

**PROJECT MANUAL
SPECIFICATIONS
DRAWINGS**

**CROSLEY FISH & WILDLIFE AREA
OFFICE REMODELING**

2010 South St. Rd. 3
NORTH VERNON, IN 47265-7950



Owner:

**Indiana Department of Natural Resources
Division of Fish & Wildlife
Indiana Government Center South
402 W. Washington Street,
Indianapolis, IN 46204**

Designed and Prepared By:

**Indiana Department of Natural Resources
Division of Engineering
402 W. Washington Street. RM W299
Indianapolis, IN 46204**

Date: _____ **Project ENG1902899363**

Crosley Fish & Wildlife Office Remodeling

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Crosley F&WL Office Remodel

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(TOC >150)

Rev. 09/15

B. LIST OF DRAWINGS

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INSTRUCTIONS TO BIDDERS

PROJECT ESTIMATED BY DEPARTMENT OF ADMINISTRATION, PUBLIC WORKS DIVISION TO BE BID AT ONE HUNDRED FIFTY THOUSAND DOLLARS (\$150,000) AND ABOVE

01 GENERAL

- A. This project is estimated by the Public Works Division, Indiana Department of Administration (the Owner), as stated in the Notice to Bidders, at One Hundred Fifty Thousand Dollars (\$150,000) and above.
- B. QUALIFICATION BY THE CERTIFICATION BOARD IS REQUIRED FOR THIS PROJECT PRIOR TO BID OPENING DATE. For information and procedure contact Executive Secretary, Certification Board, Indiana Department of Administration, 402 W. Washington St., Room W467, Indianapolis, Indiana 46204 or phone (317) 232-3005.

02 PROJECT NUMBER, DESCRIPTION AND LOCATION is as stated in the Notice to Bidders.

03 TITLE AND DEFINITIONS

Said building and/or land upon which it stands is the property of the State of Indiana. All references to the title owner of said property hereinafter will be by the term "State" and all references to the person, firm, or corporation awarded the contract for the project will be by the term "Contractor". All references to Designer shall refer to the consulting person or firm employed to contract with the Public Works Division, Indiana Department of Administration to provide architectural, engineering or other consulting services for the project, or to the Public Works Division. The preparation and issuance of contracts for this project are the responsibility of the Commissioner of the Indiana Department of Administration acting with approval of the Governor.

Contract: A written agreement between two or more parties enforceable by law.

Contractor: A person who has entered into or seeks to enter into a contract with Public Works Division.

Prime Contractor: A person or business which is primarily responsible for providing goods and service or performing a specific service, etc. under contract. A prime contractor can also be a Minority Business Enterprise.

Subcontractor: A person or a business who has a direct contract with a prime contractor who is under contract to provide goods and services or perform a specific service.

Joint Venture: An association of two or more businesses to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge.

Manufacturer: A supplier that produces goods from raw materials or substantially alters them before resale.

Minority or Women Business Enterprise (M/WBE): A business concern which is certified as at least fifty-one percent (51%) owned and controlled by a woman or women or, one or more of the individuals classified as a minority group which includes: African Americans, Hispanic Americans, Asian Americans, and other racial minorities.

Supplier: Any person or entity engaged to furnish goods, materials and/or equipment, but no on-site labor, is capable of furnishing such goods, materials and/or equipment either directly from its own stock or by ordering materials and/or equipment directly from a manufacturer, and is engaged to furnish such goods, materials and/or equipment directly to a prime contractor or one of its subcontractors.

04 PRE-BIDDING, BIDDING AND POST BIDDING REQUIREMENTS

- A. The Director, Public Works Division will authorize the Designer to issue bidding documents, construction documents and addenda to bidders.
- B. It is recommended that all Bidders visit the site prior to submitting bid, and become thoroughly familiar with the existing site conditions and work to be performed, as indicated in the bidding documents, construction documents and addenda. Extra compensation or extension of time will not be allowed for failure to examine the site prior to bidding.
- C. During the bidding period, should questions arise as to the meaning of any part of the bidding documents, construction documents or addenda that may affect the Bidder, the Bidder shall contact the Designer and/or Public Works Division and submit a written request for clarification. The Designer and/or Public Works Division will make such clarification only by written Addendum that will be mailed to each document holder or may be obtained at the office of the Designer and/or Public Works Division. By submitting a bid, the Bidder acknowledges procurement of all Addenda. No written request for clarification will be accepted by the Designer and/or Public Works Division later than fourteen (14) calendar days prior to the scheduled bid date.

- D. Bid as described in Contractor's Bid (DAPW 13) shall include Base Bid (in figures and in words) and Alternates as specified in Section entitled Alternates. In verifying bids, word amounts shall have precedence over figure amounts.
- E. Alternate amount(s) shall be listed where indicated. Add Alternates are not to be included in the Base Bid Scope of Work. Deduct Alternates are to be included in the Base Bid Scope of Work. The bid form must be signed. Note that by signing the bid document, the Bidder is acknowledging the procurement of all addenda and is certifying that the bid recognizes all items in all addenda.
- F. A bid by a corporation shall be in the legal name of the corporation followed by the word "by" and the signature of the president. The secretary of the corporation shall sign indicating his/her authority to sign. A Certificate of Corporate Resolution (DAPW 41) is required with and as a part of the bid if anyone other than the president of the corporation is signing bid documents.
- G. *The Form 96A-Questionnaire and Financial Statement is no longer required to be submitted.* The Director, Public Works Division reserves the right to request additional financial information or contractor experience as a basis for rejection of bid or award of contract.
- H. Each Bidder must file with his bid a Non-Collusion Statement (DAPW-121) signed by the same authorized person(s) who signed the bid.
- I. Each Bidder must file with his bid a completely filled in and executed Bid Bond (DAPW 15A) in accordance with IC 4-13.6-7-5. The bid bond penal sum shall be the minimum amount of five percent (5%) of the bid including all additive alternates.
- J. Each Bidder must file with his bid a completed M/WBE Participation Plan and Good Faith Effort Work Sheet (DAPW 26SUP2). Refer to the Supplement to the General Conditions for M/WBE Participation Policy (DAPW 26SUP1) for specific requirements.
- K. Each Bidder must file with his bid, the completed Contractor's Affidavit of Subcontractors Employed (DAPW 12) only if he proposes to perform any work with a subcontract amount of \$150,000.00 or more.
- L. Each bidder must file with his bid an Employee Drug Testing Plan (DAPW 150A) in accordance with IC 4-13-18 (P.L. 160-2006), or evidence that the contractor is subject to a collective bargaining agreement containing drug testing requirements that comply with IC 4-13-18.
- M. Each Bidder must include his Federal ID number or Social Security number on page 1 of 3 of the Bid Form (DAPW 13). All required bid documents must contain original hand written signatures.
- N. All documents required by statute, rule or these instructions to be included in the bid, must be submitted together in a single sealed envelope, plainly marked with the Name of Bidder, Project Identification, Project Number, Bid Time and Bid Date. Bids shall be rejected if all required documents are not in the single sealed envelope.
- O. A Bidder with proper identification may withdraw his bid at any time prior to the scheduled time for receipt of the bids; however, no bid may be withdrawn without written consent of the Director, Public Works Division for a *period of sixty (60) days after the date of the bid opening*, or unless extended in accordance with IC 4-13.6-6-4. Bids received after the designated due time for any reason, shall be rejected and returned unopened to the Bidder. The Director, Public Works Division reserves the right to reject any or all bids.
- P. Subcontractors whose work will equal or exceed One Hundred Fifty Thousand Dollars (\$150,000.00) must attain a Certificate of Qualification by the Certification Board before commencing any work on this project. Note paragraph 01. (B) above.
- Q. All Bidders (corporations) must be in good standing with the Indiana Secretary of State.

05 SIGNATURE AFFIDAVIT

- A. A Signature Affidavit (DAPW-14) containing the Bidder's authorized signature(s), properly notarized, may be submitted as a signature supplement to all other bid documents, except the bid bond, including:
 1. Contractor's Bid (DAPW 13)
 2. Non-Collusion Statement (DAPW-121)
 3. Contractor's Affidavit of Subs Employed (DAPW 12)
 4. M/WBE Participation Plan and Good Faith Effort Work Sheet (DAPW 26 SUP 2)
- B. All documents herein before required with the bid may be unsigned if the signature affidavit is submitted, except for the BID BOND. BIDDER MUST SIGN THE BID BOND.

NOTE: SIGNING THE SIGNATURE AFFIDAVIT OR BID FORM IS ACKNOWLEDGMENT OF PROCUREMENT OF ALL ADDENDA AND CERTIFICATION BY BIDDER THAT THE BID RECOGNIZES ALL ITEMS IN ALL ADDENDA.

06 WORK BY CONTRACTOR

The Contractor shall perform a minimum of 15% of the value of work (measured in dollars of the total contract price) with his own forces, and not more than 85% of the value of work is to be subcontracted.

07 SUBSTITUTIONS

The materials, products, systems and equipment described in the bidding documents, construction documents and addenda establish a standard or required function, dimension, appearance and quality that shall also be met by any proposed substitution. No substitution by manufacturer, or trade name of product named, or of a quality specified will be considered unless written request for approval has been submitted by the Bidder and has been received by the Designer and/or Public Works Division at least fourteen (14) calendar days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Designer and/or Public Works Division decision of approval or disapproval of the proposed substitution shall be final. Products, materials or systems not specified or approved prior to bidding, shall not be accepted for use in this project. All such substitutions accepted shall be acknowledged by addendum. See paragraph. 04 (C).

08 NONDISCRIMINATION

Pursuant to IC 22-9-1-10, the Contractor and subcontractors, if any, shall not discriminate against any employee or applicant for employment, to be employed in the performance of this contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of his race, religion, color, sex, disability, national origin, or ancestry. Breach of this covenant may be regarded as a material breach of the contract. Pursuant to IC 5-16-6-1, the contractor agrees:

- A. that in the hiring of employees for the performance of work under this contract or any subcontract hereunder, no contractor, or subcontractor, nor any person acting on behalf of such contractor or subcontractor shall, by reason of race, religion, color, sex, disability, national origin or ancestry, discriminate against any citizen of the State of Indiana who is qualified and available to perform the work to which the employment relates; and
- B. that no contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, religion, color, sex, national origin or ancestry; and
- C. that there may be deducted from the amount payable to the contractor by the State of Indiana or by any municipal corporation thereof, under this contract, a penalty of five dollars (\$5.00) for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract; and
- D. that this contract may be canceled or terminated by the State of Indiana or by any municipal corporation thereof, and all money due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the contract.

09 EMPLOYMENT ELIGIBILITY VERIFICATION

The Contractor affirms under the penalties of perjury that he/she/it does not knowingly employ an unauthorized alien.

The Contractor shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC 22-5-1.7-3. The Contractor is not required to participate should the E-Verify program cease to exist. Additionally, the Contractor is not required to participate if the Contractor is self-employed and does not employ any employees.

The Contractor shall not knowingly employ or contract with an unauthorized alien. The Contractor shall not retain an employee or contract with a person that the Contractor subsequently learns is an unauthorized alien.

The Contractor shall require his/her/its subcontractors, who perform work under this contract, to certify to the Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

The State may terminate for default if the Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified by the State.

The contractor shall submit, before work begins the E-Verify case verification number for each individual who is required to be verified under IC 22-5-17. An individual who is required to be verified under IC 22-5-17 whose final case result is final nonconfirmation may not be employed on the public works project.

A contractor may not pay cash to any individual employed by the contractor for work done by the individual on the public works project.

A contractor must be in compliance with the federal Fair Labor Standards Act of 1938, as amended (29 U.S.C. 201-209) and IC 22-2-2-1 through IC 22-2-2-8. A contractor must be in compliance with IC 22-3-5-1 and IC 22-3-7-34. A contractor must be in compliance with IC 22-4-1 through IC 22-4-395. A contractor must be in compliance with IC 4-13-18-1 through IC 4-13-18-7.

10 NOTICE OF AWARD

- A. Prior to execution of the Contract, in accordance with IC 4-13.6-5-2, the Director of Public Works may require additional submittals from Bidder/s to clarify contractor's experience and plans for performing the proposed work. Submittals which may be required include a critical path construction schedule which coordinates all significant tasks sequences and durations; schedule of values, and documentation of efforts to include minority and woman owned businesses in the proposed work. The Director may require Bidder/s to provide a comprehensive list of subcontractors and suppliers within 24 hours of receipt of bids.
- B. Prior to execution of the Contract, the successful Bidder shall furnish a completed Domestic Steel Affidavit (DAPW-11) to Public Works Division, Indiana Department of Administration as part of the contract. The Domestic Steel Affidavit is included for Bidder's review but need not be submitted at the time of the bid opening. Definition of Steel Products:
- "Steel products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two (2) or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.
- C. Prior to execution of the Contract, the successful Bidder shall furnish a completed Contractor's Bond for Construction (DAPW 15) (combined performance and payment bond) to Public Works Division, Department of Administration as part of the contract. The Bond form is included for Bidder's review but need not be submitted at the time of the bid opening.
- D. Prior to execution of the Contract, the successful Bidder shall furnish a completed Contractor's Certificate of Insurance (DAPW 16) to Public Works Division, Department of Administration as part of the contract. The Insurance form is included for Bidder's review but need not be submitted at the time of the bid opening.
- E. Prior to execution of the Contract, the State of Indiana will issue to the successful Bidder a letter stating that his bid was the lowest responsible and responsive bid and that the enclosed contract document is submitted to him for his consideration. If he finds it in accordance with the bid documents, it is to be returned to Public Works Division by certified mail or in person within ten (10) calendar days after receipt for further execution and with the caution that a contract will not exist until it is signed by all signatories required. Failure to execute the proper contract and furnish the ancillary documents shall constitute reason to surrender the bid bond.
- F. Concurrent with execution of the Contract, the successful Bidder may be required to furnish executed copies of Contractor-Subcontractor agreements as required in Article 5 of the General Conditions.

11 SUMMARY

All required bid documents must contain original hand written signatures. Complete documents to be submitted with this bid:

- A. The Bid Bond (DAPW-15A) must be signed by both the Bidder and Bonding Company. The Bonding Company must also attach a Power of Attorney. Bid bond information, may be on the Bonding Company's standard form.
- B. The Contractor's Bid (DAPW-13)
 - Page 1: State the amount of the bid in figures and words.
 - Page 2: State the amount of the alternate(s), indicate add, deduct or no change (READ CAREFULLY).
 - Page 3: Authorized signature of the Company. If the signature affidavit is completed and submitted with the bid, this page must be submitted but need not be signed or notarized.
- C. The Signature Affidavit (DAPW-14) must contain the completed authorized signatures properly notarized and submitted with the bid as a supplement.

This Signature Affidavit shall fulfill all of the signature requirements. NOTE: The Signature Affidavit does not apply to the Bid Bond (DAPW 15A). The Bid Bond document must be fully completed with all required signatures and submitted with the bid.
- D. The Non-Collusion Statement (DAPW-121) must be signed by the same authorized person(s) who signed the bid documents. If the signature affidavit is completed and submitted with bid, this form shall be submitted, but need not be signed.
- E. For corporations, if anyone other than the president of the corporation signs, a Certificate of Corporate Resolution (DAPW 41) giving signature authority for the signer must be included.
- F. M/WBE Participation Plan and M/WBE Good Faith Effort Work Sheet (DAPW 26SUP2) must be completed and signed by the same authorized person who signed the bid documents.
- G. The completed Contractor's Affidavit of Subcontractors Employed (DAPW-12) whose subcontract amount will be \$150,000.00 or more.
- H. The completed plan for Contractor's Employee Drug Testing Plan (or statement of collective bargaining agreement).
- I. One copy only of the Bid Documents is required. Bidders may remove and use the Documents included in the project specifications or use reproductions of the Documents.

12 INDIVIDUAL BIDS SHALL BE REJECTED BY THE DIRECTOR, PUBLIC WORKS DIVISION FOR THE FOLLOWING REASONS (IC 4-13.6-5-2; IC 4-13.6-6-1; 25 IAC 2-6-5)

- A. If the bid envelope is not sealed at the time of submission; if the envelope does not clearly identify the project number and description; if the name of the Bidder is not clearly indicated on the outside of the envelope and/or if the envelope is not date and time stamped by Public Works Division prior to the stated time for receipt of bids.
- B. If the estimated base bid cost exceeds \$150,000.00 and the bidding contractor is not certified by Public Works Certification Board to offer bids in one of the specified categories.
- C. If the bidding contractor is under suspension by the Director of Public Works or by the Public Works Certification Board.
- D. If the bidding contractor is a trust and does not identify all beneficiaries and empowered settlors of the trust.
- E. If the contractor's drug plan is not included in the bid documents pursuant to and complies with IC 4-13-18

13 INDIVIDUAL BIDS MAY BE REJECTED BY THE DIRECTOR, PUBLIC WORKS DIVISION FOR THE FOLLOWING REASONS (25 IAC 2-6-5)

- A. If the Contractor's Bid (DAPW 13) Non-Collusion Statement (DAPW 121) and/or Bid Bond (DAPW 15A) are not signed and notarized as required by these instructions, or the Signature Affidavit (DAPW 14) and the Bid Bond (DAPW 15A) are not signed and notarized as allowed as an alternative.
- B. If all required bid or alternate(s) amounts, or unit prices are not submitted with the bid when specifically called for by the specifications issued for the project.

- C. When the Bidder adds any provision reserving the right to accept or reject the award, or if the Bidder adds conditions or alternates to his bid not requested (voluntary alternates), or if there are unauthorized additions or irregularities of any kind which tend to make the proposal incomplete, indefinite or ambiguous as to its meaning or amount.
- D. When no bids received are under or within funds that can be appropriated, or within the Designer's estimate or when situations develop which make it impossible or not practical to proceed with the proposed work.
- E. If, subsequent to the opening of the bids, facts exist which would disqualify the Bidder, or that such Bidder is not deemed by the Director, Public Works Division to be responsive or responsible.
- F. If an out-of-state contractor is not registered with the Indiana Secretary of State or if any bidding contractor is not in good standing with the Secretary of State.

CONTRACTOR'S AFFIDAVIT OF SUBS EMPLOYED

Public Works Project Number: _____ Date: _____

Project Description: _____

Prime Contractor: _____

Form Submitted for Bid: _____ Contract: _____ or Payment No.: _____

The following companies are subcontractors on this project for the amount indicated:

Subcontractor Name	Subcontract For	Subcontract Amount	Revised Amount	DAPW Certified Y/N	MBE WBE	On Site Y/N

_____ being duly sworn upon oath, deposes and says that he is _____ of the firm of _____ and is familiar with the affidavit herewith and that these entries are complete and true.

STATE OF _____ }
 COUNTY OF _____ } SS:

_____ personally appeared before me, a Notary Public, in and for said County and State, this ___ day of _____, 20___, after being duly sworn upon his oath, says that the facts alleged in the foregoing affidavit are true.

My Commission Expires: _____

 NOTARY PUBLIC - SIGNATURE

 NOTARY PUBLIC PRINTED NAME

(SEAL)

GENERAL BID FOR PUBLIC WORKS

CONTRACTOR'S BID

For _____
(Insert class of work)

Project Number _____

Project Description (Title) _____

Date _____

To: Department of Administration, Public Works Division
Room W467
402 West Washington Street
Indianapolis, Indiana 46204

Pursuant to notices given, the undersigned proposes to furnish and install work
in accordance with the construction documents prepared by:

(Designer Name, Address, Telephone)

for the sum of _____
(State amount in words)

_____ \$ _____
(State amount in figures)

If required add attachment for all unit prices called for in the Specifications.

_____ Federal I.D. Number or Social Security Number

Contractor's Email address _____
(Contract and Purchase Order will be sent to email address provided)

Bidder ID Number _____

(If you do not have an Indiana Department of Administration Bidder ID Number, please obtain one online at:
<http://www.in.gov/idoa/2464.htm>)

ALTERNATE BIDS

Add Alternates Are Not to be included as part of the Base Bid Scope of Work.

Deduct Alternates are items of work that Are to be included in the Base Bid Scope of Work, and deducted from the project as described herein.

The work shall be as described in Section, ALTERNATES.

Bidder shall provide a response to each alternate specified. Response must indicate the amount to be ADDED to the base bid, DEDUCTED from the base bid, or that there is NO CHANGE.

Failure to respond to all alternates may cause the bid to be rejected.

BIDDER SHALL CHECK APPLICABLE BOX for each listed alternate.

Alternate No. ___ ADD ___ DEDUCT ___ NO CHANGE ___ AMOUNT \$ _____

Alternate No. ___ ADD ___ DEDUCT ___ NO CHANGE ___ AMOUNT \$ _____

Alternate No. ___ ADD ___ DEDUCT ___ NO CHANGE ___ AMOUNT \$ _____

Alternate No. ___ ADD ___ DEDUCT ___ NO CHANGE ___ AMOUNT \$ _____

Alternate No. ___ ADD ___ DEDUCT ___ NO CHANGE ___ AMOUNT \$ _____

Alternate No. ___ ADD ___ DEDUCT ___ NO CHANGE ___ AMOUNT \$ _____

Ethics Compliance. The Contractor and its agents shall abide by all ethical requirements that apply to persons who have a business relationship with the State, as set forth in Indiana Code § 4-2-6 et seq., the regulations promulgated there under, and Executive Order 04-08, dated April 27, 2004. If the Contractor is not familiar with these ethical requirements, the Contractor should refer any questions to the Indiana State Ethics Commission, or visit the Indiana State Ethics Commission website at <http://www.in.gov/ethics/>. If the Contractor or its agents violate any applicable ethical standards, the State may, in its sole discretion, terminate this contract immediately upon notice to the Contractor. In addition, the Contractor may be subject to penalties under Indiana Code § 4-2-6-12.

Pursuant to IC 22-9-1-10, the Contractor and subcontractors, if any, shall not discriminate against any employee or applicant for employment, to be employed in the performance of this contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of his race, religion, color, sex, disability, national origin, or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

IN TESTIMONY WHEREOF, the Bidder (a sole proprietor) has hereunto set his hand
this ___ day of _____, 20__.

Proprietorship (Company Name)

(INDIVIDUAL)

Bidder (Owner)

IN TESTIMONY WHEREOF, the Bidder (a partnership) has hereunto set their hands
this ___ day of _____, 20__.

Company Name

Partner

Partner

IN TESTIMONY WHEREOF, the Bidder (a corporation) has caused this proposal to be signed by its
President or other authorized signatory and Secretary this _____ day of _____, 20__.

Corporation Name

By President or Other Authorized Signatory

Secretary

If the bid is signed by other than the President, a Corporation Resolution designating other authorized signatory shall be submitted with this bid unless already on file with the Certification Board of the Public Works Division.

BY SIGNING THIS BID THE BIDDER ACKNOWLEDGES PROCUREMENT OF ALL ADDENDA AND
CERTIFIES THAT THIS BID RECOGNIZES ALL ITEMS IN ALL ADDENDA.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____
(Contractor's Name and Address)

as Principal, hereinafter called the Principal, and the _____
(Bonding Company Name)

a corporation duly organized under the laws of the State of _____
as Surety, hereinafter called the Surety, are held and firmly bound unto Public Works Division/Department of
Administration, State of Indiana, as Obligee, hereinafter called the Obligee,

in the sum of _____ Dollars (\$ _____)
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for: (insert State Project Number, Description and Location)

Project No. _____

Project Description: _____

Project Location: _____

NOW THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a contract
with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the
bidding or contract documents with good and sufficient surety for the faithful performance of such contract and for
the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the
Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference
not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the
Obligee may in good faith contract with another party to perform the work covered by said bid, then this obligation
shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 20____.

(Witness)

(Principal)

By: _____
(Title)

(Surety)

Witness)

(Attorney-in-fact)

I. MINORITY AND WOMEN'S BUSINESS ENTERPRISES PARTICIPATION PLAN

A Respondent is expected to submit in each response a Minority and Women's Business Enterprises Participation Plan in accordance with IC 4-13-16.5 and 25 IAC 5. The Plan must show that there are, participating in the proposed contract, Minority Business Enterprises (MBE) and Women Business Enterprises (WBE) listed in the Minority and Women's Business Enterprises Division (MWBD) directory of certified firms. Respondents must indicate the name of the MBE and WBE with which it will work, the contact name and phone number at the firm(s), the service supplied by the firm(s), the specific dollar amount from this contract that will be directed toward each firm, and the approximate date these products and/or services will be utilized. If participation is met through use of vendors who supply products and/or services, the Respondent must also indicate the vendor's tax ID number as well as provide a description of products and/or services provided to the Respondent that are directly related to this proposal and the cost of direct supplies for this proposal. All prime contractors, including MBE and WBE prime contractors, must meet the contract goals through use of subcontractors. MBE and WBE prime contractors will get no credit toward the contract goal for the use of its own workforce. The State does not accept national plans.

Failure to meet these requirements will affect the evaluation of your Proposal. The Department reserves the right to verify all information included in the Plan.

Respondents are encouraged to contact and work with MWBD to design a plan to meet established goals. MWBD's website address is www.IN.gov/idoa/minority/ and contains a complete list of all the Department's certified MBE's and WBE's.

**Minority & Women's Business Enterprises Participation
Letter of Commitment**

A signed letter(s), on company letterhead, from the MBE and/or WBE must accompany the Plan. This letter(s) shall state and will serve as acknowledgement from the MBE and/or WBE of its amount of participation, the scope of products and/or services, and approximate date these products and/or services will be utilized.

By submission of the Proposal, the Respondent acknowledges and agrees to be bound by the regulatory processes involving the State's M/WBE Program. Questions involving the regulations governing the Plan should be directed to MWBD's Compliance Unit at 317/232-3061

MBE/WBE PARTICIPATION PLAN

RFP # / Bid # / Quote # _____ DUE DATE _____

(Circle One)

RFP / BID / QUOTE NAME _____

(Circle One)

RESPONDENT _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE () _____

The following MBE and/or WBE's listed in the MWBD directory will be participating in the contract:

<u>MBE/WBE</u>	<u>P HONE</u>	<u>COMPANY NAME</u>	<u>SCOPE OF PRODUCTS/SERVICES</u>	<u>UTILIZATION DATE</u>	<u>AMOUNT</u>

***If additional room is necessary, indicate here _____. Please attach a separate page.**

THIS DOCUMENT MUST BE INCLUDED IN YOUR RESPONSE

**Indiana Department of Administration
Public Works and State Office Building Commission
GOOD FAITH EFFORTS WORKSHEET**

BIDDER _____

BID/PROJECT NUMBER _____

CONTRACT GOALS 7% MBE 5% WBE

List the M/WBEs contacted and complete the following information for each. Copies of all communications to and from each vendor should be maintained.

Company Name and Address	MBE	WBE	Type of Contact	Date of Contact	Date Response Due	Goods Or Services Requested	Result (Include Price Quote)

Indicate **Good Faith Efforts** made to utilize MWBEs. Check and explain all that apply or should be considered. Please provide evidence of the efforts that you want to be considered. A complete description of each criteria may be found in the **Indiana Department of Administration Public Works and State Office Building Commission MWBE Participation Policy**.

MBE and WBE Barrier Assistance	Describe
Advertisement	Describe
Agency Assistance	Describe
Other Criteria	Describe

CERTIFICATE OF CORPORATE RESOLUTION

I, _____, do hereby certify that I am the Secretary
Type Name
of _____, a corporation duly organized and
existing under and by virtue of the Laws of the State of Indiana;

I further certify that a regular/special meeting of the members of the Board of Directors of said corporation, duly called held and convened in conformity with the Charter and By Laws of said corporation, on the ____ day of _____, 20____, a quorum being present and voting thereon, the following resolution was duly adopted, to-wit:

I further certify that the foregoing resolution is a full, true, and complete copy as the same appears on record in the Minute Record Book of said corporation of which I am the legal custodian; that the same has not been altered, amended or repealed and is now in full force and effect.

In Witness Whereof, I have hereunto set my hand for said corporation this _____ day
of _____, 20_____.

By: _____
(Signature)

(must be signed by principal of organization)

STATE OF }
 } SS:
COUNTY OF }

personally appeared before me, a Notary Public, in and for said County and State, this day of _____, 20____, after being duly sworn upon his oath, says that the facts alleged in the foregoing affidavit are true.

My Commission Expires:

NOTARY PUBLIC - SIGNATURE

(SEAL)

NOTARY PUBLIC PRINTED NAME

NON-COLLUSION STATEMENT

The undersigned attests, subject to the penalties for perjury, that the undersigned is the Contractor, or that the undersigned is the properly authorized representative, agent, member or officer of the Contractor. Further, to the undersigned's knowledge, neither the undersigned nor any other member, employee, representative, agent or officer of the Contractor, directly or indirectly, has entered into or been offered any sum of money or other consideration for the execution of this Contract other than that which appears upon the face hereof. **Furthermore, if the undersigned has knowledge that a state officer, employee, or special state appointee, as those terms are defined in IC 4-2-6-1, has a financial interest in the Contract, the Contractor attests to compliance with the disclosure requirements in IC 4-2-6-10.5.**

Signature

Printed Name

Title

Company

DOMESTIC STEEL AFFIDAVIT

STATE OF }
 COUNTY OF } SS:
 }

PROJECT NO: _____

I hereby swear, under penalties of perjury, that the steel products furnished for this project shall conform to the following Indiana Code Definitions and contract provisions:

IC 5-16-8-1 Definitions:

"Steel products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two (2) or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.

"United States" refers to the United States of America. The term includes all territory, continental or insular, subject to the jurisdiction of the United States.

IC 5-16-8-2 Public agency contract provisions; rules for determining reasonable pricing.

Sec. 2. (a) Each public agency shall require that every contract for the construction, reconstruction, alteration, repair, improvement or maintenance of public works contain a provision that, if any steel or foundry products are to be used or supplied in the performance of the contract or subcontract, only steel or foundry made in the United States shall be used or supplied in the performance of the contract or any of the subcontracts unless the head of the public agency determines, in writing, that the cost of steel or foundry products is deemed to be unreasonable.

 (Signature)

 (Printed name)

 (Attest)
 (Vice President/Secretary/Treasurer)

 (Printed or typed name of company)

STATE OF }
 COUNTY OF } SS:
 }

_____ personally appeared before me, a Notary Public, in and for said County and State, this ___ day of _____, 20___, after being duly sworn upon his oath, says that the facts alleged in the foregoing affidavit are true.

My Commission Expires:

 NOTARY PUBLIC - SIGNATURE

(SEAL)

 NOTARY PUBLIC PRINTED NAME

CONTRACTOR'S BOND FOR CONSTRUCTION

KNOW ALL MEN BY THESE PRESENT, that _____
(Contractor)

_____ of _____
(Address) (City, State)

as principal and _____
(Bonding Company)

(Address) (City, State) (Zip Code)

as surety, are firmly bound unto the State of Indiana in the penal sum of \$_____ Dollars, for the payment of which, well and truly to be made, we bind ourselves, jointly and severally, and our joint and several heirs, executors, administrators and assigns, firmly by these present, this _____ day of _____, 20_____.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SURE, THAT, WHEREAS the State of Indiana acting by and through the Commissioner, Department of Administration, has entered into a certain written contract dated _____ of _____

(Project Number and Description)

_____ situated in _____
Indiana, in accordance with the construction documents approved and adopted by said Commissioner, Department of Administration, which are made a part of this bond.

NOW THEREFORE, if the said _____
(Contractor)
_____, shall well and faithfully do and perform the same in all respects according to the plans and specifications adopted by said Commissioner, Department of Administration, and according to the time, terms and conditions specified in said contract and incurred by him or any subcontractor in the prosecution of said work, including labor, service and materials furnished, then this obligation shall be void; otherwise to remain in full force, virtue and effect. This bond shall adhere to the requirements of IC 4-13.6-7-6 and IC 4-13.6-7-7.

IN WITNESS WHEREOF, we hereunto set our hands and seals this _____ day
of _____, 20_____.

By: _____ (Seal)
(Contractor)

By: _____ (Seal)
(Bonding Company)

By: _____
(Attorney-in-fact)

CONTRACTOR'S CERTIFICATE OF INSURANCE

This certifies to the addressee shown below that the following described policies, subject to their terms, conditions, and exclusions, have been issued to:

NAME AND ADDRESS OF INSURED: _____

COVERING (show State project number, name and location) _____

ADDRESSEE: **PUBLIC WORKS DIVISION/DEPARTMENT OF ADMINISTRATION** DATE: _____

TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE	EXPIRATION DATE	LIMITS	
1. General Liability a. Bodily Injury Including Personal Injury				Each Person - Premises and Operations	\$ _____
				Each Person – Elevators	\$ _____
				Each Person – Independent Contractor	\$ _____
				Each Person - Products Completed Including Operations	\$ _____
				Each Person – Contractual	\$ _____
				Each Occurrence -	\$ _____
				Aggregate - Products Completed Including Operations	\$ _____
b. Property Damage				Each Occurrence – Premises and Operations	\$ _____
				Each Occurrence – Elevators	\$ _____
				Each Occurrence – Independent Contractor	\$ _____
				Each Occurrence – Products Completed Including Operations	\$ _____
				Each Occurrence – Contractual	\$ _____
				Aggregate -	\$ _____
				Aggregate - Operations Protective Products and Contractual	\$ _____
2. Automobile Liability a. Bodily Injury b. Property Damage				Each Person	\$ _____
				Each Occurrence	\$ _____
				Each Accident	\$ _____
3. Excess Liability Umbrella					\$ _____
4. a. Workmen's Compensation b. Employer's Liability				Statutory Workmen's Compensation	\$ _____
				One Accident And Aggregate Disease	\$ _____
5. Builder's Risk					\$ _____

UNDER GENERAL LIABILITY POLICY OR POLICIES	YES	NO
1. Does Property Damage Liability Insurance shown include coverage for XC and U hazards?	_____	_____
2. Is Occurrence Basis Coverage provided under Property Damage Liability? _____	_____	_____
3. Is Broad Form Property Damage Coverage provided for this Project?.....	_____	_____
4. Is Personal Injury Coverage included?	_____	_____
5. Is coverage provided for Contractual Liability (including <u>indemnification provision</u>) assumed by insured?	_____	_____
UNDER AUTOMOBILE LIABILITY POLICY OR POLICIES.....	_____	_____
1. Does coverage shown above apply to non-owned and hired automobiles?	_____	_____
2. Is Occurrence Basis Coverage provided under Property Damage Liability? _____	_____	_____

In the event of cancellation, fifteen (15) days written notice shall be given to the party to whom this certificate is addressed.

NAME OF INSURANCE COMPANY

ADDRESS

SIGNATURE OF AUTHORIZED REPRESENTATIVE

CONTRACTOR'S EMPLOYEE DRUG TESTING

IC 4-13-18 IS ADDED TO THE INDIANA CODE AS A NEW CHAPTER TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2006]:

Chapter 18. Drug Testing of Employees of Public Works Contractors

Sec. 1. This chapter applies only to a public works contract awarded after June 30, 2006.

Sec. 2. As used in this chapter, "bid" includes a quotation.

Sec. 3. (a) As used in this chapter, "contractor" refers to a person who:

- (1) submits a bid to do work under a public works contract; or
- (2) does any work under a public works contract.

(b) The term includes a subcontractor of a contractor.

Sec. 4. As used in this chapter, "public works contract" refers to:

- (1) a public works contract covered by IC 4-13.6;
- (2) a public works contract covered by IC 5-16 and entered into by a state agency; or
- (3) a state highway contract covered by IC 8-23-9;

when the estimated cost of the public works project is one hundred fifty thousand dollars (\$150,000) or more.

Sec. 5. (a) A solicitation for a public works contract must require each contractor that submits a bid for the work to submit with the bid a written plan for a program to test the contractor's employees for drugs.

(b) A public works contract may not be awarded to a contractor whose bid does not include a written plan for an employee drug testing program that complies with this chapter.

(c) A contractor that is subject to a collective bargaining agreement shall be treated as having an employee drug testing program that complies with this chapter if the collective bargaining agreement establishes an employee drug testing program that includes the following:

- (1) The program provides for the random testing of the contractor's employees.
- (2) The program contains a five (5) drug panel that tests for the substances identified in section 6(a)(3) of this chapter.

(3) The program imposes disciplinary measures on an employee who fails a drug test. The disciplinary measures must include at a minimum, all the following:

- (A) The employee is subject to suspension or immediate termination.
- (B) The employee is not eligible for reinstatement until the employee tests negative on a five (5) drug panel test certified by a medical review officer.

(C) The employee is subject to unscheduled sporadic testing for at least one (1) year after reinstatement.

(D) The employee successfully completes a rehabilitation program recommended by a substance abuse professional if the employee fails more than one (1) drug test.

A copy of the relevant part of the collective bargaining agreement constitutes a written plan under this section.

Sec. 6. (a) A contractor's employee drug testing program must satisfy all of the following:

(1) Each of the contractor's employees must be subject to a drug test at least one (1) time each year.

(2) Subject to subdivision (1), the contractor's employees must be tested randomly. At least two

percent (2%) of the contractor's employees must be randomly selected each month for testing.

(3) The program must contain at least a five (5) drug panel that tests for the following:

- (A) Amphetamines.
- (B) Cocaine.
- (C) Opiates (2000 ng/ml).
- (D) PCP.
- (E) THC.

(4) The program must impose progressive discipline on an employee who fails a drug test. The discipline must have at least the following progression:

(A) After the first positive test, an employee must be:

- (i) suspended from work for thirty (30) days;
- (ii) directed to a program of treatment or rehabilitation; and
- (iii) subject to unannounced drug testing for one (1) year, beginning the day the employee returns to work.

(B) After a second positive test, an employee must be:

- (i) suspended from work for ninety (90) days;
- (ii) directed to a program of treatment or rehabilitation; and
- (iii) subject to unannounced drug testing for one (1) year, beginning the day the employee returns to work.

(C) After a third or subsequent positive test, an employee must be:

- (i) suspended from work for one (1) year;
- (ii) directed to a program of treatment or rehabilitation; and
- (iii) subject to unannounced drug testing for one (1) year, beginning the day the employee returns to work.

The program may require dismissal of the employee after any positive drug test or other discipline more severe than is described in this subdivision.

(b) An employer complies with the requirement of subsection (a) to direct an employee to a program of treatment or rehabilitation if the employer does either of the following:

(1) Advises the employee of any program of treatment or rehabilitation covered by insurance provided by the employer.

(2) If the employer does not provide insurance that covers drug treatment or rehabilitation programs, the employer advises the employee of agencies known to the employer that provide drug treatment or rehabilitation programs.

Sec. 7. (a) The public works contract must provide for the following:

(1) That the contractor implement the employee drug testing program described in the contractor's plan.

(2) Cancellation of the contract by the agency awarding the contract if the contractor:

- (A) fails to implement its employee drug testing program during the term of the contract;
- (B) fails to provide information regarding implementation of the contractor's employee drug testing program at the request of the agency; or
- (C) provides to the agency false information regarding the contractor's employee drug testing program.

(b) The provisions of the public works contract relating to cancellation of the contract by the agency awarding the contract apply to cancellation of the public works contract under this section.

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STATE OF INDIANA
GENERAL CONDITIONS

ARTICLE 1 CONTRACT DOCUMENTS

1.1 Definitions

1.1.1 The Contract Documents

The Contract Documents consist of the Agreement, the Instructions to Bidders, the Contractor's Proposal (Bid), the Conditions of the Contract (General and Supplementary), Drawings, Specifications, and Addenda issued prior to bidding, Change Orders, any written interpretation issued as a field order by the Designer pursuant to Article 1.2, and all field orders for minor changes in the Work by the Designer pursuant to Article 12.3.

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 all prior negotiations, representations, or agreements, either written or oral.

1.1.3 The Work

All labor, material, equipment, systems and services necessary to produce the result called for in the Contract Documents.

1.1.4 The Project

The Project is the total construction designed by the Designer of which the Work performed under the Contract Documents may be the whole or a part.

1.2 Execution, Correlation, Intent and Interpretations

1.2.1 The Contract Documents shall be signed by the Owner and the Contractor. The signature process may be done electronically at the discretion of the Owner.

1.2.2 By executing the Contract the Contractor represents that he has visited the site and correlated his observations with the requirements of the Contract Documents, and has no major question pertaining thereto.

1.2.3 The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the Documents is to include all labor, equipment, supervision and materials, for the proper execution and completion of the Work, and also to include those things that may be reasonably inferable from the Contract Documents as being necessary to produce the intended results. Words that have a well-known technical or trade meaning are used herein, in accordance with such recognized meaning.

1.2.4 Written interpretations necessary for the proper execution of the Work, in the form of drawings or otherwise will be issued with reasonable promptness by the Designer. Such interpretations shall be consistent with and reasonably inferable from the Contract Documents, and may be issued by field order subject to Owner's approval.

1.3 Copies Furnished and Ownership

1.3.1 The Contractor will be furnished 5 copies of drawings and specifications and any other information necessary for the execution of the Work.

1.3.2 All drawings, specifications, and copies thereof furnished by the Designer are his property. They are not to be used on any other Project, and, with the exception of one Contract set for each party to the Contract, are to be returned on request to the Designer at the completion of the Work.

ARTICLE 2 DESIGNER

2.1 Definition

2.1.1 The Designer is the person or organization identified as Designer of the Project, and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The terms Designer, Engineer, Architect, (and in certain projects Director, Public Works Division or his authorized representative), shall mean the Designer.

2.2 Administration of the Contract

2.2.1 The Designer will provide general administration of the Contract, including the functions hereinafter described.

2.2.2 Unless stated otherwise, the Designer shall be the Owner's representative during the construction phase. He shall have authority to act on behalf of the Owner only to the extent expressly provided in the Contract Documents or otherwise in writing, which will be shown to the Contractor. The Designer will advise and consult with the Owner and all of the Owner's instructions to the Contractor shall be issued through the Designer.

2.2.3 The Designer shall have access to the Work at all times wherever it is in storage, preparation and progress. The Contractor shall provide facilities for such access so that the Designer and Owner's Site Representative may perform their functions under the Contract Documents.

2.2.4 The Designer will make no less than weekly visits to the site when work is in progress to familiarize himself generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. He will not be required to make exhaustive or continuous on-site inspection to check the quality or quantity of the Work. On the basis of his on-site observations as Designer, he will keep the Owner informed of the progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work of the Contractor.

2.2.5 Based on such observation and the Contractor's applications for payment, the Designer will determine the amount owed to the Contractor and will issue Certificates for Payment in such amounts.

2.2.6 The Designer will be, in the first instance, the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder. He will promptly render such interpretations as he may deem necessary for the proper execution or progress of the Work.

2.2.7 All interpretations and decisions of the Designer will be consistent with the intent of the Contract Documents. He will exercise his best efforts to insure faithful performance by the Contractor.

2.2.8 Claims, disputes and other matters in question relating to the execution or progress of the Work or interpretation of the Contract Documents shall be referred initially to the Designer for decision and be subject to written appeal within fifteen (15) days by the Contractor. The Designer shall submit his decision promptly in writing to the Director, Public Works Division, who shall have full authority to render the final and binding decision.

2.2.9 The Designer will have responsibility to recommend to the Owner the rejection of work that does not conform to the Contract Documents. Whenever the Designer considers it necessary or advisable, he shall recommend to the Owner the stoppage of the Work or any portion thereof, and to recommend special examination or testing of the Work (whether or not fabricated, installed, or completed).

2.2.10 The Designer will review and approve or take other appropriate action upon the Contractor's submittals such as shop drawings, product data and samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Designer's approval of a specific item shall not indicate approval of all assembly of which the item is a component.

2.2.11 The Designer will prepare change orders in accordance with Article 12.

2.2.12 The Designer will conduct reviews to determine the dates of Substantial Completion and Final Completion, will receive and forward to the Owner for the Owner's review written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of Article 9.7.

2.2.13 The Designer, together with representatives from the Contractor and the Owner will conduct a review of the Work nine (9) months after the date of substantial completion to determine any work not in compliance with the Contract Documents at that time. A list of items to be corrected or completed will be forwarded to the Contractor for corrective action prior to the expiration of the one year warranty period.

2.2.14 The duties, responsibilities and limitations of authority of the Designer as the Owner's representative during construction as set forth in Articles 1 through 14 of these General Conditions shall not be modified or extended without written consent of the Owner.

2.2.15 The Designer will not be responsible for the acts or omissions of the Contractor, Subcontractor, or any of their superintendents, supervisory staffs, agents or employees, or any other persons performing any of the Work.

2.2.16 In case of the termination of the employment of the Designer, the Owner shall appoint a Designer against whom the Contractor makes no reasonable objections, whose status under the Contract shall be that of Designer.

ARTICLE 3 OWNER

3.1 Definition

3.1.1 The Owner is the State of Indiana, represented by the Commissioner; Department of Administration acting through the Director, Public Works Division and the Director's designated project manager.

3.2 Information and Service Required of the Owner

3.2.1 The Owner will furnish, through the Designer, surveys, describing known physical characteristics, legal limits and utility locations for the property on which the Project is to be erected, if in the Owner's possession.

3.2.2 Information or services under the Owner's control shall be furnished by the Owner with promptness to avoid delay in the orderly progress of the Work.

3.2.3 The Owner shall issue all instructions to the Contractor through the Designer unless specified elsewhere in these documents.

3.2.4 If the Contractor fails to correct defective work as required by Article 13 or persistently fails to carry out the Work in accordance with the Contract Documents, the Owner, by a written order may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any 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 Article 6.1.

3.3 Owner's Site Representative

3.3.1 Notwithstanding the obligations of the Designer as Owner's representative during construction, the Owner may employ an on-site representative to observe the progress of the Work.

3.3.2 The Owner's Site Representative shall function as an observer only. He shall report his findings to the Designer for review and any required further action. The Owner's Site Representative is not authorized to make changes in the Work or to interpret the Contract Documents.

3.3.3 The Owner's Site Representative shall have at all times access to the Work wherever it is in storage, preparation and progress. He may attend meetings at the site and he may review and approve the Contractor payment requests.

ARTICLE 4 CONTRACTOR

4.1 Definition

4.1.1 The Contractor is the person or organization identified as such in the Agreement. He is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

4.2 Review of Contract Documents

4.2.1 The Contractor shall carefully study and compare the Contract Documents and shall at once report to the Designer and the Owner any error, inconsistency or omission he may discover. The Contractor shall perform no portion of the Work at any time without Contract Documents or, where required, approved shop drawings, product data or samples for such portion of the Work.

4.3 Supervision and Construction Procedures

4.3.1 The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for the quality of the Work and for all construction techniques, sequences, and procedures, and for coordinating all portions of the Work.

4.3.2 The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Designer in administration of the Contract, or by inspections, tests or approvals required or performed under Paragraph 7.9 by persons other than the Contractor.

4.4 Labor and Materials

4.4.1 Unless otherwise specified in Division 1, the Contractor shall provide and pay for all labor, material, equipment, tools, construction equipment, machinery, transportation, and other facilities and services necessary for the proper execution of the Work.

4.4.2 Unless otherwise specified in Division 1, the Contractor shall provide and pay for all electric current, water, heat, and telephone services and shall maintain necessary discipline to prevent waste.

4.4.3 If any item of work shall be the subject of a jurisdictional dispute as to the craft to be used for said work, the Contractor shall aid in such inter-craft resolution and if arbitrated, abide by the decision, holding the Owner free of involvement in the dispute, and if time is lost by the dispute, extra work days will only be considered through the provisions of Article 12.2. He will do whatever he can to eliminate any embarrassment to the Owner caused by picketing, etc.

4.4.4 The Contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on the Work any unfit person or any one employee unskilled in the Work assigned to him or unqualified as a tradesman in the trade involved.

4.5 Warranty and Guarantee

4.5.1 The Contractor warrants and guarantees that all materials and equipment incorporated in the Project shall be new unless otherwise specified, and all work will be of the highest quality, free from faults and defects, and in strict conformance with the Contract Documents for a period of one year from the date of substantial completion. All work not so conforming to the Contract Documents may be considered defective. If required by the Designer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The warranties and guarantees provided in this Article and elsewhere in the Contract Documents shall be in addition to and not in limitation of any other warranty or guarantee or remedy called for the Contract Documents or otherwise prescribed by law. The Contractor, together with the Designer and representatives from the Owner, shall review the Work nine (9) months after the date of substantial completion to determine any work not in compliance with the Contract Documents. The Contractor shall correct such non-complying work prior to the expiration of the one year warranty.

4.6 Permits, Fees and Notices

4.6.1 The Contract shall secure and pay for all permits, fees and licenses necessary for the execution of the Work.

4.6.2 The Contractor and Subcontractors must submit an "Exemption Certificate for Construction Contractors" (Form ST-105) to each supplier in order to obtain exemption from the Indiana Gross Tax (i.e., sales and use tax).

4.6.3 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and orders of any public authority bearing on the conduct of the Work. If he observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Designer in writing, and any necessary changes shall be adjusted by change order. If he performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Designer, he shall bear all cost arising from such non-conformance.

4.7 Cash Allowances

4.7.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. These allowances cover the net cost of the materials and equipment delivered and unloaded at the site which cost shall be determined by the Owner through proper procedures for receiving quotes or bids as required by law. The Contractor's handling costs on the site, labor, installation costs, overhead, profit, and other expenses shall be included in the Contract sum and not in the allowance. The Contractor shall cause the Work required by these allowances to be performed by such persons as the Designer may direct, but he will not be required to employ persons against whom he has a reasonable objection. If the net cost above, when determined, is more than or less than the allowance, the Contract Sum will be adjusted accordingly by change order.

4.8 Superintendent

4.8.1 The Contractor shall keep on the Project, during the entire contract time, a competent superintendent and necessary assistants, all satisfactory to the Designer and the superintendent shall not be changed, except with the consent of the Owner, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor and shall have full authority to act on his behalf. All communications given the superintendent shall be as binding as if given by the Contractor. Important communications shall be confirmed in writing.

4.9 Responsibility for Those Performing the Work

4.9.1 The Contractor shall be responsible for the quality of the Work, for acts and omissions of all the Subcontractors, their superintendents, their supervisory staffs, agents, or employees and of all other persons performing any of the Work under a Contract with the Contractor.

4.10 Progress Schedule

4.10.1 Unless otherwise indicated in Division 1, the Contractor, immediately after being awarded the Contract, shall prepare and submit for the Designer's approval a progress schedule for the Work in relation to the entire Project. This schedule in bar graph form, or other form approved by the Owner, shall indicate the dates for the starting and completion of the various stages of construction, and in addition, will state the contractual completion date. The contract completion date, based on the construction period stated in the notice to bidders, shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by change order. A more detailed schedule may be required elsewhere in the documents.

4.11 Record Documents at the Site

4.11.1 The Contractor shall maintain for the Owner as part of the Contract one record copy of all drawings, specifications, addenda, shop drawings, change orders and other modifications at the site in good order, and marked to record all changes made during construction. These shall be available to the Designer and the Owner's Site Representative at all times while Work is in progress. All changes made during construction shall be recorded monthly and reviewed by the Designer before approval of each partial progress payment. The record documents shall be submitted to the Designer prior to the Contractor's final payment.

4.12 Shop Drawings and Samples

4.12.1 Shop drawings are all drawings, diagrams, illustrations, schedules, brochures, and other data, which are prepared by the Contractor, or any Subcontractor, manufacturer, supplier, or distributor, and which illustrate the Work.

4.12.2 The Contractor shall submit all shop drawings and samples required by the Contract or by the Designer in a timely manner, allowing sufficient time for the Designer's review so as not to cause any delay in the Work or in work by any other Contractor.

4.12.3 At the time of such submission, the Contractor shall furnish or verify all field measurements, field construction criteria, materials, catalog numbers, and the like and shall individually check, coordinate and stamp with his approval each submission, and shall in writing call the Designer's attention to any deviations in the shop drawings or samples from the requirements of the Contract Documents.

4.12.4 The Designer will check and approve, with reasonable promptness so as to cause no delay, these shop drawings and samples only for conformance with the design concept of the Project, and with the information given in the Contract Documents. The Designer's approval of a separate item will not indicate approval of the assembly in which the item functions.

4.12.5 The Designer's approval of shop drawings or samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has in writing called the Designer's attention to such deviation at the time of submission and the Designer has given written approval to the specific deviation, nor shall this relieve the Contractor from errors or omissions in the shop drawings or samples.

4.12.6 No work requiring a shop drawing or sample submission shall be commenced until the submission has been approved by the Designer. All such work shall be in accordance with approved shop drawings and samples.

4.13 Use of Premises

4.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the premises with any materials or equipment.

4.14 Cutting and Patching

4.14.1 The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and shall not endanger any work by cutting, excavating, or otherwise altering the Work or any part of it. Costs caused by defective or ill-timed work shall be borne by the party responsible therefore.

4.15 Cleaning Up

4.15.1 The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the Work, he shall remove all waste material and rubbish from and about the building as well as all his tools, scaffolding and surplus materials. Contractor shall clean all glass surfaces, lights and fixtures, ceilings, walls and shall leave the Work dusted, swept and wet mopped clean, unless more exactly specified.

4.15.2 In case of dispute the Owner may remove the rubbish and charge the cost to the several Contractors as the Designer shall determine to be just.

ARTICLE 5 SUBCONTRACTORS

5.1 Definition

As used in this article "contractor tier" refers collectively to the following classes of contractors on a public works project:

- (1) "Tier 1 contractor" includes each person that has a contract with the public agency to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "prime contractor" or a "general contractor".
- (2) "Tier 2 contractor" includes each person that has a contract with a tier 1 contractor to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "subcontractor".
- (3) "Tier 3 contractor" includes each person that has a contract with a tier 2 contractor to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "sub-subcontractor".
- (4) "Lower tier contractor" includes each person that has a contract with a tier 3 contractor or lower tier contractor to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "lower tier subcontractor".

A Subcontractor is a person or entity who has a direct Contract with the Contractor to perform any of the Work at the site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative. The term Subcontractor does not include any separate Contractor or his Subcontractors.

5.2 Award of Subcontracts and Other Contracts for Portions of the Work

5.2.1 Unless otherwise required by the Contract, the Contractor shall furnish to the Owner, with his bid on the prescribed form, the names of all persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work with an installed value of \$150,000.00 or more. The Designer will promptly reply to the Contractor in writing stating whether or not the Owner or the Designer, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Designer to reply within fourteen (14) days shall constitute notice of no reasonable objection.

5.2.2 The Contractor shall not subcontract with any such proposed person or entity to which the Owner or the Designer has made reasonable objection. The Contractor shall not be required to subcontract with anyone to whom he has a reasonable objection.

5.2.4 If the Owner or the Designer has reasonable objection to any such proposed person or entity, the Contractor shall submit a substitute to whom the Owner or the Designer has no reasonable objection.

5.2.5 The Contractor shall make no substitution of any Subcontractor, person or entity previously selected, if the Owner or Designer makes reasonable objection to such substitution.

5.2.3 The Contractor and his subcontractors shall employ only licensed plumbers and shall provide to the Owner the names and license numbers of all plumbers engaged in the Work. The Contractor shall submit this documentation with any monthly progress payment request that includes plumbing labor.

5.3 Subcontractual Relations

5.3.1 By an 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 the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Documents, assumes toward the Owner. Said agreement shall preserve and protect the rights of the Owner 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 the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Documents, has against the Owner. Provisions of Article 9 for progress payments, retainage and payment for stored material shall be incorporated without modification in all Contractor-Subcontractor agreements. The Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. Prior to execution of the Contractor-Subcontractor agreement, the Contractor shall provide all Subcontractors a complete copy of all proposed Contract Documents for the Project to which the Subcontractor will be bound by this Paragraph 5.3. Each Subcontractor shall similarly make available to his Sub-Subcontractors copies of such Documents. Executed copies of all agreements shall remain on file with the Contractor and be available for review by the Owner at the Owner's discretion.

ARTICLE 6 SEPARATE CONTRACTS

6.1 Owner's Right to Let Separate Contracts

6.1.1 The Owner reserves the right to let other contracts in connection with other portions of the Project under these or similar General Conditions.

6.1.2 When separate contracts are awarded for different portions of the Project, "the Contractor" in the Contract Documents in each case shall be the Contractor who signs each separate contract with the Owner.

6.1.3 When separate contracts are awarded for portions of the Project, the General Construction Contractor shall be responsible for the overall coordination of all separate contracts for the Project.

6.2 Mutual Responsibility of Contractors

6.2.1 The Contractor shall afford each other Contractor reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and each shall properly connect and coordinate his work with all others as coordinated by the General Contractor.

6.2.2 If any part of the Contractor's work depends on proper execution or results upon the work of any other separate Contractor, the Contractor shall inspect and promptly report to the Designer any discrepancies or defects that shall cause his work to fail or be non-conforming. Failure of the Contractor to so inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work.

6.2.3 Should the Contractor cause damage to any separate Contractor on the Project, the General Contractor agrees, upon due notice, to settle with such other Contractor by agreement, if at all possible without involving the Owner. The Owner will be involved only after evidence is presented that sureties cannot settle the problem.

6.2.4 Any costs caused by defective or ill-timed work shall be borne by the party responsible.

ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 Delinquent State Taxes (IC. 4-13-2-14.5). The Public Works Division may allow the Department of State Revenue access to the name of each person who is either:

- (1) Bidding on a Contract to be awarded under this chapter; or
- (2) A Contractor or Subcontractor under this chapter.

If the Public Works Division is notified by the Department of State Revenue that a bidder is on the most recent tax warrant list, a Contract may not be awarded to that bidder until the bidder provides a statement from the Department of State Revenue that the Bidder's delinquent tax liability has been satisfied. The Department of State Revenue may notify:

- (1) The Department of Administration; and
- (2) The Auditor of State;

that a Contractor or Subcontractor under this chapter is on the most recent tax warrant list, including the amount owed in delinquent taxes. The Auditor of State shall deduct from the Contractor's or Subcontractor's payment the amount owed in delinquent taxes. The Auditor of State shall remit this amount to the Department of State Revenue and pay the remaining balance to the Contractor or Subcontractor.

7.2 Choice of Law

7.2.1 The Contract shall be governed by the laws of the State of Indiana.

7.3 Assignment

7.3.1 The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any monies due or to become due to him hereunder, without the previous written consent of the Owner.

7.4 Written Notice

7.4.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or sent by registered or certified mail to the last business address known to him who gives the notice.

7.5 Claims for Damages

7.5.1 Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the other party or any of his employees, agents or others for whose acts he is legally liable, claim shall be made in writing to such other party within seven (7) days of the first observance of such injury or damage.

7.6 Performance Bond and Labor and Material Payment Bond

7.6.1 For projects advertised with an estimated base bid amount of One Hundred Fifty Thousand Dollars (\$150,000) or more, the Contractor shall furnish and pay for an approved one hundred percent (100%) combination performance and payment bond (Contractor's Bond for Construction, Public Works Division Form DAPW 15). This bond shall adhere to the requirements of IC. 4-13.6-7-6 and IC. 4-13.6-7-7 as amended and shall cover the faithful performance of the Contract and the payment of all obligations arising thereunder, including reimbursement for any stored materials paid for but returned to materialmen, with such sureties as the Owner may approve. The combination bond shall remain in effect throughout the entire construction period and in addition for a period of one year from the date of final acceptance. The Contractor shall deliver the required bonds to the Owner prior to execution of the Contract by the Owner unless authorized to the contrary in writing by the Owner. All bonds must be issued by bonding companies, which are licensed and approved by the Indiana Insurance Commission.

7.7 Owner's Right to Carry Out the Work

7.7.1 If the Contractor should default or neglect to carry out the Work properly or fail to perform any provision of the Contract, the Owner may, after giving seven (7) days written notice to the Contractor, without prejudice to any other remedy it may have, make good such deficiencies. In such case, an appropriate change order shall be issued deducting the cost thereof including the cost of the Designer's additional service made necessary by such default, neglect or failure of the Contractor, from the payments then or thereafter due the Contractor, provided, however, that the Designer shall approve both such action and the amount charged to the Contractor. If such payments due to the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

7.8 Royalties and Patents

7.8.1 The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from liability of any nature or kind including costs and expenses for or on account of any patented or unpatented invention, process, article or appliance manufactured or used in the performance of this Contract, including its use by the Owner.

7.9 Tests & Substitution of Materials

7.9.1 If the Contract Documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any work to be inspected, tested, or approved, the Contractor will give the Designer timely notice of its readiness and of the date fixed for such inspection, testing, or approval so that the Designer may observe the same. The Contractor shall bear all cost of such inspections, tests, and approvals unless otherwise provided.

7.9.2 If, after the commencement of the Work, the Designer, with approval of the Owner in writing, determines that the Work requires special inspection, testing, or approval for which subparagraph 7.9.1 does not provide, he will, upon written authorization from the Owner, order such special inspection, testing or approval. If such special inspection or test reveals a failure of the Work to fulfill the requirements of the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, the Contractor shall bear all costs thereof; otherwise the Owner shall bear such costs. An appropriate change order shall be issued.

7.9.3 Required certificates of inspection, testing or approval shall be secured by the Contractor and promptly delivered by him to the Designer.

7.9.4 Observations by the Designer of the inspections, tests, or approvals required by Article 7 will be promptly made, and where practicable at the source of supply at no additional cost to the Owner.

7.9.5 Neither the observations of the Designer in his administration of the Contract, nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the Contract Documents.

7.9.6 All building construction and work, alterations, repairs, plumbing, mechanical, and electrical installations and appliances connected therewith, shall comply with the Rules and Regulations of the Department of Fire and Building Services, State Board of Health, local ordinances, Rules for Licensure of Building Trades, and other statutory provisions pertaining to this class of work; such rules and regulations and local ordinances to be considered as a part of these specifications.

7.9.7 Where in these specifications, one or more certain materials, trade names, or articles of certain manufacture are mentioned, it is done for the express purpose of establishing a basis of durability and efficiency and not for the purpose of limiting competition. Approval of other acceptable products for those specified may be obtained by requesting to the Designer no later than fourteen (14) days in advance of bid date with all documentation required for the Designer to evaluate any approval. If approval is granted, the subject product will be added by addendum.

7.9.8 Should there be a reason for change of materials after award of the Contract, the following criteria shall apply:

- a. Original material no longer manufactured,
- b. Delivery not possible within time specified for job, and/or
- c. Unavailability due to causes beyond the control of the Contractor.

7.9.9 After agreement by the Designer and the Owner that a change is necessary, the Contractor shall present a request for substitution to the Designer. The burden of proof of the merit of the proposed substitute is upon the proposing party. The decision of the Designer and the Owner regarding the substitution shall be final.

7.10 Certificate of Qualification

7.10.1 In accordance with IC. 4-13.6-4 as amended, all Contractors and Subcontractors performing work for the State of Indiana on projects estimated to be in excess of one hundred fifty thousand dollars (\$150,000.00), must hold a valid Certificate of Qualification issued by the Public Works Certification Board. The Instructions to Bidders define the procedure for certification and bidding.

7.10.2 The Contractor must perform at least fifteen (15) percent of the total Contract Sum of the Work with his own forces. The Contractor shall submit copies of his payroll records, if requested by the Owner, showing the hours, rates and total costs for all personnel on his payroll detailed to the degree to ensure compliance with this paragraph and any Wage Determination provisions.

7.11 Appropriation

7.11.1 The Contract specifically limits payments to be made in accordance with appropriations made and funds made available under laws of the State of Indiana.

7.12 Federal Wage Determination if required

7.12.1 If a Davis-Bacon wage determination is included in the Contract Documents, it shall be used as the minimum wage and benefits to be paid for the trades indicated.

7.12.2 Contractor shall submit a schedule of hourly wages to be paid to each employee (including those of his subcontractors) engaged in work on the site. This submittal shall be on Contractor's letterhead stationery and shall be signed by the Contractor and notarized. A copy of this submittal shall be conspicuously posted at the site.

7.12.3 Said rates shall in no case be less than those set out in the Davis-Bacon wage schedule a copy of which is herein bound or is on file with the Owner if it is required.

7.12.4 The Contractor shall provide (and require each Subcontractor to provide) weekly payroll records listing employees engaged in work on the site for the week and the hourly rates for base pay and benefits paid to each employee listed. The payroll record form shall include a statement by the Contractor/Subcontractor certifying the accuracy and completeness of the information provided. Payroll records shall be maintained by the Contractor during the course of the Work until the end of the required warranty period.

7.13 Out-of-State Contractors

7.13.1 Proof of payment by Out-of-State Contractors of Indiana Gross Income Tax, as provided in IC. 6-2.1-5-1.1 (b) and 6-2.1-5-1.1 (a) (d) as amended shall be submitted before final payment will be approved.

7.13.2 Out-of-State Corporations must be authorized to do business in the State, IC. Title 23 prior to submitting bids. Forms may be obtained by contacting the Secretary of State, State of Indiana, Indianapolis, Indiana.

7.14 Material Delivery

7.14.1 Shipments of material to be used by the Contractor or any Subcontractor under this Contract should be delivered to the job site only during the regular working hours of the Contractor or Subcontractor. If a delivery is made during other than the normal working hours of the Contractor or Subcontractor, his authorized agent must be on duty to receive such material. No employee of the Owner is authorized to receive any shipments designated for the Contractor or Subcontractor.

7.15 Weather

7.15.1 The Contractor shall at all times provide protection against weather, rain, wind, storms, frost or heat, so as to maintain all work, materials, apparatus and fixtures free from injury or damage. At the end of the day's work, all new work likely to be damaged shall be covered.

7.15.2 During cold weather, the Contractor shall protect all work from damage. If low temperature makes it impossible to continue operations safely, in spite of cold weather precaution, the Contractor shall cease work and shall so notify the Owner and Designer.

7.15.3 Any work damaged by failure to provide protection above required, shall be removed and replaced with new work at the Contractor's expense.

7.15.4 The Contractor shall provide and maintain on the premises, where directed, watertight storage shed (or sheds) for storage of all materials, which might be damaged by exposure to weather.

7.16 Fire Hazards

7.16.1 Wherever and whenever any burning, welding, cutting or soldering operation is in progress, or equipment is in use, or any work involving a fire hazard, is performed, the Contractor responsible for such operation shall have at all times acceptable fire extinguisher or protection within five (5) feet of the operation.

7.17 Dismissal

7.17.1 Any foreman or workman employed by the Contractor or by any Subcontractor who, in the opinion of the Director, Public Works Division and/or the Designer, does not perform his work in a proper and skillful manner, or is disrespectful, intemperate, disorderly, intoxicated or otherwise objectionable shall at the written request of either of the above, be forthwith discharged by the Contractor or Subcontractor employing such foreman or workman and he shall not be employed again on any portion of the Work without the written consent of the Director of the Division of Public Works and the Designer. Should the Contractor fail to furnish suitable and sufficient machinery, equipment or personnel for the proper prosecution of the Work, the Owner or Designer may withhold all payments that are or may become due, or may suspend the Work until such orders are upheld.

ARTICLE 8 TIME

8.1 Definitions

8.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents for Substantial Completion of the Work as defined herein, including authorized adjustments thereto.

8.1.2 The date of commencement of the Work is the date established in a notice to proceed. If there is no notice to proceed, it shall be the date of the Governor's signature on the Owner-Contractor Agreement or such other date as may be established therein.

8.1.3 The Date of Substantial Completion of the Work, or designated portion thereof, is the date certified by the Director, Public Works Division when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy or utilize the Work, or designated portion thereof, for the use for which it is intended.

8.1.4 The term day as used in the Contract Documents shall mean calendar day unless otherwise specifically designated.

8.2 Progress and Completion

8.2.1 All time limits stated in the Documents are of the essence of the Contract.

8.2.2 The Contractor shall begin the Work on the date of commencement as defined herein. He shall carry the Work forward expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

8.2.3 The Owner fully expects the Contractor to employ any and all means necessary to complete the Work within the Contract Time. Conduct of the Owner's affairs, such as unforeseen site conditions or delay in processing change orders, shall not be viewed as justification for delaying the Project unless the Owner can be shown to have breached the Contract. Contractor must employ all reasonable means to execute the Project in a timely manner and in conformance with the Contract Documents even if the Contractor or Designer seeks legal remedy against the Owner for claim of damage.

8.3 Delays and Extensions of Time

8.3.1 If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner or the Designer, or by any employee of either, or by any separate Contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonable to anticipate, unavoidable casualties, or

any causes beyond the Contractor's control, or by delay authorized by the Owner pending arbitration, or by any other cause which the Designer determines may justify the delay, then the Contract Time shall be extended by a Change Order for such reasonable time as the Designer may determine.

8.3.2 Claims for extension of time shall be made in writing to the Designer. In case of a continuing delay only one claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the Work.

8.3.3 If no agreement is made stating the dates upon which interpretations as provided in Article 2.2 shall be furnished, then no claim for delay shall be allowed on account of failure to furnish such interpretations until fifteen days after written request is made for them, and not unless such claim is reasonable.

8.3.4 This Paragraph 8.3 does not exclude the recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

9.1 Contract Sum

9.1.1 The Contract Sum is the total amount payable by the Owner for the performance of the Work under the Contract Documents.

9.2 Schedule of Values

9.2.1 Before the first application for payment, the Contractor shall submit to the Owner a schedule of various parts of the Work, including quantities if required by the Owner, aggregating the total Contract Sum, divided so as to facilitate payments to Subcontractors in accordance with Article 5.3, made out in such form as the Owner and the Contractor may agree upon, and supported by such data to substantiate its correctness as the Owner may require. Each item in the Schedule of Values shall include its proper share of overhead, profit, and other general charges. This schedule, when approved by the Owner, shall be used as a basis for the Contractor's Applications for Progress and Final Payments.

9.3 Progress Payments

9.3.1 Completed work: The Contractor shall submit to the Designer an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Designer may direct. The Owner shall make payments on account of the Contract, upon issuance of Certificates of Payment certified by the Designer and the Owner's Representative, for labor and materials incorporated into the Work at the rate of ninety four (94%) percent of such value until fifty (50%) percent of the value of the Work is completed. After that fifty (50%) percent, no further retainage will be deducted. The Director, Public Works Division has the option to require that three (3%) percent of the value of the Work be retained throughout the duration of the entire Contract. The retainage schedule shall be determined prior to award of Contract. Retainage may be paid with final payment at the discretion of the Director, Public Works Division, but shall not be paid in any event until a minimum of sixty one (61) days after all work is completed.

9.3.2 Materials Stored: Payments may be made on account for materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. With written approval of the Owner, materials may be stored at another location other than the Work site if properly identified as the property of the Owner and properly protected. Storage of material at the place of business of the vendor is not acceptable (25 IAC 2-9-2). Such payments shall be conditional upon the submission by the Contractor of one of the following: 1) receipts marked by the supplier as paid; 2) supplier's final waiver of lien listing specific materials involved; 3) invoice with copy of canceled check showing payment; or 4) such other evidence of payment as the Owner may require in lieu thereof to establish ownership of all items except those listed as miscellaneous materials below. For the aggregate of miscellaneous stored materials for which payment is requested and above proof of payment is not available, a complete list will be provided along with the affidavit of payment. Upon certification by the Owner's representative that the listed materials are suitably stored, payment can be made. Miscellaneous materials are defined as pipe, fittings, wire, conduit, etc., normally stored as stock items in Contractor's warehouse. For materials stored other than at the construction site applicable insurance and transportation to the site shall be provided by the Contractor.

9.3.3 As stored materials are incorporated into the Work, the value shall be removed from the total value of stored materials requested in successive payments. Proof of ownership through one of the above methods will be required for additional materials. When, in the judgment of the Owner, retainage for completed work is not sufficient in relation to excessive amounts requested for stored materials or equipment, the Owner may elect to place the retainage for such materials or equipment in escrow. This retainage shall apply as a credit toward retainage due to be held for completed work on future payments.

9.3.4 The Contractor warrants that title to all work, materials and equipment covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt by the Contractor of payment, whichever occurs first, free and clear of all liens, claims, security interest or encumbrances, hereinafter referred to in this Article 9 as "liens"; and that no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest

therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

9.3.5 The Contractor shall accompany each application for payment request with a certification that he paid to all Subcontractors (fabricators) within ten (10) days of receipt of payment that pro rata amount of funds he has received from the Owner for the value of work or services (fabricated materials or equipment) performed by the Subcontractor (supplied by fabricator) contained in previous progress payments. The Contractor's inclusion of a value of subcontract work in his progress pay estimate is prima facie evidence of acceptance of work having such a value; therefore, if the Owner receives a certification from a Subcontractor that he has not been paid such amounts as were included in the Contractor's partial billing and subsequently paid to the Contractor by the Owner, then the Owner will hold all subsequent partial payment requests until satisfactory evidence is received from the Subcontractor that he has been paid such amounts presented to the Owner by the Contractor, paid to the Contractor by the Owner, and not distributed by the Contractor to the Subcontractor. The making of an incorrect certification of either partial payment or final payment may be considered by the Owner to be a breach of contract, and it may exercise all of its prerogatives set out in the Contract in addition to the remedies for falsifying an affidavit. Such an action could result in a suspension of qualification with the State Certification Board for a period of up to two (2) years.

9.4 Certificates for Payment

9.4.1 When the Contractor has made application for payment as above, the Designer will issue a Certificate of Payment to the Owner for such amount as he determines to be properly due, or state in writing his reasons for withholding a certificate as provided in Articles 9.5.1.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Designer to the Owner, based on the Designer's observations at the site as provided in Article 2.2.4 and the data comprising the Application for Payment, that the Work has progressed to the point indicated, and that, to the best of his knowledge, information and belief, the quality of work is in accordance with the Contract Documents subject to an evaluation of the Work as a functioning whole upon substantial completion, to the results of any subsequent tests called for in the Contract documents, to minor deviations correctable prior to the next certificate for payment and to any specific qualifications stated in his certificate, and that the Contractor is entitled to payment in the amount certified.

9.4.3 The Designer's final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Article 9.7 have been fulfilled. However, by issuing a Certificate, the Designer shall not thereby be deemed to represent that he has made any examination to ascertain how or for what purpose the Contractor has used the monies paid on account of the Contract Sum.

9.4.4 The Owner shall make payment as soon as the fiscal procedure of the State can process same after receipt from the Designer of the Certificate for Payment. The fiscal procedure by the State can include, but not be limited to, review by the Owner's using agency, verification of the Certificate by the Owner's Site Representative, review for accuracy of form and calculation by the Owner's accountant, review by the Owner's project management and execution by the Director, Public Works Division and others.

9.4.5 No certificate for a progress payment or progress payment for partial or entire occupancy of the Project by the Owner shall constitute an acceptance of work not in accordance with the Contract Documents.

9.4.6 Pursuant to IC. 4-13.6-7-2 all Contract awards of One Million Dollars (\$1,000,000) or above, if elected by the Contractor, an escrow agent will be selected by the State with whom the retainage funds for this Contract will be deposited and held until receipt of notice from the Director, Public Works Division (Escrow Form DAPW 32A) and from all other necessary parties as specified in and in accordance with the procedures and provisions of said Act.

9.5 Payments Withheld

9.5.1 The Designer (or Owner) will not approve an application in whole or in part, if in his opinion, he is unable to make representations to the Owner as provided in Article 9.4. The Designer (or Owner) will not approve Application for Payment or, because of subsequent inspections, may nullify the whole or any part of the Certificate for Payment previously issued to such extent as may be necessary in his opinion to protect the Owner from loss because of:

- A. defective work not remedied,
- B. claim filed or reasonable evidence indicating probable filing of claims,
- C. failure of the Contractor to make payments properly to Subcontractors or for materials, equipment or labor,
- D. reasonable doubt that the Contract can be completed for the unpaid balance,
- E. damage to another Contractor,
- F. reasonable indication that the Owner may be damaged by delay in receiving use of the Work as scheduled, or,
- G. unsatisfactory prosecution of the Work by the Contractor.

9.5.2 When the above grounds are removed, payment shall be processed for amounts withheld.

9.6 Failure of Payment

9.6.1 If the Designer should fail to issue any Certificate for Payment, through no fault of the Contractor, or if the Owner should fail to pay the Contractor in a reasonable time considering the fiscal procedures of the State for processing same after receipt from the Designer the amount certified by the Designer, then the Contractor may, after seven (7) additional days, give written notice to the Owner and Designer, that work will stop until payment of the amount owing has been received.

9.7 Substantial Completion and Final Payment

9.7.1 When advised by the Contractor that the Work or a designated portion thereof is substantially complete, the Designer; the Director, Public Works Division, and the Contractor shall determine jointly by inspection that the Work is substantially complete. If they determine that the Work is substantially complete, the Contractor shall then prepare a Certificate of Substantial Completion with an accompanying list of incomplete items of work (punch list), and submit it to the Designer for his signature and subsequent forwarding for approval by the Director, Public Works Division. The Certificate shall fix the date of Substantial Completion and shall state the responsibilities of the Owner and the Contractor for maintenance, heat, utilities and insurance.

9.7.2 Upon approval of the above, and notice that the Work is ready for final acceptance, the Designer, the Contractor and Owner will promptly make final review, and when they find the Work acceptable under the Contract and the Contract fully performed, the Contractor shall promptly submit the final Certificate for Payment with all other required documents, showing that the Work has been completed in accordance with the terms and conditions of the Contract, and that the entire balance in said final certificate, is due and payable.

9.7.3 Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall submit to the Designer releases or waivers of all liens arising out of the Contract; an affidavit that the releases and waivers include all the labor, materials, and equipment for which a lien could be filed and that all payrolls, material bills, and other indebtedness connected with the Work for which the Owner or its property might in any way be responsible have been paid or otherwise satisfied; and such other data establishing payment or satisfaction of all such obligations as the Owner may require. If any such lien or claim remains unpaid, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien or claim, including all costs.

9.7.4 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor, and the Designer so confirms, the Owner shall, upon certification by the Designer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted, or such portion as may be available from funds not already released to an escrow agent pursuant to IC 4-13.6-7. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.7.5 The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:

- A. unsettled liens,
- B. faulty work appearing after Substantial Completion,
- C. failure of the Work to comply with the requirements of the Contract Documents,
- D. terms of any special guarantees required by the Contract Documents.

9.7.6 If upon Substantial Completion of the Work there are any remaining uncompleted minor items, the Owner shall withhold, until those items are completed, an amount equal to two hundred percent (200%) of the value of each item as determined by the Designer or Owner.

9.7.7 The acceptance of final payment shall constitute a waiver of all claims by the Contractor, except those previously made in writing and still unsettled and covered by other agreed arrangements.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.1 Safety Precautions and Programs

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

10.2 Safety of Person and Property

10.2.1 The Contractor shall take all necessary precautions for the safety of, and will provide all necessary protection to prevent damage, injury, or loss to:

- A. all employees on the Project and all other persons who may be affected thereby,
- B. all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, and,
- C. other property at the site or adjacent thereto, including trees, shrubs, lawns, pavements, roadways, structures and

utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss. He shall erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities.

10.2.3 All damage or loss to all property specified herein caused directly or indirectly, in whole or in part, by the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, shall be remedied by the Contractor, except damage or loss attributable solely to faulty Contract Documents or to the acts or omissions of the Owner, or Designer or their employees, or for those whose acts either of them may be liable.

10.2.4 The Contractor shall designate a responsible member of his organization on the Work whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent, unless otherwise designated in writing by the Contractor to the Owner and the Designer.

10.2.5 When the use or storage of explosives or other hazardous materials or equipment is necessary for the prosecution of the Work, the Contractor shall carry on such activities under the supervision of properly qualified personnel.

10.2.6 The Contractor shall not overload, or permit any part of the Work to be loaded so as to endanger its safety.

10.2.7 All excavations creating a trench of five (5) or more feet in depth shall strictly adhere to the shoring and other safety requirements called for and described under Indiana OSHA Regulation 29 C.F.R. 1926, Subpart "P", for trench safety systems.

10.3 Emergencies

10.3.1 In an emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor because of emergency work shall be determined as provided for in Article 12, Changes in the Work, and he shall notify the Owner of such a decision within seven (7) days of the event giving rise to such claim.

ARTICLE 11 INSURANCE

11.1 General Requirements for Insurance

11.1.1 The Contractor will be required to furnish to the Owner, evidence that he has complied with all items of insurance listed herein. All insurance policies/certificates shall be on file with the Owner prior to release of the signed Contract and commencement of work.

11.1.2 The Contractor shall purchase and maintain, with a company or companies licensed to do business in Indiana, such insurance as will protect him from claims set forth below, arising out of or resulting from the Contractor's operations under the Contract, whether such operations be by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by any of them:

- A. claims under Workmen's Compensation Acts and other employee benefit acts;
- B. claims for damages because of bodily injury, personal injury, occupational sickness or disease, or death of his employees;
- C. claims for damages because of bodily injury, personal injury, sickness, disease or death of any person other than his employees;
- D. claims for damages to tangible property, including loss of use thereof.

11.1.3 This insurance shall be written for not less than any limits of liability specified herein, or required by law, whichever is greater. Policies or certificates of insurance, acceptable to the Owner, shall be filed with the Owner prior to execution of the Contract. These Certificates shall contain a provision that coverages afforded under the policies will be for the life of the Work.

11.1.4 Policies (certificates) shall show name and complete address of the Company, expiration date or dates, and policy number or numbers. Policies shall not be canceled until at least thirty (30) days prior written notice has been given to the Owner and acknowledged by the Owner in writing.

11.2 Property Insurance

11.2.1 The Contractor shall furnish and maintain, at the Contractor's expense, Fire, Extended Coverage, Vandalism, and Malicious Mischief Insurance (Builder's Risk), in the sum of 100% of the Contract amount. Builder's Risk insurance shall cover the structure on/in which the Work of this Contract is to be done including items of labor and material connected therewith, whether in or adjacent to the structure insured; material in place or to be used as part of the permanent construction, including surplus materials; shanties, protective fences, bridges, or temporary structures; miscellaneous materials and supplies incident to the Work; scaffolding, staging, towers, forms, and equipment, if included in the cost of the Work. This insurance need not cover any tools owned by mechanics, or any tools, equipment, scaffolding, staging, towers, and forms owned or rented by the Contractor, the capital value of which is not included in the cost of the Work.

11.2.3 Any loss under this Article 11.2 is to be adjusted with the Owner, and made payable to the Owner as trustee for the insured, as their interests may appear.

11.3 Liability Insurance

11.3.1 The Contractor and their subcontractors (if any) shall secure and keep in force during the term of this Contract the following insurance coverages (if applicable) covering the Contractor for any and all claims of any nature which may in any manner arise out of or result from Contractor's performance under this Contract:

- A. Commercial general liability, including contractual coverage, and products or completed operations coverage (if applicable), with minimum liability limits not less than \$700,000 per person and \$5,000,000 per occurrence unless additional coverage is required by the State. The State is to be named as an additional insured on a primary, non-contributory basis for any liability arising directly or indirectly under or in connection with this Contract.
- B. Automobile liability for owned, non-owned and hired autos with minimum liability limits of \$700,000 per person and \$5,000,000 per occurrence. The State is to be named as an additional insured on a primary, non-contributory basis.
- C. The Contractor shall provide proof of such insurance coverage by tendering to the undersigned State representative a certificate of insurance prior to the commencement of this Contract and proof of workers' compensation coverage meeting all statutory requirements of IC §22-3-2. In addition, proof of an "all states endorsement" covering claims occurring outside the State is required if any of the services provided under this Contract involve work outside of Indiana.
- D. The Contractor's insurance coverage must meet the following additional requirements:
 - 1. The insurer must have a certificate of authority or other appropriate authorization to operate in the state in which the policy was issued.
 - 2. Any deductible or self-insured retention amount or other similar obligation under the insurance policies shall be the sole obligation of the Contractor.
 - 3. The State will be defended, indemnified and held harmless to the full extent of any coverage actually secured by the Contractor in excess of the minimum requirements set forth above. The duty to indemnify the State under this Contract shall not be limited by the insurance required in this Contract.
 - 4. The insurance required in this Contract, through a policy or endorsement(s), shall include a provision that the policy and endorsements may not be canceled or modified without thirty (30) days' prior written notice to the undersigned State agency.
 - 5. The Contractor waives and agrees to require their insurer to waive their rights of subrogation against the State of Indiana.
- E. Failure to provide insurance as required in this Contract may be deemed a material breach of contract entitling the State to immediately terminate this Contract. The Contractor shall furnish a certificate of insurance and all endorsements to the State before the commencement of this Contract.
- F. Boiler and Machinery Explosion Insurance shall be required when the Work includes boiler, other pressure

vessels or steam piping installation or repair.

- G. After June 30, 2015, this entire Article will apply to any contractor that will be on the construction site pursuant to IC 5-16-13 and an acceptable certificate of insurance will be provided by each and every contractor

ARTICLE 12 CHANGES IN THE WORK

12.1 Change Orders

12.1.1 The Owner, without invalidating the Contract, may order changes in the Work consisting of additions, deletions, or modifications, with the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be executed under the applicable conditions of the Contract Documents.

12.1.2 A Change Order is a written order to the Contractor compiled and reviewed by the Designer, prepared by the Owner and then signed by the Owner and the Contractor. The order is issued after the execution of the Contract authorizing a change in the Work, and documenting any adjustment in the Contract Sum and/or the Contract Time. The Contract Sum may be changed only by change order.

12.1.3 The value of any work involved in a change in the Work shall be determined in one or more of the following ways, in order of priority listed:

- A. by mutual acceptance of a lump sum. For all amounts over \$500, the Contractor shall provide a complete listing of quantities and unit prices of materials, hours of labor with cost per hour, and separate agreed percentages for any overhead and profit. The maximum aggregate increase for overhead and profit (including all home office and field office overhead) for any Subcontractor or for the Contractor performing his own work is fifteen (15%) percent; the maximum increase for a Contractor on work performed by a Subcontractor is five (5%) percent. If the cost of performance and payment bond(s) is shown as a separate line item in the Contractor's schedule of values for the project, then an increase will be permitted to provide for the additional cost of the bond(s). If the cost of the bond(s) is not indicated on the Contractor's schedule of values for the Project, any increase in cost for bond(s) shall be included in the Contractor's allowed overhead. For listings under \$500, list lump sum for each item, or,
- B. by unit prices named in the Contract or subsequently agreed upon, or,
- C. by cost plus a mutually acceptable fixed or percentage fee.

12.1.4 Should conditions be encountered below the surface of the ground that are:

- A. at variance with the conditions indicated by the Contract Documents, and
- B. different than could be expected after a reasonable viewing of the site by the bidders, and
- C. not evident from available soil samples,

then the Contract sum may be equitably adjusted by Change Order upon claim by Contractor made within a reasonable time after the first observance of the conditions.

12.1.5 If the Contractor claims that a written interpretation issued pursuant to Article 1.2 or a written order for a minor change issued pursuant to Article 12.3 involves additional cost or time, the Contractor shall make such claim as provided in Article 12.2.

12.2 Claims for Additional Cost or Time

12.2.1 If the Contractor wishes to make a claim under the provisions of the Contract Documents for an increase in the Contract Sum or an extension in the Contract Time, he shall give the Designer written notice thereof within fifteen (15) days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor and authority received in writing from the Owner before proceeding to execute the Work, except in an emergency endangering life or property. No such claim shall be valid unless so made. Any approved change in the Contract Sum or Contract Time resulting from such claim shall be incorporated in a Change Order, initiated by the Designer and executed by the Owner. If the Designer does not initiate or the Owner execute a Change Order within a reasonable time in response to the request, such lack of action shall be construed as prima facie evidence of rejection of the request. For the purpose of this section "reasonable time" is expected not to exceed 30 days after receipt by the Owner.

12.3 Minor Changes in the Work

12.3.1 The Designer shall have authority, with Owner's approval, to order minor changes in the Work not involving an increase in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such change may be affected by written field order, with copy transmitted to the Owner. Such minor changes need not be approved in writing by the Owner; however, the Owner may provide written approval of any substitution of significant materials or equipment.

12.4 Field Orders

12.4.1 The Designer may issue written field orders, which interpret the Contract Documents in accordance with Article 1.2.4 without change in Contract Sum or Contract Time. The Contractor shall carry out such field orders promptly. The Designer shall

transmit copies of field orders to the Owner.

ARTICLE 13 EXAMINATION AND CORRECTION OF WORK

13.1 Examination of Work

13.1.1 If any portion of the Work should be covered contrary to the request of the Designer or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Designer, be uncovered for his observation and shall be replaced at the Contractor's expense.

13.1.2 Examination of questioned work may be ordered by the Designer with the approval of the Owner, and if so ordered the Work must be uncovered by the Contractor. If such work were found in accordance with the Contract Documents, the cost of re-examination and replacement shall, by appropriate change order, be charged to the Owner. If such work be found not in accordance with the Contract Documents, the Contractor shall pay such costs, unless it is found that the defect in the Work was caused by a separate Contractor employed as provided in Article 6 and in that event, the separate Contractor shall pay such costs.

13.2 Correction of Work before Substantial Completion

13.2.1 The Contractor shall promptly remove from the site all work rejected by the Designer as failing to conform to the Contract Documents, whether or not incorporated in the Project, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract Documents and without cost to the Owner and shall bear the cost of repair to or replacement of all work of separate Contractors destroyed or damaged by such removal or replacement.

13.2.2 If the Contractor does not remove such rejected work within a reasonable time, fixed by written notice from the Designer, the Owner may remove and store the material at the expense of the Contractor. If the Contractor does not agree to pay or credit the Contract with the cost of such removal within ten days thereafter, the Owner may acquire a lien upon such property and materials. If proceeds of lien foreclosure do not cover all costs, which the Owner has then borne, the difference shall be deducted from the amount to be paid to the Contractor.

13.3 Correction of Work after Substantial Completion

13.3.1 The Contractor shall correct all faults and deficiencies in the Work which appear within one year of the date of substantial completion or such longer period of time as may be prescribed by the terms of any special guarantees called for by the Contract Documents, and he shall pay for all damage to other work caused thereby. The Contractor shall remove all defective work where necessary.

13.3.2 If the Contractor does not correct such faulty or defective work and remove defective work where necessary, within a reasonable time fixed by the Designer in writing, the Owner may do the corrective work and remove the defective work, as described in Article 13.2 above.

13.3.3 All costs attributable to correcting and removing faulty or defective work shall be borne by the Contractor.

13.3.4 The obligations of the Contractor under this Article 13.3 shall be in addition to and not a limitation of any obligations imposed upon him by special guarantees called for by the Contract Documents or otherwise prescribed by law.

ARTICLE 14 TERMINATION OF THE CONTRACT

14.1 Termination by the Contractor

14.1.1 If the Work is stopped for a period of thirty days under an order of any court or other public authority through no act of fault of the Contractor or of anyone employed by the Contractor, or if the Work should be stopped for a period of thirty days by the Contractor for the Designer's failure to issue a Certificate for payment as provided in Article 9.6, or for the Owner's failure to make payment thereon as provided in said Article, then the Contractor may, upon seven days' written notice to the Owner and the Designer, terminate the Contract and recover from the Owner, in satisfaction of all claims of the Contractor, payment for all work executed, except those items involved in Designer's failure to issue Certificate, or Owner's failure to make payment.

14.2 Termination by the Owner

14.2.1 If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to Subcontractors for materials or labor, or persistently disregard laws, ordinances, rules, regulations or orders of any public authority or otherwise be guilty of a substantial violation of a provision of the Contract Documents, then the Owner, upon certification by the Designer that sufficient cause exists to justify such action, may without prejudice to any right or remedy against the Contractor or his surety and after giving the Contractor and his surety seven days written notice, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and finish the Work by whatever method the Owner

deems expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is completed, and an accounting made as set out below.

14.2.2 If the unpaid balance of the Contract sum exceeds the cost of finishing the Work, including compensation for the Designer's additional services such excess shall be paid to the Contractor. If such cost exceeds such unpaid balance, the Contractor shall pay the difference to the Owner. The Designer shall certify the cost incurred by the Owner as herein provided.

END

Indiana Department of Administration

M/WBE Participation Policy for Construction Projects

I. Introduction

The Indiana Department of Administration (“IDOA”) in its commitment to Minority and Women participation in the state’s procurement and contracting process, will require MBE and WBE participation or a best-efforts waiver as a specification in bids for construction services \$150,000 and over with subcontracting opportunities effective January 1, 2006. *See* Indiana Code 5-22-7, 5-22-7-2, 5-22-7-4.

II. Definitions

“Application for MBE and WBE Program Waiver” means documents submitted by Bidder for relief from contract goal after demonstrating all reasonable good faith efforts were made by the Bidder for the purpose of fulfilling the contract goal. The Application for MBE and WBE Program Waiver may be submitted prior to the bid due date or included in the bid package response.

“Certification” means verification by the Indiana Department of Administration, Minority and Women's Business Enterprises Division (“MWBED”) or an organization accepted by MWBED with respect to the authenticity of a minority or women owned business enterprise.

“Commercially useful function” Determination that an enterprise performs a commercially useful function will be made based on the following considerations:

- (1) An MBE or a WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE or WBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether an MBE or a WBE is performing a commercially useful function, one must evaluate the following:
 - (A) The amount of work subcontracted.
 - (B) Industry practices.
 - (C) Whether the amount the enterprise is to be paid under the contract is commensurate with the work it is actually performing.
 - (D) The credit claimed for its performance of the work.
 - (E) Other relevant factors.
- (2) An MBE or a WBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of MBE or WBE participation. In determining whether an MBE or a WBE is such an extra participant, one must examine similar transactions, particularly those in which MBEs or WBEs do not participate.
- (3) In the case of construction contracts, if:
 - (A) an MBE or a WBE does not perform or exercise responsibility for at least the agency’s requisite percent of the total cost of its contract with its own workforce; or
 - (B) the MBE or WBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved;it is presumed that the enterprise is not performing a commercially useful function.

“Letter of Commitment” means a letter obtained from the MBE and WBE’s by the Bidders. The Letter of Commitment is a signed letter(s), on company letterhead, from the minority and/or women certified business. It must be produced no later than 24 hours after the bid due date and time. This letter(s) shall state and will serve as acknowledgement from the minority and/or women certified business of their level of participation in this solicitation, the dollar amount of the commitment, the scope of service or product to be provided and the anticipated dates of utilization.

“Minority and Women Business Enterprises Division (MWBED)” means the Division which acts on behalf of the state to actively promote, monitor, and enforce the MBE AND WBE program. The final authority on all matters pertaining to the maintenance and administration of the MBE AND WBE program and compliance thereto.

“Minority/Woman Business Enterprise (MBE and WBE)” means an individual, partnership, corporation, limited liability company, or joint venture of any kind that is at least fifty-one percent (51%) owned and controlled by one (1) or more persons who are United States citizens and a member(s) of a minority group. The MBE and WBE must meet the eligibility requirements of 25 IAC 5.

“Participation Plan” means the IDOA prescribed document that sets forth the MBE and WBE subcontractors that will perform work under the contract.

III. Minority and Women Business Enterprise Certification

MBE and WBEs must be listed on the IDOA directory of certified firms at the time the bid is submitted to be eligible to meet the contract goals. The bidder should verify that a firm is certified before the bid is submitted.

Questions regarding Certification should be addressed to the following:

Indiana Department of Administration
Minority and Women's Business Enterprises Division
402 West Washington Street, Room W469
Indianapolis, IN 46204
(317) 232-3061
www.buyindiana.in.gov
mwbe@idoa.in.gov

IV. Bidding Process

IDOA will review projects for viable subcontracting opportunities. All projects will be governed by this policy unless otherwise stated.

A representative from MWBED will attend most pre-bid meetings to discuss and answer questions related to the MBE and WBE participation requirement. The MWBED will be available to assist Bidders in locating MBE and WBE firms to engage in the contract.

The 2007-2008 Contract Goals for construction projects are 7% for MBE’s and 5% for WBE’s.

Effective January 1, 2006, the following procedures will be implemented in the acceptance and evaluation of responsive and responsible bids.

Bidders must produce a Participation Plan on the approved form listing the utilization of MBE and WBE subcontractors who will be providing a commercially useful function on the project. Letter of Commitment from MBE and WBE firms they plan to engage in the contract if successful on the bid

Per 25 IAC 5-6-2(d), all prime contractors, including MBE and WBE prime contractors, must meet the sub-contracting goals through use of businesses found in the IDOA directory of certified firms. MBE and WBE prime contractors will get no credit toward the contract goal for the use of their own workforce.

If the bidder can not achieve the Contract Goals established for the bid package, the bidder shall submit a Waiver Application on the form supplied by MWBED. Bidders may submit waiver applications to MWBED up to two business days in advance of the bid due date to obtain advance approval of the waiver, or the application may be submitted without advance approval with the bid package. Bidders who submit a Participation Plan that will achieve the Contract Goals are not required to submit a Waiver Application.

If a partial waiver is being requested, a Participation Plan listing the MBE and WBE certified firms that will be used to satisfy the portion of the goal that will be met, must be included. Partial waivers may be requested using the waiver application process discussed above. A faxed copy of the Letter of Commitment for each MBE and WBE firm that is listed in the Participation Plan must be provided by the Low Bidder to the appropriate department no later than 24 hours after the bid due date and time. The original letter(s) must be provided upon receipt.

MWBED will review Applications for MBE and WBE Program Waivers and make a determination as to the bidder's responsiveness and good faith efforts. Evidence of efforts should be included with the waiver form. Any combination of the following criteria may be utilized in determining whether good faith efforts have been made:

- A. Notice to MBE and WBEs. Whether and when the bidder provided written notice, by mail, hand delivery, facsimile or electronic transmission to all qualified MBE and WBEs that perform the type of work to be subcontracted and advising the MBE and WBEs:
 - 1. of the subject work the bidder intends to subcontract;
 - 2. that their interest in Subcontracts is being solicited;
 - 3. how to obtain information for the review and inspection of Contract plans and specifications; and
 - 4. how to bid on the subcontracting opportunities and deadlines.

- B. Economically Feasible Subcontract. Whether the bidder selected economically feasible portions of the work to be performed by an MBE and WBE, including, when appropriate, breaking Subcontracts into smaller pieces or combining elements of work into economically feasible units. The ability of the bidder to perform the work with its own forces will not excuse the bidder from making positive efforts to meet the MBE and WBE goals.

- C. Consideration of all MBE and WBE Quotations. Whether the bidder considered all quotations received from MBE and WBEs and, for those quotations not accepted, an explanation of why the MBE and WBE will not be used during the course of the Project. Receipt of a lower quotation from a non-MBE and WBE will not, in itself, excuse bidder's failure to meet the MBE and WBE goals. Price alone does not constitute an acceptable basis for rejecting MBE and WBE subcontractor bids unless the bidder can demonstrate that a reasonable price was not obtained from an MBE and WBE.
- D. MBE and WBE Barrier Assistance. Whether the bidder provided assistance to interested MBE and WBE firms: in reviewing the Contract plans and specifications or addressing other barriers to subcontracting.
- E. Advertisement. Whether the bidder advertised to search for prospective MBE and WBEs to participate in the Contract.
- F. Agency Assistance. Whether the bidder contacted any of the following agencies for the purpose of locating prospective MBE and WBEs:
1. Indiana Department of Administration
Minority and Women's Business Enterprises Division
402 West Washington Street, Room W469
Indianapolis, IN 46204
(317) 232-3061
mwbe@idoa.in.gov
 2. Indiana Business Diversity Council, Inc.
2126 North Meridian Street
Indianapolis, IN 46202
(317) 921-2678
mdhouse@inbdc.org
- G. Research Participation Areas. Whether the bidder made efforts to research other possible areas of participation including supplying, shipping, engineering and any other role that may contribute to the production and delivery of the products or services needed to fulfill the Contract.
- H. Response Time. The time the bidder allowed for a meaningful response to its solicitations.
- I. Documentation of Statements from MBE and WBEs. Any documentation or statements received from MBE and WBEs who have been listed as having been contacted by the bidder.
- J. Availability of MBE and WBEs. The availability of MBE and WBEs to perform the work and the availability, or lack of availability, of MBE and WBEs in the location where the work is to be performed.
- K. Other Criteria. Any other criteria deemed appropriate by MWBED.

This list is not intended to be exclusive or exhaustive. The bidder may also submit documentation of other types of efforts that they have taken which reflect the quality, quantity and intensity of those efforts.

When evaluating Waiver Applications, MWBED reserves the right to verify that any information supplied on the Participation Plan and Waiver Application is accurate. By the submittal of a bid, the bidder acknowledges the right of MWBED to ensure compliance with the Participation Program and thereby agrees to provide, upon request, earnest, diligent and prompt cooperation in MWBED's verification process.

In cases where MWBED concludes the bidder's Participation Plan and the Waiver Application is deficient through no fault of the bidder, the bidder may be instructed to submit a modified Participation Plan within five (5) working days from the date of such notice. Failure to submit the modified Participation Plan within the specified period of time, may result in the bid being considered non-responsive and may be rejected.

In cases where MWBED concludes that the Participation Plan and Waiver Application is deficient or in cases where MWBED has determined that the bidder has not cooperated with its efforts to verify the submitted documentation, a bid may be considered non-responsive and may be rejected.

If the established Contract Goals are not achieved but the Waiver Application is granted, the bid will be considered responsive. If the established Contract Goals are not achieved and the Waiver Application is denied, a bid may be considered non-responsive and may be rejected.

Failure to provide the Participation Plan and/or a Waiver Application accounting for the total participation goal set for the project will result in the bid being considered non-responsive and the bid may be rejected.

By submission of a bid, a bidder thereby acknowledges and agrees to be bound by the regulatory process set forth in 25 IAC 5.

A bidder who knowingly or intentionally misrepresents the truth about either the status of a firm that is being proposed as an MBE and WBE or who misrepresents the level or the nature of the amount to be subcontracted to the MBE and WBE may suffer penalties pursuant to Indiana Code 5-16-6.5-5.

A Contractor who knowingly or intentionally misrepresents the truth about his/her status as an MBE and WBE or who misrepresents the level or the nature of the amount subcontracted to his/her firm may suffer penalties pursuant to Indiana Code 35-44-2-1.

V. Compliance

Contractors shall contract with all MBE and WBE firms listed on the Participation Plan. The subcontract or purchase order shall be for an amount that is equal to, or greater than, the total dollar amount listed on the form.

Contractors shall notify MWBED immediately if any firm listed on the Participation Plan refuses to enter into a subcontract or fails to perform according to the requirements of the subcontract.

The Contractor's proposed MBE and WBE Contract Goals will become incorporated into and a requirement of the Contract. Contractors shall not substitute, replace or terminate any MBE and WBE firm without prior written authorization from MWBED and the Owner.

Contractors shall cooperate and participate in compliance reviews as determined necessary by MWBED. Contractors shall provide all necessary documentation to show proof of compliance with the requirements as requested by MWBED.

VI. Non Compliance

A bid governed by this policy that does not meet the participation goals or does not receive an approved waiver will NOT be considered.

After the bid is awarded and if it is determined by MWBED that the Contractor is not in compliance with this Participation Program, MWBED will notify the Contractor within ten (10) days after the initial compliance review or the site visit and identify the deficiencies found and the required corrective action that should be taken to remedy the deficiencies within a specific time period.

If a Contractor is found non-compliant, the Contractor must submit, in writing, a specific commitment, in writing, to correct the deficiencies. The commitment must include the precise action to be taken and the date for completion.

If MWBED determines the Contractor has failed to comply with the provisions of this Participation Program, Contractor's Utilization Statement or 25 IAC 5, IDOA may impose any or all of the following sanctions:

- a. Withholding payment on the Contract until such time that satisfactory corrective measures are made.
- b. Adjustment to payments due or the permanent withholding of retainages of the Contract.
- c. Suspension or termination of the specific Contract in which the deficiency is known to exist. In the event this sanction is employed, the Contractor will be held liable for any consequential damages arising from the suspension or termination of the Contract, including damages caused as a result of the delay or from increased prices incurred in securing the performance of the balance of the work by other Contractors.
- d. Recommendation to the certification board to revoke the contractor's certification status with the Public Works Division of IDOA. This recommendation may result in the suspension or revocation of the contractor's ability to perform on future state contracts for a period no longer than thirty-six (36) months.
- e. Continued non-compliance may be deemed a material breach of the agreement between MWBED and Contractor, whereupon MWBED shall have all the rights and remedies available to it under the Contract or at law.
- f. Suspension, revocation, or denial of the MBE or WBE certification and eligibility to participate in the MBE or WBE program for a period of not more than thirty-six (36) months.

VII. Forms and Attachments

Minority Participation Plan
Good Faith Efforts Worksheet

**STATE OF INDIANA'S
STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION PROJECT
(for projects estimated more than \$150,000)
WORKS PROJECTNUMBER XXXXX
[INSERT] PROJECT DESCRIPTION
[INSERT] INSTITUTION/DEPARTMENT**

THIS IS A PUBLIC WORKS CONSTRUCTION CONTRACT (“Contract”), entered into by and between the Indiana Department of Administration’s Public Works Division (“State”) and XXXXXXXXXXXX (“Contractor”), executed pursuant to the terms and conditions set forth herein and is governed by Indiana Code 4-13.6, *et seq.*

1. Definitions. The following definition applies throughout this Contract:

For purposes of the State’s Public Works Project Number **XXXXXX** (“Project”), the term “Contract Documents” shall mean and include the following: this Contract and the Project Bid Package, which includes the Contractor’s Application for Pre-Qualification, the Public Work’s Solicitation for Quotation (DAPW 30), Bid Documentation, Pre-Contract Document, General Conditions (DAPW 26), Supplementary Conditions, Instructions to Bidders, Drawings, Specifications, and Addenda issued by the State in connection with the Project and prior to the submission of the Contractor’s Proposal.

Subject to Section 39, *Order of Precedence, Incorporation by Reference*, of this Contract, Contract Documents shall also consist of the Contractor’s Proposal and Response, as well as any other documentation submitted by it in response to the Project (hereinafter collectively referred to as “Contractor’s Proposal”).

Additionally, Contract Documents shall include any subsequent amendments, change orders and any written interpretations issued as field orders by the Designer pursuant to General Conditions, Article 1.2 (DAPW 26) and all field orders for minor changes by the Designer pursuant to General Conditions, Article 12.3 (DAPW 26). Change orders and amendments shall be executed in the manner authorized by Section 35, *Merger and Modification*, of this Contract.

When applicable, Contract Documents shall include the Performance Bond and/or the Labor and Materials Payment Bond, as required by IC 4-13.6-7-6 and IC 4-13.6-7-7, and fully described and captured in the General Conditions (DAPW 26).

The Contract Documents are specifically and collectively incorporated herein by reference.

2. Duties of Contractor. The Contractor shall furnish all labor and materials, perform all of the work, and otherwise fulfill all of its obligations in conformance with the Contract Documents. These duties are described and captured in the Contract Documents. The Contractor agrees that not less than fifteen percent (15%) of the work, measured in dollar volume, will be performed by its own forces. Any subcontractor employed for any part of this Contract awarded in excess of One Hundred Fifty Thousand Dollars (\$150,000.00) shall be qualified with the State of Indiana’s Public Works Division Certification Board and shall have a valid Certificate of Qualification in the prime classification of work for this Contract.

3. Consideration. All payments provided herein are subject to appropriations made and funds allocated as provided by laws of the State of Indiana. The State shall pay the Contractor for performance of this Contract in current funds as follows:

BASE BID: **\$XXXXXXX.00**
ALTERNATE(S):
TOTAL CONTRACT PRICE: **\$XXXXXXX.00**

4. Term. The work to be performed under this Contract shall commence within ten (10) days of the last signatory to this Contract. The work shall be completed within **XXX** calendar days.

5. Conflict of Interest. As used in this section:

“Immediate family” means the spouse, partner, housemate or the unemancipated children of an individual, as defined by 42 Indiana Administrative Code 1-3-13.

“Interested party,” means:

1. The individual executing this Contract;
2. An individual who has an ownership interest of three percent (3%) or more of the Contractor, if the Contractor is not an individual; or
3. Any member of the immediate family of an individual specified under Subdivision 1 or 2.

“State” means the Indiana Department of Administration.

“State employee” means a state employee, a special state appointee or a state officer, as defined by IC 4-2-6-1(a)(9), (a)(18) and (a)(19), respectively.

- A. The Contractor covenants that it neither has, nor will it have, a direct or indirect financial interest by way of an interested party in any other contract connected or associated with this Contract. The Contractor further represents and warrants that no state employee, who is an interested party of the Contractor as sole proprietor, or who serves as an officer, director, trustee, partner or employee of the Contractor as a legal business entity, participated in any decision or vote of any kind in the award of this Contract. As such and by the execution of this Contract, the Contractor represents and warrants that the result of this Contract does not and will not create a conflict of interest under IC 4-2-6-9 or IC 4-2-6-10.5.
- B. The State may cancel this Contract, without recourse by the Contractor, if an interested party is a state employee and a violation of IC 4-2-6-9 or IC 4-2-6-10.5 has occurred.
- C. The State will not exercise its right of cancellation under Section B above, if the Contractor provides the State an opinion from the State Ethics Commission indicating that the existence of this Contract and the employment by the State of the interested party does not violate any statute or rule relating to ethical conduct of state employees. The State may take action, including cancellation of this Contract, consistent with an opinion of the State Ethics Commission obtained under this Section.
- D. The Contractor has an affirmative obligation under this Contract to disclose to the State when an interested party is or becomes a state employee. The obligation under this section extends only to those facts that the Contractor knows or reasonably should know.

6. Licensing Standards. The Contractor and its employees and subcontractors shall comply with all applicable licensing standards, certification standards, accrediting standards and any other laws, rules or regulations governing services to be provided by the Contractor pursuant to this Contract. The State shall not be required to pay the Contractor for any services performed when the Contractor, its employees or

subcontractors are not in compliance with such applicable standards, laws, rules or regulations. If licensure, certification or accreditation expires or is revoked, or if disciplinary action is taken against the applicable licensure, certification or accreditation, the Contractor shall notify the State immediately and the State, at its option, may immediately terminate this Contract.

7. Escrow Agreement. Contemporaneously with the execution of this Contract, the parties may provide for the escrow of retained portions of payments to the Contractor by entering into a separate Escrow Agreement, pursuant to IC 4-13.6-7, with an escrow agent described in IC 4-13.6-7-2(b). Should the Contractor elect to escrow retainage, the Escrow Agreement will become a part of this contract as if fully contained herein.

8. Contractor's Certification. The Contractor certifies that it has been pre-qualified by the State of Indiana's Public Works Division Certification Board to perform the work and furnish the services required by this Project. The Contractor further certifies that all information and documentation submitted by it in its Application for Prequalification Certification, the Contractor's Proposal and submitted in response to the Project, is true, accurate and complete as of the date of this Contract's effectiveness. The Contractor shall immediately notify the State of any material change to such information. The Contractor shall immediately notify the State if, during the course of performance of this Contract, it or any of its principals are proposed for debarment or ineligibility, or become debarred or declared ineligible, from entering into contracts with the federal government or any department, agency or political subdivision of the State.

9. Contractor Employee Drug Testing. Pursuant to IC 4-13-18, the Contractor shall implement the employee drug testing program submitted as part of its Contractor's Proposal. The State may cancel this Contract if it determines that the Contractor:

- A. Has failed to implement its employee drug testing program during the term of this Contract;
- B. Has failed to provide information regarding implementation of the Contractor's employee drug testing program at the request of the State; or
- C. Has provided to the State false information regarding the Contractor's employee drug testing program.

10. Access to Records. The Contractor and its subcontractors, if any, shall maintain all books, documents, papers, accounting records, and other evidence pertaining to all costs incurred under this Contract. They shall make such materials available at their respective offices at all reasonable times during this Contract, and for three (3) years from the date of final payment under this Contract, for inspection by the State or its authorized designees. Copies shall be furnished at no cost to the State if requested.

11. Assignment; Successors. The Contractor binds its successors and assignees to all the terms and conditions of this Contract. The Contractor shall not assign or subcontract the whole or any part of this Contract without the State's prior written consent. The Contractor may assign its right to receive payments to such third parties as the Contractor may desire without the prior written consent of the State, provided that the Contractor gives written notice (including evidence of such assignment) to the State thirty (30) days in advance of any payment so assigned. The assignment shall cover all unpaid amounts under this Contract and shall not be made to more than one party.

12. Assignment of Antitrust Claims. As part of the consideration for the award of this Contract, the Contractor assigns to the State all right, title and interest in and to any claims the Contractor now has, or

may acquire, under state or federal antitrust laws relating to the products or services which are the subject of this Contract.

13. Audits. The Contractor acknowledges that it may be required to submit to an audit of funds paid through this Contract. Any such audit shall be conducted in accordance with IC §5-11-1, *et seq.*, and audit guidelines specified by the State.

The State considers the Contractor to be a “vendor” for purposes of this Contract. However, if required by applicable provisions of the Office of Management and Budget Circular A-133 (Audits of States, Local Governments, and Non-Profit Organizations), following the expiration of this Contract the Contractor shall arrange for a financial and compliance audit of funds provided by the State pursuant to this Contract. Such audit is to be conducted by an independent public or certified public accountant (or as applicable, the Indiana State Board of Accounts), and performed in accordance with Indiana State Board of Accounts publication entitled “Uniform Compliance Guidelines for Examination of Entities Receiving Financial Assistance from Governmental Sources,” and applicable provisions of the Office of Management and Budget Circulars A-133 (Audits of States, Local Governments, and Non-Profit Organizations). The Contractor is responsible for ensuring that the audit and any management letters are completed and forwarded to the State in accordance with the terms of this Contract. Audits conducted pursuant to this paragraph must be submitted no later than nine (9) months following the close of the Contractor’s fiscal year. The Contractor agrees to provide the Indiana State Board of Accounts and the State an original of all financial and compliance audits. The audit shall be an audit of the actual entity, or distinct portion thereof that is the Contractor, and not of a parent, member, or subsidiary corporation of the Contractor, except to the extent such an expanded audit may be determined by the Indiana State Board of Accounts or the State to be in the best interests of the State. The audit shall include a statement from the Auditor that the Auditor has reviewed this Contract and that the Contractor is not out of compliance with the financial aspects of this Contract.

If Federal Funds are involved in this Contract, the State also considers the Contractor to be a “Contractor” under 2 C.F.R. 200.330 for purposes of this Contract. However, if required by applicable provisions of 2 C.F.R. 200 (Uniform Administrative Requirements, Cost Principles, and Audit Requirements), Contractor shall arrange for a financial and compliance audit, which complies with 2 C.F.R. 200.500 *et seq.*

14. Authority to Bind Contractor. The signatory for the Contractor represents that he/she has been duly authorized to execute this Contract on behalf of the Contractor and has obtained all necessary or applicable approvals to make this Contract fully binding upon the Contractor when his/her signature is affixed, and accepted by the State.

15. Changes in Work. The Contractor shall not commence any additional work or change the scope of the work until authorized in writing by the State. The Contractor shall make no claim for additional compensation in the absence of a prior written approval and amendment executed by all signatories hereto. This Contract may only be amended, supplemented or modified by a written document executed in the same manner as this Contract.

16. Compliance with Laws.

- A. The Contractor shall comply with all applicable federal, state, and local laws, rules, regulations, and ordinances, and all provisions required thereby to be included herein are hereby incorporated by reference. The enactment or modification of any applicable state or federal statute or the promulgation of rules or regulations thereunder after execution of

this Contract shall be reviewed by the State and the Contractor to determine whether the provisions of this Contract require formal modification.

- B. The Contractor and its agents shall abide by all ethical requirements that apply to persons who have a business relationship with the State as set forth in IC §4-2-6, *et seq.*, IC §4-2-7, *et seq.*, the regulations promulgated thereunder, and Executive Order 04-08, dated April 27, 2004. **If the Contractor has knowledge, or would have acquired knowledge with reasonable inquiry, that a state officer, employee, or special state appointee, as those terms are defined in IC 4-2-6-1, has a financial interest in the Contract, the Contractor shall ensure compliance with the disclosure requirements in IC 4-2-6-10.5 prior to the execution of this contract.** If the Contractor is not familiar with these ethical requirements, the Contractor should refer any questions to the Indiana State Ethics Commission, or visit the Inspector General's website at <http://www.in.gov/ig/>. If the Contractor or its agents violate any applicable ethical standards, the State may, in its sole discretion, terminate this Contract immediately upon notice to the Contractor. In addition, the Contractor may be subject to penalties under IC §§4-2-6, 4-2-7, 35-44-1-3, and under any other applicable laws.
- C. The Contractor certifies by entering into this Contract that neither it nor its principal(s) is presently in arrears in payment of taxes, permit fees or other statutory, regulatory or judicially required payments to the State of Indiana. The Contractor agrees that any payments currently due to the State of Indiana may be withheld from payments due to the Contractor. Additionally, further work or payments may be withheld, delayed, or denied and/or this Contract suspended until the Contractor is current in its payments and has submitted proof of such payment to the State.
- D. The Contractor warrants that it has no current, pending or outstanding criminal, civil, or enforcement actions initiated by the State, and agrees that it will immediately notify the State of any such actions. During the term of such actions, the Contractor agrees that the State may delay, withhold, or deny work under any supplement, amendment, change order or other contractual device issued pursuant to this Contract.
- E. If a valid dispute exists as to the Contractor's liability or guilt in any action initiated by the State or its agencies, and the State decides to delay, withhold, or deny work to the Contractor, the Contractor may request that it be allowed to continue, or receive work, without delay. The Contractor must submit, in writing, a request for review to the Indiana Department of Administration (IDOA) following the procedures for disputes outlined herein. A determination by IDOA shall be binding on the parties. Any payments that the State may delay, withhold, deny, or apply under this section shall not be subject to penalty or interest, except as permitted by IC §5-17-5.
- F. The Contractor warrants that the Contractor and its subcontractors, if any, shall obtain and maintain all required permits, licenses, registrations, and approvals, and shall comply with all health, safety, and environmental statutes, rules, or regulations in the performance of work activities for the State. Failure to do so may be deemed a material breach of this Contract and grounds for immediate termination and denial of further work with the State.
- G. The Contractor affirms that, if it is an entity described in IC Title 23, it is properly registered and owes no outstanding reports to the Indiana Secretary of State.

H. As required by IC §5-22-3-7:

(1) The Contractor and any principals of the Contractor certify that:

(A) The Contractor, except for de minimis and nonsystematic violations, has not violated the terms of:

- (i) IC §24-4.7 [Telephone Solicitation Of Consumers];
- (ii) IC §24-5-12 [Telephone Solicitations]; or
- (iii) IC §24-5-14 [Regulation of Automatic Dialing Machines];

in the previous three hundred sixty-five (365) days, even if IC §24-4.7 is preempted by federal law; and

(B) The Contractor will not violate the terms of IC §24-4.7 for the duration of the Contract, even if IC §24-4.7 is preempted by federal law.

(2) The Contractor and any principals of the Contractor certify that an affiliate or principal of the Contractor and any agent acting on behalf of the Contractor or on behalf of an affiliate or principal of the Contractor, except for de minimis and nonsystematic violations,

(A) Has not violated the terms of IC §24-4.7 in the previous three hundred sixty-five (365) days, even if IC §24-4.7 is preempted by federal law; and

(B) Will not violate the terms of IC §24-4.7 for the duration of the Contract, even if IC §24-4.7 is preempted by federal law.

17. Condition of Payment. All services provided by the Contractor under this Contract must be performed to the State's reasonable satisfaction, as determined at the discretion of the undersigned State representative and in accordance with all applicable federal, state, local laws, ordinances, rules and regulations. The State shall not be required to pay for work found to be unsatisfactory, inconsistent with this Contract or performed in violation of and federal, state or local statute, ordinance, rule or regulation.

18. Confidentiality of State Information. The Contractor understands and agrees that data, materials, and information disclosed to the Contractor may contain confidential and protected information. The Contractor covenants that data, material, and information gathered, based upon or disclosed to the Contractor for the purpose of this Contract will not be disclosed to or discussed with third parties without the prior written consent of the State.

The parties acknowledge that the services to be performed by Contractor for the State under this Contract may require or allow access to data, materials, and information containing Social Security numbers maintained by the State in its computer system or other records. In addition to the covenant made above in this section and pursuant to 10 IAC 5-3-1(4), the Contractor and the State agree to comply with the provisions of IC §4-1-10 and IC §4-1-11. If any Social Security number(s) is/are disclosed by Contractor, Contractor agrees to pay the cost of the notice of disclosure of a breach of the security of the system in addition to any other claims and expenses for which it is liable under the terms of this Contract.

19. Continuity of Services.

- A. The Contractor recognizes that the service(s) to be performed under this Contract are vital to the State and must be continued without interruption and that, upon Contract expiration, a successor, either the State or another contractor, may continue them. The Contractor agrees to:
 - 1. Furnish phase-in training; and
 - 2. Exercise its best efforts and cooperation to effect an orderly and efficient transition to a successor.

- B. The Contractor shall, upon the State's written notice:
 - 1. Furnish phase-in, phase-out services for up to sixty (60) days after this Contract expires; and
 - 2. Negotiate in good faith a plan with a successor to determine the nature and extent of phase-in, phase-out services required. The plan shall specify a training program and a date for transferring responsibilities for each division of work described in the plan, and shall be subject to the State's approval. The Contractor shall provide sufficient experienced personnel during the phase-in, phase-out period to ensure that the services called for by this Contract are maintained at the required level of proficiency.

- C. The Contractor shall allow as many personnel as practicable to remain on the job to help the successor maintain the continuity and consistency of the services required by this Contract. The Contractor also shall disclose necessary personnel records and allow the successor to conduct on-site interviews with these employees. If selected employees are agreeable to the change, the Contractor shall release them at a mutually agreeable date and negotiate transfer of their earned fringe benefits to the successor.

- D. The Contractor shall be reimbursed for all reasonable phase-in, phase-out costs (i.e., costs incurred within the agreed period after contract expiration that result from phase-in, phase-out operations).

20. Debarment and Suspension.

- A. The Contractor certifies by entering into this Contract that neither it nor its principals nor any of its subcontractors are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from entering into this Contract by any federal agency or by any department, agency or political subdivision of the State of Indiana. The term "principal" for purposes of this Contract means an officer, director, owner, partner, key employee or other person with primary management or supervisory responsibilities, or a person who has a critical influence on or substantive control over the operations of the Contractor.

- B. The Contractor certifies that it has verified the state and federal suspension and debarment status for all subcontractors receiving funds under this Contract and shall be solely responsible for any recoupment, penalties or costs that might arise from use of a suspended or debarred subcontractor. The Contractor shall immediately notify the State if any subcontractor becomes debarred or suspended, and shall, at the State's request,

take all steps required by the State to terminate its contractual relationship with the subcontractor for work to be performed under this Contract.

21. Default by State. If the State, sixty (60) days after receipt of written notice, fails to correct or cure any material breach of this Contract, the Contractor may cancel and terminate this Contract and institute measures to collect monies due up to and including the date of termination.

22. Disputes.

- A. Should any disputes arise with respect to this Contract, the Contractor and the State agree to act immediately to resolve such disputes. Time is of the essence in the resolution of disputes.
- B. The Contractor agrees that, the existence of a dispute notwithstanding, it will continue without delay to carry out all of its responsibilities under this Contract that are not affected by the dispute. Should the Contractor fail to continue to perform its responsibilities regarding all non-disputed work, without delay, any additional costs incurred by the State or the Contractor as a result of such failure to proceed shall be borne by the Contractor, and the Contractor shall make no claim against the State for such costs.
- C. If the parties are unable to resolve a contract dispute between them after good faith attempts to do so, a dissatisfied party shall submit the dispute to the Commissioner of the Indiana Department of Administration for resolution. The dissatisfied party shall give written notice to the Commissioner and the other party. The notice shall include (1) a description of the disputed issues, (2) the efforts made to resolve the dispute, and (3) a proposed resolution. The Commissioner shall promptly issue a Notice setting out documents and materials to be submitted to the Commissioner in order to resolve the dispute; the Notice may also afford the parties the opportunity to make presentations and enter into further negotiations. Within 30 business days of the conclusion of the final presentations, the Commissioner shall issue a written decision and furnish it to both parties. The Commissioner's decision shall be the final and conclusive administrative decision unless either party serves on the Commissioner and the other party, within ten business days after receipt of the Commissioner's decision, a written request for reconsideration and modification of the written decision. If the Commissioner does not modify the written decision within 30 business days, either party may take such other action helpful to resolving the dispute, including submitting the dispute to an Indiana court of competent jurisdiction. If the parties accept the Commissioner's decision, it may be memorialized as a written Amendment to this Contract if appropriate.
- D. The State may withhold payments on disputed items pending resolution of the dispute. The unintentional nonpayment by the State to the Contractor of one or more invoices not in dispute in accordance with the terms of this Contract will not be cause for the Contractor to terminate this Contract, and the Contractor may bring suit to collect these amounts without following the disputes procedure contained herein.
- E. With the written approval of the Commissioner of the Indiana Department of Administration, the parties may agree to forego the process described in subdivision C. relating to submission of the dispute to the Commissioner. This paragraph shall not be construed to abrogate provisions of Ind. Code 4-6-2-11 in situations where dispute

resolution efforts lead to a compromise of claims in favor of the State as described in that statute. In particular, releases or settlement agreements involving releases of legal claims or potential legal claims of the state should be processed consistent with Ind. Code 4-6-2-11, which requires approval of the Governor and Attorney General.

- F. This paragraph shall not be construed to abrogate provisions of Ind. Code 4-6-2-11 in situations where dispute resolution efforts lead to a compromise of claims in favor of the State as described in that statute. In particular, releases or settlement agreements involving releases of legal claims or potential legal claims of the state should be processed consistent with Ind. Code 4-6-2-11, which requires approval of the Governor and Attorney General.

23. Drug-Free Workplace Certification. As required by Executive Order No. 90-5 dated April 12, 1990, issued by the Governor of Indiana, the Contractor hereby covenants and agrees to make a good faith effort to provide and maintain a drug-free workplace. The Contractor will give written notice to the State within ten (10) days after receiving actual notice that the Contractor, or an employee of the Contractor in the State of Indiana, has been convicted of a criminal drug violation occurring in the workplace. False certification or violation of this certification may result in sanctions including, but not limited to, suspension of contract payments, termination of this Contract and/or debarment of contracting opportunities with the State for up to three (3) years.

In addition to the provisions of the above paragraph, if the total amount set forth in this Contract is in excess of \$25,000.00, the Contractor certifies and agrees that it will provide a drug-free workplace by:

- A. Publishing and providing to all of its employees a statement notifying them that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Contractor's workplace, and specifying the actions that will be taken against employees for violations of such prohibition;
- B. Establishing a drug-free awareness program to inform its employees of (1) the dangers of drug abuse in the workplace; (2) the Contractor's policy of maintaining a drug-free workplace; (3) any available drug counseling, rehabilitation and employee assistance programs; and (4) the penalties that may be imposed upon an employee for drug abuse violations occurring in the workplace;
- C. Notifying all employees in the statement required by subparagraph (A) above that as a condition of continued employment, the employee will (1) abide by the terms of the statement; and (2) notify the Contractor of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction;
- D. Notifying the State in writing within ten (10) days after receiving notice from an employee under subdivision (C)(2) above, or otherwise receiving actual notice of such conviction;
- E. Within thirty (30) days after receiving notice under subdivision (C)(2) above of a conviction, imposing the following sanctions or remedial measures on any employee who is convicted of drug abuse violations occurring in the workplace: (1) taking appropriate personnel action against the employee, up to and including termination; or (2) requiring such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state or local health, law enforcement, or other appropriate agency; and

- F. Making a good faith effort to maintain a drug-free workplace through the implementation of subparagraphs (A) through (E) above.

24. Employment Eligibility Verification. As required by IC §22-5-1.7, the Contractor swears or affirms under the penalties of perjury that:

- A. The Contractor does not knowingly employ an unauthorized alien.
- B. The Contractor shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC §22-5-1.7-3. The Contractor is not required to participate should the E-Verify program cease to exist. Additionally, the Contractor is not required to participate if the Contractor is self-employed and does not employ any employees.
- C. The Contractor shall not knowingly employ or contract with an unauthorized alien. The Contractor shall not retain an employee or contract with a person that the Contractor subsequently learns is an unauthorized alien.
- D. The Contractor shall require his/her/its subcontractors who perform work under this Contract to certify to the Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

The State may terminate for default if the Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified by the State.

25. Employment Option. If the State determines that it would be in the State's best interest to hire an employee of the Contractor, the Contractor will release the selected employee from any non-competition agreements that may be in effect. This release will be at no cost to the State or the employee.

26. Force Majeure. In the event that either party is unable to perform any of its obligations under this Contract or to enjoy any of its benefits because of natural disaster or decrees of governmental bodies not the fault of the affected party (hereinafter referred to as a "Force Majeure Event"), the party who has been so affected shall immediately give notice to the other party and shall do everything possible to resume performance. Upon receipt of such notice, all obligations under this Contract shall be immediately suspended. If the period of nonperformance exceeds thirty (30) days from the receipt of notice of the Force Majeure Event, the party whose ability to perform has not been so affected may, by giving written notice, terminate this Contract.

27. Funding Cancellation. When the Director of the State Budget Agency makes a written determination that funds are not appropriated or otherwise available to support continuation of performance of this Contract, this Contract shall be canceled. A determination by the Director of State Budget Agency that funds are not appropriated or otherwise available to support continuation of performance shall be final and conclusive.

28. Governing Law. This Contract shall be governed, construed, and enforced in accordance with the laws of the State of Indiana, without regard to its conflict of laws rules. Suit, if any, must be brought in the State of Indiana.

29. HIPAA Compliance. If this Contract involves services, activities or products subject to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), the Contractor covenants that it will appropriately safeguard Protected Health Information (defined in 45 CFR 160.103), and agrees that it is subject to, and shall comply with, the provisions of 45 CFR 164 Subpart E regarding use and disclosure of Protected Health Information.

30. Indemnification. The Contractor agrees to indemnify, defend, and hold harmless the State, its agents, officials, and employees from all claims and suits including court costs, attorney's fees, and other expenses caused by any act or omission of the Contractor and/or its subcontractors, if any, in the performance of this Contract. The State shall not provide such indemnification to the Contractor.

31. Independent Contractor; Workers' Compensation Insurance. The Contractor is performing as an independent entity under this Contract. No part of this Contract shall be construed to represent the creation of an employment, agency, partnership or joint venture agreement between the parties. Neither party will assume liability for any injury (including death) to any persons, or damage to any property, arising out of the acts or omissions of the agents, employees or subcontractors of the other party. The Contractor shall provide all necessary unemployment and workers' compensation insurance for the Contractor's employees, and shall provide the State with a Certificate of Insurance evidencing such coverage prior to starting work under this Contract.

32. Information Technology Enterprise Architecture Requirements. If the Contractor provides any information technology related products or services to the State, the Contractor shall comply with all IOT standards, policies and guidelines, which are online at <http://iot.in.gov/architecture/>. The Contractor specifically agrees that all hardware, software and services provided to or purchased by the State shall be compatible with the principles and goals contained in the electronic and information technology accessibility standards adopted under Section 508 of the Federal Rehabilitation Act of 1973 (29 U.S.C. 794d) and IC §4-13.1-3. Any deviation from these architecture requirements must be approved in writing by IOT in advance. The State may terminate this Contract for default if the Contractor fails to cure a breach of this provision within a reasonable time.

33. Insurance

- A. The Contractor and their subcontractors (if any) shall secure and keep in force during the term of this Contract the following insurance coverages (if applicable) covering the Contractor for any and all claims of any nature which may in any manner arise out of or result from Contractor's performance under this Contract:
1. Commercial general liability, including contractual coverage, and products or completed operations coverage (if applicable), with minimum liability limits not less than \$700,000 per person and \$5,000,000 per occurrence unless additional coverage is required by the State. The State is to be named as an additional insured on a primary, non-contributory basis for any liability arising directly or indirectly under or in connection with this Contract.
 2. Automobile liability for owned, non-owned and hired autos with minimum liability limits of \$700,000 per person and \$5,000,000 per occurrence. The State is to be named as an additional insured on a primary, non-contributory basis.

3. The Contractor shall secure the appropriate Surety or Fidelity Bond(s) as required by the state department served or by applicable statute.
 4. The Contractor and their subcontractors shall provide proof of such insurance coverage by tendering to the undersigned State representative a certificate of insurance prior to the commencement of this Contract and proof of workers' compensation coverage meeting all statutory requirements of IC §22-3-2. In addition, proof of an "all states endorsement" covering claims occurring outside the State is required if any of the services provided under this Contract involve work outside of Indiana.
- B. The Contractor's insurance coverage must meet the following additional requirements:
1. The insurer must have a certificate of authority or other appropriate authorization to operate in the state in which the policy was issued.
 2. Any deductible or self-insured retention amount or other similar obligation under the insurance policies shall be the sole obligation of the Contractor.
 3. The State will be defended, indemnified and held harmless to the full extent of any coverage actually secured by the Contractor in excess of the minimum requirements set forth above. The duty to indemnify the State under this Contract shall not be limited by the insurance required in this Contract.
 4. The insurance required in this Contract, through a policy or endorsement(s), shall include a provision that the policy and endorsements may not be canceled or modified without thirty (30) days' prior written notice to the undersigned State agency.
 5. The Contractor waives and agrees to require their insurer to waive their rights of subrogation against the State of Indiana.
- C. Failure to provide insurance as required in this Contract may be deemed a material breach of contract entitling the State to immediately terminate this Contract. The Contractor shall furnish a certificate of insurance and all endorsements to the State before the commencement of this Contract.

34. Key Person(s).

- A. If both parties have designated that certain individual(s) are essential to the services offered, the parties agree that should such individual(s) leave their employment during the term of this Contract for whatever reason, the State shall have the right to terminate this Contract upon thirty (30) days' prior written notice.
- B. In the event that the Contractor is an individual, that individual shall be considered a key person and, as such, essential to this Contract. Substitution of another for the Contractor shall not be permitted without express written consent of the State.

Nothing in Sections A and B, above shall be construed to prevent the Contractor from using the services of others to perform tasks ancillary to those tasks which directly require the expertise of the key person.

Examples of such ancillary tasks include secretarial, clerical, and common labor duties. The Contractor shall, at all times, remain responsible for the performance of all necessary tasks, whether performed by a key person or others.

Key person(s) to this Contract is/are:

35. Merger & Modification. This Contract constitutes the entire agreement between the parties. No understandings, agreements, or representations, oral or written, not specified within this Contract will be valid provisions of this Contract. This Contract may not be modified, supplemented, or amended, except by written agreement signed by all necessary parties.

36. Minority and Women’s Business Enterprises Compliance. Award of this Contract was based, in part, on the Minority and/or Women’s Business Enterprise (“MBE” and/or “WBE”) participation plan. The following certified MBE or WBE subcontractors will be participating in this Contract:

<u>MBE/WBE</u>	<u>PHONE</u>	<u>COMPANY NAME</u>	<u>SCOPE OF PRODUCTS and/or SERVICES</u>	<u>UTILIZATION DATE</u>	<u>PERCENT</u>
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Terms for participation are as provided in the Contractor’s Proposal to the State’s request for participation, which are described and captured in the Contract Documents.

A copy of each subcontractor agreement must be submitted to IDOA’s MBE/WBE Division within thirty (30) days of the effective date of this Contract. Failure to provide a copy of any subcontractor agreement will be deemed a violation of the rules governing MBE/WBE procurement, and may result in sanctions allowable under 25 IAC 5-7-8. Failure to provide any subcontractor agreement may also be considered a material breach of this Contract. The Contractor must obtain approval from IDOA’s MBE/WBE Division before changing the participation plan submitted in connection with this Contract.

The Contractor shall report payments made to MBE/WBE Division subcontractors under this Contract on a monthly basis. Monthly reports shall be made using the online audit tool, commonly referred to as “Pay Audit.” MBE/WBE Division subcontractor payments shall also be reported to the Division as reasonably requested and in a format to be determined by Division.

37. Nondiscrimination. Pursuant to the Indiana Civil Rights Law, specifically including IC §22-9-1-10, and in keeping with the purposes of the federal Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act, the Contractor covenants that it shall not discriminate against any employee or applicant for employment relating to this Contract with respect to the hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of the employee’s or applicant’s race, color, national origin, religion, sex, age, disability, ancestry, status as a veteran, or any other characteristic protected by federal, state, or local law (“Protected Characteristics”). Contractor certifies compliance with applicable federal laws, regulations, and executive orders prohibiting discrimination based on the Protected Characteristics in the provision of services. Breach of this paragraph may be regarded as a material breach of this Contract, but nothing in this paragraph shall be construed to imply or establish an employment relationship between the State and any applicant or employee of the Contractor or any subcontractor.

The State is a recipient of federal funds, and therefore, where applicable, Contractor and any subcontractors shall comply with requisite affirmative action requirements, including reporting, pursuant to 41 CFR Chapter 60, as amended, and Section 202 of Executive Order 11246 as amended by Executive Order 13672.

38. Notice to Parties. Whenever any notice, statement or other communication is required under this Contract, it shall be sent to the following addresses, unless otherwise specifically advised.

- A. Notices to the State shall be sent to: Public Works Divisions, Director
Indiana Department of Administration
402 W Washington St Room W467
Indianapolis, IN 46204
- B. Notices to the Contractor shall be sent to: **[INSERT CONTRACTOR NAME]**
[INSERT CONTRACTOR ADDRESS]
- C. As required by IC 4-13-2-14.8, payments to the Contractor shall be made via electronic funds transfer in accordance with instructions filed by the Contractor with the Indiana Auditor of State.

39. Order of Precedence; Incorporation by Reference. Any inconsistency or ambiguity in this Contract shall be resolved by giving precedence in the following order: (1) this Contract, (2) the Project Bid Package, (3) attachments prepared by the State; (4) Contractor's Proposal; and (5) attachments prepared by the Contractor. All of the foregoing are incorporated fully by reference. All attachments, and all documents referred to in this paragraph are hereby incorporated fully by reference.

40. Ownership of Documents and Materials.

A. All documents, records, programs, applications, data, algorithms, film, tape, articles, memoranda, and other materials (the "Materials") not developed or licensed by the Contractor prior to execution of this Contract, but specifically developed under this Contract shall be considered "work for hire" and the Contractor hereby transfers and assigns any ownership claims to the State so that all Materials will be the property of the State. If ownership interest in the Materials cannot be assigned to the State, the Contractor grants the State a non-exclusive, non-cancelable, perpetual, worldwide royalty-free license to use the Materials and to use, modify, copy and create derivative works of the Materials.

B. Use of the Materials, other than related to contract performance by the Contractor, without the prior written consent of the State, is prohibited. During the performance of this Contract, the Contractor shall be responsible for any loss of or damage to the Materials developed for or supplied by the State and used to develop or assist in the services provided while the Materials are in the possession of the Contractor. Any loss or damage thereto shall be restored at the Contractor's expense. The Contractor shall provide the State full, immediate, and unrestricted access to the Materials and to Contractor's work product during the term of this Contract.

41. Payments.

- A. All payments shall be made 35 days in arrears in conformance with State fiscal policies and procedures and, as required by IC §4-13-2-14.8, the direct deposit by electronic funds transfer to the financial institution designated by the Contractor in writing unless a specific waiver has been obtained from the Indiana Auditor of State. No payments will be made in advance of receipt of the goods or services that are the subject of this Contract except as permitted by IC §4-13-2-20.

- B. The State Budget Agency and the Contractor acknowledge that Contractor is being paid in advance for the maintenance of equipment and / or software. Pursuant to IC §4-13-2-20(b)(14), Contractor agrees that if it fails to perform the maintenance required under this Contract, upon receipt of written notice from the State, it shall promptly refund the consideration paid, pro-rated through the date of non-performance.

42. Penalties/Interest/Attorney's Fees. The State will in good faith perform its required obligations hereunder and does not agree to pay any penalties, liquidated damages, interest or attorney's fees, except as permitted by Indiana law, in part, IC §5-17-5, IC §34-54-8, IC §34-13-1 and IC § 34-52-2-3.

Notwithstanding the provisions contained in IC §5-17-5, any liability resulting from the State's failure to make prompt payment shall be based solely on the amount of funding originating from the State and shall not be based on funding from federal or other sources.

43. Progress Reports. The Contractor shall submit progress reports to the State upon request. The report shall be oral, unless the State, upon receipt of the oral report, should deem it necessary to have it in written form. The progress reports shall serve the purpose of assuring the State that work is progressing in line with the schedule, and that completion can be reasonably assured on the scheduled date.

44. Public Record. The Contractor acknowledges that the State will not treat this Contract as containing confidential information, and will post this Contract on its website as required by Executive Order 05-07. Use by the public of the information contained in this Contract shall not be considered an act of the State.

45. Renewal Option. This Contract may be renewed under the same terms and conditions, subject to the approval of the Commissioner of the Department of Administration and the State Budget Director in compliance with IC §5-22-17-4. The term of the renewed contract may not be longer than the term of the original contract.

46. Severability. The invalidity of any section, subsection, clause or provision of this Contract shall not affect the validity of the remaining sections, subsections, clauses or provisions of this Contract.

47. Substantial Performance. This Contract shall be deemed to be substantially performed only when fully performed according to its terms and conditions and any written amendments or supplements.

48. Taxes. The State is exempt from most state and local taxes and many federal taxes. The State will not be responsible for any taxes levied on the Contractor as a result of this Contract.

49. Termination for Convenience. This Contract may be terminated, in whole or in part, by the State, which shall include and is not limited to the Indiana Department of Administration and the State Budget Agency whenever, for any reason, the State determines that such termination is in its best interest. Termination of services shall be effected by delivery to the Contractor of a Termination Notice at least thirty (30) days prior to the termination effective date, specifying the extent to which performance of services under such termination becomes effective. The Contractor shall be compensated for services properly rendered prior to the effective date of termination. The State will not be liable for services performed after the effective date of termination. The Contractor shall be compensated for services herein provided but in no case shall total payment made to the Contractor exceed the original contract price or shall any price increase be allowed on individual line items if canceled only in part prior to the original termination date. For the purposes of this paragraph, the parties stipulate and agree that the Indiana Department of Administration shall be deemed to be a party to this agreement with authority to terminate

the same for convenience when such termination is determined by the Commissioner of IDOA to be in the best interests of the State.

50. Termination for Default.

- A. With the provision of thirty (30) days notice to the Contractor, the State may terminate this Contract in whole or in part if the Contractor fails to:
 - 1. Correct or cure any breach of this Contract; the time to correct or cure the breach may be extended beyond thirty (30) days if the State determines progress is being made and the extension is agreed to by the parties;
 - 2. Deliver the supplies or perform the services within the time specified in this Contract or any extension;
 - 3. Make progress so as to endanger performance of this Contract; or
 - 4. Perform any of the other provisions of this Contract.

- B. If the State terminates this Contract in whole or in part, it may acquire, under the terms and in the manner the State considers appropriate, supplies or services similar to those terminated, and the Contractor will be liable to the State for any excess costs for those supplies or services. However, the Contractor shall continue the work not terminated.

- C. The State shall pay the contract price for completed supplies delivered and services accepted. The Contractor and the State shall agree on the amount of payment for manufacturing materials delivered and accepted and for the protection and preservation of the property. Failure to agree will be a dispute under the Disputes clause. The State may withhold from these amounts any sum the State determines to be necessary to protect the State against loss because of outstanding liens or claims of former lien holders.

- D. The rights and remedies of the State in this clause are in addition to any other rights and remedies provided by law or equity or under this Contract.

51. Travel. No expenses for travel will be reimbursed unless specifically permitted under the scope of services or consideration provisions. Expenditures made by the Contractor for travel will be reimbursed at the current rate paid by the State and in accordance with the State Travel Policies and Procedures as specified in the current Financial Management Circular. Out-of-state travel requests must be reviewed by the State for availability of funds and for appropriateness per Circular guidelines.

52. Indiana Veteran’s Business Enterprise Compliance. Award of this Contract was based, in part, on the Indiana Veteran’s Business Enterprise (“IVBE”) participation plan. The following IVBE subcontractors will be participating in this Contract:

VBE	PHONE	COMPANY NAME	SCOPE OF PRODUCTS and/or SERVICES	UTILIZATION	DATE	PERCENT
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N/A

A copy of each subcontractor agreement must be submitted to IDOA within thirty (30) days of the effective date of this Contract. Failure to provide any subcontractor agreement may also be considered a material breach of this Contract. The Contractor must obtain approval from IDOA’s MBE/WBE Division before changing the participation plan submitted in connection with this Contract.

The Contractor shall report payments made to IVBE subcontractors under this Contract on a monthly basis. Monthly reports shall be made using the online audit tool, commonly referred to as "Pay Audit." IVBE subcontractor payments shall also be reported to IDOA as reasonably requested and in a format to be determined by IDOA.

53. Waiver of Rights. No right conferred on either party under this Contract shall be deemed waived, and no breach of this Contract excused, unless such waiver is in writing and signed by the party claimed to have waived such right. Neither the State's review, approval or acceptance of, nor payment for, the services required under this Contract shall be construed to operate as a waiver of any rights under this Contract or of any cause of action arising out of the performance of this Contract, and the Contractor shall be and remain liable to the State in accordance with applicable law for all damages to the State caused by the Contractor's negligent performance of any of the services furnished under this Contract.

54. Work Standards. The Contractor shall execute its responsibilities by following and applying at all times the highest professional and technical guidelines and standards. If the State becomes dissatisfied with the work product of or the working relationship with those individuals assigned to work on this Contract, the State may request in writing the replacement of any or all such individuals, and the Contractor shall grant such request.

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Non-Collusion and Acceptance

The undersigned attests, subject to the penalties for perjury, that the undersigned is the Contractor, or that the undersigned is the properly authorized representative, agent, member or officer of the Contractor. Further, to the undersigned's knowledge, neither the undersigned nor any other member, employee, representative, agent or officer of the Contractor, directly or indirectly, has entered into or been offered any sum of money or other consideration for the execution of this Contract other than that which appears upon the face hereof. **Furthermore, if the undersigned has knowledge that a state officer, employee, or special state appointee, as those terms are defined in IC 4-2-6-1, has a financial interest in the Contract, the Contractor attests to compliance with the disclosure requirements in IC 4-2-6-10.5.**

IN WITNESS WHEREOF, the Contractor and the State have, through their duly authorized representatives, entered into this Contract for Public Works Project Number **XXXXXX**. The parties, having read and understood the foregoing terms of this Contract, do by their respective signatures dated below agree to the terms thereof.

XXXXXXXXXX
[Contractor]

Department of Administration
Public Works Division

By: _____
Printed Name: _____
Title: _____

Date: _____

By: _____
Director, DAPW
For IDOA Commissioner if less than \$1,000,000

Date: _____

Approved by:
Department of Administration

Approved by:
State Budget Agency

By: _____
Jessica Robertson, Commissioner

By: _____
Brian E. Bailey, Director

Date: _____

Date: _____

Approved as to Form and Legality:
*Form approval has been granted by the Office
of the Attorney General pursuant to
IC 4-13-2-14.3(e) on August 15, 2016.
FA 16-28*

This Instrument was prepared by: **[INSERT NAME]** on **XX/XX/XXXX**

Legal counsel: _____ (initials)

SECTION 010100 - GENERAL REQUIREMENTS

PART I – GENERAL

1.01 PROJECT REQUIREMENTS

- A. The Contractor shall perform all work required to complete the project in accordance with the Contract Documents, to meet the design intent of the Contract Documents, and to minimize potential change orders.
- B. The Project consists of furnishing all labor, material, equipment, services, and other related items necessary to complete the work per Contract Documents.
- C. The Contractor shall make a good faith effort to attend the pre-bid meeting. If a need exists to see the site on another date, bidder shall contact Property Manager to schedule a meeting on site.

1.02 DESCRIPTION

- A. **BASE BID** - Work of the Project described in details in specifications and drawings, includes renovation of existing 1-story office building approximately 1,103 square feet in size.
The work includes demolition, new interior wall and doors, attic insulation, new ceiling and new interior finishes, casework, new plumbing, re-working electrical wiring and new lights, new computer data connections, and re-working existing mechanical ducts. See drawing G-2 for detailed scope.

- B. **ALTERNATE #1** – As shown on drawing C-1.

The work includes:

- Removing existing concrete slab in front of the building as shown on drawing C-1.
- Furnishing and installing (replacing old) approx. 50 linear feet of water line, as shown on drawing C-1.
- Securing existing porch roof structure with temporary columns and bracing to be approved by DNR Engineering Division Engineer.
- Removal of one wood column and cutting the bottom of three columns to height permitting installation of new foundations and metal connectors under columns.
- Constructing new concrete work according to details shown on drawing C-1.
- Constructing sidewalk and ADA new diagonal curb ramp.
- Installing new threshold for main entrance.
- All new concrete work shall have slopes meeting ADA requirements.

- C. **ALTERNATE #2** – As shown on drawing S-1.

The work includes:

- Adding hurricane clips
- Adding plywood plates to trusses.
- Adding through bolts, washers, lock washers and nuts to beam-column connection.
- Securing roof structure to existing building.
- Installing insect screen and triangle louver in the end wall.
- Installing new ceiling and wood trims.
- Paint the ceiling and stain all porch exposed wood.
-

- D. **ALTERNATE #3.** – Exterior window and door lintels restoration. See drawing G-2 for details.

1.02 BID

- A. The Base Bid shall include all work and requirements indicated by the Bidding Documents.
 - 1. The Contractor shall not be allowed extra compensation by reason of any matter or thing concerning which the contractor could have fully informed himself/herself prior to bidding. No verbal agreement, understanding or conversation with an agent or employee of the owner, either before or after the execution of this contract, shall affect or modify the terms or obligations herein contained.
 - 2. The Contractor shall submit a Schedule of Values based on various types of work in accordance with Article 9.2 of the General Conditions.

1.03 COMMENCEMENT AND COMPLETION OF WORK

- A. The Contractor shall commence work within 10 days after the date of execution of the Contract.
- B. Work required by the Contract Documents shall be **completed within 120 days** after the date of the Contract.
- C. This project, or portion thereof, will not be ready for substantial completion review until test and performance evaluations are completed, all items are installed, proper paint is dry, and area is clear of construction rubbish and debris.
- D. Before Final Payment of the Contract Price, the Contractor shall submit to the Owner, on the Contracting Firm's Letterhead, the following statement signed, dated, and witnessed:
 - 1. "I hereby certify that to the best of my knowledge no asbestos-containing material was used as a building material during this project."

1.04 BUILDER'S RISK INSURANCE:

- A. The Contractor shall, during the term of this contract and as required in Article 11.2.5 of the General Conditions, maintain a Builder's Risk Policy in the amount of **100%** of the contract amount.

1.05 PAYMENT BOND:

- A. Contractor **shall provide a payment bond** in an amount equal to one hundred percent (100%) of the total contract price. Payment bond shall meet the requirements of Section 7.6 of the General Conditions.

1.06 SUBMISSION OF POST-BID INFORMATION:

- A. Submit the following information within ten days of receipt of Notice to Proceed.
 - 1. Designation of the work to be performed by the Contractor with his own forces.
 - 2. A list of Subcontractors.
 - 3. A list of manufacturers and suppliers.

1.07 CODES AND STANDARDS:

- A. All work shall meet or exceed **all current codes and standards**, all current rules and regulations and all applicable requirements of Federal, State and Local Authorities having jurisdiction, including the latest OSHA and Americans with Disabilities Act of 1990 amended to date.
- B. Meet and comply with the applicable portions of the latest editions of the following standards and codes:
 - 1. Indiana Construction Rules and Regulations.

2. Indiana Building Code
3. Indiana State Construction Industry Safety Code.
4. Indiana Electric Code.
5. Indiana plumbing Code.

1.08 WORKING HOURS:

- A. Contractor shall perform all construction activity on Monday thru Friday, excluding state holidays, between the hours of 7:00 a.m. and 5:00 p.m., unless previous arrangements are made with the Owner.
- B. All work performed at other times shall be only by approval from the Owner, confirmed in writing, and shall not constitute a change in the contract amount.

1.09 EXISTING SITE CONDITIONS:

- A. Data on the drawings pertaining to present conditions, dimensions, type of construction, obstructions on or near site, location of utilities, etc. have been obtained from sources believed reliable, but accuracy of such data is not guaranteed and is furnished solely for accommodation of the Contractor.
- B. The Contractor shall, prior to excavating, verify the location of all buried utilities, public and private including buried power lines and fiber optic cables.
 1. Due to the unknown schedule for the electrical and sanitary work under separate contracts, this work may already be installed.

1.10 CONSTRUCTION AND STORAGE AREA:

- A. The Contractor shall confine the construction operations and storage of materials within an area approved by the Owner or designated representative.

1.11 ROADWAY-SITE PROTECTION:

- A. The Contractor shall, at his expense, be responsible to repair any and all damage to the State property's roads and drainage structures caused by his equipment and/or personnel from project site. Areas to be repaired shall be done by using similar material and be approved by the Engineer.
- B. The ingress and egress to the project site shall be approved by the Designer.

1.12 SUBSTITUTIONS:

- A. Prior to Bid Opening request for substitutions shall be made in accordance with the requirements of paragraph 08 of the Instructions to Bidders and accordingly shall be requested at least 14 days prior to Bid Opening.
- B. Substitutions shall be made in accordance with the requirements of Article 7 of the General Conditions.

1.13 ARCHEOLOGICAL AND HISTORIC ARTIFACTS:

- A. If any objects are uncovered during construction which could possibly be of archeological or historic importance, this shall immediately be reported to the Owner. Work at that spot shall not proceed further until the Owner has evaluated the object and the area where it was found and approved continuation of the work.

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- B. If any construction time is lost due to such objects being found, an equal number of calendar days will be added to the project completion time.

1.14 SALVAGE RIGHTS:

- A. Unless stated otherwise in this specifications or on the plans, all equipment and materials removed as part of this project and not indicated for re-use on the project shall become the property of the Contractor and removed from the site.

1.15 SITE ACCESS PRIOR TO BIDDING:

- A. Bidders may obtain access to the construction site, for on-site inspection prior to bidding as indicated in the "Notice to Bidders."

Contact Personnel are:

- 1. Division of Fish & Wildlife DNR
Contact: Chad A Springer, Property Manager
Telephone: (812) 346-5596
Email: cspringer@dnr.IN.gov

Address: Crosley Fish & Wildlife Office
2010 South SR 3
North Vernon, IN 47265-7950

1.16 CONFINED SPACE ENTRY:

- A. Written permit is required prior to entry into areas meeting the OSHA definition of a "permit required confined space". Areas meeting this definition and which are known or presumed to require access for this project are as follows:
 - 1. There are no known permit required confined spaces on this project.
- B. Non-listing of a confined space requiring access does not relieve the Contractor of responsibility for obtaining a permit if required by OSHA Regulations.

END OF SECTION

SECTION 010200

ALLOWANCES

PART 1 - GENERAL:

1.01 REMEDIATION ALLOWANCE

- A. Contractor shall include an allowance of **\$5,000.00** in the Base Bid for remediation of unforeseen constraints. This amount shall be included as a separate item in the Schedule of Values adding up to the total bid price.
- B. Such constraints may include but are not necessarily limited to unforeseen subsurface conditions particular to this construction site; improperly recorded or unrecorded physical properties and conditions at the site; obstruction of or delays to reasonable work sequences by the Property, or the Owner; uncommon adverse weather or site conditions; and conflict within or omissions from the Contract Documents.
- C. All remediation work shall be proposed to and authorized by the Director of Public Works Division prior to execution, jointly documented by Contractor and Designer, and recorded in Contractor's As-built and Designer's Project Record Documents.
- D. **If any portion of the allowance is not used during the project, that portion will revert to the owner and will not be included in the contractor's final payment.**

END OF SECTION

SECTION 013100

CONSTRUCTION SCHEDULES

1.01 REQUIRED SCHEDULES:

- A. Progress Schedules (Bar Charts or CPM/PERT Charts) will be required.
- B. Content of Schedules:
 - 1. Provide complete sequence of construction by activity showing dates for beginning, and completion of, each element of construction.
 - 2. Identify work in separate phases, or other logically grouped activities.
 - 3. Horizontal time scale: Identify first day's work of each week.
 - 4. Scale and Spacing: To allow space for updating.

1.02 UPDATING:

- A. Show all changes occurring since previous submission of updated schedule.
- B. Indicate progress of each activity, show completion dates.
- C. Include:
 - 1. Major changes in scope.
 - 2. Activities modified since previous updating.
 - 3. Revised projections due to changes.
 - 4. Other identifiable changes.

1.03 SUBMITTALS:

- A. Submit initial schedules at the Pre-Construction Conference.

1.04 DISTRIBUTION:

- A. Distribute copies of reviewed schedules to:
 - 1. Job site file.
 - 2. Subcontractors.
 - 3. Other concerned parties.
- B. Instruct recipients to report any inability to comply, and provide detailed explanation, with suggested remedies.

END OF SECTION

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. The following DAPW Sections included in this Project Manual:
 - 1. DAPW 13 Contractor's Bid Form.
 - 2. DAPW 26 State Of Indiana -General Conditions.
 - 3. DAPW 33Standard Agreement for Construction Projects.

1.2 SUMMARY

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

1.3 SUBMITTAL PROCEDURES

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
- C. Processing Time: Allow time for submittal review, including time for resubmittals (if appears).
- D. Identification: Place a permanent label or title block on each paper submittal item; and for electronic submittals, a .pdf file containing the same identifying information as follows:
 - 1. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Name of subcontractor.
 - f. Name of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
- E. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- F. Resubmittals: Make resubmittals in same form as initial submittal.
- G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction.
- H. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS (NOT USED)

PART 3 –EXECUTION (NOT USED)

END OF SECTION 013300

SECTION 017100

SITE CLEAN UP

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Related Requirements Specified Elsewhere: Cleaning for specific products or work: Specification Section for that work.
- B. All cleaning shall be the responsibility of the General Contractor unless specifically noted otherwise.
- C. Maintain premises and public properties free from accumulations of waste, debris, and rubbish, caused by operations.
- D. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

1.02 REQUIREMENTS OF REGULATORY AGENCIES:

- A. Maintain project in accord with Occupational Safety & Health Act of 1970 as amended, in terms of cleanup.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on project site.
 - 2. Do not dispose of volatile or toxic wastes in storm or sanitary drains.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION:

- A. Execute cleaning to insure that grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down materials and rubbish to lay dust and prevent blowing dust.
- C. At reasonable intervals, during progress of work, clean site and public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish.
- E. Remove waste material, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

3.02 FINAL CLEANING:

- A. Remove all foreign materials from site area.
- B. Broom clean paved surfaces; rake clean other surfaces of grounds.
- C. Owner will assume responsibility for cleaning as of time designated on Certificate of Substantial Completion, Conditional Acceptance or partial occupancy, whichever is first for Owner's acceptance of Project or portion thereof.

END OF SECTION

SECTION 017200

PROJECT RECORD DOCUMENTS

1.01 GENERAL: Related requirements specified elsewhere:

- A. Shop drawings, project data, and samples: General Conditions.

1.02 MAINTENANCE OF DOCUMENTS:

- A. Contractor shall maintain at the job site one copy of the project drawings and specifications, including all addenda, shop drawings and change orders, and shall make said documents available for inspection by the Owner.
- B. Maintain and submit to the Designer a set of the project drawings showing all changes made during the course of the work and any differences between the existing facilities encountered and that shown on the drawings. These drawings must be submitted before the final payment.

1.03 OPERATION AND MAINTENANCE MANUAL:

- A. Submit to the Designer 2 copies of an "Operation and Maintenance Manual" for all architectural specialties and mechanical and electrical equipment. The manual shall contain the following information in addition to shop drawings.
 - 1. Index of contents of manual and reference to use and location of item.
 - 2. Complete operation data and maintenance instructions.
 - 3. Parts lists and diagrams with component part numbers.
 - 4. Sequence of operation for all control systems.
 - 5. Wiring Diagrams.
 - 6. Names and addresses of local distributors.
 - 7. Fully executed warranties.
- B. Contractor shall perform all maintenance and retain all responsibility for required maintenance prior to submittal of the "Operation and Maintenance Manuals" to the Designer.

END OF SECTION

SECTION 031000
CONCRETE FORM WORK

PART 1 - GENERAL:

1.01 RELATED WORK SPECIFIED ELSEWHERE:

- A. Filling, Excavating, Backfilling and Compacting: Section 315000
- B. Concrete Reinforcement: Section 032000.
- C. Cast-In-Place Concrete: Section 033000.

1.02 QUALITY ASSURANCE:

- A. Reference Standards:
 - 1. The American Concrete Institute Building Code; ACI.
- B. Allowable Tolerances for Wood and Metal FORM WORK:
 - 1. Vertical and Horizontal: not more than 3/8 inch in 10 feet.

PART 2 - PRODUCTS

2.01 FORMS FOR CONCEALED CONCRETE SURFACES:

- A. Standard wood or metal forms meeting requirements of ACI- 318.
- B. Bank forms provided soil is firm and will hold a true shape.

2.02 FORMS FOR EXPOSED SURFACES:

- A. 5/8 inch or 3/4 inch plywood meeting requirements of National Bureau Standards, Product Standard PS 1, Article 3.6.4, Class II.

2.03 FORM OIL:

- A. Shall be non-staining.
- B. Shall not impede curing of concrete.
- C. Shall not cause softening of concrete.
- D. Shall be compatible with color tinting admixtures when colored concrete is required.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. General:

1. Forms: Sizes shown on Drawing and braced or tied to maintain shape and position.
2. Joints: tight to prevent leakage of mortar.
3. Form Construction and Assembly: Prevent concrete damage when removed.
4. Abutting Edges: Plywood forms shall be attached to a single framing member with 6d box nails 8 inches o.c. Steel forms shall butt tightly together and securely anchored to prevent spreading.

B. Bank Forms:

1. Increase dimensions shown on Drawings 2 inches both ways.
2. Hand excavated last 6 inches all dimensions.
3. Final trimming shall be performed same day concrete is placed.
4. If bank forms fail to hold a true shape, wood or metal forms shall be used to maintain proper size of members.

3.02 REMOVAL:

- A. Remove forms in accordance with ACI-318.
- B. Notify Designer before removing forms.

3.03 PROTECTION:

- A. Protect surfaces and corners from damage or abrasion.

END OF SECTION

SECTION 032000

CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. Steel reinforcement for cast-in-place concrete.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Concrete Form work: Section 031000.
- B. Cast-in-Place Concrete: Section 033000.
- C. Filling, Excavating, Backfilling and Compacting: Section 315000.

1.03 REFERENCE STANDARDS:

- A. ACI American Concrete Institute.
 - 1. ACI 301 - Structural Concrete for Building.
 - 2. ACI 318 - Building code requirements for reinforced concrete.
 - 3. ACI 347 - Recommended practice for concrete Form work.
- B. ASTM - American Society for Testing and Materials.
- C. INDOH - Indiana Department of Highways Standard Specifications.
- D. All codes and specifications referenced herein shall refer to the current codes and specification, including amendments, revisions, and addenda, in effect at the time of bid submittal.

1.04 ALLOWABLE TOLERANCES:

- A. All reinforcing steel shall be placed with-in 3/8 inch of the locations shown on the drawings.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. All reinforcing steel shall be delivered in bundles, crates, assemblies, or rolls separated by shape, size and length of reinforcing steel.
- B. All bundles, shapes, assemblies and rolls shall be clearly marked indicating size, shape, and length of reinforcing steel.
- C. All steel shall be stored in crates, on wood blocking, or on concrete blocking to prevent contamination from dirt, mud, ponded water, grease and oils.

1.06 SUBMITTALS:

- A. Submit fabrication and installation shop drawings for approval at least 14 days before reinforcing installation.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Deformed Reinforcement:

1. ASTM A-615 Grade 60: Billet steel bars
2. ASTM A-616 Grade 60: Rail steel bars
3. ASTM A-617 Grade 60: Axle steel bars

B. Welded Wire Fabric:

1. ASTM A-185 Grade 60: Welded steel wire fabric.
2. 6x6 W1.4xW1.4, sheets only.

2.02 FABRICATION:

A. ACI 318 for cleaning and bending of reinforcement.

B. Splice length shall be in accordance with ACI 318 unless otherwise indicated on the drawings.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Steel Bar Reinforcement:

1. Place in positions and spacing indicated on the plans
2. Provide splices in locations shown on the plans.
3. Securely fasten and support bars to prevent displacement before, during, and after concrete placement.

B. Wire Fabric:

1. Place in middle cross-sectional third of concrete slabs.
2. Place in longest practical lengths.
3. Splices:
 - a. Provide for one full mesh width plus 2 inches.
 - b. Offset splices.
 - c. Tie splices to prevent displacement.
 - d. Selvage edge splices one full mesh.
4. Provide steel or concrete supports to prevent displacement before, during, and after concrete placement.

3.02 CLEANING:

- A. Clean all reinforcement of dirt, mud, ice, oil, grease, loose rust and other deleterious material that will prevent proper bonding of concrete to steel.

END OF SECTION

SECTION 033000

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. All cast-in-place concrete.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

- A. Filling, Excavating, backfilling and compacting: Section 02221.
- B. Concrete Form Work: Section 03100.
- C. Concrete Reinforcement: Section 03200.

1.03 REFERENCE STANDARDS:

- A. ACI - American Concrete Institute:
 - 1. ACI 301 - Structural concrete for building.
 - 2. ACI 305 - Hot weather concreting.
 - 3. ACI 306 - Cold weather concreting.
 - 4. ACI 318 - Building code requirements for reinforced concrete.
- B. ASTM -American Society for Testing and Materials.
- C. INDOT - Indiana Department of Transportation Standard Specifications.
- D. All codes and specifications referenced herein shall refer to the current codes and specification, including amendments, revisions, and addenda, in effect at the time of bid submittal.

1.04 SUBMITTALS:

- A. Concrete Delivery Tickets
 - 1. THE CONTRACTOR SHALL SAVE ALL CONCRETE DELIVERY TICKETS AND DELIVER SUCH TICKETS TO THE DESIGNER OR HIS REPRESENTATIVE WHEN REQUESTED. FAILURE TO PROVIDE DELIVERY TICKETS AS SPECIFIED BELOW SHALL BE CAUSE FOR REJECTION OF CONCRETE WORK.
 - 2. Concrete delivery tickets for each batch of delivered concrete shall include the following information in accordance with ASTM C-94. All quantities shall be the total quantity batched in the delivery vehicle.
 - a. Quantity of cement.
 - b. Quantity of fine aggregate.
 - c. Quantity of coarse aggregate.
 - d. Quantity of each admixture.
 - e. Initials of producers representative.
 - f. Sufficient information to determine the total quantity of free water.
- B. Concrete mix designs shall be submitted to the designer at least 15 days prior to planned use. Submittals shall include the following information:
 - 1. Source of cement
 - 2. Source of aggregates
 - 3. Brand of each admixture
- C. For concrete expected to be placed between May 1 and September 30, concrete mix designs shall be submitted for additional hot weather concreting. These shall outline any special provisions for controlling concrete temperature, aggregate moisture content, and set time. This shall be submitted 15 days prior to planned use for approval by the Designer.
- D. Submit concrete compression test results to Designer. Tests shall be as specified in Part 3 Execution.

1.05 ALLOWABLE TOLERANCES: MAXIMUM FLOOR SLOPE SHALL NOT EXCEED 2%.

- A. Plus or minus 1/4 inch in 10 feet for all finishes and walls.
- B. Plus or minus 1/4 inch maximum deviation from required elevations except as noted below:
 - 1. All transitions between adjacent slabs, pavements, and entries shall be smooth as to prevent tripping hazards.
 - 2. Slabs that are to positively drain such as pitched floors, walks, and pavements shall not contain low spots which pond water.

1.06 PRODUCT DELIVERY AND STORAGE:

- A. Deliver all concrete in ready mix vehicles in accordance to ASTM C-94.
- B. Handle concrete rapidly from mixer to form.
- C. Use buckets, chutes, troughs, conveyors, and pipes to handle concrete without segregation. Concrete shall not be permitted to drop more than 12 inches.

1.07 CONTRACTOR'S OPTIONS

- A. 6 inch thick sidewalks and exterior slabs constructed on prepared subgrade may be substituted for 4 inch thick sidewalks and exterior slabs constructed on 4 inches of granular fill.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Portland Cement: ASTM C-150, Type I or Type III.
- B. Air-entraining Admixture: ASTM C-260.
- C. Fine Aggregate
 - 1. ASTM C-33 or INDOT 903.02 Class A.
 - 2. Natural sand composed of clean, sound, hard, durable particles.
 - 3. Graded per INDOT 903.01(g) size #23.
- D. Coarse Aggregate:
 - 1. ASTM C-33 or INDOT 903.02 Class A.
 - 2. Crushed limestone, crushed dolomite, crushed gravel, or uncrushed gravel.
 - 3. 1 inch maximum aggregate size graded per INDOT 903.02 (e) size #8.
 - 4. 12 inch maximum aggregate size graded per INDOT 903.02 (e) size #5.
- E. Admixtures:
 - 1. ASTM C-494 or ASTM C-1017.
 - 2. All brands of admixtures shall be submitted for approval by the designer.

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- F. Mixing Water: Clean, potable water free of oils, acids, vegetable matter, alkalies, and other harmful impurities.
- G. Expansion Joint Filler:
1. Foam or sponge fillers:
 - a. Pre-molded, resilient, compressible, non-extruding and non-staining.
 - b. Polyethylene, polyurethane, neoprene, or polyvinyl chloride.
 - c. Closed-cell construction with 25% compressibility at 15 psi distributed pressure.
 - d. Compatible with joint sealant.
 2. Cane Fiber Filler:
 - a. Pre-molded board product.
 - b. Asphalt impregnated.
 - c. ASTM D-1751.
 - d. Non-extruding.
 3. Cork Filler:
 - a. ASTM D-1752.
 - b. Manufactured from granulated cork particles bonded in resin.
 - c. Non-extruding.
 - d. Compatible with joint sealant.
- H. Joint Sealant:
1. One part, neutral cure, low modulus silicone.
 2. ASTM C-920 type S, NS, Class 25.
 3. Compatible with concrete and limestone substrates without primer.
 4. Complies with Federal Specification TT-S-00227E, Type 1, Class A, + 50%, -50% joint movement, minimum 15 shore A hardness.
 5. Color shall be gray-limestone tint.
- I. Concrete Curing Compound:
1. Interior Concrete: ASTM C-309 Type 1, clear or translucent.
 2. Exterior Concrete: ASTM C-309 Type 1, clear or translucent.
- J. Concrete Hardener and Dustproofer:
1. Shall be magnesium/zinc fluor silicate or sodium silicate liquid hardener which will chemically react with calcium carbonate and free lime in the concrete.
 2. Acceptable Products are as Follows:
 - a. Lapidolith by Sonneborn
 - b. Sciolith by Chem Masters
 - c. Permalith by L.M. Scofield Company
 - d. Other equal brands
- K. Vapor Barrier:
1. 10 mil (0.01 inch) polyethylene sheeting.
 2. All punctures and holes shall be covered by additional sheets with at least 12" overlap on all edges. Tape all seams.

L. Fibers:

1. 100% virgin polypropylene, polyester or nylon fibers.
2. Collated and fibrillated fiber bundles.
3. 3/4" inch in length.
4. Polyester fibers shall be coated to not react with cement.

2.02 CONCRETE MIX:

- A. Concrete shall be batched and delivered in accordance with ASTM C-94 and ACI-318 chapter 4 except as more detailed herein.
- B. Concrete shall be proportioned by a water/cement ratio method based upon requirements for a plastic and workable mix. Maximum water to cement ratio by weight shall equal 0.40 based upon saturated, surface dry aggregates.
- C. Minimum compressive strength at 28 days: 4000 psi.
- D. Permissible slumps are as follows:
 1. 4 inches to 7 inches where water reducing or super- plasticizing admixtures are used.
 2. 1 inch to 2 inches where water reducing or super- plasticizing admixture are NOT used.
- E. Minimum cement contents are as follows:
 1. 1 inch maximum aggregate size: 475 pounds of cement per cubic yard.
 2. 12 inch maximum aggregate size: 425 pounds of cement per cubic yard.
- F. Air Entrainment: 5% to 7% by volume.
- G. Concrete mix shall contain 12 pounds of polypropylene fibers, 1 pound of polyester fibers, or 1 pound of nylon fibers per cubic yard of concrete.

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Notify Designer at least 48 hours before scheduled concrete placement.
- B. Tamp all trench bottoms and slab subbases until firm. Compaction shall be as shown on the drawings or otherwise shown in these specifications.
- C. Inspect trench bottoms, slab subbases, and forms for proper expansion joints, and proper placement of embedded items.
- D. Do not place concrete until bearing surfaces under wall or column footings have been inspected and approved by the Designer or his representative.
- E. Remove all ice, debris, and deleterious material from forms.
- F. Remove all oils, grease, ice, debris, and other deleterious matter from reinforcement.
- G. Remove all free water from the area of concrete placement unless tremie is used. The use of a tremie shall

be approved in writing by the Designer prior to concrete placement.

3.02 CONCRETE PLACEMENT:

- A. Moisten all forms, including earth, until surfaces are moist, but not wet. Remove all free water.
- B. Conveying equipment, including scheduled truck deliveries, shall be capable of providing a supply of concrete at the site of placement without separation of ingredients and without interruptions sufficient to permit the loss of plasticity between successive placement.
- C. Concrete shall be deposited as nearly as practicable to its final position to avoid segregation due to re-handling or flowing.
- D. Concreting shall be carried on at such a rate that at all times the concrete is plastic and flows readily into the forms and around the reinforcement.
- E. No water shall be added to the concrete at the job site. Concrete which can not be placed and finished shall be removed from the project site at no cost to the Owner.
- F. After concreting is started, it shall be carried on as a continuous operation until placing of a panel or section as defined by its boundaries or predetermined joints is completed.
- G. All concrete shall be thoroughly consolidated by suitable means, such as spading, rodding and vibrating, during placement. Concrete shall be thoroughly worked around reinforcement, around embedded fixtures, and into corners of forms. Concrete shall not be over consolidated as to cause segregation or bleeding.
- H. When placing concrete on sloped surfaces, placement shall begin at the lower end of the structure and proceed uphill with each successive placement thoroughly consolidated with the previous placement.

3.03 JOINTING:

- A. Concrete contraction joints shall be installed in all slabs pavements, and walks.
- B. Concrete contraction joints shall be constructed to the following depths:
 - 1. 4 inch thick slabs: 1 inch depth.
 - 2. 6 inch thick slabs: 2 inch depth.
 - 3. 8 inch thick slabs: 2 inch depth.
 - 4. Curbs: 2 depth.
- C. Concrete contracting joints may be formed by tooling, sawing, insertion and removal of joint formers, or insertion of stay-in-place crack inducers.
 - 1. Tooled joints shall be formed with clean tools having a maximum 1/16 inch radius at the joint bottom.
 - 2. Sawn joints shall be 1/8 inch wide.
 - 3. Insertion devices shall be a maximum of 1/8" wide with a pointed bottom.
 - 4. Crack inducers shall be constructed of polyvinyl chloride with a maximum width of 1/8 inch.
- D. Expansion joints shall be installed at all locations indicated on the drawings and at all columns, piers, posts, manholes and walls. The maximum spacing of expansion joints in concrete floors and slabs shall not exceed the maximum allowed in the Indiana Building Code and the American Concrete Institute Standards.

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1. All Expansion Joints in Concrete Walks and Connections of Concrete Walks and Entrance Slabs shall have a minimum of 3 evenly spaced 5/8" diameter by 8 inch long dowels through the joint unless otherwise indicated. One end of the dowel shall be sleeved or wrapped to prevent the concrete from bonding to the dowel.

- E. Expansion joint widths shall be as indicated on the drawings with a minimum width of 2 inch.
- F. Expansion joints shall be sealed to prevent the intrusion of dirt and moisture. Sealant shall be compatible with joint filler, and all surfaces shall be primed according to manufacturer's recommendations.
- G. All construction joints shall be installed as expansion joints

3.04 CURING:

- A. Start curing immediately after finishing and as soon as concrete is sufficiently stiff to not be damaged by curing covers.
- B. Cure concrete for a minimum of seven days.
- C. Protect concrete from heavy rain, mechanical injury, injurious action of sun, and injurious action of wind.
- D. Do not use dry sand or cement to take up excess of free water.
- E. All concrete on this project shall be cured by either the wet method or with curing compounds.
- F. Wet Curing:
 1. Cover exposed concrete surfaces with clean, moist burlap sheets, with clean, moist blankets, or with clean plastic sheeting.
 2. Support edges of burlap, blankets, or plastic sheets to keep from blowing for the entire curing period.
 3. Keep burlap or blankets continuously moist with the use of foggers, sprayers, misters, or sprinklers.
- G. Membrane Curing:
 1. Apply curing compound with pressure spraying equipment in sufficient thickness as recommended by the manufacturer to form an effective water seal.

3.05 HOT WEATHER CONCRETING:

- A. Hot weather concreting provisions shall be in effect whenever the air temperature is above 80° or above 75° F. and rising, or whenever the concrete temperature is above 80° F.
- B. Concrete mixes for hot weather concreting shall include set retarding admixtures, water reducing and set retarding admixtures, or high range water reducing and set retarding admixtures.
- C. In addition to the information required in 1.04 (A), delivery tickets shall include the following information:
 1. Time of batching.
 2. Time of arrival at the job site.
 3. Time of last concrete placement.
 4. Temperature at time of first delivery.
 5. Moisture contents of both coarse and fine aggregates.

- D. No concrete shall be accepted with a temperature over 99° F. at delivery to the job site.
- E. Concrete shall be placed in accordance to ACI-305.
- F. Protect concrete from rapid moisture evaporation before and after finishing by providing wind breaks, by covering with polyethylene sheeting, or by water misting.

3.06 COLD WEATHER CONCRETING:

- A. Cold weather concreting provisions shall be in effect whenever the temperature is below 40° F. or below 50° F. and falling.
- B. Concrete shall be placed in accordance with ACI-306.
- C. Methods of heating materials and protecting concrete shall be approved by the Designer prior to placing concrete.
- D. The use of salts, chemicals or foreign materials mixed with the concrete to prevent freezing is prohibited.
- E. The Contractor shall provide blankets, insulation and protective coverings to insure concrete temperatures do not fall below 70° F. for 3 days after placing, or do not fall below 50° F. for 5 days after placing.

3.07 FIELD QUALITY CONTROL TESTS:

- A. Contractor shall have copies of ASTM C-31, ASTM C-39, and ASTM C-145 at the job site. Personnel shall be familiar with sampling and testing requirements of these standards.
- B. Concrete Compression Tests:
 - 1. Make test cylinders and test in accordance with ASTM C- 31 and ASTM C-39.
 - 2. Testing shall be done by an independent laboratory approved by the Designer. Cylinders shall be delivered to the laboratory within 24 hours of sampling.
 - 3. Provide one set of three cylinders for each 27 cubic yards of concrete placed in one day. Provide a minimum of two sets of three cylinders for each day of concrete placement.
 - 4. One cylinder of each set shall be broken at 7 days, one cylinder broken at 28 days, and one cylinder reserved.
 - 5. Contractor shall be responsible for payment of such tests and shall furnish necessary equipment.
- C. Concrete Slump Tests:
 - 1. Make tests at the time and place of concrete placement and in accordance with ASTM C-143.
 - 2. Make test periodically and as often in the opinion of the Designer or his representative when a change in consistency of the concrete is noted.
 - 3. During hot weather, each batch of concrete shall be tested.
 - 4. The Contractor shall provide slump cone, rods, and other necessary equipment to perform the test.
- D. Temperature Tests:
 - 1. The temperature of concrete for each slump test shall be required.

3.08 FINISHING:

- A. All concrete floor surfaces shall receive Concrete Hardener and Dust Proofing. Application shall be in accordance with manufacturer's printed instructions.
- B. Interior slabs shall be finished with a wood float finish.
- C. Exterior walks and slabs shall be finished with a light broom finish, or a wood float finish.
- D. Brooming shall remove all tooling marks left by edgers or jointers.
- E. All exposed edges shall be tooled to a 3 inch radius.
- F. Curbs and exposed wall surfaces shall have all fine and irregular projections removed. Form tie holes and other cavities shall be saturated with water and filled with a mortar of fine aggregate, cement, and water.
- G. Ramps (slopes greater than 1:20 or 5% gradient) shall be tinned with 0.09 inch to 0.013 inch wide grooves 0.12 to 0.19 inches deep at approximate 3/4 inch centers. Grooves shall be transverse to the direction of the ramp.
- H. All areas which have a drain shall have the concrete surfaces sloped as indicated on the drawings, but not less than 1/8" per foot and not more than 1:50
- I. All areas with drains shall have positive drainage with out ponding. All areas which have ponding shall be removed and replaced with new concrete.

END OF SECTION

SECTION 072100 - THERMAL INSULATION AND MOISTURE CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Foam-plastic board insulation.
2. Glass-fiber blanket insulation.
3. Attic Insulation Baffles

B. Related Sections include following:

1. Division 03 Section "Cast in Place Concrete".
2. Division 09 Section(s) "**Gypsum Board**"

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated, including product test reports.

PART 2 - PRODUCTS

2.1 FOAM-PLASTIC BOARD INSULATION

- A. Extruded-Polystyrene Board Insulation: ASTM C578, with maximum flame-spread and smoke-developed indexes of 25 and 450, respectively, per ASTM E84.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. DiversiFoam Products.
 - b. Dow Chemical Company (The).
 - c. Owens Corning.
 - d. Pactiv Building Products.
2. **Type IV, 25 psi** (173 kPa) – adjacent foundation

2.2 GLASS-FIBER BLANKET INSULATION

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

1. CertainTeed Corporation.
2. Johns Manville.
3. Knauf Insulation.

4. Owens Corning.

- B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.3 SPRAY POLYURETHANE FOAM INSULATION

- A. Closed-Cell Polyurethane Foam Insulation: ASTM C 1029, Type II, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. BASF Corporation.
 - b. Dow Chemical Company (The).
 - c. Henry Company.
2. Minimum density of 1.5 lb/cu. ft., thermal resistivity of 6.2 deg F x h x sq. ft./Btu x in. at 75 deg F.

2.4 ATTIC INSULATION BAFFLES

- A. Manufacturer ADO Products, or equal

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.
- E. Miscellaneous Voids: Install Spray Polyurethane Insulation according to manufacturer's written instructions.

END OF SECTION 072100

SECTION 074643 - COMPOSITION PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Engineered wood panels
2. Trim
3. Flashing
4. Sealant

1.2 COORDINATION

- A. Coordinate installation with flashings, trims, sealants, and adjoining construction to ensure proper sequencing for weathertight performance.
- B. Coordinate with finish painting to be applied over primed panels. Comply with coating manufacturer's written requirements.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Engineered wood panels.

- B. Samples: For each exposed product and texture specified, 12 inches long x width as required to show two (2) grooves.

1.4 INFORMATIONAL SUBMITTALS

- A. Manufacturer Certificates: Signed by manufacturer certifying that engineered wood cladding complies with requirements specified.

1. Submit evidence of meeting performance requirements.

- B. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for engineered wood panels.

- C. Research/Evaluation Reports: For each type of engineered wood cladding required, from ICC-ES.

- D. Sample Warranty: For special warranty (Reference 1.8).

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1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of product.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.
- B. Store products in manufacturer's labeled packaging until ready for installation. Protect from damage.
- C. Store products off the ground, on a flat surface, and under a roof or separate waterproof covering.

1.7 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's limits.

1.8 WARRANTY

- A. Manufacturer's Standard Warranty: Transferable limited warranty.
 - 1. Warranty Period: Fifty (50) years prorated from date of Substantial Completion.
- B. Special Warranty: Manufacturer agrees to repair or replace products that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including buckling.
 - b. Deterioration of materials beyond normal weathering.
 - c. Fungal degradation.
 - d. Cracking, peeling, separating, chipping, flaking, or rupturing of resin-impregnated surface overlay.
 - 2. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide one of the following:
 - 1. LP Building Products; LP SmartSide.

2. Or equal as approved by Architect prior to bidding.

B. Source Limitations: Obtain products, including related accessories, from single source from single manufacturer.

2.2 ENGINEERED WOOD PANELS

A. Strand Panel Siding: 190 Series

1. Description: Exterior-grade phenolic resin-saturated paper overlay laminated to EPA-registered zinc-borate-preserved-treated engineered wood siding; structurally rated; AWWPA compliant; exposed edges sealed for moisture resistance; acrylic primed for painting.
2. Fire Rating: 1 hour per ASTM E119; ASTM E 84 Class C flamespread.
3. Texture: Embossed rough-sawn Cedar.
4. Grooves: Channel grooves 3/8 inch, 4 inches o.c.
5. Nominal Thickness: 0.530 inch minimum
6. Length: 10 feet. Layout panels to minimize number of joints and as indicated on drawings.
7. Board Width: 48 inches (1220 mm) nominal.
8. Edges: Shiplap.

2.3 TRIM

A. Provide painted hardwood trim in sizes and profiles as shown and indicated to complete the work.

2.4 ACCESSORIES

- A. Fasteners: ASTM A153, hot-dip galvanized or stainless steel nails with 0.113 inch diameter shank and 0.27 inch diameter head, long enough to achieve 1 1-1/2 inch penetration into structural sheathing and framing
- B. Flashing: Pre-finished (Kynar) aluminum panels in profiles as indicated.
- C. Sealant: Master Seal NP 150 or equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify location and condition of existing framing for support and anchorage of engineered wood soffit panels to permit proper installation.

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3.2 PREPARATION

- A. Prepare existing substrates using methods recommended in writing by the cladding manufacturer.
- B. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected.
- C. Commencement of installation constitutes acceptance of conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
 - 1. Install in accordance with conditions stated in ICC-ES ESR-1301.
 - 2. Properly space joints to allow for equilibration.
- B. Do not install to green wood or crooked structural framing. Do not install over rain soaked or buckled materials. Do not install if excessive moisture is present, including that from curing concrete.
- C. Do not cut cladding to fabricate trim; use hardwood trim components.
- D. After installation, seal and flash joints except the overlapping horizontal lap joints. Seal around penetrations. Paint exposed cut edges.

3.4 ADJUSTING AND CLEANING

- A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.
- B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products.

END OF SECTION

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Interior standard steel doors and frames.
 - 2. Exterior standard steel doors and frames.
- B. Related Requirements:
 - 1. Section 087000 "Finishing Hardware"

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or ANSI/SDI A250.8.

1.4 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, temperature-rise ratings, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door type.
 - 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.

4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
7. Details of anchorages, joints, field splices, and connections.
8. Details of accessories.
9. Details of moldings, removable stops, and glazing.

- C. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of thermally rated door assemblies for tests performed by a qualified testing agency indicating compliance with performance requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum 4-inch high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Ceco Door; ASSA ABLOY.
 2. Curries Company; ASSA ABLOY.
 3. Steelcraft; an Allegion brand.

2.2 PERFORMANCE REQUIREMENTS

- A. Thermally Rated Door Assemblies: Provide door assemblies with U-factor of not more than 0.38 deg Btu/F x h x sq. ft. when tested according to ASTM C518.

2.3 INTERIOR STANDARD STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B.
 - 1. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches
 - c. Face: steel sheet, minimum thickness of 0.042 inch
 - d. Edge Construction: Model 1, Full Flush
 - e. Edge Bevel: Provide manufacturer's standard beveled or square edges
 - f. Core: Manufacturer's standard
 - 2. Frames:
 - a. Materials: Steel sheet, minimum thickness of 0.053 inch
 - b. Construction: Knocked down
 - 3. Exposed Finish: Prime

2.4 EXTERIOR STANDARD STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Extra-Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 3; ANSI/SDI A250.4, Level A.
 - 1. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches
 - c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A60 coating.
 - d. Edge Construction: Model 2, Seamless
 - e. Edge Bevel: Provide manufacturer's standard beveled or square edges
 - f. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
 - g. Bottom Edges: Close bottom edges of doors where required for attachment of weather stripping with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
 - h. Core: Manufacturer's standard
 - 2. Frames:

- a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A60 coating.
 - b. Construction: Full profile welded
3. Exposed Finish: Prime

2.5 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet.
3. Postinstalled Expansion Anchor: Minimum 3/8-inch diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at top of underlayment.

D. Material: ASTM A879/A879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized according to ASTM A153/A153M, Class B.

2.6 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153/A153M.

E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

F. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-

developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.

- G. Glazing: Comply with requirements in Section 088000 "Glazing."

2.7 FABRICATION

- A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
- B. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to ANSI/SDI A250.6, the Door Hardware Schedule, and templates.
1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.
- C. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with mitered hairline joints.
1. Provide stops and moldings flush with face of door, and with beveled stops unless otherwise indicated.
 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames. Provide loose stops and moldings on inside of hollow-metal doors and frames.
 4. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.
 5. Provide stops for installation with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

2.8 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.
- B. Hollow-Metal Frames: Comply with ANSI/SDI A250.11
 - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - b. Install frames with removable stops located on secure side of opening.
 - 2. Fire-Rated Openings: Install frames according to NFPA 80.
 - 3. Floor Anchors: Secure with postinstalled expansion anchors.
 - 4. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors.
 - 5. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- C. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.
 - 1. Non-Fire-Rated Steel Doors: Comply with ANSI/SDI A250.8
- D. Glazing: Comply with installation requirements in hollow-metal manufacturer's written instructions.

3.3 FIELD QUALITY CONTROL

- A. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- B. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

3.4 REPAIR

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

END OF SECTION 081113

SECTION 087000

FINISHING HARDWARE

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Hardware Requirements:

1. Provide locks and other devices called for in the schedule.
2. The schedule is not intended to be entirely inclusive but is furnished to assist Contractor in determining the extent and quality of hardware required. Provide all related items and accessories as required for a fully functional system.
3. Hardware items not specifically mentioned shall be supplied in equal quality and type indicated in the schedule.

1.02 SUBMITTALS:

- A. Submit complete schedule showing factory numbers and sizes for approval.
- B. Furnish catalog cuts, drawings and other descriptive hardware data as required.
- C. Submit evidence of purchase of permanent **Stanley Security Solutions Best Lock Corporation or Marshall Best Security Corporation** cores for all locksets, cylinders, and padlocks.

1.03 QUALITY ASSURANCE:

A. Applicable Federal Specifications:

1. Hardware types listed shall meet the requirements of the applicable provisions of the following Federal Specifications:
 - a. Hinges FF-H-00116d
 - b. Locks and Door Trim FF-H-00106c/gen.
 - c. Door closer FF-H-121d
 - d. Door stops and bumpers FF-H-111a

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Deliver hardware individually packed and labeled with item number corresponding to approved schedule.

1.05 JOB CONDITIONS:

- A. Furnish correct hardware to fit the door and frame conditions, with special attention to threshold heights.

1.06 SUBSTITUTIONS:

- A. Trade names and catalog numbers of a particular manufacturer are given as a means of describing type, materials, strength, design, quality, weight, mechanical construction and operation of hardware items and requirements to which such hardware shall conform.
- B. Hardware of other manufacturers may be substituted upon written approval of the Designer with the following exceptions:
 - 1. All keyed locks shall have cores manufactured by **Stanley Security Solutions Best Lock Corporation, Indianapolis, Indiana, or Marshall Best Security Corporation.**

1.07 SPECIAL KEYING REQUIREMENTS:

- A. Construction and permanent cores and temporary and permanent keys for all locks.
 - 1. Construction cores will remain the property of the Stanley Security Solution Best Lock Corporation, (or Marshall Best Security Corporation) and will be exchanged by the Owner for permanent cores master-keyed to the Owners system.
 - 2. Control key and operating keys for construction shall not be part of Owner's permanent master-key system. Control key and one (1) operating key shall be furnished to Owner prior to occupancy.
 - 3. Contractor shall, at no additional charge, furnish credit to the Owner direct from Best Lock Corporation factory or sales representative the following items:
 - a. One (1) permanent core keyed lock.
 - b. Two (2) keys per permanent core.
 - 4. **All keyed locks** shall be furnished with construction cores. **All exterior locks** shall be furnished with **brass** construction cores.

1.08 GUARANTEE:

- A. Guarantee in writing that hardware furnished is free from defects in material and workmanship. Guarantee shall be for a period of one year from date of final acceptance.
- B. Agree to repair or replace defective hardware during the guarantee period at no additional cost to Owner.

PART 2 - PRODUCTS

2.01 FABRICATION:

- A. General:
 - 1. All hardware shall be of best manufacture in quality, finish and design free from defects.
 - 2. Finish for hardware: U.S. 26D unless otherwise indicated.

- B. Locksets: as specified.
 - 1. Back set: 2 3/4 inches.
- C. Door closer: comply with manufacturer's recommendations for individual door size and location.
 - 1. Closer Bodies: cast iron, with malleable iron arms.
 - 2. Provide parallel arms, corner brackets and drop plates as required.
 - 3. Where wall conditions permit, all door closer shall swing 180 degrees.
 - 4. Accessible Entrance Closer shall meet American's with Disabilities Act of 1990 amended to date.
- D. Butts-Hinges:
 - 1. Full mortise type, 4 1/2 inches by 4 1/2 inches, unless otherwise indicated.
 - 2. Supply butts of sufficient width to swing 180 degrees or to nearest wall.
 - 3. All exterior doors, which swing out, shall have non-removable hinge pins.
- E. Stops and Holders: dome type, cast bronze, with rubber cushions.
- F. Anchors for thresholds and door stops: lead machine screw anchors. Rawl plugs are not acceptable.

PART 3 - EXECUTION

3.01 INSPECTION:

- A. Examine the drawings, projections of trim and rebates to permit door to free swing 180 degrees or to the closest adjacent wall.
- B. Check thickness of doors and verify sizes of all hardware, for proper fit and performance.

3.02 INSTALLATION:

- A. All hardware shall be installed by mechanics skilled in the application of institutional grade hardware.
- B. All instruction sheets and installation details, which are packed with the hardware, shall be read and understood before an attempt is made to install the hardware.
- C. Install finishing hardware without marring adjacent work. After fitting, remove until painting is completed, then reinstall.
- D. Thresholds:
 - 1. Bedded in synthetic rubber sealant.
 - 2. Fasten with lead machine screw anchors.
 - 3. Shall not be pre-drilled.
 - 4. Accessible Entrance Thresholds shall meet American's with Disabilities Act of 1990 amended to date.

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- E. After installation, all templates, instruction sheets, and installation details, shall be placed in a file folder to be turned over to Owner when building is accepted.

3.03 ADJUSTMENT:

- A. Examine hardware at work completion.
- B. Test, oil, grease, ease, and adjust hardware for perfect operation.

3.04 HARDWARE CATALOGS:

- A. Hardware listed in schedule is taken from the catalogs of the following manufacturers:
- | | |
|-----------------------------|-------------------------------|
| 1. Butts | Stanley |
| 2. Continuous Hinges | Roton |
| 3. Locks and Door Trims | Stanley Best (S. Best) |
| 4. Door closers | LCN |
| 5. Stop Bumpers | IVES |
| 6. Flush Bolts | IVES |
| 7. Door Pulls / Push Plates | IVES |
| 8. Thresholds | National Guard Products (NGP) |
| 9. Door Bottoms & Seals | National Guard Products (NGP) |
| 10. Holders/Stops | Glynn Johnson (GJ) |
| 11. Hinge | Hager |

3.05 HARDWARE SCHEDULE:

Hardware Set #1 (Entrance)

Door # 01-A

Each Opening to Receive:

Qty	Type	Description	Finish
3	Butts - FBB191 NRP 4 ½ x 4 ½	Stanley	32D
1	Lockset - 93K7AB15K - STK	S. Best	626AM
1	Closer - 4111 DEL (Cush-N-Stop)	LCN	689
1	Threshold - 427	NGP	Mill
1	Door Bottom Seal -113NA	NGP	Anodized
1 set	Weather-strip - 137SA	NGP	Anodized
1	Door Drip 16SS	NGP	US32D

Hardware Set #2 (Office)

Door # 02-A, 04-A, 05-A, 06-A

Each Opening to Receive:

Qty	Type	Description	Finish
1½ pr.	Butts - FBB179 4 ½ x 4 ½	Stanley	32D
1 ea.	Lockset - 93K7B15K - STK	S. Best	626AM
1 ea.	Wall Bumper - 407CCV	IVES	US26D

Hardware Set #3 (Existing Doors to Remain)

Door # 04-B, 05-B

Each Opening to Receive:

Qty	Type	Description	Finish
1 set	Weather-strip - 137SA	NGP	Anodized
1	Door Bottom Seal -113NA	NGP	Anodized
1	Threshold	NGP	Anodized

Note: Type and size as required to suit existing conditions. Maximum ½” height and as required to accommodate door bottom.

Hardware Set #4 (Furnace, Mop Sink, & IT Closets)

Door # 07-A, 07-B, 08-B

Each Opening to Receive:

Qty	Type	Description	Finish
1 ea.	BF30 Series BiFold Hardware	Stanley	Standard

Note: Provide steel track, top and bottom pivots, guide wheels, aligners, hinges, snuggers, jamb brackets, door knobs (type as selected by Architect), fasteners, and all related hardware, accessories, and options as required to suit project conditions for a complete and fully functional system.

Hardware Set #5 (Restroom)

Door # 08-A

Each Opening to Receive:

Qty	Type	Description	Finish
1½ pr.	Butts - FBB179 4 ½ x 4 ½	Stanley	32D
1 ea.	Lockset - 93K0L15K - STK	S. Best	626AM
1 ea.	Hinge Pin Bumper - 212	Hager	26D

Note: Provide adjustable hinge pin door bumper to maintain ADA access and prevent door contact with wall.

Legend

NRP Non-removable Pin

END OF SECTION

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior gypsum board.
 - 2. Exterior gypsum board for ceilings and soffits.
 - 3. Tile backing panels.
 - 4. Texture finishes.

1.2 SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

- A. Gypsum Board, Type X: ASTM C1396/C1396M.
 - 1. Thickness: 5/8 inch.
 - 2. Long Edges: Tapered.

2.2 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

- A. Exterior Gypsum Soffit Board: ASTM C1396/C1396M, with manufacturer's standard edges.
 - 1. Core: 5/8 inch Type X.

2.3 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.
 - 1. Thickness: 1/2 inch.
 - 2. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

2.4 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.
 - 1. Material: Plastic.
 - 2. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.

- c. LC-Bead: J-shaped; exposed long flange receives joint compound.
- d. L-Bead: L-shaped; exposed long flange receives joint compound.
- e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
- f. Expansion (control) joint.

B. Exterior Trim: ASTM C1047.

- 1. Material: plastic.
- 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475/C475M.

B. Joint Tape:

- 1. Interior Gypsum Board: Paper.
- 2. Exterior Gypsum Soffit Board: Paper.
- 3. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

D. Joint Compound for Exterior Applications:

- 1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound as recommended by panel manufacturer.

E. Joint Compound for Tile Backing Panels:

- 1. Cementitious Backer Units: As recommended by backer unit manufacturer.
- 2. Water-Resistant Gypsum Backing Board: Use setting-type taping compound and setting-type, sandable topping compound.

2.6 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.

- 1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer. Fasten with corrosion-resistant screws

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C840.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- D. Install trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
 1. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- E. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- G. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 1. Level 1: Concealed areas, and where indicated.
 2. Level 5: Surfaces that will be exposed to view.
- H. Cementitious Backer Units: Finish according to manufacturer's written instructions.
- I. Protect adjacent surfaces from drywall compound and texture finishes and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- J. Remove and replace panels that are wet, moisture damaged, and mold damaged.

3.2 APPLYING TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.11, at where indicated.

END OF SECTION 092900

SECTION 097200 – FIBERGLASS REINFORCED PANELS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Prefinished fiberglass reinforced plastic sheets factory adhered to unfinished untreated plywood backer and related PVC trims.

1.2 RELATED SECTIONS

- A. Section 09290 - Gypsum wallboard.
- B. Section 06100 - Rough Carpentry.
- C. Section 06200 - Finish Carpentry.
- D. Section 07920 - Sealants and Caulking.
- E. Section 09651 - Resilient Tile Flooring.

1.3 REFERENCES

- A. American Society for Testing and Materials: Standard Specifications (ASTM)
 - 1. ASTM D 256 - Izod Impact Strengths (ft #/in)
 - 2. ASTM D 570 - Water Absorption (%)
 - 3. ASTM D 638 - Tensile Strengths (psi) & Tensile Modulus (psi)
 - 4. ASTM D 790 - Flexural Strengths (psi) & Flexural Modulus (psi)
 - 5. ASTM D 2583- Barcol Hardness
 - 6. ASTM D 5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels.
 - 7. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.4 SUBMITTALS

- A. Product Data: Submit sufficient manufacturer's data to indicate compliance with these specifications, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Samples for Verification: Submit appropriate section of panel for each finish selected indicating the color, texture, and pattern required.
 - 1. Submit complete with specified applied finish.
 - 2. For selected patterns show complete pattern repeat.

3. Exposed Molding and Trim: Provide samples of each type, finish, and color.

C. Manufacturers Material Safety Data Sheets (MSDS) for adhesives, sealants and other pertinent materials prior to their delivery to the site.

1.5 QUALITY ASSURANCE

A. Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with:

1. ASTM E 84 (Method of test for surface burning characteristics of building Materials)
a. Wall Required Rating – Class A.

B. Sanitary Standards: System components and finishes to comply with:

1. United States Department of Agriculture (USDA) requirements for food preparation facilities, incidental contact.
2. Food and Drug Administration (FDA) 1999 Food Code 6-101.11.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials factory packaged on strong pallets.

B. Store panels and trim lying flat, under cover and protected from the elements. Allow panels to acclimate to room temperature (range of 60 to 75°F) for 48 hours prior to installation.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Building are to be fully enclosed prior to installation with sufficient heat (70°) and ventilation consistent with good working conditions for finish work

B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.

1. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

1.8 WARRANTY

A. Furnish one year guarantee against defects in material and workmanship.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Vittetoe, Inc.; 2112 Keokuk-Washington Rd., Keota, IA 52248. Ph:800-848-8386.

Fax: 641-636-3764. Email: info@vittetoe.com Web: <http://www.vittetoe.com>

1. Product: Glass Board

- B. Marlite; 1 Marlite Drive, Dover, OH 44622. Ph: 800-377-1221. Fax (330) 343-4668 Email: info@marlite.com Web: www.marlite.com
 - 1. Product: Standard FRP
- C. Equal product as approved by Owner and Architect / Designer.

2.2 PANELS

- A. Fiberglass reinforced thermosetting polyester resin panel sheets complying with ASTM D 5319.
 - 1. Coating: Manufacturer's standard.
 - 2. Dimensions:
 - a. Thickness: 0.090" (2.29mm) nominal
 - b. Width: 4'-0" (1.22m) nominal
 - c. Length: 8'-0" (2.4m) nominal
 - 3. Tolerance:
 - a. Length and Width: +/-1/8" (3.175mm)
 - b. Square: Not to exceed 1/8" for 8 foot (2.4m) panels or 5/32" (3.96mm) for 10 foot (2.4m) panels
- B. Properties: Resistant to rot, corrosion, staining, denting, peeling, and splintering.
 - 1. Flexural Strength - 1.0×10^4 psi per ASTM D 790. (7.0 kilogram-force/square millimeter)
 - 2. Flexural Modulus - 3.1×10^5 psi per ASTM D 790. (217.9 kilogram-force/square millimeter)
 - 3. Tensile Strength - 7.0×10^3 psi per ASTM D 638. (4.9 kilogram-force/square millimeter)
 - 4. Tensile Modulus - 1.6×10^5 psi per ASTM D 638. (112.5 kilogram-force/square millimeter)
 - 5. Water Absorption - 0.72% per ASTM D 570.
 - 6. Barcol Hardness (scratch resistance) of 35 55 as per ASTM D 2583.
 - 7. Izod Impact Strength of 72 ft. lbs./in ASTM D 256
- C. Back Surface: Smooth. Imperfections which do not affect functional properties are not cause for rejection.
- D. Front Finish: In accordance with preapproved sample.
- E. Color and Surface:
 - 1. Vittetoe: White Glass Board
 - 2. Marlite: Standard FRP P100
- F. Substrate: 3/8" Plywood.
- G. Fire Rating: Class A.

2.3 MOLDINGS

- A. PVC Trim: Provide manufacturer's standard trims in lengths as required to complete the work
 - 1. Inside Corners
 - 2. Outside Corners (at eyewash area)

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3. Divisions
4. Edges

2.4 ACCESSORIES

1. Provide accessories as required and recommended by the manufacturer to complete the work.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.
- B. Repair defects prior to installation.

3.2 INSTALLATION

- A. Comply with manufacturer's recommended procedures and installation sequence.
- B. Cut sheets to meet supports allowing 1/8" (3 mm) clearance for every 8 foot (2.4m) of panel.
 1. Cut and drill with carbide tipped saw blades and drill bits.
 2. Pre-drill fastener holes with high speed drill bit.
 - a. Space fasteners as recommended by manufacturer.
- C. Apply panel moldings to all panel edges using silicone sealant providing for required clearances.
 1. All moldings must provide for a minimum 1/8" (3mm) of panel expansion at joints and edges, to insure proper installation.
 2. Apply sealant to all moldings, channels and joints between the system and different materials to assure watertight installation.

3.3 CLEANING

- A. Remove excess sealant from panels and moldings and final clean all surfaces.
- B. Refer to manufacturer's specific cleaning recommendations. Do not use abrasive cleaners.

END OF SECTION 09720

SECTION 099600 - HIGH-PERFORMANCE COATINGS – ALTERNATE #3

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 the application of high-performance coating systems on the following substrates:

- 1. Exterior Steel Lintels – Alternate #3
- 2. Protect existing brick, doors, windows, and related construction to remain.

- B. Related Requirements:

- 1. Priming product shall be NSF/ANSI 61 certified as emersion grade.
- 2. Compatibility of priming and finish systems shall be verified by manufacturer.
- 3. Priming work shall be completed on properly prepared exposed steel within 2 hours of the lead abatement process and before the formation of corrosion.
- 4. Primer material and priming work shall be completed to allow for future painting work without additional surface preparation for a period up to 12 months following application of primer.
- 5. Wet and dry film thickness field testing may be performed by the Owner's representative and/or independent testing agency to verify coating thickness. Provide additional coating material where required to achieve specified minimum coating thickness.
- 6. Manufacturer's Product Representative shall observe coating application work and submit written report of findings.
- 7. Special Project Warranty: Provide 2-year warranty against corrosion, delamination and related failures.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.

- 1. Indicate VOC content.

- B. Material Safety Data Sheets (MSDS).

- 1. Furnish from all suppliers Material Safety Data Sheets for all applicable materials including, but not limited to, paints, thinners, and abrasive materials.
- 2. Provide for employees one copy of all data sheets at the job site for employee access.
- 3. Provide one copy to the Owner. No work may commence without the complete filing.

4. All sheets shall conform to requirements of SARA Right-to-Know Act.

1.4 QUALITY ASSURANCE

- A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
- B. Manufacturer shall be a company that specializes in producing high quality industrial coating materials. This company shall have 10 years or more experience demonstrated by case histories in the designated field of application.
- C. Applicator: A firm specializing in painting work with not less than five years of experience in installing paint products similar to those required for this project.
 1. Applicator shall have successfully completed the SSPC QP1 Contractor Prequalification Program.
- C. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.
- D. Pre-Painting Conference: Prior to installation of painting materials and associated work, meet at project site, with Applicator, Paint Manufacturer's Representative, Owner's Representative/Inspector and Contractor. Record (Owner's Representative/Inspector) discussions of conference, together with decisions and agreements (or disagreements) reached. Furnish copy of record to each party attending. Review methods and procedures related to work; including but not necessarily limited to the following:
 1. Tour job site areas to be painted. Inspect and discuss conditions of substrate and other preparatory work performed by other trades.
 2. Review painting requirements (drawings, specifications and other contract documents).
 3. Review required submittals, both complete and yet to be completed.
 4. Review and finalize construction schedule related to painting work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.
 5. Review compatibility of products with indicated substrates. Provide only products that are recommended by paint manufacturer to be fully compatible.
- F. Environmental Standards: Coating materials shall comply with provisions of the following:
 1. Environmental Protection Agency (EPA) National Volatile Organic Compound (VOC) Emission Standards for Architectural Coatings, unless more stringent standards are required by authorities having jurisdiction.
 2. Environmental Protection Agency (EPA) requirements for lead and mercury free paint.

- G. Manufacturers Observation: Representative of manufacturer shall periodically make field observations, to verify that product and/or material is being installed according to project and manufacturer's specifications.
 - 1. Report: Submit copies of field observation report to Owner's Representative / Inspector and Contractor, stating observations and any directives given to installer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

- A. Apply coatings only when relative humidity, temperature of surfaces to be coated, and ambient air temperatures are within limits established by coating manufacturer.
- B. Do not apply exterior coatings in snow, rain, fog, or mist.

1.7 SPECIAL PROJECT WARRANTY

- A. Provide special project warranty on all work covered by this Section, signed by Contractor, in which Contractor agrees to repair and re-coat interior and exterior steel that shows evidence of failure or deterioration within specified warranty period.
 - 1. Special Project Warranty Period: 2 years from the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS AND PRODUCTS:

- A. Manufacturers and Products: Subject to compliance with requirements, provide products by the following:
 - 1. Sherwin-Williams Company (The).
 - 2. Tnemec
 - 3. Or Equal

2.2 HIGH-PERFORMANCE COATINGS, GENERAL

A. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
3. Products shall be of same manufacturer for each coat in a coating system.

B. Colors: As selected by Architect from manufacturer's full range of standard colors.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with the most stringent requirements of the manufacturer's written instructions and recommendations and applicable portions of "MPI Architectural Painting Specification Manual" for substrates and coating systems indicated.
- B. Coordinate with lead paint abatement process to ensure compliance with requirements.
- C. Steel Substrates: Remove paint, primers, rust, loose mill scale, and foreign matter. Clean using methods recommended in writing by paint manufacturer, but not less than the following:
 1. SSPC-SP 6/NACE No. 3.

3.3 APPLICATION

- A. Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

1. Use applicators and techniques suited for coating and substrate indicated.
 2. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.
- C. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

3.4 FIELD QUALITY CONTROL

- A. Wet and Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test coatings for wet and dry film thickness.
1. Contractor shall touch up and restore coated surfaces damaged by testing.
 2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations and thickness specified herein, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. Protect existing surfaces to remain to minimize finish work on surfaces adjacent to high performance coating work.
- B. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- C. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- D. Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- E. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.6 HIGH-PERFORMANCE COATING SCHEDULE

- A. Sherwin-Williams:
1. Exterior Steel Substrates: Urethane Zinc-Rich Primer and finish
 - a. Prime Coat:
 - 1) Corothane I Galvapak, 2K Zinc Primer, 3.0 - 4.0 mils DFT

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- b. Intermediate Coat:
 - 1) Macropoxy 646, Fast Cure Epoxy, B58 Series, 3.0 - 10.0 mils DFT
- c. Exterior Steel UV Finish Coat:
 - 1) Hi-Solids Polyurethane (UV and mildew resistant formulation), B65 Series, 3.0 - 5.0 mils DFT.

END OF SECTION 099600

SECTION 104250 - SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. All signage shall meet the requirements of the Americans with Disabilities Act, Accessibility Guidelines for Buildings and Facilities amended to date.

1.2 SUBMITTALS

- A. Submit manufacturer's descriptive literature and specifications of materials.
- B. Submit shop drawings listing sign styles, lettering and locations, and overall dimensions of each sign.
- C. Color Chart: Manufacturer's standard color chart.

PART 2 - PRODUCTS

2.1 APPROVED SIGNS:

- A. ASI Sign Systems, Inc.
 1. Sign Face: Polyamide Resign.
 2. Carrier: 0.040" thick aluminum or 0.011" thick polyester (sign type determines material used).
 3. Fasteners: Double face tape or screws.
- B. Best Manufacturing Sign Systems:
 1. Melamine plastic laminate, 1/8" thick.
 2. Fasteners: Double face tape or screws.

2.2 SIGN FABRICATIONS:

- A. Tactile characters/symbols/pictograms shall be raised 1/32 inch from the sign faceplate. Signs shall be one-piece construction; add-on and/or engraved characters are not acceptable.
- B. When required for ADA compliance, text shall be accompanied by Grade 2 Braille.
- C. All letters, numbers, and symbols shall contrast with their background – either light colors on dark background or dark colors on light background. All exposed surfaces shall have a non-glare finish.

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- D. Lettering style shall be standard bold condensed upper case, or other sans serif or simple serif typeface.
- E. Sizes of letters, numbers and symbols shall be as follows:
 - 1. Room names shall be 5/8" high.
 - 2. Lettering for room usage and directional identification shall be 5/8" high.
 - 3. Symbols shall be 4 inches high.
 - 4. Letters, numbers and symbols shall be centered on sign.
- F. When required for ADA compliance, Grade 2 Braille shall be placed directly below last line of letters or numbers.

2.3 SIGN SIZE:

- A. Signs shall be sized according to copy.

2.4 ACCESSORIES:

- A. Mounting Hardware: Manufacturer's standard holes and screws or adhesive.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Locate signs adjacent to latch side of door, 60 inches above finished floor to center line of sign, in accordance with ADA requirements.

3.2 SIGN SCHEDULE:

	<u>LOCATION</u>	<u>SIGN COPY</u>	<u>SYMBOLS</u>
A.	Main Entrance	ENTRANCE	
B.	Restroom	RESTROOM	MEN/WOMEN PICTOGRAPH
C.	Storage Area	STORAGE	

END OF SECTION 104250

SECTION 105200

FIRE EXTINGUISHERS

PART 1 - GENERAL

1.01 SCOPE:

- A. Fire Extinguishers

1.02 STANDARDS:

- A. Fire extinguishers shall satisfy OSHA ordinary hazard requirements, extinguisher shall be rated 2-A, 10-B:C.

PART 2 - PRODUCTS

2.02 APPROVED FIRE EXTINGUISHER:

- A. Fire extinguishers shall be Amerex Model #500/500T or approved equal.
- B. Provide wall mounted strap and mounting brackets as required.

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. Install fire extinguishers on mounting brackets according to manufacturer's recommendation.

3.02 SCHEDULE:

- A. Install fire extinguishers in locations indicated on Drawings but not less than one at each exterior door, door between bays and in the break room.

END OF SECTION

**SECTION 15140
DOMESTIC WATER PIPING**

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes domestic water piping from locations indicated to fixtures and equipment inside the building.

1.2 SUBMITTALS

- A. Field quality-control test reports.

1.3 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.
- B. Comply with NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances," and NSF 61, "Drinking Water System Components-Health Effects; Sections 1 through 9," for combined fire-protection and domestic water service piping to building.
- C. Comply with NSF 14, "Plastics Piping Components and Related Materials," for plastic, potable domestic water piping and components. Retain below for all potable-water piping.
- D. Comply with NSF 61, "Drinking Water System Components-Health Effects; Sections 1 through 9," for potable domestic water piping and components.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Transition Couplings: Coupling or other manufactured fitting the same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.
- B. Steel Pipe: ASTM A 53, Type E or S, Grade A or B, Schedule 40, galvanized. Include ends matching joining method.
 - 1. Steel Pipe Nipples: ASTM A 733, made of ASTM A 53 or ASTM A 106, Schedule 40, galvanized, seamless steel pipe. Include ends matching joining method.
 - 2. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface, and female threaded ends.

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3. Gray-Iron, Threaded Fittings: ASME B16.4, Class 125, galvanized, standard pattern.
 4. Cast-Iron Flanges: ASME B16.1, Class 125.
 5. Cast-Iron, Flanged Fittings: ASME B16.1, Class 125, galvanized.
 6. Steel-Piping, Expansion Joints: Compound, galvanized, steel fitting with telescoping body and slip-pipe section. Include packing rings, packing, limit rods, chrome-plated finish on slip-pipe sections, and flanged ends.
 7. Steel-Piping, Double Expansion Joints: Compound, galvanized, steel fitting with telescoping body and two slip-pipe sections. Include packing rings, packing, limit rods, chrome-plated finish on slip-pipe sections, and flanged ends.
- C. Soft Copper Tube: ASTM B 88, Types K and L, water tube, annealed temper.
1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end. Furnish Class 300 flanges if required to match piping.
 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
- D. Hard Copper Tube: ASTM B 88, Types L and M, water tube, drawn temper.
1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end. Furnish Class 300 flanges if required to match piping.
 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
- E. CPVC Schedule 40 Pipe: ASTM F 441/F 441M.
1. CPVC Schedule 40 Fittings: ASTM F 438, socket type.
- F. CPVC Schedule 80 Pipe: ASTM F 441/F 441M.
1. CPVC Schedule 80 Fittings: ASTM F 439, **socket** type.
- G. CPVC Piping System: ASTM D 2846/D 2846M, SDR 11, pipe and socket fittings.
- H. CPVC Tubing System: ASTM D 2846/D 2846M, SDR 11, tube and socket fittings.

- I. PVC Schedule 40 Pipe: ASTM D 1785.
 - 1. PVC Schedule 40 Fittings: ASTM D 2466, socket type.
- J. PVC Schedule 80 Pipe: ASTM D 1785.
 - 1. PVC Schedule 80 Fittings: ASTM D 2467, socket type.

2.2 VALVES

- A. CPVC Union Ball Valves: MSS SP-122, with full-port ball, **socket** detachable end connectors, and pressure rating not less than **150 psig** at **73 deg. F**.
 - 1. Material Option: MSS SP-122, of plastic other than CPVC and suitable for potable water. Include threaded ends and pressure rating not less than **150 psig** at **73 deg F**, unless otherwise indicated.
- B. CPVC Check Valves: Swing or ball-check design and pressure rating not less than **150 psig** at **73 deg. F**.
- C. PVC Union Ball Valves: MSS SP-122, with full-port ball, **socket** detachable end connectors, and pressure rating not less than **150 psig**.
- D. PVC Check Valves: Swing or ball-check design and pressure rating not less than **150 psig**.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS

- A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below, unless otherwise indicated.
- B. Flanges may be used on aboveground piping, unless otherwise indicated.
- C. Domestic Water Piping: Use **any of** the following piping materials for each size range:
 - 1. NPS 1-1/2 and Smaller: Hard copper tube, **Type L**; copper pressure fittings; and soldered joints.
 - 2. NPS 1-1/2 and Smaller: ASTM F 441/F 441M, CPVC, Schedule 80 pipe; CPVC, Schedule 80 threaded fittings; and threaded joints.
 - 3. NPS 1-1/2 and Smaller: ASTM F 441/F 441M, CPVC, Schedule **40** pipe; CPVC, Schedule **40** socket fittings; and solvent-cemented joints.
 - 4. NPS 1-1/2 and Smaller: CPVC piping system for NPS 1-1/2; CPVC tubing system for NPS 1-1/4 and smaller; and solvent-cemented joints.
 - 5. NPS 1-1/2 and Smaller: CPVC tubing system and solvent-cemented joints.

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6. NPS 2: Hard copper tube, **Type L** copper pressure fittings; and soldered joints.
7. NPS 2: CPVC, Schedule 80 pipe; CPVC, Schedule 80 threaded fittings; and threaded joints.
8. NPS 2: CPVC, Schedule **40** pipe; CPVC, Schedule **40** socket fittings; and solvent-cemented joints.
9. NPS 2: CPVC **pipng** system and solvent-cemented joints.
10. NPS 2-1/2 to NPS 3-1/2: Hard copper tube, **Type L**; copper pressure fittings; and soldered joints.
11. NPS 2-1/2 to NPS 3-1/2: CPVC, Schedule 80 pipe; CPVC, NPS 2-1/2 to NPS 3-1/2: CPVC, Schedule **80** pipe; CPVC, Schedule **80** socket fittings; and solvent-cemented joints.

- D. CPVC ball, butterfly, and check valves may be used with CPVC piping.
- E. PVC ball, butterfly, and check valves may be used with PVC piping.

3.2 PIPING INSTALLATION

- A. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**" for basic piping installation.
- B. Extend domestic water service piping to exterior water distribution piping in sizes and locations indicated.
- C. Install cast-iron sleeve with water stop and mechanical sleeve seal at each service pipe penetration through foundation wall. Select number of interlocking rubber links required to make installation watertight. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**" for sleeves and mechanical sleeve seals.
- D. Install wall penetration system at each service pipe penetration through foundation wall. Make installation watertight. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**".
- E. Perform the following steps before operation:
1. Close drain valves, hydrants, and hose bibbs.
 2. Open shutoff valves to fully open position.
 3. Open throttling valves to proper setting.
 4. Remove plugs used during testing of piping and plugs used for temporary sealing of piping during installation.
 5. Remove and clean strainer screens. Close drain valves and replace drain plugs.
 6. Remove filter cartridges from housings, and verify that cartridges are as specified for application where used and that cartridges are clean and ready for use.

- F. Check plumbing equipment and verify proper settings, adjustments, and operation. Do not operate water heaters before filling with water.
- G. Check plumbing specialties and verify proper settings, adjustments, and operation.
 - 1. Water-Pressure Regulators: Set outlet pressure at 60 psig maximum, unless otherwise indicated.
- H. Energize pumps and verify proper operation.

3.3 JOINT CONSTRUCTION

- A. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**" for basic piping joint construction.
- B. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.

3.4 ROUGHING-IN FOR WATER METERS

3.5 VALVE INSTALLATION

- A. Install sectional valve close to water main on each branch and riser serving plumbing fixtures or equipment. Use ball or gate valves for piping NPS 2 and smaller. Use butterfly or gate valves for piping NPS 2-1/2 and larger.
- B. Install shutoff valve on each water supply to equipment and on each water supply to plumbing fixtures without supply stops. Use ball or gate valves for piping NPS 2 and smaller. Use butterfly or gate valves for piping NPS 2-1/2 and larger.
- C. Install drain valves for equipment, at base of each water riser, at low points in horizontal piping, and where required to drain water piping.
 - 1. Install hose-end drain valves at low points in water mains, risers, and branches.
 - 2. Install stop-and-waste drain valves where indicated.
- D. Install balancing valve in each hot-water circulation return branch and discharge side of each pump and circulator. Set balancing valves partly open to restrict but not stop flow. Use ball valves for piping NPS 2 and smaller and butterfly valves for piping NPS 2-1/2 and larger. Install calibrated balancing valves in each hot-water circulation return branch and discharge side of each pump and circulator. Set calibrated balancing valves partly open to restrict but not stop flow.

3.6 HANGER AND SUPPORT INSTALLATION

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- A. Refer to Division 15 Section 15060 "**Hangers and Supports**" for pipe hanger and support devices. Install the following:
 - 1. Vertical Piping: MSS Type 8 or Type 42, clamps.
 - 2. Individual, Straight, Horizontal Piping Runs: According to the following:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer than 100 Feet: MSS Type 43, adjustable roller hangers.
 - c. Longer than 100 Feet, if indicated: MSS Type 49, spring cushion rolls.
 - 3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 - 4. Base of Vertical Piping: MSS Type 52, spring hangers.
- B. Install supports according to Division 15."
- C. Support vertical piping and tubing at base and at each floor.
- D. Rod diameter may be reduced 1 size for double-rod hangers, to a minimum of 3/8 inch.
- E. Install hangers for steel piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1-1/4 and Smaller: 84 inches with 3/8-inch rod.
 - 2. NPS 1-1/2: 108 inches with 3/8-inch rod.
 - 3. NPS 2: 10 feet with 3/8-inch rod.
 - 4. NPS 2-1/2: 11 feet with 1/2-inch rod.
 - 5. NPS 3 and NPS 3-1/2: 12 feet with 1/2-inch rod.
 - 6. NPS 4 and NPS 5: 12 feet with 5/8-inch rod.
 - 7. NPS 6: 12 feet with 3/4-inch rod.
 - 8. NPS 8 to NPS 12: 12 feet with 7/8-inch rod.
- F. Install supports for vertical steel piping every 15 feet.
- G. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 3/4 and Smaller: 60 inches with 3/8-inch rod.
 - 2. NPS 1 and NPS 1-1/4: 72 inches with 3/8-inch rod.
 - 3. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
 - 4. NPS 2-1/2: 108 inches with 1/2-inch rod.
 - 5. NPS 3 to NPS 5: 10 feet with 1/2-inch rod.
 - 6. NPS 6: 10 feet with 5/8-inch rod.
 - 7. NPS 8: 10 feet with 3/4-inch rod.
- H. Install supports for vertical copper tubing every 10 feet.

- I. Install hangers for CPVC piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 1 and Smaller: 36 inches with 3/8-inch rod.
 - 2. NPS 1-1/4 to NPS 2: 48 inches with 3/8-inch rod.
 - 3. NPS 2-1/2 to NPS 3-1/2: 48 inches with 1/2-inch rod.
 - 4. NPS 4 and NPS 5: 48 inches with 5/8-inch rod.
 - 5. NPS 6: 48 inches with 3/4-inch rod.
 - 6. NPS 8: 48 inches with 7/8-inch rod.
- J. Install supports for vertical CPVC piping every 60 inches for NPS 1 and smaller and every 72 inches for NPS 1-1/4 and larger.
- K. Install hangers for PVC piping with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 2 and Smaller: 48 inches with 3/8-inch rod.
 - 2. NPS 2-1/2 to NPS 3-1/2: 48 inches with 1/2-inch rod.
 - 3. NPS 4 and NPS 5: 48 inches with 5/8-inch rod.
 - 4. NPS 6: 48 inches with 3/4-inch rod.
 - 5. NPS 8: 48 inches with 7/8-inch rod.
- L. Install supports for vertical PVC piping every 48 inches.
- M. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.7 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment and machines to allow service and maintenance.
- C. Connect domestic water piping to exterior water service piping. Use transition fitting to join dissimilar piping materials.
- D. Connect domestic water piping to service piping with shutoff valve, and extend and connect to the following:
 - 1. Booster Systems: Cold-water suction and discharge piping.
 - 2. Water Heaters: Cold-water supply and hot-water outlet piping in sizes indicated, but not smaller than sizes of water heater connections.
 - 3. Plumbing Fixtures: Cold- and hot-water supply piping in sizes indicated, but not smaller than required by plumbing code. Refer to Division 15."
 - 4. Equipment: Cold- and hot-water supply piping as indicated, but not smaller than equipment connections. Provide shutoff valve and union for each connection. Use flanges instead of unions for NPS 2-1/2 and larger.

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3.8 FIELD QUALITY CONTROL

A. Inspect domestic water piping as follows:

1. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
2. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:
 - a. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 - b. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
3. Re-inspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for re-inspection.
4. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

B. Test domestic water piping as follows:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
2. Leave uncovered and unconcealed new, altered, extended, or replaced domestic water piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
3. Cap and subject piping to static water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
4. Repair leaks and defects with new materials and retest piping or portion thereof until satisfactory results are obtained.
5. Prepare reports for tests and required corrective action.

3.9 CLEANING

A. Clean and disinfect potable[**and non-potable**] domestic water piping as follows:

1. Purge new piping and parts of existing domestic water piping that have been altered, extended, or repaired before using.

2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction or, if methods are not prescribed, procedures described in either AWWA C651 or AWWA C652 or as described below:
 - a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
 - b. Fill and isolate system according to either of the following:
 - 1) Fill system or part thereof with water/chlorine solution with at least 50 ppm of chlorine. Isolate with valves and allow to stand for 24 hours.
 - 2) Fill system or part thereof with water/chlorine solution with at least 200 ppm of chlorine. Isolate and allow to stand for three hours.
 - c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
 - d. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedures if biological examination shows contamination.
- B. Prepare and submit reports of purging and disinfecting activities.
- C. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

END OF SECTION 15140

**SECTION 15150
SANITARY WASTE AND VENT PIPING**

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes soil and waste, sanitary drainage and vent piping inside the building.

1.2 SUBMITTALS

- A. Field quality-control test reports.

1.3 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.
- B. Comply with NSF 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-dwv" for plastic drain, waste, and vent piping; "NSF-drain" for plastic drain piping; "NSF-tubular" for plastic continuous waste piping; and "NSF-sewer" for plastic sewer piping.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Flexible Transition Couplings for Underground Non-pressure Piping: ASTM C 1173 with elastomeric sleeve. Include ends of same sizes as piping to be joined and include corrosion-resistant metal band on each end.
- B. Hubless Cast-Iron Pipe and Fittings: ASTM A888 or CISPI 301.
 - 1. Couplings: ASTM C 1277 assembly of metal housing, corrosion-resistant fasteners, and ASTM C 564 rubber sleeve with integral, center pipe stop.
 - a. Heavy-Duty, Type 304, Stainless-Steel Couplings: ASTM A 666, Type 304, stainless-steel shield; stainless-steel bands; and sleeve.
 - 1) **NPS 1-1/2 to NPS 4: 3-inch-** wide shield with 4 bands.
 - 2) **NPS 5 to NPS 10: 4-inch-** wide shield with 6 bands.
 - b. Heavy-Duty, FMG-Approved Couplings: ASTM A 666, Type 304, stainless-steel housing; stainless-steel bands; and sleeve.
 - 1) **NPS 1-1/2 to NPS 4: 3-inch-** wide housing with 2 bands.

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- 2) **NPS 5 to NPS 10: 4-inch-** wide housing with 2 bands.
 - c. Heavy-Duty, Cast-Iron Couplings: ASTM A48, 2-piece, cast-iron housing; stainless-steel bolts and nuts; and sleeve.
 - d. Heavy-Duty, Type 301, Stainless-Steel Couplings: ASTM A 666, Type 301, stainless-steel shield; stainless-steel bands; and sleeve.
 - 1) **NPS 1-1/2 to NPS 4: 3-inch-** wide shield with 4 bands.
 - 2) **NPS 5 to NPS 10: 4-inch-** wide shield with 6 bands.
 - e. Compact, Stainless-Steel Couplings: CISPI 310 with ASTM A 167, Type 301, or ASTM A 666, Type 301, stainless-steel corrugated shield; stainless-steel bands; and sleeve.
 - 1) **NPS 1-1/2 to NPS 4: 2-1/8-inch-** wide shield with 2 bands.
 - 2) **NPS 5 and NPS 6: 3-inch-** wide shield with 4 bands.
 - 3) **NPS 8 and NPS 10: 4-inch-** wide shield with 4 bands.
 - 4) **NPS 12 and NPS 15: 5-1/2-inch-** wide shield with 6 bands.
- C. Steel Pipe: ASTM A 53, Type E or S, Grade A or B, Schedule 40, galvanized. Include ends matching joining method.
1. Steel Pipe Nipples: ASTM A 733, made of ASTM A 53 or ASTM A 106, Schedule 40, galvanized, seamless steel pipe. Include ends matching joining method.
 2. Malleable-Iron Unions: ASME B16.39; Class 150; hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface; and female threaded ends.
 3. Cast-Iron, Threaded, Drainage Fittings: ASME B16.12, **galvanized**.
 4. Gray-Iron, Threaded Fittings: ASME B16.4, Class 125, **galvanized**, standard pattern.
 5. Cast-Iron Flanges: ASME B16.1, Class 125.
 6. Cast-Iron, Flanged Fittings: ASME B16.1, Class 125, **galvanized**.
 7. Steel-Piping, Expansion Joints: Compound, galvanized steel fitting with telescoping body and slip-pipe section. Include packing rings, packing, limit rods, chrome-plated finish on slip-pipe section, and flanged ends.
 8. Steel-Piping, Double Expansion Joints: Compound, galvanized steel fitting with telescoping body and two slip-pipe sections. Include packing rings, packing, limit rods, chrome-plated finish on slip-pipe sections, and flanged ends.
- D. Copper DWV Tube: ASTM B 306, drainage tube, drawn temper.
1. Copper Drainage Fittings: ASME B16.23, cast copper or ASME B16.29, wrought copper, solder-joint fittings.
- E. Soft Copper Tube: **ASTM B 88, Type L**, water tube, annealed temper.

1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought- copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end.
 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.
- F. Hard Copper Tube: **ASTM B 88, Types L and M**, water tube, drawn temper.
1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought- copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
 2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end.
 3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.
- G. ABS Pipe: ASTM D 2661, Schedule 40, solid wall.
1. ABS Socket Fittings: ASTM D 2661, made to ASTM D 3311, drain, waste, and vent patterns.
- H. Cellular-Core, ABS Pipe: ASTM F 628, Schedule 40.
1. ABS Socket Fittings: ASTM D 2661, made to ASTM D 3311, drain, waste, and vent patterns.
- I. ABS Special Fittings: ASTM F 409, drainage-pattern tube and tubular fittings with ends as required for application.
- J. PVC Pipe: ASTM D 2665, solid-wall drain, waste, and vent.
1. PVC Socket Fittings: ASTM D 2665, socket type, made to ASTM D 3311, drain, waste, and vent patterns.
- K. Cellular-Core, Schedule 40, PVC Pipe: ASTM F 891, Schedule 40.
1. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.
- L. Cellular-Core, Sewer and Drain Series, PVC Pipe: ASTM F 891, Series PS 100.
1. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Series PS 100 sewer and drain pipe.

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- M. PVC Special Fittings: ASTM F 409, drainage-pattern tube and tubular fittings with ends as required for application.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS

- A. Transition and special fittings with pressure ratings at least equal to piping pressure ratings may be used in applications below, unless otherwise indicated.
- B. Flanges may be used on aboveground pressure piping, unless otherwise indicated.
- C. Aboveground, Soil, Waste, and Vent Piping: Use **any of** the following piping materials for each size range:
 - 1. **NPS 1-1/4 and NPS 1-1/2:** Use **NPS 1-1/2** hubless, cast-iron soil piping and one of the following:
 - a. Couplings: Heavy-duty, Type **301, 304**, stainless steel.
 - b. Couplings: Heavy-duty, **FMG approved cast iron**.
 - c. Couplings: Compact, stainless steel.
 - 2. **NPS 1-1/4 and NPS 1-1/2:** Steel pipe; cast-iron, threaded drainage fittings; and threaded joints.
 - 3. **NPS 1-1/4 and NPS 1-1/2:** ABS pipe, ABS socket fittings, and solvent-cemented joints.
 - 4. **NPS 1-1/4 and NPS 1-1/2:** Cellular-core, ABS pipe; ABS socket fittings; and solvent-cemented joints.
 - 5. **NPS 1-1/4 and NPS 1-1/2:** PVC pipe, PVC socket fittings, and solvent-cemented joints.
 - 6. **NPS 1-1/4 and NPS 1-1/2:** Cellular-core, Schedule 40, PVC pipe; PVC socket fittings; and solvent-cemented joints.
 - 7. **NPS 2 to NPS 4:** Service class, cast-iron soil piping; gaskets; and gasketed joints.
 - 8. **NPS 2 to NPS 4:** Hubless, cast-iron soil piping and one of the following:
 - a. Couplings: Heavy-duty, Type **301, 304**, stainless steel.
 - b. Couplings: Heavy-duty, **cast iron**.
 - c. Couplings: Compact, stainless steel.
 - 9. **NPS 2 to NPS 4:** Steel pipe; cast-iron, threaded drainage fittings; and threaded joints.
 - 10. **NPS 2 to NPS 4:** Stainless-steel piping, gaskets, and gasketed joints.
 - 11. **NPS 2 to NPS 4:** Copper DWV tube, copper drainage fittings, and soldered joints.

- a. Option for Vent Piping, **NPS 2-1/2 and NPS 3-1/2**: Hard copper tube, **Type M**; copper pressure fittings; and soldered joints.
 12. **NPS 2 to NPS 4**: ABS pipe, ABS socket fittings, and solvent-cemented joints.
 13. **NPS 2 to NPS 4**: Cellular-core, ABS pipe; ABS socket fittings; and solvent-cemented joints.
 14. **NPS 2 to NPS 4**: PVC pipe, PVC socket fittings, and solvent-cemented joints.
 15. **NPS 2 to NPS 4**: Cellular-core, Schedule 40, PVC pipe; PVC socket fittings; and solvent-cemented joints.
 16. **NPS 5 and NPS 6**: Service class, cast-iron soil piping; gaskets; and gasketed joints.
 17. **NPS 5 and NPS 6**: Hubless, cast-iron soil piping and one of the following:
 - a. Couplings: Heavy-duty, Type **301, 304**, stainless steel.
 - b. Couplings: Heavy-duty, **cast iron**.
 - c. Couplings: Compact, stainless steel.
 18. **NPS 5 and NPS 6**: Steel pipe; cast-iron, threaded drainage fittings; and threaded joints.
 19. **NPS 5 and NPS 6**: Copper DWV tube, copper drainage fittings, and soldered joints.
 20. **NPS 5 and NPS 6**: Use **NPS 6** ABS pipe, ABS socket fittings, and solvent-cemented joints.
 21. **NPS 5 and NPS 6**: Use **NPS 6** cellular-core, ABS pipe; ABS socket fittings; and solvent-cemented joints.
 22. **NPS 5 and NPS 6**: Use **NPS 6** PVC pipe, PVC socket fittings, and solvent-cemented joints.
 23. **NPS 5 and NPS 6**: Cellular-core, Schedule 40, PVC pipe; PVC socket fittings; and solvent-cemented joints.
- D. Underground, Soil, Waste, and Vent Piping: Use **[any of]** the following piping materials for each size range:
1. **NPS 1-1/2**: Hubless, cast-iron soil piping and one of the following:
 - a. Couplings: Heavy-duty, Type **301, 304**, stainless steel.
 - b. Couplings: Heavy-duty, **[cast iron]**.
 - c. Couplings: Compact, stainless steel.
 2. **NPS 1-1/2**: ABS pipe, ABS socket fittings, and solvent-cemented joints.
 3. **NPS 1-1/2**: Cellular-core, ABS pipe; ABS socket fittings; and solvent-cemented joints.
 4. **NPS 1-1/2**: PVC pipe, PVC socket fittings, and solvent-cemented joints.
 5. **NPS 1-1/2**: Cellular-core, PVC pipe; PVC socket fittings; and solvent-cemented joints.

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6. **NPS 2 to NPS 4:** Service class, cast-iron soil piping; gaskets; and gasketed joints.
7. **NPS 2 to NPS 4:** Extra-Heavy class, cast-iron soil piping; gaskets; and gasketed joints.
8. **NPS 2 to NPS 4:** Hubless, cast-iron soil piping and one of the following:
 - a. Couplings: Heavy-duty, Type **301, 304**, stainless steel.
 - b. Couplings: Heavy-duty, **cast iron**.
 - c. Couplings: Compact, stainless steel.
9. **NPS 2 to NPS 4:** ABS pipe, ABS socket fittings, and solvent-cemented joints.
10. **NPS 2 to NPS 4:** Cellular-core, ABS pipe; ABS socket fittings; and solvent-cemented joints.
11. **NPS 2 to NPS 4:** PVC pipe, PVC socket fittings, and solvent-cemented joints.
12. **NPS 2 to NPS 4:** Cellular-core, Schedule 40, PVC pipe; PVC socket fittings; and solvent-cemented joints.
13. **NPS 2 to NPS 4:** Use **NPS 3 and NPS 4** cellular-core, Sewer and Drain Series, PVC pipe; PVC socket fittings; and solvent-cemented joints.
14. **NPS 5 and NPS 6:** Service class, cast-iron soil piping; gaskets; and gasketed joints.
15. **NPS 5 and NPS 6:** Extra-Heavy class, cast-iron soil piping; gaskets; and gasketed joints.
16. **NPS 5 and NPS 6:** Hubless, cast-iron soil piping and one of the following:
 - a. Couplings: Heavy-duty, Type **301, 304**, stainless steel.
 - b. Couplings: Heavy-duty, **cast iron**.
 - c. Couplings: Compact, stainless steel.
17. **NPS 5 and NPS 6:** Use **NPS 6** ABS pipe, ABS socket fittings, and solvent-cemented joints.
18. **NPS 5 and NPS 6:** Use **NPS 6** cellular-core, ABS pipe; ABS socket fittings; and solvent-cemented joints.
19. **NPS 5 and NPS 6:** PVC pipe, PVC socket fittings, and solvent-cemented joints.
20. **NPS 5 and NPS 6:** Cellular-core, Schedule 40, PVC pipe; PVC socket fittings; and solvent-cemented joints.
21. **NPS 5 and NPS 6:** Use **NPS 6** cellular-core, Sewer and Drain Series, PVC pipe; PVC socket fittings; and solvent-cemented joints.

3.2 PIPING INSTALLATION

- A. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**" for basic piping installation.

- B. Install cleanouts at grade and extend to where building sanitary drains connect to building sanitary sewers.
- C. Install cast-iron sleeve with water stop and mechanical sleeve seal at each service pipe penetration through foundation wall. Select number of interlocking rubber links required to make installation watertight. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**" for sleeves and mechanical sleeve seals.
- D. Install wall penetration system at each service pipe penetration through foundation wall. Make installation watertight. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**" for wall penetration systems.
- E. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
 - 1. Encase underground piping with PE film according to ASTM A674 or AWWA C105.
- F. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if 2 fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- G. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.
- H. Install soil and waste drainage and vent piping at the following minimum slopes, unless otherwise indicated:
 - 1. Building Sanitary Drain: 2 percent downward in direction of flow for piping **NPS 3** and smaller; 1 percent downward in direction of flow for piping **NPS 4** and larger.
 - 2. Horizontal Sanitary Drainage Piping: 2 percent downward in direction of flow.
 - 3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.

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- I. Sleeves are not required for cast-iron soil piping passing through concrete slabs-on-grade if slab is without membrane waterproofing.
- J. Install ABS soil and waste drainage and vent piping according to ASTM D 2661.
- K. Install PVC soil and waste drainage and vent piping according to ASTM D 2665.
- L. Install underground **ABS and PVC** soil and waste drainage piping according to ASTM D 2321.
- M. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

3.3 JOINT CONSTRUCTION

- A. Refer to Division 15 Section 15050 "**Basic Mechanical Materials and Methods**" for basic piping joint construction.
- B. Cast-Iron, Soil-Piping Joints: Make joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
 - 1. Gasketed Joints: Make with rubber gasket matching class of pipe and fittings.
 - 2. Hubless Joints: Make with rubber gasket and sleeve or clamp.
- C. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.
- D. PVC Nonpressure Piping Joints: Join piping according to ASTM D 2665.

3.4 VALVE INSTALLATION

- A. Refer to Division 15 Section for general-duty valves.
- B. Shutoff Valves: Install shutoff valve on each sewage pump discharge.
 - 1. Use gate or full-port ball valve for piping **NPS 2** and smaller.
 - 2. Use gate valve for piping **NPS 2-1/2** and larger.
- C. Check Valves: Install swing check valve, downstream from shutoff valve, on each sewage pump discharge.
- D. Backwater Valves: Install backwater valves in piping subject to sewage backflow.
 - 1. Horizontal Piping: Horizontal backwater valves. **Use normally closed type, unless otherwise indicated.**

2. Floor Drains: Drain outlet backwater valves, unless drain has integral backwater valve.
3. Install backwater valves in accessible locations.
4. Refer to Division 15 for backwater valves.

3.5 HANGER AND SUPPORT INSTALLATION

- A. Refer to Division 15 for seismic-restraint devices.
- B. Refer to Division 15 for pipe hanger and support devices. Install the following:
 1. Vertical Piping: MSS Type 8 or Type 42, clamps.
 2. Individual, Straight, Horizontal Piping Runs: According to the following:
 - a. **100 Feet** and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer Than **100 Feet**: MSS Type 43, adjustable roller hangers.
 - c. Longer Than **100 Feet**, if Indicated: MSS Type 49, spring cushion rolls.
 3. Multiple, Straight, Horizontal Piping Runs **100 Feet** or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 4. Base of Vertical Piping: MSS Type 52, spring hangers.
- C. Install supports according to Division 15
- D. Support vertical piping and tubing at base and at each floor.
- E. Rod diameter may be reduced 1 size for double-rod hangers, with **3/8-inch** minimum rods.
- F. Install hangers for cast-iron soil piping with the following maximum horizontal spacing and minimum rod diameters:
 1. **NPS 1-1/2 and NPS 2: 60 inches** with **3/8-inch** rod.
 2. **NPS 3: 60 inches** with **1/2-inch** rod.
 3. **NPS 4 and NPS 5: 60 inches** with **5/8-inch** rod.
 4. **NPS 6: 60 inches** with **3/4-inch** rod.
 5. Spacing for **10-foot** lengths may be increased to **10 feet**. Spacing for fittings is limited to **60 inches**.
- G. Install supports for vertical cast-iron soil piping every **15 feet**.
- H. Install hangers for steel piping with the following maximum horizontal spacing and minimum rod diameters:
 1. **NPS 1-1/4: 84 inches** with **3/8-inch** rod.
 2. **NPS 1-1/2: 108 inches** with **3/8-inch** rod.
 3. **NPS 2: 10 feet** with **3/8-inch** rod.

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4. NPS 2-1/2: 11 feet with 1/2-inch rod.
 5. NPS 3: 12 feet with 1/2-inch rod.
 6. NPS 4 and NPS 5: 12 feet with 5/8-inch rod.
 7. NPS 6: 12 feet with 3/4-inch rod.
- I. Install supports for vertical steel piping every 15 feet.
- J. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
1. NPS 1-1/4: 72 inches with 3/8-inch rod.
 2. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
 3. NPS 2-1/2: 108 inches with 1/2-inch rod.
 4. NPS 3 to NPS 5: 10 feet with 1/2-inch rod.
 5. NPS 6: 10 feet with 5/8-inch rod.
- K. Install supports for vertical copper tubing every 10 feet.
- L. Install hangers for **ABS and PVC** piping with the following maximum horizontal spacing and minimum rod diameters:
1. NPS 1-1/2 and NPS 2: 48 inches with 3/8-inch rod.
 2. NPS 3: 48 inches with 1/2-inch rod.
 3. NPS 4 and NPS 5: 48 inches with 5/8-inch rod.
 4. NPS 6: 48 inches with 3/4-inch rod.
- M. Install supports for vertical **ABS and PVC** piping every 48 inches.
- N. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.
- 3.6 CONNECTIONS
- A. Connect soil and waste piping to exterior sanitary sewerage piping. Use transition fitting to join dissimilar piping materials.
- B. Connect drainage and vent piping to the following:
1. Plumbing Fixtures: Connect drainage piping in sizes indicated, but not smaller than required by plumbing code.
 2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.
 3. Plumbing Specialties: Connect drainage and vent piping in sizes indicated, but not smaller than required by plumbing code. Equipment: Connect drainage piping as indicated. Provide shutoff valve, if indicated, and union for each connection. Use flanges instead of unions for connections NPS 2-1/2 and larger.

3.7 FIELD QUALITY CONTROL

- A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.
 - 1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 - 2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
- C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- D. Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction.
 - 1. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
 - 2. Prepare reports for tests and required corrective action.

3.8 CLEANING

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

3.9 PROTECTION

- A. Exposed **ABS and PVC** Piping: Protect plumbing vents exposed to sunlight with two coats of water-based latex paint.

END OF SECTION 15150

SECTION 15050 - BASIC MECHANICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Piping materials and installation instructions common to most piping systems.
2. Dielectric fittings.
3. Mechanical sleeve seals.
4. Sleeves.
5. Escutcheons.
6. Grout.
7. Mechanical demolition.
8. Equipment installation requirements common to equipment sections.
9. Concrete bases.
10. Supports and anchorages.

1.2 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.3 SUBMITTALS

- A. Welding certificates.

1.4 QUALITY ASSURANCE

- A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code--Steel."

- B. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
 - 1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
 - 2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- C. Electrical Characteristics for Mechanical Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.

PART 2 - PRODUCTS

2.1 PIPE, TUBE, AND FITTINGS

- A. Refer to individual Division 15 piping Sections for pipe, tube, and fitting materials and joining methods.
- B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

2.2 JOINING MATERIALS

- A. Refer to individual Division 15 piping Sections for special joining materials not listed below.
- B. Pipe-Flange Gasket Materials: ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch (3.2-mm) maximum thickness unless thickness or specific material is indicated.
- C. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.
- D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- E. Brazing Filler Metals: AWS A5.8, BCuP Series or BAg1, unless otherwise indicated.
- F. Welding Filler Metals: Comply with AWS D10.12.
- G. Solvent Cements for Joining Plastic Piping:
 - 1. ABS Piping: ASTM D 2235.
 - 2. CPVC Piping: ASTM F 493.
 - 3. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
 - 4. PVC to ABS Piping Transition: ASTM D 3138.

2.3 DIELECTRIC FITTINGS

- A. Description: Combination fitting of copper alloy and ferrous materials with threaded, solder-joint, plain, or weld-neck end connections that match piping system materials.
- B. Insulating Material: Suitable for system fluid, pressure, and temperature.
- C. Dielectric Unions: Factory-fabricated, union assembly, for **250-psig (1725-kPa)** minimum working pressure at **180 deg F (82 deg C)**.
- D. Dielectric Flanges: Factory-fabricated, companion-flange assembly, for **150- or 300-psig (1035- or 2070-kPa)** minimum working pressure as required to suit system pressures.
- E. Dielectric Couplings: Galvanized-steel coupling with inert and noncorrosive, thermoplastic lining; threaded ends; and **300-psig (2070-kPa)** minimum working pressure at **225 deg F (107 deg C)**.
- F. Dielectric Nipples: Electroplated steel nipple with inert and noncorrosive, thermoplastic lining; plain, threaded, or grooved ends; and **300-psig (2070-kPa)** minimum working pressure at **225 deg F (107 deg C)**.

2.4 MECHANICAL SLEEVE SEALS

- A. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.
- B. Sealing Elements: **[EPDM] [NBR] <Insert other>** interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
- C. Pressure Plates: **[Plastic] [Carbon steel] [Stainless steel]**. Include two for each sealing element.
- D. Connecting Bolts and Nuts: **[Carbon steel with corrosion-resistant coating] [Stainless steel]** of length required to secure pressure plates to sealing elements. Include one for each sealing element.

2.5 SLEEVES

- A. Galvanized-Steel Sheet: **0.0239-inch (0.6-mm)** minimum thickness; round tube closed with welded longitudinal joint.
- B. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.
- C. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- D. Stack Sleeve Fittings: Manufactured, cast-iron sleeve with integral clamping flange. Include clamping ring and bolts and nuts for membrane flashing.
 - 1. Underdeck Clamp: Clamping ring with set screws.

- E. Molded PVC: Permanent, with nailing flange for attaching to wooden forms.
- F. PVC Pipe: ASTM D 1785, Schedule 40.
- G. Molded PE: Reusable, PE, tapered-cup shaped, and smooth-outer surface with nailing flange for attaching to wooden forms.

2.6 ESCUTCHEONS

- A. Description: Manufactured wall and ceiling escutcheons and floor plates, with an ID to closely fit around pipe, tube, and insulation of insulated piping and an OD that completely covers opening.
- B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with polished chrome-plated finish.
- C. One-Piece, Cast-Brass Type: With set screw.
 - 1. Finish: **[Polished chrome-plated] [Rough brass] [Polished chrome-plated and rough brass]**.
- D. Split-Casting, Cast-Brass Type: With concealed hinge and set screw.
 - 1. Finish: **[Polished chrome-plated] [Rough brass] [Polished chrome-plated and rough brass]**.

2.7 GROUT

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
 - 1. Characteristics: Post-hardening, volume-adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
 - 2. Design Mix: **5000-psi (34.5-MPa)**, 28-day compressive strength.
 - 3. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 MECHANICAL DEMOLITION

- A. Refer to Division 1 Sections "Cutting and Patching" and "Selective Demolition" for general demolition requirements and procedures.
- B. Disconnect, demolish, and remove mechanical systems, equipment, and components indicated to be removed.
 - 1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.

2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
 3. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 4. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
 5. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 6. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 7. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- C. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

3.2 PIPING SYSTEMS - COMMON REQUIREMENTS

- A. Install piping according to the following requirements and Division 15 Sections specifying piping systems.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- F. Install piping to permit valve servicing.
- G. Install piping at indicated slopes.
- H. Install piping free of sags and bends.
- I. Install fittings for changes in direction and branch connections.
- J. Install piping to allow application of insulation.
- K. Select system components with pressure rating equal to or greater than system operating pressure.
- L. Install escutcheons for penetrations of walls, ceilings, and floors.

- M. Install sleeves for pipes passing through concrete and masonry walls, gypsum-board partitions, and concrete floor and roof slabs.
- N. Aboveground, Exterior-Wall Pipe Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for **1-inch (25-mm)** annular clear space between pipe and sleeve for installing mechanical sleeve seals.
1. Install steel pipe for sleeves smaller than **6 inches (150 mm)** in diameter.
 2. Install cast-iron "wall pipes" for sleeves **6 inches (150 mm)** and larger in diameter.
 3. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- O. Underground, Exterior-Wall Pipe Penetrations: Install cast-iron "wall pipes" for sleeves. Seal pipe penetrations using mechanical sleeve seals. Select sleeve size to allow for **1-inch (25-mm)** annular clear space between pipe and sleeve for installing mechanical sleeve seals.
1. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- P. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Refer to Division 7 Section "Through-Penetration Firestop Systems" for materials.
- Q. Verify final equipment locations for roughing-in.
- R. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.

3.3 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and Division 15 Sections specifying piping systems.
- B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- D. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.
- E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.

- F. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- G. Welded Joints: Construct joints according to AWS D10.12, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.
- H. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.
- I. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
1. Comply with ASTM F 402, for safe-handling practice of cleaners, primers, and solvent cements.
 2. ABS Piping: Join according to ASTM D 2235 and ASTM D 2661 Appendixes.
 3. CPVC Piping: Join according to ASTM D 2846/D 2846M Appendix.
 4. PVC Pressure Piping: Join schedule number ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
 5. PVC Nonpressure Piping: Join according to ASTM D 2855.
 6. PVC to ABS Nonpressure Transition Fittings: Join according to ASTM D 3138 Appendix.
- J. Plastic Pressure Piping Gasketed Joints: Join according to ASTM D 3139.
- K. Plastic Nonpressure Piping Gasketed Joints: Join according to ASTM D 3212.
- L. PE Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
1. Plain-End Pipe and Fittings: Use butt fusion.
 2. Plain-End Pipe and Socket Fittings: Use socket fusion.
- M. Fiberglass Bonded Joints: Prepare pipe ends and fittings, apply adhesive, and join according to pipe manufacturer's written instructions.

3.4 PIPING CONNECTIONS

- A. Make connections according to the following, unless otherwise indicated:
1. Install unions, in piping **NPS 2 (DN 50)** and smaller, adjacent to each valve and at final connection to each piece of equipment.
 2. Install flanges, in piping **NPS 2-1/2 (DN 65)** and larger, adjacent to flanged valves and at final connection to each piece of equipment.

3. Dry Piping Systems: Install dielectric unions and flanges to connect piping materials of dissimilar metals.
4. Wet Piping Systems: Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals.

3.5 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

- A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.
- B. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
- C. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
- D. Install equipment to allow right of way for piping installed at required slope.

3.6 CONCRETE BASES

- A. Concrete Bases: Anchor equipment to concrete base according to equipment manufacturer's written instructions and according to seismic codes at Project.
 1. Construct concrete bases of dimensions indicated, but not less than **4 inches (100 mm)** larger in both directions than supported unit.
 2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on **18-inch (450-mm)** centers around the full perimeter of the base.
 3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
 4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 5. Install anchor bolts to elevations required for proper attachment to supported equipment.
 6. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
 7. Use **3000-psi (20.7-MPa)**, 28-day compressive-strength concrete and reinforcement.

3.7 ERECTION OF METAL SUPPORTS AND ANCHORAGES

- A. Refer to Division 5 Section "Metal Fabrications" for structural steel.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.
- C. Field Welding: Comply with AWS D1.1.

3.8 ERECTION OF WOOD SUPPORTS AND ANCHORAGES

- A. Cut, fit, and place wood grounds, nailers, blocking, and anchorages to support, and anchor mechanical materials and equipment.
- B. Select fastener sizes that will not penetrate members if opposite side will be exposed to view or will receive finish materials. Tighten connections between members. Install fasteners without splitting wood members.
- C. Attach to substrates as required to support applied loads.

3.9 GROUTING

- A. Mix and install grout for mechanical equipment base bearing surfaces, pump and other equipment base plates, and anchors.
- B. Clean surfaces that will come into contact with grout.
- C. Provide forms as required for placement of grout.
- D. Avoid air entrapment during placement of grout.
- E. Place grout, completely filling equipment bases.
- F. Place grout on concrete bases and provide smooth bearing surface for equipment.
- G. Place grout around anchors.
- H. Cure placed grout.

END OF SECTION 15050

SECTION 16050
BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 SUMMARY

- A.** This Section includes the following:
 - 1. Raceways.
 - 2. Building wire and connectors.
 - 3. Supporting devices for electrical components.
 - 4. Electrical identification.
 - 5. Utility company electricity-metering components.
 - 6. Concrete equipment bases.
 - 7. Electrical demolition.
 - 8. Cutting and patching for electrical construction.

1.2 SUBMITTALS

- A.** Product Data: For utility company electricity-metering components.
- B.** Shop Drawings: Dimensioned plans and sections or elevation layouts and single-line diagram of electricity-metering component assemblies specific to this Project.

1.3 QUALITY ASSURANCE

- A.** Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B.** Devices for Utility Company Electricity Metering: Comply with utility company published standards.
- C.** Comply with NFPA 70.

1.4 COORDINATION

- A.** Coordinate chases, slots, inserts, sleeves, and openings for electrical supports, raceways, and cable with general construction work.
- B.** Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning before closing in the building.
- C.** Coordinate electrical service connections to components furnished by utility companies.

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1. Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for service entrances and electricity-metering components.
- D. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces. Access doors and panels are specified in Division 8 Section 08311 "Access Doors and Frames."
- E. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

PART 2 - PRODUCTS

2.1 RACEWAYS

- A. EMT: Electrical metallic tubing; ANSI C80.3, zinc-coated steel, with [set-screw] fittings.
- B. FMC: Flexible metal conduit; zinc-coated steel.
- C. IMC: Intermediate metal conduit; ANSI C80.6, zinc-coated steel, with threaded fittings.
- D. LFMC: Liquid-tight flexible metal conduit; zinc-coated steel with sunlight-resistant and mineral-oil-resistant plastic jacket.
- E. RMC: Rigid metal conduit; galvanized rigid steel; ANSI C80.1.
- F. RNC: Rigid nonmetallic conduit; NEMA TC 2, Schedule 40 PVC, with NEMA TC3 fittings.
- G. Raceway Fittings: Specifically designed for raceway type with which used.

2.2 WIRES, CABLES, AND CONNECTIONS

- A. Conductors, No. 10 AWG and Smaller: Solid or stranded copper.
- B. Conductors, Larger Than No. 10 AWG: Stranded copper.
- C. Insulation: Thermoplastic, rated 600 V, 75 deg. C minimum, Type THW, THHN-THWN, or USE depending on application.
- D. Cable: Type **MC** with ground wire.
- E. Wire Connectors and Splices: Units of size, ampacity rating, material, type, and class suitable for service indicated.

2.3 SUPPORTING DEVICES

- A. Material: Cold-formed steel, with corrosion-resistant coating.
- B. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.
- C. Slotted-Steel Channel: Flange edges turned toward web, and 9/16-inch-diameter slotted holes at a maximum of 2 inches o.c., in webs. Strength rating to suit structural loading.
- D. Nonmetallic Slotted Channel and Angle: Structural-grade, factory-formed, glass-fiber-resin channels and angles with 9/16-inch- diameter holes at a maximum of 8 inches o.c., in at least one surface. Strength rating to suit structural loading.
- E. Slotted Channel Fittings and Accessories: Recommended by the manufacturer for use with the type and size of channel with which used.
 - 1. Materials: Same as channels and angles, except metal items may be stainless steel.
- F. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.
- G. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.
- H. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for non-armored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.
- I. Expansion Anchors: Carbon-steel wedge or sleeve type.
- J. Toggle Bolts: All-steel springhead type.
- K. Powder-Driven Threaded Studs: Heat-treated steel.

2.4 ELECTRICAL IDENTIFICATION

- A. Identification Device Colors: Use those prescribed by ANSI A13.1, NFPA 70, and these Specifications.
- B. Colored Adhesive Marking Tape for Raceways, Wires, and Cables: Self-adhesive vinyl tape, not less than 1 inch wide by 3 mils thick.
- C. Tape Markers for Conductors: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

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- D. Color-Coding Cable Ties: Type 6/6 nylon, self-locking type. Colors to suit coding scheme.
- E. Underground Warning Tape: Permanent, bright-colored, continuous-printed, vinyl tape compounded for permanent direct-burial service, and with the following features:
 - 1. Not less than **6 inches wide by 4 mils thick**.
 - 2. Embedded continuous metallic strip or core.
 - 3. Printed legend that indicates type of underground line.
- F. Engraved-Plastic Labels, Signs, and Instruction Plates: Engraving stock, melamine plastic laminate punched or drilled for mechanical fasteners **1/16-inch** minimum thickness for signs up to **20 sq. in.** and **1/8-inch** minimum thickness for larger sizes. Engraved legend in black letters on white background.
- G. Warning and Caution Signs: Preprinted; comply with 29 CFR 1910.145, Chapter XVII. Colors, legend, and size appropriate to each application.
 - 1. Interior Units: Aluminum, baked-enamel-finish, punched or drilled for mechanical fasteners.
 - 2. Exterior Units: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate with **0.0396-inch**, galvanized-steel backing. **1/4-inch** grommets in corners for mounting.
- H. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.

2.5 EQUIPMENT FOR UTILITY COMPANY'S ELECTRICITY METERING

- A. Comply with requirements of electrical power utility company for [**current transformer cabinets**] [**meter sockets**] [**modular meter centers**] <Insert other related equipment>.

2.6 CONCRETE BASES

- A. Concrete Forms and Reinforcement Materials: As specified in Division 3 Section 03300"[**Cast-in-Place Concrete**] 03301 [**Cast-in-Place Concrete (Limited Applications)**]."
- B. Concrete: **3000-psi**, 28-day compressive strength.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

- A.** Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom.
- B.** Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.
- C.** Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.
- D.** Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 RACEWAY APPLICATION

A. Outdoor Installations:

- 1. Exposed: **RMC**.
- 2. Concealed: **RMC**.
- 3. Underground, Single Run: **RMC**.
- 4. Underground, Grouped: **RNC**.
- 5. Connection to Vibrating Equipment: **LFMC**.
- 6. Boxes and Enclosures: **NEMA 250, Type 3R or Type 4**, unless otherwise indicated.

B. Indoor Installations:

- 1. Exposed: **EMT** except in wet or damp locations, use **IMC**.
- 2. Concealed in Walls or Ceilings: **EMT**.
- 3. In Concrete Slab: **RMC**.
- 4. Below Slab on Grade or in Crawlspace: **RMC**
- 5. Connection to Vibrating Equipment: **FMC**; except in wet or damp locations: **LFMC**.
- 6. Boxes and Enclosures: **NEMA 250, Type 1**, unless otherwise indicated.

3.3 RACEWAY AND CABLE INSTALLATION

- A.** Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors.
- B.** Keep legs of raceway bends in the same plane and keep straight legs of offsets parallel.
- C.** Use **RMC** elbows where **RNC** turns out of slab.

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- D. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or woven polypropylene or monofilament plastic line with not less than **200-lb** tensile strength. Leave at least **12 inches** of slack at each end of pull wires.
- E. Install telephone and signal system raceways, **2-inch trade size** and smaller, in maximum lengths of **150 feet** and with a maximum of two 90-deg ree bends or equivalent. Add pull boxes where necessary to accomplish this.
- F. Connect motors and equipment subject to vibration, noise transmission, or movement with a maximum of **72-inches** flexible conduit. Install LFMC in wet or damp locations. Install separate ground conductor across flexible connections.
- G. Set floor boxes level and trim after installation to fit flush to finished floor surface.

3.4 WIRING METHODS FOR POWER, LIGHTING, AND CONTROL CIRCUITS

- A. Application: Use wiring methods specified below to the extent permitted by applicable codes as interpreted by authorities having jurisdiction.
- B. Concealed Feeders in Ceilings **Walls Gypsum Board Partitions: Nonmetallic sheathed cable.**
- B. Exposed Branch Circuits: **Insulated single conductors in raceway.**
- C. Concealed Branch Circuits in Ceilings **Walls Gypsum Board Partitions: Nonmetallic sheathed cable.**
- D. Concealed Branch Circuits **in Concrete:** Insulated single conductors in raceway.
- E. Underground Feeders and Branch Circuits: Insulated single conductors in raceway.
- F. Remote-Control Signaling and Power-Limited Circuits, Classes 1, 2, and 3: Insulated conductors in raceway unless otherwise indicated.

3.5 WIRING INSTALLATION

- A. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.

3.6 ELECTRICAL SUPPORTING DEVICE APPLICATION

- A. Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, slotted channel system components.
- B. Dry Locations: Steel materials.

- C. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four with, **200-lb** minimum design load for each support element.

3.7 SUPPORT INSTALLATION

- A. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.
- B. Size supports for multiple raceway or cable runs so capacity can be increased by a 25 percent minimum in the future.
- C. Support individual horizontal single raceways with separate, malleable-iron pipe hangers or clamps **except use spring-steel fasteners for 1-1/2-inch and smaller single raceways above suspended ceilings and for fastening raceways to slotted channel and angle supports**].
- D. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.
- E. Secure electrical items and their supports to building structure, using the following methods unless other fastening methods are indicated:
 - 1. Wood: Wood screws or screw-type nails.
 - 2. Gypsum Board: Toggle bolts. Seal around sleeves with joint compound, both sides of wall.
 - 3. Masonry: Toggle bolts on hollow block and expansion bolts on solid block. Seal around sleeves with mortar, both sides of wall.
 - 4. New Concrete: Concrete inserts with machine screws and bolts.
 - 5. Existing Concrete: Expansion bolts.
 - 6. Structural Steel: **Spring-tension clamps**.
 - 7. Light Steel Framing: Sheet metal screws.
 - 8. Fasteners for Damp, Wet, or Weather-Exposed Locations: Stainless steel.
 - 9. Light Steel: Sheet-metal screws.
 - 10. Fasteners: Select so load applied to each fastener does not exceed 25 percent of its proof-test load.

3.8 IDENTIFICATION MATERIALS AND DEVICES

- A. Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

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- B.** Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.
- C.** Self-Adhesive Identification Products: Clean surfaces before applying.
- D.** Tag and label circuits designated to be extended in the future. Identify source and circuit numbers in each cabinet, pull and junction box, and outlet box. Color-coding may be used for voltage and phase identification.
- E.** Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines located directly above power and communication lines. Locate **6 to 8 inches** below finished grade. If width of multiple lines installed in a common trench or concrete envelope does not exceed **16 inches**, overall, use a single line marker.
- F.** Install warning, caution, and instruction signs where required to comply with 29 CFR 1910.145, Chapter XVII, and where needed to ensure safe operation and maintenance of electrical systems and of items to which they connect. Indoors install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.
- G.** Install engraved-laminated emergency-operating signs with white letters on red background with minimum **3/8-inch**- high lettering for emergency instructions on power transfer, load shedding, and other emergency operations.

3.9 ELECTRICITY-METERING EQUIPMENT

- A.** Install utility company metering equipment according to utility company's written requirements. Provide grounding and empty conduits as required by utility company.

3.10 FIRESTOPPING

- A.** Apply fire-stopping to cable and raceway sleeves and other penetrations of fire-rated floor and wall assemblies to restore original undisturbed fire-resistance ratings of assemblies. Fire-stopping installation is specified in Division 7 Section 07841 "Through-Penetration Firestop Systems."

3.11 CONCRETE BASES

- A.** Construct concrete bases of dimensions indicated, but not less than **4 inches** larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated.

3.12 DEMOLITION

- A. Protect existing electrical equipment and installations indicated to remain. If damaged or disturbed in the course of the Work, remove damaged portions and install new products of equal capacity, quality, and functionality.
- B. Accessible Work: Remove exposed electrical equipment and installations, indicated to be demolished, in their entirety.
- C. Abandoned Work: Cut and remove buried raceway and wiring, indicated to be abandoned in place, **2 inches** below the surface of adjacent construction. Cap raceways and patch surface to match existing finish.
- D. Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation.

3.13 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair, refinish and touch up disturbed finish materials and other surfaces to match adjacent undisturbed surfaces.

END OF SECTION 16050

SECTION 270528 – COMMUNICATIONS SYSTEMS

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. Scope of work includes material and labor for installation of computer connections in Crosley Fish & Wildlife Office. See Part 2 specification for material and drawing E-1 for computer and panel location.

1.3 QUALITY CONTROL

- A. As Built Drawings
- B. Testing Copper

PART 2 - PRODUCTS

- 2.1 8 Singles; Manufacturer General, Part # 7131800, Units 1000
- 2.2 Cat 6 Jack-Outlet end; Manufacturer Panduit, Part # CJ688TGBU, Units 13
- 2.3 Cat 6 Jack-Patch Panel; Manufacturer Panduit, Part # CJ688TGBU, Units 13
- 2.4 Patch Panels; Manufacturer Panduit, Part # CWPP12WBL, Units 2
- 2.5 Faceplate; Manufacturer Panduit, Part # CFPE2EIY, Units 13
- 2.6 Blanks; Manufacturer Panduit, Part # CMBEI-X, Units 13
- 2.7 One Back Board (plywood)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 270528