOILET 083 TO NOT BE INSTALLED. PROVIDE PIPE WITH SHUT-OFF VALVE AND CAPS FOR FUTURE RENOVATION.	221317	CAP ALL EXISITNG SANITARY AND VENT LINES AT FLOOR.
221113	BEYOND POINT. DOMESTIC WATER PIPING AND FIXTURES IN AUTOPSY 011 AND TOILET/SHOWER 015 TO NOT BE INSTALLED.	221319	REGARDLESS OF ACCEPTANCE OF ALTERNATE. INSTALL BELOVERADE SANITARY AND DOMESTIC PIPING. CAP AT FLOOR FOR USE IN FUTURE RENOVATION.
	PROVIDE PIPE WITH SHUT-OFF VALVE AND CAPS FOR FUTURE RENOVATION.	221320	EXISTING SANITARY PIPING SERVING RESTROOM ABOVE.

EXISITING GAS METER SERVICING BUILDING.

EXISTING DOMESTIC LINE SERVING CELLS ABOVE.

FLUSHABLE DETOX TOILET ABOVE.

SOFTENED COLD WATER MAIN.

SINK TO NEW DOMESTIC MAINS.

WATER RETURN MAIN.

INSTALL NEW FLUSH VALVE ON TO EXISTING PIPING SERVING

CONNECT EXISTING DOMESTIC COLD WATER TO NEW DOMESTIC

CONNECT EXISTING DOMESTIC LINES SERVICING JANITORS MOP

CONNECT EXISTING DOMESTIC HOT WATER RETURN TO NEW HOT

EXISTING DOMESTIC AND SANITARY LINE SERVING CELLS ABOVE.

PLUMBING BAS	IS OF	DESIGN
SANITARY	419	DFU'S
COLD WATER	700	WSFU'S
HOT WATER	106	WSFU'S
GAS	5320	CFH

PLUMBING SYMBOLS

	A	COMPRESSED AIR
	— DCW—	— DOMESTIC COLD WATER
	— SCW—	DOMESTIC SOFT COLD WATER
	G	NATURAL GAS
	— —DHW—— —	— DOMESTIC HOT WATER
	— —HW-140— —	—
	— DHWR—	— — HOT WATER RETURN
	SAN	SANITARY ABOVE GROUND
	· — — — SAN — — — -	——— SANITARY BELOW GROUND
	ST	STORM ABOVE GROUND
	ST	— — STORM BELOW GROUND
	V	ABOVE GROUND VENT
		— — — BELOW GROUND VENT
	\bowtie	BALL VALVE
		CALIBRATED BALANCING VALVE
		CHECK VALVE
		SINGLE LINE - PIPE DROP
	<u> </u>	SINGLE LINE - PIPE RISE
•	-	SINGLE LINE - PIPE RISE TEE
	()—	SINGLE LINE - PIPE DROP TEE
		TWO LINE - PIPE DROP
		TWO LINE - PIPE RISE
	\boxtimes	ROOF DRAIN
M		OVERFLOW ROOF DRAIN
•	\boxtimes	WATER HAMMER ARRESTOR
	•	CONNECT TO EXISTING
	$lue{ullet}$	DISCONNECT FROM EXISTING
		Demo TO POINT

ANNOTATION SYMBOLS

PHOTOGRAPH TARGET

1010GRAPH TARGET	
,	VIEW NUMBER
3/A5.1 	SHEET NUMBER
~	DIRECTION OF PHOTOGRAPH

EQUIPMENT ABBREVIATIONS

AD CB C C F CO F CD CB CD F EV CD CB CD CB CD CB CD CB CB CD CB	AREA DRAIN CATCH BASIN COMBINATION UNIT DRINKING FOUNTAIN ELECTRIC WATER COOLER FLOOR CLEAN OUT FLOOR DRAIN GARBAGE DISPOSAL GREASE INTERCEPTOR HOSE BIBB ICE MACHINE BOX LAVATORY LINT INTERCEPTOR MOP BASIN OIL INTERCEPTOR
RD RD	ROOF DRAIN RECIRCULATING PUMP
RP SH	SHOWER
<u>S</u> <u>TD</u>	SINK
TD TP	TRENCH DRAIN TRAP PRIMER
<u>TV</u>	TEMPERING VALVE
<u> </u>	URINAL
<u>WH</u>	WALL HYDRANT
WC -	WATER CLOSET
WCO	WALL CLEANOUT
<u>WH</u> WHA	WATER HEATER WATER HAMMER ARRESTOR
WS	WATER SOFTENER
DET	DOMESTIC EXPANSION TANK
<u>GD</u>	GARBAGE DISPOSAL
<u>IMB</u> WHA	ICE MACHINE BOX WATER HAMMER ARRESTOR
V V 1 1/ V	**************************************

HIMPING ARREVIATIONS

<u>PLUMBIN</u>	<u>G ABBREVIATIOI</u>
A.F.F.	
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BT	BRINE TANK
BV	BALANCING VALVE
CONT	CONTINUATION
CW	CW
DN	DOWN
DWG.	DRAWING
ELEV.	ELEVATION
FBG	FROM BELOW GRADE
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FUT	FUTURE
G	NATURAL GAS
GPM	GALLONS PER MINUTE
HW	HOT WATER RETURN
HWR	HOT WATER RETURN
IE LION	INVERT ELEVATION
LKW	LAVATORY KITCHEN
W	WASTE
MAX	MAXIMUM
MIN	MINIMUM
OS&Y PHE	OUTSIDE SCREW & YOKE PLATE HEAT EXCHANGER
ST	STORM
SQFT	SQUARE FEET
TBG	TO BELOW GRADE
TFA	TO FLOOR ABOVE
TFB	TO FLOOR ABOVE TO FLOOR BELOW
TS	TEMPERATURE SENSOR
TYP	TYPICAL
V	VENT
v VTR	VENT THROUGH ROOF
W	WASTE

EXISTING STORM PIPING FROM ROOF DRAIN.

STORM PIPING DOWN THROUGH THE FLOOR.

TO EXISTING STORM WATER FORCE MAIN.

EXISTING SANITARY MAIN TO SEWAGE MAIN.

EXISTING SANITARY PIPING.

CONNECT EXISTING STORM PIPING TO NEW STORM PIPING.

ROUTE NEW STORM PIPING FROM EXISTING ROOF DRAIN.

INSTALL SUMP PUMP IN EXISTING BASIN AND CONNECT TO

INSTALL ELEVATOR SUMP PUMP IN EXISTING BASIN. CONNECT TO

COORDINATE ROUTING OF STORM RISE WITH HVAC DUCTWORK IN CHASE. CONNECT STORM PIPING TO NEW STORM MAIN.

INSTALL SUMP PUMP TO SERVE EXISTING BASIN AND CONNECT

GENERAL NOTES

- 1. INSTALLATION OF PLUMBING FIXTURES AND ACCESSORIES, INCLUDING FLUSH CONTROL VALVES INTENDED FOR PEOPLE WITH DISABILITIES, SHALL BE IN ACCORDANCE WITH ADA REQUIREMENTS.
- 2. INSTALLATION OF PLUMBING PIPING SHALL BE FULLY COORDINATED WITH STRUCTURAL, ARCHITECTURAL, ELECTRICAL, AND HVAC DRAWINGS TO AVOID CONFLICT.
- 3. NO PLUMBING (WATER, DRAINS, VENT, OR GAS PIPING) SHALL BE INSTALLED DIRECTLY ABOVE ANY ELECTRICAL PANELS. COORDINATE WITH OTHER DIVISIONS BEFORE PROCEEDING WITH INSTALLATION.
- 4. IF NON DESIGN BASE EQUIPMENT IS SELECTED, CONTRACTOR SHALL BEAR ADDITIONAL COSTS FOR MODIFICATIONS TO THE ORIGINAL SYSTEM(S), INCLUDING COSTS FOR ARCHITECT/ENGINEER DESIGN
- 5. PROVIDE WATER HAMMER ARRESTERS AT PLUMBING FIXTURES AND GROUPS OF PLUMBING FIXTURES THAT ARE SUBJECT TO WATER HAMMER. SELECT ARRESTERS IN ACCORDANCE WITH THE PLUMBING AND DRAINAGE INSTITUTE STANDARD.
- 6. CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS, LABOR AND EQUIPMENT PERMIT FEES, REQUIRED FOR, OR INCIDENTAL TO THE INSTALLATION OF A COMPLETE AND OPERATIONAL PLUMBING SYSTEM AS INDICATED IN THE CONTRACT DOCUMENTS INCLUDING SPECIFICATIONS.
- 7. ALL PLUMBING SERVICES GOING INTO THE BUILDING AND LEAVING THE BUILDING SHALL BE CONNECTED TO THE SITE UTILITIES, COORDINATE WITH SITE UTILITIES DRAWINGS. COORDINATE ALL EXTERIOR UNDERGROUND PLUMBING WORK WITH THE SITE UTILITIES BEFORE COMMENCING WORK. COORDINATE
- 8. ALL PLUMBING WORK SHALL BE IN CONFORMANCE WITH THE INTERNATIONAL PLUMBING CODE. LATEST EDITION ADOPTED BY THE STATE OF INDIANA WITH INDIANA AMENDMENTS, MUNICIPAL OR CITY CODES, AND THE AUTHORITY HAVING JURISDICTION.
- 9. INSTALL BALL VALVE CLOSE TO WATER MAIN ON EACH BRANCH AND RISER SERVING PLUMBING EQUIPMENT AND FIXTURES.
- 10. ALL REQUIRED SHUT-OFF VALVES IN THE HOUSING UNITS SHALL BE CLEARLY MARKED. LOCATED IN THE SAME PLACE, AND ACCESSIBLE WITHOUT A LADDER. SHUT-OFF VALVES LOCATED ABOVE THE CEILING THROUGHOUT THE BUILDING SHALL BE WITHIN 24" OF THE CEILING.
- 11. REFERENCE SECTIONS AND RISER / ISOMETRICS FOR ADDITIONAL INFORMATION ON PIPE SIZES NOT SHOWN IN PLAN VIEWS.
- 12. PIPING SERVING DRINKING FOUNTAINS, ELECTRIC WATER COOLERS, AND LAVATORIES LOCATED BELOW GRADE OR BELOW THE SECOND FLOOR SHALL BE SOFT COPPER TUBE AND INSTALLED IN 4" PVC CONDUIT WITH LONG SWEEP BENDS. CONDUIT TO BE CAPPED 12" ABOVE CHASE FLOOR AND CONCEALED BEHIND FIXTURES. INSTALLATION REQUIRED FOR FUTURE SERVICABILITY OR PIPE REPLACEMENT.
- 13. REFER TO ARCHITECTURAL ROOF DRAWINGS FOR DIMENSIONS.

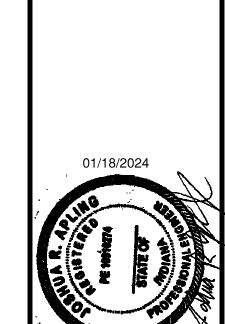
INDICATED, PROVIDE SIZE SHOWN ON PLUMBING FIXTURE SCHEDULE.

ALL UNDERGROUND PIPING WITH FOUNDATION DRAWINGS.

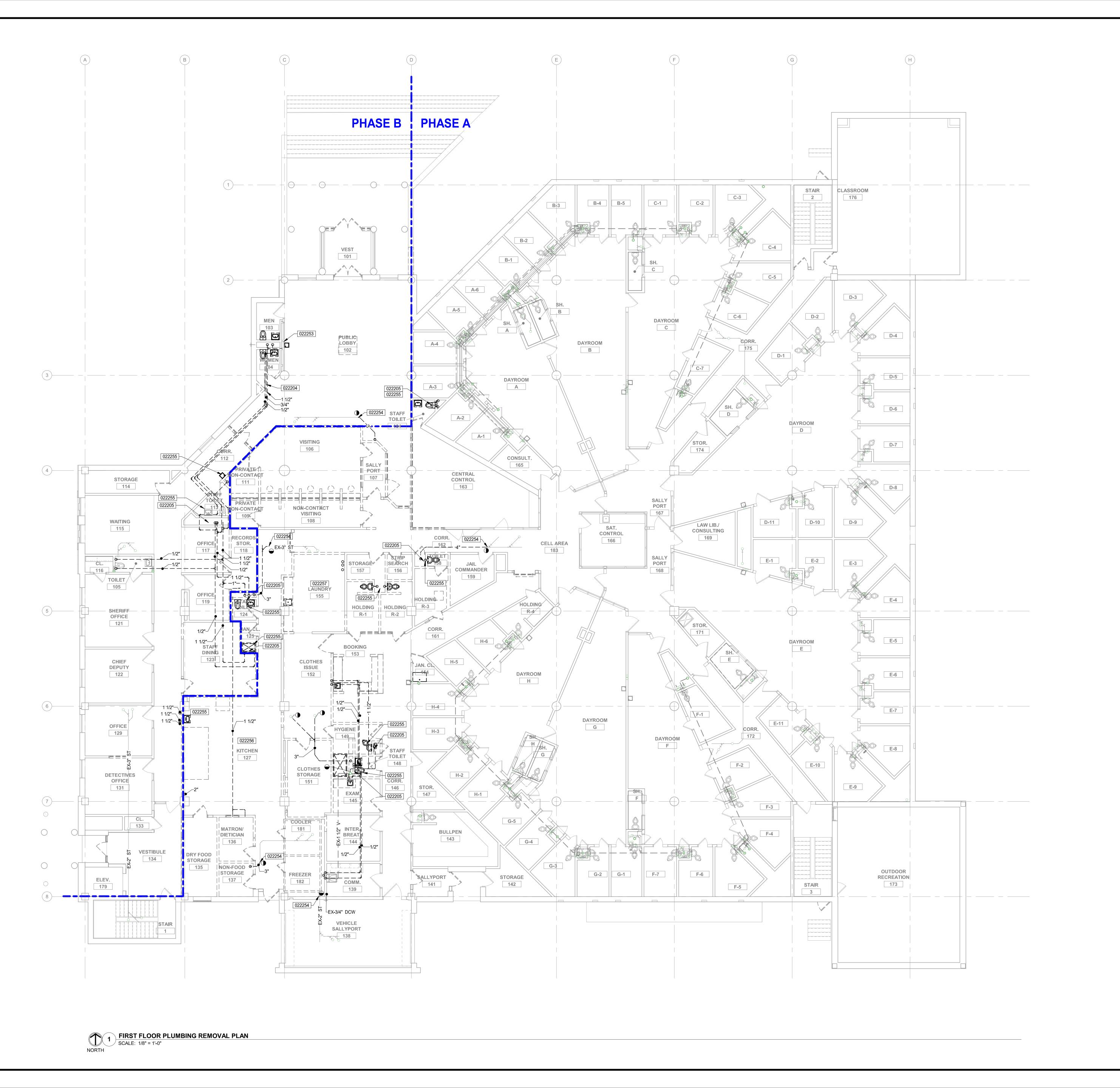
- 14. CONTRACTOR SHALL PROVIDE ACCESS DOORS IN ALL WALLS AND CEILINGS WHERE SERVICE OR ADJUSTMENT TO MECHANICAL, PLUMBING, OR FIRE PROTECTION ITEMS MAY BE REQUIRED. ACCESS DOORS SHALL BE OF AN APPROPRIATE SIZE REQUIRED FOR EACH APPLICATION. WHERE APPLICABLE,
- ACCESS DOORS SHALL MATCH THE FIRE RATING OF THE WALL ASSEMBLY. 15. PROVIDE SIZES TO FIXTURES AS INDICATED ON PLANS, RISERS, AND SECTIONS. IF SIZE IS NOT
- 16. PROVIDE HOUSEKEEPING PAD FOR EQUIPMENT. PAD SIZES SHOWN ARE APPROXIMATE AND ARE BASED ON BASIS OF DESIGN EQUIPMENT. MAINTENANCE REQUIRES EQUIPMENT PADS SIZED TO SPECIFIC EQUIPMENT FURNISHED. PROVIDE EQUIPMENT PAD SIZES BASED ON ACTUAL SIZE OF FURNISHED EQUIPMENT. SUBMIT COORDINATION DRAWINGS ILLUSTRATING PROPOSED PAD DIMENSIONS BASED ON APPROVED EQUIPMENT. DO NOT PERFORM LAYOUT WORK OR BEGIN FORM WORK FOR PADS PRIOR TO APPROVAL OF COORDINATION DRAWINGS.
- 17. INITIAL FLOW TEST PERFORMED ON 02/07/2022 IS OUTDATED, CONTRACTOR TO VERIFY FLOW TEST PRIOR TO CONSTRUCTION AND REPORT BACK TO ENGINEER

GENERAL DEMOLITION NOTES

- 1. REFER TO DRAWINGS OF ALL OTHER DISCIPLINES FOR ADDITIONAL REMOVALS AND SELECTIVE DEMOLITION ACTIVITIES.
- 2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO SELECTIVE DEMOLITION ACTIVITIES. ANY ITEMS NOT INDICATED ON DRAWINGS OR SPECIFICATIONS THAT ARE IN CONFLICT WITH THE CONTRACT WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BID FOR CLARIFICATION.
- 3. FOR DURATION OF THE PROJECT IF ANY EXISTING ITEM IS DAMAGED DURING CONSTRUCTION, IT SHALL BE REPLACED AND RESTORED TO ITS ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- 4. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL TEMPORARY SHORING AND BRACING REQUIRED TO COMPLETE THE WORK.
- 5. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED, INCLUDING ASSOCIATED REPAIR AND FINISHING TO MATCH ADJACENT SURFACES.
- 6. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY ENVIRONMENTAL CONTROL MEASURES INCLUDING ACCEPTABLE AIR QUALITY CONTROL MEASURES, DUST CONTROL, EROSION CONTROL AND OTHER MEASURES REQUIRED FOR PROTECTION OF PROPERTY DURING SELECTIVE DEMOLITION AND CONSTRUCTION
- 7. CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATING CONTRACT DRAWINGS WITH FIELD CONDITIONS AND WORK ASSOCIATED WITH EACH TRADE.
- 8. CONTRACTOR SHALL COORDINATE DEMOLITION ACTIVITIES WITH NEW WORK TO VERIFY DIMENSIONS AND EXTENT OF REMOVALS PRIOR TO BEGINING OF WORK.
- 9. CONTRACTOR IS RESPONSIBLE FOR REMOVAL, STORAGE AND REINSTALLATION OF REMAINING WALL MOUNTED DEVICES INTENDED FOR REUSE.
- 10. ALL DEMOLITION WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE STATE OF
- INDIANA, LOCAL BUILDING CODES, OSHA AND NFPA.
- 11. OWNER RESERVES THE RIGHT TO SALVAGE ANY EQUIPMENT OR MATERIAL INDICATED TO BE DEMOLISHED.
- 12. PIPING AND DUCTWORK DEMOLITION PLANS ARE FOR DIAGRAMMATIC PURPOSES ONLY BASED ON LIMITED SITE OBSERVATIONS. CONTRACTOR TO REMOVE ANY UNUSED / ABANDONED DUCTWORK, EQUIPMENT, PIPING (SANITARY, VENT, DOMESTIC WATER, GAS, REFRIGERANT, FIRE ETC.), ASSOCIATED ACCESORIES COMPLETE WHETHER INDICATED ON THE PLANS OR NOT. CONTRACTOR TO VERIFY EXTENT OF DEMOLITION ON THE FIELD AND COORDINATE WITH THE ENGINEER (AT NO ADDITIONAL COST TO THE OWNER). PATCH WALLS, CEILINGS, ROOF AND/OR FLOOR TO MATCH ADJACENT CONDITIONS WHETHER INDICATED ON THE PLANS OR NOT.



DRAWING NUMBER



GENERAL NOTES

SCHEDULE.

- A. REFER TO SHEETS G1.1 AND P0.1 FOR ADDITIONAL GENERAL NOTES AND INFORMATION.
- B. WHERE PIPE SIZE MAY NOT BE INDICATED SERVING A FIXTURE,
 PROVIDE SIZES AS INDICATED IN THE PLUMBING FIXTURE
- C. INSTALL ALL EQUIPMENT, FIXTURES, AND ASSOCIATED
 - ACCESSORIES PER MANUFACTURER RECOMMENDATIONS.
 - D. COORDINATE WITH ALL OTHER DISCIPLINES BEFORE INSTALLING ANY PIPING DEVICES.
 - E. INVERT ELEVATIONS ARE BASED ON 100.00' FINISHED FIRST FLOOR ELEVATION TO BOTTOM OF PIPE. SITE / CIVIL PLANS ESTABLISH FINISHED FLOOR ELEVATION.
 - F. PROVIDE GAS PRESSURE REGULATORS AS NEEDED FOR EQUIPMENT.
 - G. EXACT LOCATION OF PLUMBING FIXTURES SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS TO MEET A.D.A REQUIREMENTS.

PLUMBING KEYNOTES

2204 REMOVE ALL EXISTING DOMESTIC PLUMBING PIPING AND FIXTURES BEYOND THIS POINT FOR ROUTING OF NEW LINES TO FIXTURES.

2205 COMPLETELY REMOVE EXISTING SANITARY AND

DOMESTIC PIPING.

DISCONNECT AND REMOVE ALL PLUMBING FIXTURES AND ASSOCIATED DOMESTIC PIPING IN MEN 103 AND WOMEN 104 RESTROOM. EWC SERVING PUBLIC LOBBY 102 TO BE REMOVED WITH DOMESTIC PIPING. CAP

SANITARY FOR REUSE IN RENOVATION.

022254 DEMOLISH PIPING TO THIS POINT

DISCONNECT AND REMOVE ALL PLUI
REMOVE ALL PIPING FROM KITCHEN.

DISCONNECT AND REMOVE ALL PLUMBING FIXTURES IN ROOM WITH ASSOCATED PIPING.

THE OWNER OF THE PARTY OF THE P

— — ALTERNATE BOUNDARY AS NOTED/LABELED

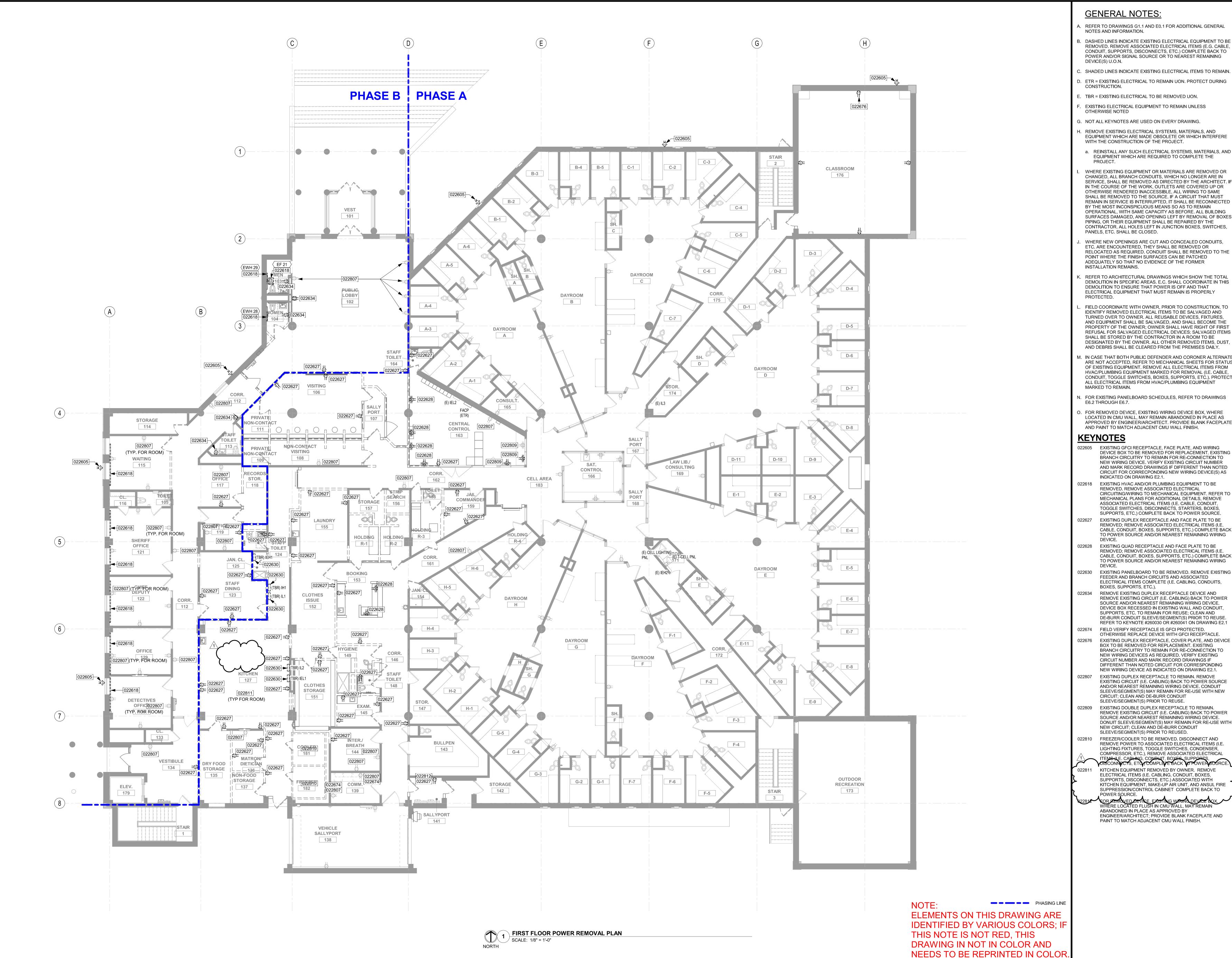
NOTE

PHASING LINE

ELEMENTS ON THIS DRAWING ARE IDENTIFIED BY VARIOUS COLORS; IF THIS NOTE IS NOT RED, THIS DRAWING IS NOT IN COLOR AND NEEDS TO BE REPRENTED IN COLOR.

PD11

PLUMBING



- REFER TO DRAWINGS G1.1 AND E0.1 FOR ADDITIONAL GENERAL NOTES AND INFORMATION.
- DASHED LINES INDICATE EXISTING ELECTRICAL EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED ELECTRICAL ITEMS (E.G. CABLE, CONDUIT, SUPPORTS, DISCONNECTS, ETC.) COMPLETE BACK TO
- POWER AND/OR SIGNAL SOURCE OR TO NEAREST REMAINING
- . ETR = EXISTING ELECTRICAL TO REMAIN UON. PROTECT DURING
- TBR = EXISTING ELECTRICAL TO BE REMOVED UON.
- EXISTING ELECTRICAL EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED
- REMOVE EXISTING ELECTRICAL SYSTEMS, MATERIALS, AND EQUIPMENT WHICH ARE MADE OBSOLETE OR WHICH INTERFERE WITH THE CONSTRUCTION OF THE PROJECT.
- a. REINSTALL ANY SUCH ELECTRICAL SYSTEMS, MATERIALS, AND EQUIPMENT WHICH ARE REQUIRED TO COMPLETE THE
- WHERE EXISTING EQUIPMENT OR MATERIALS ARE REMOVED OR CHANGED, ALL BRANCH CONDUITS, WHICH NO LONGER ARE IN SERVICE, SHALL BE REMOVED AS DIRECTED BY THE ARCHITECT. IF IN THE COURSE OF THE WORK, OUTLETS ARE COVERED UP OR OTHERWISE RENDERED INACCESSIBLE, ALL WIRING TO SAME SHALL BE REMOVED TO THE SOURCE. IF A CIRCUIT THAT MUST REMAIN IN SERVICE IS INTERRUPTED, IT SHALL BE RECONNECTED BY THE MOST INCONSPICUOUS MEANS SO AS TO REMAIN OPERATIONAL, WITH SAME CAPACITY AS BEFORE. ALL BUILDING SURFACES DAMAGED, AND OPENING LEFT BY REMOVAL OF BOXES PIPING, OR THEIR EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR. ALL HOLES LEFT IN JUNCTION BOXES, SWITCHES, PANELS, ETC. SHALL BE CLOSED.
- WHERE NEW OPENINGS ARE CUT AND CONCEALED CONDUITS. ETC. ARE ENCOUNTERED, THEY SHALL BE REMOVED OR RELOCATED AS REQUIRED. CONDUIT SHALL BE REMOVED TO THE POINT WHERE THE FINISH SURFACES CAN BE PATCHED ADEQUATELY SO THAT NO EVIDENCE OF THE FORMER INSTALLATION REMAINS.
- REFER TO ARCHITECTURAL DRAWINGS WHICH SHOW THE TOTAL DEMOLITION IN SPECIFIC AREAS. E.C. SHALL COORDINATE IN THIS DEMOLITION TO ENSURE THAT POWER IS OFF AND THAT ELECTRICAL EQUIPMENT THAT MUST REMAIN IS PROPERLY
- IDENTIFY REMOVED ELECTRICAL ITEMS TO BE SALVAGED AND TURNED OVER TO OWNER. ALL REUSABLE DEVICES, FIXTURES, AND EQUIPMENT SHALL BE SALVAGED, AND SHALL BECOME THE PROPERTY OF THE OWNER; OWNER SHALL HAVE RIGHT OF FIRST REFUSAL FOR SALVAGED ELECTRICAL DEVICES; SALVAGED ITEMS SHALL BE STORED BY THE CONTRACTOR IN A ROOM TO BE DESIGNATED BY THE OWNER. ALL OTHER REMOVED ITEMS, DUST, AND DEBRIS SHALL BE CLEARED FROM THE PREMISES DAILY.
- I. IN CASE THAT BOTH PUBLIC DEFENDER AND CORONER ALTERNATE ARE NOT ACCEPTED, REFER TO MECHANICAL SHEETS FOR STATUS OF EXISTING EQUIPMENT. REMOVE ALL ELECTRICAL ITEMS FROM HVAC/PLUMBING EQUIPMENT MARKED FOR REMOVAL (I.E. CABLE, CONDUIT, TOGGLE SWITCHES, BOXES, SUPPORTS, ETC.). PROTEC ALL ELECTRICAL ITEMS FROM HVAC/PLUMBING EQUIPMENT
- N. FOR EXISTING PANELBOARD SCHEDULES, REFER TO DRAWINGS
- O. FOR REMOVED DEVICE, EXISTING WIRING DEVICE BOX, WHERE LOCATED IN CMU WALL, MAY REMAIN ABANDONED IN PLACE AS APPROVED BY ENGINEER/ARCHITECT, PROVIDE BLANK FACEPLATE AND PAINT TO MATCH ADJACENT CMU WALL FINISH.
 - DEVICE BOX TO BE REMOVED FOR REPLACEMENT. EXISTING BRANCH CIRCUITRY TO REMAIN FOR RE-CONNECTION TO NEW WIRING DEVICE. VERIFY EXISTING CIRCUIT NUMBER AND MARK RECORD DRAWINGS IF DIFFERENT THAN NOTED CIRCUIT FOR CORRECPONDING NEW WIRING DEVICE(S) AS INDICATED ON DRAWING E2.1.
- 022618 EXISTING HVAC AND/OR PLUMBING EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED ELECTRICAL CIRCUITING/WIRING TO MECHANICAL EQUIPMENT, REFER TO MECHANICAL PLANS FOR ADDITIONAL DETAILS, REMOVE ASSOCIATED ELECTRICAL ITEMS (I.E. CABLE, CONDUIT. TOGGLE SWITCHES, DISCONNECTS, STARTERS, BOXES, SUPPORTS, ETC.) COMPLETE BACK TO POWER SOURCE.
- 022627 EXISTING DUPLEX RECEPTACLE AND FACE PLATE TO BE REMOVED; REMOVE ASSOCIATED ELECTRICAL ITEMS (I.E. CABLE, CONDUIT, BOXES, SUPPORTS, ETC.) COMPLETE BACK TO POWER SOURCE AND/OR NEAREST REMAINING WIRING
- 022628 EXISTING QUAD RECEPTACLE AND FACE PLATE TO BE REMOVED; REMOVE ASSOCIATED ELECTRICAL ITEMS (I.E. CABLE, CONDUIT, BOXES, SUPPORTS, ETC.) COMPLETE BACK TO POWER SOURCE AND/OR NEAREST REMAINING WIRING
- 022630 EXISTING PANELBOARD TO BE REMOVED. REMOVE EXISTING FEEDER AND BRANCH CIRCUITS AND ASSOCIATED ELECTRICAL ITEMS COMPLETE (I.E. CABLING, CONDUITS, BOXES, SUPPORTS, ETC.).
- 022634 REMOVE EXISTING DUPLEX RECEPTACLE DEVICE AND REMOVE EXISTING CIRCUIT (I.E. CABLING) BACK TO POWER SOURCE AND/OR NEAREST REMAINING WIRING DEVICE. DEVICE BOX RECESSED IN EXISTING WALL AND CONDUIT, SUPPORTS, ETC. TO REMAIN FOR REUSE; CLEAN AND DE-BURR CONDUIT SLEEVE/SEGMENT(S) PRIOR TO REUSE. REFER TO KEYNOTE #260030 OR #260041 ON DRAWING E2.1
- 022674 FIELD VERIFY RECEPTACLE IS GFCI PROTECTED. OTHERWISE REPLACE DEVICE WITH GFCI RECEPTACLE. 022676 EXISTING DUPLEX RECEPTACLE, COVER PLATE, AND DEVICE BOX TO BE REMOVED FOR REPLACEMENT. EXISTING BRANCH CIRCUITRY TO REMAIN FOR RE-CONNECTION TO NEW WIRING DEVICES AS REQUIRED. VERIFY EXISTING CIRCUIT NUMBER AND MARK RECORD DRAWINGS IF
- DIFFERENT THAN NOTED CIRCUIT FOR CORRESPONDING NEW WIRING DEVICE AS INDICATED ON DRAWING E2.1. 022807 EXISTING DUPLEX RECEPTACLE TO REMAIN. REMOVE EXISTING CIRCUIT (I.E. CABLING) BACK TO POWER SOURCE AND/OR NEAREST REMAINING WIRING DEVICE, CONDUIT SLEEVE/SEGMENT(S) MAY REMAIN FOR RE-USE WITH NEW CIRCUIT; CLEAN AND DE-BURR CONDUIT
- SLEEVE/SEGMENT(S) PRIOR TO REUSE. 022809 EXISTING DOUBLE DUPLEX RECEPTACLE TO REMAIN REMOVE EXISTING CIRCUIT (I.E. CABLING) BACK TO POWER SOURCE AND/OR NEAREST REMAINING WIRING DEVICE. DONUIT SLEEVE/SEGMENT(S) MAY REMAIN FOR RE-USE WITH NEW CIRCUIT; CLEAN AND DE-BURR CONDUIT SLEEVE/SEGMENT(S) PRIOR TO REUSED.
- 022810 FREEZER/COOLER TO BE REMOVED. DISCONNECT AND REMOVE POWER TO ASSOCIATED ELECTRICAL ITEMS (I.E. LIGHTING FIXTURES, TOGGLE SWITCHES, CONDENSER, COMPRESSOR, ETC.). REMOVE ASSOCIATED ELECTRICAL KITCHEN EQUIPMENT REMOVED BY OWNER. REMOVE ELECTRICAL ITEMS (I.E. CABLING, CONDUIT, BOXES, SUPPORTS, DISCONNECTS, ETC.) ASSOCIATED WITH KITCHEN EQUIPMENT, MAKE-UP AIR UNIT, AND ANSUL FIRE SUPPRESSION/CONTROL CABINET COMPLETE BACK TO
- ABANDONED IN PLACE AS APPROVED BY ENGINEER/ARCHITECT; PROVIDE BLANK FACEPLATE AND PAINT TO MATCH ADJACENT CMU WALL FINISH.

01/18/2024

DRAWING NUMBER

ELECTRICAL

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SECTION 055213 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Exterior aluminum pipe and tube railings.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design railings, including comprehensive engineering analysis by a qualified professional engineer in the State of Indiana, using performance requirements and design criteria indicated.
- B. Structural Performance: Railings shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
 - b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
- C. 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 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Railing brackets.
- B. Shop Drawings: Include plans, elevations, sections, details and attachments to other work.
- C. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer in the State of Indiana responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified professional engineer.
- B. Welding certificates.

1.6 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of railing from single source from single manufacturer.
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code Steel."

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Aluminum Pipe and Tube Railing (Exterior)
 - 1. Manufacturers: Subject to compliance with requirements, provide one of the following:
 - a. Blum: Julius Blum & Co., Inc.
 - b. Alumaguard.
 - c. Aluminum Tube Railings, Inc.
 - d. Braun: J.G. Braun Co.
 - e. Hollaender Manufacturing Co,
 - f. Wagner: R & B Wagner, Inc.
 - g. Superior Aluminum Products

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.
 - Provide type of bracket with flange tapped for concealed anchorage to threaded hanger bolt exterior locations and predrilled hole for exposed bolt anchorage interior locations and that provides 1-1/2-inch clearance from inside face of handrail to finished wall surface.

2.3 ALUMINUM

- A. Aluminum, General: Provide 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.
- B. Extruded Bars and Tubing: ASTM B 221, Alloy 6063-T5/T52.
- C. Extruded Structural Pipe and Round Tubing: ASTM B 429/B 429M, Alloy 6063-T6.
 - 1. Provide Standard Weight (Schedule 40) pipe unless otherwise indicated.
- D. Drawn Seamless Tubing: ASTM B 210, Alloy 6063-T832.
- E. Plate and Sheet: ASTM B 209, Alloy 6061-T6.
- F. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.
- G. Castings: ASTM B 26/B 26M, Alloy A356.0-T6

2.4 FASTENERS

- A. General: Provide the following:
 - 1. Aluminum Railings: Type 304 or Type 316 stainless-steel fasteners.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
- C. Fasteners for Interconnecting Railing Components:
 - 1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for railings indicated.
 - 2. Provide Phillips flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

2.6 FABRICATION

- A. General: Fabricate 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 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. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32-inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- F. Connections: Fabricate railings with either welded or nonwelded connections unless otherwise indicated.
- G. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.
- H. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
 - 1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.
- I. Form changes in direction as follows:
 - 1. By bending or by inserting prefabricated elbow fittings.
- J. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- K. Close exposed ends of railing members with prefabricated end fittings.

- L. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4- inch or less.
- M. Brackets, Flanges, Fittings and Anchors: Provide wall brackets, flanges, miscellaneous fittings and anchors to interconnect railing members to other work unless otherwise indicated.
- N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.
- O. For railing posts set in concrete, provide steel sleeves not less than 6 inches long with inside dimensions not less than 1/2-inch greater than outside dimensions of post, with metal plate forming bottom closure.

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.8 ALUMINUM FINISHES

- A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- B. Mill Finish: AA-M12, nonspecular as fabricated at exterior loading dock.
- C. Clear Anodic Finish: AAMA 611, AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated: Chemical Finish: etched medium matte: Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment and elevation; measured from established lines and levels and free of rack.
 - Do not weld, cut or abrade surfaces of 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.

PIPE AND TUBE RAILINGS 055213 - 5

- 2. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4-inch in 12 feet.
- C. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- D. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing 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. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of 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 metal sleeves preset and anchored into concrete for installing posts. After posts are inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 5-inches deep and 3/4-inch 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 nonshrink, nonmetallic grout or anchoring cement mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Cover anchorage joint with flange of same metal as post, attached to post with set screws.
- D. Leave anchorage joint exposed with 1/8-inch buildup, sloped away from post.
- E. Anchor posts to metal surfaces with oval flanges, angle type or floor type as required by conditions, connected to posts and to metal supporting members as follows:
 - 1. For aluminum pipe railings, attach posts using fittings designed and engineered for this purpose.
 - 2. For steel pipe railings, weld flanges to post and bolt to metal supporting surfaces.
- F. Install removable railing sections, where indicated, in slip-fit metal sockets cast in concrete.

3.4 ATTACHING RAILINGS

A. Attach railings to existing wall with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.

PIPE AND TUBE RAILINGS 055213 - 6

- 1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
- 2. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.

3.5 ADJUSTING AND CLEANING

A. Clean aluminum by washing thoroughly with clean water and soap and rinsing with clean water.

3.6 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

END OF SECTION 055213

PIPE AND TUBE RAILINGS 055213 - 7

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SECTION 093000 - TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Porcelain tile for floors and base.
- B. Related Sections include the following:
 - 1. Division 07 Section "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.

1.3 DEFINITIONS

- A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.
- B. Facial Dimension: Nominal tile size as defined in ANSI A137.1.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.
- D. Samples for Verification:
 - 1. Full-size units of each type and composition of tile and for each color and finish required.
 - 2. Assembled samples with grouted joints for each type and composition of tile and for each color and finish required, at least 12 inches (300 mm) square and mounted on rigid panel. Use grout of type and in color or colors approved for completed work.

- 3. Full-size units of each type of trim and accessory.
- E. Qualification Data: For Installer.

1.5 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain all tile from one source or producer.
 - 1. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.
- C. Mockups: Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects.
 - 1. Build mockup of floor and wall tile installation.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1. Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the Work include the manufacturers specified.

2.2 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.

- 1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
 - B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.
 - C. Colors, Textures, and Patterns: From manufacture's standard selection.
 - D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
 - E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless otherwise indicated.

2.3 TILE PRODUCTS

- A. Porcelain Tile: Basis of Design Product: Subject to compliance with requirements provide "Quartzite Collection" as manufactured by StonePeak High-Tech Porcelain or an Architect approved product by one of the following manufacturers:
 - 1. Or pre-approved equal by:
 - a. American Olean; Div. of Dal-Tile International Corp.
 - b. Crossville Ceramics Company, L.P.
 - c. Daltile.
 - d. Florida Tile Industries, Inc.
 - e. Royal Mosa Tiles
 - 2. Porcelain Floor Tile:
 - a. Style: Quartzite.
 - b. Type: Porcelain.c. Application: Floor.
 - d. Size: 12-inches by 12-inches.
 - e. Thickness: 1/3-inch.
 - f. Color: iron. g. Finish: Honed.
 - 3. Technical Data:
 - a. Water Absorption: ASTM C373 < 0.1%.
 - b. Breaking Strength: ASTM C648 > 400 lbs.
 - c. Scratch Hardness: MOHS > 7.0.
 - d. Chemical Resistance: ASTM C650 Unaffected.
 - e. Bond Strength: > 200 psi.

4. Porcelain Tile base:

a. Size: Bullnose 3-inches by 12-inches.

b. Edge: Rectified.c. Finish: Matt.d. Color: Iron.

B. Trim:

- 1. Provide necessary caps, stops, returns, trimmers and other shapes to complete installation.
- 2. Color and finish: Aluminum.

C. Accessories:

- 1. Base:
 - a. Schluter Systems LP.
- 2. Option:
 - a. Custom Building Products
 - b. Blanke and Co.
 - c. Dural USA, Inc.

D. Tile Backer Board:

- 1. Moisture-resistant treated gypsum core, glass mats both sides, and vinyl, water barrier coating on finished side.
 - a. Conventional cement-board and green-board products are not acceptable.
- 2. Thickness: 5/8-inch.
- 3. Mold-resistance score: 10 per ASTM D3273.
- 4. Base Product: DensShield Tile Backer by Georgia Pacific.
- 5. Optional Products:
 - a. Fiberock Interior Panel, Aqua-Tough by USG.
 - b. GlasRoc Tile Backer by Certainteed.
- 6. Tile Backer Board scheduled in Fire Rated Walls:
 - a. Approved fire resistive products with comparable moisture-resistance.
 - b. Base Product: DensShield Fireguard Tile Backer by Georgia Pacific.
 - c. Optional Manufacturers:
 - a. USG.
 - b. Certainteed.

2.4 GROUTING MATERIALS

A. Manufacturers:

- 1. Bonsal, W. R., Company.
- 2. Bostik.
- 3. DAP, Inc.
- 4. LATICRETE International Inc.
- 5. MAPEI Corporation.
- 6. TEC Specialty Products Inc.
- 7. Custom Building Products.
- B. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of the following:
 - 1. Prepackaged dry-mortar mix containing dry, redispersible, ethylene vinyl acetate additive to which only water must be added at Project site.
 - 2. Prepackaged dry-mortar mix combined with acrylic resin or styrene-butadiene-rubber liquid-latex additive.
 - For wall applications, provide nonsagging mortar that complies with Paragraph F 4.6.1 in addition to the other requirements in ANSI A118.4.
- C. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement and white or colored aggregate as required to produce color indicated.

2.5 MISCELLANEOUS MATERIALS

- A. Trowelable Patching Compounds: Latex-modified, Portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- C. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints that does not change color or appearance of grout.

1. Products:

- a. Bonsal, W. R., Company; Grout Sealer.
- b. Bostik; CeramaSeal Grout Sealer.
- c. MAPEI Corporation; KER 003, Silicone Spray Sealer for Cementitious Tile Grout.
- d. Southern Grouts & Mortars, Inc.; Silicone Grout Sealer.
- e. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
- f. TEC Specialty Products Inc.; TA-256 Penetrating Silicone Grout Sealer.
- g. Miracle.
- h. Custom Building Products.

- D. Joint Compound for Tile Backing Panels:
 - 1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.6 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
 - 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.
 - 3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.
- B. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
- B. TCA Installation Guidelines: TCA's "Handbook for Ceramic Tile Installation." Comply with TCA installation methods indicated in ceramic tile installation schedules.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- E. Jointing Pattern: Align joints when adjoining tiles on walls and trim are same size. Lay out tile work and center tile fields in both directions on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Tile Pattern: One third running bond.
- F. If tile ends in middle of wall, rather than wall to wall, provide end bull nosed tile.
- G. Grout tile to comply with requirements of the following tile installation standards:
 - 1. For ceramic tile grouts (sand-Portland cement; dry-set, commercial Portland cement; and latex-Portland cement grouts), comply with ANSI A108.10.

3.4 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
- B. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

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SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES

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. Vacuum breakers.
- 2. Backflow preventers.
- 3. Water pressure-reducing valves.
- 4. Balancing valves.
- 5. Temperature-actuated, water mixing valves.
- 6. Strainers for domestic water piping.
- 7. Outlet boxes.
- 8. Hose stations.
- 9. Hose bibbs.
- 10. Wall hydrants.
- 11. Drain valves.
- 12. Water-hammer arresters.
- 13. Trap-seal primer device.
- 14. Trap-seal primer systems.
- 15. Flexible connectors.

B. Related Requirements:

- 1. Section 220519 "Meters and Gauges for Plumbing Piping" for thermometers, pressure gauges, and flow meters in domestic water piping.
- 2. Section 224716 "Pressure Water Coolers" for water filters for water coolers.

1.3 DEFINITIONS

- A. AMI: Advanced Metering Infrastructure.
- B. AMR: Automatic Meter Reading.
- C. FKM: A family of fluroelastomer materials defined by ASTM D1418.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For domestic water piping specialties.
 - 1. Include diagrams for power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For domestic water piping specialties to include in emergency, operation, and maintenance manuals.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PIPING SPECIALTIES

A. Domestic water piping specialties intended to convey or dispense water for human consumption are to comply with the SDWA, requirements of authorities having jurisdiction, and NSF 61 and NSF 372, or to be certified in compliance with NSF 61 and NSF 372 by an American National Standards Institute (ANSI)-accredited third-party certification body that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.

2.2 PERFORMANCE REQUIREMENTS

A. Minimum Working Pressure for Domestic Water Piping Specialties: 125 psig unless otherwise indicated.

2.3 VACUUM BREAKERS

- A. Pipe-Applied, Atmospheric-Type Vacuum Breakers:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Apollo Valves; a part of Aalberts Integrated Piping Systems.
 - b. Cash Acme, A Division of Reliance Worldwide Corporation.
 - c. FEBCO; A WATTS Brand.
 - d. WATTS.
 - e. Zurn Industries, LLC.

- 2. Standard: ASSE 1001.
- 3. Size: NPS 1/4 to NPS 3, as required to match connected piping.
- 4. Body: Bronze.
- 5. Inlet and Outlet Connections: Threaded.
- 6. Finish: Rough bronze.

B. Hose-Connection Vacuum Breakers:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Apollo Valves; a part of Aalberts Integrated Piping Systems.
 - b. Cash Acme, A Division of Reliance Worldwide Corporation.
 - c. Legend Valve & Fitting, Inc.
 - d. MIFAB, Inc.
 - e. WATTS.
 - f. Woodford Manufacturing Company.
 - g. Zurn Industries, LLC.
- 2. Standard: ASSE 1011.
- 3. Body: Bronze, nonremovable, with manual drain.
- 4. Outlet Connection: Garden-hose threaded complying with ASME B1.20.7.
- 5. Finish: Chrome or nickel plated.

2.4 BACKFLOW PREVENTERS

- A. Reduced-Pressure-Principle Backflow Preventers:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Ames Fire & Waterworks; A WATTS Brand.
 - b. Apollo Valves; a part of Aalberts Integrated Piping Systems.
 - c. FEBCO; A WATTS Brand.
 - d. WATTS.
 - e. Zurn Industries, LLC.
 - 2. Standard: ASSE 1013.
 - 3. Operation: Continuous-pressure applications.
 - 4. Pressure Loss: 12 psig maximum, through middle third of flow range.
 - 5. See schedule on drawings for additional characteristics.
 - 6. Accessories:
 - a. Valves NPS 2-1/2 and Larger: Outside-screw and yoke-gate type with flanged ends on inlet and outlet.
 - b. Air-Gap Fitting: ASME A112.1.2, matching backflow-preventer connection.
- B. Double-Check, Backflow-Prevention Assemblies:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Ames Fire & Waterworks; A WATTS Brand.
- b. Apollo Valves; a part of Aalberts Integrated Piping Systems.
- c. FEBCO; A WATTS Brand.
- d. Flomatic Corporation.
- e. WATTS.
- f. Zurn Industries, LLC.
- 2. Standard: ASSE 1015.
- 3. Operation: Continuous-pressure applications unless otherwise indicated.
- 4. Pressure Loss: 5 psig maximum, through middle third of flow range.
- 5. See schedule on drawings for additional characteristics.
- 6. Accessories:
 - a. Valves NPS 2 and Smaller: Ball type with threaded ends on inlet and outlet.
 - b. Valves NPS 2-1/2 and Larger: Outside-screw and yoke-gate type with flanged ends on inlet and outlet.

C. Backflow-Preventer Test Kits:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Apollo Valves; a part of Aalberts Integrated Piping Systems.
 - b. WATTS.
 - c. Zurn Industries, LLC.
- 2. Description: Factory calibrated, with gauges, fittings, hoses, and carrying case with test-procedure instructions.

2.5 WATER PRESSURE-REDUCING VALVES

A. Water Regulators:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Apollo Valves; a part of Aalberts Integrated Piping Systems.
 - b. Cash Acme, A Division of Reliance Worldwide Corporation.
 - c. WATTS.
 - d. Zurn Industries, LLC.
- 2. Standard: ASSE 1003.
- 3. Pressure Rating: Initial working pressure of 150 psig.
- 4. See schedule on drawings for additional characteristics.
- 5. Body: Bronze with chrome-plated finish for NPS 2 and smaller; cast iron with interior lining that complies with AWWA C550 or that is FDA approved for NPS 2-1/2 and NPS 3.
- 6. End Connections: Threaded or solder for NPS 2 and smaller; flanged or solder for NPS 2-1/2 and NPS 3.

2.6 BALANCING VALVES

A. Memory-Stop Balancing Valves:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Apollo Valves; a part of Aalberts Integrated Piping Systems.
 - b. Crane; a Crane Co. brand.
 - c. Hammond Valve.
 - d. Jenkins Valves; a Crane Co. brand.
 - e. Milwaukee Valve Company.
 - f. NIBCO INC.
 - g. Red-White Valve Corp.
- 2. Standard: MSS SP-110 for two-piece, copper-alloy ball valves.
- 3. Pressure Rating: 400-psig minimum CWP.
- 4. Size: NPS 2 or smaller.
- 5. Body: Copper alloy.
- 6. Port: Standard or full port.
- 7. Ball: Chrome-plated brass or stainless steel.
- 8. Seats and Seals: Replaceable.
- 9. End Connections: Solder joint or threaded.
- 10. Handle: Vinyl-covered steel with memory-setting device.

B. Automatic Flow Control Balancing Valves:

- 1. Flow Regulation: The valve shall regulate the flow of recirculated domestic hot water based on temperature of the water entering the valve. As the water temperature increases the valve proportionally closes dynamically adjusting flow to meet the specified temperature.
- 2. Pressure Rating: 200 psig maximum working pressure.
- 3. Temperature Rating: 250°F maximum working temperature.
- 4. Size: NPS 2 or smaller.

2.7 TEMPERATURE-ACTUATED, WATER MIXING VALVES

- A. Thermostatic, Water Mixing Valves (Digital):
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Acorn Engineering Company; a Division of Morris Group International.
 - b. Aerco
 - c. Armstrong International, Inc.
 - d. Heat-Timer.
 - e. Leonard Valve Company.
 - f. POWERS; A WATTS Brand.
 - g. WATTS.
 - h. Zurn Industries, LLC.

- i. Bradley
- 2. Standard: ASSE 1017.
- 3. Pressure Rating: 125 psig minimum unless otherwise indicated.
- 4. Type: Exposed-mounted, thermostatically controlled, water mixing valve.
- 5. Material: Bronze body with corrosion-resistant interior components.
- 6. Connections: Threaded inlets and outlet.
- 7. Accessories: Manual temperature control, check stops on hot- and cold-water supplies.
- 8. See schedule on drawings for additional characteristics.

2.8 STRAINERS FOR DOMESTIC WATER PIPING

A. Y-Pattern Strainers:

2.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Keckley Company.
 - b. Titan Flow Control, Inc.
 - c. WATTS.
 - d. Zurn Industries, LLC.
 - Pressure Rating: 125 psig minimum unless otherwise indicated.
- 3. Body: Bronze for NPS 2 and smaller; cast iron with interior lining that complies with AWWA C550 or that is FDA approved, epoxy coated and for NPS 2-1/2 and larger.
- 4. End Connections: Threaded for NPS 2 and smaller; flanged for NPS 2-1/2 and larger.
- 5. Screen: Stainless steel with round perforations unless otherwise indicated.
- 6. Perforation Size:
 - a. Strainers NPS 2 and Smaller: 0.020 inch.
 - b. Strainers NPS 2-1/2 to NPS 4: 0.045 inch.
 - c. Strainers NPS 5 and Larger: 0.10 inch.
- 7. Drain: Factory-installed, hose-end drain valve.

B. Icemaker Outlet Boxes:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Acorn Engineering Company; a Division of Morris Group International.
 - b. Guy Gray, IPS Corporation.
 - c. LSP Products Group.
 - d. Oatev.
 - e. Water-Tite, IPS Corporation.
 - f. WATTS.
 - g. Zurn Industries, LLC.
 - h. Sioux Chief
- 2. Mounting: Recessed.

- 3. Material and Finish: Stainless steel box and faceplate.
- 4. Faucet: Valved fitting complying with ASME A112.18.1. Include NPS 1/2 or smaller copper tube outlet.
- 5. Supply Shutoff Fitting: NPS 1/2 gate, globe, or ball valve and NPS 1/2 copper, water tubing.

2.9 HOSE BIBBS

A. Hose Bibbs:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. MIFAB, Inc.
 - c. Prier Products, Inc.
 - d. WATTS.
 - e. Woodford Manufacturing Company.
 - f. Zurn Industries, LLC.
- 2. Standard: ASME A112.18.1 for sediment faucets.
- 3. Body Material: Bronze.
- 4. Seat: Bronze, replaceable.
- 5. Supply Connections: NPS 3/4 threaded or solder-joint inlet.
- 6. Outlet Connection: Garden-hose thread complying with ASME B1.20.7.
- 7. Pressure Rating: 125 psig.
- 8. Vacuum Breaker: Integral or field-installation, nonremovable, drainable, hose-connection vacuum breaker complying with ASSE 1011.
- 9. See schedule on drawings for additional characteristics.

2.10 WALL HYDRANTS

A. Non-freeze Wall Hydrants:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. Prier Products, Inc.
 - e. WATTS.
 - f. Woodford Manufacturing Company.
 - g. Zurn Industries, LLC.
- 2. Standard: ASME A112.21.3M for concealed-outlet, self-draining wall hydrants.
- 3. Pressure Rating: 125 psig.
- 4. Operation: Loose key.

- 5. Casing and Operating Rod: Of length required to match wall thickness. Include wall clamp.
- 6. Inlet: NPS 3/4 or NPS 1.
- 7. Outlet, Concealed: With integral vacuum breaker and garden-hose thread complying with ASME B1.20.7.
- 8. Box: Deep, flush mounted with cover.
- 9. Box and Cover Finish: Polished nickel bronze.

2.11 DRAIN VALVES

- A. Ball-Valve-Type, Hose-End Drain Valves:
 - 1. Standard: MSS SP-110 for standard-port, two-piece ball valves.
 - 2. Pressure Rating: 400-psig minimum CWP.
 - 3. Size: NPS 3/4.
 - 4. Body: Copper alloy.
 - 5. Ball: Chrome-plated brass.
 - 6. Seats and Seals: Replaceable.
 - 7. Handle: Vinyl-covered steel.
 - 8. Inlet: Threaded or solder joint.
 - 9. Outlet: Threaded, short nipple with garden-hose thread complying with ASME B1.20.7 and cap with brass chain.

2.12 WATER-HAMMER ARRESTERS

- A. Water-Hammer Arresters:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. AMTROL, Inc.
 - b. Jay R. Smith Mfg Co; a division of Morris Group International.
 - c. Josam Company.
 - d. MIFAB, Inc.
 - e. Precision Plumbing Products.
 - f. WATTS.
 - g. Zurn Industries, LLC.
 - 2. Standard: ASSE 1010 or PDI-WH 201.
 - 3. Type: Piston.
 - 4. Size: ASSE 1010, Sizes AA and A through F, or PDI-WH 201, Sizes A through F.

2.13 TRAP-SEAL PRIMER DEVICE

- A. Supply-Type, Trap-Seal Primer Device:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.

- b. Josam Company.
- c. MIFAB, Inc.
- d. Precision Plumbing Products.
- e. WATTS.
- f. Zurn Industries, LLC.
- g. Sioux Chief.
- 2. Standard: ASSE 1018.
- 3. Pressure Rating: 125 psig minimum.
- 4. Body: Bronze.
- 5. Inlet and Outlet Connections: NPS 1/2 threaded, union, or solder joint.
- 6. Gravity Drain Outlet Connection: NPS 1/2 threaded or solder joint.
- 7. Finish: Chrome plated, or rough bronze for units used with pipe or tube that is not chrome finished.

2.14 TRAP-SEAL PRIMER SYSTEMS

- A. Trap-Seal Primer Systems:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Precision Plumbing Products.
 - b. Zurn Industries, LLC.
 - c. Sioux Chief
 - 2. Standard: ASSE 1044.
 - 3. Inlet Size: NPS 3/4, ASTM B88, Type L; copper, water tubing.
 - 4. Cabinet: Recessed-mounted steel box with stainless steel cover.
 - 5. Electric Controls: 24-hour timer, solenoid valve, and manual switch for 120 V ac power.
 - a. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 - 6. Vacuum Breaker: ASSE 1001.
 - 7. Size Outlets: NPS 1/2.

2.15 TRAP-SEAL PROTECTION DEVICE

- A. Trap-Seal Protection Device:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Rectorseal Sureseal

- b. Jay R. Smith.
- c. MIFA
- d. Precision Plumbing Products.
- e. Zurn Industries, LLC.
- f. Sioux Chief
- 2. ASSE 1072 rated, waterless, inline trap seal.
- 3. HDPE housing with heavy duty silicone diaphragm with soft EPDM rubber sealing gasket.

2.16 FLEXIBLE CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Flex-Hose Co., Inc.
 - 2. Mason Industries, Inc.
 - 3. Metraflex Company (The).
- B. Bronze-Hose Flexible Connectors: Corrugated-bronze tubing with bronze wire-braid covering and ends brazed to inner tubing.
 - 1. Working-Pressure Rating: Minimum 200 psig.
 - 2. End Connections NPS 2 and Smaller: Threaded copper pipe or plain-end copper tube.
 - 3. End Connections NPS 2-1/2 and Larger: Flanged copper alloy.
- C. Stainless Steel-Hose Flexible Connectors: Corrugated-stainless steel tubing with stainless steel wire-braid covering and ends welded to inner tubing.
 - 1. Working-Pressure Rating: Minimum 200 psig.
 - 2. End Connections NPS 2 and Smaller: Threaded steel-pipe nipple.
 - 3. End Connections NPS 2-1/2 and Larger: Flanged steel nipple.

PART 3 - EXECUTION

3.1 INSTALLATION OF PIPING SPECIALTIES

- A. Backflow Preventers: Install in each water supply to mechanical equipment and systems and to other equipment and water systems that may be sources of contamination. Comply with authorities having jurisdiction.
 - 1. Locate backflow preventers in same room as connected equipment or system.
 - 2. Install drain for backflow preventers with atmospheric-vent drain connection with air-gap fitting, fixed air-gap fitting, or equivalent positive pipe separation of at least two pipe diameters in drain piping and pipe-to-floor drain. Locate air-gap device attached to or under backflow preventer. Simple air breaks are unacceptable for this application.
 - 3. Do not install bypass piping around backflow preventers.

- B. Water Regulators: Install with inlet and outlet shutoff valves. Install pressure gauges on inlet and outlet.
- C. Balancing Valves: Install in locations where they can easily be adjusted. Set at indicated design flow rates.
- D. Temperature-Actuated, Water Mixing Valves: Install with check stops or shutoff valves on inlets and with shutoff valve on outlet.
- E. Y-Pattern Strainers: For water, install on supply side of each water pressure-reducing valve and pump.
- F. Outlet Boxes: Install boxes recessed in wall or surface mounted on wall. Install 1-1/2-by-3-1/2-inch fire-retardant-treated-wood blocking, wall reinforcement between studs. Comply with requirements for fire-retardant-treated-wood blocking in Section 061000 "Rough Carpentry."
- G. Water-Hammer Arresters: Install in water piping in accordance with PDI-WH 201.
- H. Supply-Type, Trap-Seal Primer Device: Install with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body, trap, or inlet fitting. Adjust valve for proper flow.
- I. Drainage-Type, Trap-Seal Primer Device: Install as lavatory trap with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body, trap, or inlet fitting.
- J. Trap-Seal Primer Systems: Install with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body, trap, or inlet fitting. Adjust system for proper flow.

3.2 PIPING CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. When installing piping specialties adjacent to equipment and machines, allow space for service and maintenance.

3.3 ELECTRICAL CONNECTIONS

- A. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."
- C. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.

3.4 CONTROL CONNECTIONS

A. Connect control wiring in accordance with Section 260523 "Control-Voltage Electrical Power Cables."

3.5 IDENTIFICATION

- A. Plastic Labels for Equipment: Install engraved plastic-laminate equipment nameplate or sign on or near each of the following:
 - 1. Vacuum breakers.
 - 2. Backflow preventers.
 - 3. Water pressure-reducing valves.
 - 4. Balancing valves.
 - 5. Temperature-actuated, water mixing valves.
 - 6. Outlet boxes.
 - 7. Hose stations.
 - 8. Wall hydrants.
 - 9. Trap-seal primer device.
 - 10. Trap-seal primer systems.
- B. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit. Nameplates and signs are specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.6 ADJUSTING

- A. Set field-adjustable pressure set points of water pressure-reducing valves.
- B. Set field-adjustable flow set points of balancing valves.
- C. Set field-adjustable temperature set points of temperature-actuated, water mixing valves.
- D. Adjust each reduced-pressure-principle backflow preventer and double-check, backflow-prevention assembly in accordance with manufacturer's written instructions, authorities having jurisdiction and the device's reference standard.

3.7 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform the following tests and inspections with the assistance of a factory-authorized service representative.

- 1. Test each reduced-pressure-principle backflow preventer and double-check, backflow-prevention assembly according to authorities having jurisdiction and the device's reference standard.
- 2. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- 3. Operational Test: After electrical circuitry has been energized, start units to confirm unit operation.
- 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Domestic water piping specialties will be considered defective if they do not pass tests and inspections.
- D. Prepare test and inspection reports.

END OF SECTION 221119

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SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES

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. Cleanouts.
 - 2. Miscellaneous sanitary drainage piping specialties.
- B. Related Requirements:
 - 1. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashing assemblies.
 - 2. Section 077200 "Roof Accessories" for preformed flashings.
 - 3. Section 078413 "Penetration Firestopping" for through-penetration firestop assemblies.
 - 4. Section 221423 "Storm Drainage Piping Specialties" for trench drains for storm water, channel drainage systems for storm water, roof drains, and catch basins.

1.3 DEFINITIONS

- A. ABS: Acrylonitrile butadiene styrene.
- B. PVC: Polyvinyl chloride.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For sanitary waste piping specialties to include in emergency, operation, and maintenance manuals.

PART 2 - PRODUCTS

2.1 CLEANOUTS

A. Cast-Iron Exposed Cleanouts:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. WATTS.
 - e. Zurn Industries, LLC.
 - f. Sioux Chief.
- 2. Standard: ASME A112.36.2M.
- 3. Size: Same as connected drainage piping
- 4. Body Material: Hubless, cast-iron soil pipe test tee as required to match connected piping.
- 5. Closure: Raised-head, brass plug.
- 6. Closure Plug Size: Same as or not more than one size smaller than cleanout size.

B. Cast-Iron Exposed Floor Cleanouts:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. WATTS.
 - e. Zurn Industries, LLC.
 - f. Sioux Chief.
- 2. Standard: ASME A112.36.2M for cast-iron soil pipe with cast-iron ferrule cleanout.
- 3. Size: Same as connected branch.
- 4. Riser: ASTM A74, Extra-Heavy Class, cast-iron drainage pipe fitting and riser to cleanout.
- 5. See schedule on drawings for additional characteristics.

C. Cast-Iron Wall Cleanouts:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. WATTS.
 - e. Zurn Industries, LLC.

- f. Sioux Chief.
- 2. Standard: ASME A112.36.2M. Include wall access.
- 3. Size: Same as connected drainage piping.
- 4. See schedule on drawings for additional characteristics.

2.2 MISCELLANEOUS SANITARY DRAINAGE PIPING SPECIALTIES

A. Deep-Seal Traps:

- 1. Description: Cast-iron or bronze casting, with inlet and outlet matching connected piping and cleanout trap-seal primer valve connection.
- 2. Size: Same as connected waste piping.
 - a. NPS 2: 4-inch-minimum water seal.
 - b. NPS 2-1/2 and Larger: 5-inch-minimum water seal.

B. Floor-Drain, Trap-Seal Primer Fittings:

- 1. Description: Cast iron, with threaded inlet and threaded or spigot outlet, and trap-seal primer valve connection.
- 2. Size: Same as floor drain outlet with NPS 1/2 side inlet.

C. Floor-Drain, Inline Trap Seal:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. RectorSeal Plumbing; A CSW Industrials Company.
 - e. Sioux Chief.
- 2. Description: Inline floor drain trap seal, forming a physical barrier to slow trap evaporation while not impeding flow from drain.
- 3. Material: Polymer.
- 4. Standard: Tested and certified in accordance with ASSE 1072.
- 5. Listing: ICC-ES or IAPMO listed.
- 6. Size: Same as floor drain outlet or strainer throat.

D. Air-Gap Fittings:

- 1. Standard: ASME A112.1.2, for fitting designed to ensure fixed, positive air gap between installed inlet and outlet piping.
- 2. Body: Bronze or cast iron.
- 3. Inlet: Opening in top of body.
- 4. Outlet: Larger than inlet.

5. Size: Same as connected waste piping and with inlet large enough for associated indirect waste piping.

E. Sleeve Flashing Device:

- Description: Manufactured, cast-iron fitting, with clamping device that forms sleeve for pipe floor penetrations of floor membrane. Include galvanized-steel pipe extension in top of fitting that will extend 2 inches above finished floor and galvanized-steel pipe extension in bottom of fitting that will extend through floor slab.
- 2. Size: As required for close fit to riser or stack piping.

F. Stack Flashing Fittings:

- 1. Description: Counterflashing-type, cast-iron fitting, with bottom recess for terminating roof membrane, and with threaded or hub top for extending vent pipe.
- 2. Size: Same as connected stack vent or vent stack.

G. Vent Caps:

- 1. Description: Cast-iron body with threaded or hub inlet and vandal-proof design. Include vented hood and setscrews to secure to vent pipe.
- 2. Size: Same as connected stack vent or vent stack.

H. Frost-Resistant Vent Terminals:

- 1. Description: Manufactured or shop-fabricated assembly constructed of copper, lead-coated copper, or galvanized steel.
- 2. Design: To provide 1-inch enclosed air space between outside of pipe and inside of flashing collar extension, with counterflashing.

I. Expansion Joints:

- 1. Standard: ASME A112.6.4.
- 2. Body: Cast iron with bronze sleeve, packing, and gland.
- 3. End Connections: Matching connected piping.
- 4. Size: Same as connected soil, waste, or vent piping.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install cleanouts in aboveground piping and building drain piping according to the following, unless otherwise indicated:
 - 1. Size same as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.
 - 2. Locate at each change in direction of piping greater than 45 degrees.

- 3. Locate at minimum intervals of 50 feet for piping NPS 4 and smaller and 100 feet for larger piping.
- 4. Locate at base of each vertical soil and waste stack.
- B. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.
- C. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- D. Install deep-seal traps on floor drains and other waste outlets, if indicated.
- E. Install floor-drain, trap-seal primer fittings on inlet to floor drains that require trap-seal primer connection.
 - 1. Exception: Fitting may be omitted if trap has trap-seal primer connection.
 - 2. Size: Same as floor drain inlet.
- F. Install air-gap fittings on draining-type backflow preventers and on indirect-waste piping discharge into sanitary drainage system.
- G. Install sleeve and sleeve seals with each riser and stack passing through floors with waterproof membrane.
- H. Install vent caps on each vent pipe passing through roof.
- I. Install frost-resistant vent terminals on each vent pipe passing through roof. Maintain 1-inch clearance between vent pipe and roof substrate.
- J. Install expansion joints on vertical stacks and conductors. Position expansion joints for easy access and maintenance.
- K. Install frost-proof vent caps on each vent pipe passing through roof. Maintain 1-inch clearance between vent pipe and roof substrate.
- L. Install wood-blocking reinforcement for wall-mounting-type specialties.
- M. Install traps on plumbing specialty drain outlets. Omit traps on indirect wastes unless trap is indicated.

3.2 PIPING CONNECTIONS

- A. Comply with requirements in Section 221316 "Sanitary Waste and Vent Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment, to allow service and maintenance.

3.3 LABELING AND IDENTIFYING

- A. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit.
 - 1. Nameplates and signs are specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.4 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221319

SECTION 221319.13 - SANITARY DRAINS

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. Floor drains.

1.3 DEFINITIONS

- A. ABS: Acrylonitrile-butadiene styrene.
- B. FRP: Fiberglass-reinforced plastic.
- C. HDPE: High-density polyethylene.
- D. PE: Polyethylene.
- E. PP: Polypropylene.
- F. PVC: Polyvinyl chloride.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 DRAIN ASSEMBLIES

- A. Sanitary drains shall bear label, stamp, or other markings of specified testing agency.
- B. Comply with NSF 14 for plastic sanitary piping specialty components.

2.2 FLOOR DRAINS

A. Cast-Iron Floor Drains:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. Prier Products, Inc.
 - e. WATTS.
 - f. Zurn Industries, LLC.
 - g. Sioux Chief.
- 2. Standard: ASME A112.6.3.
- 3. Pattern: Floor drain.
- 4. Body Material: Cast-Iron.
- 5. Outlet: Bottom.
- 6. Sediment Bucket: Required.
- 7. Top or Strainer Material: Bronze.
- 8. Top of Body and Strainer Finish: Nickel bronze.
- 9. Top Shape: Round.
- 10. Trap Material: Cast iron.
- 11. Trap Pattern: See schedule on drawings.
- 12. Trap Features: See schedule on drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.
 - 1. Position floor drains for easy access and maintenance.
 - 2. Set floor drains below elevation of surrounding finished floor to allow floor drainage.
 - 3. Set with grates depressed according to the following drainage area radii:
 - a. Radius, 30 Inches or Less: Equivalent to 1 percent slope, but not less than 1/4-inch total depression.
 - b. Radius, 30 to 60 Inches: Equivalent to 1 percent slope.
 - c. Radius, 60 Inches or Larger: Equivalent to 1 percent slope, but not greater than 1-inch total depression.
 - 4. Install floor-drain flashing collar or flange, so no leakage occurs between drain and adjoining flooring.

- a. Maintain integrity of waterproof membranes where penetrated.
- 5. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.
- B. Install trench drains at low points of surface areas to be drained.
 - 1. Set grates of drains flush with finished surface, unless otherwise indicated.
- C. Install plastic channel drainage system components on support devices, so that top will be flush with adjacent surface.
- D. Install open drain fittings with top of hub 2 inches above floor.

3.2 CONNECTIONS

- A. Comply with requirements in Section 221316 "Sanitary Waste and Vent Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Comply with requirements in Section 221319 "Sanitary Waste Piping Specialties" for backwater valves, air admittance devices and miscellaneous sanitary drainage piping specialties.
- C. Install piping adjacent to equipment to allow service and maintenance.
- D. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- E. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.3 LABELING AND IDENTIFYING

A. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit.

Nameplates and signs are specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.4 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221319.13

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SECTION 224213.16 - COMMERCIAL URINALS

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. Wall-hung urinals.
 - 2. Urinal flushometer valves.
 - 3. Supports.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for urinals.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For flushometer valves to include in operation and maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Flushometer-Valve Repair Kits: Equal to 10 percent of amount of each type installed, but no fewer than six of each type.

PART 2 - PRODUCTS

2.1 WALL-HUNG URINALS

- A. Urinals Wall Hung, Back Outlet, Blowout:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Standard.
 - b. Crane Plumbing, LLC.
 - c. Kohler Co.
 - d. Mansfield Plumbing Products, LLC.
 - e. Sloan Valve Company.
 - f. TOTO USA, Inc.
 - g. Zurn Industries, LLC.

2. Fixture:

- a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.
- b. Material: Vitreous china.
- c. Trapway: Open trapway with integral trap.
- d. Outlet Size and Location: NPS 2; back.
- e. Color: White.
- 3. Waste Fitting:
 - a. Standard: ASME A112.18.2/CSA B125.2 for coupling.
 - b. Size: NPS 2.
- 4. Support: Type I urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture.
- 5. See schedule on drawings for characteristics.

2.2 URINAL FLUSHOMETER VALVES

- A. Sensor-Operated, hardwired, Diaphragm Flushometer Valves.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Standard.
 - b. Crane Plumbing, LLC.
 - c. Mansfield Plumbing Products, LLC.
 - d. Sloan Valve Company.
 - e. TOTO USA, Inc.
 - f. Zurn Industries, LLC.

- g. Delta.
- 2. Standard: ASSE 1037/ASME 112.1037/CSA B125.37.
- 3. Minimum Pressure Rating: 125 psig.
- 4. Features: Include integral check stop and backflow-prevention device.
- 5. Material: Brass body with corrosion-resistant components.
- 6. Exposed Flushometer-Valve Finish: Chrome plated.
- 7. Panel Finish: Chrome plated or stainless steel.
- 8. Style: Exposed.
- 9. Consumption: 0.125 gpf.
- 10. Minimum Inlet: NPS 3/4.
- 11. Minimum Outlet: NPS 3/4.

2.3 SUPPORTS

A. Type I Urinal Carrier:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. WATTS.
 - e. Zurn Industries, LLC.
 - f. Sioux Chief.
- 2. Standard: ASME A112.6.1M.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before urinal installation.
- B. Examine walls and floors for suitable conditions where urinals will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Urinal Installation:

- 1. Install urinals level and plumb according to rough-in drawings.
- 2. Install wall-hung, back-outlet urinals onto waste fitting seals and attached to supports.

3. Install accessible, wall-mounted urinals at mounting height for the handicapped/elderly, according to ICC A117.1.

B. Support Installation:

- 1. Install supports, affixed to building substrate, for wall-hung urinals.
- 2. Use off-floor carriers with waste fitting and seal for back-outlet urinals.

C. Flushometer-Valve Installation:

- 1. Install flushometer-valve water-supply fitting on each supply to each urinal.
- 2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
- 3. Install lever-handle flushometer valves for accessible urinals with handle mounted on open side of compartment.

D. Wall Flange and Escutcheon Installation:

- 1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations.
- 2. Install deep-pattern escutcheons if required to conceal protruding fittings.
- 3. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."

E. Joint Sealing:

- 1. Seal joints between urinals and walls and floors using sanitary-type, one-part, mildew-resistant silicone sealant.
- 2. Match sealant color to urinal color.
- 3. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 PIPING CONNECTIONS

- A. Connect urinals with water supplies and soil, waste, and vent piping. Use size fittings required to match urinals.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
- D. Where installing piping adjacent to urinals, allow space for service and maintenance.

3.4 ADJUSTING

- A. Operate and adjust urinals and controls. Replace damaged and malfunctioning urinals, fittings, and controls.
- B. Adjust water pressure at flushometer valves to produce proper flow.

3.5 CLEANING AND PROTECTION

- A. Clean urinals and fittings with manufacturers' recommended cleaning methods and materials.
- B. Install protective covering for installed urinals and fittings.
- C. Do not allow use of urinals for temporary facilities unless approved in writing by Owner.

END OF SECTION 224213.16

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SECTION 224216.13 - COMMERCIAL LAVATORIES

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. Vitreous-china, wall-mounted lavatories.
- 2. Manually operated lavatory faucets.
- 3. Automatically operated lavatory faucets.
- 4. Supply fittings.
- 5. Waste fittings.
- 6. Lavatory supports.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for lavatories.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings: Include diagrams for power, signal, and control wiring of automatic faucets.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For lavatories and faucets to include in operation and maintenance manuals.
 - 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

- 1. Faucet Washers and O-Rings: Equal to 10 percent of amount of each type and size installed.
- 2. Faucet Cartridges and O-Rings: Equal to 5 percent of amount of each type and size installed.

PART 2 - PRODUCTS

2.1 VITREOUS-CHINA, WALL-MOUNTED LAVATORIES

- A. Lavatory Vitreous China, Wall Mounted, with Back:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Standard.
 - b. Kohler Co.
 - c. Sloan Valve Company.
 - d. TOTO USA, Inc.
 - e. Zurn Industries, LLC.
 - 2. Fixture:
 - a. Standard: ASME A112.19.2/CSA B45.1.
 - b. Type: For wall hanging.
 - c. Faucet-Hole Location: Top.
 - d. Color: White.
 - e. Mounting Material: Chair carrier.
 - 3. Faucet: See schedule on drawings.
 - 4. Support: Type II, concealed-arm lavatory carrier.

2.2 AUTOMATICALLY OPERATED LAVATORY FAUCETS

- A. Lavatory faucets intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act (SDWA), requirements of the Authority Having Jurisdiction (AHJ), and with NSF 61/NSF 372, or be certified in compliance with NSF 61/NSF 372 by an American National Standards Institute (ANSI) accredited third-party certification body, that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.
- B. Lavatory Faucets Automatic Type: Hardwired Electronic Sensor Operated, Nonmixing,:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Standard.
 - b. Bradley Corporation.

- c. Chicago Faucets; Geberit Company.
- d. Gerber Plumbing Fixtures LLC.
- e. GROHE America, Inc.
- f. Kohler Co.
- g. Moen Incorporated.
- h. Sloan Valve Company.
- 2. Standards: ASME A112.18.1/CSA B125.1 and UL 1951.
- 3. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 4. General: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture hole punchings; coordinate outlet with spout and fixture receptor.
- 5. See schedule on drawings for characteristics.

2.3 SUPPLY FITTINGS

- A. NSF Standard: Comply with NSF 61 and NSF 372 for supply-fitting materials that will be in contact with potable water.
- B. Standard: ASME A112.18.1/CSA B125.1.
- C. Supply Piping: Chrome-plated-brass pipe or chrome-plated copper tube matching water-supply piping size. Include chrome-plated-brass or stainless steel wall flange.
- D. Supply Stops: Chrome-plated-brass, one-quarter-turn, ball-type or compression valve with inlet connection matching supply piping.
- E. Operation: Loose key.
- F. Risers:
 - 1. NPS 1/2.
 - 2. Chrome-plated, rigid-copper-pipe and brass straight or offset tailpieces riser.

2.4 WASTE FITTINGS

- A. Standard: ASME A112.18.2/CSA B125.2.
- B. Drain: Grid type with NPS 1-1/4 offset and straight tailpiece.
- C. Trap:
 - 1. Size: NPS 1-1/2 by NPS 1-1/4.
 - 2. Material:
 - a. Stainless steel, two-piece trap and swivel elbow with 0.012-inch thick stainless steel tube to wall, and stainless steel wall flange.

2.5 LAVATORY SUPPORTS

A. Lavatory Carrier:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. WATTS.
 - e. Zurn Industries, LLC.
 - f. Sioux Chief.
- 2. Standard: ASME A112.6.1M.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before lavatory installation.
- B. Examine counters and walls for suitable conditions where lavatories will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install lavatories level and plumb in accordance with roughing-in drawings.
- B. Install supports, affixed to building substrate, for wall-mounted lavatories.
- C. Install accessible wall-mounted lavatories at handicapped/elderly mounting height for people with disabilities or the elderly, in accordance with ICC A117.1.
- D. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons if required to conceal protruding fittings. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."
- E. Seal joints between lavatories, counters, and walls using sanitary-type, one-part, mildewresistant silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."
- F. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible lavatories. Comply with requirements in Section 220719 "Plumbing Piping Insulation."

3.3 PIPING CONNECTIONS

- A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

3.4 ELECTRICAL CONNECTIONS

- A. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- C. Install electrical devices furnished by manufacturer, but not factory mounted in accordance with NFPA 70 and NECA 1.

3.5 ADJUSTING

A. Operate and adjust lavatories and controls. Replace damaged and malfunctioning lavatories, fittings, and controls.

3.6 CLEANING AND PROTECTION

- A. After completing installation of lavatories, inspect and repair damaged finishes.
- B. Clean lavatories, faucets, and other fittings with manufacturers' recommended cleaning methods and materials.
- C. Provide protective covering for installed lavatories and fittings.
- D. Do not allow use of lavatories for temporary facilities unless approved in writing by Owner.

END OF SECTION 224216.13

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SECTION 224216.16 - COMMERCIAL SINKS

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. Service sinks.
- 2. Handwash sinks.
- 3. Manually operated sink faucets.
- 4. Supply fittings.
- 5. Waste fittings.
- 6. Sink supports.
- 7. Grout.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for sinks.
 - 2. Include rated capacities, operating characteristics and furnished specialties and accessories.

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Counter cutout templates for mounting of counter-mounted sinks.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For sinks and faucets to include in operation and maintenance manuals.
 - 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Faucet Washers and O-Rings: Equal to 10 percent of amount of each type and size installed.
 - 2. Faucet Cartridges and O-Rings: Equal to 5 percent of amount of each type and size installed.

PART 2 - PRODUCTS

2.1 SERVICE SINKS

- A. Service Sinks Molded Stone, Floor Mounted:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Fiat Products.
 - b. Florestone Products Co., Inc.
 - 2. Source Limitations: Obtain sinks from single source from single manufacturer.
 - 3. Fixture: See schedule on drawings for characteristics.
 - 4. Faucet: See schedule on drawings.

2.2 HANDWASH SINKS

- A. Handwash Sinks Stainless Steel:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Amtekco Industries, Inc; a Wasserstrom Company.
 - b. Eagle Group.
 - c. Elkay.
 - d. Just Manufacturing.
 - e. Sloan Valve Company.
 - 2. Source Limitations: Obtain sinks from single source from single manufacturer.
 - 3. Fixture:
 - a. Standards:
 - 1) ASME A112.19.3/CSA B45.4.
 - NSF 61
 - b. Type: Wall-mounted stainless steel basin with radius corners, back for faucet, and support brackets.

- c. Material: 18 gauge, Type 304 stainless steel.
- 4. Faucet: See schedule on drawings.
- 5. Supply Fittings: Comply with requirements in "Supply Fittings" Article.
- 6. Waste Fittings: Comply with requirements in "Waste Fittings" Article.
- 7. Support: Type II sink carrier.

2.3 MANUALLY OPERATED SINK FAUCETS

- A. Sink faucets intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act (SDWA), with requirements of the Authority Having Jurisdiction (AHJ), and with NSF 61 and NSF 372, or be certified in compliance with NSF 61 and NSF 372 by an ANSI-accredited third-party certification body, in that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.
- B. Commercial Sink Faucets Manual Type: Two-handle mixing.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - American Standard.
 - b. Chicago Faucets; Geberit Company.
 - c. Elkay.
 - d. Gerber Plumbing Fixtures LLC.
 - e. Just Manufacturing.
 - f. Kohler Co.
 - g. T&S Brass and Bronze Works, Inc.
 - h. Wolverine Brass, Inc.
 - i. Zurn Industries, LLC.
 - 2. Source Limitations: Obtain sink faucets from single source from single manufacturer.
 - 3. Standard: ASME A112.18.1/CSA B125.1.
 - 4. General: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture hole punchings; coordinate outlet with spout and sink receptor.
 - 5. See schedule on drawings for characteristics.

2.4 SUPPLY FITTINGS

- A. NSF Standard: Comply with NSF 61 and NSF 372 for supply-fitting materials that will be in contact with potable water.
- B. Standard: ASME A112.18.1/CSA B125.1.
- C. Supply Piping: Chrome-plated brass pipe or chrome-plated copper tube matching water-supply piping size. Include chrome-plated brass or stainless steel wall flange.
- D. Supply Stops: Chrome-plated brass, one-quarter-turn, ball-type or compression valve with inlet connection matching supply piping.

- E. Operation: Loose key.
- F. Risers:
 - 1. NPS 1/2.
 - 2. Chrome-plated, rigid-copper pipe.

2.5 WASTE FITTINGS

- A. Standard: ASME A112.18.2/CSA B125.2.
- B. Drain: Grid type with NPS 1-1/2 offset and straight tailpiece.
- C. Trap:
 - 1. Size: NPS 1-1/2.
 - 2. Material:
 - a. Chrome-plated, two-piece, cast-brass trap and swivel elbow with 17-gauge brass tube to wall; and chrome-plated brass or steel wall flange.

2.6 SINK SUPPORTS

- A. Sink Carrier:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. WATTS.
 - e. Zurn Industries, LLC.
 - f. Sioux Chief.
 - 2. Source Limitations: Obtain sink supports from single source from single manufacturer.
 - 3. Standard: ASME A112.6.1M.

2.7 GROUT

- A. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- B. Characteristics: Nonshrink; recommended for interior and exterior applications.
- C. Design Mix: 5000 psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in for water-supply piping and sanitary drainage and vent piping systems to verify actual locations of piping connections before sink installation.
- B. Examine walls, floors, and counters for suitable conditions where sinks will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install sinks level and plumb in accordance with rough-in drawings.
- B. Install supports, affixed to building substrate, for wall-hung sinks.
- C. Install wall-mounted sinks at accessible mounting height in accordance with ICC A117.1.
- D. Install water-supply piping with stop on each supply to each sink faucet.
 - 1. Exception: Use ball or gate valves if supply stops are not specified with sink. Comply with valve requirements specified in Section 220523.12 "Ball Valves for Plumbing Piping."
 - 2. Install stops in locations where they can be easily reached for operation.
- E. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deeppattern escutcheons if required to conceal protruding fittings. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."
- F. Seal joints between sinks and counters, floors, and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."
- G. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible sinks. Comply with requirements in Section 220719 "Plumbing Piping Insulation."

3.3 PIPING CONNECTIONS

- A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

3.4 ADJUSTING

A. Operate and adjust sinks and controls. Replace damaged and malfunctioning sinks, fittings, and controls.

3.5 CLEANING AND PROTECTION

- A. After completing installation of sinks, inspect and repair damaged finishes.
- B. Clean sinks, faucets, and other fittings with manufacturers' recommended cleaning methods and materials.
- C. Provide protective covering for installed sinks and fittings.
- D. Do not allow use of sinks for temporary facilities unless approved in writing by Owner.

END OF SECTION 224216.16

SECTION 224716 - PRESSURE WATER COOLERS

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 pressure water coolers and related components.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of pressure water cooler and bottle filling station.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Shop Drawings:

1. Include diagrams for power, signal, and control wiring.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For pressure water coolers to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Filter Cartridges: Equal to 10 percent of quantity installed for each type and size indicated, but no fewer than 4 of each.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Standards:

- 1. Pressure water coolers and bottle filling stations intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act (SDWA), requirements of the Authority Having Jurisdiction (AHJ), and with NSF 61 or NSF 372, or be certified in compliance with NSF 61 or NSF 372 by an ANSI-accredited third-party certification body, that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.
- 2. Comply with ASHRAE 34 for water coolers. Provide HFC 134a (tetrafluoroethane) refrigerant unless otherwise indicated.
- 3. Comply with UL 399.
- 4. Comply with ASME A112.19.3/CSA B45.4.
- 5. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 6. Comply with NSF 42 and NSF 53 for water filters for water coolers and bottle filling stations.
- 7. Comply with ICC A117.1 for accessible water coolers and bottle filling stations.

2.2 PRESSURE WATER COOLERS

- A. Pressure Water Coolers Wall-Mounted, standard, wheelchair accessible, bottle filler .
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Elkay.
 - b. Halsey Taylor.
 - c. Haws Corporation.
 - 2. Cabinet: Single or Bi-level with two attached cabinets, vinyl-covered steel with stainless-steel top.
 - 3. Bubbler: One, with adjustable stream regulator, located on each cabinet deck.
 - 4. Control: Push bar.
 - Glass filler.
 - 6. Bottle Filler: Sensor activation, with 20-second automatic shutoff timer: Fill rate 0.5 to 1.5 gpm.
 - 7. Drain: Grid with NPS 1-1/4 tailpiece.
 - 8. Supply: NPS 3/8 with shutoff valve.
 - 9. Waste Fitting: ASME A112.18.2/CSA B125.2, NPS 1-1/4 brass P-trap.
 - 10. Filter: One or more water filters complying with NSF 42 and NSF 53 for cyst and lead reduction to below EPA standards; with capacity sized for unit peak flow rate.

- 11. Cooling System: Electric, with hermetically sealed compressor, cooling coil, air-cooled condensing unit, corrosion-resistant tubing, refrigerant, corrosion-resistant-metal storage tank, and adjustable thermostat.
 - a. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 12. Support: Type II Water-cooler carrier.
- 13. Water-Cooler Mounting Height: Handicapped/elderly according to ICC A117.1.
- 14. Capacities and Characteristics: See schedule on drawings.

2.3 SUPPORTS

- A. Type II Water-Cooler Carrier:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. Wade Drains.
 - e. Watts; a Watts Water Technologies company.
 - f. Zurn Industries, LLC.
 - g. Sioux Chief.
 - 2. Standard: ASME A112.6.1M.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in for water-supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before fixture installation.
- B. Examine walls and floors for suitable conditions where fixtures will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install fixtures level and plumb according to roughing-in drawings. For fixtures indicated for children, install at height required by authorities having jurisdiction.
- B. Install off-the-floor carrier supports, affixed to building substrate, for wall-mounted fixtures.
- C. Install mounting frames, affixed to building construction, and attach recessed, pressure water coolers, and bottle filling stations to mounting frames.

- D. Install water-supply piping with shutoff valve on supply to each fixture to be connected to domestic-water distribution piping. Use ball valve. Install valves in locations where they can be easily reached for operation. Valves are specified in Section 220523.12 "Ball Valves for Plumbing Piping" and Section 220523.15 "Gate Valves for Plumbing Piping."
- E. Install trap and waste piping on drain outlet of each fixture to be connected to sanitary drainage system.
- F. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons where required to conceal protruding fittings. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."
- G. Seal joints between fixtures and walls using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 PIPING CONNECTIONS

- A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Install ball shutoff valve on water supply to each fixture. Install valve upstream from filter for water cooler. Comply with valve requirements specified in Section 220523.12 "Ball Valves for Plumbing Piping" and Section 220523.15 "Gate Valves for Plumbing Piping."
- D. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

3.4 ELECTRICAL CONNECTIONS

- A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Install electrical devices furnished by manufacturer, but not factory mounted, according to NFPA 70 and NECA 1.

3.5 ADJUSTING

- A. Adjust fixture flow regulators for proper flow and stream height.
- B. Adjust pressure water-cooler temperature settings.

3.6 CLEANING

- A. After installing fixture, inspect unit. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish.
- B. Clean fixtures, on completion of installation, according to manufacturer's written instructions.
- C. Provide protective covering for installed fixtures.
- D. Do not allow use of fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 224716

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SECTION 233300 - AIR DUCT ACCESSORIES

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. Backdraft and pressure relief dampers.
- 2. Manual volume dampers.
- 3. Control dampers.
- 4. Flange connectors.
- 5. Turning vanes.
- 6. Duct-mounted access doors.
- 7. Duct access panel assemblies.
- 8. Flexible connectors.
- 9. Duct accessory hardware.

B. Related Requirements:

- 1. Section 233346 "Flexible Ducts" for insulated and non-insulated flexible ducts.
- 2. Section 233723 "HVAC Gravity Ventilators" for roof-mounted ventilator caps.
- 3. Division 28 specification "Addressable Fire-Alarm Systems" for duct-mounted fire and smoke detectors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. For duct silencers, include pressure drop, dynamic insertion loss, and self-generated noise data. Include breakout noise calculations for high-transmission-loss casings.
- B. Shop Drawings: For duct accessories. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail duct accessories' fabrication and installation in ducts and other construction. Include dimensions, weights, loads, and required clearances; and method of field assembly into duct systems and other construction. Include the following:
 - a. Special fittings.

- b. Manual volume damper installations.
- c. Control-damper installations.
- d. Fire-damper, smoke-damper, combination fire- and smoke-damper, ceiling, and corridor-damper installations, including sleeves; and duct-mounted access doors and remote damper operators.
- e. Duct security bars.
- f. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, or BIM model, drawn to scale, on which ceiling-mounted access panels and access doors required for access to duct accessories are shown and coordinated with each other, using input from installers of the items involved.
- B. Source quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For air duct accessories to include in operation and maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fusible Links: Furnish quantity equal to 10 percent of amount installed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems," and NFPA 90B "Installation of Warm Air Heating and Air Conditioning Systems."
- B. Comply with SMACNA's "HVAC Duct Construction Standards Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.

2.2 BACKDRAFT AND PRESSURE RELIEF DAMPERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1. American Warming and Ventilating; a Mestek Architectural Group company.
- 2. Greenheck Fan Corporation.
- 3. Nailor Industries Inc.
- 4. NCA Manufacturing, Inc.
- 5. Pottorff.
- 6. Ruskin Company.
- 7. United Enertech.
- B. Description: Gravity balanced.
- C. Performance:
 - 1. Maximum Air Velocity: 2000 fpm.
 - 2. Maximum System Pressure: 2 inches wg.
- D. Construction:
 - 1. Frame:
 - a. Hat shaped.
 - b. 16-gauge-thick, galvanized sheet steel, with welded or mechanically attached corners and mounting flange.
 - Blades:
 - a. Multiple single-piece blades.
 - b. Center pivoted, maximum 6-inch width, 0.050-inch-thick aluminum sheet with sealed edges.
 - 3. Blade Action: Parallel.
- E. Blade Seals: Neoprene, mechanically locked.
- F. Blade Axles:
 - 1. Material: Galvanized steel.
 - 2. Diameter: 0.20 inch.
- G. Tie Bars and Brackets: Galvanized steel.
- H. Return Spring: Adjustable tension.
- I. Bearings: Steel ball or synthetic pivot bushings.
- J. Accessories:
 - 1. Adjustment device to permit setting for varying differential static pressure.
 - 2. Counterweights and spring-assist kits for vertical airflow installations.
 - 3. Chain pulls.
 - 4. Screen Mounting:

- a. Front mounted in sleeve.
 - 1) Sleeve Thickness: 20 gauge minimum.
 - 2) Sleeve Length: 6 inches minimum.
- 5. Screen Material: Aluminum.
- 6. Screen Type: Bird.
- 7. 90-degree stops.

2.3 MANUAL VOLUME DAMPERS

- A. Low-Leakage, Steel, Manual Volume Dampers:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Warming and Ventilating; a Mestek Architectural Group company.
 - b. McGill AirFlow LLC.
 - c. Nailor Industries Inc.
 - d. Pottorff.
 - e. Ruskin Company.
 - f. United Enertech.
 - g. NCA.
 - h. Arrow United Industries.
 - 2. Comply with AMCA 500-D testing for damper rating.
 - 3. Low-leakage rating, with linkage outside airstream, and bearing AMCA's Certified Ratings Seal for both air performance and air leakage.
 - 4. Construction:
 - a. Linkage: Out of airstream.
 - b. Suitable for horizontal or vertical airflow applications.
 - 5. Frames:
 - a. Hat shaped.
 - b. Thickness: 16-gauge galvanized sheet steel.
 - c. Mitered and welded corners.
 - d. Flanges for attaching to walls and flangeless frames for installing in ducts.
 - 6. Blades:
 - a. Multiple or single blade.
 - b. Parallel- or opposed-blade design.
 - c. Stiffen damper blades for stability.
 - d. Galvanized, roll-formed steel; 16 gauge thick.

7. Blade Edging Seals:

- a. Closed-cell neoprene.
- b. Inflatable seal blade edging or replaceable rubber seals.
- 8. Blade Jamb Seals: Cambered aluminum...
- 9. Blade Axles: Galvanized steel.
- 10. Bearings:
 - a. Oil-impregnated bronze.
 - b. Dampers mounted with vertical blades to have thrust bearing at each end of every blade.
- 11. Tie Bars and Brackets: Galvanized steel.
- 12. Locking device to hold damper blades in a fixed position without vibration.

B. Jackshaft:

- 1. Size: 0.5-inch diameter.
- 2. Material: Galvanized-steel pipe rotating within pipe-bearing assembly mounted on supports at each mullion and at each end of multiple-damper assemblies.
- 3. Length and Number of Mountings: As required to connect linkage of each damper in multiple-damper assembly.

C. Damper Hardware:

- 1. Zinc-plated, die-cast core with dial and handle, made of 3/32-inch-thick zinc-plated steel, and a 3/4-inch hexagon locking nut.
- 2. Include center hole to suit damper operating-rod size.
- 3. Include elevated platform for insulated duct mounting.

2.4 CONTROL DAMPERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. American Warming and Ventilating; a Mestek Architectural Group company.
 - 2. Arrow United Industries.
 - 3. Greenheck Fan Corporation.
 - 4. McGill AirFlow LLC.
 - 5. Nailor Industries Inc.
 - 6. NCA Manufacturing, Inc.
 - 7. Pottorff.
 - 8. Ruskin Company.
 - 9. United Enertech.
 - 10. Young Regulator Company.

B. General Requirements:

- 1. Unless otherwise indicated, use parallel-blade configuration for two-position control, equipment isolation service, and when mixing two airstreams. For other applications, use opposed-blade configuration.
- 2. Factory or field assemble multiple damper sections to provide a single damper assembly of size required by the application.

C. Performance:

- 1. Low-leakage rating, with linkage outside airstream, and bearing AMCA's Certified Ratings Seal for both air performance and air leakage.
- 2. Pressure Drop: 0.05 inch wg at 1500 fpm across a 24-by-24-inch damper when tested in accordance with AMCA 500-D, Figure 5.3.
- 3. Velocity: Up to 3000 fpm.
- 4. Temperature: Minus 25 to plus 180 deg F.
- 5. Pressure Rating: Damper close-off pressure equal to fan shutoff pressure with a maximum blade deflection of 1/200 of blade length.

D. Construction:

- 1. Linkage out of airstream.
- 2. Suitable for horizontal or vertical airflow applications.
- 3. Frames:
 - a. Hat shaped.
 - b. 16-gauge-thick, galvanized sheet steel.
 - c. Mitered and welded corners.

4. Blades:

- a. Multiple blade with maximum blade width of 6 inches.
- b. Parallel-blade design.
- c. Galvanized steel.
- d. 16-gauge-thick single skin or 14-gauge-thick air foil dual skin.

5. Blade Edging Seals:

- a. Replaceable Closed-cell neoprene.
- b. Inflatable seal blade edging, or replaceable rubber seals.
- 6. Blade Jamb Seal: Flexible stainless steel, compression type.
- 7. Blade Axles: 1/2-inch diameter; galvanized steel.
- 8. Blade-Linkage Hardware: Zinc-plated steel and brass; ends sealed against blade bearings. Linkage mounted out of air stream.
- 9. Bearings:
 - a. Molded synthetic.
 - b. Dampers mounted with vertical blades to have thrust bearings at each end of every blade.

- E. Damper Actuator Electric:
 - 1. Electric 24 V ac.
 - 2. Manufacturer to provide 120V to 24V transformer accessory.
 - 3. UL 873, plenum rated.
 - 4. Fully modulating with fail-safe spring return.
 - a. Sufficient motor torque and spring torque to drive damper fully open and fully closed with adequate force to achieve required damper seal.
 - b. Minimum 90-degree drive rotation.
 - 5. Clockwise or counterclockwise drive rotation as required for application.
 - 6. Environmental Operating Range:
 - a. Temperature: Minus 40 to plus 130 deg F.
 - b. Humidity: 5 to 95 percent relative humidity noncondensing.
 - 7. Environmental enclosure: NEMA 2.
 - 8. Actuator to be factory mounted and provided with a single-point wiring connection.
- F. Controllers, Electrical Devices, and Wiring:
 - Comply with requirements for electrical devices and connections specified in Section 230923
 "Direct Digital Control (DDC) System for HVAC."
 - 2. Electrical Connection: 24 V, 60 Hz.

2.5 FLANGE CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ductmate Industries, Inc.
 - 2. Nexus PDQ.
 - 3. Ward Industries; a brand of Hart & Cooley, Inc.
- B. Description: Add-on or roll-formed, factory fabricated, slide-on transverse flange connectors, gaskets, and components.
- C. Material: Galvanized steel.
- D. Gauge and Shape: Match connecting ductwork.
- E. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ductmate Industries, Inc.
 - 2. Duro Dyne Inc.
 - 3. Elgen Manufacturing.
 - 4. METALAIRE, Inc.

- 5. SEMCO LLC.
- 6. Ward Industries; a brand of Hart & Cooley, Inc.
- F. Manufactured Turning Vanes for Metal Ducts: Fabricate curved blades of galvanized sheet steel; support with bars perpendicular to blades set; set into vane runners suitable for duct mounting.
 - 1. Acoustic Turning Vanes: Fabricate airfoil-shaped aluminum extrusions with perforated faces and fibrous-glass fill.
- G. Manufactured Turning Vanes for Nonmetal Ducts: Fabricate curved blades of resin-bonded fiberglass with acrylic polymer coating; support with bars perpendicular to blades set; set into vane runners suitable for duct mounting.
- H. General Requirements: Comply with SMACNA's "HVAC Duct Construction Standards Metal and Flexible"; Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
- I. Vane Construction:
 - 1. Single wall.
 - 2. Single wall for ducts up to 48 inches wide and double wall for larger dimensions.

2.6 DUCT-MOUNTED ACCESS DOORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. American Warming and Ventilating; a Mestek Architectural Group company.
 - 2. Ductmate Industries, Inc.
 - 3. Flexmaster U.S.A., Inc.
 - Greenheck Fan Corporation.
 - 5. McGill AirFlow LLC.
 - 6. Nailor Industries Inc.
 - 7. Pottorff.
 - 8. Ventfabrics, Inc.
- B. Duct-Mounted Access Doors: Fabricate access panels in accordance with SMACNA's "HVAC Duct Construction Standards Metal and Flexible"; Figure 7-2 (7-2M), "Duct Access Doors and Panels," and Figure 7-3, "Access Doors Round Duct."
 - 1. Door:
 - a. Double wall, rectangular.
 - b. Galvanized sheet metal with insulation fill and thickness as indicated for duct pressure class.
 - c. Vision panel.

- d. Hinges and Latches: 1-by-1-inch butt or piano hinge and cam latches.
- e. Fabricate doors airtight and suitable for duct pressure class.
- 2. Frame: Galvanized sheet steel, with bend-over tabs and foam gaskets.
- 3. Number of Hinges and Locks:
 - a. Access Doors Less Than 12 Inches Square: No hinges and two sash locks.
 - b. Access Doors up to 18 Inches Square: Two hinges and two sash locks.

2.7 DUCT ACCESS PANEL ASSEMBLIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. CL WARD & Family Inc.
 - 2. Ductmate Industries, Inc.
 - 3. Flame Gard, Inc.
- B. Access panels used in cooking applications:
 - 1. Labeled in accordance with UL 1978 by an NRTL.
- C. Panel and Frame: Minimum thickness 16-gauge carbon steel.
- D. Fasteners: Carbon steel. Panel fasteners shall not penetrate duct wall.
- E. Gasket: Comply with NFPA 96, grease-tight, high-temperature ceramic fiber, rated for minimum 2000 deg F.
- F. Minimum Pressure Rating: 10 inches wg positive or negative.

2.8 FLEXIBLE CONNECTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Ductmate Industries, Inc.
 - 2. Duro Dyne Inc.
 - 3. Elgen Manufacturing.
 - 4. Ventfabrics, Inc.
 - 5. Ward Industries; a brand of Hart & Cooley, Inc.
- B. Materials: Flame-retardant or noncombustible fabrics.
- C. Coatings and Adhesives: Comply with UL 181, Class 1.

- D. Metal-Edged Connectors: Factory fabricated with a fabric strip 3-1/2 inches wide attached to two strips of 2-3/4-inch-wide, 0.028-inch-thick, galvanized sheet steel or 0.032-inch-thick aluminum sheets. Provide metal compatible with connected ducts.
- E. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.
 - 1. Minimum Weight: 26 oz./sq. yd..
 - 2. Tensile Strength: 480 lbf/inch in the warp and 360 lbf/inch in the filling.
 - 3. Service Temperature: Minus 40 to plus 200 deg F.
- F. Outdoor System, Flexible Connector Fabric: Glass fabric double coated with weatherproof, synthetic rubber resistant to UV rays and ozone.
 - 1. Minimum Weight: 24 oz./sq. yd..
 - 2. Tensile Strength: 530 lbf/inch in the warp and 440 lbf/inch in the filling.
 - 3. Service Temperature: Minus 50 to plus 250 deg F.
- G. Thrust Limits: Combination coil spring and elastomeric insert with spring and insert in compression, and with a load stop. Include rod and angle-iron brackets for attaching to fan discharge and duct.
 - 1. Frame: Steel, fabricated for connection to threaded rods and to allow for a maximum of 30 degrees of angular rod misalignment without binding or reducing isolation efficiency.
 - 2. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 - 3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 - 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 - 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 - 6. Elastomeric Element: Molded, oil-resistant rubber or neoprene.
 - 7. Coil Spring: Factory set and field adjustable for a maximum of 1/4-inch movement at start and stop.

2.9 DUCT ACCESSORY HARDWARE

- A. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit ductinsulation thickness.
- B. Adhesives: High strength, quick setting, neoprene based, waterproof, and resistant to gasoline and grease.

2.10 MATERIALS

- A. Galvanized Sheet Steel: Comply with ASTM A653/A653M.
 - 1. Galvanized Coating Designation: G90.

- 2. Exposed-Surface Finish: Mill phosphatized.
- B. Stainless Steel Sheets: Comply with ASTM A480/A480M, Type 304, and having a No. 2 finish for concealed ducts and No. 2 finish for exposed ducts.
- C. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless steel ducts.
- D. Tie Rods: Galvanized steel, 1/4-inch minimum diameter for lengths 36 inches or less; 3/8-inch minimum diameter for lengths longer than 36 inches.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install duct accessories in accordance with applicable details in SMACNA's "HVAC Duct Construction Standards Metal and Flexible" for metal ducts and in NAIMA AH116 for fibrous-glass ducts.
- B. Install duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel and fibrous-glass ducts, stainless steel accessories in stainless steel ducts, and aluminum accessories in aluminum ducts.
- C. Install volume dampers at points on supply, return, and exhaust systems where branches extend from larger ducts. Where dampers are installed in ducts having duct liner, install dampers with hat channels of same depth as liner, and terminate liner with nosing at hat channel.
 - 1. Install steel volume dampers in steel ducts.
 - 2. Install aluminum volume dampers in aluminum ducts.
- D. Set dampers to fully open position before testing, adjusting, and balancing.
- E. Install test holes at fan inlets and outlets and elsewhere as indicated and as needed for testing and balancing.
- F. Install duct access doors on sides of ducts to allow for inspecting, adjusting, and maintaining accessories and equipment at the following locations:
 - 1. On both sides of duct coils.
 - 2. Upstream from duct filters.
 - 3. At outdoor-air intakes and mixed-air plenums.
 - 4. At drain pans and seals.
 - 5. Downstream from manual volume dampers, control dampers, backdraft dampers, and equipment.
 - 6. Adjacent to and close enough to fire or smoke dampers, to reset or reinstall fusible links.

 Access doors for access to fire or smoke dampers having fusible links shall be pressure

- relief access doors and shall be outward operation for access doors installed upstream from dampers and inward operation for access doors installed downstream from dampers.
- 7. At each change in direction and at maximum 50-ft. spacing.
- 8. Upstream and downstream from turning vanes.
- 9. Control devices requiring inspection.
- 10. Elsewhere as indicated.
- G. Install access doors with swing against duct static pressure.
- H. Access Door Sizes:
 - 1. One-Hand or Inspection Access: 8 by 5 inches.
 - 2. Two-Hand Access: 12 by 6 inches.
 - 3. Head and Hand Access: 18 by 10 inches.
- Label access doors according to Section 230553 "Identification for HVAC Piping and Equipment" to indicate the purpose of access door.
- J. Install flexible connectors to connect ducts to equipment.
- K. For fans developing static pressures of 5 inches wg and more, cover flexible connectors with loaded vinyl sheet held in place with metal straps.
- L. Install duct test holes where required for testing and balancing purposes.
- M. Install thrust limits at centerline of thrust, symmetrical on both sides of equipment. Attach thrust limits at centerline of thrust and adjust to a maximum of 1/4-inch movement during start and stop of fans.
- N. Connect terminal units to supply ducts directly or with maximum 12-inch lengths of flexible duct. Do not use flexible ducts to change directions.
- O. Connect diffusers to ducts with maximum 60-inch lengths of flexible duct clamped or strapped in place.
- P. Connect flexible ducts to metal ducts with adhesive plus sheet metal screws.

3.2 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Operate dampers to verify full range of movement.
 - 2. Inspect locations of access doors, and verify that size and location of access doors are adequate to perform required operation.
 - 3. Operate fire, smoke, and combination fire and smoke dampers to verify full range of movement and that proper heat-response device is installed.

- 4. Inspect turning vanes for proper and secure installation, and verify that vanes do not move or rattle.
- 5. Operate remote damper operators to verify full range of movement of operator and damper.

END OF SECTION 233300

AIR DUCT ACCESSORIES 233300 - 13

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AIR DUCT ACCESSORIES 233300 - 14

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. Tubular in-line centrifugal fans.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes for fans.
 - 2. Rated capacities, operating characteristics, and furnished specialties and accessories.
 - 3. Certified fan performance curves with system operating conditions indicated.
 - 4. Certified fan sound-power ratings.
 - 5. Motor ratings and electrical characteristics, plus motor and electrical accessories.
 - 6. Material thickness and finishes, including color charts.
 - 7. Dampers, including housings, linkages, and operators.
 - 8. Fan speed controllers.

B. Shop Drawings:

- 1. Include plans, elevations, sections, and attachment details.
- 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
- 3. Include diagrams for power, signal, and control wiring.
- 4. Design Calculations: Calculate requirements for selecting vibration isolator and for designing vibration isolation bases.
- 5. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For centrifugal fans to include in normal operation, emergency operation, and maintenance manuals with replacement parts listing.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Belts: One set(s) for each belt-driven unit.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. NFPA Compliance: Comply with NFPA 90A for design, fabrication, and installation of unit components.
- C. ASHRAE 62.1 Compliance: Applicable requirements in ASHRAE 62.1, Section 5 "Systems and Equipment" and Section 7 "Construction and System Startup."
- D. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6 "Heating, Ventilating, and Air-Conditioning."
- E. Capacities and Characteristics:
 - 1. Refer to Mechanical Equipment Schedules for additional information.
 - 2. Blade Type: Contoured blade profile.
 - 3. Class: AMCA 99, Section 14, Class I.
 - 4. Drive Type: Belt and Direct.
 - 5. Housing Material: Reinforced steel.
 - 6. Wheel Material: Steel.
 - 7. Motor:
 - a. Motor Enclosure Type: Totally enclosed, fan cooled.
 - b. Suitable for Use with Variable-Frequency Drive: Yes.
 - 8. Vibration Isolators:
 - a. Type: Spring.
 - b. Static Deflection: 1 inch.

2.2 TUBULAR IN-LINE CENTRIFUGAL FANS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Greenheck Fan Corporation.
 - 2. Hartzell Fan Incorporated.
 - 3. JencoFan.
 - 4. Loren Cook Company.
 - 5. PennBarry.
 - 6. Twin City.
 - 7. ACME.
- B. Direct-Drive Units: Motor mounted in air stream, factory wired to disconnect switch located on outside of fan housing.
- C. Belt-Driven Units: Motor mounted on adjustable base, with adjustable sheaves, enclosure around belts within fan housing, and lubricating tubes from fan bearings extended to outside of fan housing.

D. Accessories:

- 1. Access for Inspection, Cleaning, and Maintenance: Comply with requirements in ASHRAE 62.1.
- 2. Variable-Speed Controller: Solid-state control to reduce speed from 100 to less than 50 percent.
- 3. Companion Flanges: For inlet and outlet duct connections.
- 4. Motor and Drive Cover (Belt Guard): Epoxy-coated steel.

2.3 MOTORS

- A. Comply with NEMA designation, temperature rating, service factor, and efficiency requirements for motors specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
- B. Where variable-frequency drives are indicated or scheduled, provide fan motor compatible with variable-frequency drive.

2.4 SOURCE QUALITY CONTROL

- A. AMCA Certification for Fan Sound Performance Rating: Test, rate, and label in accordance with AMCA 311.
- B. AMCA Certification for Fan Aerodynamic Performance Ratings: Test, rate, and label in accordance with AMCA 211.
- C. Operating Limits: Classify fans in accordance with AMCA 99, Section 14.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Install centrifugal fans level and plumb.
- B. Disassemble and reassemble units, as required for moving to the final location, according to manufacturer's written instructions.
- C. Lift and support units with manufacturer's designated lifting or supporting points.

D. Equipment Mounting:

- Support duct-mounted and other hanging centrifugal fans directly from the building structure, using suitable hanging systems as specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."
- 2. Comply with requirements for vibration isolation devices specified in Section 230548.13 "Vibration Controls for HVAC."
- E. Unit Support: Coordinate with duct connections. Coordinate wall penetrations and flashing with wall construction. Secure units to structural support with anchor bolts.
 - Comply with requirements in Section 230548.13 "Vibration Controls for HVAC."
- F. Install units with clearances for service and maintenance.
- G. Label fans according to requirements specified in Section 230553 "Identification for HVAC Piping and Equipment."

3.2 DUCTWORK AND PIPING CONNECTIONS

- A. Drawings indicate general arrangement of ducts and duct accessories. Make final duct connections with flexible connectors. Flexible connectors are specified in Section 233300 "Air Duct Accessories."
- B. Install ducts adjacent to fans to allow service and maintenance.
- C. Install piping from scroll drain connection, with trap with seal equal to 1.5 times specified static pressure, to nearest floor drain with pipe sizes matching the drain connection.

3.3 ELECTRICAL CONNECTIONS

- A. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

- C. Install electrical devices furnished by manufacturer, but not factory mounted, according to NFPA 70 and NECA 1.
- D. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.
 - 1. Nameplate shall be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."
 - 2. Nameplate shall be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least 1/2 inch high.

3.4 CONTROL CONNECTIONS

- A. Install control and electrical power wiring to field-mounted control devices.
- B. Connect control wiring according to Section 260523 "Control-Voltage Electrical Power Cables."

3.5 STARTUP SERVICE:

- A. Engage a factory-authorized service representative to perform startup service.
 - 1. Complete installation and startup checks in accordance with manufacturer's written instructions.
 - 2. Verify that shipping, blocking, and bracing are removed.
 - 3. Verify that unit is secure on mountings and supporting devices and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
 - 4. Verify that cleaning and adjusting are complete.
 - 5. For direct-drive fans, verify proper motor rotation direction and verify fan wheel free rotation and smooth bearing operation.
 - 6. For belt-drive fans, disconnect fan drive from motor, verify proper motor rotation direction, and verify fan wheel free rotation and smooth bearing operation. Reconnect fan drive system, align and adjust belts, and install belt guards.
 - 7. Adjust belt tension.
 - 8. Adjust damper linkages for proper damper operation.
 - 9. Verify lubrication for bearings and other moving parts.
 - 10. Verify that manual and automatic volume control and fire and smoke dampers in connected ductwork systems are in fully open position.
 - 11. Disable automatic temperature-control operators, energize motor and confirm proper motor rotation and unit operation, adjust fan to indicated rpm, and measure and record motor voltage and amperage.
 - 12. Shut unit down and reconnect automatic temperature-control operators.
 - 13. Remove and replace malfunctioning units and retest as specified above.

3.6 ADJUSTING

- A. Adjust damper linkages for proper damper operation.
- B. Adjust belt tension.
- C. Lubricate bearings.
- D. Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC."

3.7 CLEANING

A. After completing system installation and testing, adjusting, and balancing and after completing startup service, clean fans internally to remove foreign material and construction dirt and dust

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will engage a qualified testing agency to perform tests and inspections.
- B. Perform tests and inspections.
 - 1. Fan Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 3. Fans and components will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

3.9 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain centrifugal fans.

END OF SECTION 233416

SECTION 233423 - HVAC POWER VENTILATORS

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. Centrifugal roof ventilators.

1.3 PERFORMANCE REQUIREMENTS

- A. Project Altitude: Base fan-performance ratings on actual Project site elevations.
- B. Operating Limits: Classify according to AMCA 99.
- C. Fans utilized for smoke control shall meet UL-864 and all applicable code requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes for fans.
 - 2. Rated capacities, operating characteristics, and furnished specialties and accessories.
 - 3. Certified fan performance curves with system operating conditions indicated.
 - 4. Certified fan sound-power ratings.
 - 5. Motor ratings and electrical characteristics, plus motor and electrical accessories.
 - 6. Material thickness and finishes, including color charts.
 - 7. Dampers, including housings, linkages, and operators.
 - 8. Prefabricated roof curbs.
 - 9. Fan speed controllers.

B. Shop Drawings:

- Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
- 2. Include diagrams for power, signal, and control wiring.

- C. Delegated Design Submittal: For unit hangars and supports indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Design Calculations: Calculate requirements for selecting vibration isolators and for designing vibration isolation bases.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Floor plans, reflected ceiling plans, and other details, or BIM model, drawn to scale, showing the items described in this Section and coordinated with all building trades.
 - 1. Roof framing and support members relative to duct penetrations.
 - 2. Ceiling suspension assembly members.
 - 3. Size and location of initial access modules for acoustical tile.
 - 4. Ceiling-mounted items including light fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
- B. Field quality-control reports.
- C. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For HVAC power ventilators to include in normal and emergency operation, and maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Belts: One set(s) for each belt-driven unit.

1.8 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. AMCA Compliance: Fans shall have AMCA-Certified performance ratings and shall bear the AMCA-Certified Ratings Seal.
- C. UL Standards: Power ventilators shall comply with UL 705.

1.9 COORDINATION

- A. Coordinate size and location of structural-steel support members.
- B. Coordinate sizes and locations of concrete bases with actual equipment provided.
- C. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.
- B. NFPA Compliance: Comply with NFPA 90A for design, fabrication, and installation of unit components.
- C. ASHRAE 62.1 Compliance: Applicable requirements in ASHRAE 62.1, Section 5 "Systems and Equipment" and Section 7 "Construction and Startup."
- D. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6 "Heating, Ventilating, and Air-Conditioning."

2.2 CENTRIFUGAL VENTILATORS – ROOF MOUNTED

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Greenheck Fan Corporation.
 - 2. Hartzell Fan Incorporated.
 - 3. JencoFan.
 - 4. Loren Cook Company.
 - PennBarry.
 - 6. Canarm HVAC Fans.
 - 7. ACME.
- B. Housing: Removable spun-aluminum dome top and outlet baffle; square, one-piece aluminum base with venturi inlet cone.
 - 1. Upblast Units: Provide spun-aluminum discharge baffle to direct discharge air upward, with rain and snow drains.
- C. Fan Wheels: Aluminum hub and wheel with backward-inclined blades Type A.
- D. Belt Drives:

- 1. Resiliently mounted to housing.
- 2. Fan Shaft: Turned, ground, and polished steel; keyed to wheel hub.
- 3. Shaft Bearings: Permanently lubricated, permanently sealed, self-aligning ball bearings.; minimum ABMA9, L(10) of 100,000 hours.
- 4. Fan Pulleys: Cast iron or cast steel with split, tapered bushing; dynamically balanced at factory.
- 5. Motor Pulleys: Adjustable pitch for use with motors through 5 hp. Select pulley so pitch adjustment is at the middle of adjustment range at fan design conditions. Provide fixed pitch for use with motors larger than 5 hp.
- 6. Fan and motor isolated from exhaust airstream.

E. Accessories:

- 1. Disconnect Switch: Nonfusible type, with thermal-overload protection mounted inside fan housing, factory wired through an internal aluminum conduit.
- 2. Starter per Division 26 specifications.
- 3. Bird Screens: Removable, 1/2-inch mesh, aluminum or brass wire.
- 4. Dampers: Counterbalanced, parallel-blade, backdraft dampers mounted in curb base; factory set to close when fan stops.
- 5. Motorized Dampers: Parallel-blade dampers mounted in curb base with electric actuator; wired to close when fan stops.
- F. Roof Curbs: Galvanized steel; mitered and welded corners; 1-1/2-inch-thick, rigid, fiberglass insulation adhered to inside walls; and 1-1/2-inch wood nailer. Size as required to suit roof opening and fan base.
 - 1. Configuration: Self-flashing without a cant strip, with mounting flange.
 - 2. Overall Height: 18 inches.
 - 3. Sound Curb: Curb with sound-absorbing insulation.
 - 4. Pitch Mounting: Manufacture curb for roof slope.
 - 5. Metal Liner: Galvanized steel.
 - 6. Burglar Bars: 1/2-inch-thick steel bars welded in place to form 6-inch squares.
 - 7. Mounting Pedestal: Galvanized steel with removable access panel.
 - 8. Vented Curb: Unlined with louvered vents in vertical sides.
- G. Capacities and Characteristics: See schedule on drawings.

2.3 MOTORS

- A. Comply with NEMA designation, temperature rating, service factor, and efficiency requirements for motors specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
 - 1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
- B. Enclosure Type: Totally enclosed, fan cooled.

2.4 SOURCE QUALITY CONTROL

- A. Certify sound-power level ratings according to AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.
- B. Certify fan performance ratings, including flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests according to AMCA 210, "Laboratory Methods of Testing Fans for Aerodynamic Performance Rating." Label fans with the AMCA-Certified Ratings Seal.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Install power ventilators level and plumb.
- B. Equipment Mounting:
 - 1. Secure roof-mounted fans to roof curbs with zinc-plated hardware. See Section 077200 "Roof Accessories" for installation of roof curbs.
 - 2. Comply with requirements for vibration isolation devices specified in Section 230548.13 "Vibration Controls for HVAC."
- C. Install units with clearances for service and maintenance.
- D. Label units according to requirements specified in Section 230553 "Identification for HVAC Piping and Equipment."
- E. Secure roof-mounted fans to roof curbs with cadmium-plated hardware. See Section 077200 "Roof Accessories" for installation of roof curbs.

3.2 DUCTWORK CONNECTIONS

A. Drawings indicate general arrangement of ducts and duct accessories. Make final duct connections with flexible connectors. Flexible connectors are specified in Section 233300 "Air Duct Accessories."

3.3 ELECTRICAL CONNECTIONS

- A. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

- C. Install electrical devices furnished by manufacturer, but not factory mounted, according to NFPA 70 and NECA 1.
 - 1. Nameplate shall be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."
 - 2. Nameplate shall be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least 1/2 inch high.

3.4 CONTROL CONNECTIONS

- A. Install control and electrical power wiring to field-mounted control devices.
- B. Connect control wiring according to Section 260523 "Control-Voltage Electrical Power Cables."

3.5 STARTUP SERVICE:

- A. Engage a factory-authorized service representative to perform startup service.
 - 1. Complete installation and startup checks in accordance with manufacturer's written instructions.
 - 2. Verify that shipping, blocking, and bracing are removed.
 - 3. Verify that unit is secure on mountings and supporting devices and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
 - 4. Verify that cleaning and adjusting are complete.
 - 5. For direct-drive fans, verify proper motor rotation direction and verify fan wheel free rotation and smooth bearing operation.
 - 6. For belt-drive fans, disconnect fan drive from motor, verify proper motor rotation direction, and verify fan wheel free rotation and smooth bearing operation. Reconnect fan drive system, align and adjust belts, and install belt guards.
 - 7. Adjust belt tension.
 - 8. Adjust damper linkages for proper damper operation.
 - 9. Verify lubrication for bearings and other moving parts.
 - 10. Verify that manual and automatic volume control and fire and smoke dampers in connected ductwork systems are in fully open position.
 - 11. Disable automatic temperature-control operators, energize motor and confirm proper motor rotation and unit operation, adjust fan to indicated rpm, and measure and record motor voltage and amperage.
 - 12. Shut unit down and reconnect automatic temperature-control operators.
 - 13. Remove and replace malfunctioning units and retest as specified above.

3.6 ADJUSTING

- A. Adjust damper linkages for proper damper operation.
- B. Adjust belt tension.

- C. Lubricate bearings.
- D. Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC."
- E. Replace fan and motor pulleys as required to achieve design airflow.

3.7 CLEANING

A. After completing system installation and testing, adjusting, and balancing and after completing startup service, clean fans internally to remove foreign material and construction dirt and dust.

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections with the assistance of a factory-authorized service representative.
 - 1. Fan Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - 2. Test and adjust controls and safeties.
 - 3. Fans and components will be considered defective if they do not pass tests and inspections.
 - 4. Prepare test and inspection reports.

3.9 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain centrifugal fans.

END OF SECTION 233423

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