

# Project Manual:

## **Tunnel Repairs 2023** **On the Campus of Indiana State University** **Terre Haute, Indiana 47809**

**Owner:**



**Indiana State  
University**

Department of Facilities Management  
951 Sycamore Street  
Terre Haute, Indiana 47809  
812-237-8100

**Structural Engineer**

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**ARSEE ENGINEERS, INC.**

CLIENT ORIENTED – BY DESIGN

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9715 Kincaid Drive, Suite 100  
Fishers, IN 46037  
317-594-5152

**Mechanical/Electrical Engineer**



**R.E. Dimond**

and Associates, Inc.  
Consulting Engineers  
732 North Capitol Avenue  
Indianapolis, IN 46204

PHONE: (317) 634-4672 FAX: (317) 638-8725

**Bid Number B0027822**



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00 10 00  
NOTICE TO BIDDERS

Sealed proposals are requested for Tunnel Repairs 2023, Bid Number B0027822. Proposals will be received for the above contract at the Office of the Department of Purchasing, Indiana State University, Facilities Management and Purchasing Building, 951 Sycamore Street, Terre Haute, Indiana 47809, until 2:00pm Local Time, March 7, 2023. Effective March 5, 2022 Facial PPE (masks) are not required in Indiana State University Buildings so respondents delivering Bids are not required to wear facial PPE when delivering Bids, however, it is suggested that a mask be worn to protect the Purchasing Department Personnel when delivering the Bids.

There will be no in person Public Bid Opening. The Bids will be opened at 2:15pm on the due date and read aloud via Teams conference call. For conference call access call 812-228-8187 and enter conference ID 292 054 61 followed by #.

Bidding Documents may be downloaded from the ISU Plan Room at <http://www.indstateplanroom.com/> on **February 16, 2023** for \$5.00 per person/download which covers all downloads for that particular Project. Bidders must register for a free account the first time they access the website. Bid Documents may be ordered for purchase on CD, for \$7.50 per CD, or on paper copy at applicable printing costs from Rapid Reproductions, Inc., 129 South 11<sup>th</sup> Street, Terre Haute, IN 47807 (812-238-1681 Toll Free 800-736-7084).

Proposals are to be made on the Bid Form published in the Project Manual, based on Form 96 (Revised), as prescribed by the State Board of Accounts. As a mandatory requirement the Proposal shall be accompanied by a certified check; cashier's check or a Bid Bond (AIA A310) for an amount not less than 5% of the total bid price for Base Bid(s) and all add Alternates. See Section 00 10 10 Instructions to Bidders 3.01 for Bid Bond Requirements

Bidder(s) receiving awards shall be required to provide acceptable surety in the form of a Performance and Labor and Materials Payment Bond for the full amount of the award. Include the cost of all bonds and insurance in the Bid amount.

Indiana State University is a Tax Exempt Institution and Indiana Sales Tax for products permanently incorporated in work shall not be included as part of the Bid or on any Application for Payment.

All Bidders must comply with All State and Federal Non-Discrimination laws.

Responsive bidders may not have an active dispute, claim, or litigation with Indiana State University.

Indiana State University reserves the right to accept or reject any Bid and to waive any irregularities in Bidding. Any proposal received after the time fixed herein shall be returned unopened.

No bid may be withdrawn after the opening of Bids without the consent of Indiana State University for a period of One Hundred Twenty (120) days after the time of opening Bids.

There will not be an actual Pre-Bid conference meeting for the Project. A copy of a Pre-Bid Information sheet will be included with the Bidding Documents. Bidders shall review the information sheet and the contained information will become a part of the Bidding Documents.

Pre-Bid site visits have been scheduled at 1:00pm on February 21, 2023 at the north entrance 1<sup>st</sup> floor of the ISU Science Building, 600 Chestnut Walk, Terre Haute, Indiana 47809. While masks are not required on the ISU campus or in campus buildings attendees are reminded to practice social distancing whenever possible. *Representatives of each of the Bidders are strongly urged to attend.*

Contract Award shall be to a Single Prime Bidder for all single Base Bid project work or the Contract Award may be to multiple Single Prime Bidders for multiple Base Bid Package project work. The prime Bidder(s) shall be an experienced and qualified Contractor(s) having successfully completed a minimum of three (3) projects of similar size and scope. The Bid form for this Project requires the Bidder to submit evidence of successful installation of similar projects (minimum of three projects), including customer information, scope, dates, Contract dollar amounts. With their Bid the Bidder shall submit their most current audited financial statement and vendor trade credit references as evidence of financial capability to perform the work.

00 10 00  
NOTICE TO BIDDERS

**All questions relating to this Project shall be addressed to:**

**Dale Warner, R.E. Dimond and Associates**

**Phone 317-634-4672 E-mail [dale.warner@redimond.com](mailto:dale.warner@redimond.com)**

INDIANA STATE UNIVERSITY BOARD OF TRUSTEES

By: Diann E. McKee  
Senior Vice President for Finance and Administration and University Treasurer  
Indiana State University

END OF SECTION 00 10 00

00 10 10  
INSTRUCTIONS TO BIDDERS

PART 1- INSTRUCTIONS TO BIDDERS

1.01 GENERAL

- A. Bidders shall carefully read the Notice to Bidders with regard to preparation of proposals, which includes the date and place for receiving proposals. See PART 3 of this Section 00 10 10 Instructions to Bidders for a complete list of the required forms for Bidding.
- B. All Bidders shall fully inform themselves of the conditions under which the work is to be performed, the site of the work, the obstacles that may be encountered, and other relevant matters concerning the work to be performed.
- C. The Contractor shall begin Work within seven (7) days after Award preparing submittals and procuring material. Actual Work shall begin on or about May 9, 2023 with all Work substantially completed by August 18, 2023. All work that requires utility shutdowns shall be thoroughly coordinated and scheduled with the Owner. Interior tunnel work that does not affect operations may extend duration until September 29, 2023. Final closeout shall be within thirty (30) calendar days thereafter. A warranty walk-thru may be held eleven (11) months from the date of substantial completion.
- D. No Bidder, after being awarded the contract, shall be allowed any extra compensation for reason of their failure to fully inform themselves, prior to their Bidding, of all requirements of the Contract Documents, the Drawings, and Specifications.
- E. If any Bidder for the proposed contract is in doubt as to the true meaning of any part of the Drawings, Specifications or their proposed Contract Documents, they may submit to the Owner written request for any interpretation thereof. The Bidder submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by an Addendum duly issued. A copy of such Addendum will be posted to the ISU Plan Room and e-mail notification sent to each registered plan holder (see 1.07 of this Section). Such Addendum, if any, issued before submission of the Bids, shall be taken into account and included in the proposal.
- F. Any Bidder may withdraw their Bid at any time prior to the scheduled time for the receipt of bids.
- G. No Bidder may withdraw their Bid or proposal for a period of One Hundred Twenty (120) calendar days after date and time set for opening Bids.
- H. It is understood that the Owner reserves the right to waive any irregularities in Bidding and to accept or reject any or all Bids.
- I. It is further understood on Bids with multiple Bid Packages the Owner reserves the right to selectively Award individual Bid Packages to multiple Prime Bidders submitting the lowest and best Bids for the individual Bid Packages.

1.02 EXAMINATION OF SITE AND BIDDING DOCUMENTS

- A. The site shall be carefully examined prior to bidding to ascertain the location of the work, existing conditions, and all other matters which may affect the work under this Contract. Each Bidder by making their Bid represents that they have visited the site and familiarized themselves with the local conditions under which the Work is to be performed.
- B. The Bidding Documents shall be carefully examined to ascertain the character, quality and quantity of the work to be performed, of materials and items to be furnished, of equipment and facilities needed during construction, of utilities and of all other matters which may affect the work under the Contract. Each Bidder by making their Bid represents that they have read and fully understands the Bidding Documents.

00 10 10  
INSTRUCTIONS TO BIDDERS

1.03 PRE-BID CONFERENCE

- A. There will not be an actual Pre-Bid conference. A pre-bid site visit will be held to allow Bidders' to visit the site. All questions, even if asked and answered at the pre-bid site visit, shall be submitted in writing via e-mail to the Project main contact and Owner.
- B. An Addendum will be issued confirming any information conveyed at pre-bid site visit and no verbal response tendered during pre-bid site visit shall have legal standing unless so confirmed by Addendum.
- C. Additional site visits may be arranged with the Project's Main Contact or Owner's Main Contact.

1.04 BIDDING QUESTIONS

- A. Questions regarding the Bidding Documents and Project shall be submitted in writing via e-mail to the Project main contact and Owner. An Addendum will be issued to respond to all questions received. No verbal or direct e-mail response shall have legal standing unless so confirmed by Addendum.
- B. The last day for questions to submitted shall be three (3) business days prior to the scheduled date for the receipt of Bids. Any questions submitted after that date may not receive consideration.

1.05 EXECUTION OF AGREEMENT

- A. For all Projects the forms of agreement which the successful Bidder, as Contractor, will enter into will be an ISU Award Letter, an ISU Purchase Order and a Contract for Construction. Prior to issuance of the Purchase Order the Contractor shall provide to the Director of Purchasing the Labor and Material Performance Bond, their most current financial statement and vendor trade credit references as evidence of financial capability to perform the work and the policies of insurance or insurance certificates as required by the Contract Documents and listed in the Award Letter. All Bonds and Insurance shall have an A.M. Best rating of not less than an "A". Once all the required paperwork has been received by ISU Purchasing and the Purchase Order issued, an electronic PDF copy of the Contract for Construction Between Indiana State University and Contractor, will be e-mailed to the Contractor for their signature and return to the Department of Facilities Management Contract Administrator for forwarding to the Senior Vice President for Finance and Administration for Owner signature. A fully executed copy of this Contract will be returned to the Contractor via e-mail for their files.
- B. Time Limits for Execution of Agreement.
  - 1. The successful Bidder shall supply the required paperwork (their Financial Statement (if not supplied with their Bid), Certificate of Insurance and their Performance and Payment Bond) to the ISU Purchasing Department within ten (10) calendar days after receipt of the ISU Award Letter.
  - 2. The successful Bidder shall within seven (7) calendar days after receipt of the Contract for Construction Between Indiana State University and Contractor enter into the written Contract to perform the work in accordance with the Drawings and Specifications by signing and returning the Contract to the Department of Facilities Management Contract Administrator for forwarding to the Senior Vice President for Finance and Administration for Owner's signature and return to the Bidder.
- C. In the case a Bidder whose Bid is accepted, fails to perform their Bid by providing the required paperwork within ten (10) calendar days after receipt of the Award Letter and entering into the written Contract with the Owner within seven (7) calendar days after receipt, then this failure may be cause for their certified check, draft or Bid Bond, and the proceeds thereof, to remain the absolute property of the Owner, as liquidated damages, it being impossible to estimate the amount of damages such failure would occasion.



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INSTRUCTIONS TO BIDDERS

1.06 INDEMNIFICATION

- A. Bidders, in consideration of the privilege of Bidding, specifically waive all rights both legal and equitable which they have or might be construed to have against Indiana State University because of any action taken in accepting or rejecting bids and proposals, for themselves, and /or for subcontractors, suppliers and/or manufacturers, who may file an action based on any such acceptance or rejection. Bidders shall be liable for any resultant reasonable attorney fees and expenses incurred by Indiana State University.

1.07 ADDENDA

- A. All Addenda for the Project will be posted on the ISU Plan Room at: <http://www.indstateplanroom.com/>. Addenda may be downloaded at no cost to registered plan holders.
- B. A Bidder must register for a free account the first time they access the ISU Plan Room website.
- C. The Bidder will receive an e-mail notifying that an Addendum is available for download from this site. The Bidder is advised to periodically check this link in the event an e-mail fails to deliver.

1.08 SUBSTITUTIONS PRIOR TO BID

- A. Requests for substitution of any material, construction, equipment and methods named or described in the Specifications, on the Drawings and any Addenda issued shall be submitted in writing to the Architect/Engineer and Owner a minimum of seven (7) calendar days prior to Bidding. Complete support documentation shall be provided that the item to be substituted is equal to or exceeds the material, construction, equipment or methods named or described in the Specifications, on the Drawings and any Addenda issued with the request for substitution. It is solely at the discretion of the Architect/Engineer and the Owner to allow any requests for substitution.
- B. Should it be determined after Award of the Bid that the Bidder based their Bid on any material, construction, equipment and methods not named or described in the Specifications, on the Drawings and any Addenda issued as approved for substitution prior to Bidding shall be disallowed and the material, construction, equipment and methods named or described in the Specifications, on the Drawings and any Addenda issued shall be provided at no additional cost to the Owner.

PART 2 - SUBCONTRACTORS, SUPPLIER AND MANUFACTURER'S BIDS TO BIDDERS

2.01 SUBCONTRACTOR, SUPPLIER AND MANUFACTURE BUNDLING OF PRICES TO PROSPECTIVE BIDDERS

- A. Subcontractors, Suppliers and Manufacturers are permitted to bundle quote prices to Bidders however these bundled prices may not be used to withhold providing individual pricing to a Bidder for bundled items when requested by a Bidder to provide individual pricing. No subcontractor or supplier shall make it a condition of their bid that another part of the project be awarded to them.
- B. Failure to provide individual pricing upon Bidder's request may be cause to disqualify a Subcontractor or Supplier and Manufacturer from Indiana State University Projects.

PART 3- EXECUTION FORMS FOR BIDDING

3.01 BID BOND

- A. A certified or cashier's check or Bid Bond is a mandatory requirement to be submitted with the Bid and shall be based on not less than five (5) percent of the Bid amount total of the Base Bid(s) and all add Alternates.
- B. The Bid bond shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties

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INSTRUCTIONS TO BIDDERS

as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. The Bid Bond shall be obtained from surety or insurance company that is duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. In addition to appearing on Circular 570 U.S. Dept. of the Treasury, such Surety or insurance company shall maintain an A.M. Best's Rating of not less than "A."

- C. Failure to submit an acceptable Bid Bond with the Bid shall disqualify a Bidder.

3.02 BIDDERS FINANCIAL STATEMENT

- A. With their Bid the Bidder shall submit their most current independently audited or reviewed financial statement and vendor trade credit references as evidence of financial capability to perform the work.
- B. Failure to submit the Bidder's financial statement may be cause to disqualify a Bidder.

3.03 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION (SECTION 00 10 20 OF PROJECT MANUAL)

- A. This certificate is required by the regulations implementing Executive Order 12549 Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participants' responsibilities. The regulations were published as Part V11 of the May 26, 1988 Federal Register (pages 19160-19211).
- B. Submit at time of Bid. Failure to submit with the Bid may be cause to disqualify a Bidder.

3.04 MBE/WBE/VBE PARTICIPATION PLAN. (SECTION 00 10 40 OF THE PROJECT MANUAL)

- A. See Section 00 10 30 MBE/WBE/VBE COMPLIANCE INSTRUCTIONS for full details on submission of the Participation Plan.
- B. This Plan must be submitted at time of Bid by **all Bidders**. Failure to submit with the Bid may be cause to disqualify a Bidder.

3.05 MANDATORY TIER II REPORTING REQUIREMENT FOR PROJECTS EQUAL TO OR GREATER THAN \$500,000.00. (Note: this form may not be included in all Project Manuals)

- A. MBE/WBE/VBE utilization in the performance of this Contract must be reported with each Application for Payment using the ISU Business Diversity Spend Reporting Form for Construction/Renovation/Facilities Repair Projects (see included: Tier II Spend Report Form.xlsx.)
- B. Compliance with Owner's Mandatory Tier II Reporting Requirement is a condition for the approval of an Applications for Payment.
- C. An electronic copy in Excel format will be included with the Award Letter when applicable.

3.06 BIDDER'S CERTIFICATION OF AUTHORIZED EMPLOYMENT (SECTION 00 10 45 OF THE PROJECT MANUAL)

- A. Bidder must certify at time the of Bidding that they have read and understand the "Contractor's Certification of Authorized Employment" provision of the Contract Documents In Section 00 20 11 Amendments to General Conditions Article 13, subparagraph 13.1.7.3 and its subparagraphs
- B. Submit at time of Bid. Failure to submit with the Bid may be cause to disqualify a Bidder.

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INSTRUCTIONS TO BIDDERS

3.07 BID FORM (SECTION 00 20 00 OF THE PROJECT MANUAL)

- A. In order to receive consideration, make all Bids in strict accordance with the following:
  - 1. Proposals shall be submitted only on the form furnished, a copy of which is bound into and forms a part of this Project Manual, and which will become a part of the Purchase Order Contract of the successful Bidder (use a photocopy of the Bid Form herein).
  - 2. Proposals shall be completely and correctly filled out using ink or typewriter, with signatures in ink.
  - 3. Prices, except unit prices and percentages, shall be stated both in figures and in writing. In the event of a discrepancy between writing and the figures, the written amount shall govern.
  - 4. Proposals shall be signed by the Bidder, by a partner, or a duly authorized officer for a corporation, and shall give the Bidder's business address and telephone number. Failure to sign the Bid form may be cause to disqualify a Bid.
  - 5. Proposals submitted by non-Indiana corporations shall be accompanied by a certificate of existence issued by the Indiana Secretary of State.
  - 6. Any interlineation, alteration or erasure of the published Bid Form may be grounds for rejection of the proposal. Proposal shall contain no recapitulation of the work to be done.
  - 7. Proposals shall be based only on the material, construction, equipment and methods named or described in the Specifications, on the Drawings, and any Addenda issued prior to Bidding. See item 1.08 of this Sections for substitution request requirements.
- B. Modification of proposals already submitted will be accepted by letter, fax or telegram if received by the Owner prior to the date and hour set for opening of proposals.
- C. Each Bid shall be addressed to the Owner, and shall be delivered to the Office of the Director of Purchasing at the address given in the Notice to Bidders on or before the day and hour set for opening of Bids. Each Bid shall be enclosed in a sealed envelope bearing the title of the Project, the name of the Bidder, and the date and hour of the Bid opening. It is the sole responsibility of the bidder to see that their bid is received on time.

3.08 ADDENDA

- A. Indicate receipt of Addenda on the Bid Form in the spaces provided for acknowledgement.
- B. Failure to indicate receipt may be cause to disqualify a Bid.

3.09 BID FORM - BASE BID(S)

- A. Base Bid(s) shall be based only on the material, construction, equipment and methods named or described in the Specifications, on the Drawings, and any Addenda issued prior to Bidding. See item 1.08 of this Section for substitution request requirements.
- B. On Bids with multiple Base Bid Packages the Owner reserves the right to selectively Award individual Base Bid Packages to multiple Prime Bidders submitting the lowest and best Bids for the individual Bid Packages.

3.10 BID FORM - ALTERNATE BID(S)

- A. Each Bidder, in addition to submission of the Base Bid, shall submit a Bid for any Alternate(s) as called for (if any). Failure to submit said Alternate Bid(s) shall be sufficient cause for the Owner to reject any proposal in its entirety. Also the Owner may consider the Alternate Bid in awarding of a Contract, but is under no obligation to accept any Alternate Bid.

00 10 10  
INSTRUCTIONS TO BIDDERS

- B. Proposals shall be based only on the material, construction, equipment and methods named or described in the Specifications, on the Drawings, and any Addenda issued prior to Bidding. See item 1.08 of this Section for substitution request requirements.

3.11 BID FORM – ALLOWANCES

- A. Allowances (if any) shall be included in the applicable Bid (Base Bid(s) or Alternate Bid(s)) as called for in the Allowance Section of the Bid Form and/or Section 01 23 60 Allowances.
- B. It is solely at the discretion of the Architect/Engineer/Owner what costs may be applied to an Allowance.
- C. Any unused portion of an Allowance shall be returned to the Owner at Contract Closeout.

3.12 NON-COLLUSION AFFIDAVIT

- A. The Bidder, by its officers and agents or representatives present at the time of filing their bid, being duly sworn, say on their oaths that neither they nor any of them have in any way, directly or indirectly, entered into any arrangement or agreement with any other bidder, or with any public office of the State of Indiana, of any county or municipality or other public offices whereby such affiance or either of them, has paid or is to pay to such other bidder or public officer any sum of money, or has given or is to give to such other bidders or public officer anything of value whatever, or such affiance of affiance or either of them has not, directly or indirectly entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in letting of the contract sought for by the attached bids; that no inducement of any form or character other than which appears upon the face of the bid will be suggested, offered, paid, or delivered to any person whomsoever to influence the acceptance of the said bid or awarding of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contract sought by this bid.
- B. Submission of the signed Bid Form indicates compliance.

3.13 NON-DISCRIMINATION

- A. The Bidder and its 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 their hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment because of their sex, race, natural origin, ancestry or religion or disability as prohibited under the Americans with Disabilities Act. Breach of this covenant may be regarded as a material breach of the Contract.
- B. Submission of the signed Bid Form indicates compliance.

3.14 CERTIFICATION OF UNITED STATES STEEL PRODUCTS

- A. The Bidder certifies that the Bidder and all Subcontractors will comply with the statutory obligations to use steel products made in the United States.
- B. Submission of the signed Bid Form indicates compliance.

3.15 BID FORM - APPENDIX A SUBCONTRACTOR AND SUPPLIER/MANUFACTURERS LISTS

- A. The Prime Contractor (Bidder) shall list all Subcontractors and Suppliers/Manufacturers called for in Appendix A of the Bid Form at the time of Bid Submission. Failure to provide this information may be sufficient cause to disallow a Bid.
- B. **The Prime Contractor (Bidder) shall use the Subcontractors, Suppliers, Materials and Equipment as listed in the Bid Form Appendix "A" submitted at the time of Bid. It is the Prime Contractor's (Bidder's) responsibility to assure they have listed**

00 10 10  
INSTRUCTIONS TO BIDDERS

**the correct Subcontractors, Suppliers, Materials and Equipment on their Bid Form.  
THERE SHALL BE NO CHANGES PERMITTED TO THESE LISTS.**

1. Exception: If the Owner determines the Subcontractors, Suppliers, Materials or Equipment are not acceptable, the Owner shall notify the Prime Contractor (Bidder) in writing within two (2) working days after receipt of Bids of the unacceptable Subcontractor(s), Supplier(s), Material(s) and/or Equipment(s).

**3.16 BID FORM - APPENDIX B UNIT PRICES**

- A. Each Bidder shall submit pricing for Unit Prices as called for (if any) in Appendix B. Failure to submit said pricing may be sufficient cause for the Owner to reject any proposal in its entirety. Also the Owner may consider the Unit Pricing in awarding of a Contract.
- B. Unit Prices shall be based only on the material, construction, equipment and methods named or described in the Specifications, on the Drawings, and any Addenda issued prior to Bidding.
- C. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

**3.17 BID FORM - APPENDIX C**

- A. By 2:00pm on the next business day after receipt of Bids the Bidder shall submit, a wage rate schedule for the workers of the Prime Bidder and all major Subcontractors involved in the Work. The wage rate shall include the worker's hourly rate plus all fringe benefits to be paid to the worker.
- B. A major Subcontractor is defined as any Subcontractor whose portion of the Bid is in excess of \$250,000 or 20% of the total Bid whichever is less.
- C. Failure to submit this wage rate schedule within the allotted time may be sufficient cause to disallow a Bid. The wage rates provided may be used as a basis for Award of the Bid.
- D. The Owner reserves the right to require certified payroll records to be provided to verify the wage rates listed on the wage rate schedule are accurate.

END OF SECTION 00 10 10

00 10 10  
INSTRUCTIONS TO BIDDERS

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00 10 20  
CERTIFICATION REGARDING SUSPENSION, DEBARMENT, INELIGIBILITY AND  
VOLUNTARY EXCLUSION

This certificate is required by the regulations implementing Executive Orders 12549 and 12689, Uniform Guidance 2 CFR 200.213 and 2 CFR 180 sections regarding Suspension and Debarment

Is your organization, or its principals, suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction, by any Federal department or agency?      ☐ Yes      ☐ No

Are any of your subcontractors, or its principals, suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction, by any Federal department or agency?      ☐ Yes      ☐ No

\_\_\_\_\_  
Your Company's Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Your Name

\_\_\_\_\_  
Date

END OF SECTION 00 10 20

00 10 20

CERTIFICATION REGARDING SUSPENSION, DEBARMENT, INELIGIBILITY AND  
VOLUNTARY EXCLUSION

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00 10 30  
MBE/WBE/VBE COMPLIANCE INSTRUCTIONS

PART 1 – CONSTRUCTION SERVICES – INSTRUCTION TO BIDDERS

1.01 MBE/WBE/VBE Participation Plan

- A. Indiana State University is committed to diversity and non-discrimination in all aspects of its operations. This initiative is to ensure that certified MBEs, WBEs, and VBEs are included in all invitations for quotes and bids, and that all prospective bidders are notified of Indiana State University's expectation for diversity, including but not limited to MBE/WBE/VBE participation in procurement contracts for professional services, materials, supplies and equipment, and in contracts for the construction, architectural services, renovation or repair of university facilities and equipment. This expectation extends to all tiers of contractor utilization. Each Prime contractor should actively solicit and include certified minority, women and veteran owned subcontractors in bid submissions if economically feasible.
- B. The Minority, Women's and Veteran's Business Enterprise Participation Plan (form included in specifications) shall be submitted with the bid. This Participation Plan will be considered during the proposal evaluation process.
- C. Indiana State University's annual MBE, WBE, and VBE participation goals parallel those set by the Indiana Department of Administration for its own business diversity efforts. The State MBE/WBE participation goals may be found at [www.in.gov/idoa/mwbe/2743.htm](http://www.in.gov/idoa/mwbe/2743.htm) and VBE participation goals may be found at [www.in.gov/idoa/2862.htm](http://www.in.gov/idoa/2862.htm)

1.02 Definitions

- A. "Minority-owned Business Enterprise" (MBE) means an individual, partnership, corporation, limited liability company, or joint venture of any kind that is 51% owned and controlled by (1) or more persons who are (a) United States citizens; and (b) members of a racial minority group: African American, American Indians, Hispanics, Asian Americans, or other similar minority group as defined by 13 CFR 124.103 and have been certified by the State of Indiana.
- B. "Women-owned Business Enterprise" (WBE) means an individual, partnership, corporation, limited liability company, or joint venture of any kind that is 51% owned and controlled by (1) or more persons who are (a) United States citizens; and (b) whose gender is female and have been certified by the State of Indiana.
- C. "Veteran-owned Business Enterprise" (VBE) means an Indiana firm with its principal place of business location in Indiana and is currently certified by the Department of Veterans Affairs as a veteran-owned business and have been certified by the State of Indiana or who have been Federally certified.

1.03 Qualifications for Participation

- A. In order to count toward participation goals, the MBEs and WBEs must be certified by the State of Indiana.
- B. VBEs must be certified by the State of Indiana or have been Federally certified.

1.04 Failure to Participate

- A. Failure to submit the Minority, Women's and Veteran's Business Enterprise Participation Plan with the Bid may be cause to reject a Bid.
- B. The Owner retains the right to hold payment, and/or to reject future bids submitted by the successful Contractor in the event that Contractor misrepresents either MBE/WBE/VBE participation in this Project, or its efforts to obtain MBE/WBE/VBE participation in this project, or fails to report MBE/WBE/VBE spend on this project.
- C. The Owner, at its discretion, may waive in part or in whole the minority-owned business enterprise, women-owned business enterprise and/or veteran-owned business enterprise requirement if in the opinion of the Owner it would be impractical, or not in the best interest of the Owner.

00 10 30  
MBE/WBE/VBE COMPLIANCE INSTRUCTIONS

1.05 Mandatory Tier II Reporting Requirement for Projects equal to or greater than \$500,000.00

- A. The successful Contractor shall take all necessary and reasonable steps to ensure that MBE/WBE/VBEs have the maximum opportunity to compete for and perform work on this Contract.
- B. MBE/WBE/VBE utilization in the performance of this Contract must be reported with each Application for Payment using the ISU Business Diversity Spend Reporting Form for Construction/Renovation/Facilities Repair Projects (see included: Tier II Spend Report Form.xlsx.)
- C. Compliance with Owner's Mandatory Tier II Reporting Requirement is a condition for the approval of an Applications for Payment.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 00 10 30

00 10 40  
MBE/WBE/VBE PARTICIPATION PLAN

Project Name \_\_\_\_\_

Bid Number \_\_\_\_\_ Bid Date \_\_\_\_\_

This Form must be completed by all Bidders and submitted with the Bid. **Failure to submit may be cause to reject the Bid.**

Check if Bidder is an MBE, WBE or VBE

Bidders Firm \_\_\_\_\_ MBE      WBE      VBE

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Phone \_\_\_\_\_

E-mail \_\_\_\_\_

The following certified minority, women and/or veteran -owned firms will be participating in the project according to the following schedule. Indicate whether each firm is an MBE, WBE or VBE by selecting the MBE, WBE or VBE box below.

1. \_\_\_\_\_  

<u>FIRM</u>	<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	<input type="checkbox"/> VBE	<u>TRADE</u>	<u>AMOUNT</u>	<u>% OF TOTAL BID</u>
-------------	------------------------------	------------------------------	------------------------------	--------------	---------------	-----------------------

\_\_\_\_\_  

<u>CONTACT NAME</u>	<u>PHONE</u>	<u>E-MAIL</u>
---------------------	--------------	---------------

2. \_\_\_\_\_  

<u>FIRM</u>	<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	<input type="checkbox"/> VBE	<u>TRADE</u>	<u>AMOUNT</u>	<u>% OF TOTAL BID</u>
-------------	------------------------------	------------------------------	------------------------------	--------------	---------------	-----------------------

\_\_\_\_\_  

<u>CONTACT NAME</u>	<u>PHONE</u>	<u>E-MAIL</u>
---------------------	--------------	---------------

3. \_\_\_\_\_  

<u>FIRM</u>	<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	<input type="checkbox"/> VBE	<u>TRADE</u>	<u>AMOUNT</u>	<u>% OF TOTAL BID</u>
-------------	------------------------------	------------------------------	------------------------------	--------------	---------------	-----------------------

\_\_\_\_\_  

<u>CONTACT NAME</u>	<u>PHONE</u>	<u>E-MAIL</u>
---------------------	--------------	---------------

4. \_\_\_\_\_  

<u>FIRM</u>	<input type="checkbox"/> MBE	<input type="checkbox"/> WBE	<input type="checkbox"/> VBE	<u>TRADE</u>	<u>AMOUNT</u>	<u>% OF TOTAL BID</u>
-------------	------------------------------	------------------------------	------------------------------	--------------	---------------	-----------------------

\_\_\_\_\_  

<u>CONTACT NAME</u>	<u>PHONE</u>	<u>E-MAIL</u>
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If more space is need attach additional sheet

If no MBE, WBE or VBE contractors are listed above please indicate reason(s) why:

Unable to locate any MBEs, WBEs or VBEs.

Unable to secure competitive pricing from any MBEs, WBEs or VBEs.

Other reasons, please describe: \_\_\_\_\_

00 10 40  
MBE/WBE/VBE PARTICIPATION PLAN

Describe below your efforts to obtain minority, women and veteran's business enterprise participation for this project.

Be sure to attach a copy of all solicitation efforts, e.g., ads that were published or networking events, etc.

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List below the MBE/WBE/VBE contractors you individually contacted to request a quote for this project. If all work is to be self-performed and your Firm is not MBE, WBE or VBE list N/A in top left line below.

MBE, WBE, VBE Firms Contacted

Check all that apply:

1.	<hr/> <div style="text-align: center;">FIRM CONTACTED</div>	<hr/> <div style="text-align: center;">TRADE</div>	<div style="text-align: center;">MBE</div>	<div style="text-align: center;">WBE</div>	<div style="text-align: center;">VBE</div>	<div style="text-align: center;">Not Low</div>	<div style="text-align: center;">No reply</div>
	<hr/> <div style="text-align: center;">CONTACT NAME</div>	<hr/> <div style="text-align: center;">PHONE</div>	<hr/> <div style="text-align: center;">E-MAIL</div>				
2.	<hr/> <div style="text-align: center;">FIRM CONTACTED</div>	<hr/> <div style="text-align: center;">TRADE</div>	<div style="text-align: center;">MBE</div>	<div style="text-align: center;">WBE</div>	<div style="text-align: center;">VBE</div>	<div style="text-align: center;">Not Low</div>	<div style="text-align: center;">No reply</div>
	<hr/> <div style="text-align: center;">CONTACT NAME</div>	<hr/> <div style="text-align: center;">PHONE</div>	<hr/> <div style="text-align: center;">E-MAIL</div>				
3.	<hr/> <div style="text-align: center;">FIRM CONTACTED</div>	<hr/> <div style="text-align: center;">TRADE</div>	<div style="text-align: center;">MBE</div>	<div style="text-align: center;">WBE</div>	<div style="text-align: center;">VBE</div>	<div style="text-align: center;">Not Low</div>	<div style="text-align: center;">No reply</div>
	<hr/> <div style="text-align: center;">CONTACT NAME</div>	<hr/> <div style="text-align: center;">PHONE</div>	<hr/> <div style="text-align: center;">E-MAIL</div>				
4.	<hr/> <div style="text-align: center;">FIRM CONTACTED</div>	<hr/> <div style="text-align: center;">TRADE</div>	<div style="text-align: center;">MBE</div>	<div style="text-align: center;">WBE</div>	<div style="text-align: center;">VBE</div>	<div style="text-align: center;">Not Low</div>	<div style="text-align: center;">No reply</div>
	<hr/> <div style="text-align: center;">CONTACT NAME</div>	<hr/> <div style="text-align: center;">PHONE</div>	<hr/> <div style="text-align: center;">E-MAIL</div>				

If more space is need attach additional sheet

By my signature, I certify that the above statements are true and accurate, all as of the date below. I also understand that any changes to this plan must be approved by Indiana State University and documented by Construction Change Directive.

Agent of Bidder \_\_\_\_\_

Date \_\_\_\_\_

END OF SECTION 00 10 40

## BIDDER'S CERTIFICATION OF AUTHORIZED EMPLOYMENT

In accordance with Indiana Code 22-5-1. 7 as amended, each Contractor in any tier of a public works project shall not knowingly employ unauthorized aliens. Every contractor shall enroll in and verify the work eligibility status of all employees hired after June 30, 2015 using the U.S. Citizenship and Immigration Services (USCIS) E-Verify program as defined in IC §22-5-1.7-3, unless the E-Verify program no longer exists.

The Prime Contractor shall require their subcontractors who perform work under this Contract to certify to the Prime 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 Prime Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor. The successful Prime Contractor and its sub-contractors at all levels shall comply with all provisions of the statute or the Contract is subject to cancellation.

---

I hereby certify that I have read and understand the "Contractor's Certification of Authorized Employment" provision of the Contract Documents In Section 00 20 11 Amendments to General Conditions Article 13, subparagraph 13.1.7.3 and its subparagraphs and that the undersigned and proposed and actual sub-contractors at all tiers shall comply with the provisions of the Statute

On behalf of and as authorized by the Bidder, I affirm and depose that the Bidder and our Subcontractors shall not knowingly employ unauthorized aliens.

---

(Bidder - Please print full name of your proprietorship, partnership, or corporation)

---

(Name - Authorized Signing Officer)

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(Title)

---

(Signature)

---

(Date)

END OF SECTION 00 10 45

00 10 45  
BIDDER'S CERTIFICATION OF AUTHORIZED EMPLOYMENT

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**Indiana State  
University**

Office of the Senior Vice President for  
Finance and Administration and University Treasurer  
Rankin Hall Suite 200  
210 North 7<sup>th</sup> Street  
Terre Haute, Indiana 47809

# **Contract for Construction Between Indiana State University and Contractor**

ISU Form CfC101-19  
Based on AIA Form A101

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## **AGREEMENT**

Agreement for the Contract of Construction made as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year  
of Two Thousand and \_\_\_\_\_

**BETWEEN** the Owner  
Indiana State University  
210 North Seventh Street  
Terre Haute, Indiana 47809-0001

and the Contractor:  
(Name and address)

Project is:  
(Name and location)

The Architect/Engineer is:  
(Name and address)

Indiana State University and the Contractor agree as set forth below:

**Part 1 – Contract Documents:**

The Contract Documents include this Contract for Construction, Conditions of the Contract (General and Special Conditions), Drawings, Specifications, Addenda issued prior to execution of this Contract, other documents listed in this Contract, and Modifications issued after execution of this Contract; these form the Contract, and are as fully a part of the Contract as if attached to this Contract or repeated herein. This Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representation or agreements, either written or oral. An enumeration of the Contract Documents and other Modifications appears in Part 9 of this document.

**Part 2 – Work of This Contract:**

The Contractor shall execute the entire work as described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others, or as follows:

**Part 3 – Start Date and Substantial Completion Date:**

- 3.01 The Start Date shall be as indicated in Section 00 10 10 of the Project Specifications, as listed in any subsequent Addenda, the Notice to Proceed Letter or as listed below:
- 3.02 The Contractor shall achieve Substantial Completion as indicated in Section 00 10 10 of the Project Specifications, as listed in any subsequent Addenda, the Notice to Proceed Letter or as listed below:
- 3.03 Substantial Completion maybe adjusted as allowed under Contract Documents or as mutually agreed upon in writing by the Owner and the Contractor.

**Part 4 – Contract Sum:**

- 4.01 Indiana State University shall pay the Contractor in current funds for the Contractor's performance of the Contract the Contract Sum of \_\_\_\_\_dollars  
(\$\_\_\_\_\_) subject to additions or deductions as provided in the Contract Documents
- 4.02 The Contract Sum is based upon the following Alternates, if any, which are described in the Contract Documents and are hereby accepted by Indiana State University:
- 4.03 Unit Prices, if any, are as follows:
- 4.04 Allowances



### **Part 5 – Progress Payments**

- 5.01 Based on an Application for Payment Issued to the Architect/Engineer by the Contractor, Indiana State University shall make progress payments on the account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.
- 5.02 The period covered by each Application for Payment shall be on a regular monthly basis of not less than Twenty Eight (28) calendar days.
- 5.03 When the Application for Payment is received by the Architect/Engineer, Indiana State University shall make payment within fifteen (15) days after the approval of the Application for Payment by the Architect/Engineer and receipt by Indiana State University Office of Finance and Administration.
- 5.04 Each Application for Payment shall be based on the schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of Work and shall be prepared in a form and supported by such data as required by the Architect/Engineer and Indiana State University to evaluate and substantiate the accuracy of the Application for Payment. Unless objected to by the Architect/Engineer or Indiana State University this schedule of values shall be the basis for all Contractor Applications for Payment.
- 5.05 Applications for Payment shall indicate the percentage of completion of each portion of Work as of the end of the application period.
- 5.06 A Partial Waiver of Lien shall be included with each progress Application for Payment.
- 5.07 Subject to provisions of the Contract Documents, the amount of the Application for Payment shall be computed as follows:
  - A. Total of all portions of Work indicted on the schedule of values completed during the application period.
  - B. Total of verified stored materials indicated on the schedule of values acquired during the application period, provided proof of insurance on the storage facility is submitted.
  - C. Total of all Change Orders approved or Change Directives issued during the application period.
  - D. Less a Retainage of ten percent (10%)
  - E. Subtract the aggregate of previous Applications of Payments made to Indiana State University and subtract amounts, if any, withheld or nullified by the Architect/Engineer.
- 5.08 The progress payment amount determined by Section 5.06 shall be further modified under the following circumstances
  - A. Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to ninety five percent (95%) of the Contract Sum; less any amounts the Architect/Engineer or Indiana State University shall determine for incomplete work and unsettled claims.
  - B. Add, if final completion of the work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Subparagraph 9.10.3 of the General Conditions.
- 5.09 Reduction or Limitation of Retainage:
  - A. At the sole written discretion of Indiana State University, if acceptable progress is made, at fifty percent (50%) completion of the Contract Sum the remaining Retainage may be reduced to 0%.

### **Part 6 – Final Payment**

- 6.01 Final payment, constituting the remaining unpaid balance of the Contract Sum, shall be made to the Contractor by Indiana State University when:
  - A. The Contract has been fully performed by the Contractor as detailed in the Contract Documents.
  - B. Approval of the Final Application for Payment is received from the Architect/Engineer.
- 6.02 No Contractor claims for additional compensation shall be permitted or accepted more than sixty (60) days following the Contractor's submission of their Final Application for Payment.
- 6.03 Payment shall be made by Indiana State University 61 days after issuance of the of the Contractor's Final Application for Payment and Final Waiver of Lien and final approval from the Architect/Engineer of the Final Application for Payment.

**Part 7 – Miscellaneous Provisions**

- 7.01 Where reference is made in this document to a provision of the General Conditions or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

**Part 8 – Termination or Suspension**

- 8.01 The Contract may be terminated by Indiana State University or the Contractor as provided in Article 14 of the General Conditions.
- 8.02 The Work may be suspended by Indiana State University as provided in Article 14 of the General Conditions.

**Part 9 – Enumeration of Contract Documents**

- 9.01 The Contract Documents, except for Modifications issued after execution of this Contract, are enumerated as follows:
- A. The agreement is this executed **Contract for Construction Between Indiana State University and Contractor, ISU Form CFC101-20**.
  - B. The General Conditions are the General Conditions of the Contract for Construction, AIA Document A201.
  - C. The Supplementary and Other Conditions are those contained in the Project Specifications and are as follows:  
See attached Exhibit A Sections 00 and 01
  - D. The Specifications:  
See attached Exhibit A Sections 02-33 as applicable
  - E. The Drawings:  
See attached Exhibit B
  - F. The Addenda:  

Number	Date	Pages
--------	------	-------
  - G. Other Documents, if any, forming the Contract Documents are as follows:  
Certification Regarding Suspension, Debarment, Ineligibility and Voluntary Exclusion Form, MBE/WBE/VBE Participation Plan, Contractor's Certification of Authorized Employment Form, Award Letter, Purchase Order

This agreement is entered into as of the day and year first written above and is executed by electronic copy in PDF format of which one is delivered to the Contractor, one is delivered to the Architect/Engineer, and the remainder to Indiana State University for distribution to the ISU Purchasing Department, the Office of the Senior Vice President for Finance and Administration and the ISU Department of Facilities Management.

Indiana State University

Contractor

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
**Diann E. McKee**  
(Printed or Typed Name)

\_\_\_\_\_  
(Printed or Typed Name)

**Exhibit A – Refer to Addenda for any additions, deletions or revisions to these Specification Sections**

**Exhibit B – Refer to Addenda for any additions, deletions or revisions to these Drawings**

BASED ON BID FORM  
FORM NO. 96  
REVISED FORMAT 1/14/2013

GENERAL BID FOR PUBLIC BUILDING

PROJECT: **Tunnel Repairs 2023**

TO: INDIANA STATE UNIVERSITY  
BOARD OF TRUSTEES  
TERRE HAUTE, INDIANA

FROM:

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(Name of Bidder) (Company Name)

---

(Address)

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(City, State, Zip)

PHONE NUMBER \_\_\_\_\_

DATE: \_\_\_\_\_

SUBMITTED BY: \_\_\_\_\_  
(Signature) (Title)

The Bidder's signature certifies the Bidder is in compliance with all aspects of the Bid Documents

**ADDENDA**

The following Addenda have been received. The modifications to the bidding documents noted therein have been considered and all costs thereto are included in the Bid Sum(s).

Addendum # _____	Dated _____
Addendum # _____	Dated _____
Addendum # _____	Dated _____
Addendum # _____	Dated _____

**OWNER'S RIGHTS REGARDING ACCEPTANCE OF BIDS**

It is understood that the Owner reserves the right to accept or reject any Bid and to waive any irregularities in Bidding. It is further understood on Bids with multiple Base Bid Packages the Owner reserves the right to selectively Award individual Base Bid Packages to multiple Prime Bidders submitting the lowest and best Bids for the individual Base Bid Packages.

00 20 00  
BID FORM

TAX EXEMPT

Indiana State University is a Tax Exempt Institution and Indiana Sales Tax for products permanently incorporated in work shall not be included as part of the Bid. All other applicable Federal, State and Local taxes shall be included in the Bid sum. Tax exempt certificate available upon request.

OFFER:

Pursuant to and in compliance with 'Instructions to Bidders', and other Bidding Documents prepared by the Indiana State University Facilities Management Department for the above mentioned project, the signer, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents and with local conditions affecting the performance and costs of the Work at the place where the Work is to be completed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the Work within the time stated and in strict accordance with the intent of the proposed Contract Documents, including furnishing bonds, insurance, labor, materials, and to do all the Work required to construct and complete in accordance with the proposed Contract Documents as follows:

BASE BID

Repair pipe racks and relocate conduits/cables in Tunnel T-07 per Specifications and Drawings

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
(State Amount in Words)

ALTERNATE BIDS

1. Alternate No. 1: Concrete Repairs in Tunnel T-07 per Specifications and Drawings

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
(State Amount in Words) Add ☐ Deduct ☐

2. Alternate No. 2: Repair pipe racks and relocate conduits/cables in Tunnel T-02 per Specifications and Drawings

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
(State Amount in Words) Add ☐ Deduct ☐

3. Alternate No. 3: Concrete repairs in Tunnel T-02 per Specifications and Drawings

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)  
(State Amount in Words) Add ☐ Deduct ☐

ALLOWANCES

1. A \$4,000.00 Allowance shall be included in the Base Bid for the A/E to create "Record Drawings" as detailed in Section 01 77 00 Contract Closeout.
2. A \$50,000.00 Allowance shall be included in the Base Bid for Unforeseen Conditions and General Construction Contingency. It is solely at the discretion of the Architect/Engineer/Owner what costs may be applied to this Allowance.

00 20 00  
BID FORM

ACCEPTANCE

This offer shall be opened to acceptance and is irrevocable for the period as follows:

- Base Bid and All Alternates - One Hundred Twenty (120) calendar days from the Bid opening date.

If the Owner accepts the Bid within the time period stated above, Bidder will:

- Furnish the required bonds and insurance certificates within ten (10) calendar days of receipt of the Award Letter
- Commence work within seven (7) calendar days of receipt of the Award Letter or as Directed by the Owner.
- Execute the Contract for Construction Between Indiana State University and Contractor within seven (7) calendar days of receipt of the Contract.

The Bidder agrees to coordinate and expedite their work and that if the Award is given within fourteen (14) calendar days from the Bid opening date the work shall be substantially completed as listed in Section 00 10 10 Instructions to Bidders 1.01 C. If the Award is not made within the stated fourteen (14) calendar days then the substantial completion date may be adjusted as allowed by the Contract Documents or as mutually agreed upon in writing by the Owner and Contractor.

NON-COLLUSION AFFIDAVIT

The Bidder, by its officers and agents or representatives present at the time of filing their bid, being duly sworn, say on their oaths that neither they nor any of them have in any way, directly or indirectly, entered into any arrangement or agreement with any other bidder, or with any public office of the State of Indiana, of any county or municipality or other public offices whereby such affiance or either of them, has paid or is to pay to such other bidder or public officer any sum of money, or has given or is to give to such other bidders or public officer anything of value whatever, or such affiance of affiance or either of them has not, directly or indirectly entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in letting of the contract sought for by the attached bids; that no inducement of any form or character other than which appears upon the face of the bid will be suggested, offered, paid, or delivered to any person whomsoever to influence the acceptance of the said bid or awarding of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contract sought by this bid.

NON-DISCRIMINATION

The Bidder and its 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 their hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment because of their sex, race, natural origin, ancestry or religion or disability as prohibited under the Americans with Disabilities Act. Breach of this covenant may be regarded as a material breach of the Contract.

CERTIFICATION OF UNITED STATES STEEL PRODUCTS

The Bidder certifies that the Bidder and all Subcontractors will comply with the statutory obligations to use steel products made in the United States.

MBE/WBE/VBE BIDDING:

See Section 00 10 30 for requirements for MBE/WBE/VBE Compliance. Section 00 10 40 MBE/WBE/VBE Participation Plan must be completed by **all Bidders** and submitted with the Bid. Failure to submit with the Bid may be sufficient cause to disqualify a Bid.

EXPERIENCE QUESTIONNAIRE

List similar projects completed by your organization:

1. Contract Amount \_\_\_\_\_  
Description \_\_\_\_\_  
Date Completed \_\_\_\_\_  
Owner \_\_\_\_\_  
(Name and phone #)
2. Contract Amount \_\_\_\_\_  
Description \_\_\_\_\_  
Date Completed \_\_\_\_\_  
Owner \_\_\_\_\_  
(Name and phone #)

List similar projects currently under construction by your organization

1. Contract Amount \_\_\_\_\_  
Description \_\_\_\_\_  
Date Completed \_\_\_\_\_  
Owner \_\_\_\_\_  
(Name and phone #)
2. Contract Amount \_\_\_\_\_  
Description \_\_\_\_\_  
Date Completed \_\_\_\_\_  
Owner \_\_\_\_\_  
(Name and phone #)

es ☐ No ☐ Has your organization ever failed to complete any work awarded it?

If yes, where and why?

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00 20 00  
BID FORM

Yes ☐ No ☐ Does your Organization have any pending litigation or litigation completed within the past five (5) years initiated by your Organization or the Owner as a result of your work on another Project?

If yes, attach a complete listing, with your Bid, of all such litigation(s) and name(s) of Institutions and/or Parties involved with complete contact information. Failure to submit this information may result in disqualification of your Bid.

Yes ☐ No ☐ Has your Organization been cited for violation of State or Federal regulations within the past twelve months?

If yes, what was the violation and resolution?

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List references from firms for which your organization has performed work. Provide firm name, contact person name and phone number.

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APPENDICES

The following Appendices are submitted with the Bid:  
Appendix A - Subcontractors and Material/Supplier Lists  
Appendix B - Unit Prices  
Appendix C - Wage Rate Schedule

## OATH AND AFFIRMATION

Attested to this \_\_\_\_ day of \_\_\_\_\_, 202\_\_\_\_

By \_\_\_\_\_

## ACKNOWLEDGMENT

State of \_\_\_\_\_  
SS:

County of \_\_\_\_\_

\_\_\_\_\_ being duly sworn, deposes and  
(Name of person)

says that he/she is \_\_\_\_\_ of  
(Title)

\_\_\_\_\_ and that the  
(Name of organization)  
statements contained in the foregoing bid, certification and affidavit are true and correct.

Subscribed and sworn to before me by \_\_\_\_\_

this \_\_\_\_ day of \_\_\_\_\_, 201\_\_\_\_

\_\_\_\_\_  
Notary Public

My Commission Expires \_\_\_\_\_

County of Residence \_\_\_\_\_

SUPPLEMENTS TO BID FORM

TO: INDIANA STATE UNIVERSITY

PROJECT: **Tunnel Repairs 2023**

DATE: \_\_\_\_\_

SUBMITTED BY:  
(full name)

\_\_\_\_\_  
(full address)

In accordance with Instructions to Bidders and Bid Form, we include the Supplements to Bid Form for Appendices listed below. The information provided shall be considered an integral part of the Bid Form.

**Appendix A** - Subcontractor and Manufacturers List (to be submitted at time of Bid)  
Failure to submit may be cause to disqualify bid

\_\_\_\_\_  
(Bidder)

\_\_\_\_\_  
(Project)

The following will be performed (or provided) by the Subcontractors and Manufacturers listed herein and coordinated by us.

The Prime Contractor (Bidder) shall list all Subcontractors and Suppliers/Manufacturers called for in Appendix A of this Bid Form at the time of Bid Submission. Failure to provide this information may be sufficient cause to disallow a Bid.

**The Prime Contractor (Bidder) shall use the Subcontractors, Suppliers, Materials and Equipment as listed in the Bid Form Appendix "A" submitted at the time of Bid. It is the Prime Contractor's (Bidder's) responsibility to assure they have listed the correct Subcontractors, Suppliers, Materials and Equipment on their Bid Form. THERE SHALL BE NO CHANGES PERMITTED TO THESE LISTS.**

Exception: If the Owner determines the Subcontractors, Suppliers, Materials or Equipment are not acceptable, the Owner shall notify the Prime Contractor (Bidder) in writing within two (2) working days after receipt of Bids of the unacceptable Subcontractor(s), Supplier(s), Material(s) and/or Equipment(s).

(Listings begin on next page)

SUBCONTRACTOR LIST

**Bidder shall provide the names of all applicable Subcontractors**

Description	Subcontractor
General Construction	_____
Concrete Work	_____
Concrete Repairs	_____
Steel Fabricator	_____
Painting Work	_____
Mechanical Work	_____
Insulation Work	_____
Electrical Work	_____
IT (voice/data) Work	_____

SUPPLIER & MANUFACTURERS LIST

**Bidder shall provide the names of all applicable Suppliers and Manufacturers**

Product Description	Supplier	Manufacturer
Sealants	_____	_____
Concrete Patch	_____	_____
Injection Epoxy	_____	_____
Paint	_____	_____
Pipe Insulation	_____	_____
Light Fixtures	_____	_____

(Appendix B begins on the next page)

**Appendix B – Unit Prices**

- |  |       |
|--|-------|
| 1. Rout and Caulk Cracks per LF                                    | _____ |
| 2. Horizontal Concrete Patching per SF                             | _____ |
| 3. Overhead Concrete Patching per SF                               | _____ |
| 4. Vertical Concrete Patching per SF                               | _____ |
| 5. Overhead Crack Repair by Epoxy Injection per LF                 | _____ |
| 6. Vertical Crack Repair by Epoxy Injection per LF                 | _____ |
| 7. Overhead / Vertical Control Joint Repair per LF                 | _____ |
| 8. Clean and Repaint Pipe Rack per EA                              | _____ |
| 9. Re-anchor Pipe Rack per EA                                      | _____ |
| 10. Replace Pipe Rack per EA                                       | _____ |
| 11. Re-insulate Utility Pipe per LF                                | _____ |
| 12. Install New Lighting per EA                                    | _____ |
| 13. Install New 1" Conduit and Wiring (with 3#8 conductors) per LF | _____ |
| 14. Install New GFCI Receptacle and Box per EA                     | _____ |
| 15. Install New Lighting Controls and Box per EA                   | _____ |
| 16. Install New Exit Sign and Box per EA                           | _____ |

**Appendix C – Wage Rate Schedules**

By 2:00pm on the next business day after receipt of Bids the Bidder shall submit, a wage rate schedule for the workers of the Prime Bidder and all major Subcontractors involved in the Work. Failure to supply the wage rate schedule(s) as required by the Bidding Documents may be sufficient cause to disallow a Bid

END OF SECTION 00 20 00

00 20 00  
BID FORM

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# DRAFT AIA® Document A201™ – 2007

## General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

< >  
< >

THE OWNER:

(Name, legal status and address)

< >< >  
< >

THE ARCHITECT:

(Name, legal status and address)

< >< >  
< >

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#### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 BASIC DEFINITIONS**

#### **§ 1.1.1 THE CONTRACT DOCUMENTS**

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

#### **§ 1.1.2 THE CONTRACT**

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

#### **§ 1.1.3 THE WORK**

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

#### **§ 1.1.4 THE PROJECT**

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

#### **§ 1.1.5 THE DRAWINGS**

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

#### **§ 1.1.6 THE SPECIFICATIONS**

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

#### **§ 1.1.7 INSTRUMENTS OF SERVICE**

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

#### **§ 1.1.8 INITIAL DECISION MAKER**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

### **§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.



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

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

### **§ 1.3 CAPITALIZATION**

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

### **§ 1.4 INTERPRETATION**

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

### **§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE**

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

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

### **§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM**

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

## **ARTICLE 2 OWNER**

### **§ 2.1 GENERAL**

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

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

### **§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

**§ 2.2.1** Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.2** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

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

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

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

### **§ 2.3 OWNER'S RIGHT TO STOP THE WORK**

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

### **§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## **ARTICLE 3 CONTRACTOR**

### **§ 3.1 GENERAL**

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

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

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

### **§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**

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

**§ 3.2.2** Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

### **§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

**§ 3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

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

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

### **§ 3.4 LABOR AND MATERIALS**

**§ 3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other

facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

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

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

### **§ 3.5 WARRANTY**

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

### **§ 3.6 TAXES**

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

### **§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS**

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

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

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

**§ 3.7.4 Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume



the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### **§ 3.8 ALLOWANCES**

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

**§ 3.8.2** Unless otherwise provided in the Contract Documents,

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

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

### **§ 3.9 SUPERINTENDENT**

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

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

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

### **§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

**§ 3.10.2** The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

### **§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE**

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### **§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

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

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

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

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

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

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

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

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

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

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

required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### **§ 3.13 USE OF SITE**

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

### **§ 3.14 CUTTING AND PATCHING**

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

**§ 3.14.2** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### **§ 3.15 CLEANING UP**

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

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

### **§ 3.16 ACCESS TO WORK**

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

### **§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS**

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

### § 3.18 INDEMNIFICATION

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

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

## ARTICLE 4 ARCHITECT

### § 4.1 GENERAL

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

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

**§ 4.1.3** If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

### § 4.2 ADMINISTRATION OF THE CONTRACT

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

**§ 4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

**§ 4.2.3** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.



#### **§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION**

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

**§ 4.2.5** Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

**§ 4.2.6** The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

**§ 4.2.7** The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

**§ 4.2.8** The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

**§ 4.2.9** The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

**§ 4.2.10** If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

**§ 4.2.11** The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

**§ 4.2.12** Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

**§ 4.2.13** The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

**§ 4.2.14** The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 DEFINITIONS**

**§ 5.1.1** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

**§ 5.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### **§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK**

**§ 5.2.1** Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 5.2.3** If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**§ 5.2.4** The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

### **§ 5.3 SUBCONTRACTUAL RELATIONS**

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may

be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### **§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS**

**§ 5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

### **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

#### **§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS**

**§ 6.1.1** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

**§ 6.1.2** When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**§ 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

**§ 6.1.4** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

#### **§ 6.2 MUTUAL RESPONSIBILITY**

**§ 6.2.1** The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that

the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

**§ 6.2.4** The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

**§ 6.2.5** The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### **§ 6.3 OWNER'S RIGHT TO CLEAN UP**

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 GENERAL**

**§ 7.1.1** Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

**§ 7.1.2** A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

**§ 7.1.3** Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

### **§ 7.2 CHANGE ORDERS**

**§ 7.2.1** A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

### **§ 7.3 CONSTRUCTION CHANGE DIRECTIVES**

**§ 7.3.1** A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

**§ 7.3.2** A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

**§ 7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or



.4 As provided in Section 7.3.7.

**§ 7.3.4** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

**§ 7.3.5** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

**§ 7.3.6** A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

**§ 7.3.7** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

**§ 7.3.8** The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

**§ 7.3.9** Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

**§ 7.3.10** When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### **§ 7.4 MINOR CHANGES IN THE WORK**

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

## **ARTICLE 8 TIME**

### **§ 8.1 DEFINITIONS**

**§ 8.1.1** Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

**§ 8.1.2** The date of commencement of the Work is the date established in the Agreement.

**§ 8.1.3** The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

**§ 8.1.4** The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

### **§ 8.2 PROGRESS AND COMPLETION**

**§ 8.2.1** Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

### **§ 8.3 DELAYS AND EXTENSIONS OF TIME**

**§ 8.3.1** If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

**§ 8.3.2** Claims relating to time shall be made in accordance with applicable provisions of Article 15.

**§ 8.3.3** This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 CONTRACT SUM**

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

### **§ 9.2 SCHEDULE OF VALUES**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### **§ 9.3 APPLICATIONS FOR PAYMENT**

**§ 9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

**§ 9.3.1.2** Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

#### **§ 9.4 CERTIFICATES FOR PAYMENT**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

**§ 9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### **§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION**

**§ 9.5.1** The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

**§ 9.5.2** When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

**§ 9.5.3** If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

## **§ 9.6 PROGRESS PAYMENTS**

**§ 9.6.1** After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

**§ 9.6.2** The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

**§ 9.6.3** The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

**§ 9.6.4** The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

**§ 9.6.5** Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

**§ 9.6.6** A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

**§ 9.6.7** Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

## **§ 9.7 FAILURE OF PAYMENT**

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect,



stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

## **§ 9.8 SUBSTANTIAL COMPLETION**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

**§ 9.8.3** Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

## **§ 9.9 PARTIAL OCCUPANCY OR USE**

**§ 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

**§ 9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

## **§ 9.10 FINAL COMPLETION AND FINAL PAYMENT**

**§ 9.10.1** Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the

Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**§ 9.10.4** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

**§ 9.10.5** Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS**

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

### **§ 10.2 SAFETY OF PERSONS AND PROPERTY**

**§ 10.2.1** The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

**§ 10.2.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

**§ 10.2.3** The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

**§ 10.2.4** When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

**§ 10.2.5** The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

**§ 10.2.6** The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

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

#### **§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY**

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### **§ 10.3 HAZARDOUS MATERIALS**

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

**§ 10.3.2** Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

**§ 10.3.6** If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

#### **§ 10.4 EMERGENCIES**

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### **ARTICLE 11 INSURANCE AND BONDS**

#### **§ 11.1 CONTRACTOR'S LIABILITY INSURANCE**

**§ 11.1.1** The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

**§ 11.1.2** The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction



of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

**§ 11.1.3** Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

**§ 11.1.4** The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

## **§ 11.2 OWNER'S LIABILITY INSURANCE**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

## **§ 11.3 PROPERTY INSURANCE**

**§ 11.3.1** Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

**§ 11.3.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

**§ 11.3.1.2** If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

**§ 11.3.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

**§ 11.3.1.4** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

**§ 11.3.1.5** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or

otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

### **§ 11.3.2 BOILER AND MACHINERY INSURANCE**

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

### **§ 11.3.3 LOSS OF USE INSURANCE**

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

**§ 11.3.4** If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

**§ 11.3.5** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

**§ 11.3.6** Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

### **§ 11.3.7 WAIVERS OF SUBROGATION**

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

**§ 11.3.8** A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

**§ 11.3.9** If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the

Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

**§ 11.3.10** The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

#### **§ 11.4 PERFORMANCE BOND AND PAYMENT BOND**

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

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

### **ARTICLE 12 UNCOVERING AND CORRECTION OF WORK**

#### **§ 12.1 UNCOVERING OF WORK**

**§ 12.1.1** If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

**§ 12.1.2** If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

#### **§ 12.2 CORRECTION OF WORK**

##### **§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

##### **§ 12.2.2 AFTER SUBSTANTIAL COMPLETION**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

**§ 12.2.2.2** The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

**§ 12.2.3** The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

**§ 12.2.4** The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

**§ 12.2.5** Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### **§ 12.3 ACCEPTANCE OF NONCONFORMING WORK**

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## **ARTICLE 13 MISCELLANEOUS PROVISIONS**

### **§ 13.1 GOVERNING LAW**

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

### **§ 13.2 SUCCESSORS AND ASSIGNS**

**§ 13.2.1** The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

**§ 13.2.2** The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### **§ 13.3 WRITTEN NOTICE**

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

### **§ 13.4 RIGHTS AND REMEDIES**

**§ 13.4.1** Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

**§ 13.4.2** No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.



## **§ 13.5 TESTS AND INSPECTIONS**

**§ 13.5.1** Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

**§ 13.5.2** If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

**§ 13.5.3** If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

**§ 13.5.4** Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

**§ 13.5.5** If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

**§ 13.5.6** Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

## **§ 13.6 INTEREST**

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

## **§ 13.7 TIME LIMITS ON CLAIMS**

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

## **ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT**

### **§ 14.1 TERMINATION BY THE CONTRACTOR**

**§ 14.1.1** The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

## § 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

## § 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

**§ 14.3.2** The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

#### **§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE**

**§ 14.4.1** The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

**§ 14.4.2** Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**§ 14.4.3** In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

### **ARTICLE 15 CLAIMS AND DISPUTES**

#### **§ 15.1 CLAIMS**

##### **§ 15.1.1 DEFINITION**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

##### **§ 15.1.2 NOTICE OF CLAIMS**

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

##### **§ 15.1.3 CONTINUING CONTRACT PERFORMANCE**

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

##### **§ 15.1.4 CLAIMS FOR ADDITIONAL COST**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

##### **§ 15.1.5 CLAIMS FOR ADDITIONAL TIME**

**§ 15.1.5.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

**§ 15.1.5.2** If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

### § 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

### § 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.



**§ 15.2.7** In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

**§ 15.2.8** If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### **§ 15.3 MEDIATION**

**§ 15.3.1** Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

**§ 15.3.2** The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

**§ 15.3.3** The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

### **§ 15.4 ARBITRATION**

**§ 15.4.1** If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

**§ 15.4.1.1** A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

**§ 15.4.2** The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

**§ 15.4.3** The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

### **§ 15.4.4 CONSOLIDATION OR JOINDER**

**§ 15.4.4.1** Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

**§ 15.4.4.2** Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an

additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

**§ 15.4.4.3** The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.



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PART 1 – GENERAL

1.01 AMENDMENTS TO GENERAL CONDITIONS

- A. The General Conditions for this Project shall be the American Institute of Architects' Document A201-2007, "General Conditions of the Contract for Construction, Articles 1 through 15, inclusive, 38 pages, and hereafter referred to as the "General Conditions." Such document is specifically made a part of the Contract Documents.
- B. The following amendments shall modify, delete, and supplement the General Conditions. Where any Article, Paragraph, or Subparagraph in the General Conditions is supplemented by one of the following Paragraphs, the provisions of such Article, Paragraph, or Subparagraph shall remain in full force and effect and the supplemental provisions shall be considered as added thereto. Where any Article, Paragraph not so amended, deleted, voided, or superseded shall remain in full force and the order and numbering of subsequent articles, Paragraphs or Subparagraphs shall be changed to read as if in sequence.
- C. Refer to other Division 00 documents for additional supplemental requirements.

PART 2 – AMENDMENT ARTICLES

2.01 ARTICLE 1

- A. Subparagraph 1.1.1: Amend this Subparagraph by deleting the last sentence beginning with the words "Unless specifically enumerated" and substituting the following sentence: "The Contract Documents shall also include the Notice to Bidders, Instructions to Bidders, Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion, Bid Form, Subcontractors and Materials Listing, Contractor's Non-Collusion Affidavit, and all portions of Addenda relating to Bidding Requirements."
- B. Add the following Subparagraph 1.1.7

"1.1.7 ARCHITECT/ENGINEER"

"Where the word Architect is used in the AIA A201-2007 it shall be inferred to also include the Design Engineer(s), e.g. Architect/Engineer, Engineer (for Engineer only Administered Projects).

- C. Add the following Section 1.7

"1.7 LITIGATION

1.7.1 All litigation under this Contract must be initiated in Vigo County, Indiana and Contractor consents to the jurisdiction of the Vigo County courts.

1.7.2 Contractor hereby waives its right to a jury trial in any matters litigated in Vigo County.

1.7.3 In any litigation initiated by Contractor, Contractor shall reimburse all attorney's fees and expenses incurred by Owner up to a maximum of \$100,000 provided Contractor has presented its claims as required by this Contract and the Owner has made a good faith offer to resolve any dispute prior to litigation. The determination of a 'good faith offer' shall rest solely with the Architect who will render their opinion in writing to Contractor or Owner upon request prior to Contractor initiating litigation or thereafter as requested. The Architect's decision is binding on Owner and Contractor and admissible in court as determinative of this issue.

1.7.4 In any litigation initiated by Owner against Contractor, provided Contractor was given the opportunity to resolve all issues prior to litigation being initiated and failed to do so through a reasonable offer, as determined by the Architect, then Contractor shall be responsible to reimburse all attorney's fees and expenses incurred by Owner for all litigation as well as for all pre-litigation activities engaged in by the Owner for

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investigating, evaluating, or mediating any claims, issues, or matters related to Contractor.”

2.02 ARTICLE 2

- A. Subparagraph 2.1.2: Delete this Subparagraph in its entirety.
- B. Subparagraph 2.2.5: Amend this Subparagraph by adding “electronically” after the word Documents in the second line.

2.03 ARTICLE 3

- A. Paragraph 3.2: Amend this Paragraph by deleting Subparagraph 3.2.1 in its entirety and replacing with the following new subparagraph 3.2.1 and its subparagraphs:

“3.2.1 By executing the Contract, the Contractor represents to the Owner that:”

“3.2.1.1 The Contractor has a high level of experience and expertise in the business administration construction, management, workplace health and safety supervision and superintendence of projects of similar size and complexity and that it will perform the Work with the care, skill and diligence of such a contractor.”

“3.2.1.2 Contractor and, to the best of its knowledge, its subcontractors are financially solvent, able to pay all debts as they mature and have sufficient working capital to complete the Work and all obligations thereunder.”

“3.2.1.3 The Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work.”

“3.2.1.4 Contractor is authorized to do business in the State of Indiana.”

“3.2.1.5 Contractor’s execution of the Contract and its performance thereof are within its authorized powers.”

“3.2.1.6 Contractor has:”

“3.2.1.6.1 Studied the Contract Documents, understands their provisions and that that they are sufficiently detailed and complete to permit the Contractor to perform the Work in accordance with the Contract Documents, within the Contract Time and for the Contract Sum.”

“3.2.1.6.2. Inspected the Project site.”

“3.2.1.6.3 Investigated and satisfied itself as to:

“3.2.1.6.3.1 The site and locality where the Work is to be performed and the conditions and difficulties to be encountered, including access thereto.”

“3.2.1.6.3.2 The availability of utilities and access thereto.”

“3.2.1.6.3.3 Conditions affecting transportation, disposal, handling and storage of materials, supplies and equipment.”

“3.2.1.6.3.4 Any materials, supplies or equipment which are to be furnished by the Owner for the Contractor’s use.”

“3.2.1.6.3.5 The type and availability of tools, equipment and facilities to perform the Work.”

“3.2.1.6.3.6 The availability and adequacy of labor and trades, and, if applicable, union wage scales, benefits, working conditions, craft jurisdictions, area practices and collective bargaining agreements affecting the Work.”

“3.2.1.6.3.7 Prevailing weather and climatological conditions.”

“3.2.1.6.3.8 All laws applicable to the Work and to the Contractor.”



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“3.2.1.6.3.9 All other factors which may affect the Contractor’s performance of the Work.”

- B. Paragraph 3.4: Amend this Paragraph by adding Subparagraphs 3.4.4 through 3.4.7 as follows:

“3.4.4 The Contractor shall employ competently trained and experienced engineers and supervisors, who shall coordinate general, mechanical, and electrical Work and crafts with the required construction progress. The Contractor shall exercise complete control over their Subcontractor(s) in a manner which will unite their efforts toward completion of the project as contracted.”

“3.4.5 The Contractor shall continuously maintain adequate protection of all their Work and the Work of Subcontractors from damage and shall hold harmless the Owner and Architect/Engineer from injury or loss arising in connection with this contract, including legal defense costs. The Contractor shall make good any such damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or those caused by agents or employees of the Owner.”

“3.4.6 The Contractor shall be responsible for and shall establish and verify exterior lines and the required elevations of all buildings and structures to be erected at the site.”

“3.4.7 The Contractor shall coordinate and expedite the Work of all lower tier Contractors.”

- C. Paragraph 3.5: Amend this Paragraph by adding Subparagraphs 3.5.1, 3.5.2, and 3.5.3 as follows:

“3.5.1 The Contractor shall warranty that all Work executed under the respective sections will be free from defects of materials and workmanship for the period of one (1) year from the Date of Substantial Completion of the Work or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents. The Contractor further agrees that they will, at their own expense, repair and replace all such defective Work, and all other Work damaged that becomes defective during the term of the warranty. Where warranties are required, Contractor shall secure warranties in writing from Subcontractors, manufacturers and/or material suppliers addressed to and in favor of the Owner and deliver same to the Owner upon completion of Work. Delivery of warranties shall not relieve the Contractor from any obligations assumed under any other provisions of Contract.”

“3.5.2 Any damage to the building or its contents and/or Work of other Contractors caused by failure of any piece of equipment and/or faulty installation shall be repaired or replaced by the party or parties furnishing the original equipment/installation and paid for by the Contractor at fault.”

“3.5.3 An inspection of the installed Work and/or equipment will be made just before the end of the stipulated warranty period and any installations and/or equipment which, in the opinion of the Architect/Engineer and/or Owner, show undue wear, failure, incorrect operation, or otherwise do not conform to the letter and intent of the Contract Documents shall be repaired or replaced by the Contractor furnishing same at no additional charge.”

- D. Paragraph 3.6: Amend this Subparagraph by adding the words “Unless otherwise provided in the Contract Documents,” to the beginning of this Paragraph.

- E. Paragraph 3.9: Amend this Paragraph by adding Subparagraph 3.9.4 as follows:

“3.9.4 Subcontractors for any other Work shall have a competent superintendent at the site at all times when Work is being performed under their contracts.

- F. Paragraph 3.13: Amend this Paragraph by adding Subparagraph 3.13.1 as follows:

“3.13.1 The Contractor shall prepare an overlay sketch of the construction areas indicating spaces assigned for field office, storage sheds, containers, trailers and field

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shops, and for stockpiles and staging of materials for all trades. This sketch shall be submitted to the Owner and the Architect/Engineer for their information prior to moving any such equipment and materials onto the Project Site.”

- G. Paragraph 3.16: Amend this Paragraph 3.16 adding the following to the end:

“If Work is being executed at locations other than the Project site, the Contractor shall notify the Architect/Engineer where such Work is being executed, and at what time such Work will be ready for inspection, in order that the Architect/Engineer may inspect such Work Prior to its delivery to the Project Site.”

- H. Paragraph 3.18: Amend this Paragraph by adding Subparagraph 3.18.3 as follows:

“3.18.3 The Contractor shall indemnify the Owner and Architect/Engineer for any claim, demand or expense which may be made by reason of:

“.1 Any injury to person or property sustained by the Owner or by any person, firms, or corporations, if caused by the Contractor.”

“.2 Any injury to person or property sustained by any person, firms, or corporations caused by an act or omission of the Contractor or of any person, firm, or corporation directly or indirectly employed by him in connection with this Work, whether the said injury or damage occurs upon or adjacent to the Work.”

“.3 The Contractor, at his own cost, expense, and risk, shall defend any and all actions, suits, or other legal proceedings that may be rendered against the Owner and Architect/Engineer in any such action, suit, or proceedings.”

“.4 The Contractor shall indemnify the Owner and Architect/Engineer from any and all costs resulting from any claim or suits in connection with liens that may be brought or instituted against the Owner. Neither the final payment or any part of the retained percentage of the Contract shall become due until the Contractor has delivered to the Owner a complete release of all liens arising out of the Contract.”

2.04 ARTICLE 4

- A. Subparagraph 4.1.2: Delete this Subparagraph in its entirety.
- B. Subparagraph 4.2.7: Modify the first sentence of this Subparagraph by deleting the words “approve or take” and substituting the word “indicate.”
- C. Subparagraph 4.2.10: Amend this Subparagraph by adding the words “in writing” after the word “agree” in the first sentence.

2.05 ARTICLE 5

- A. Paragraph 5.3: Amend this Paragraph by adding the following sentence thereto:
- “Unless otherwise excepted, nothing contained in this Contract shall create any contractual relationship between any Subcontractor and the Owner.”

2.06 ARTICLE 6 (NO CHANGE)

2.07 ARTICLE 7

- A. Paragraph 7.1: Amend this Paragraph by adding the following new Subparagraph 7.1.4:

“7.1.4 When a change in the Work is contemplated which may affect the Contract Sum or duration of the Work, the Architect/Engineer will issue a ‘Proposal Request’ detailing the Work involved in such proposed change. Upon receipt of such ‘Proposal Request,’ the Contractor shall promptly, but in no case longer than five (5) working days, issue a reply or ‘Change Quotation,’ stipulating the change in cost of Project and/or duration as a result of the proposed change. This issuance of a Proposal Request does not, in any way, authorize commencement of the Work therein described. Should, after review and consultation with the Owner, the Architect/Engineer find the ‘Change Quotation’ by the

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Contractor to be acceptable, the Architect/Engineer will within thirty (30) calendar days issue a written 'Change Order' to the Contractor."

B. Add the following Subparagraph 7.1.5 as follows

"7.1.5 If Contractor proceeds with change order work before receiving a fully executed change order or change directive, then Contractor waives the right to object to the scope of work change, the amount of the change order, and the adjustment, if any, to the time of performance."

C. Amend Subparagraph 7.3.3 by adding the following Subparagraphs:

".5 Time and material."

".6 Extra Work performed under Item .5 above shall be upon the option of the Owner only in the event that the lump sum required under Item .1 is not acceptable."

".7 Extra Work shall be performed for the cost of the labor payroll plus 15% of the labor payroll and the cost of the material plus 5% of the material cost. Said markup fees are intended to compensate for the cost of payroll taxes, insurance of all kinds, all taxes of the Contractor, including State Taxes, Federal Income Tax, Unemployment, and FICA Taxes, as well as all other overhead costs, expenses, and carrying charges whatsoever, including the profit to be derived from such additional Work. Labor payroll is defined as the actual hourly labor cost plus any fringes payable as listed on the wage rate schedule(s) provided as required by the Bidding Documents.

".8 In case such Work is performed by a Subcontractor or a lower tier Contractor with the Owner's consent, the Work shall be marked up as indicated in 7.3.3.7 by the Contractor actually performing the Work. Each succeeding Contractor may mark up their direct labor and material costs as indicated in 7.3.3.7. Otherwise each succeeding Contractor, including the Prime Contractor, may add 5% for handling/coordination. Additional mark-ups of a Subcontractor's costs shall not be permitted.

".9 Costs for bond premiums are allowable provided documentation from the Bonding Company is included detailing the added bond cost premium, the current bond total and the new bond total."

D. Subparagraph 7.3.7: Amend the following:

.1 Delete the text and replace with:

"1 The cost of the labor payroll plus 15% of the labor payroll;"

.2 Delete the semicolon at the end of the sentence and add "plus 5% of the total of the costs;"

.3 Delete the semicolon at the end of the sentence and add "plus 5% of the total of the costs;"

.4 Delete all text following the word bonds in the first line and replace with ",with documentation from the Bonding Company including details of the added bond cost premium, the current bond total and the new bond total;"

.5 Delete the text and replace with:

"5 Additional costs of supervision directly attributable to the change if the change results in supervision of change work at a time outside the normal work hours of the Project."

E. Paragraph 7.3: Add the following new Subparagraphs 7.3.11, 7.3.12, and 7.3.13:

"7.3.11 When extra Work is performed under Item 7.3.3.2 above, said unit prices shall represent the total cost to the Owner and shall not be subject to any additional charges whatsoever."

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“7.3.12 In order to facilitate checking of quotations for extras or credits, all proposals shall be accompanied by a complete breakdown of costs, including labor, material, and subcontracts. Labor and material shall be marked up in the manner prescribed herein. Where cost items consist of major subcontracts, such contracts shall be broken down in a similar fashion.”

“7.3.13 When changes are made that result in a credit to the Owner, the value of the credit will be established by the method indicated in Items 7.3.3.1 or 7.3.3.2”

2.08 ARTICLE 8 (NO CHANGE)

2.09 ARTICLE 9

- A. Subparagraph 9.3.1: Amend this Subparagraph by deleting the words “if required” in the third line.

- B. Paragraph 9.3: Amend this Paragraph by adding Subparagraph 9.3.4 as follows:

“9.3.4 The Owner will retain, until the Work is at least fifty percent (50%) complete, ten percent (10%) of the amount due the Contractor on account of approved progress payments. At the time the Work is at least fifty percent (50%) completed or thereafter, if the manner of completion of the Work and its progress are and remain satisfactory to the Owner and Architect/Engineer, and in the absence of other good and sufficient reasons, the Architect/Engineer will (upon presentation by the Contractor of Consent of Surety) recommend to the Owner that any remaining approved partial payments be paid in full. Regardless of the Owner’s decision relative to further retainage, all prior retainages that were withheld will be held until completion of the contract Work and all remedial Work, listed as conditions of substantial completion, and following final payment. If retainage is limited to ten percent (10%) of the first fifty percent (50%) of the contract amount, as described above, five percent (5%) will be withheld from payments for all subsequent change orders; therefore, the minimum retainage shall be five percent (5%) of the current contract amount.”

- C. Subparagraph 9.6.3: Delete this Subparagraph in its entirety.

- D. Subparagraph 9.6.5: Delete this Subparagraph in its entirety.

- E. Paragraph 9.7: Delete the text of this Paragraph and replace with the following new Subparagraphs 9.7.1 and 9.7.2

“9.7.1 The Architect shall issue to the Owner a Certificate for Payment within seven calendar days after receipt of the Contractor’s Application for Payment. Upon receipt of the Certificate for Payment (Application for Payment) from the Architect, the Owner will endeavor to make payment to the Contractor within fifteen calendar days. If payment is not made within a reasonable time, then the Contractor may, upon seven additional days’ written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor’s reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.”

“9.7.2 If an Application for Payment is being held for just cause, the Architect shall notify the Contractor in writing of the cause and what remedial action must be taken for the Application for Payment to be released for payment.

- F. Subparagraph 9.10.2: Amend this Subparagraph by deleting the word “and” in the eighth line and adding the following after the “Owner” in the eleventh line:

“and (6) the Architect/Engineer has received the required Record Drawings, brochures, manuals, operating instructions, warranties, affidavits, final application for payment, any other special data requirements and has performed a final inspection and confirmed that all items of completion are correct and acceptable at which time he will initiate a ‘Final Completion’ letter establishing the date of Final Completion.”

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2.10 ARTICLE 10

- A. Subparagraph 10.2.2: Amend this Subparagraph by adding the following to the end thereof:  
"In the event of conflict between these Contract Documents and any Federal, State, or Local Authority laws, rules, regulations, or requirements, the most stringent requirement shall govern the Work."
- B. Subparagraph 10.3.1: Amend this Subparagraph by deleting the phrase "and Architect" in the sixth line.
- C. Subparagraph 10.3.2: Amend this Subparagraph by deleting the phrase "and Architect" in the second sentence; deleting the phrase "and the Architect" from the third sentence; and by deleting the words "either" and "or Architect" from the fourth sentence; by replacing the phrase, "and the Architect have" with the word "has" in the fourth sentence.
- D. Paragraph 10.3 add the following Subparagraph 10.3.7  
10.3.7 "The Contractor shall also comply with all the safety paragraphs listed in Section 00 30 00 of the Contract Documents. In the event of conflict between 10.3 and Section 00 30 00, Section 00 30 00 shall prevail."

2.11 ARTICLE 11

- A. Article 11: Insert a new Subparagraph 11.1 and renumber each succeeding Paragraph accordingly:  
11.1 See Specification Section 00 20 20 for additional requirements. In the event of conflict between Section 00 20 20 and this Paragraph 11, requirements of Section 00 20 20 shall prevail.
- B. Subparagraph 11.1.1 (renumbered 11.2.1): Amend this Subparagraph by adding the phrase, "and that are acceptable to the Owner," following the word "located," in the second line.
- C. Subparagraph 11.1.1 (renumbered 11.2.1): Amend this Subparagraph by adding the phrase, ", Indiana State University, the Indiana State University Board of Trustees and the Architect/Engineer," following the word "Contractor," in the second line.
- D. Subparagraph 11.1.1 (renumbered 11.2.1): Amend this Subparagraph by adding Sub-Subparagraphs .9 and .10 as follows:  
".9 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:  
Premises Operations (including X, C, and U coverage's as applicable)  
Independent Contractor's Protective  
Products and Completed Operations  
Personal Injury Liability with Employment Exclusion deleted  
Contractual, including specified provision for the Contractor's obligations under Paragraph 3.18  
Owned, non-owned and hired motor vehicles"  
".10 Broad Form Property Damage including Completed Operations: If the General Liability coverage's are provided by a Commercial General Liability Policy on a claims made basis, the policy date or Retroactive Date shall predate the Contract; the termination date of the policy or applicable extended reporting period shall be no earlier than the termination date of coverage's required to be maintained after final payment, certified in accordance with Subparagraph 9.10.2."
- E. Subparagraph 11.1.2 (renumbered 11.2.2): Add the following renumbered Subparagraph 11.2.2.1

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“11.2.2.1 The insurance required by renumbered Subparagraph 11.2.1 shall be written for not less than the following limits, or greater if required by law:

See Section 00 20 20 for Insurance Requirement Levels

- F. Subparagraph 11.1.3 (renumbered 11.2.3): Amend this Subparagraph by changing the word “30” to “60” in the second sentence.

- G. Subparagraph 11.1.3 (renumbered 11.2.3): Amend this Subparagraph by deleting the last sentence beginning with the phrase, “Information concerning reduction....” And substituting the following:

“The form of the certificate shall be AIA Document G715, SUPPLEMENTAL ATTACHMENT for Acord Certificate of Insurance 25-S (7/90). Contractor shall furnish promptly to the Owner copies of any endorsements that are subsequently issued amending coverage or limits. Certificates of Insurance shall name the Owner (Indiana State University Board of Trustees) and Architect/Engineer as ‘Additional Insured’s.’”

- H. Paragraph 11.1 (renumbered 11.2): Amend this Paragraph by adding Subparagraph 11.2.5 as follows:

“11.2.5 The Contractor, in connection with the above mentioned Workmen’s Compensation and Occupational Disease Insurance, shall furnish to the Owner, prior to commencement of the Work, duly executed and validated forms as prescribed by the Indiana Industrial Board showing that such insurance is in full force and effect.”

- I. Sub-subparagraph 11.3.1.1 (renumbered 11.4.1.1): Amend this Subparagraph by adding the following Subparagraph 11.4.1.1.1:

“11.4.1.1.1: Such Insurance shall not insure against loss due to theft of Contractor’s, Subcontractor’s, Sub-Subcontractor’s tools, equipment, and other personal property. The responsibility to guard against such thefts shall lie with the respective Contractor, Subcontractor, or Sub-Subcontractor whose tools, equipment, and other personal property are susceptible to such thefts.”

- J. Subparagraph 11.3.1.3 (renumbered 11.4.1.3): Add the following phrase to the end of the sentence:

The deductible amount shall be \$25,000.00 unless otherwise advised by the Owner.

- K. Subparagraph 11.3.9 (renumbered 11.4.9): Delete this Subparagraph in its entirety.

## 2.12 ARTICLE 12

- A. Subparagraph 12.2.2.1: Amend this Subparagraph by adding the following sentence to the end:

“Where special warranties of longer duration are required, the Contractor shall secure warranties from Subcontractors, manufacturers and/or material suppliers as applicable, addressed to and in favor of the Owner, and deliver copies of same to the Owner upon completion of the Work. Delivery of said warranties shall not relieve Contractor of any obligation assumed under any other provisions of the Contract.”

## 2.13 ARTICLE 13

- A. Subparagraph 13.1: Delete the text in its entirety and replace with the following:

“13.1 Contractor and all Subcontractors are responsible to comply with Indiana Code as it pertains to public works projects. The following are notable requirements set forth in IC 5-16-13, in effect as of July 1, 2015, but are not inclusive of all requirements.”

- B. Subparagraph 13.1: Add the following numbered Subparagraph 13.1.1:

“13.1.1 Contractor agrees, and represents to Owner, that at least 15% of the Contract Price (at the time this Agreement is executed) is comprised of any combination of the

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following: 1) Work performed by Contractor's employees; 2) Services supplied directly by Contractor's employees; or 3) Materials supplied directly by Contractor.

- C. Subparagraph 13.1: Add the following numbered Subparagraph 13.1.2:

"13.1.2 Contractor and all Subcontractors, regardless of tier, shall not pay cash to its employees for Work performed on this public works Project."

- D. Subparagraph 13.1: Add the following numbered Subparagraph 13.1.3:

"13.1.3 Contractor and all Subcontractors, regardless of tier, shall comply with federal Fair Labor Standards Act of 1938."

- E. Subparagraph 13.1: Add the following numbered Subparagraph 13.1.4:

"13.1.4 Contractor and all Subcontractors, regardless of tier, shall be in compliance with workers compensation requirements of Indiana Code 22-3-5-1 and Indiana Code 22-3-7-34 and commits worker's compensation fraud if such Contractor or Subcontractor falsely classifies an employee as an independent contractor, sole proprietor, owner, partner, officer, or member of a limited liability company."

- F. Subparagraph 13.1: Add the following numbered Subparagraph 13.1.5:

"13.1.5 Contractor and all Subcontractor, regardless of tier, shall be in compliance with unemployment compensation system requirements of Indiana Code 22-4-1 through 22-4-39-5."

- G. Subparagraph 13.1: Add the following numbered Subparagraph 13.1.6:

"13.1.6 Contractor and all Subcontractors, regardless of tier, shall be in compliance with requirements for drug testing of its employees set forth in Indiana Code 4-13-18-1 through 4-13-18-7 if estimated cost of public works Contract is at least \$150,000. With each application for payment the Contractor shall submit an affidavit, dated and signed by the Contractor, that neither they nor, to their knowledge, any of their subcontractors has violated the "Drug Testing Program provision of the Indiana Code."

- H. Subparagraph 13.1: Add the following numbered Subparagraph 13.1.7:

"13.1.7 Following provisions shall be in effect for Contracts awarded after March 31, 2018."

- I. Subparagraph 13.1.7: Add the following numbered Subparagraph 13.1.7.1:

"13.1.7.1 Contractor and Subcontractors, regardless of tier, shall preserve its payroll and related records for three (3) years after completion of the project work and such records shall be open to inspection by the Indiana Department of Workforce Development."

- J. Subparagraph 13.1.7: Add the following numbered Subparagraphs 13.1.7.2 and 13.1.7.2.1:

"13.1.7.2 Recommended Employment of Apprentices"

"13.1.7.2.1 Owner strongly recommends that Contractor employs apprentices from each building trades craft involved in the Project to the maximum extent feasible. In doing so, the Contractor shall consider whether such apprentices are indentured into a Joint Apprenticeship Training Program or other comparable bona fide apprenticeship training program, registered and certified with the U.S. Department of Labor, Bureau of Apprenticeship and Training and shall use as a guide the Apprenticeship Standards of the Labor-Management Contract for the appropriate jurisdictional area when determining the appropriate ratio of apprentices from each respective craft."

- K. Subparagraph 13.1.7: Add the following numbered Subparagraphs 13.1.7.3, 13.1.7.3.1 and 13.1.7.3.2:

"13.1.7.3 Contractor's Certification of Authorized Employment (E-Verify Requirements.)"

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“13.1.7.3.1 In accordance with Indiana Code 22-5-1. 7 as amended, each Contractor in any tier of a public works project shall not knowingly employ unauthorized aliens. Every contractor shall enroll in and verify the work eligibility status of all employees hired after June 30, 2015 using the U.S. Citizenship and Immigration Services (USCIS) E-Verify program as defined in IC §22-5-1.7-3, unless the E-Verify program no longer exists.

“13.1.7.3.2 The Prime Contractor shall require their subcontractors who perform work under this Contract to certify to the Prime 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 Prime Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor. The Prime Contractor and its sub-contractors at all levels must comply with all provisions of the statute or the Contract is subject to cancellation.”

- L. Subparagraph 13.1.7: Add the following numbered Subparagraphs 13.1.7.4 and 13.1.7.4.1

“13.1.7.4 Non-Collusion Affidavit”

“13.1.7.4.1 The Bidder, by its officers and agents or representatives present at the time of filing their bid, being duly sworn, say on their oaths that neither they nor any of them have in any way, directly or indirectly, entered into any arrangement or agreement with any other bidder, or with any public office of the State of Indiana, of any county or municipality or other public offices whereby such affiance or either of them, has paid or is to pay to such other bidder or public officer any sum of money, or has given or is to give to such other bidders or public officer anything of value whatever, or such affiance of affiance or either of them has not, directly or indirectly entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in letting of the contract sought for by the attached bids; that no inducement of any form or character other than which appears upon the face of the bid will be suggested, offered, paid, or delivered to any person whomsoever to influence the acceptance of the said bid or awarding of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contract sought by this bid.”

- M. Subparagraph 13.1.7: Add the following numbered Subparagraphs 13.1.7.5 and 13.1.7.5.1

“13.1.7.5 Non-Discrimination”

“13.1.7.5.1 The Bidder and its 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 their hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment because of their sex, race, natural origin, ancestry or religion or disability as prohibited under the Americans with Disabilities Act. Breach of this covenant may be regarded as a material breach of the Contract.”

- N. Subparagraph 13.1.7: Add the following numbered Subparagraphs 13.1.7.6 and 13.1.7.6.1

“13.1.7.6 Certification of United States Steel”

“13.1.7.6.1 The Bidder certifies that the Bidder and all Subcontractors will comply with the statutory obligations to use steel products made in the United States.

- O. Subparagraph 13.5.1: Add the following Subparagraph 13.5.1.1:

“13.5.1.1: Prior to commencing the Project the Contractor shall submit a list of all proposed testing companies for the Project to the Architect/Engineer and Owner for approval.”

- P. Subparagraph 13.5.2: Add the following Subparagraph 13.5.2.1



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“13.5.2.1: Prior to testing, unless the testing company has been previously approved, the Contractor shall submit to the Architect/Engineer and Owner the proposed testing company for approval.”

2.14 ARTICLE 14

- A. Subparagraph 14.1.1: Amend this Subparagraph by deleting Sub-Subparagraph .4.
- B. Subparagraph 14.2.1: Amend this Subparagraph by adding a new Sub-Subparagraph 14.2.1.5 as follows:

“.5 becomes financially incapable of completing the Work contemplated by the Contract Documents.”

- C. Add subparagraph 14.2.5 as follows

“14.2.5 Contractor shall be responsible to reimburse Owner all attorney’s fees and expenses incurred by Owner if Contractor is terminated for cause.”

2.15 ARTICLE 15

- A. Subparagraph 15.1.2: Delete the text of this Subparagraph and replace by adding the following Subparagraph 15.1.2.1, Subparagraph 15.1.2.2 and Subparagraph 15.1.2.3:

“Subparagraph 15.1.2.1 Claims must be initiated by written notice to the Architect within 21 calendar days after the occurrence of the event.”

“Subparagraph 15.1.2.2 Notice of a claim must include what the claim is for, when the event occurred causing the claim, the amount of additional time (Project extension) being requested and any financial implications of the claim with sufficient specificity to allow the Owner an opportunity to modify the Project scope to remain within the Owner’s approved budget.”

“Subparagraph 15.1.2.3 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.”

- B. Subparagraph 15.1.4 delete this Subparagraph in its entirety.
- C. Subparagraph 15.1.5 delete this and all its subparagraphs in their entirety.
- D. Subparagraph 15.3.2 Delete the text in its entirety and replace with the following:

“15.3.2. If, through acts of neglect on the part of the Contractor, any other Contractor or Subcontractor shall suffer loss or damage on the Work, the Contractor shall agree to settle with such other Contractor or Subcontractor by negotiation or binding dispute resolution, if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim against the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim, including legal defense costs.”

- E. Subparagraph 15.3.3 In the first sentence after the word “fee” add a period and delete the remainder of that sentence.
- F. Paragraph 15.4: Delete this Paragraph in its entirety. Additionally; delete all references and requirements for Arbitration throughout the entire AIA A201-2007 Document and replace with Litigation.

PART 3 – NOT USED

END OF SECTION 00 20 11

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SUPPLEMENTARY GENERAL CONDITIONS

Preface: ***These Supplementary General Conditions supplement and modify AIA Document A201 General Conditions of the Contract for Construction (2007 Edition), General Conditions between the Owner and Contractor.***

PART 1- SUPPLEMENTARY GENERAL CONDITIONS

1.01 DEFINITIONS

- A. "Contract". The Contract or Agreement, the Notice to Bidders, the Instructions to Bidders, the Bid or Proposal, the General Conditions, The Special Conditions, the Specification and Drawings, also any Addenda or the Modifications incorporated in any of the above documents before the execution of the Contract or Agreement.
- B. "Owner": The Indiana State University Board of Trustees.
- C. "Architect/Engineer": the individual or firm hired by the Owner to prepare the Construction Documents and to Administer the Contract.
- D. "Contractor": The person, firm or corporation who, with the Owner, executes the Contract, or the duly recognized assignee thereof.
- E. "Subcontractor": A person, firm or corporation who, under contract with Contractor, furnished material only, labor and materials, or labor only, at the site of or for the project.
- F. "Director": The Director of Department of Facilities Management at Indiana State University, or his duly authorized representative.
- G. "Surety": Any person, firm or corporation which has executed, as surety, the Contractor's performance bond securing the performance of the within contracts.
- H. "Work": Includes both materials and labor.

1.02 BOND

- A. Before any contract made for this work becomes valid, the Contractor shall furnish the Owner a satisfactory performance and payment bonds, in such form as the Owner may prescribe and with such surety or sureties as it may approve each in an amount equal to 100% of the total contract price. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. These bonds shall guarantee all labor and material to be as required, the faithful payment of any claim or liens from any cause for which the Contractor or any Subcontractor is liable, including those for labor, materials, utility service, transportation costs and for supplies, equipment, machinery (or the rental thereof).
- B. Licensed Sureties and Insurers
  - 1. All bonds required by the Contract Documents (such as the Bid Specifications, Award Letter, Contract for Construction, etc.) to be purchased and maintained by the Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. In addition to appearing on Circular 570 U.S. Dept. of the Treasury, such Surety or insurance company shall maintain an A.M. Best's Rating of not less than "A".

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C. The surety bond shall contain the following paragraph:

1. "The said surety for value received hereby stipulates and agrees that no change, extension of time, alterations, or additions to the terms of the contract, or to the work to be performed hereunder, or the specifications accompanying them, shall in any way affect its obligations on this bond, alteration or addition to the terms of the contract, or to the work or the specifications."

1.03 INSURANCE

**NOTE: The dollar amounts shown in this paragraph are for jobs over \$50,000.  
See footnotes and amounts for jobs less than \$50,000.**

- A. The Prime Contractor(s) shall provide all insurances listed here-in in these Specifications and shall require the Subcontractor(s) to provide the same. The Prime Contractor(s) shall not commence work under this Contract until they have obtained all insurance required by these specifications and until such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been obtained. Policies expiring on a fixed date before final acceptance of the project must be renewed and evidence of such renewal submitted to the Owner before such date.
- B. The Prime Contractor(s) shall furnish the Owner with satisfactory evidence of the insurance required, with satisfactory compliance as determined solely by Owner.
- C. It is solely the responsibility of the Prime Contractor(s) to confirm that the Subcontractor(s) are in compliance with the insurance requirements of these Specifications, to maintain copies of the Subcontractors insurance on file and to be prepared to provide evidence of these insurances to the Owner upon demand.
- D. Insurance Required:
  1. Worker's Compensation and Employers Insurance:
    - a. The Prime Contractor(s) shall maintain during the life of this contract Worker's Compensation and Employers Liability Insurance for all Prime Contractor's employees employed at or involved in any manner with the project, and, in case any work is sublet, the Prime Contractor(s) shall require the Subcontractor(s), at their own expense, similarly to provide Worker's Compensation and Employers Liability Insurance for all of the Subcontractor's employees engaged in or involved in any manner with work under this contract. Such Workers' Compensation insurance will be in accordance with the statutory requirements of the State of Indiana, with and including Worker's Compensation for All Other States, if any. The Prime Contractor(s) shall and require Subcontractor(s) to provide insurance coverage equal to that provided under the Worker's Compensation Act, for the protection of the Contractor's employees not otherwise protected. Employer's liability coverage must be maintained in amounts not less than \$500,000/\$500,000/\$500,000. Limits may be provided through a single policy or a primary/excess policy basis.
  2. Commercial General Liability Insurance.<sup>1</sup>
    - a. The Contractor shall and require Subcontractors, at their own expense respectively, to maintain during the life of this contract Commercial General Liability Insurance insuring the Prime Contractor and any subcontractor, and owner and any other party required to be insured, from claims for bodily injury, death, personal injury and property damage which may arise from or on account of operations under this Contract, whether such operations be by the Prime Contractor(s) or by any

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<sup>1</sup> For Smaller Contracts, the following limits (including umbrella liability) are permitted:

Contracts \$25,000 to \$49,999.....	\$ 2,000,000
"       \$10,000 to \$24,999.....	\$ 1,000,000
"       \$ 9,999 and under.....	\$ 500,000

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Subcontractor or by anyone directly or indirectly employed by either of them and the amounts of such insurance shall be as follows:

- \$2,000,000 General Aggregate
- \$1,000,000 Combined Single Limit Bodily Injury, Property Damage
- \$1,000,000 Products/Completed Operations
- \$1,000,000 Personal Injury and Advertising Injury
- \$ 100,000 Fire Damage

The General Aggregate limit shall apply separately, in total, to this project only.

3. Business Auto Insurance<sup>2</sup>:

- a. The Prime Contractor(s) shall and shall require all Subcontractors to maintain at their own expense respectively, at all times during the life of this contract, business auto insurance covering all liability and claims arising from the ownership, use, maintenance, operation, loading or unloading of automobiles anywhere in the United States, in connection with the performance of the Contract, whether such automobiles are owned, hired, or non-owned by the Contractor or Subcontractors.
- b. Such auto insurance shall be written with a limit of not less than \$1,000,000 per occurrence as a combined single limit for Bodily Injury and Property Damage coverage.

4. Umbrella Liability Insurance<sup>2</sup>:

- a. The Prime Contractor(s) shall and shall require all Subcontractors to maintain at their own expense respectively, at all times during the life of this Contract, Umbrella Liability Insurance providing excess coverage over the above specified primary insurance in an amount not less than:
  - \$1,000,000 for contracts \$50,000 to \$99,999.99
  - \$2,000,000 for contracts \$100,000 to \$999,999.99
  - \$3,000,000 for contracts \$ 1,000,000 to \$2,999,999.99
  - \$5,000,000 for contracts over \$3,000,000

E. Additional Insurance Requirements:

1. The Prime Contractor(s) shall and shall require all Subcontractors to include Indiana State University, Indiana State University Board of Trustees and any Architect/Engineer Firm hired by Indiana State University for the Project, as an additional insured on their Commercial General Liability, Umbrella Liability Insurance and Business Auto Insurance policies with regard to this contract.
2. Certificate(s) of Insurance shall include an endorsement of a Waiver of Subrogation in favor of the Owner for Commercial General Liability Insurance, Umbrella Liability Insurance, Worker's Compensation and Employers Liability Insurance and Business Auto Insurance.
3. On Projects in excess of \$1,000,000.00 a copy of the applicable pages from the Contractor's policy shall be provided showing the endorsements listed in paragraphs 1 and 2 of this Item 1.03 E.
4. With regard to the above mentioned Commercial General Liability, Business Auto, and Umbrella Liability Insurance, if in the event of any major change or cancellation of such policy, the Prime Contractor(s) shall and shall require all Subcontractors to give a 30-day advance notice to the Owner.
5. The Prime Contractor(s) shall and shall require of all Subcontractors that the insurance companies must have an A.M. Best's rating of not less than an "A" for projects over \$150,000 and a rating of B+ or higher for projects under \$150,000 and that the insurance

<sup>2</sup> For Smaller Contracts, the following limits (including umbrella liability) are permitted

Contracts \$25,000 to \$49,999.....	\$2,000,000
\$10,000 to \$24,999.....	\$1,000,000
\$ 9,999 and under.....	\$ 500,000

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companies are duly licensed or authorized in the jurisdiction in which the Project is located to issue insurance policies for the limits and coverages so required.

F. Builders Risk Insurance:

1. The Owner agrees to provide property insurance including Builders Risk insurance for property under construction, and all materials and labor at or within 1,000 feet of the site intended for use in the "work" or project. Pursuant to this agreement, Owner hereby affirms the policy contains a waiver of subrogation in favor of the contractor or subcontractors should loss or damage of the type insured against result in loss to covered property; and Owner agrees to release from liability the contractor, to the extent such loss or damage is insured by said policy.
2. Coverage does not extend to personal property, tools, equipment, scaffolding, staging, or similar equipment of the contract or subcontractor(s), or any employees thereof.
3. Notwithstanding the foregoing however, Contractor is responsible for the property insurance deductible of \$25,000 applicable to each covered loss to the work or project. Contractor acknowledges and affirms it will, without delay, pay the deductible, or if the loss remains within the deductible, pay that part of the deductible that equals the loss amount.

G. Indemnification:

1. The Prime Contractor shall and shall require Subcontractors to indemnify the Owner and any other party required to be insured from all claims arising from the failure of the Prime Contractor(s) to require the Subcontractors to provide the insurance required by these Specifications.
2. Notwithstanding any other provision to the contrary, the Contractor(s) agree to indemnify the Owner only for losses due to personal injury, or property damage to the extent caused by Contractor's negligent acts or omissions, or the negligent acts or omissions of Contractor's employees, agents and subcontractors during the performance of this Contract, but not to the extent caused by others. The Contractor shall defend Owner on claims that do not present a conflict of legal theory or fact between Owner and Contractor. Each party shall defend itself on any claim that does present a conflict of legal theory or fact between the parties.
3. Under no circumstances shall either party be liable for any loss, damage or delay due to any cause beyond either party's reasonable control, including but not limited to acts of government, fire, explosion, theft, weather damage, flood, earthquake, riot, civil commotion, war, mischief or act of God.
4. In the event of a strike or work stoppage by Contractor's employees, the Contractor agrees to use its best efforts to fulfill its obligations pursuant to their contract utilizing management and supervisory personnel.
5. Under no circumstances shall either party be liable to the other for special, indirect, or consequential damages of any kind including, but not limited to, loss of profits, loss of good will, loss of business opportunity, additional financing costs or loss of use of any equipment or property, whether in contract, tort (including negligence), warranty or otherwise, notwithstanding any indemnity or other provision to the contrary.

1.04 SUBCONTRACTORS

- A. At the time of Bid the Prime Contractor(s) (Bidder(s)) shall provide the names of the proposed Subcontractors listed in Appendix A of the Bid Form. Prior to the Awarding of the Contract, the Contractor shall submit to the Owner, in writing, the names of all the proposed Subcontractors and major material vendors. All Subcontractors shall be licensed and bonded and shall be held to the same level of experience and qualifications as are required of the Prime Contractor (Bidder) in Section 001000 NOTICE TO BIDDERS last paragraph.
- B. The Prime Contractor shall be responsible for the acts and omissions of his Subcontractors and of persons either directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

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- C. Nothing contained in the Contract shall create any contractual relationship between any Sub-contractor and the Owner, and no Subcontractor will be recognized as a party to the Contract.
- D. The Prime Contractor shall use the Subcontractors, Suppliers, Materials and Equipment as listed in the Bid Form Appendix "A" submitted at the time of Bid. There shall be no changes permitted to this list except as listed in Section 00 10 10 Paragraph 3.14 APPENDIX A, Item B.1.

1.05 DRAWINGS

- A. The drawings referred to in these specifications show such plans and details as are regarded necessary by the Architect/Engineer and/or the Owner to properly illustrate the work required, to estimate the cost of the work, and to complete its construction.
- B. The Architect/Engineer and/or the Owner will from time to time furnish such additional detail and working drawings as may be deemed necessary to interpret and explain the Contract drawings and all such additional drawings shall be of equal force with those mentioned above and shall be considered as forming part of this Contract.
- C. The general character of the work shall be subject to minor modifications when detailed or full sized drawings for such work are prepared.
- D. All lettering on drawings is to be considered a part of the drawings.
- E. All drawings, specifications, etc., are the property of the Owner and shall be returned before the final award is issued, if so requested.

1.06 RELATIONSHIP AND PRIORITY OF DOCUMENTS

- A. The documents comprising the Contract are complementary and what is called for by one shall be as binding as if called for by all. The intention of the Contract is to include all labor, materials, and equipment necessary for the proper execution of the work.
- B. In the case of a discrepancy between the requirements of the Drawings and the Specifications or between Sections of the Specifications:
  - 1. The more stringent shall apply.
  - 2. In equal situations the Specifications or as directed by the Owner prevails.

1.07 PERMITS

- A. The Contractor shall give all requisite notices to public officials, secure and pay for all permits, legal fees or charges, have the work inspected by all proper public authorities, pay all charges connected with such inspections and deliver the proper inspection certificates and all receipts for charges to the Owner.
- B. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Owner in writing, and any necessary change shall be accomplished by the appropriate modification. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations and without such notice to the Architect, he shall assume full responsibility therefore and shall bear all cost attributable thereto.

1.08 SAMPLES

- A. The Contractor shall submit in writing to the Owner for approval samples and shop or installation drawings of the materials he proposes to use, or such other related materials as owner otherwise requests.
- B. Each sample shall be labeled, bearing the name and quality of the material, the Contractor's name, the date and a description of the sample. A letter from the Contractor stating that the samples conform to the requirements of the drawings and specifications shall accompany all such samples. Transportation charges on all samples shall be prepaid.

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- C. Samples and drawings shall be submitted in due time so as to permit proper consideration without delaying the Contractor's operation. Material shall not be ordered until approval is received from the Owner, in writing. The use of any material will be permitted only so long as it remains equal to the approved sample.

1.09 CONTRACTOR'S SUPERVISION

- A. The Prime Contractor shall maintain on the Project site a competent Project Superintendent at all times any work is being performed; either by the Prime Contractor's workers or any Subcontractor's workers. **If the Project Superintendent is not on the Project site the Owner shall be notified immediately. If the Project Superintendent is not on the jobsite, without written prior approval or notification to be away from the jobsite, the Owner may be entitled to a \$1,000 credit for each day or part of the day the Project Superintendent is not onsite while actual work is being performed.**
- B. The Contractor's superintendent shall represent the Contractor during their absence and all directions given the superintendent shall be as binding as if given to the Contractor.

1.11 LAYING OUT AND UTILITY LOCATES

- A. The Contractor shall thoroughly examine the drawings and specifications before commencing work and report to the Owner if any discrepancy, errors, or defect appears, but he shall not be held responsible for their existence.
- B. The Contractor shall lay out his own work.
- C. Prior to any cutting, drilling, trenching, excavating or other earthwork the Contractor shall determine the exact location of all utility lines and appurtenances that could be encountered which are not shown on the drawings as follows.
  - 1. A minimum of forty eight (48) hours prior to commencing work the Contractor shall contact Indiana Locates for all public utility locates.
  - 2. A minimum of forty eight (48) hours prior to commencing work the Contractor shall contact the Project Coordinator for all ISU Utility locates.
- D. Failure to contact for the appropriate locates shall make Contractor solely responsible for all costs incurred to repair all damaged utility lines or appurtenances.
- E. The Contractor shall hand excavate within three (3) feet, or as required by the Utility Company, on either side of a marked utility unless exact depth of the marked utility is known and the planned work will in no way be in close proximity with the utility line or appurtenance.

1.12 MATERIAL AND LABOR

- A. Except as otherwise stipulated, the Contractor shall provide and pay for all materials, labor, tools and equipment necessary for the execution of the work.
- B. The Owner reserves the right to require the Contractor to discontinue the service of any workmen employed on the work whom he deems incompetent, negligent, or otherwise objectionable, and to suspend any portion of the work embraced in the Contract whenever, in his opinion, it would be inexpedient to start or continue such work.

1.13 DEFECTIVE WORK AND MATERIALS

- A. Any materials and workmanship found to be defective, improperly placed, not in strict conformity with the drawings and specifications, or defaced or injured through action of fire or elements, through usage by the Contractor or his employees or from any other cause, shall be removed immediately from the premises and satisfactory materials or work substituted therefore without delay. This shall include making good the work of other Contractors destroyed or damaged by such removal or replacement. The cost of the above replacements shall be borne by the Contractor responsible for the defective work or material.
- B. Should the Contractor in the execution of his work discover any imperfections or errors in the work of other Contractors that would interfere with the proper execution of his contract, he



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shall immediately report this fact to the Owner. Errors or imperfections in the work of other Contractors will in no case excuse installation of imperfect work by this Contractor.

- C. No previous inspection shall be held as an acceptance of defective work or materials or relieve the Contractor from the obligation to furnish sound materials or to perform satisfactory work in accordance with the contract requirements. The final payment shall not relieve the Contractor of the responsibility for faulty materials or workmanship and he shall remedy all such defects, settlements, or other work resulting there from, which shall appear within a period of one (1) year from date of final acceptance or within the period stipulated in certain separate guarantees or bonds required elsewhere in the specifications, whichever may be the longer.
- D. The Owner shall be the sole judge of the materials furnished and the character of work performed.

**1.14 RESPONSIBILITY FOR DAMAGE**

- A. The Contractor shall be responsible for all damages to life and property due to his action or failure to act when action would reasonably be expected. He shall be responsible for all parts of his work, both temporary and permanent, until the work under his contract is declared accepted by the Owner.
- B. The Contractor shall continuously maintain adequate protection of all his work from damage, and shall protect the Owner's property and all adjacent property from injury in connection with the Contract.
- C. The Contractor shall be held responsible for damage to work of other Contractors that is the result of his operation.
- D. Should the Contractor believe that the work shown by the drawings or specifications is not correct when executed to obtain safe and substantial results, or if any discrepancy appears, it is his duty to immediately notify the Owner in writing, stop work on same, and await written instruction.

**1.15 INDIANA SALES TAX**

- A. Indiana State University is a Tax Exempt Institution and Indiana Sales Tax for products permanently incorporated in work shall not be included as part of the Bid or on any Application for Payment.
- B. Contractor Responsibilities:
  - 1. Pay Indiana Sales Tax on all non-exempt purchases and provide the Owner with detailed documentation of all taxes of non-exempt items invoiced on their Application for Payment. Documentation shall be provided with their Application for Payment at the time of first billing of each taxable item.
  - 2. Upon completion of work, file with Owner notarized statement that all purchases were made under their exemption certificate where entitled to be exempt.
  - 3. Pay legally assessed penalties for improper use of the exemption certificate number.

**1.16 CLEANING UP**

- A. The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish.
- B. When directed by the Owner, the Contractor shall clear out and remove any rubbish that may constitute an obstruction to the progress of the work.
- C. At completion of the contract, the Contractor shall remove from the premises all rubbish and surplus material, and shall repair any damage to his work no matter by who caused, and shall leave the premises clean and in perfect repair and order.

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1.17 NON-DISCRIMINATION CLAUSE

- A. "Pursuant to the requirements of Indiana Code 22-9-1-10 and 5-16-6-1, Contractor and his Subcontractors may not discriminate against any employee or applicant for employment to be employed in the performance of such contract, with respect to their hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment because of their sex, race, natural origin, ancestry or religion or disability as prohibited under the Americans With Disabilities Act. The contractor and subcontractor, if any, agrees to comply with all the provisions contained in the Equal Opportunity Clause quoted in Executive Orders No. 11246 and No. 11375. In addition, the contractor shall cause this Equal Opportunity Clause to be included in the subcontracts or purchase orders hereunder unless exempted by rules, regulations and orders of the Secretary of Labor issued pursuant to Section 204 of the Executive Orders No. 11246 and No. 11375 as amended. Breach of the covenant may be regarded as a material breach of contract."

1.18 PUBLIC RELATIONS

- A. Indiana State University is an Affirmative Action Institution. Any inappropriate actions toward any Indiana State University student, faculty or staff member by any Contractor's Employee shall result in the employee being told to leave the Campus of Indiana State University immediately. This employee shall not be allowed to return to work on the Project for the duration of the Project or longer. Repeated offences by a Contractor's employees may result in disqualification of the Contractor for this and future Indiana State University Projects.

1.19 "OR APPROVED EQUAL" CLAUSE

- A. Unless the Specifications indicates that substitutions are not allowed, whenever a material or article required is specified or shown on the plans by using the name of the proprietary product or of a particular manufacturer or vendor, any material or article which will perform adequately the duties imposed by the general design will be considered equal and satisfactory providing the material or article so proposed is of equal substance and function in the Architect/Engineer and Owner's opinion. It shall not be purchased or installed without written approval. Requests for substitution prior to Bidding shall be as per Section 001010 INSTRUCTIONS TO BIDDERS Item 1.08
- B. Complete descriptive information, specifications and samples or sample material must be submitted at the time the proposal is submitted. In addition, a list of projects with dates and contact persons must be submitted at the time the proposal is submitted showing where the proposed alternate material or article has been installed or used. Failure to submit information as requested will be cause for rejection of the Bid submitted.

1.20 VERIFYING MEASUREMENTS

- A. The Contractor shall verify all measurements on the site and be responsible for any mistakes he may make and their results. If the Contractor discovers any discrepancy, in figures on the drawings, he shall report same to the Architect/Engineer and Owner before proceeding with any work affected by the discrepancy and shall be held responsible for results should he fail to make such reports.

1.21 EXTRAS

- A. Without invalidating the Contract, the Owner may order extra work or make changes by altering, adding to, or deducting from the work, the Contract sum being adjusted accordingly, and the consent of the Surety being first obtained where necessary or desirable. All work of the kind Bid upon shall be paid for at the price stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the Owner, and the price is stated in such order.
- B. Requests for compensation, for previously approved Change Orders omitted from an Application for Payment, received sixty (60) calendar days after Owner receipt of the Final Application for Payment (Release of Retainage) shall not be honored.

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1.22 GENERAL GUARANTY

- A. Neither the final certificate of payment nor any provision in the Contract documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the Contract documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting there from, which shall appear within a period of one (1) year from the date of final acceptance of the work, unless a longer period is specified.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 00 20 20

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SUPPLEMENTARY GENERAL CONDITIONS

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ISU SPECIAL REQUIREMENTS AND INFORMATION

## PART 1- SPECIAL REQUIREMENTS

## 1.01 BARRICADES

- A. ISU will provide barricades during the initial closure of a construction site. However, once the Contractor mobilizes, ISU will remove the barricades, and Contractor shall replace them with his own. If additional barricades are required during the construction phase, Contractors shall provide them at their expense.

## 1.02 BURIED UTILITIES

- A. All Direct Buried Utility Lines and Utility Duct Banks will be marked by use of the appropriate marker tape continuously installed a minimum of twelve (12) inches above said utility line or duct bank. Marker tape shall be a minimum of six (6) inches wide.

## 1.03 REMOVAL AND RE-INSTALLATION OF EQUIPMENT

- A. The Owner is not responsible for the removal or re-installation of any equipment necessitated by this work.
- B. All electrical disconnects and reconnects of equipment necessitated by this work shall be performed by a licensed bonded Electrical Contractor hired by the Contractor to perform this work. The Owner will assist in locating the power source but will not be responsible for the actual performance the electrical work.

## 1.04 PRIME CONTRACTOR RIGHT OF SALVAGE

- A. The Owner has the first right of salvage of any items not slated for re-use on every Project.
- B. Should the Owner waive their right for salvage for any item not slated for re-use or designated in for recycling; then these items become the property of the Prime Contractor.
- C. The Prime Contractor at their discretion may grant to others the right to salvage items not slated for re-use and this may be used to comply with the recycling requirements as long as records are kept.
- D. However; once an item has been placed in a dumpster or any other trash receptacle no one is allowed to enter a dumpster or search through a trash receptacle for the purpose of removing items for salvage while these trash containers are on the campus of Indiana State University.
- E. The Prime Contractor shall protect these trash containers by use of a six (6) foot high chain link fence enclosure around the trash container(s) to prevent any person from gaining access to the trash containers for actions prohibited by this item.

## 1.05 CERTIFICATE OF INDUSTRIAL BOARD

- A. The Contractor shall furnish a certificate of insurance from an insurance company acceptable to Indiana State University evidencing that the Contractor has complied with the Indiana Worker's Compensation Law.

## 1.06 COVID 19 REQUIREMENTS FOR ISU PROJECT WORK

- A. Effective March 5, 2022 the wearing of masks is optional on the Campus of Indiana State University (ISU) and in ISU buildings. Contractor's employees will no longer be required to wear masks when working in occupied ISU buildings unless the occupant of the space where the work is being performed requests the Contractor's employees to wear a mask. The Contractor's employees shall have a mask available to put on if the occupant requests masks be worn in their space. The same applies to Vendors visiting the work space.
- B. Any Contractor and Subcontractor's employees exposed to Covid 19 shall be required to comply with CDC and State of Indiana guidelines, whichever is more stringent, for quarantine/isolation and shall not return to work on the Project until medically cleared to

ISU SPECIAL REQUIREMENTS AND INFORMATION

return to work. The effected Contractor and Subcontractor shall notify the Owner in writing of any Covid 19 incidents.

## 1.07 CAMPUS TOBACCO POLICY

- A. Effective in 2011 the following became the ISU smoking policy:
  1. The sale of tobacco products is prohibited on university-owned, operated, or leased property.
  2. The use of smoking tobacco products is prohibited on university-owned, operated, or leased property.
  3. The use of smoking tobacco products is permitted in privately owned vehicles and in designated smoking areas on campus.
  4. Any exceptions for the use of smoking tobacco products on university-owned, operated, or leased property must be approved by the President or Provost.
  5. Enforcement of this policy will depend on the cooperation of all faculty, staff, and students not only to comply with the policy, but also to encourage others to comply, in order to promote a healthy environment in which to work, study and live.
  6. Observation of violation of the policy should be reported to Public Safety at 812-237-5555. Follow up for violations of the policy should be referred to the appropriate administrative office for review and action for faculty through the office of Academic Affairs, for staff through Human Resources and to the Dean of Students for students.
- B. Amendments to this policy for Contractors
  1. Delete item 5 in its entirety and replace with the following:  
 "Enforcement of this policy will depend on the cooperation of the Contractors and their employees to comply with the policy and encourage others to comply in order to promote a healthy environment in which to work".
  2. Delete item 6 in its entirety and replace with the following:  
 "Observation of violation of this policy should be reported to the Contractor's Project Superintendent and/or the Owner's Project Manager. Contractor's employees repeatedly violating this policy may be asked to leave the Campus of Indiana State University and not be allowed to continue work on the Project".
  3. Add the following item 7:  
 "For major construction or renovation Projects (as determined solely by the Owner) the Owner shall designate a Contractor's smoking area near or within the boundaries of the job-site; unless the Prime Contractor(s) chooses to declare the entire Project job-site as non-smoking. Under no circumstances shall smoking be permitted within a building under construction or renovation.
- C. Additionally on construction sites on university-owned, operated, or leased property the use of smokeless tobacco products is prohibited.

## 1.08 PARKING REGULATIONS

- A. Beginning January 2018, construction employees will be required to park with a Construction Permit in Lot N (11<sup>th</sup> and Chestnut), Lot K (1<sup>st</sup> and Chestnut) or Lot I (3<sup>rd</sup> and Tippecanoe) when regular classes are in session. Contractors will be allowed to request an appropriate number of permits depending upon the project size for "core campus" parking. These permits should be used for carpooling or transporting employees to/from the construction and the construction parking lots. Contractors will also be allowed to have 2 foreman construction permits per project which will allow the foreman direct access to the construction project.
- B. When regular classes are not in session (i.e. weekends, Fall Break, Winter Recess, and summer sessions [the Monday after commencement thru one week before move-in]) contractors and their employees will be allowed to park in any regular/open lot on campus with a construction permit unless the lot is reserved for an event.

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## 1.09 ISU ENVIRONMENTAL CODE FOR CONTRACTORS

- A. Prior to starting any work, Contractor shall provide to the Owner a written document containing emergency procedures in case of:
  - 1. Liquid spills or leaks
  - 2. Release of gases or toxic vapors
  - 3. Excessive smoke
- B. This document shall contain but not be limited to:
  - 1. Emergency medical, fire, and police phone numbers including the ISU University Police.
  - 2. EPA phone numbers
  - 3. IDEM phone numbers
  - 4. Location of Material Safety Data Sheets.
- C. Prior to using any chemical or hazardous material the contractor shall provide the Owner with a copy of Material Data Safety Sheets covering the chemical or hazardous material.
- D. Contractor shall not burn or bury waste material on campus, or discharge any hazardous, or undesirable materials to sewers, or release toxic materials to the air.
- E. Contractor shall provide adequate exhaust ventilation for work area when generation of air contaminants is likely, i.e., painting, handling flammable liquids, welding, cutting, applying adhesives, etc.
- F. Contractor shall have at the job site Material Safety Data Sheets (MSDS) covering all chemicals and hazardous materials to be used in the work area. MSDS are to be available to workers and ISU personnel during normal working hours. Contractor shall use proper procedures based on MSDS when handling hazardous chemicals and materials.
- G. Contractor shall provide vacuum breakers or backflow preventers at each location where he utilizes building water supply.
- H. Any Contractor employee who deliberately interferes with environmental monitoring shall be removed from the project immediately.
- I. Contractor shall prevent fumes from welding, cutting, etc. and dust generated by construction from entering areas outside the work area by erecting plastic film barriers, sealing openings and ducts, and installing exhaust fans as required.
- J. Air contaminants in the work area shall not exceed OSHA regulations.

## 1.10 ISU SAFETY CODE FOR CONTRACTORS

- A. General:
  - 1. All work performed by contractors shall be done in accordance with all applicable Federal, State and Local laws, codes, and regulations and recommendations of Factory Mutual Engineering and Research (FM).
  - 2. Any safety hazard or unsafe act recognized by the Owner shall be reported to the Contractor responsible for job coordination. The safety hazard shall be corrected in a timely manner dictated by the severity of the safety hazard or unsafe act.
  - 3. Contractors shall remove all rubbish from the job site daily.
  - 4. All construction materials shall be protected from wind damage. Materials shall be secured to prevent them from becoming airborne with subsequent injury to personnel or damage to property.
- B. Communication:
  - 1. Contractor's job supervisors, or designated safety persons, must carry at all times a cellular phone to facilitate communication between the job site and the ISU University

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Police and Facilities Management Department. The cellular phones must remain on the job site during regular working hours. Contractor(s) shall report to the designated representative of ISU, or to ISU Police, any safety problem, code infraction, personal injury, or damage to ISU property. Report shall be made immediately after such occurrence.

C. Fire Protection:

1. Contractors shall provide a type "ABC" fire extinguisher for each work crew.
2. Extinguishers are to be kept within easy reach of each work crew and never farther than 10 feet from some worker. Inspection tags on extinguishers shall indicate the date of last inspection.
3. Contractor's supervisor shall keep torch cutting operations to a minimum by instructing personnel to use power saws, pipe cutters, etc. It shall be the duty and responsibility of the Contractor performing any cutting or welding to comply with the safety provisions of the National Fire Codes (NFC) pertaining to such work.
4. Contractor shall adhere to Factory Mutual Engineering and Research (FM) "Cutting and Welding" permit system. Permits are available through the Office of Environmental Safety's Fire Specialist Office at 812-237-4020.
5. Prime Contractor shall provide a one hour fire watch at the end of each workday when any cutting or welding occurred to assure that no possibility of fire exists from any work performed that day.

D. Safety Program: Prior to starting any work the Contractor shall submit to ISU a written safety program for the project including but not limited to:

1. Occupational Health & Environmental Controls
  - a. Personal Protective Equipment
  - b. Fire Protection & Prevention
  - c. Hand & Power Tools
  - d. Ladders & Scaffolds
  - e. Motor Vehicles and Mechanized Equipment
  - f. Accident Prevention
  - g. Safety Inspections
  - h. OSHA Inspections
2. Instruct all of his personnel as to location of emergency telephone(s).
3. Instruct all his personnel as to location of fire alarm (pull) stations.
4. Instruct all of his personnel to follow FM "Cutting and Welding Permit Systems" and emphasize the need to advise ISU's representative 24 hours prior to doing any welding, cutting, brazing, etc.
5. Instruct all his personnel to advise ISU representative prior to doing any welding, cutting, or brazing on or near a roof structure.
6. Instruct all personnel as to location on the job site of a copy of OSHA 29 CFR, Part 1926.
7. Instruct all of his personnel as to location of first aid supplies.

E. Flammable Storage:

1. Flammable or combustible liquids (paints, thinners, asphalt, gasoline, and tar or similar materials) shall be stored and handled as per NFPA 30, 4-5.5, and OSHA Construction Standard 1926.152. Quantities of flammable paints, etc., inside building work areas shall not exceed the amount to be used in one day.



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2. Containers of Class I liquids that are stored outside of an inside liquid storage area shall not exceed a capacity of 1 gallon, except safety cans shall be permitted up to 2 gallon capacity. Not more than 10 gallons of class I and class II liquids combined shall be stored in a single fire area outside of an approved storage cabinet or an inside liquid storage area unless in safety cans. Not more than 25 gallons of class I and class II liquids combined shall be stored in a single fire area in safety cans outside of an inside fluid storage area or an approved storage cabinet. Not more than 60 gallons of class IIIA liquids shall be stored outside of an inside liquid storage area or outside an approved storage cabinet.
  3. Rags saturated with flammable liquids shall be placed in approved cans and removed from the work site at the end of the work shift.
- F. Site Control: Contractor shall be responsible for securing the job site at all times and have personnel on call 24 hours per day for emergencies. Contractors shall protect their equipment and materials and ISU property from theft. Contractors shall secure doors, and openings including roof openings.
- G. Prior to a multiple day shutdown the Contractors shall:
1. Remove all debris and leave the premises broom clean.
  2. Shut off all unnecessary electric power and water supplies.
  3. Remove all flammable liquids from the work site.
  4. Secure small tools in gang boxes.
  5. Leave drives open for emergencies.
- H. Temporary Electrical Service:
1. Temporary electrical service shall be provided by a licensed, bonded electrical contractor.
  2. All extension cords shall be protected from abrasion and traffic. Multiple lengths of extension cord shall be connected with waterproof twistlock type connectors. Any electrical service over 115 volts shall be marked accordingly. All electrical power supplied from building service or portable generators shall have ground fault protection as part of the circuit.
  3. Portable generators or welders driven by internal combustion engines shall not be located inside the building. Positioning of this equipment outside the building shall be such that engine exhaust shall not enter the workplace or adjacent buildings.
- I. OSHA Reporting:
1. Contractors shall complete an OSHA 106 form on all reportable occupational injuries and illnesses for each of their job locations on the ISU campus. This requires posting the information from the initial accident report on a master log (OSHA 200) form within six working days after the accident occurs. This form must be kept available for OSHA Compliance Safety and Health Office and ISU review.
  2. See OSHA Regulations 29 CFR Part 1904, "Recording and Reporting Occupational Injuries and Illnesses"
- 1.11 FIRE SUPPRESSION SYSTEM REGULATIONS
- A. Prior to closing any fire suppression system valve or in any way making a fire suppression system inoperable the Contractor shall contact the Fire Specialist's Office at 812-237-4020 to obtain a FM Global Red Tag so the impairment to the system may be reported.
- B. When the work is complete the Contractor shall immediately contact the Fire Safety Specialist to report the work is complete so the red tag may be removed and FM Global notified that the system has been returned to normal operation.

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## 1.12 ELECTRICAL SAFETY REGULATIONS

- A. OSHA *Control of Hazardous Energy Lockout/Tagout Regulations* apply to all work performed on the Campus of Indiana State University. These Regulations are available for review on the OSHA Internet Website at <http://www.osha.gov/SLTC/controlhazardousenergy/index.html> . Any individual who removes another's lock or tag shall be ordered to leave Indiana State University and shall be disqualified from any future work at Indiana State University.
- B. High fault currents, in excess of 45kA, exist at certain points on electrical systems at Indiana State University. Employing Contractors shall make their employees working on campus electrical systems aware that this condition exists.
- C. No individual shall be permitted to install or service any energized circuit, equipment or apparatus where voltages greater than 100 volts to ground is present unless another individual is present.
- D. No individual shall be permitted to operate or service any main or feeder main overcurrent protection device, whether group mounted or individually mounted, unless another individual is present.
- E. Deliberately shorting a branch circuit to ground to locate a branch feeder breaker is strictly prohibited.
- F. Any individual observed in violation of Regulations "C", "D" or "E" may be asked to immediately leave the workplace and/or their employer may be fined based on the following scale. Violations may apply to one or multiple employees.
- 1<sup>st</sup> violation                      Notice of Violation Warning Placed in Employing Firm's Work Record File
  - 2<sup>nd</sup> violation                      \$100.00
  - 3<sup>rd</sup> violation                      \$250.00
  - All subsequent violations      \$500.00 per incident
- G. **Repeated violations may be cause to disqualify the individual and/or employing firm from any other future work on the campus of Indiana State University.**

## 1.13 FIRE ALARM SYSTEM COORDINATION WITH PROJECT WORK

- A. An automatic fire detection system may in operation in areas of work. Prior to start of Work the Contractor shall verify with the Owner if devices are present in the Work area.
- B. Contractor shall coordinate with Owner for the shut down and reactivation of automatic fire detection devices in work areas based on the following procedures.
1. Prior to 2:30pm on the day before work is scheduled the Contractor shall contact either Pat Teeters at 812-237-8187 (Office) or 812-230-6141 (Cellular) to request fire alarm devices be disabled. If no answer, call Brad Welker at 812-237-8109 (alternate contacts). The Contractor shall provide exact work location, the time the devices are required to be disabled by and a means by which to contact the Contractor the next day, i.e. pager or cellular phone number. It is permissible to leave a "voice mail" of the required information.
  2. Prior to starting work the next day the Contractor shall contact Pat Teeters (preferred contact) or Brad Welker (alternate contact) to verify if the required devices are disabled. Please listen carefully to the voice mail announcement for information in the event of no answer.
  3. Prior to leaving the job-site at the end of workday or by 2:30pm the Contractor shall contact one of the aforementioned individuals to report clearance to reactivate the devices for the evening and what, if any, devices require disabling for the following workday.

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C. Failure to follow these procedures may result in fines being levied on the Contractor based on the following schedule.

- 1<sup>st</sup> failure to call and schedule in advance – Warning.
- Any subsequent failure to call and schedule in advance – \$10.00 per occurrence
- 1<sup>st</sup> failure to call resulting in activation of fire alarm system – Warning or \$100.00, dependent on situation as determined by the Owner.
- Any subsequent failure to call resulting in activation of fire alarm system - \$100.00 per occurrence.

#### 1.14 INSPECTION

A. At the conclusion of the entire work encompassed in this contract, written notice requesting inspection shall be submitted to the Owner at least ten (10) days prior to the anticipated inspection date.

#### 1.15 PAYMENT AND FINAL ACCEPTANCE

A. Anticipated Draw Schedule

1. For any Project in excess of \$500,000.00 the Contractor shall submit an anticipated monthly drawdown schedule.
2. This schedule shall be submitted within fourteen (14) calendar days after Award of Contract to:

The Office of the Senior Vice President for Finance and Administration  
Rankin Hall Suite 210  
Terre Haute, IN 47809

B. Applications for Payments shall be submitted on AIA Application for Payment form G702 with Continuation Sheet G703 (or on a form approved by the Owner). While no set date is required for Applications for Payment, the application shall be submitted on a regular monthly basis for labor and materials permanently installed in the work, for material stored on site and for properly insured materials stored off-site under the following conditions:

1. For purposes of making periodic estimates, the Contractor shall furnish an itemized breakdown of his contract amount, distributed according to different classes of work. In making application for payments, the Contractor shall show, each period, the percentages of completion of each class.
2. Contractor shall send three (3) copies for each Application for Payment. In lieu of submitting "hard" copies it is permissible to scan and e-mail the pay applications. See 1.17 B of this Section for list of e-mail recipients.
3. The Owner will make partial payment to the Contractor on the basis of a duly certified, approved estimate of the work performed during the preceding calendar month by the Contractor within 15 days after receipt by the Owner.
4. Payment will be made on balance due on labor and materials installed permanently in the work to within 90% of estimated value, and not to exceed 90% of the value of materials delivered to the site which are not subject to damage by exposure to the elements.
5. Stored materials and equipment offsite: The Owner will make payment for materials and equipment store offsite under the following conditions.
  - a. The Contractor requests in writing to the Architect/Engineer/Owner for payment on offsite stored materials and equipment.
  - b. The Architect/Engineer/Owner is given access to the offsite storage facility for purposes of inspection and verification of the stored materials and equipment. Any material or equipment not properly stored or protected shall not be approved for payment.

ISU SPECIAL REQUIREMENTS AND INFORMATION

- c. The Contractor shall provide to the Architect/Engineer/Owner a current Certificate of Insurance on the remote storage facility. This insurance shall remain in force for the duration of the storage of the stored materials and equipment at the remote location.
- 6. The Owner, if conditions in its opinion warrant, has the right to withhold, in addition to retained percentages, such an amount or amounts from the payment to the Contractor as may be necessary to pay just unpaid claims for labor and services rendered and materials furnished in connection with the work.
- 7. The Owner will not approve for payment on any estimate, the value on any materials which, in his opinion, does not meet the contract requirements.
- 8. At the conclusion of installation and satisfactory inspection by the Owner, the work shall be acceptable for payment of an amount equal to ninety-five (95%) percent of the total contract amount.
- 9. Reduction or Limitation of Retainage:
  - a. At the sole written discretion of Indiana State University, if acceptable progress is made, at fifty percent (50%) completion of the Contract Sum the remaining Retainage may be reduced to 0%.
  - b. Any subsequent Change Orders after the reduction of Retainage shall have 5% Retainage withheld.
- 10. **Requests for compensation, for previously approved Change Orders omitted from an Application for Payment, received sixty (60) calendar days after Owner receipt of the Final Application for Payment (Release of Retainage) shall not be honored.**
- 11. Final payment will be due and payable the later of sixty-one (61) days from date of receipt of the Final Application for Payment or after the Contractor has completed all punch list items, certified that all Subcontractors and Suppliers have been paid, and all claims, including the Contractor's, have been resolved. Before issuance of the final payment, the Contractor shall furnish an affidavit (Final Waiver of Lien) as evidence that there are no claims on account of the Contract, outstanding liens of claims for materials furnished, or labor performed on the work. The final payment shall constitute the acceptance of the work by the Owner, except as to work thereafter found to be defective. The date of such payment shall be regarded as the date of final acceptance of the work.
- 12. Warranty: The Warranty Period shall be per AIA A201-2007 Article 3 Paragraph 3.5 as amended by Specification Section 00 20 11 Amendments to General Conditions.

## C. ACH Payments

- 1. In an effort to expedite Contractor payments Indiana State University requests the Contractor set up an ACH account for Project Payments. Contact Catherine Procarione in the ISU Office of the Controller at 812-237-3525 to set up this account.
- 2. If the Contractor currently has an ACH Account with Indiana State University it is not necessary to set up an account for each Project. It is solely the responsibility of the Contractor to maintain accurate Banking information on file with the ISU Office of the Controller.

## D. Special provisions regarding Retainage and Escrow:

- 1. The laws of the State of Indiana (IC 5-16-5.5-3 as amended) contain certain provisions regarding retainage, bonds and payment of Contractors and Subcontractors. The Contracts and Subcontracts entered into pursuant to these instructions to Bidders shall be governed by those provisions with respect to Contracts in excess of \$200,000 entered into between a Contractor and the Indiana State University Board of Trustees.
- 2. These provisions require, among other things, that the amounts retained by the Owner from the contractor pursuant to retainage provisions be placed in an escrow agreement to be executed by the Contractor. Pursuant to these provisions, the successful Bidder shall be required to execute an escrow agreement between the Contractor and the Owner.

ISU SPECIAL REQUIREMENTS AND INFORMATION

3. This escrow agreement shall have no application to payment withheld by the Owner pursuant to provisions of the Construction Contract intended to protect the Owner from loss on account of defective work not remedied; claims filed on reasonable evidence; failure of the Contractor to make payments when due to subcontractors or for material or labor; reasonable doubt that the contract can be completed for the balance then unpaid; damage to another contract; failure or refusal of the Contractor to prosecute the work in strict compliance with the above process schedule; or similar provision.
4. In addition, each successful Bidder will be required to comply with all applicable provisions of the statute referred to above with respect to each of his Subcontractors (as the term 'Subcontractor' is defined in the statute referred to above).
5. The Contractor shall contact Kathy Abernathy in the Office of the Senior Vice President for Finance and Administration at (812)-237-3554 to set-up this escrow account.
6. Should a Contractor fail to execute an Escrow Agreement between the Contractor and the Owner (Indiana State University Board of Trustees) the Contractor waives all claims for any interest the Contractor would have accrued had an Escrow Agreement been executed.

## 1.16 CONTRACTOR'S BID

- A. Contractor shall submit Bid for Base Bid and any Alternate Bids as listed in Section 00 20 00.

## 1.17 INVOICING

- A. All invoices and/or Certificates of Payment must be addressed to:

Indiana State University  
 Department of Facilities Management  
 951 Sycamore Street  
 Terre Haute, IN 47809  
 Attention: Bryan Duncan

And sent via the Architect/Engineer  
 R.E. Dimond and Associates  
 732 North Capitol Avenue  
 Indianapolis, IN 46204  
 Attention: Dale Warner

- B. It is permissible to submit applications for payment electronically via e-mail. E-mail copies of the Application for Payment to:

1. Dale Warner [dale.warner@redimond.com](mailto:dale.warner@redimond.com)
2. Pat Teeters [patrick.teeters@indstate.edu](mailto:patrick.teeters@indstate.edu)
3. Bryan Duncan [bryan.duncan@indstate.edu](mailto:bryan.duncan@indstate.edu)
4. Bryan Wilson [bwilson@arsee-engineers.com](mailto:bwilson@arsee-engineers.com)

**Do not sent Applications for Payment to the ISU Accounts Payable Office**

- C. A Partial Wavier of Lien shall be submitted with every Application for Payment until the final Application for Payment (Release of Retainage) when a Final Waiver of Lien shall be submitted.

## 1.18 SITE LOCATION(S)

- A. **ISU Utility Tunnels T-07 and T-02, Terre Haute, Indiana 47809 (Refer to Drawings for tunnel locations)**

ISU SPECIAL REQUIREMENTS AND INFORMATION

1.19 PROJECT CONTACTS

- A. All questions regarding this Project shall be addressed to:

**Dale Warner**

R.E. Dimond and Associates, Inc.

732 North Capitol Avenue

Indianapolis, IN 46204

Phone 317-634-4672 Cell 317-403-0668 E-mail [dale.warner@redimond.com](mailto:dale.warner@redimond.com)

To expedite response structural/concrete questions may also be sent to:

**Bryan Wilson**

ARSEE Engineers, Inc.

9715 Kincaid Drive, Suite 100

Fishers, IN 46037

Phone 317-594-5152 E-mail [bwilson@arsee-engineers.com](mailto:bwilson@arsee-engineers.com)

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 00 30 00

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SUMMARY OF WORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The project is located on the campus of Indiana State University in Utility Tunnels T-07 and T-02. Refer to Drawings for locations of these tunnels.

1.02 RELATED SECTIONS

- A. Division 00 Sections
- B. Division 01 Sections
- C. All Division 02-33 Sections as applicable

1.03 SCOPE OF WORK – BASE BID

- A. The following, but not limited to, is included in the Base Bid Package:
  - 1. Repairs to Utility Infrastructure in Tunnel T-07
    - a. Selective demolition of pipe racks, raceway and wiring
    - b. Repairs to utility pipe racks and repaint.
    - c. Installation of new raceway and wiring to allow for structural repairs
- B. Procedures
  - 1. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the Base Bid into the Project.
  - 2. Include as part of the Base Bid miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of the Base Bid.

1.04 SCOPE OF WORK – ALTERNATES

- A. The following, but not limited to, is included in the Alternate(s)
  - 1. Alternate No. 1: Concrete repairs to utility tunnel T-07
    - a. Selective demolition of damaged concrete in tunnel envelope.
    - b. Repairs to concrete tunnel per Specifications and Drawings
  - 2. Alternate No. 2: Repairs to Utility Infrastructure in Tunnel T-02
    - b. Selective demolition of pipe racks, raceway and wiring
    - c. Repairs to utility pipe racks and repaint.
    - d. Installation of new raceway and wiring to allow for structural repairs
  - 3. Alternate No. 3: Concrete repairs to utility tunnel T-07
    - a. Selective demolition of damaged concrete in tunnel envelope.
    - b. Repairs to concrete tunnel per Specifications and Drawings
- B. The cost or credit for each Alternate is the net addition to or deduction from the Contract Sum to incorporate Alternate into the Work. No other adjustments are made to the Contract Sum.
- C. Procedures
  - 1. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the Alternate into the Project.
  - 2. Include as part of each Alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of Alternate.

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SUMMARY OF WORK

3. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each Alternate. Indicate if Alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to Alternates.
  4. Execute accepted Alternates under the same conditions as other work of the Contract.
  - D. Selection and Award of Alternates: The Owner reserves the right to selectively accept or reject Alternates at their discretion and is under no obligation to accept any Alternates.
- 1.05 BID SUBMISSION REQUIREMENTS
- A. Bids shall be submitted on the included Bid Form (Section 00 20 00) and will be reviewed and accepted or rejected at the Owner's option.
  - B. All Bids shall be held for a period of One Hundred Twenty (120) Calendar days after submission of the Bid.
- 1.06 RELATED WORK SPECIFIED ELSEWHERE
- A. The Prime Contractor shall be aware, and shall make his subcontractors aware that the requirements in the sections of Divisions 00 and 01 pertain to all the work and they are binding on each section of these specifications as if they were repeated in each section in their entirety.
  - B. The Prime Contractor shall be responsible for understanding the scope and intent of the work in all sections of these Specifications
  - C. The Prime Contractor is responsible for review of all sections of the Specifications and all Drawings to confirm any additional areas of responsibility.
  - D. All Contractors are responsible for their area of work which might show up only on a drawing from another series or Specification section.
- 1.07 CONTRACTS
- A. Work shall be performed under one Prime Contract.
- 1.08 PRIME CONTRACTOR'S DUTIES
- A. Project Supervision: see Section 00 20 20 item 1.09 for requirements
  - B. Except as specifically noted, provide and pay for:
    1. Labor, materials and equipment
    2. Tools, construction equipment and machinery
    3. Other facilities and services necessary for proper execution and completion of work
  - C. Pay legally required State and Federal Taxes.
  - D. Contractor shall make all his own measurements in the field and shall be responsible for correct fitting. He shall coordinate this work with all other branches in such a manner as to cause a minimum of conflict or delay. Contractor shall coordinate his work in advance with all other trades and report immediately any difficulty which can be anticipated.
  - E. The Contract Documents shall be carefully studied by the Contractor during the course of construction. Any errors in layout or errors of omission which are discovered shall be referred immediately to the Architect/Engineer for interpretation or correction.
  - F. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at time of receipt of bids:
    1. Permits
    2. Licenses
  - G. Give required notices.



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SUMMARY OF WORK

- H. Comply with codes ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
- I. Promptly submit written notice to Architect/Engineer of observed variances of Contract Documents from legal requirements.
- J. Enforce strict discipline and good order among employees.
- K. Coordinate delivery and installation dates with Architect/Engineer and Owner and incorporate into Construction Schedule.
- L. Prepare and update Construction Schedule.
- M. Notify and receive approval from the Owner at least 48 hours in advance for utility connections, or shut-off. Coordinate these operations with the Owner, through the Architect/Engineer, and complete the work in the minimum amount of time.
- N. Notify the Architect/Engineer in writing when work is completed and keep the Architect/Engineer informed of the progress of the work. No work shall be closed or covered until it has been inspected and approved. Should work not inspected be covered, uncover all such work so that it can be properly inspected and after such inspection, properly repair and replace all of the work at no additional cost to the Owner.
- O. Where the Contract Documents require any work to be tested, the Architect/Engineer shall be notified sufficiently in advance so that he may observe such tests.
- P. Contractor shall submit a copy of any permits he has secured before starting work on this project unless otherwise stated by Owner.
- Q. Where the Contract Documents require the use of AIA Documents including, but not limited to, G702 Application and Certificate for Payment and G703 Continuation Sheet.
- R. For Projects in excess of \$500,000.00 submit with each Application for Payment the Owner's Mandatory Tier II Spend Report using the ISU Business Diversity Spend Reporting Form for Construction/Renovation/Facilities Repair Projects per instructions on the Section 00 10 41 Tier II Spending Reporting Form.

1.09 OTHER REQUIREMENTS

- i. Nightly the Prime Contractor shall secure the construction site to discourage unauthorized individuals from accessing the site. Special effort to secure the site shall be made on Friday evenings.
- ii. While the site shall be kept orderly at all times, weekly the Prime Contractor shall clean-up the construction site of:
  - 1. Any accumulated trash and rubbish.
  - 2. Dirt, dust, mud, etc. associated with the construction process.
  - 3. Salvaged materials not slated for re-use and excess materials not slated for use.
- iii. Weed and grass control: The Prime Contractor shall maintain weeds or grasses to less than 6" in height where applicable

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 01 10 00

01 10 00  
SUMMARY OF WORK

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01 23 60  
ALLOWANCES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
  - 1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Lump-sum allowances.
  - 2. Unit-cost allowances.
  - 3. Contingency allowances.
  - 4. Testing and inspecting allowances.
  - 5. Quantity allowances.
- C. Related Sections include the following:
  - 1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
  - 2. Division 01 Section "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

1.03 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise the Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.04 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.05 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

01 23 60  
ALLOWANCES

- D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.06 TESTING AND INSPECTING ALLOWANCES

- A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.
- B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure.
- C. Costs of services not required by the Contract Documents are not included in the allowance.
- D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.07 UNUSED MATERIALS

- A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
  - 1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.02 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.03 SCHEDULE OF ALLOWANCES

- A. Allowance # 1: A \$4,000.00 allowance shall be included in the Base Bid for the A/E to create record drawings. These drawings shall be based on the Contractors field mark-ups of the Construction Documents. The Contractor is solely responsible to provide accurate mark-ups for the creation of these record drawings. Should it be discovered that errors exist in the record drawings the Contractor shall pay for the re-creation of accurate record drawings at no additional cost to the Owner.
- B. Allowance # 2: A \$50,000.00 Allowance shall be included in the Base Bid for Unforeseen Conditions and General Construction Contingency. It is solely at the discretion of the Architect/Engineer/Owner what costs may be applied to this Allowance. Any unused Allowance monies shall be returned to the Owner at Project closeout by Change Order.

END OF SECTION 01 23 60

01 23 70  
UNIT PRICES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.

1.03 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form in Appendix B, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.04 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices or as listed herein.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. All Unit Prices provided at the time of Bid submission shall remain in effect for the duration of the Project.
- E. List of Unit Prices: A list of unit prices is included at the end of this Section.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.01 LIST OF UNIT PRICES

- A. Unit Price # 1: Price per linear foot to rout and caulk cracks in concrete.
- B. Unit Price # 2: Price per square foot for horizontal concrete patching.
- C. Unit Price # 3: Price per square foot to remove unsound concrete within overhead surfaces and patch
- D. Unit Price # 4: Price per square foot to remove unsound concrete within vertical surfaces and patch.
- E. Unit Price # 5: Price per linear foot to inject overhead cracks in concrete.
- F. Unit Price # 6: Price per linear foot to inject vertical cracks in concrete.
- G. Unit Price # 7: Price per linear foot to repair interior vertical and overhead joints in concrete.
- H. Unit Price # 8: Price per each to clean and paint utility pipe rack.
- I. Unit Price # 9: Price per each to re-anchor utility pipe rack.
- J. Unit Price # 10: Price per each to remove and replace utility pipe rack.
- K. Unit Price # 11: Price per linear foot to re-insulate utility pipe.
- L. Unit Price # 12: Price per each to install new lighting.

01 23 70  
UNIT PRICES

- M. Unit Price # 13: Price per linear foot to install new 1" conduit and wiring (3#8 conductors)
- N. Unit Price # 14: Price per each to install new GFCI receptacle and device box.
- O. Unit Price # 15: Price per each to install new lighting control and device box.
- P. Unit Price # 16: Price per each to install new exit sign and box.

END OF SECTION 01 23 70

01 25 00  
CONTRACT CONSIDERATIONS

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Schedule of Values
- B. Application for Payment
- C. Change procedures
- D. Alternates
- E. Substantial Completion
- F. Final Completion

1.02 SCHEDULE OF VALUES

- A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet or similar form.
- B. Submit Schedule of Values electronically in PDF format within 15 calendar days after date of the Award Letter.
- C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Identify site mobilization, bonds and insurance, and other overhead costs.
- D. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- E. Include within each line item, a direct proportional amount of Contractor's overhead and profit.
- F. Revise schedule if additional Alternates are Awarded after the initial Award by adding these Alternates as separate line items broken down in detail as was provided in the initial approved Schedule of Values.
- G. Revise schedule to list approved Change Orders, broken down in detail as was provided in the initial approved Schedule of Values.
- H. Submit "Consent of Surety to Schedule of Values" with Schedule of Values.

1.03 APPLICATIONS FOR PAYMENT

- A. Submit four (4) copies of each application on AIA Form G702- Application and Certificate for Payment and AIA G703 - Continuation Sheet or similar.
- B. Content and Format: Utilize most current approved Schedule of Values for listing items in each Application for Payment.
- C. Payment Period: As indicated in the Contract Documents.
- D. Waiver of Liens.
- E. Include Certified Payroll forms if required by Owner.

1.04 CHANGE PROCEDURES

- A. The Architect/Engineer will advise of minor changes in the Work not involving and adjustment to Contract Sum/Price or Contract Time as authorized by AIA A201, 2007 Edition, Paragraph 7.4 by issuing supplemental instructions on AIA Form G710 or ISU Form SI/FCC-12.
  - 1. The Architect/Engineer may issue a Request for Proposal (RFP) which includes A detailed description of a proposed change, with supplementary or revised Drawings and

01 25 00  
CONTRACT CONSIDERATIONS

Specifications if required. Contractor shall prepare and submit an estimate within 10 calendar days, listing if:

- a. A change in Contract Time for executing the change is requested.
- b. A stipulation of any overtime work required
- c. The period of time during which the requested price will be considered valid, but not less than 21 calendar days.

B. The Contractor may propose changes by submitting a request for change, Change Proposal (CP), to the Architect/Engineer, describing the proposed change and its full effect on the Work.

1. Include a statement describing:

- a. The reason for the change.
- b. The effect on the Contract Sum/Price and Contract Time with full documentation.
- c. A statement describing the effect on Work by separate or other Contractors.
- d. A stipulation of any overtime work required.
- e. The period of time during which the requested price will be considered valid, but not less than 21 calendar days.

C. RFP and CP Pricing

1. Project Supervision costs:

a. Section 00 20 20 Item 1.09 states in part:

"The Prime Contractor shall maintain on the Project site a competent Project Superintendent at all times any work is being performed; either by the Prime Contractor's workers or any Subcontractor's workers."

b. There shall be no costs included in the pricing of a RFP or CP for Project Superintendent's Supervision Hours while the work is being performed unless the Work included in the RFP/CP pricing will occur at a time not within the normal scheduled Project hours of construction.

2. Contractor Mark-up and Allowable Charges

a. Section 00 20 11 2.07 Subparagraph 3.3.3.7, 3.3.3.8 and 3.3.3.9 states:

".7 Extra Work shall be performed for the cost of the labor payroll plus 15% of the labor payroll and the cost of the material plus 5% of the material cost. Said markup fees are intended to compensate for the cost of payroll taxes, insurance of all kinds, all taxes of the Contractor, including State Taxes, Federal Income Tax, Unemployment, and FICA Taxes, as well as all other overhead costs, expenses, and carrying charges whatsoever, including the profit to be derived from such additional Work. Labor payroll is defined as the actual hourly labor cost plus any fringes payable as listed on the wage rate schedule(s) provided as required by the Bidding Documents.

".8 In case such Work is performed by a Subcontractor or a lower tier Contractor with the Owner's consent, the Work shall be marked up as indicated in 7.3.3.7 by the Contractor actually performing the Work. Each succeeding Contractor may mark up their direct labor and material costs as indicated in 7.3.3.7. Otherwise each succeeding Contractor, including the Prime Contractor, may add 5% for handling/coordination. Additional mark-ups of a Subcontractor's costs shall not be permitted.



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CONTRACT CONSIDERATIONS

- “9 Costs for bond premiums are allowable provided documentation from the Bonding Company is included detailing the added bond cost premium, the current bond total and the new bond total.”
- b. Labor charges subject to the 15% mark-up shall be based on the actual labor payroll defined as the actual hourly labor cost plus any fringes payable as listed on the wage rate schedule(s) provided as required by the Bidding Documents.”. The Wage Rate Schedule, submitted as required by the Contract Documents, shall be used to determine if the hourly labor rate used for pricing and labor mark-up is correct.
  - c. Insurance, Taxes and similar shall not be included in the RFP or CP pricing since, per 3.3.3.7, “Said markup fees are intended to compensate for the cost of payroll taxes, insurance of all kinds, all taxes of the Contractor, including State Taxes, Federal Income Tax, Unemployment, and FICA Taxes, as well as all other overhead costs, expenses, and carrying charges whatsoever, including the profit to be derived from such additional Work”.
3. All RFP and CP pricing shall be submitted in enough detail for the Architect/Engineer and Owner to properly evaluate the proposed pricing. These pricing details extend to the lower tier Subcontractor’s pricing as well. The Architect/Engineer and Owner may request additional pricing breakdown if in their opinion insufficient pricing detail was provided for evaluation. The Contractor shall promptly provide the additional pricing detail.
- D. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Architect/Engineer and Owner.
  - E. Construction Change Directive: Architect/Engineer may issue a directive, on AIA Form G713 or ISU Form CCD-18 Construction Change Directive signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute the change.
  - F. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
  - G. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- 1.05 ALTERNATES
- A. Alternate Bid prices shall be held for one hundred twenty (120) days from date of Bid.
  - B. Alternate Bids may be used as the basis for Award of Contract.
  - C. The Owner may Award none, some or all Alternates submitted.
  - D. The Owner is under no obligation to accept any Alternates submitted.
  - E. Accepted Alternates shall be listed as separate line items on the Schedule of Values broken down as directed by the Architect/Engineer/Owner.
- 1.06 SUBSTANTIAL COMPLETION
- A. The substantial completion date shall be as listed in Section 001010 INSTRUCTIONS TO BIDDERS. The substantial completion date may be adjusted as allowed by the Contract Documents or as mutually agreed upon in writing by the Owner and Contractor.
  - B. **Should a Contractor list an early substantial completion date on their Project Schedule or any Project Document, this early substantial completion date shall not be permitted to be used as a claim for additional compensation for the Contractor’s failure to meet their early substantial completion date.**

CONTRACT CONSIDERATIONS

- C. Warranty: The Warranty Period shall commence at substantial completion per AIA A201-2007 Article 3 Paragraph 3.5 as amended by Specification Section 00 20 11 AMENDMENTS TO GENERAL CONDITIONS.

## 1.07 FINAL COMPLETION

- A. The Contractor's final Application for Payment (Release of Retainage) shall not be approved for payment until all punch list items are complete, all claims (Contractor and Subcontractor) have been resolved and all conditions of Section 01 77 00 PROJECT CLOSEOUT have been met.
- B. Requests for compensation, for previously approved Change Orders omitted from an Application for Payment, received sixty (60) calendar days after receipt of the Final Application for Payment (Release of Retainage) shall not be honored.**
- C. Final payment will be due and payable the late of sixty-one (61) days from date of receipt of the Final Application for Payment or after the Contractor has completed all punch list items, certified that all Subcontractors and Suppliers have been paid, and all claims, including the Contractor's, have been resolved. Before issuance of the final payment, the Contractor shall furnish an affidavit (Final Waiver of Lien) as evidence that there are no claims on account of the Contract, outstanding liens of claims for materials furnished, or labor performed on the work. The final payment shall constitute the acceptance of the work by the Owner, except as to work thereafter found to be defective. The date of such payment shall be regarded as the date of final acceptance of the work.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 01 25 00

01 31 00  
COORDINATION AND MEETINGS

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Coordination.
- B. Field engineering.
- C. Preconstruction meeting.
- D. Progress meetings.
- E. Field Record Drawings and Specifications

1.02 COORDINATION

- A. Coordination scheduling, submittals, and Work of the various sections of the Project Manual to assure efficient and orderly sequence of installation of interdependent construction elements, with provision for accommodating items installed later.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. The Contractor shall provide coordination drawings for above-ceiling areas where at least two different services run in parallel or cross one another. Drawings are to be submitted, reviewed by the consultant team, and returned to the contractor prior to the start of any installation in these areas.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and cleanup of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's occupancy.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.03 FIELD ENGINEERING

- A. Contractor to locate and protect survey control and reference points.
- B. Control datum for survey is that established by Owner provided survey and/or shown on Drawings.
- C. Verify set-backs and easements, confirm drawing dimensions and elevations.
- D. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- E. Submit a copy of registered site drawing and certificate signed by the Land Surveyor that the elevations and locations of the Work is in conformance with the Contract Documents.

1.04 PRECONSTRUCTION MEETING

- A. Architect/Engineer will schedule a meeting after Notice of Award.
- B. Attendance Required: Owner, Architect/Engineer, Contractor and major subcontractors.

01 31 00  
COORDINATION AND MEETINGS

C. Agenda:

1. Introductions.
    - a. Official Project Name and Number (to appear on all Project correspondence)
    - b. Designation of personnel representing the parties in Contract, Owner and the Architect/Engineer
  2. Status of required paperwork to ISU Purchasing Department.
  3. Distribution of Contract Documents.
  4. Submission of full list of sub-contractors and suppliers, schedule of values, proposed pay application schedule and proposed project schedule.
  5. Procedures and processing of submittals, substitutions, field decisions, proposal request, Change Orders, and Contract closeout procedures.
  6. Scheduling activities of a Testing Agency (if required).
  7. Use of premise by Owner and Contractor.
  8. Owner's requirements and partial occupancy.
  9. Construction facilities and controls provided by Owner.
  10. Temporary utilities.
  11. Survey and building layout.
  12. Security and housekeeping procedures.
  13. Procedures for testing.
  14. Procedures for maintaining record documents.
- D. Architect/Engineer to record minutes and distribute copies within seven (7) days after meeting to participants, with copies to Architect/Engineer, Owner, and those affected by decisions made.

1.05 PROGRESS MEETINGS

- A. Schedule and attend meetings throughout progress of the Work at maximum monthly intervals.
- B. Architect/Engineer will make arrangements for meetings, prepare agenda with copies for participant and preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, and Architect/Engineer, as appropriate to agenda topics for each meeting.
- D. Agenda:
  1. Review minutes of previous meetings.
  2. Review of Work progress.
  3. Field observations, problems, and decisions.
  4. Identification of problems which impede planned progress.
  5. Review of submittals schedule and status of submittals.
  6. Review of off-site fabrication and delivery schedules.
  7. Maintenance of progress schedule.
  8. Corrective measures to regain projected schedules.
  9. Planned progress during succeeding work period.
  10. Coordination of projected progress.
  11. Maintenance of quality and work standards.
  12. Effect of proposed changes on progress schedule
  13. Other business relating to Work.

01 31 00  
COORDINATION AND MEETINGS

- E. Architect/Engineer to record minutes and distribute copies within seven (7) days after meeting to participants, with copies to the Owner, and those affected by decisions made.

1.06 FIELD PROJECT RECORD DOCUMENTS

A. Documents and Samples at the Site:

1. General: The Prime Contractor shall maintain at the site for the Owner and A/E a record copy of the Drawings, Specifications, addenda, bulletins, Architect/Engineer's Supplemental Instructions, and Change Orders, in good order and marked currently to record changes and selections made during construction, and in addition reviewed Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Owner and the Architect/Engineer review.
2. Posting:
  - a. Record Drawings: Keep a complete record of the locations of all items indicating the Work as actually installed. Changes and deviations are to be indicated on the Record Contract Drawings. Give particular attention to concealed work which would be difficult to identify, measure, and record at a later date. The Subcontractor shall record concealed items, changes, and deviations under the direction of the Contractor as the Work progresses. The Contractor shall clearly identify all deviations from the Contract Documents.
  - b. Record Specifications: Indicate the changes made by addendum, bulletin, Architect/Engineer's Supplemental Instructions, and Change Order. Indicate the manufacturer selected for all items whether specified proprietarily or generally.
  - c. No review of record documents by the Architect/Engineer/Owner shall be a waiver of deviations from the Contract Documents or the submittals, or in any way relieve the Contractor from his responsibility to perform the Work in accordance with the Contract Documents.

PART 2 - NOT USED

PART 3 – NOT USED

END OF SECTION 01 31 00

01 31 00  
COORDINATION AND MEETINGS

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01 32 00  
SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined either by manufacturer's name and catalog number or by reference to recognized industry standards.
- B. To ensure that the specified products are furnished and installed in accordance with the design intent, procedures have been established for advance submittal of design data and for its review by the Architect/Engineer.
- C. The Architect/Engineer's review of Contractor's material submittal shall not relieve the Contractor of responsibility for errors, omission, quantities, or capacities even though work is executed in accordance with the reviewed/approved submittal material.
- D. The checking of the Contractor's Material Submittal is a gratuitous assistance and the Architect/Engineer does not thereby assume responsibility or liability for errors or omissions. Where such errors or omissions are discovered later, they shall be made good by the Contractor, irrespective of any review/approval by the Architect/Engineer since Contractor's Proposal assumes a complete, operable, and acceptable installation.
- E. Work Included:
  - 1. Submit, to the Architect/Engineer, shop drawings, project data and samples required by Specification sections electronically in PDF format.
  - 2. Simultaneous to submitting to the Architect/Engineer, the Contractor shall submit to the Owner's designated contacts a copy of all submittals provided to the Architect/Engineer in PDF Format.
  - 3. All submittals shall be separated by CSI format and shall list the appropriate CSI 6-digit code on the PDF file name. Submittal packages which include items listed under different Specification sections shall be submitted as separate PDF Files. Multiple submittals at different times under the same Specification Section shall have file name extension added to indicate the number of the submittal, e.g. 26 51 00(1), 26 51 00(2), etc.
  - 4. Designate in construction schedule dates for submission and dates reviewed shop drawings, project data and samples will be needed for each product in order to maintain the progress of construction as scheduled. Also indicate critical delivery dates of all items.
  - 5. Any submittal that requires expedited review shall be noted on the submittal cover page with a "required by" review date listed. A Contractor's failure to submit in a timely manner is not cause to request an expedited review.

1.02 PRODUCT HANDLING

- A. Make all submittals of shop drawings, samples, requests for substitution, and other similar items, in strict accordance with the provisions of this section of these Specifications.

1.03 DEFINITIONS

- A. Shop Drawings:
  - 1. Original drawings, prepared by Contractor, subcontractor, supplier or distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details.
    - a. Prepared by a qualified detailer
    - b. Identify details by reference to sheet and detail numbers shown on contract drawings.

01 32 00  
SUBMITTALS AND SUBSTITUTIONS

B. Product Data:

1. Manufacturer's standard schematic drawings:
  - a. Scanned copies of schematic drawings from hard copy paper catalog pages are not acceptable. Obtain PDF files of schematic drawings from the Supplier/Manufacturer for submission.
  - b. Modify drawings to delete information which is not applicable to project.
  - c. Supplement standard information to provide additional information applicable to project.
2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.
  - a. Scanned copies of catalog sheets from hard copy paper catalog pages are not acceptable. Obtain PDF files of items from the Supplier/Manufacturer for submission.
  - b. Clearly mark each item to identify pertinent materials, products, or models to be provided.
  - c. Show dimensions and clearances required.
  - d. Show performance characteristics and capabilities.
  - e. Show wiring diagrams and controls.
3. Material and Safety Data Sheets shall be furnished for all applicable Project Materials.

1.04 SUBMITTAL REVIEW TIME

- A. Every effort will be made to return submittals within ten (10) calendar days or less.
- B. This ten (10) days may require adjustment based on, but not limited to, the following:
  1. Complexity of the submittal
  2. Size of the job and number of items included in the submittal
  3. Number of submittals received at the same time or on the same day
- C. Submittals received that do not clearly indicate the items being provided on the submittal will be returned marked "Rejected Resubmit" which will further delay the submittal return time.

PART 2 - PRODUCTS

2.01 SHOP DRAWINGS

- A. Scale required: Unless otherwise specifically directed by the Architect/Engineer, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the work.
- B. All shop drawings shall be submitted electronically in PDF Format to the Architect/Engineer with a simultaneous submission to the Owner's designated recipients.
- C. Accompany shop drawings with transmittal letter containing:
  1. Date and revision dates
  2. Project title and number
  3. The names of:
    - a. Architect/Engineer
    - b. Contractor
    - c. Subcontractor
    - d. Supplier
    - e. Manufacturer



01 32 00  
SUBMITTALS AND SUBSTITUTIONS

- f. Separate detailer when pertinent
  - 4. Identification of product or material
  - 5. Relation to adjacent structure or materials
  - 6. Field dimensions, clearly identified as such
  - 7. Specification section number
  - 8. Applicable standards, such as ASTM number of Federal Specification
  - 9. A blank space 2-1/2" x 3", for the Architect/Engineer's electronic stamp
  - D. Identification of deviations from Contract Documents
  - E. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract Documents. Any materials submitted without the Contractor's stamp of approval will be returned to the Contractor with no action taken.
  - F. Reviewed shop drawings shall be returned to the Contractor and Owner's designated recipients electronically stamped as follows:
    - 1. Reviewed
    - 2. Reviewed as Noted
    - 3. Rejected - Resubmit
  - G. The Owner shall submit their review comments to the Architect/Engineer. Official Review of shop drawings shall be by the Architect/Engineer only. The Contractor shall not proceed based on Owner comments only unless the Owner is the Architect/Engineer.
- 2.02 SUBMITTALS
- A. All submittals for materials and equipment shall be made within forty (40) days of award of the contract and in no case shall any materials or equipment be delivered to the job site until submittals have been reviewed by the Architect/Engineer and Owner. This requirement will be a condition for approval of subsequent Applications for Payment.
  - B. All submittals shall be submitted electronically in PDF Format to the Architect/Engineer with a simultaneous submission to the Owner's designated recipients.
  - C. Submittals which reflect color samples shall be submitted in color.
  - D. Accompany submittals with transmittal letter containing:
    - 1. Date and revision dates
    - 2. Project title and number
    - 3. The names of:
      - a. Architect/Engineer
      - b. Contractor
      - c. Subcontractor
      - d. Supplier
      - e. Manufacturer
      - f. Separate detailer when pertinent
    - 4. Identification of product or material
    - 5. Relation to adjacent structure or materials
    - 6. Field dimensions, clearly identified as such
    - 7. Specification section number
    - 8. Applicable standards, such as ASTM number of Federal Specification
    - 9. A blank space 2-1/2" x 3", for the Architect/Engineer's electronic stamp
  - E. Identification of deviations from Contract Documents

01 32 00  
SUBMITTALS AND SUBSTITUTIONS

- F. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract Documents. Any materials submitted without the Contractor's stamp of approval will be returned to the Contractor with no action taken.
- G. Reviewed submittals shall be returned to the Contractor electronically stamped as follows:
  - 1. Reviewed
  - 2. Reviewed as Noted
  - 3. Rejected - Resubmit
- H. The Owner shall submit their review comments to the Architect/Engineer. Official Review of submittals shall be by the Architect/Engineer only. The Contractor shall not proceed based on Owner comments only unless the Owner is the Architect/Engineer.

2.03 SAMPLES

- A. Physical samples as defined by the General Conditions shall be furnished to the Architect/Engineer for approval prior to ordering or fabrication of any product.
- B. Submit samples as specified in each of specification sections.
- C. Submit an electronic transmittal or review sheet stamped by the Contractor with a blank space for the Architect/Engineer's electronic stamp.

2.04 SUBSTITUTIONS DURING CONSTRUCTION

- A. The approved "Suppliers and Manufacturers List" is an essential part of the Contract. Substitutions of materials, equipment, etc. require the written approval of the Architect/Engineer and Owner. Substitutions during construction will only be considered when there is a proven benefit to the Owner. It is at the sole discretion of the Architect/Engineer and Owner to determine if the substitution is warranted.
  - 1. The Architect/Engineer and Owner will consider proposals for substitution of specified materials, equipment, and methods only when such proposals are accompanied by full and complete technical data and all other information required by the Architect/Engineer and Owner to evaluate the proposed substitution. Also, submit with request accurate cost data on the proposed substitution in comparison with the product specified, whether or not modification of the Contract Sum is to be a consideration.
  - 2. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this work by the Architect/Engineer and Owner.
  - 3. Requests for substitution, when forwarded by the Contractor to the Architect/Engineer and Owner, are understood to mean that the Contractor:
    - a. Represents that they have personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
    - b. Will provide the same guarantee for the substitution that they would for that specified;
    - c. Certifies that the cost data presented is complete and includes all related costs under this Contract, but excludes costs under separate contracts and the Architect's redesign cost, and that he waives all claims for additional cost related to the substitution which subsequently become apparent;
    - d. Will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.
- B. See Section 00 10 10 INSTRUCTIONS TO BIDDERS Item 1.08 for requirements for substitutions prior to Bid.

PART 3 – NOT USED

01 32 00  
SUBMITTALS AND SUBSTITUTIONS

END OF SECTION 01 32 00

01 40 00  
QUALITY CONTROL

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances
- C. References.
- D. Mockup.
- E. Inspecting and testing laboratory services.
- F. Manufacturer's field services and reports.

1.02 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturer's instructions, including each step in sequence.
- C. Should manufacturer's instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.03 TOLERANCES

- A. Monitor tolerance control of installed Products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturer's tolerances. Should manufacturer's tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.04 REFERENCES

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. The contractual relationship, duties, and responsibilities of the parties in Contract nor those of the Architect/Engineer shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.05 INSPECTING AND TESTING LABORATORY SERVICES

- A. See Section 01 41 00 for requirements for the selection of Inspection and Testing Laboratory Services Testing Agency (Agencies) and responsibility for payment for these services.
- B. An independent firm will perform inspections, tests, and other services specified in individual specification sections and as required by the Architect/Engineer or the Owner.

01 40 00  
QUALITY CONTROL

- C. Inspecting, testing, and source quality control may occur on or off the project site. Perform off-site inspecting or testing as required by the Architect/Engineer or the Owner.
- D. Reports will be submitted by the independent firm to the Architect/Engineer and Contractor, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
- F. Notify Architect/Engineer and independent firm 24 hours prior to expected time for operations requiring services.
- G. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- H. Testing or inspecting does not relieve Contractor to perform Work to contract requirements.
- I. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Architect/Engineer. Payment for retesting will be paid by the Contractor.

1.06 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observations. Observer subject to approval of Architect/Engineer.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.
- D. Submit report in duplicate within 30 days of observations to Architect/Engineer for information.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 01 40 00

01 41 00  
TESTING LABORATORY SERVICES

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section describes testing and inspecting to be provided by the Contractor, plus cooperation required from the Contractor with the Owner's selected testing agency and others responsible for testing and inspecting the Work. This Section supersedes all references within the Contract Documents to Contractor provided testing.
- B. Related Work:
  - 1. Documents affecting Work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 01 of these Specifications.
  - 2. Requirements for testing may be described in various Sections of these Specifications.
  - 3. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described in this Section.
- C. Work not included:
  - 1. Selection of testing laboratory: The Owner will select a prequalified independent testing laboratory.
  - 2. Selection of construction soil engineer: The Owner will select a prequalified independent soil engineer to observe performance of Work in connection with excavating, trenching, filling, backfilling, and grading, and to perform compaction tests.

1.02 QUALITY ASSURANCE

- A. The testing laboratory will be qualified to the Owner's approval in accordance with ASTM E329.
- B. Testing, when required, will be in accordance with all pertinent codes and regulations, and with selected standards of the American Society for Testing and Materials.
- C. Promptly process and distribute required copies of test reports and related instructions to assure necessary testing and replacement of materials with the least possible delay in progress of the Work.

PART 2 – PRODUCTS

2.01 PAYMENT FOR TESTING

- A. Initial services of testing laboratory:
  - 1. The Owner will pay for initial services requested by the Owner.
  - 2. When initial tests indicate non-compliance with the Contract Documents, the costs of all tests associated with that non-compliance will be deducted by the Owner from the Contract Sum.
- B. Initial services of Construction Soil Engineer:
  - 1. The Owner will pay for initial services requested by the Owner, including but not necessarily limited to, observing performance of Work in connection with excavating, trenching, filling, backfilling and grading.

01 41 00  
TESTING LABORATORY SERVICES

2. The Owner will pay for compaction tests performed by the construction soil engineer, but will deduct from the Contract Sum the costs for compaction tests performed to prove compliance with codes or ordinances.
3. Retesting: When initial tests indicate non-compliance with the Contract Documents, subsequent retesting occasioned by the non-compliance shall be performed by the same testing agency, and costs thereof will be deducted by the Owner from the Contract Sum.

2.02 CODE COMPLIANCE TESTING

- A. Inspections and tests required by codes or ordinances, or by a plan approval authority, and which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

2.03 CONTRACTOR'S CONVENIENCE TESTING

- A. Inspecting and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

PART 3 – EXECUTION

3.01 COOPERATION WITH TESTING LABORATORY

- A. Representatives of the testing laboratory shall have access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.

3.02 TAKING SPECIMENS

- A. All specimens and samples for testing, unless otherwise provided in the Contract Documents, shall be taken by the testing personnel. All sampling equipment and personnel will be provided by the testing laboratory. All deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

3.03 SCHEDULES FOR TESTING

- A. Establishing schedule:
  1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
  2. Provide testing laboratory with a minimum of 24 hours advance notice.
  3. Provide all required time within the construction schedule.
- B. Revising schedule: When changes of construction schedule are necessary during construction, coordinate all such changes with the testing laboratory as required.
- C. Adherence to schedule: When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra charges for testing attributable to the delay may be back-charged to the Contractor and shall not be borne by the Owner.

END OF SECTION 01 41 00

01 42 00  
DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

- A. General: This section specifies procedural and administrative requirements for compliance with governing regulations and the codes and standards imposed upon the work. The requirements include the obtaining of permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.
- B. "Regulations" is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the work regardless of whether they are lawfully imposed by governing authority or not.
- C. Governing Regulations: Refer to General and Supplementary Conditions for requirement related to compliance with governing regulations.

1.03 DEFINITIONS

- A. General Explanation: A substantial amount of specification language consists of definitions for terms found in other Contract Documents, including drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon). Certain terms used in Contract Documents are defined in this article. Definitions and explanations contained in this section are not necessarily either complete or exclusive, but are general for the work to the extent that they are not stated more explicitly in another element of the Contract Documents.
- B. General Requirements: The provisions or requirements of Division 00 and Division 01 sections apply to entire work of Contract and, where so indicated, to other elements which are included in project.
- C. Indicated: The term "indicated" is a cross-reference to graphic representations, notes or schedules in the specifications, and to similar means of recording requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled" and "specified" are used in lieu of "indicated", it is for purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.
- D. Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted", mean "directed by Architect/Engineer", "requested by Architect/Engineer", and similar phrases. However, no such implied meaning will be interpreted to extend Architect's/Engineer's responsibility into the Contractor's area of construction supervision.
- E. Approve: Where used in conjunction with Architect's/Engineer's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Architect's/Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Architect/Engineer be interpreted as a release of Contractor from responsibilities to fulfill requirements of Contract Documents.
- F. Project Site: The term "project site" is defined as the space available to the Contractor for performance of the work, wither exclusively or in conjunction with others performing other work as part of the project. The extent of the project site is shown on the drawings, and may or may not be identical with description of the land upon which project is to be built.



01 42 00  
DEFINITIONS AND STANDARDS

- G. **Furnish:** Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar operations, as applicable in each instance.
  - H. **Install:** Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.
  - I. **Provide:** Except as otherwise defined in greater detail, term "provide" means to furnish and install, complete and ready for intended use, as applicable in each instance.
  - J. **Installer:** The term "installer" is defined as the entity (person or firm) engaged by the Contractor, its Subcontractor or Sub-subcontractor for performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a requirement that installers be expert in the operations they are engaged to perform.
  - K. **Testing Laboratories:** The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at the project site or elsewhere; and to report and, if required, interpret results of those inspections or tests.
- 1.04 **PROJECT MANUAL FORMAT AND CONTENT EXPLANATION**
- A. **General:** This article is provided to help the user of these specifications more readily understand the format, language, implied requirements and similar conventions of content. None of the following explanations shall be interpreted to modify the substance of the contract requirements.
  - B. **Production Methods:** Portions of these specifications have been produced by the Architect's/Engineer's standard method of editing master specifications, and may contain minor deviations from traditional writing formats. Such deviations are a natural result of this production technique, and no other meaning shall be implied.
  - C. **Project Manual Format:** These specifications are organized based upon the Construction Specifications Institute's 33 Division format. The organization of these specifications into Divisions, Sections or Trade Headings generally conforms to recognized industry practice.
    - 1. Divisions are groupings of related or similar sections. The divisions are recognized as the construction industry consensus method of uniform specification organization.
    - 2. **Sections:** For convenience, "Sections" are considered as the basic units of work. The section title is descriptive only and not intended to limit the meaning or content of a section or to be completely descriptive of requirements specified therein.
    - 3. **Section Numbering** is used to facilitate cross-references in the Contract Documents. Sections are placed in the Project Manual in numeric sequence; however, the numeric sequence is not complete and the listing of the section in the "Index" at the beginning of the Project Manual must be consulted to determine the numbers and names of specifications sections in the Contract Documents.
  - D. **Project Identification:** The project number of the Contract Documents is the Bid Number recorded on the Project Manual Cover Sheet, in Section 00 10 00 Notice to Bidders and Section 00 20 00 Bid Form.
  - E. **Page Numbering:** Pages are numbered independently for each section. The section number is shown together with the page number at the bottom of each page to facilitate the location of text in the Project Manual.

DEFINITIONS AND STANDARDS

- F. Text Subordination: Portions of specification text are subordinated to other portions in the following manner:
1. Certain sections may be subordinate to other sections or parts of other sections. When that occurs, the degree of subordination is described in those sections.
  2. Sub-articles, which are printed in upper/lower case lettering, are subordinate to Article titles.
  3. Paragraphs and lines of text are subordinate to sub-article titles.
  4. Paragraphs and lines of text that are indented from the left margin are subordinate to the preceding text that is either not indented, or is indented by a lesser amount.
- G. Project Manual Content: This project specification has been produced employing certain conventions in the use of language as well as conventions regarding the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
1. In certain circumstances, the language of the specifications and other Contract Documents is of the abbreviated type. It implies words and meanings that will be appropriately interpreted. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where the full context of the Contract Documents so indicates.
  2. Imperative language is generally used in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by Contractor. At certain locations in the text, for clarity of reading, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by Contractor or, when so noted, by others.
- H. Methods of Specifying: The techniques or methods of specifying requirements varies throughout the text.
1. The method used for specifying one unit or work has no bearing on requirements for another unit of work.
  2. Methods of specifying may include the following, or any combination of the following:
    - a. Prescriptive.
    - b. Open-generic-descriptive.
    - c. Performance.
    - d. Proprietary.
    - e. Compliance with reference standards.
- I. Specialists Assignments: In certain instances, specification text requires or implies that specific elements of the work are to be assigned to specialists or expert entities, who must be engaged for the performance of the work. Such assignments are intended to establish which part or entity involved in a specific element of the work is considered as being sufficiently experienced in the indicated construction processes or operations to be recognized as "expert" in those processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of all contract requirements remains with the Contractor.
- J. These requirements should not be interpreted to conflict with the enforcement of building codes and similar regulations governing the work. They are also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
- K. Trades: Except as otherwise indicated, the use of titles such as "Carpentry" in specification text, is not intended to imply that the work must be performed by an accredited or unionized tradesperson of corresponding generic name (such as "carpenter"). It is also not intended to

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DEFINITIONS AND STANDARDS

imply that specified requirements apply exclusively to work by tradespersons of that corresponding generic name.

1.05 DRAWING SYMBOL

- A. General: Except as otherwise noted indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., latest edition.
- B. Mechanical/Electrical Drawings: Graphic symbols used on mechanical/electrical drawings are generally aligned with symbols recommend by ASHRAE. Where appropriate, these symbols supplemented by more specific symbols as recommended by other recognized technical associations including ASME, ASPE, IEEE and similar organizations. Refer instances of uncertainty to the Architect/Engineer for clarification before proceeding.

1.06 INDUSTRY STANDARDS

- A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written into the Contract Documents, applicable standards of the construction industry have the same force and effect as if copied directly into the Contract Documents. Such industry standards are hereby made a part of the Contract Documents by reference. Individual specification sections indicate which codes and standards the Contractor must keep available for reference at the project site.
- B. Referenced standards (standard referenced directly in Contract Documents) have precedence over non-referenced standards which are recognized in industry for applicability to work.
- C. Non-referenced standards are hereby defined as not being applicable to the work, except as general requirement of whether the work complies with recognized construction industry standards.
- D. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.
- E. Updated Standards: At the request of the Architect/Engineer, Contractor or governing authority, submit a change order proposal where an applicable industry code or standard has been revised and reissued after the date of the Contract Documents and before the performance of the work affected. The Architect/Engineer will decide whether to issue the change order to proceed with the updated standard.
- F. Conflicting Requirements: Where compliance with 2 or more standards is specified, and where these standards establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents specifically indicate a less stringent requirement. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Architect/Engineer for a decision before proceeding.
- G. Minimum Quantities or Quality Levels: In every instance, the quantity or quality level shown or specified is intended to be the minimum for the work to be provided or performed. Unless otherwise indicated, the actual work may either comply exactly, within specified, or may exceed that minimum within reasonable limits. In complying with these requirements, the indicated numeric values are either minimum or maximum values, as noted, or as appropriate for the context of the requirements. Refer instances of uncertainty to the Architect/Engineer for decision before proceeding.
- H. Copies of Standards: Contract Documents require that each entity performing work be experienced in that part of the work being performed. Each entity is also required to be familiar with recognized industry standards applicable to that part of the work. Copies of applicable standards are not bound with the Contract Documents.

DEFINITIONS AND STANDARDS

- I. Where copies of standards are needed for proper performance of the work, the Contractor is required to obtain such copies directly from the publication source.
- J. Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Architect/Engineer reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.
- K. Abbreviations and Names: Where acronyms or abbreviations are used in the specifications or other Contract Documents they are defined to mean the industry recognized name of the trade association, standards generating organization, governing authority or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations", published by Gale Research Co., available in most libraries.

**1.07 GOVERNING REGULATIONS/AUTHORITIES**

- A. General: The procedure followed by Architect/Engineer has been to contact governing authorities where necessary to obtain information needed for the purpose of preparing Contract Documents; recognized that such information may or may not be of significance in relation to Contractor's responsibilities for performing the work. Contact governing authorities directly for necessary information and decisions having a bearing on performance of work.
- B. Trade Union Jurisdictions: The Contractor shall maintain, and shall require Prime Subcontractor to maintain, complete current information on jurisdictional matters, regulations actions and pending actions, as applicable to the work. Discuss new developments at appropriate project meetings at the earliest feasible dates, and record information of relevance along with the actions agreed upon. The manner in which Contract Documents have been organized and subdivided is not intended to be an indication of jurisdictional or trade union agreements. Assign and subcontract the work, and employ trades-men laborers, in a manner which will not unduly risk jurisdictional disputes of kind which could result in conflicts, delays, claims and losses in the performance of the work.

**1.08 SUBMITTALS**

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

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 01 42 00

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DEFINITIONS AND STANDARDS

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TEMPORARY FACILITIES - RENOVATION PROJECTS

PART 1 – GENERAL

1.01 CONTRACTOR'S USE OF PREMISES AND FACILITIES

- A. Confine operations at site to areas permitted by:
  - 1. Construction Limits
  - 2. Contract Documents
  - 3. Written Owner Approval
- B. Do not load structure with weight that will endanger structure or existing adjacent structures including any subsurface construction.
- C. The Prime Contractor shall assume full responsibility for protection and safekeeping of product stored on premises.
- D. The Prime Contractor shall move any stored products which interfere with operations of Owner or other Contractor.
- E. The activities of the Prime Contractor, including his subcontractors, material suppliers, employees, and others engaged in the work, shall be strictly limited to the Owner's property. Under no circumstances shall parking, material storage, or other uses of adjacent private property be permitted. Locations of storage areas, field office, parking areas, and the like on the project site shall be only within the construction limits as indicated on the drawings or as approved by the Owner.
- F. Use of Installed Work: Construction personnel may use toilet facilities, sink, and other fixtures and equipment installed in work only as expressly permitted by Architect/Engineer or Owner. Any privileges granted may be revoked if abused.
- G. Construction personnel shall exercise care and shall provide whatever protective measures are required to assure that their particular portions of the work do not damage or alter portions of the work that have been previously installed, either partially or completely. All work so damaged or altered shall be repaired or replaced to the satisfaction of the Architect by the party whose work has been affected, and the expense thereof shall be borne by the party who caused the damage or alteration.
- H. Protection of Floors: In interior areas used for construction or field "shops", protect floors from physical damage, oil drippings, and other staining which might impair bonding of new floor coverings, utilizing such methods as heavy polyethylene covering, sawdust or sand boxes, rigid insulation or the like.

1.02 FIELD OFFICE

- A. The Prime Contractor and their Sub-Contractors shall be responsible for their own field office.
- B. The Prime Contractor shall provide telephone service, including cellular phone for the on-site foreman, for the duration of the project.
- C. Provide at all times fire extinguishers as required by applicable codes and regulations.
- D. Post in a conspicuous space near the telephone, pertinent emergency phone numbers and notices as may be required by governing authorities and fire protection department.

1.03 SITE PROTECTION

- A. Contractor shall adhere to Factory Mutual Engineering and Research (FM) "Cutting and Welding" permit system. Permits are available through the Office of Environmental Safety's Fire Specialist Office at 812-237-4020.
- B. Prime Contractor shall provide a one hour fire watch at the end of each workday when any cutting or welding occurred to assure that no possibility of fire exists from any work performed that day.

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TEMPORARY FACILITIES - RENOVATION PROJECTS

1.04 TEMPORARY ELECTRIC SERVICE

- A. Responsibility: The Prime Contractor shall be allowed to utilize the Owner's electricity for all construction purposes. The Prime Contractor shall arrange for the distribution and continuance throughout the work and the removal at the completion of the work of temporary electrical service. All electrical installations shall be by a Licensed Bonded Electrical Contractor. All elements of such temporary electric service shall conform to the regulations of the National Electric Code, current edition, and OSHA. All temporary wiring shall include a green equipment grounding conductor, and the entire temporary electrical service shall have equipment grounding continuity; all outlets for the connection of portable equipment shall be of the GFCI type. The Contractor shall provide all necessary wiring. The Prime Contractor or their Sub Contractor shall provide extension cords, outlets, etc. required to extend temporary service from nearest outlets of adequate capacity for the power required to points of usage.
- B. Distribution Wiring: The temporary distribution wiring shall be adequate to provide whatever is required for the operation of 120 volts, single-phase portable tools and equipment not exceeding one horsepower; the distribution wiring shall provide a receptacle within 50 feet of all portions of the building area.
- C. Temporary Lighting: The Prime Contractor shall provide all wiring, light bulbs and fixtures necessary to furnish temporary lighting of one watt per sq. ft. of construction area, but provide a minimum of one light in each enclosed space. Keep such temporary lighting in operation during all working periods.
- D. Supervision: The Prime Contractor shall maintain strict supervision over the use of the temporary electrical service and shall be responsible for damages incurred by misuse.

1.05 TEMPORARY WATER SERVICE

- A. The Prime Contractor may use the Owner's existing water service for construction purposes. The Prime Contractor shall provide and maintain leak-free, all hoses, fitting, nozzles, and the like required to distribute water to points of usage. Maintain strict supervision over use and waste of water. Take care not to spill or run water in any part of the building. Repair, replace, or restore (whichever may be deemed necessary by the Architect/Engineer) at no additional cost to the Owner, all work, new or existing, including equipment, furnishings, machines, finished surfaces, and the like which may be damaged by water due to construction operations, and by the misuse of such temporary water service. At completion of the work remove all temporary water distribution items.

1.06 RESTROOM FACILITIES

- A. The Contractor shall be permitted to utilize the Owner's restroom facilities in lieu of providing temporary toilets. The Contractor shall exercise reasonable care so as not cause excess soiling or damage to the restroom facilities.
- B. Any Contractor abuse of the Owner's restrooms shall be just cause for the Owner to revoke the use of the restrooms for the duration of the Project.

1.07 TEMPORARY STORAGE

- A. The Prime Contractor and each of their Sub-Contractors shall be responsible for their own temporary storage.
- B. Provide secure areas as may be required for storage and protection of materials, tools and equipment.

1.08 SIGNS

- A. Identification Signs: No signs or advertisements shall be permitted on the project site or on temporary structures, except those which are required to conform to the safety requirements of the Contract Documents or those which are expressly permitted by the Architect/Engineer or specified herein.

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TEMPORARY FACILITIES - RENOVATION PROJECTS

1.09 TEMPORARY BARRIERS

- A. The Prime Contractor shall be responsible for seeing that all shafts and openings through the floors or roofs are adequately barricaded, marked, and lighted. They shall provide barriers, markers, or other provisions, or all, at all conditions, such as items protruding from the work, which might cause injury to persons. The design, locations, and requirements of protective barricades shall be subject to approval of the Architect/Engineer, but the Contractor shall be responsible for their adequacy. When such conditions no longer exist, barriers and the like shall be removed.

1.10 SITE SECURITY

- A. All temporary construction which may be required to maintain security of buildings or construction areas shall be provided by the Prime Contractor. At the end of each day's work, close all windows opened by construction personnel, and close all access doors to work areas. Work damaged in this regard shall be repaired or replaced to the satisfaction of the Architect/Engineer/Owner. Security guard service shall not be provided as a part of any Contract for this project for field office, storage sheds and storage areas, or for protection of construction tools, equipment, and materials. Such security may, at the Contractor's option, be provided at no additional cost to the Owner.

1.11 TRASH REMOVAL

- A. The Prime Contractor shall remove from the Construction site, and legally dispose of, all rubbish resulting from the work under his contract. Rubbish shall be removed daily and not be allowed to accumulate, other than the trash placed in trash containers outside the building.

1.12 RESTORATION OF TEMPORARY FACILITIES

- A. The Prime Contractor shall be responsible for his restoration of his own temporary facilities.
- B. Storage area and project offices: At completion of the work, remove from the project site all evidence of temporary services, field office, temporary sheds, covers, pallets, excess materials, scrap materials, equipment tools, waste, debris, and other foreign materials. Restore to the Architect/Engineer's satisfaction such area to its condition which existed prior to starting construction work, utilizing whatever methods are appropriate. Repair and patch to match all drive and parking lot surfaces damaged by construction processes; subject to the Architect/Engineer's approval. Fill, grade and reseed all lawn areas and replace all trees, plants or shrubs damaged by the construction process.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 01 50 10



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TEMPORARY FACILITIES - RENOVATION PROJECTS

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MATERIALS AND EQUIPMENT

PART 1 – GENERAL

1.01 MATERIALS HANDLING

- A. Delivery: Deliver materials and equipment to Project Site in unopened, undamaged dry containers, wrappings, cartons, crates, sacks, or the like, clearly labeled as to product and materials, and with the manufacturer's name or trademark or both. Materials delivered in other than such condition may be rejected by the Architect/Engineer.
- B. Storage: Suitably store materials and equipment in designated areas and in accordance with manufacturer's recommendations or in a manner approved by the Architect or both. Store such materials and equipment off the ground, totally protected from ground splash, mud, weather separation, intrusion of foreign materials, and other damage. Do not store materials, equipment, or tools on roofs, unless such materials are to be immediately installed during the current work day, and unless equipment and tools are being integrally used in the work. Do not store volatile materials such as solvents, gasoline, oil, fuels, and the like within the building. Immediately remove paper, rags, etc., which might become soaked with such materials when they must be taken into the building for use in the work. At the end of each work day, remove such "safety cans" of materials to their storage area outside the building. The Contractor shall, upon delivery of material and equipment to the project site, check to ascertain that all materials, parts, accessories, and other incidentals necessary for the installation of such materials and equipment have been delivered and received at the project site, so that no delays are caused in the work due to insufficient quantities of materials or missing parts.

1.02 INSTALLATIONS

- A. Materials: Materials and equipment shall be new and undamaged and shall be installed as indicated on the drawings. They shall fit accurately into adjacent work and shall be plumb, level, and true-to-line. All materials and equipment shall be anchored securely and rigidly in place, maintaining alignment with adjacent work. Where installation methods and techniques are not specifically covered by the drawings or the specifications, normal first-class trade practices and manufacturer's instructions and recommendations shall govern, providing that they are approved by the Architect/Engineer.
- B. "Not-In-Contract" Items: Materials, equipment, fixtures, devices and other items indicated on the drawings as "Not-In-Contract" or "N.I.C." shall in no way be a part of the Contract. Where such "Not-In-Contract" items are accompanied by an indication to be installed by the Contractor, the Contractor shall receive, store, protect, assemble, install, and connect such items in accordance with the best accepted practices of the trade or trades involved and with the provisions of the Specifications for similar items that are totally part of the Contract. The Contractor shall be responsible for obtaining such specific information for the installation and connection of such items.
- C. Reinstalling Existing Items: Where existing materials, equipment, fixtures, devices, and other items are indicated on the drawings to be removed, or received, and reinstalled under the Contract, treat such existing items as if they were new and install such existing items as shown on the drawings, in accordance with the best accepted practices of the trade or trades involved and with provisions of the specifications for similar new items.

1.03 REMOVAL AND RE-INSTALLATION OF EQUIPMENT

- A. The Owner is not responsible for the removal or re-installation of equipment necessitated by this work.
- B. All electrical disconnects and reconnects of equipment necessitated by this work shall be performed by a licensed bonded Electrical Contractor hired by the Contractor to perform this work. The Owner will assist in locating the power source but will not be responsible for the

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MATERIALS AND EQUIPMENT

actual performance the electrical work.

1.04 ACCESSIBILITY

- A. The Contractor shall locate all equipment which must be serviced, operated or maintained in fully accessible positions. Minor deviations from the contract drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without approval.
- B. It is the Contractor's responsibility to provide access panels when serviceable parts of his installation are concealed by finished construction, unless access panels are specifically indicated on the Drawings or elsewhere in the Project Manual to be by others. Access panel data shall be submitted with the equipment Shop Drawings.
- C. Ample space shall be allowed for removal of all parts that may require replacement or service in the future. The service area is to be indicated on Shop Drawings.
- D. The Contractor shall extend all grease fittings to an accessible location.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 01 60 00

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CUTTING AND PATCHING

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Requirements and limitations for cutting and patching of Work

1.02 RELATED SECTIONS

- A. Section 01 10 00 - Summary of Work: Work by Owner or by separate contractors
- B. Section 01 32 00 - Submittals and Substitutions
- C. Section 01 60 00 - Materials and Equipment
- D. Individual Product Specification Sections:
  - 1. Cutting and patching incidental to work of the section
  - 2. Advance notification to other sections of openings required in work of those sections
  - 3. Limitations on cutting structural members

1.03 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
  - 1. Structural integrity of any element of Project
  - 2. Integrity of weather exposed or moisture resistant element
  - 3. Efficiency, maintenance, or safety of any operational element
  - 4. Visual qualities of sight exposed elements
  - 5. Work of Owner or separate contractor
- B. Include in request:
  - 1. Identification of Project
  - 2. Location and description of affected Work
  - 3. Necessity for cutting or alteration
  - 4. Description of proposed Work and Products to be used
  - 5. Alternatives to cutting and patching
  - 6. Effect on work of Owner
  - 7. Date and time work will be executed

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Primary Products: Those required for original installation.

PART 3 – EXECUTION

3.01 RESPONSIBILITY

- A. Each respective Contractor is responsible for the required cutting and patching to complete his work.
- B. Each respective Contractor shall coordinate with the General Contractor and bear all costs associated with cutting and patching.

3.02 EXAMINATION

- A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

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CUTTING AND PATCHING

- B. After uncovering existing Work, assess conditions affecting performance of work.
- C. Beginning of cutting or patching means acceptance of existing conditions.

3.03 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering work.
- C. Maintain excavations free of water.

3.04 CUTTING

- A. Execute cutting and fitting including excavation and fill to complete the Work.
- B. Uncover work to install improperly sequenced work.
- C. Remove and replace defective or non-conforming work.
- D. Remove samples of installed work for testing when requested.
- E. Provide openings in the Work for penetration of mechanical and electrical work.
- F. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- G. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.05 PATCHING

- A. Execute patching to complement adjacent Work.
- B. Fit Products together to integrate with other Work.
- C. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- D. Employ original installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- E. Restore work with new Products in accordance with requirements of Contract Documents.
- F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material, to full thickness of the penetrated element.
- H. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION 01 73 10

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CONTRACT CLOSEOUT

PART 1 – GENERAL

1.01 SUBSTANTIAL COMPLETION SUBMISSIONS

A. Record Drawings and Record Specifications:

1. The Contractor shall provide the final Field Record Drawings and Specifications which have been maintained and updated during the duration of the Project to the Architect/Engineer for review. Submit documents in paper form of each Drawing and Specification Division of the Work.
2. Certifications: The Prime Contractor and Subcontractors shall certify, by endorsement on the Record Drawings and Specifications that each of the revised sheets represents a complete and accurate record of the Work as executed.

B. Operations and Maintenance Data

1. Assemble a manual in electronic PDF format on USB Flash Drive indexed by Division of work Sub indexed by Specification of work, presenting for the Owner's guidance full details for care and maintenance of visible surfaces and of equipment included in the Work for review by the A/E.
  - a. Include a copy of the reviewed Architect/Engineer submittal and/or shop drawing. The Submittal and/or shop drawing shall be annotated by the Contractor indicating that the comments have been included in the document.
  - b. Include manufacturer's literature relating to motors and other equipment, catalog cut, parts lists, wiring diagrams, instruction sheets, and other pertinent information which will be useful to the Owner in overall operation and maintenance.
  - c. Include a list of installers and service representatives with company names and addresses, names of individuals to contact, and telephone numbers.
  - d. Include manuals called for in other Sections of the Specifications, in this manual.
2. Certifications: The Contractor shall certify, by endorsement of the manual, that the manual is complete and accurate.
3. On Projects where the Owner is the Architect/Engineer, submit to the Owner for review.

C. Warranties

1. Forms:
  - a. Extended Warranties: Provide a copy of the manufacturer's extended warranty, fill it out completely, sign it, and have it countersigned by the installer and manufacturer if required by the Contract Documents.
  - b. Manufacturers' Warranties: Manufacturer's warranty modified, when required to comply with requirements of the Contract Documents.
2. Starting Date: The starting date for warranties is the Date of Substantial Completion of the Work.
3. Submittal: At the time of Substantial Completion submit all warranties, including special warranties, required by the Contract Documents to the Architect/Engineer review.

D. Statement of Application

1. Submit Owner prepared fully executed Certificate of Substantial Completion.

E. Service and Maintenance Contracts

1. At the time of Substantial Completion submit executed contracts for extended service or maintenance required by the Contract Documents to the Architect/Engineer for review by the A/E.

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CONTRACT CLOSEOUT

2. Extended maintenance proposals where called for in the specification shall be submitted with the proposals for each trade at the time their portion of the work is bid. Furnish copies of the maintenance proposal to the Owner and Architect/Engineer for review prior to award of the subcontract for each portion of work.

1.02 FINAL CLEANING

- A. Responsibility: The Prime Contractor is responsible for the final cleaning of the Project and for the coordination and direction of cleaning by all trades.
- B. Materials:
  1. Use only cleaning materials recommended by the manufacturers of the surfaces to be cleaned.
  2. Use cleaning materials only on surfaces recommended by the cleaning materials manufacturers.
- C. Execution:
  1. Employ experienced workers, or professional cleaners, for final cleaning.
  2. Clean all surfaces whether exposed to view or not.
  3. Remove trash, rubbish, waste materials, tools, and equipment from the site.
  4. Remove grease, dust, dirt, plaster, mortar, fingerprints, and other foreign materials from interior and exterior surfaces exposed to view, e.g., the surfaces of structural steel, miscellaneous metal, woodwork, plaster, masonry, concrete, mechanical and electrical equipment, piping, duct work, and conduit; polish surfaces so designated to shine finish.
  5. Clean the electrical closets, pipe and duct shafts, chases, furred spaces, and similar spaces which are generally unfinished. Leave these spaces free from rubbish, loose plaster, mortar droppings, waste construction materials, dirt, and dust.
  6. The Architect/Engineer is to review items which the Prime Contractor proposes removing labels before they are removed.
  7. Maintain cleaning until date of Substantial Completion or the date of partial occupancy of the building, whichever is earlier. Re-cleaning will not be required after the Work has been inspected and accepted, unless later operations of the Contractor make re-cleaning of certain portions necessary.

1.03 PREPARATION OF FINAL RECORD DRAWINGS AND RECORD SPECIFICATIONS

- A. The Prime Contractor shall employ the Project A/E to re-draft, in CAD format, the paper copy Record Drawings onto the Bid Drawings to create the final Record Drawings.
- B. The Prime Contractor shall employ the Project A/E to retype the paper Record Specifications to indicate all revisions to the Bid Specifications. Items changed shall be marked by a double strike through and revised language inserted in red letters.
- C. An Allowance to cover the costs of the re-drafting of Drawings and revisions to the Specification will be provided and shall be included in the Prime Contractors Bid. Final Allowance cost payments will be based on actual documented A/E costs for their work. The Allowance payment will be adjusted accordingly. This Allowance shall be listed as a separate line item on the Schedule of Values.

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CONTRACT CLOSEOUT

1.04 FINAL CLOSEOUT

- A. Final Closeout date shall be as listed in Section 00 10 10 1.01
- B. At Final Closeout the Contractor shall submit to the Owner, via the Architect/Engineer if applicable:
  - 1. One (1) hard copy of the reviewed and accepted O&M Manual in 3-ring binder(s)
  - 2. One (1) copy on a USB Flash Drive of the complete Project Documentation in PDF format, except as noted in item "o" below, including but not limited to:
    - a. Design Meeting Notes (the Contractor shall coordinate with the A/E to obtain)
    - b. Pre-Bid meeting documents
    - c. The Contractor's Project Bidding Documents including Addenda.
    - d. Award documentation
    - e. Required submissions as detailed in the Award Letter
    - f. Pre-Construction meeting documents and
    - g. Progress meeting notes and Construction observation notes.
    - h. All Change items, e.g. ASI, RFI, RFQ, CP, CO, etc., with documentation
    - i. Pay Applications
    - j. Reviewed and accepted O&M Manual,
    - k. Warranties,
    - l. Extended Service and Maintenance Contracts
    - m. Record Specifications
    - n. A scanned copy of the marked-up Record Drawings
    - o. Record Drawings in both PDF and CAD format
  - 3. The Prime Contractor shall retain the paper copies of the Record Drawings and Record Specifications for a minimum of seven (7) years in a safe location and produce these documents upon request by the Owner.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 01 77 00



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CONTRACT CLOSEOUT

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## SECTION 03 01 00 – CONCRETE REPAIRS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Removal of deteriorated concrete and subsequent replacement and patching.
  - 2. Epoxy crack injection.
  - 3. Corrosion-inhibiting treatment.
  - 4. Composite structural reinforcement.

#### 1.3 BIDDING PROCEDURES

- A. Inspect project area prior to bidding to determine material and labor quantities and other services required to accomplish the Work as indicated on the Drawings and specified in this Section.
- B. Include concrete repairs indicated on the Drawings.
- C. Additional concrete repairs authorized during construction will be added to the Work by unit price Change Orders.

#### 1.4 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."
  - 1. Unit prices apply to authorized additions to the Work as authorized by Change Orders.
- B. General: Unit prices include the cost of preparing existing construction to receive the work indicated.

#### 1.5 DEFINITIONS

- 1. Saturated Surface-Dry (SSD): Condition of an aggregate particle or other porous solid when the permeable voids are filled with water and no water is on the exposed surfaces.

#### 1.6 REFERENCED STANDARDS

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

2. International Concrete Repair Institute (ICRI) Technical Guidelines.
  - a. Guideline No. 310.1R "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion."
  - b. Guideline No. 310.2R "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair."
3. NACE/SSPC (The Society for Protective Coatings) "Surface Preparation Standards, Guides, and Specifications."

#### 1.7 ACTION SUBMITTALS

- A. Product Data: For each product.

#### 1.8 INFORMATION SUBMITTALS

- A. Qualification Data: For concrete-repair specialist.
- B. Quality-Control Program: Submit before work begins.

#### 1.9 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Each packaged patching-mortar manufacturer shall employ factory-authorized service representatives who are available for consultation and Project-site inspection and on-site assistance.
- B. Concrete-Repair Specialist Qualifications: Engage an experienced concrete-repair firm that employs installers and supervisors who are trained and approved by manufacturer to apply packaged patching-mortar and crack-injection adhesive to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing or patching new concrete is insufficient experience for concrete repair work.
- C. Quality-Control Program: Prepare a written plan for concrete repairs to systematically demonstrate the ability of personnel to properly perform repair work, including each phase or process, protection of surrounding materials during operations, and control of debris and runoff during the Work. Describe in detail materials, methods, equipment, and sequence of operations to be used for each phase of the Work.
- D. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for materials and execution.
  1. Concrete Removal and Patching: Remove and repair an approximately 10 sq. ft. area of deteriorated tunnel lid.
    - a. Mockup must demonstrate all stages / aspects of the repair.
  2. Crack Injection: Prepare substrate and inject an approximately 4 linear foot crack in tunnel lid.

- a. Mockup must demonstrate all stages / aspects of the repair.
- 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.
- 4. Rejected mockups shall be completely removed and a new mock-up installed for approval.
- 5. Obtain mock-up approval before repair work begins.
- 6. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.
- B. Store cementitious materials off the ground, under cover, and in a dry location.
- C. Store aggregates covered and in a dry location; maintain grading and other required characteristics and prevent contamination.

#### 1.11 FIELD CONDITIONS

- A. Environmental Limitations for Epoxies: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer. During hot weather, cool epoxy components before mixing, store mixed products in shade, and cool unused mixed products to retard setting. Do not apply to wet substrates unless approved by manufacturer.
- B. Cold-Weather Requirements for Cementitious Materials: Do not apply unless concrete-surface and air temperatures are above 40 deg F and will remain so for at least 48 hours after completion of Work.
- C. Hot-Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Provide artificial shade and wind breaks, and use cooled materials as required. Do not apply to substrates with temperatures of 90 deg F and above.
- D. Protect patching materials from thermal shock cracking during the curing period by avoiding rapid changes in temperature.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Source Limitations: For repair products, obtain each color, grade, finish, type, and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.

## 2.2 PATCHING MORTAR

### A. Patching Mortar Requirements:

1. Only use patching mortars that are recommended by manufacturer for each applicable horizontal, vertical, or overhead use orientation.

### B. Patching Mortar for Vertical and Overhead Orientation: One-component rheoplastic, silica-fume modified, fiber-reinforced repair mortar with an integral corrosion inhibitor.

1. Products: Subject to compliance with requirements, provide the following:
  - a. Master Builders Solutions; MasterEmaco N 425.

## 2.3 REINFORCEMENT MATERIALS

### A. Reinforcing Bars: ASTM A615/A615M, Grade 60, deformed.

### B. Dowels: Prosoco Concrete Patch-Tie or approved equal

1. Alloy: Type 304 Stainless Steel
2. Diameter: 8 mm
3. Length: As required to support reinforcing mesh in specified location and to provide at least 1 3/4 inch embedment into substrate.

### C. Reinforcing Mesh: Square, stainless steel, Type 304, welded, 2" x 2" mesh, 0.120" thick (11 gauge) wire diameter, 89% open area, 0.5 lb/sf.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. McNichols Co., Inc.

### D. Stainless Steel Tie Wire: ASTM A1022/A1022M, Type 304, not less than 0.0508 inch in diameter.

### E. Mechanical Splice Couplers: ACI 318 Type 1, same material of reinforcing bar being spliced; tension-compression type.

## 2.4 EPOXY INJECTION MATERIALS

### A. Epoxy type shall be a two component, non-solvent, low-viscosity epoxy adhesive system containing minimum 100 percent solids with no dilutants or volatile solvents, capable of being injected under pressure into cracks as small as 0.001 inch wide to their full depth, complying with ASTM C881 except as specified herein.

### B. Epoxy adhesives shall be as follows based on materials by the Sika Corporation.

1. Epoxy adhesive for injection of cracks greater than or equal to 1/16 inch in width shall be Sikadur Injection Gel.
  2. Epoxy adhesive for injection of cracks less than 1/16 inch in width shall be Sikadur 35, Hi-Mod LV.
  3. Sikadur 52 may be used in fine hairline cracks at Contractor's option.
  4. Where stone has been broken into individual separate pieces, epoxy to reglue the unit in place shall be either Sikadur 32, Hi-Mod or Sikadur 31, Hi-Mod Gel.
- C. Surface seal materials must have adequate strength and adhesion to confine the epoxy injection adhesive in the crack being repaired until the injected adhesive has cured. After this, the surface seal must be capable of being removed with no visible damage to the substrate surface or finish.
- D. Color of all epoxy adhesives shall match the substrate finish and shall meet the Engineer's and Owner's approval or be repaired as directed by the Engineer at the Contractor's expense.

## 2.5 MISCELLANEOUS MATERIALS

- A. Water: Potable.

## 2.6 CURING MATERIALS

- A. Curing: Clear, Waterborne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.
- B. Clear, Waterborne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class B.
1. Product: Subject to compliance with requirements, provide the following:
    - a. Master Builders Solutions: MasterKure CC 1315WB

## 2.7 MIXES

- A. General: Mix products, in clean containers, according to manufacturer's written instructions.
1. Do not add water, thinners, or additives unless recommended by manufacturer.
  2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
  3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.
- B. Mortar Scrub Coat: Mix dry ingredients with enough water to provide consistency of thick cream.

- C. Dry-Pack Mortar: Mix required type(s) of patching-mortar dry ingredients with just enough liquid to form damp cohesive mixture that can be squeezed by hand into a ball but is not plastic, according to manufacturer's written instructions.

## 2.8 EQUIPMENT

- A. Concrete square cut edges shall be performed with a power-operated saw equipped with a diamond-impregnated blade.
- B. Chipping hammers shall not be heavier than nominal 15 pound class.
- C. Needle scalers and/or wire brushes shall be used to remove heavy corrosion and loose scale and to establish a mechanical key to the saw cut bonding surface of the concrete.
- D. For Metering, Mixing & Injecting Epoxy Adhesive:
  - 1. The equipment used to meter and mix the two injection adhesive components and inject the mixed adhesive into the crack shall be of a positive displacement type.
  - 2. The injection equipment shall have the capability of discharging the mixed adhesive at pressures up to 200 psi and maintaining that pressure.
  - 3. The equipment shall have the capability of maintaining the mix ratio for the injection adhesive prescribed by the manufacturer of the adhesive within a tolerance of +/- 5% by volume at any discharge pressure up to 200 psi.
  - 4. At all times during the work the Contractor must keep complete and accurate records available to the Engineer and Owner of the ratio check tests and the pressure check tests described in the above paragraphs.
  - 5. In addition, the Engineer or Owner may at any time without prior notification of the Contractor request the Contractor to conduct the tests.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Inspection: Notify Engineer of conditions or surfaces which may adversely affect the installation of concrete repairs. Do not proceed with this work until unsatisfactory conditions are corrected. Commencement of work implies acceptance of surfaces and environmental conditions by the Contractor.
- B. Comply with manufacturers' written instructions for surface preparation and product application.
- C. Repair procedures specified in this Section define the suggested general scope and description of the work to be performed. Utilize appropriate means and methods for the safe execution of the work. Install materials in accordance with manufacturer's written instructions and industry-best practices.

### 3.2 EXAMINATION

- A. Notify Engineer two days in advance of dates when areas of deteriorated or delaminated concrete and deteriorated reinforcing bars will be located.
- B. Locate areas of delamination using hammer or chain-drag sounding in accordance with ASTM D4580 and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries according to ICRI 310.1R. At columns and walls make boundaries level and plumb unless otherwise indicated. Arrange for Engineer to review the repair configuration boundaries.

### 3.3 PREPARATION

- A. Ensure that supervisory personnel are on-site and on duty when concrete repair work begins and during its progress.
- B. Protect persons, motor vehicles, surrounding surfaces of building being repaired, building site, plants, and surrounding buildings from harm resulting from concrete repair work.
  - 1. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
  - 2. Use only proven protection methods appropriate to each area and surface being protected.
  - 3. Contain dust and debris generated by concrete repair work and prevent it from reaching the public or adjacent surfaces.
  - 4. Use water-mist sprinkling and other wet methods to control dust only with adequate, approved procedures and equipment that ensure that such water will not create a hazard or adversely affect other building areas or materials.
  - 5. Protect floors and other surfaces along haul routes from damage, wear, and staining.
  - 6. Protect adjacent surfaces and equipment by covering them with heavy polyethylene film and waterproof masking tape. If practical, remove items, store, and reinstall after potentially damaging operations are complete.
  - 7. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.
  - 8. Dispose of debris and runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- C. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Owner immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.
  - 1. Prevent solids such as aggregate or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from concrete repair work.
  - 2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.



- D. Preparation for Concrete Removal: Examine construction to be repaired to determine best methods to safely and effectively perform concrete repair work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed in the course of repair.
  - 1. Verify that affected utilities have been disconnected and capped.
  - 2. Provide and maintain shoring, bracing, and temporary structural supports as required to preserve stability and prevent unexpected or uncontrolled movement, settlement, or collapse of construction being demolished and construction and finishes to remain. Strengthen or add new supports when required during progress of removal work.
- E. Reinforcing-Bar Preparation: Remove oxidation and scale from exposed reinforcing bars by needle scaling and wire brushing and in accordance with ICRI 310.1R.
  - 1. Where section loss of reinforcing bar is more than 25 percent, or 20 percent in two or more adjacent bars, cut bars and remove and replace as indicated on Drawings.
  - 2. Remove additional concrete as necessary to provide at least 3/4-inch clearance at existing and replacement bars.
  - 3. Splice replacement bars to existing bars according to ACI 318 by lapping, welding, or using noncorrosive mechanical couplings.

### 3.4 REMOVAL OF CONCRETE

- A. Do not overload structural elements with debris.
- B. Determine area to be patched by removing loose, unsound shards. Extend concrete removal along exposed reinforcing bars to locations along bar free of bond inhibiting corrosion and where bar is securely bonded to surrounding concrete
- C. Saw-cut perimeter of areas indicated for removal to a depth of at least 1/2 inch. Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcement. Do not nick existing steel reinforcement. Do not overcut at corners of the patch.
- D. Remove deteriorated and delaminated concrete by breaking up and dislodging from reinforcement.
- E. Remove additional concrete if necessary to provide a depth of removal of at least 1/2 inch over entire removal area.
- F. Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar and to provide at least 3/4-inch clearance around bar.
  - 1. Remove concrete along reinforcing steel to locations along bar free of bond inhibiting corrosion and where bar is securely bonded to surrounding concrete.
  - 2. If non-corroded reinforcing steel is exposed during undercutting process, use care to not damage bar's bond to surrounding concrete.

- G. Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound and debonded concrete is completely removed.
- H. Provide surfaces with a fractured profile of at least 1/8 inch that are approximately perpendicular or parallel to original concrete surfaces. At columns and walls, make top and bottom surfaces level unless otherwise directed.
- I. Thoroughly clean removal areas of loose concrete, dust, and debris. Ensure substrate is alkaline (pH above 9.5).

### 3.5 REINFORCEMENT

- A. Reinforcing Mesh: Where patch depth is more than 1 inch and patch area is more than 1 sq. ft., install reinforcing mesh. Locate mesh no closer than 1/2 inch and no more than 1 inch from the finished surface. Tie mesh firmly to dowels with specified tie wire. Lap edges and ends of adjoining sheets at least two mesh spacings. Lace overlaps with tie wire. Trim mesh to fit neatly within patch area. Sequence installation of mesh with patching mortar as indicated in other Part 3 Articles.
  - 1. Install dowels and screw anchors at spacings indicated on the Drawings to support reinforcing mesh. Provide additional dowels and as required to ensure adequate support of mesh perimeter.
  - 2. Reinforcing mesh may be eliminated in applications where size of patch and exposed reinforcing bars will provide adequate mechanical keying / restraint of patch as determined by Engineer.
- B. In patch areas where reinforcing mesh is not required based on paragraph 3.4.A, install dowels to key patch to substrate as follows:
  - 1. Patch depth is more than 1/2 inch and less than 1 1/2 inch: Install dowels every sixteen square inches. Embed into sound concrete at least 1 1/2 inch with end head no closer than 1/2 inch and no more than 1 inch from finished surface of patch. Dowels shall be installed at an angle of approximately 45 degrees relative to the finished patch surface. Do not install dowels normal to the patch surface.
  - 2. Patch depth is more than 1 1/2 inch: Install dowels every thirty-six square inches. Embed into sound concrete at least 1 3/4 inch end no closer than 1/2 inch and no more than 1 inch from finished surface of patch. Dowels shall be installed at an angle of approximately 45 degrees relative to the finished patch surface. Do not install dowels normal to the patch surface.

### 3.6 INSTALLATION OF PATCHING MORTAR

- A. Place patching mortar as specified in this article unless otherwise recommended in writing by manufacturer or where dry-pack mortar is required due to cavity depth.
  - 1. Provide forms where necessary to confine patch to required shape.
  - 2. Wet substrate and forms thoroughly and then remove standing water to achieve a saturated surface-dry condition.

- B. Pretreatment: With a gloved hand or brush, scrub a small quantity of patching mortar into the SSD surface and thoroughly coating repair area to promote bond. If bond coat dries, recoat before placing patching mortar.
- C. General Placement: Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always troweling toward edges of patch. At fully exposed reinforcing bars, force patching mortar to fill space behind bars by compacting with trowel from sides of bars.
- D. Patch Areas Requiring Reinforcing Mesh: Place initial lifts as required to build patch to within 1 inch of where mesh is to be located. Install reinforcing mesh and continue placing patch material.
  - 1. If initial lifts reach final set before continuation of patching, follow manufacturer's written instructions to determine if additional bond coat is required.
- E. Vertical Patching: Place material in lifts of not more than 2 inches or less than 1/4 inch. Do not feather edges.
- F. Overhead Patching: Place material in lifts of not more than 2 inches or less than 1/4 inch. Do not feather edges.
- G. Consolidation: After each lift is placed, consolidate material and screed surface.
- H. Multiple Lifts: Where multiple lifts are used, score surface of lifts to provide a rough surface for placing subsequent lifts. Allow each lift to reach initial set before placing subsequent lifts.
- I. Finishing: Allow surfaces of lifts that are to remain exposed to become firm and then finish to a surface matching adjacent concrete.
- J. Curing: Apply membrane-forming curing and sealing compound immediately after finishing patched areas.
  - 1. Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.

### 3.7 INSTALLATION OF DRY-PACK-MORTAR

- A. Use dry-pack mortar for deep cavities. Place as specified in this article unless otherwise recommended in writing by manufacturer.
  - 1. Provide forms where necessary to confine patch to required shape.
  - 2. Wet substrate and forms thoroughly and then remove standing water to achieve a saturated surface dry condition.
- B. Pretreatment: Using specified patching mortar, apply a mortar scrub coat with a brush, scrubbing it into surface and thoroughly coating repair area to promote bond. If scrub coat dries, recoat before placing patching mortar.

- C. Place dry-pack mortar into cavity by hand, and compact tightly into place. Do not place more material at a time than can be properly compacted. Continue placing and compacting until patch is approximately level with surrounding surface.
- D. Patch Areas Requiring Reinforcing Mesh:
  - 1. Place and compact dry-pack mortar to within 1 inch of where mesh is to be located. Install reinforcing mesh. Continue placing and compacting dry-pack mortar.
  - 2. If initial lifts reach final set before continuation of patching, follow manufacturer's written instructions to determine if additional bond coat is required.
- E. After cavity is filled and patch is compacted, trowel surface to match profile and finish of surrounding concrete. A thin coat of patching mortar may be troweled into the surface of patch to help obtain required finish.
- F. Curing: Apply membrane-forming curing and sealing compound immediately after finishing patched areas.
  - 1. Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.

### 3.8 CRACKED CONCRETE – EPOXY INJECTION REPAIRS

- A. Application of Surface Seal and Backing:
  - 1. Seal cracks to be injected with surface sealer material on both top and bottom of deck surface so that the epoxy is completely contained.
  - 2. Provide entry ports in surface seals on bottom of deck as required to achieve complete filling of the crack.
  - 3. Moving the injection nozzle to the next port before epoxy has appeared will not be permitted.
- B. Epoxy Injection:
  - 1. Inject epoxy in accordance with procedures as recommended by manufacturer or as required to obtain 100% penetration of cracks without inclusion of air pockets or voids in epoxy and as required to achieve a structural bond of the substrate. Crack injection in concrete deck shall be performed from the underside of the deck.
  - 2. Begin injection of epoxy at lower entry port and continue until there is an appearance of epoxy at entry port directly adjacent to or above entry port being pumped, thus indicating epoxy travel.
  - 3. When epoxy travel is indicated, discontinue injection on entry port being pumped, seal it, and transfer epoxy injection to next adjacent port where epoxy has appeared.
  - 4. Perform epoxy injection continuously until cracks are completely filled.
  - 5. Finishing requirements:
    - a. When cracks are completely filled, cure epoxy for sufficient time to allow removal of surface seal without any draining or runback of epoxy material from cracks.

- b. Remove surface seals and clean substrate surfaces with epoxy injection system cleaners as required to produce flush, inconspicuous surface having same appearance and finish as adjoining substrate, showing no indentations or evidence of entry port fitting materials or procedures, and having appearance acceptable to the Engineer. Cleaners must not be harmful to adjacent materials and must be approved by the Engineer.
- 6. Special requirements:
  - a. If penetration of cracks is impossible, immediately notify the Engineer.
  - b. Modifications to epoxy injection procedures will not be permitted unless authorized in writing by the Engineer.

### 3.9 FIELD QUALITY CONTROL

- A. Manufacturers Field Service: Engage manufacturers' factory-authorized service representatives for consultation and Project-site inspection and to provide on-site assistance when requested by Engineer.
  - 1. Have manufacturers' factory-authorized service representatives perform the following number of Project-site inspections to observe progress and quality of the Work, distributed over the period of product installation, regardless of on-site assistance requested by Engineer:
    - a. Packaged Patching-Mortar Installation: one inspection.

### 3.10 CLEAN UP

- A. During the performance of the work, the Contractor shall clean and protect work in progress and any adjoining work. Apply protective covering on installed work where it is required to ensure freedom from damage or deterioration at the time of substantial completion.
- B. Contractor shall clean and perform maintenance on installed work as frequently as necessary through the remainder of the construction period.
- C. The Contractor shall supervise performance of the work in such a manner and by such means which will ensure that none of the work, whether completed or in progress will be subjected to harmful, dangerous, damaging or otherwise deleterious exposure during the construction period.
- D. All unused material and equipment and any debris shall be removed from public access ways and taken to a staging area or other location suitable to the Owner on a daily basis prior to the end of the project working hours.

### 3.11 PROTECTION

- A. Protect concrete repairs from damage and wear during remainder of construction period. Provide protective covering on installed work when necessary to prevent damage.

- B. Correct deficiencies in or remove concrete repair materials that do not comply with requirements; repair substrates and reapply concrete repair materials.
- C. At completion of Work, remove unused material, equipment and debris from site.

END OF SECTION 03 01 00

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## SECTION 20 00 10 – COMMON WORK RESULTS FOR HVAC

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this and all Sections of Divisions 20, 21, 22 and 23.

#### 1.2 SUMMARY

- A. This Section includes general administrative and procedural requirements for mechanical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 1:

1. Requirements of Regulatory Agencies.
2. Abbreviations contained in Specifications.
3. Shop Drawings.
4. Record Drawings
5. Drawings.
6. Construction Documents.
7. Work and Workmanship.
8. Coordination between Contractors.
9. Assignment of Miscellaneous Work.
10. Material Equipment Transport
11. Material Storage.
12. Product and Material Approval.
13. Protection and Treatment of Property.
14. Demolition and Removal of Equipment.
15. Attaching to Building Construction.
16. Rough-ins.
17. Mechanical Installations.
18. Cleaning and Touch-up.
19. General Completion Startup/Owner Orientation.

#### 1.3 REQUIREMENT OF REGULATORY AGENCIES

- A. All materials and workmanship shall comply with all applicable codes, specifications, local ordinances, industry standards and utility company regulations.
- B. In case of difference between building codes, specifications, state laws, local ordinances, industry standards, utility company regulations and Contract Documents, the most stringent shall govern. Contractor shall promptly notify Engineer in writing of any such difference.



- C. Non-compliance: should Contractor perform any work that does not comply with requirements of applicable building codes, state laws, local ordinances, industry standards and utility company regulations, he shall bear all costs arising in correcting the deficiencies.
- D. Applicable codes and standards shall include all state laws, local ordinances, utility company regulations and applicable requirements of the most recent editions of the following nationally accepted codes and standards:
  - 1. The Indiana Building Code. (IBC)
  - 2. The Indiana Electric Code.
  - 3. The Indiana Mechanical Code. (IMC)
  - 4. The Indiana Fuel-Gas Code.
  - 5. The Indiana Fire Code.
  - 6. The Indiana Plumbing Code. (IPC)
  - 7. The Indiana Elevator Code.
  - 8. The Indiana Handicapped Accessibility Code.
  - 9. National Fire Protection Associates (NFPA) codes and regulations.
  - 10. Regulations of the Indiana State Board of Health.
  - 11. Regulations of the Insurance Bureau of Indiana.
  - 12. Requirements of Factory Mutual (FM).
  - 13. Regulations of the Indiana Department of Fire Prevention and Building Services.
  - 14. The Americans with Disabilities Act (ADA).
  - 15. All local and municipal codes and/or regulations.
- E. Except as otherwise specified herein, all piping work and materials are to conform to the American Standards Association Code for Pressure Piping.
- F. All fired and unfired pressure vessels furnished and installed under this contract are to conform to all requirements of current edition of State of Indiana Rules and Regulations for Boilers and Unfired Pressure Vessels. Copies of all certificates of tests and construction as required by this code to be turned over to Owner.
- G. Permits: Contractor shall pay for all building permits required by work and permits for opening streets and for connection to various utilities, including fees for water meter installation and any other requirements necessary to carry out his work. Where streets or sidewalks are cut, same must be repaired to at least as good a condition as they were before, all at expense of this Contractor. Permits shall be posted in prominent place at building site properly protected from weather and physical damage.

#### 1.4 ABBREVIATIONS CONTAINED IN SPECIFICATIONS

- A. ACI American Concrete Institute
- B. ACIL The Association of Independent Scientific, Engineering, and Testing Firms
- C. ADA Americans with Disabilities Act
- D. AGA American Gas Association
- E. AIA American Insurance Association
- F. AIHA American Industrial Hygiene Association

G.	AISC	American Institute of Steel Construction
H.	AISI	American Iron and Steel Institute
I.	ANSI	American National Standards Institute
J.	ARI	Air-Conditioning and Refrigeration Institute
K.	ASA	American Standards Association
L.	ASC	Adhesive and Sealant Council
M.	ASHRAE	American Society of Heating, Refrigerating & Air-Conditioning Engineers
N.	ASME	American Society of Mechanical Engineers
O.	ASPE	American Society of Plumbing Engineers
P.	ASTM	American Society for Testing Materials
Q.	AWS	American Welding Society
R.	AWWA	American Water Works Association
S.	DIPRA	Ductile Iron Pipe Research Association
T.	EPA	Environmental Protection Agency
U.	FIA	Factory Insurance Association
V.	FCI	Fluid Controls Institute
W.	FM	Factory Mutual System
X.	HI	Hydraulic Institute
Y.	HI	Hydronics Institute (Division of Gas Appliance Manufacturers Association)
Z.	IRI	Industrial Risk Insurance
AA.	ISA	International Society for Measurement and Control
BB.	MCAA	Mechanical Contractors Association of America
CC.	MSS	Manufacturing Standardization Society of the Valve and Fittings Industry
DD.	NBS	National Bureau of Standards
EE.	NEBB	National Environmental Balancing Bureau
FF.	NIA	National Insulation Association (Formerly National Insulation and Abatement)
GG.	NIST	National Institute of Standards and Technology (U.S. Department of Commerce)
HH.	NUSIG	National Uniform Seismic Installation Guidelines
II.	OSHA	Occupational Safety & Health Administration (U.S. Department of Labor)
JJ.	PCA	Portland Cement Association
KK.	PDI	Plumbing and Drainage Institute
LL.	UL	Underwriters Laboratories
MM.	UNI	Uni-Bell PVC Pipe Association
NN.	WSC	Water Systems Council

#### 1.5 SHOP DRAWINGS

- A. Review of Shop Drawings does not relieve Contractor of responsibility for correct ordering of material and equipment.
- B. Contractor review should insure that equipment will fit into available space.
- C. Shop Drawings shall be prepared and submitted in accordance with Division 1 "Submittals".
- D. Include all significant data on Shop Drawing Submittals shown in Specifications and Equipment Schedule. Including, but not limited to the following:

1. Description of construction and material types and gauge of materials used.
2. Dimensional drawing showing locations of all field connections including piping, control, power and sheet metal as well as equipment configuration.
3. Dimensional drawing showing locations of all field connections including piping, control, power and sheet metal as well as equipment configuration.
4. Note any special tools required for equipment service.

E. Items Requiring Submittals:

1. Each individual section lists the required items to be submitted.

1.6 RECORD DRAWINGS

- A. Contractor shall be responsible for furnishing to Engineer a complete, accurate and neat set of marked-up blue-line drawings in accordance with Division 1. This set shall contain all deviations between actual construction and Contract Drawings.
- B. Contractor shall maintain a mark-up set of as-built drawings on the project site and shall keep all drawings up-to-date as construction progresses. This marked-up set shall be returned to Contractor, as many times as necessary, in order to obtain desired results.
- C. Engineer's employees shall inspect Drawings regularly on project site for accuracy and omissions. Pay request will not be approved if marked-up record drawings are not onsite and up to date.
- D. Refer to Division 1 "CONTRACT CLOSEOUT" for further instructions.

1.7 CONSTRUCTION DOCUMENTS

- A. Construction documents shall include all divisions of specifications, all drawings and all issued addenda.
- B. In a case of conflict between the drawings and specifications, or between divisions of specifications, the most stringent condition shall apply.

1.8 DRAWINGS

- A. Mechanical Drawings show general arrangement of all piping, equipment and appurtenances. They shall be followed as closely as actual building construction and work of other trades will permit. Mechanical work shall conform to requirements shown on all Drawings. General and Structural Drawings shall take precedence over Mechanical Drawings. Because of small scale of Mechanical Drawings, it is not possible to indicate all offsets, fittings and accessories, which may be required. Contractor shall investigate structural and finish conditions affecting work and shall arrange his work accordingly, providing such fittings, valves and accessories as may be required to meet such conditions.

- B. For purpose of clarity and legibility, Drawings are essentially diagrammatic, although size and location of equipment and piping are drawn to scale wherever possible. Verify Contract Document information at site.
- C. Drawings indicate required sizes and points of termination of pipes and ducts and suggested routes. It is not the intention of Drawings to indicate all necessary offsets. Install work in manner to conform to structure, avoid obstructions, preserve headroom and keep openings and passageways clear. Do not scale from Drawings.
- D. In case of a conflict in construction documents and or the specifications, Contractor shall receive clarification, prior to bidding, in the form of an addendum or include in his price, the greater amount of work of the conflicts shown. (i.e., if two pipe sizes are indicated for the same pipe, the Contractor shall price the larger of the two pipes.)

#### 1.9 WORK AND WORKMANSHIP

- A. Provide all required labor, materials, equipment and Contractor's services necessary for complete installation of systems required in full conformity with requirements of authorities having jurisdiction; and as indicated on Drawings and herein specified.
- B. Finished job shall be functional and complete in every detail, including any and all such items required for a complete system, whether or not these items are specified or shown on drawings.
- C. Any apparatus, material or work not shown on Contract Drawings but mentioned in the Specifications, or vice versa, or any incidental accessories or minor details not shown but necessary to make the work complete in all respects and ready for operation, even if not particularly specified, shall be provided without additional expense to the Owner.
- D. Each Contractor shall acquaint himself with details of all work to be performed by other trades and take necessary steps to integrate and coordinate his work with other trades.
- E. It is assumed the Mechanical Contractor is familiar with standard first class installation procedures. Therefore, these Specifications do not attempt to include every detail or operation necessary for the complete installation.
- F. It should be particularly noted that the terms "furnish" and "provide" are interchangeable and that each of these terms means to provide, install and connect, unless otherwise stated.
- G. Whenever tables or schedules show quantities of materials, they shall not be used as a guide to Contractor. Each Contractor shall be responsible for furnishing all materials noted on Drawings and as specified.
- H. Craftsman trained in each respective trade shall install work in that trade.

#### 1.10 COORDINATION BETWEEN CONTRACTORS

- A. Each Contractor and Subcontractor shall study all Drawings applicable to this work so complete coordination between trades will be effected. Special attention shall be given to points where

ducts cross other ducts or piping, where lights fit into ceilings and where pipe, ducts and conduit pass through walls and columns. Temperature controls interface, where applicable, shall be given attention.

- B. It is responsibility of each Contractor and Subcontractor to leave necessary room for other trades. No extra compensation will be allowed to cover cost of removing piping, conduit, ducts or equipment found encroaching on space required by others.

#### 1.11 ASSIGNMENT OF MISCELLANEOUS WORK

- A. Penetrations: holes required for piping or ductwork shall be cut in field at expense of respective Contractor. Engineer shall give approval prior to any cutting.
- B. All fire stopping of mechanical penetrations by respective Contractor.
- C. Pipe identification shall be by Mechanical Contractor as specified in Section 20 00 50.
- D. Wall Sleeves in existing construction shall be provided and installed by the respective Contractor.

#### 1.12 EQUIPMENT WARRANTY AND EARLY EQUIPMENT STARTUP

- A. Contractor shall provide a complete warranty for all equipment, controls, etc. that includes parts and labor, any equipment that fails shall be repaired and/or replaced at no cost to owner.
- B. The warranty shall start on the date of substantial completion. On projects with multiple phases, the date of substantial completion of the final phase shall be the date that the warranty starts for all phases, i.e. the entire project. No exceptions.
- C. The "umbrella" warranty for the project shall be one year.

#### 1.13 MATERIAL AND EQUIPMENT TRANSPORT

- A. All material and equipment, shipped to site, shall be suitably covered and protected during shipment to site.
- B. Protection shall include shrink wrapping and desiccant bags for humidity controls.
- C. Protect equipment from weather, road salts, road dirt, condensation, damage and all other situations that can be detrimental to the condition of the equipment and material being shipped.
- D. Engineer will not be on site during delivery; however, Engineer reserves the right to reject material or equipment after the fact that is delivered to site in unsatisfactory condition.

#### 1.14 MATERIAL STORAGE

- A. Provide suitable protection from weather and vandalism for all materials and equipment to be installed. Storage shall be dry, clean and safe. Provide heat as required to stop condensation. Condensation occurs during periods of large ambient temperature swings, i.e. spring or fall. Any materials or equipment damaged, deteriorated, rusted or defaced due to improper storage shall be fully repaired, refinished or replaced, as directed by Engineer at no additional cost.

### PART 2 - PRODUCTS

#### 2.1 PRODUCT AND MATERIAL APPROVAL

- A. A Specification followed by one or more manufacturers is limited to those manufacturers. Names of other manufacturers may be submitted for approval, to the Engineer, a minimum of ten calendar days prior to receiving bids. Approval will be issued by Addendum if approval is granted.
- B. The mechanical equipment shall be new, listed by UL and shall confirm to NEMA requirements.
- C. If changes in pipe, ductwork, conduit, wiring, structural support, ceiling space, etc. are required as a result of the contractor's decision to purchase equipment with a different arrangement than shown on the Drawings, the Contractor shall be responsible for including all associated costs in their bid. Manufacturers listed on schedules shall be considered "basis of design" (BOD). Note that manufacturers listed as equals may have physical characteristics such as weight, footprint, sound levels, electrical, etc, which require more coordination, piping, wiring, and/or general construction changes. The Mechanical Contractor will be responsible for all additional costs associated with the installation of this equipment. Contractors should seek clarification prior to bid for any equipment that does not meet or exceed the scheduled or specified characteristics.

### PART 3 - EXECUTION

#### 3.1 PROTECTION AND TREATMENT OF PROPERTY

- A. Repair streets, which are part of State Highway System to satisfaction of State Highway Department.
- B. Replace base and wearing surfaces of streets with same kind and thickness of material as existing. Replace brick, concrete and asphalt surface to width 6" wider than disturbed area. Replace entire surface if more than 30% has been disturbed.
- C. Replace sidewalks, curbs, gutters, driveways, with same kind and thickness of material. Replace entire section of concrete walks or driveways.
- D. Re-grade and replant lawn areas.
- E. Protect existing utilities. Cap existing utilities that are abandoned.

- F. All property in existing facilities that is damaged/removed, by contractor operations shall be repaired/replaced to previous operating and appearance condition.

### 3.2 DEMOLITION AND REMOVAL OF EQUIPMENT

- A. Contractor shall remove all equipment, hangers and support for portion of mechanical system in present building as indicated on Drawings and/or implied by nature of the work to be removed. Contractor shall remove all pipes and ductwork back to source made obsolete by removing equipment unless specifically instructed otherwise.
- B. Contractor shall properly support remaining portions of the work. Contractor shall provide valves, plugs, vents, etc. as required so existing systems remain operational.
- C. Openings remaining after equipment has been removed shall be patched to match surrounding surfaces and in conformance with good practice.

### 3.3 ATTACHING TO BUILDING CONSTRUCTION

- A. Equipment and pipe supports shall be attached to tunnel floor and tunnel roof. Support shall be as detailed on Drawings.

### 3.4 ROUGH-IN

- A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be installed.
- B. Refer to shop drawings for equipment rough-in requirements.

### 3.5 MECHANICAL INSTALLATIONS

- A. General: Sequence, coordinate, and integrate the various elements of mechanical systems, materials, and equipment. Comply with the following requirements:
  - 1. Coordinate mechanical systems, equipment, and materials installation with other building components.
  - 2. Verify all dimensions by field measurements.
  - 3. Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
  - 4. Where mounting heights are not detailed or dimensioned, install systems, material, and equipment to provide the maximum headroom possible.
  - 5. Install systems, materials, and equipment to conform with engineer reviewed submittal data. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect/Engineer.
  - 6. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components.

7. All shutdowns required to connect to existing systems shall be scheduled and coordinated with the Owner. Contractor shall prefabricate and install new materials as much as possible to keep shutdown duration to a minimum.
8. Contractor shall field verify all locations, sizes and connection points to existing piping, ductwork and systems as shown on the drawings. Contact Engineer with any discrepancies.

### 3.6 GENERAL COMPLETION, STARTUP

- A. It is Mechanical Contractors' responsibility to conduct an owner orientation meeting which will review all systems, their operation and operation of all equipment.
- B. General Requirements.
  1. Inspect screwed joints for leakage and remake each joint that appears to be faulty. Do not wait for rust to form. Clean threads on both parts, apply compound and remake joint.
  2. Adjust pipe hangers and supports for correct pitch and alignment.
  3. Flush systems and clean all strainers. After 30 days of operation clean strainers again.
  4. Provide such continuing adjustment services as is necessary to insure proper functioning of all mechanical systems after building occupancy and during guarantee period.
  5. Provide duct stiffeners, air straighteners, or turning vanes as required to stop any oil canning, drumming or fan surge to the satisfaction of the engineer.

END OF SECTION 20 00 10



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## SECTION 20 00 50 – COMMON MATERIALS AND METHODS FOR HVAC

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this and all Sections of Divisions 20, 21, 22 and 23.

#### 1.2 SUMMARY

- A. Provide equipment, materials, labor and services common to more than one section of Divisions 20, 21, 22 and 23. The work generally includes, but is not limited to the following:
  - 1. Pipe Identification
  - 2. Equipment Identification
  - 3. Paint

#### 1.3 SUBMITTALS

- A. If specified products are provided, submittals are not required for products provided in this section.
- B. If it is desired to use products that are not specified then those products must be submitted for review prior to ordering said products.

### PART 2 - PRODUCTS

#### 2.1 PIPE IDENTIFICATION

- A. Labeling shall consist of the following:
  - 1. Pipe identification to comply with ASME A13.1.
  - 2. Identification of medium in pipe using all uppercase letters.
  - 3. Arrow indicating direction of flow.

#### 2.2 PAINT

- A. As noted on Drawings.

### PART 3 - EXECUTION

#### 3.1 PIPE IDENTIFICATION

- A. Install Pipe Identification on each system. Include pipe service as abbreviated on Drawings i.e. CHWS, CHWR, etc. and arrows showing normal direction of flow.

1. Plastic markers, with application systems. Install on insulation segment of required for hot, un-insulated piping.
2. Locate pipe identification as follows:
  - a. Exposed piping in unfinished spaces, machine rooms, and accessible maintenance spaces, such as shafts, tunnels, plenums, above lay-in ceilings and exterior non-concealed locations.
  - b. Near each branch, excluding short takeoffs for fixtures and terminal units. Mark each pipe at branch, if flow pattern or service is not obvious.
  - c. Adjacent to penetrations where pipes pass through walls, floors, ceilings, or enter non-accessible enclosures.

### 3.2 ERECTION OF METAL SUPPORTS AND ANCHORAGE

- A. Cut, fit and place miscellaneous metal supports accurately in location, alignment and elevation to support and anchor mechanical materials and equipment.
- B. Field Welding: Comply with AWS D1.1, "Structural Welding Code – Steel".

END OF SECTION 20 00 50

SECTION 20 00 60 – COMMON PIPE, VALVES, FITTING AND HANGERS FOR HVAC

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. No pipe replacement is included in this project. Schedule are for reference only. Only pipe rework and Spider Guides are to be replaced.
- B. This section specifies piping, valves and fittings including piping support for all systems. These systems include the following:
  - 1. System Piping Schedule #3  
0 to 15 PSIG Steam Supply
  - 2. System Piping Schedule #5  
101 to 150 PSIG Steam Supply
  - 3. System Piping Schedule #8  
Steam Condensate
  - 4. System Piping Schedule #9  
High Pressure Steam Condensate
- C. Related sections include the following:
  - 1. 20 00 10 Common Work Results for Fire Suppression, Plumbing and HVAC
  - 2. 20 00 50 Common Materials and Methods for Fire Suppression, Plumbing and HVAC
  - 3. 20 01 80 Common Insulation for Plumbing and HVAC
  - 4. Division 23 Mechanical

1.3 SUBMITTAL

- A. Submit product data for valves and fittings used in each system.
- B. Submittal data to be in compliance with Section 20 00 10.
- C. Product data shall include pressure and temperature classifications, model numbers, material types, actuators, trim, valve handle extensions and all pertinent data as required for complete evaluation by Engineer.

- D. Maintenance data for valves shall include adjusting, servicing, disassembly, exploded view with part numbers and repair instructions.
- E. Piping submittals are not required. However piping to meet all specifications.

#### 1.4 QUALITY ASSURANCE

- A. ASME Compliance: Comply with ASME B31.9 for building services piping and ASME B31.1 for power piping.
- B. MSS Compliance: Comply with the various MSS Standard Practice documents referenced.
- C. Welded and Soldered Pipe
  - 1. Pipe welding shall comply with provisions of latest revision of applicable code, whether ASME Boiler & Pressure Vessel Code, ASTM Code for Pressure Piping, or such state or local requirements as may supersede code mentioned above.
  - 2. A copy of his welding procedure specification together with proof of its qualification as outlined and required by most recent issue of code having jurisdiction.
  - 3. Submit Operator's qualification record in conformance with provisions of code having jurisdiction, showing that operator was under proven procedure specifications submitted by Contractor.
  - 4. Standard procedure specifications and operators qualified by National Certified Pipe Welding Bureau shall be considered as conforming to requirements of these specifications.
  - 5. Welders to have ASME test papers not more than 5 years old.
  - 6. Each manufacturer or Contractor shall be responsible for quality of welding done by his organization and shall repair or replace work not in accordance with these specifications.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Prepare for shipping as follows:
  - 1. Protect internal parts against rust and corrosion.
  - 2. Protect threads, flange faces, grooves, and weld ends.
  - 3. Set globe and gate valves closed to prevent rattling.
  - 4. Set ball and plug valves open to minimize exposure of functional surfaces.
  - 5. Set butterfly valves closed or slightly open.
  - 6. Set butterfly valves closed or slightly open.
- B. Use the following precautions during storage:
  - 1. Maintain valve end protection.
  - 2. Store indoors and maintain valve temperature higher than ambient dew-point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.
  - 3. Stack piping above grade and covered.

- C. Use a sling to handle large valves. Rig to avoid damage to exposed parts. Do not use handwheels and stems as lifting or rigging points.

## PART 2 - PRODUCTS

### 2.1 PIPE MATERIAL DESIGNATIONS

- A. Refer to System Schedules in Execution portion of this Section for designation of pipe types to be used for each piping system. When more than one piping type is designated, contractor may choose which type is installed.
- B. Piping Designations
  - 1. CP-2 Steel:
    - a. 3/4" to 2" ASTM A53, Type S (seamless) or Type F (furnace-butt welded) Grade A Black steel (galvanized if so noted). U.S. Steel; Laclede; Republic; Youngstown, Jones & Laughlin.
    - b. 2-1/2" to 12" ASTM A53, Type E (electric resistance welded) Grade A Black steel (galvanized if so noted).
    - c. 14" to 20" ASTM A53, Type E (electric resistance welded) Grade B or Type S (seamless), (galvanized if so noted). U.S. Steel; Laclede; Republic; Youngstown; Jones & Laughlin.

### 2.2 PIPE FITTING DESIGNATIONS

- A. Refer to System Schedules in Execution portion of this Section for designation of fitting types to be used for each piping system. Fittings to be of the same strength of piping in each respective piping system. When more than one type is designated, contractor may choose which type is installed.
- B. Fitting Designations:
  - 1. CF-2 Cast Iron: ASME B16.4; 250# (or as noted) black cast iron threaded fitting (galvanized if so noted). Grinnell; Kuhns, Illinois Malleable; Stockham.
  - 2. CF-4 Flanged: 125# (or as noted) black cast iron, flanged fitting (galvanized if so noted). Grinnell; Kuhns; Stockham; Illinois Malleable.
  - 3. CF-5 Wrought Steel fittings: ASTM, B16.9, B16.11, B16.28. Steel butt welding fitting. All elbows shall be long radius, unless otherwise noted. Tube Turns; Midwest; Taylor Forge; Ladish; NIBCO; Grinnell; Weld Bend; Babcock Wilcox.

### 2.3 PIPE JOINT DESIGNATIONS

- A. Refer to System Schedules in Execution portion of this Section for designations of joint types to be used for each piping system. When more than one type is designated, contractor may choose which type is installed.

B. Piping Joint Designations:

1. CJ-1 Threaded: threads shall conform to ASME B1.20.1, ASTM B16.3, B16.4, B16.12. Remove all burrs. Ream pipe ends to full bore and remove all chips. Use pipe compound on male ends only. Approved pipe compounds: Blue Seal; Key Tite.
2. CJ-5 Welded Pipe: standard specification provision for fabrication and erection of piping systems as recommended by National Certified Pipe Welding Bureau. All welding of pipe, regardless of condition of is to be installed as follows:
  - a. Pipe welding shall comply with provisions of latest revision of applicable code, whether ASME Boiler & Pressure Vessel Code, ASTM Code for Pressure Piping, or such state or local requirements as may supersede code mentioned above.
  - b. A copy of his welding procedure specification together with proof of its qualification as outlined and required by most recent issue of code having jurisdiction.
  - c. Submit Operator's qualification record in conformance with provisions of code having jurisdiction, showing that operator was under proven procedure specifications submitted by Contractor.
  - d. Standard procedure specifications and operators qualified by National Certified Pipe Welding Bureau shall be considered as conforming to requirements of these specifications.
  - e. Welders to have ASME test papers not more than 5 years old.
  - f. Each manufacturer or Contractor shall be responsible for quality of welding done by his organization and shall repair or replace work not in accordance with these specifications.
3. CJ-43 Wrought Cast-and Forged-Steel Flanges and Flanged Fittings: Class 150 and 300 ASME B16.5, including bolts, nuts, and gaskets of Materials Group: 1.1, Connections Butt Weld, facings: Raised Face; Crane.
4. CJ-44 Flanged Joints:
  - a. Cast-Iron Flanges and Flanged Fittings: ASME B16.21, Classes 25, 125 and 250; raised ground face, and bolt holes spot faced. Including bolts, nuts and gaskets.
  - b. Flange bolts and nuts: ASME B18.2, Carbon Steel unless otherwise indicated.

2.4 UNIONS AND FLANGED CONNECTIONS

- A. 150 pound malleable iron with ground joint and brass to iron seats. Crane 1280.
- B. 125 pound wrought copper or cast brass union with solder joint fittings. Crane 633.
- C. 150 pound forged steel flanges with welding neck. Crane 568.
- D. 150 pound bronze flanges with tube stop. Mueller F900.

2.5 VALVE DESIGNATIONS

- A. No valves will be replaced. Valve schedules are for reference only.



PART 2 - PRODUCTS (Continued)

VALVE SCHEDULES

- 1 Refer to System Schedules in Execution portion of this Section for designation of valve types to be used for each piping system.
- 2 VALVE DESIGNATION CV-1 CV-2
- 3 TYPE Gate Gate
- 4 MAXIMUM WORKING
- 4.1 Pressure - PSIG 125 125
- 4.2 Temperature - °F Sat. Stm. Sat. Stm.
- 5 SIZE LIMITS - Inches 1/2 - 3 2 1/2 - 12
- 6 DESCRIPTION
- 6.1 Body Bronze Iron ASTM A-126B
- 6.2 Trim Bronze Bronze
- 6.3 Gate Split Wedge Solid ASTMA-126B
- 6.4 Bonnet Screw-in Bolted
- 6.5 Stem Rising OS&Y ASTM B-16B
- 6.6 Seat Integral Renewable
- 6.7 Agency Compliance MSS SP-80 MSS SP-70
- 7 APPROVED RODUCTS
- 7.1 Nibco S211, T211, T135 F617-0
- 7.2 Jenkins 991 AT, 990 AJ 651A, 650A
- 7.3 Crane 1700S, 1700T 465 - 1/2
- 8 NOTES
- 8.1 Use OS&Y (CV-2) valves when noted on drawings.
- 8.2 Provide manufacturer's standard stem packing for service intended.
- 8.3 Valves with rising stems suitable for repacking under pressure.

PART 2 - PRODUCTS (Continued)

VALVE SCHEDULES

- |     |  |                          |
|-----|--|--------------------------|
| 1   | Refer to System Schedules in Execution portion of this Section for designation of valve types to be used for each piping system. |                          |
| 2   | VALVE DESIGNATION  | CV-3.1                   |
| 3   | TYPE   | Gate                     |
| 4   | MAXIMUM WORKING  |                          |
| 4.1 | Pressure - PSIG  | 250                      |
| 4.2 | Temperature - °F   | 450                      |
| 5   | SIZE LIMITS - Inches   | 2 1/2 - 12               |
| 6   | DESCRIPTION  |                          |
| 6.1 | Body   | Cast Iron or Ferro-steel |
| 6.2 | Trim   | Bronze                   |
| 6.3 | Disc/plug  | Solid Wedge              |
| 6.4 | Bonnet   | Bolted                   |
| 6.5 | Stem   | OS&Y                     |
| 6.6 | Seat   | Renewable rings          |
| 7   | APPROVED PRODUCTS  |                          |
| 7.1 | Crane  | 7-1/2E                   |
| 7.2 | Lunkenheimer   | 1436                     |
| 7.3 | Jenkins  | 204                      |
| 7.4 | Stockham   | F667                     |
| 8   | NOTES  |                          |
| 8.1 | Provide manufacturer's standard stem packing for service intended.   |                          |
| 8.2 | Valves with rising stems suitable for repacking under pressure.  |                          |

PART 2 - PRODUCTS (Continued)

VALVE SCHEDULES

- 1 Refer to System Schedules in Execution portion of this Section for designation of valve types to be used for each piping system.
- 2 VALVE DESIGNATION CV-1.4
- 3 TYPE Gate
- 4 MAXIMUM WORKING
- 4.1 Pressure - PSIG 600
- 4.2 Temperature - °F 850
- 5 SIZE LIMITS - Inches 1/2 - 2"
- 6 DESCRIPTION
- 6.1 Body Forged Steel
- 6.2 Trim Monel
- 6.3 Disc/plug Solid
- 6.4 Bonnet Bolted
- 6.5 Stem OS&Y
- 6.6 Seat Renewable
- 6.7 Agency Compliance ASME B16.34, API 602
- 7 APPROVED PRODUCTS
- 7.1 Vogt SW12111 (Socket Weld)
- 8 NOTES
- 8.1 Provide manufacturer's standard stem packing for service intended.
- 8.2 Valves with rising stems suitable for repacking under pressure.

PART 2 - PRODUCTS (Continued)

VALVE SCHEDULES

- |     |  |                       |          |
|-----|--|-----------------------|----------|
| 1   | Refer to System Schedules in Execution portion of this Section for designation of valve types to be used for each piping system. |                       |          |
| 2   | VALVE DESIGNATION  | CV-4                  |          |
| 3   | TYPE   | Globe                 |          |
| 4   | MAXIMUM WORKING  |                       |          |
| 4.1 | Pressure - PSIG  | 125                   |          |
| 4.2 | Temperature - °F   | Sat. Stm.             |          |
| 5   | SIZE LIMITS - Inches   | 1/2 - 2 1/2           |          |
| 6   | DESCRIPTION  |                       |          |
| 6.1 | Body   | Bronze                |          |
| 6.2 | Trim   | Bronze                |          |
| 6.3 | Disc/plug  | Renewable Composite   |          |
| 6.4 | Bonnet   | Screw-in              |          |
| 6.5 | Stem   | Rising-Silicon Bronze |          |
| 6.6 | Seat   | Integral              |          |
| 6.7 | Agency Compliance  | MSS SP-80             |          |
|     | APPROVED PRODUCTS  | Soldered              | Threaded |
| 7.1 | Nibco  | S211                  | T211     |
| 7.2 | Crane  | 1310                  | 1        |
| 8   | NOTES  |                       |          |
| 8.1 | Provide manufacturer's standard stem packing for service intended.   |                       |          |
| 8.2 | Valves with rising stems suitable for repacking under pressure.  |                       |          |

PART 2 - PRODUCTS (Continued)

VALVE SCHEDULES

- 1 Refer to System Schedules in Execution portion of this Section for designation of valve types to be used for each piping system.
- 2 VALVE DESIGNATION CV-5
- 3 TYPE Globe
- 4 MAXIMUM WORKING
  - 4.1 Pressure - PSIG 125
  - 4.2 Temperature - °F Sat. Stm.
- 5 SIZE LIMITS - Inches 3 - 12
- 6 DESCRIPTION
  - 6.1 Body Iron ASTM A126
  - 6.2 Trim Bronze
  - 6.3 Disc/plug Renewable Composite
  - 6.4 Bonnet Bolted
  - 6.5 Stem OS&Y
  - 6.6 Seat Renewable Rings
  - 6.7 Agency Compliance MSS SP-85
- 7 APPROVED PRODUCTS
  - 7.1 Nibco F-718-B
  - 7.2 Crane 351
  - 7.3 Jenkins 613CJ
- 8 NOTES
  - 8.1 Provide manufacturer's standard stem packing for service intended.
  - 8.2 Valves with rising stems suitable for repacking under pressure.

PART 2 - PRODUCTS (Continued)

VALVE SCHEDULES

- 1 Refer to System Schedules in Execution portion of this Section for designation of valve types to be used for each piping system.
- 2 VALVE DESIGNATION CV-4.1 CV-5.1
- 3 TYPE Globe Globe
- 4 MAXIMUM WORKING
- 4.1 Pressure - PSIG 150 150
- 4.2 Temperature - °F 300 300
- 5 SIZE LIMITS - Inches 1/2 - 3 2 1/2 - 8
- 6 DESCRIPTION
- 6.1 Body Bronze Cast Steel
- 6.2 Trim Screwed Bronze Exelloy
- 6.3 Disc/plug Renewable Plug Renewable Plug
- 6.4 Bonnet Union Bolted
- 6.5 Stem Rising OS&Y
- 6.6 Seat Renewable Renewable
- 7 APPROVED PRODUCTS
- 7.1 Crane 14 - 1/2P 143XR (Flange)  
143 -1/2 XR (Weld)
- 7.2 Jenkins 546P 1040-CM  
2040-CM
- 7.3 O.I.C. 559 1542-N
- 8 NOTES
- 8.1 Provide manufacturer's standard stem packing for service intended.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install pipe, valves and fittings for each system as designated in the System Schedules on the following pages.
- B. Reference Products, Part 2 of this Section for specifications and manufacturers of pipes, valves and fittings designated to be installed in System Schedules.

PART 3 - EXECUTION (Continued)

SYSTEM PIPING SCHEDULE 3  
0 to 15 PSIG STEAM SUPPLY

- 1 Install pipe, valves and fittings as designated in this Schedule for this System.
- 2 NOMINAL SIZE RANGE
  - 2.1 Minimum Diameter 3/4" 2 1/2"
  - 2.2 Maximum Diameter 2" 12"
- 3 DESIGN
  - 3.1 Working Pressure PSIG 125 125
  - 3.2 Working Temperature °F 250 250
- 4 PIPING DESIGNATIONS
  - 4.1 Sch. 40 Bl. St. CP-2 CP-2
- 5 FITTING DESIGNATIONS
  - 5.1 Cast Iron Threaded CF-2 -
  - 5.2 125# Cast Iron Flanged - CF-4
  - 5.3 Sch. 40 Wrt. St. - CF-5
- 6 JOINT DESIGNATIONS
  - 6.1 Threaded CJ-1 -
  - 6.2 Butt Welded - CJ-5
  - 6.3 125# Flanged - CJ-44
- 7 VALVE DESIGNATIONS
  - 7.1 Gate CV-1 CV-2
  - 7.2 Globe CV-4 CV-4, 5
- 8 NOTES
  - 8.1 Use Schedule 30 black steel on all sizes over 12".
  - 8.2 See Division 23, "Heating Ventilating and Air Conditioning" for special valves.



PART 3 - EXECUTION (Continued)

SYSTEM PIPING SCHEDULE 5  
101 to 150 PSIG STEAM SUPPLY

- |     |   |        |             |
|-----|---|--------|-------------|
| 1   | Install pipe, valves and fittings as designated in this Schedule for this System. |        |             |
| 2   | NOMINAL SIZE RANGE  |        |             |
| 2.1 | Minimum Diameter  | 3/4"   | 2 1/2"      |
| 2.2 | Maximum Diameter  | 2"     | 20"         |
| 3   | DESIGN  |        |             |
| 3.1 | Working Pressure PSIG   | 150    | 150         |
| 3.2 | Working Temperature °F  | 350    | 350         |
| 4   | PIPING DESIGNATIONS   |        |             |
| 4.1 | Sch. 40 Bl. St.   | CP-2   | CP-2        |
| 5   | FITTING DESIGNATIONS  |        |             |
| 5.1 | 250# Cast Iron Screwed  | CF-2   | -           |
| 5.2 | 250# Cast Iron Flanged  | -      | CF-43       |
| 5.3 | Sch. 40 Wrt. St.  | -      | CF-5        |
| 6   | JOINT DESIGNATIONS  |        |             |
| 6.1 | Threaded  | CJ-1   | -           |
| 6.2 | Butt Welded   | -      | CJ-5        |
| 6.3 | 300# Flanged  | -      | CJ-43       |
| 7   | VALVE DESIGNATIONS  |        |             |
| 7.1 | Gate  | CV-1.4 | CV-3.1      |
| 7.2 | Globe   | CV-4.1 | CV-4.1, 5.1 |
| 8   | NOTES   |        |             |
| 8.1 | Use Schedule 40 unless otherwise noted.   |        |             |
| 8.2 | See Division 23, "Heating Ventilating and Air Conditioning" for special valves.   |        |             |
| 8.3 | Use Schedule 80 black steel pipe on 2" and smaller piping.                        |        |             |

PART 3 - EXECUTION (Continued)

SYSTEM PIPING SCHEDULE 8  
STEAM CONDENSATE, BLOWOFF AND RELIEF

- 1 Install pipe, valves and fittings as designated in this Schedule for this System.
- 2 NOMINAL SIZE RANGE
  - 2.1 Minimum Diameter 3/4" 2 1/2"
  - 2.2 Maximum Diameter 2" 12"
- 3 DESIGN
  - 3.1 Working Pressure PSIG 125 125
  - 3.2 Working Temperature °F 250 250
- 4 PIPING DESIGNATIONS
  - 4.1 Sch. 80 Bl. St. CP-2 CP-2
- 5 FITTING DESIGNATIONS
  - 5.1 125# Cast Iron CF-2 -
  - 5.2 Sch. 80 Wrt. St. - CF-5
- 6 JOINT DESIGNATIONS
  - 6.1 Threaded CJ-1 -
  - 6.2 Butt Weld - CJ-5
  - 6.3 150# Flanged - CJ-43
- 7 VALVE DESIGNATIONS
  - 7.1 Gate CV-1 CV-2
  - 7.2 Globe CV-4 CV-4, 5
- 8 NOTES
  - 8.1 See Division 23 "Heating Ventilating and Air Conditioning" for special valves.

PART 3 - EXECUTION (Continued)

SYSTEM PIPING SCHEDULE 9  
HIGH PRESSURE STEAM CONDENSATE,  
BLOWOFF AND RELIEF

- 1 Install pipe, valves and fittings as designated in this Schedule for this System.
- 2 NOMINAL SIZE RANGE
  - 2.1 Minimum Diameter 3/4"
  - 2.2 Maximum Diameter 2"
- 3 DESIGN
  - 3.1 Working Pressure PSIG 125
  - 3.2 Working Temperature °F 250
- 4 PIPING DESIGNATIONS
  - 4.1 Sch. 80 Bl. St. CP-2
- 5 FITTING DESIGNATIONS
  - 5.1 125# Cast Iron CF-2
- 6 JOINT DESIGNATIONS
  - 6.1 Threaded CJ-1
  - 6.2 Butt Weld -
  - 6.3 150# Flanged -
- 7 VALVE DESIGNATIONS
  - 7.1 Gate CV-1.4
- 8 NOTES
  - 8.1 See Division 23 "Heating Ventilating and Air Conditioning" for special valves.
  - 8.2 See Division 23 "Conduit Encased Pipe" for buried condensate pipe system.

### 3.2 PIPE SUPPORT

#### A. Pipe Support

1. Furnish and install supports, guides, anchors and swaybraces required for proper installation and support of pipe lines except supports noted to be furnished by others.
2. Pipe suspension shall prevent excessive stress and excessive variation in supporting force. Fabrication and installation of supports for pipe lines shall not constrain piping to cause excess transfer of load from supports to piping or from support to support when expansion or contraction occurs. Supports shall be capable of taking entire piping load imposed by expansion or contraction.
3. Where pipe vibration transmits objectionable vibration to building structure or attached equipment, hangers shall be supplemented by spring cushions or an energy absorbing means in the supports themselves, or through the addition of flexible piping connectors or other auxiliary equipment.
4. Piping system where flexibility is not desired shall be supported by rigid hangers.
5. See Section 20 00 10, "Attaching to Building Construction" for attaching pipe support to structure.

#### B. Pipe Carriers (Pipe Supported from Below on Racks, Piers, Stands or Trapeze Support)

1. For Hot Lines
  - a. See 23 22 13, Steam and Condensate Piping Systems.
2. For Cold Lines: all pipe sizes supported on steel pipe chair designed to contain pipe movement in direction perpendicular to pipe run but allow some movement in direction of pipe run.
3. All hangers used on lines requiring insulation and vapor barrier shall have hangers oversized to allow insulation to pass thru hanger. Install insulation cradles or wood blocks the same thickness as insulation so insulation will not be crushed. Insulation cradles or wood blocks shall be designed for this specific use.

#### C. For piping hanger rod attachment to building, see Section 20 00 10 "Attaching to Building Construction."

### 3.3 INSTALLATION OF PIPING

- A. Remove raised face from flanges that are to match cast iron flat face patterns.
- B. Coat studs, nuts, flange faces and metallic gaskets with material similar to molybdenum disulphide before assembly.
- C. Pipe sizes refer to nominal inside pipe diameter except on copper refrigeration lines and steel and wrought iron pipe 14" and larger.

- D. Bonney Weldolet Forge Branch Outlet Fittings may be used where steel with welding fittings are specified in lieu of branch outlet tees, provided branch tee is 2 sizes smaller than main. Nipples welded into mains not acceptable.
- E. Caulk clearance space in floor sleeves with plastic compound or fire stop material as required.
- F. Caulk exterior wall sleeves with thiokol.
- G. Use dielectric couplings when joining dissimilar piping materials.
- H. Refer to General Requirements for installation of sleeves, escutcheons, cutting and fitting and attaching to building construction.
- I. Refer to Insulation Section 20 01 80 for insulation data.
- J. Conceal all pipes where provisions have been made for this purpose.
- K. In case of conflict on Drawings as to pipe size, the larger pipe size shall be installed.
- L. Joints shall be approved type, gas and watertight for system pressure.
- M. All pipes shall be cut square, reamed, chamfered and free of all burrs and obstructions. Pipe ends shall have full-bore openings and not be undercut.
- N. All pipes to equipment and isolation valves shall be full pipe size as shown on Drawings regardless of equipment connection size. Use reducers at equipment to reduce to equipment size.
- O. Condensate piping shall be installed with slope of not less than 1/8" per foot.

#### 3.4 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and Division 23 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 C 32.
- E. 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.
- F. Welded Joints: Construct joints according to AWS D10.12, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.
- G. Flanged Joints: Select appropriate gasket material, size, type and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

### 3.5 PIPING CONNECTIONS

- A. Make connections according to the following, unless otherwise indicated:
1. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment.
  2. Install flanges, in piping NPS 2-1/2 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.
  5. "Pulled Tee's" in copper piping are not allowed.

END OF SECTION 20 00 60

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## SECTION 20 01 80 – COMMON INSULATION FOR HVAC

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This section includes field applied insulation and jacket materials for all systems. These systems include:
  - 1. System Insulation Schedule 1:
    - Low and High Pressure Steam Pipe
    - Steam Condensate Pipe
- B. Any equipment that is to be factory insulated is specified with respective equipment.
- C. Any piece of equipment, pipe, or duct, installed in this contract, which is typically insulated to prevent condensation, shall be insulated unless specifically noted otherwise.
- D. Related sections include all applicable Mechanical Sections.

#### 1.3 SUBMITTALS

- A. Submit product data for insulation, jacket materials and fittings used in each system as required in Section 20 00 10, "Shop Drawings".
- B. Product data shall include thermal conductivity, thickness, jacket material, insulation material, sealing compounds, flame-spread and smoke-developed ratings for each type of product to be used.
- C. Submit test reports of independent testing agency showing conformance with flame-spread and smoke-developed ratings.

#### 1.4 QUALITY ASSURANCE

- A. Insulation Contractor shall have completed a minimum of two (2) projects of similar scope. Upon request, the Insulation Contractor shall provide a list of similar projects and references to the Engineer. The engineer may wish to inspect work previously installed by the Insulation Contractor.
- B. Insulation Installed Indoors: Flame-spread rating of 25 or less, and smoke-developed rating of 50 or less.



1.5 DELIVERY, STORAGE, AND HANDLING

- A. All insulation to be shipped to site in unopened containers as packaged by Insulation Manufacturers.
- B. All containers shall state contents within.
- C. Store in clean dry area properly protected from weather and physical damage.
- D. Open only containers required to be opened as construction progresses.

1.6 COORDINATION

- A. Coordinate size and location of supports, hangers and insulation shields.
- B. Coordinate hanger sizes and piping penetrations for pipes requiring insulation, wood blocking and saddles with piping installer.

1.7 SCHEDULING

- A. Schedule insulation application after pipe testing and heat trace has been installed.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

- A. Refer to Insulation Material Schedules in Execution portion of this Section for Insulation types to be used for each system. When more than one is shown, contractor may choose which type is to be installed.
- B. Fiberglass Insulation
  - 1. Glass fiber bonded with a thermosetting resin with thermal conductivity of .25 or less @ 75°F. 3-pound per cubic foot density. Designed for use to 850°F.
    - a. Preformed Pipe Insulation with Jacket: ASTM C547, Type 1, Class 1 with factory applied all-purpose, vapor-retarder jacket, 0.02 perm max water vapor permeance.
    - b. Blanket Insulation: ASTM C 553, Type II, without facing and with all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.
  - 2. Fire-Resistant Adhesive: Comply with MIL-A-3316C in the following classes and grades:
    - a. Class 1, Grade A for bonding glass cloth and tape to un-faced glass-fiber insulation, for sealing edges of glass-fiber insulation, and for bonding lagging cloth to un-faced glass-fiber insulation.
    - b. Class 2, Grade A for bonding glass-fiber insulation to metal surfaces.

3. Vapor-Retarder Mastics: Fire- and water-resistant, vapor-retarder mastic for indoor applications. Comply with MIL-C-19565C, Type II.
4. Mineral-Fiber Insulating Cements: Comply with ASTM C 195.
5. Expanded or Exfoliated Vermiculite Insulating Cements: Comply with ASTM C 196.
6. Mineral-Fiber, hydraulic-setting insulating and finishing cement: Comply with ASTM C 449/C 449M.
7. Manufacturers:
  - a. CertainTeed Manson
  - b. Knauf Insulation.
  - c. Owens-Corning Fiberglas Corp.
  - d. Schuller International, Inc.
  - e. Johns Manville

## 2.2 ADHESIVES

- A. Adhesives or mastics used in the application or manufacture of insulating materials shall be fire retardant with UL flame rating not exceeding 25 and smoke developed rating not exceeding 50 (on dry film) when tested in accordance with ASTM E 84. All adhesives specifically designed for respective application as noted by insulation manufacturer.

## 2.3 JACKETS

### A. PVC Jacket

1. High-impact
  - a. Fittings – Gloss White, preformed, 30 Mill, PVC jacket designed for use with and provided by same manufacturer of insulation. Fiberglass insert wrapped around fitting and covered by PVC preformed jacket piping insulation system.
  - b. Sheet – Gloss White, preformed, pre-cut and curled 20 mil PVC jacket designed for use with and provided by same manufacturer of piping insulation system. Ultraviolet-resistant suitable for outdoor service and temperature range 0 – 150°F. Jacket to be completely sealed with solvent weld for vapor proof barrier where noted in schedule.

### B. Foil and Paper Jacket

1. Laminated, glass-fiber-reinforced, flame-retardant kraft paper and aluminum foil. Maximum of .02 perms moisture vapor transmission, ASTM C 921, Type I, Max 25/50 flame smoke rating.

### C. Aluminum Jacket

1. Aluminum roll stock .020" thick, ready for shop or field cutting and forming. ASTM B209, 3003 alloy, H-14 temper.
2. Aluminum Fittings - Preformed - same thickness and finish as jacket.
3. Jacket Bands - Aluminum 3/4" wide.

D. Stainless Steel Jacket

1. Stainless steel roll stock .020" thick, ready for shop or field cutting and forming. ASTM A66, Type 304 or 316.
2. Stainless steel fittings - Gore Type, same thickness and finish as jacket.
3. Jacket Bands - Stainless steel, Type 304, 3/4" wide.

2.4 ACCESSORIES AND ATTACHMENTS

A. Glass Cloth and Tape

1. Comply with MIL-C-20079H, Type I for cloth and Type II for tape. Woven glass-fiber fabrics, plain weave, pre-sized a minimum of 8 oz./sq. yd. (270 g/sq. m). Tape Width: 4 inches (100 mm).

B. Bands

1. 3/4 inch (19 mm) wide, in one of the following materials compatible with jacket:
  - a. Stainless Steel: ASTM A 666, Type 304; 0.020 inch (0.5 mm) thick.
  - b. Aluminum: 0.007 inch (0.18 mm) thick.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install Insulation for each system as designated in the Insulation Material Schedules on the following pages.
- B. Reference Products, Part 2 of this Section for specifications and manufacturers of insulation materials designated to be installed in Insulation Material Schedules.

3.0 EXECUTION (Continued)

SYSTEM INSULATION SCHEDULE 1:  
LOW PRESSURE STEAM PIPE  
HIGH PRESSURE STEAM PIPE  
STEAM CONDENSATE PIPE

- 1 Install insulation materials as designated in this schedule for system(s) listed.
- 2 LOCATION INSIDE
- 3 INSULATION
  - 3.1 Pipe Fiberglass-Preformed with Jacket
  - 3.2 Fitting Fiberglass Blanket
- 4 INSULATION THICKNESS
  - 4.1 Pipe Size  $\leq 2"$  2 ½ ", 3"  $\geq 4"$
  - 4.2 Insulation Thickness 1 ½" 1 ½" 2 ½"
- 5 JACKETS
  - 5.1 Pipe Integral to Insulation
  - 5.2 Fittings Preformed PVC (See Note 6.3)
  - 5.3 Vapor-Retardant No
- 6 NOTES
  - 6.1 Where pipe insulation is to be painted, install glass cloth jacket. Prior to finish paint, paint with one coat of fire retardant, washable, white liquid plastic coating. Confirm compatibility with finish paint prior to painting.
  - 6.2 Steam Valves, expansion joints, PRV's and similar devices which require service shall have removable, reusable insulation covers, fabricated with core insulation that are manufactured from fabrics, suitable for high steam temperatures, fiberglass blanket rated to 1000°F, securement systems consisting of Velcro flap at parting seam, circumferential belts, and rope draw cords at terminal ends. Removable covers as manufactured by Megawrap, Evansville IN, or equal.

### 3.2 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation and other conditions affecting performance of insulation application.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.3 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

### 3.4 GENERAL APPLICATION REQUIREMENTS

- A. All insulation that is to be painted shall be covered with glass cloth jacket unless noted otherwise.
- B. Apply insulation only after pipes, ducts and equipment have been tested and cleaned.
- C. Apply insulation materials, accessories, and finishes according to the manufacturer's written instructions; with smooth, straight, and even surfaces; and free of voids throughout the entire length.
- D. Refer to schedules at the beginning of this Section for insulation materials and thickness, jackets, and fittings required for each system. Unless otherwise indicated, insulation shall be the same type throughout the same service.
- E. Use accessories compatible with insulation materials and suitable for the service. Use accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- F. Where insulation is applied on ducts, pipes and equipment which are against columns, walls or other equipment without adequate space for insulation, finish off insulation in workmanlike manner to meet approval of Engineer.
- G. Apply multiple layers of insulation with longitudinal and end seams staggered.
- H. Seal joints, seams and ends of insulation with vapor-retardant mastic on insulation with a compound recommended by the insulation material manufacturer on systems indicated to receive a vapor retardant.
- I. Keep insulation materials dry during application and finishing.
- J. Insulation shall be applied by craftsmen who are qualified to install insulation.
- K. Apply insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by the insulation material manufacturer.

- L. Apply insulation with the least number of joints practical.
- M. Apply insulation over fittings and specialties, with continuous thermal and vapor-retardant integrity, on systems noted to have vapor-retardant jacket.
- N. Provide removable sections of insulation or insulation boxes at all points where access is required for servicing of equipment on systems not requiring vapor-retardant jacket.
- O. Aluminum jackets shall be installed in high traffic areas subject to damage.
- P. On systems not requiring vapor-retardant, neatly bevel insulation at all flanges, access cover plates, etc. so that bolts may be removed without disturbing insulation.
- Q. All hangers used on lines requiring insulation and vapor barrier shall have hangers oversized and insulation cradles to allow insulation to pass thru hanger.
- R. Cut insulation according to manufacturer's written instructions to prevent compressing insulation to less than 75 percent of its nominal thickness.
- S. Whenever Insulation Jacket is noted as Vapor Retardant: Overlap insulation facing at seams a minimum of one inch and secure with pressure-sensitive tape or adhesive as recommended by Manufacturer.
- T. Seal penetrations with vapor-retardant mastic.
- U. Apply insulation for exterior applications tightly joined to interior insulation ends.
- V. Seal insulation to roof flashing with vapor-retardant mastic.
- W. Interior Wall and Partition Penetrations: Apply insulation continuously through walls and partitions.
- X. Insulation Terminations: For insulation application where vapor retardants are indicated, taper insulation ends. Seal tapered ends with a compound recommended by the insulation material manufacturer to maintain vapor retardant.
- Y. Apply adhesives and mastics at the manufacturer's recommended coverage rate.
- Z. Do not weld brackets, clips, or other attachment devices to item being insulated unless specifically noted to do so.

### 3.5 PIPING APPLICATION REQUIREMENTS

- A. Apply insulation with integral jackets as follows:
  - 1. Pull jacket tight and smooth.
  - 2. Circumferential Joints: Cover with 3-inch- (75-mm-) wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip and spaced 4 inches (100mm) o.c.

3. Longitudinal Seams: Overlap jacket seams at least 1-1/2 inches (40 mm). Apply insulation with longitudinal seams at bottom pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 4 inches (100 mm) o.c.
    - a. Exception: Do not staple longitudinal laps on insulation having a vapor retardant.
  4. Vapor-Retardant Mastics: Where vapor retardants are indicated, apply mastic on seams and joints and at ends adjacent to flanges, unions, valves, and fittings.
  5. At penetrations in jackets for thermometers and pressure gages, fill and seal voids with vapor-retardant mastic.
- B. Apply insulation to fittings and elbows as follows:
1. Apply pre-molded insulation sections of the same material as straight segments of pipe insulation where scheduled. Secure according to manufacturer's written instructions.
  2. Apply mitered sections of pipe insulation, or glass-fiber blanket insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire, tape, or bands.
  3. Apply jacket material overlapping seams at least 1 inch (25 mm) at each end. Secure with manufacturer's recommended adhesive, attachments and accessories. Seal seams with tape. Use vapor-retardant mastic on insulation indicated to receive vapor-retardant.
- C. Apply insulation to valves and specialties as follows:
1. Apply pre-molded insulation sections of the same material as straight segments of pipe insulation when available. Secure according to manufacturer's written instructions.
  2. When pre-molded insulation sections are not available, apply glass-fiber blanket insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation. For strainers, arrange insulation for access to strainer basket without disturbing insulation.
  3. Use preformed standard PVC fitting covers for valve sizes where available. Secure fitting covers with manufacturer's attachments and accessories. Seal seams with tape. Also, seal seams with vapor-retardant mastic on insulation indicated to receive vapor-retardant.
  4. On piping 3" and smaller, not requiring vapor-retardant, fittings may be insulated with insulating cement equal in thickness to adjoining pipe insulation and troweled to smooth even finish. Do not insulate heating water pipe valves or unions.
  5. For larger sizes where PVC fitting covers are not available, seal insulation with canvas jacket and sealing compound recommended by the insulation material manufacturer.
- D. Exterior Wall Penetrations: For penetrations of below-grade exterior walls, terminate insulation flush with mechanical sleeve seal. Seal terminations with vapor-retardant mastic.
- E. Hangers and Anchors: All hangers used on lines requiring insulation shall have hangers oversized and insulation support shield to allow insulation to pass continuously thru hanger.
1. Install insert materials on all piping 1 1/2" and larger. Apply insulation to tightly joint the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by the insulation material manufacturer.

2. Fabricate inserts of heavy density insulating material suitable for temperature. Insulation inserts shall not be less than the following lengths:

1 1/2" to 2 1/2" pipe size	10" long
3" to 6" pipe size	12" long
8" to 10" pipe size	16" long
12" and over	22" long

3. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect the jacket from tear or puncture by the hanger, support, and shield.

F. Apply insulation to flanges as follows:

1. Apply preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation segment the same as overall width of the flange and bolts, plus twice the thickness of the pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Apply jacket material with manufacturer's recommended adhesive, overlapping seams at least 2 inch (50 mm), and seal joints with vapor-retardant mastic.

END OF SECTION 20 01 80



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## SECTION 23 22 13 – STEAM AND CONDENSATE PIPING SYSTEMS

### PART 1 – GENERAL

#### 1.1 SUMMARY

- A. This section includes piping, specialties and installation guidelines for the following systems:
  - 1. High Pressure Steam
  - 2. Low and High Pressure Steam Condensate Return
- B. Steam specialties in this section include the following:
  - 1. Pipe Spider Guides
  - 2. Pipe Roller Stands

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Components and installation shall be in compliance with section 20 00 60, Pipe, Valves, Fittings and Hangers for Fire Suppression, Plumbing and HVAC.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of the following:
  - 1. Expansion Joints
- B. Field quality-control test reports.
- C. Operation and maintenance data.

#### 1.4 QUALITY ASSURANCE

- A. ASME Compliance: Comply with ASME B31.1, "Power Piping" and ASME B31.9, "Building Services Piping" for materials, products, and installation. Safety valves and pressure vessels shall bear the appropriate ASME label.

### PART 2 - PRODUCTS

#### 2.1 SPIDER GUIDES

- A. Guides to be designed for steam service to be used for steel pipe alignment guide.
- B. Alignment guides to maintain pipe centerline axis to expansion joints and throughout the intermediate portion of the pipe run and prevent bowing and resist buckling.
- C. Must follow the "Standards of the Expansion Joint Manufacturers Association, Inc." Constructed of heavy gauge pressed steel with precision drilled bolting.

- D. Guides to be hot dipped galvanized.
- E. Hyspan series 9500.

## 2.2 PIPE ROLLER STANDS

- A. Standards: Complies with Federal Specification A-A-1192A (Type 46), WW-H-171-E (Type 47), ANSI/MSS SP-69 and MSS SP-58 (Type 46).
- B. Material: Cast iron base plate and stand roll with steel adjusting screws.
- C. Finish: Plain
- D. Maximum Temperature: 400°F
- E. Manufacturer:
  - 1. Anvil 274

## PART 3 - EXECUTION

### 3.1 VALVE APPLICATIONS

- A. Install shutoff duty valves at branch connections to steam supply mains, at steam supply connections to equipment, and at the outlet of steam traps.
- B. Install safety valves on pressure-reducing stations and elsewhere as required by ASME Boiler and Pressure Vessel Code. Install safety-valve discharge piping, without valves, to a point outside building as indicated on Drawings. Install drip pan elbow on discharge of safety valves and pipe drip pan to floor drain. Comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1, for installation requirements.

### 3.2 PIPING INSTALLATION

- A. Install piping of type as indicated in Section 20 00 60.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Use indicated piping locations and arrangements if such were used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- C. Install piping free of sags and bends.
- D. Install piping to allow application of insulation.
- E. Select system components with pressure rating equal to or greater than system operating pressure.

- F. Install steam supply piping at a minimum uniform grade of 0.2 percent downward in direction of steam flow.
- G. Install condensate return piping at a minimum uniform grade of 0.4 percent downward in direction of condensate flow.
- H. Reduce pipe sizes using eccentric reducer fitting installed with level side down.
- I. Install valves according to Section 20 00 60. Note: No ball valves or quick opening valves allowed on steam systems unless specifically shown.
- J. Install unions in piping, NPS 2 and smaller, adjacent to valves, at final connections of equipment, and elsewhere as indicated.
- K. Install flanges in piping, NPS 2-1/2 and larger, at final connections of equipment and elsewhere as indicated.
- L. Install expansion loops, expansion joints, anchors, and pipe alignment guides shown on drawings and as specified.
- M. Install drip legs at low points and natural drainage points such as ends of mains, bottoms of risers, and ahead of pressure regulators, and control valves.
  - 1. On straight runs with no natural drainage points, install drip legs at intervals not exceeding 300 feet.
  - 2. Size drip legs same size as main. In steam mains NPS 6 and larger, drip leg size can be reduced, but to no less than NPS 4.

### 3.3 HANGERS AND SUPPORTS

- A. See Section 20 00 60 for hanger installations.
- B. See Section 20 00 10 for hanging attachment to building construction.

END OF SECTION 23 22 13

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## SECTION 26 05 00 – COMMON WORK RESULTS FOR ELECTRICAL

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General, Supplementary, and Special Conditions apply to all electrical work.

#### 1.02 DESCRIPTION OF WORK

- A. Section 260500 applies to all electrical materials, equipment, installations and services supplied under any portion of the work.
- B. All work must meet or exceed all Local, State and Federal Codes and ADA Guidelines.
- C. All Electrical Contractor or Electrical Sub-contractor work shall be performed by a licensed and bonded Electrical Contractor with at least five (5) years of successful installation experience on projects with electrical work similar to this project.
- D. The Electrical Contractor or Electrical Sub-contractor shall coordinate the Basic Requirements as applicable to any equipment, installations and services of an electrical nature.
- E. It is the intention of this Division of the Specifications and the accompanying drawings to describe and provide for the furnishing, installing, testing and placing in satisfactory and successful operation all equipment, materials, devices and necessary appurtenances to provide a complete electrical system.
- F. The Contract drawings indicate the extent and the general location and arrangement of equipment, conduit and wiring. The General Contractor and their Electrical Sub-contractor shall study the plans and details and shall coordinate with all other trades to prevent conflict and interference with other installations.
- G. The Electrical Contractor or the Electrical Sub-contractor is responsible for installation of a complete and operating electrical system in accordance with the intent of the Drawings and Specifications.
- H. Any minor changes in location of equipment and conduits from those shown on the plans shall be made without extra charge if so directed by the Owner prior to installation.
- I. All equipment shall be installed such that maintenance and service may be properly accomplished. If necessary, the Owner may at their option require the contractor to demonstrate the service on any piece of equipment to determine sufficient service space exists. If service space is not adequate, the equipment shall be relocated at no additional cost to the Owner so that sufficient service space is achieved.

#### 1.03 PERMITS AND FEES

- A. This work shall include the procurement of and payment for all permits and fees for the performance of the electrical work.

#### 1.04 SUBMITTALS

- A. The following items that shall be submitted for approval prior to ordering. Submit individually by the appropriate Specification Section number.
  - 1. Raceway (unless special raceway is specified a letter on Company letterhead stating the products to be used are in conformance with the Specifications is acceptable as a Submittal. Check with Engineer/Owner)
  - 2. Wire (unless special wire is specified a letter on Company letterhead stating the products to be used are in conformance with the Specifications is acceptable as a Submittal. Check with Engineer/Owner)
  - 3. Wiring Devices and Covers
  - 4. Lighting Fixtures
  - 5. Disconnect Switches
  - 6. Motor Starters
  - 7. Panelboards and Switchboards
  - 8. Fire Alarm
  - 9. Others as required by the related Division 26 Section.
- B. Submission of the above information shall be electronically in ISU approved PDF Format.

#### 1.05 PROJECT CLOSEOUT

- A. On Electrical Prime Projects one set of all Project documents shall be submitted electronically in PDF Format on a USB Flash Drive. The following is a list, but not limited to, of required documentation to be included on the USB flash drive:
  - 1. Bid Form
  - 2. Award Letter and Contract for Construction
  - 3. Meeting minutes and supporting documentation.
  - 4. Reviewed submittals and reviewed shop drawings
  - 5. All Change documentation, e.g. ASI, RFI, CCD, RFP, CP, CO, etc.
  - 6. Pay Applications
  - 7. Installation instructions and schematic drawings
    - a. Complete parts list with manufacturer's model numbers.
    - b. Complete wiring diagrams showing all connections and internal wiring. Factory typical wiring diagrams are not acceptable.
  - 8. Operating and maintenance instructions.
  - 9. Warranty and guarantee information
  - 10. Substantial Completion documents to determine start of Warranty Period

- B. When individual Specification Sections call for close-out submission they may be combined on a master Project close-out USB flash drive with itemized files and sub-files for each Section.
- C. Additionally, submit one hard copy of the O&M's in a 3-ring binder and unfolded Record Drawings.
- D. Prior to release of final payment, Indiana State University must receive a complete set of record drawings in AutoCAD 2010 on a CD or DVD. The Design Engineer and the Indiana State University Department of Facilities Management engineering staff must approve these drawings.

#### 1.06 COPPER REQUIREMENTS FOR ELECTRICAL EQUIPMENT

- A. All current-carrying components (phase, neutral and ground) of all electrical equipment shall be copper. No CUAL allowed without prior approval of Owner.
- B. Exceptions: molded case circuit breakers with in-built lugs and safety switches.

#### 1.07 UNDERGROUND UTILITIES

- A. All underground utility lines shall be buried a minimum of 36" below finished grade.
- B. Place 3" of compacted red sand below all buried utility lines and cover with 12" of red sand.
- C. Remainder of the trench shall be back filled with new topsoil free of debris, compacted in 6" lifts to 98% standard proctor using the water jet method.
- D. Install the appropriate 6" wide marker tape a minimum of 12" above any buried utility line.

#### 1.08 NEUTRAL RULES

- A. Neutral rules and requirements for multi-circuit branch raceway installations.
  - 1. A separate dedicated neutral shall be installed for every phase conductor in a multi-circuit 120-volt or 277-volt raceway.
  - 2. Neutrals shall be marked in such a way as to prevent the accidental crossing of neutrals at device locations.
  - 3. Neutrals in 120-volt applications shall be white, gray in 277-volt applications.
  - 4. This includes pre-wired raceway systems such as ISODUCT and systems furniture.
  - 5. No sharing of neutrals is allowed.
- B. Over sizing of neutral conductors shall not be allowed in lieu of the preceding rules and requirements.
- C. THESE RULES SUPERCEDE ANY OTHER NEUTRAL INSTRUCTIONS EITHER WRITTEN OR IMPLIED IN ANY OTHER SPECIFICATION SECTION OR SHOWN ON DRAWINGS.

#### 1.09 RACEWAY SYSTEMS INSTALLATION SUMMARY

- A. Provide conduits, cable trays, surface raceways, boxes, fittings and supports to form a complete, coordinated, and continuously grounded raceway system.
- B. No more than three (3) single phase (120volt and 277volt) circuits shall be installed in a conduit raceway system.



#### 1.10 RACEWAY REQUIREMENTS

- A. Conduits indoors in general areas shall be electrical metallic tubing (EMT) with steel set screw or compression fittings.
- B. Conduits indoors in hazardous areas, encased in concrete floorslabs or subjected to water, physical damage or abuse shall be galvanized rigid steel (GRS) or intermediate metal conduit (IMC) with cast or malleable iron threaded fittings and bushings.
- C. Conduits indoors for medium voltage distribution circuits or for fire pump feeders shall be galvanized rigid steel conduit with cast or malleable iron threaded fittings and bushings.
- D. Conduits outdoors shall be galvanized rigid steel or intermediate metal conduit with cast or malleable iron threaded fittings and bushings.
- E. Conduits encased in concrete underground shall be Type DB PVC for IT applications and Schedule 80 for MV applications both with matching fittings.
- F. Conduits direct buried underground shall be Schedule 40 PVC with matching fittings.
- G. Conduits in steam tunnels shall be galvanized rigid steel or intermediate metal conduit with cast or malleable iron threaded fittings and bushings. Exceptions to this requirement are tunnel segments inside building (i.e., mechanical rooms) where EMT may be used.
- H. Final connections to recessed lighting fixtures and under counter lights shall be 1/2" minimum flexible metallic conduit, manufactured wiring systems, or galvanized steel Type MC Cable all with steel fittings.
  - 1. Manufactured wiring systems shall
    - a. Only be used above accessible ceilings.
    - b. Shall not be used in walls or above permanent ceilings.
    - c. Shall contain a dedicated, separate, grounding conductor.
  - 2. Type MC cable conductors shall be color coded to match the building color-coding scheme. Type MC Cable shall be terminated with steel setscrew connectors that have integral insulating bushings. Self-locking, twist-in type fittings are not acceptable.
- I. Final connections to motors, transformers and equipment subject to vibration or removal for maintenance shall be 1/2" minimum liquid tight flexible metallic conduit with steel liquid tight fittings. Transformer connections may be non-liquid tight flexible metallic conduit in electrical rooms only.
- J. Connections to recessed power receptacles and light switches in areas with accessible ceilings:
  - 1. In new 'metal stud and gypsum board partitions (walls)' and in existing 'metal stud and gypsum board partitions (walls)', where the wall is not being otherwise opened up, the final connections may be made with type MC Cable. This MC Cable, shall:
    - a. Be run to a box immediately above the accessible ceiling, and the box size shall not exceed 4-11/16" square.
    - b. Conduit shall be used for the entire run, from this junction box, to the power source, load (lights), etc.
    - c. No more than three circuits may be run through any given junction box.

- d. Individual conductors making up the MC cable shall be stranded copper, with separate grounding conductor, and steel corrugated armor. Individual conductors shall be color coded as required in section 16120.
  - e. The MC Cable is terminated using UL listed hardware intended for the cable and boxes being used, (and rated for commercial and industrial environments).
  - f. The MC Cable shall be secured in the wall cavity as required by NEC.
  - g. The MC Cable shall be as short as it is necessary to serve the need and meet the Code
- K. In areas with non-accessible ceilings devices shall be installed with standard conduit; run back in a continuous installation to a junction box located at an access point in the ceiling
- L. Connections to other recessed devices, (including communication outlet boxes, junction or pull boxes, etc) shall be with standard conduit of the type appropriate for the wall construction.

#### 1.11 CABLE TRAY REQUIREMENTS

- A. Power and telecommunications cable trays shall be aluminum, ladder type, of the sizes shown on the drawings.
- B. Center spline telecommunications cable tray may only be used where shown.
- C. Changes in cable tray direction or elevation shall be made using standard fittings from the same manufacturer as the cable tray.
- D. Barriers shall be installed in cable trays where shown to separate circuits of different voltage levels.

#### 1.12 SURFACE RACEWAY REQUIREMENTS

- A. When conduits in finished areas cannot be concealed in walls or above ceilings, surface raceways may be used where permitted. Boxes and fittings shall match and be from the same manufacturer as the raceways.
- B. Raceway shall be metal and white in color unless otherwise noted on the drawings.
- C. Contractor shall verify with the Owner if the use of metal surface raceway is acceptable.

#### 1.13 BOX REQUIREMENTS

- A. Provide sheet steel outlet boxes, extensions, and plaster rings for EMT, flexible metal conduit, and MC cable.
- B. Provide cast or malleable iron outlet boxes and covers for galvanized rigid steel conduits, intermediate metal conduits, and liquidtight flexible metal conduits.
- C. Boxes shall be sized for all conductors and devices to be contained within. Box extensions shall not be used to correct for undersized boxes. A single extension may be used as follows only if all free conductors extend at least 3 inches outside of the extension opening.
  - 1. On boxes being flush mounted in masonry walls.
  - 2. On existing boxes in walls that are being furred out.
  - 3. On existing boxes for connecting to an existing circuit.

4. On fire alarm, security and clock system boxes where required by the system manufacturer's instructions.
- D. Plaster rings shall not be considered box extensions, but their capacities may be included in box fill calculations.

#### 1.14 SUPPORT REQUIREMENTS

##### A. Mechanical Areas and Tunnels

1. Surface mounted equipment shall be secured to steel channels.
2. Surface mounted raceway 1½" and smaller and boxes maybe attached directly to surfaces.
3. Multiple raceway runs maybe attached to
  - a. A trapeze system with approved straps
  - b. Trapeze shall be attached to the structure by steel channels and threaded rod.
4. Vertical surface race way 1½" maybe attached by:
  - a. Below 8' by one or two hole straps
  - b. 8" and above with pipe hangers ("Minerallac style hangers")
5. The channels and raceway shall be attached with toggle bolts to hollow tile, block or similar surfaces, and attached with screws or bolts and expansion shields to solid masonry or concrete.

##### B. Finished Areas Above Suspended Ceilings

1. Raceway and boxes maybe attached directly to surfaces with appropriate straps or hangers.
2. Multiple raceway runs maybe attached to
  - a. A trapeze system with approved straps
  - b. Trapeze shall be attached to the structure by steel channels and threaded rod.
3. The channels and raceway shall be attached with toggle bolts to hollow tile, block or similar surfaces, and attached with screws or bolts and expansion shields to solid masonry or concrete.
4. Attachment of raceway to ceiling grid support wires or rods is not permitted.

##### C. Finished Areas Inside Walls

1. Raceway and boxes shall be attached to structural members with devices specifically designed for raceway/box attachment to the type of structural member used.

##### D. Finished Areas Exposed

1. Surface raceway shall be attached to finished surfaces utilizing the factory approved method of attachment.
2. Tape is not acceptable for attachment of non-metallic surface raceway.

## PART 2 - PRODUCTS

### 2.01 CONDUITS

- A. Electrical metallic tubing shall be thin wall steel tubing, electro-galvanized or hot dipped galvanized inside and outside. Fittings and bushings shall be galvanized steel set screw type with two screws per connection for sizes over 2".
- B. Galvanized rigid steel conduit and intermediate metal conduit shall be hot dipped galvanized inside and outside, in 10' lengths and threaded on both ends. Fittings and bushings shall be cast or malleable iron, and hot dipped galvanized inside and outside.
- C. PVC conduit and fittings shall be Type DB for encasement in concrete for IT applications, Schedule 40 for direct burial, concealed and exposed work, and Schedule 80 in MV Duct Banks. Fittings shall be of the same type and from the same manufacturer as the conduit. PVC conduit shall be UL Labeled for 90 degrees C cables. Approved Manufacturers:
  - 1. Cantex
  - 2. Carlon
  - 3. National Pipe & Plastic.
- D. Flexible metallic conduit shall be galvanized steel or aluminum. Fittings shall be of steel with cadmium or galvanized finish. Fittings shall be machine screw clamp type, single or two-piece. Self-locking, twist-in type fittings are not acceptable.
- E. Liquid tight flexible metallic conduit shall consist of a flexible, galvanized steel core, a continuous copper ground strip and a polyvinyl chloride jacket. Fittings shall be steel liquid tight grounding type from the same manufacturer as the conduit.

## 2.02 CABLE TRAYS

- A. Ladder type cable tray shall be aluminum, of the width shown, with 4" rail height, 13/16" minimum rung width, and 9" maximum rung spacing. The tray with a 10' span shall be capable of sustaining a working load of 145 pounds per lineal foot with a load deflection of 1.0" when tested in accordance with NEMA VE1-3.01. Approved Manufactures:
  - 1. B-Line
  - 2. Chalfant
  - 3. Cope
  - 4. Globetrays
  - 5. Husky
  - 6. Mono-Systems
  - 7. Square D
  - 8. Wiremold.
- B. Center spline cable tray shall be aluminum, of the width shown, with top mounted rungs, 3" load depth, 13/16" minimum rung width, and 9" maximum rung spacing. The tray with a 10' span shall be capable of sustaining a working load of 145 pounds per lineal foot with a load deflection of 1.0" when tested in accordance with NEMA VE1-3.01.
- C. Tray fittings including horizontal and vertical bends, tees, crosses, reducers, splice plates and expansion joints shall be from the same manufacturer and of the same product line as the tray. Bends, tees, crosses and reducers shall have a 13/16" minimum rung width, a 9" maximum rung spacing, and a 12" minimum bend radius.

- D. Tray fasteners shall be galvanized or zinc plated steel.

## 2.03 SURFACE RACEWAYS

- A. Where surface raceways are called for on the drawings, or when conduits in finished areas cannot be concealed in walls or above ceilings, surface raceways shall be used. Boxes and fittings shall match and be from the same manufacturer as the surface raceway.
- B. Surface raceways shall consist of a base and cover, sized for the number of conductors contained within, complete with all connectors, fittings, bushings, boxes, covers and mounting hardware.
- C. Raceways shall be 600 volt rated, and be in compliance with the applicable paragraphs of NEC Article 352.
- D. They shall be non-flammable, and UL labeled, under UL 5, or UL 5A (as applicable).
- E. The completed raceway system shall be vandal resistant.
- F. Shall accept receptacles, cover plates, telephone/data outlets and other standard wiring devices as specified elsewhere in these specifications.
- G. The coverplates used for wiring devices and telecommunication outlets shall be of the 'overlapping' type, and shall therefore cover the 'cut-end' of the raceway cover.
- H. The raceways shall have "scuff" resistant finish, and the raceways shall be paintable.
- I. All components of the raceway system exposed to view shall be of the same color and shade.
- J. Barriers shall be provided when necessary to separate conductors of different voltages, or services.
- K. Surface raceways shall be steel or plastic as noted below, and as noted on the drawings:
- L. Type Standards Manufacturers
  - 1. Metallic
    - a. Metallic raceways shall be of .040" thick (minimum) zinc plated or galvanized steel.
    - b. The acceptable levels of quality are, generically,
      - 1) Like "Wiremold V500 and V700" for smaller single channel raceway applications,
      - 2) Like "Wiremold V3000" for larger single channel raceway applications, and
      - 3) Like "Wiremold V4000" for larger multi-channel raceway applications.
    - c. Manufacturers include Wiremold, Hubbell, Thomas and Betts, or Mono-System.
  - 2. Plastic
    - a. Plastic raceways shall be of a material meeting all of the requirements of UL 5A, (including flammability, resistively structural strength, etc.).
    - b. The acceptable levels of quality are, generically,
      - 1) Panduit LD series, or Carlon Series 30 for smaller single channel raceway applications;
      - 2) Panduit Type T-70, or Carlon "Premiere", for larger single channel raceways, and smaller multi-channel raceways; and

- 3) Panduit Twin 70 or Carlon "Prestige", for larger multi-channel raceway applications.
- c. Manufacturers include Panduit, Carlon, Hubbell, Mono Systems, and Wiremold.
- M. Use vertical surface raceways from junction boxes above the ceiling, to the horizontal portion of the surface raceway. Locate vertical section as close to room corners (or 'vertical breaks' in mid wall) as is possible. Use of exposed vertical conduits is not acceptable.

#### 2.04 BOXES

- A. Boxes for fixtures, outlets, switches, equipment connections and wire pulling shall be
  - 1. Cast or formed from carbon steel sheets of commercial grade steel not less than 14-gauge,
  - 2. One-piece construction, zinc, or cadmium plated,
  - 3. Tapped for mounting plates and covers as required.
- B. Pull and junction boxes shall be
  - 1. Fabricated from galvanized or painted code gauge cold rolled carbon steel sheets.
  - 2. Welded construction with flat removable covers fastened to the box with machine screws.
  - 3. Seams and joints shall be closed and reinforced with flanges formed of the same material from which the box is constructed or by continuous welding which will provide equivalent strength to flange construction.
  - 4. Preferably not provided with 'knockouts'.
- C. Box covers shall be fastened in place by machine screws or hinges and latches. Self-tapping or sheet metal fasteners are not acceptable.

#### 2.05 SUPPORTS

- A. Hangers and brackets shall be made of steel pipe, channel iron, angle iron or prefabricated steel channel. Prefabricated steel channel shall be by B-Line, Hilti, Powerstrut or Unistrut.
- B. Anchors shall be lead shield anchors or plastic expansion anchors for small loads, and expansion or epoxy anchors for large loads. Powder-driven anchors shall not be used.

#### 2.06 LABELS AND DIRECTORIES

- A. Equipment nameplates shall be engraved .125 inch (1/8") thick 'Lanaloid' (Lanacoid) plastic. White, with black letters. The engraved letters shall be at least one quarter inch (¼") high.
- B. Receptacles and lighting switch covers shall be labeled using clear adhesive backed nylon or Mylar tape with black text permanently laminated to the tape.
- C. Panel directories shall be typed on supplied card stock with panel, or card stock similar in thickness and material as those supplied with the panels. Install supplied clear plastic cover, or one of like material.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. All work shall conform to all applicable Codes and Construction Standards.
- B. All installations shall be warranted for a period of one (1) year against defects in material and workmanship.
- C. The Owner reserves the right to relocate any device fifteen (15) feet prior to installation at no additional cost.
- D. Material Storage
  - 1. All materials shall be new and in original factory packaging.
  - 2. All material shall be kept dry and clean.
  - 3. The Owner reserves the right to reject any material not properly stored.
- E. Contractor shall swab clean the interior of all raceway prior to pulling wire.
- F. Device plate screw slots shall be oriented vertically.

### 3.02 RACEWAYS

- A. Size conduits in accordance with the NEC, but not less than the sizes shown on the drawings. Minimum power, fire alarm and control conduit size shall be  $\frac{3}{4}$ ". Minimum telecommunications conduit size shall be 1".
- B. Install concealed and exposed conduits and cable trays parallel to or at right angles to building lines. Conduits shall not be embedded in concrete slabs except where specifically shown. Install surface raceways as close to room corners or trim features as possible to make the surface raceways less obvious.
- C. Make directional changes in primary power distribution conduits above ground with sweeps and long radius elbows, and underground with 20' minimum radius bends.
- D. Conceal conduits wherever possible and practical. When conduits cannot be concealed in finished areas, use surface raceways with matching boxes from the same manufacturer as the raceways.
- E. Metal conduits, fittings, enclosures and raceways shall be mechanically joined together in a firm assembly to form a continuous electrical conductor providing effective electrical grounding continuity.
- F. Provide expansion fittings at the intervals specified in the manufacturer's instructions.
- G. Conduits entering panels located outdoors, in parking structures, in steam tunnels and on cooling towers shall enter from the sides, back, or bottom. Conduits shall not enter from the top.
- H. Separate raceways from uninsulated steam pipes, hot water pipes, and other hot surfaces by a minimum of 4" horizontally or 12" vertically. Separate raceways from ventilation ducts and insulated pipes so that they do not come into contact with each other.
- I. Low voltage signal circuits shall be separated or shielded from power circuits to prevent the induction of noise into the signal circuits.
- J. EMT entering sheet metal enclosures and outlet boxes shall be secured in place by a connector with a locknut. Rigid conduit shall be secured with locknut inside and outside and

a bushing. Sufficient thread on the connector or conduit shall extend into the enclosure so that the bushing will butt tight into the connector or conduit. Bushings shall not be used as jamb nuts or in lieu of locknuts.

- K. Flexible metallic conduit to motors and similar equipment shall not exceed 3'-0" in length, and shall have adequate slack to absorb the maximum vibration. Flexible conduit connections to lighting fixtures shall not exceed 6'-0" in length.

### 3.03 MOUNTING HEIGHTS

- A. Except where shown otherwise, install equipment and devices at the following heights:
  - 1. Receptacles (Wall): 18" A.F.F. to center
  - 2. Receptacles (Above Counter): 48" A.F.F. to center or 4" minimum above countertop or backsplash.
  - 3. Receptacles (Unfinished Area): 48" A.F.F. to center
  - 4. Surface Raceway Receptacle Strips: 42" A.F.F. to bottom
  - 5. Light Switches: 48" A.F.F. to center
  - 6. Telephone Outlets (Wall Phone): 48" A.F.F. to center
  - 7. Telephone/Data Outlets: 18" A.F.F. to center
  - 8. Clock Outlets: 88" A.F.F. to center
  - 9. Fire Alarm Pull Stations: 45" A.F.F. to center
  - 10. Fire Alarm Horn/Strobes: 80" A.F.F. to bottom or 1' below finished ceiling whichever is lower.
  - 11. Card Readers: 48" A.F.F. to card slot
  - 12. Security System Controls: 48" A.F.F. to center
  - 13. Thermostats/HVAC Controls: 48" A.F.F. to center
  - 14. Panelboards: 72" A.F.F. to top
  - 15. Safety Switches/Motor Starters: 72" A.F.F. to top (except top of handle shall not exceed 78" A.F.F.)
  - 16. Motor Control Pushbuttons: 60" A.F.F. to center
  - 17. Verify with the Owner for heights not otherwise listed.

### 3.04 SUPPORTS

- A. Provide 4" thick concrete housekeeping pads for floor-mounted equipment.
- B. Support all electrical items independently of supports provided by the other trades.
- C. Support conduits and boxes using steel conduit straps or 1/4-inch minimum diameter threaded rod hangers. Suspended ceiling hangers or hanger wire shall not be used (except to support flexible metallic conduit and manufactured wiring systems).
- D. Support cable trays with support brackets or 3/8" diameter minimum threaded rod hangers at intervals not exceeding 8'-0" for straight runs. Additional supports shall be provided at tray fittings.



- E. Hangers shall be of sufficient strength that their deflection at mid span does not exceed 1/240 of the hanger span length after the cables are installed.
- F. Route flexible metallic conduit, manufactured wiring systems and Type MC cable parallel to or perpendicular to building lines, and in a neat and workmanlike manner. Coil the excess manufactured wiring systems and Type MC cable, and support independently of the ceiling grid system at intervals not exceeding 3 feet.

### 3.05 PENETRATIONS, SLEEVES AND FIRE SEALS

- A. Cut floor and wall penetrations neatly and to the minimum size required for installation of the equipment and raceways.
- B. Provide galvanized steel pipe sleeves for all conduits penetrating floors, exterior walls and roofs.
  - 1. Extend floor sleeves above the floor a minimum of 2 inches.
  - 2. Embed sleeves in new concrete or step-core concrete and grout sleeves into existing concrete with epoxy grout.
  - 3. Seal floor sleeves using fire-sealing systems approved by a Nationally Recognized Testing Laboratory.
  - 4. Seal exterior wall and roof penetrations water tight.
- C. Patch both sides of wall penetrations cut for electrical equipment and raceways to seal against the passage of air, sound and fire.
  - 1. Seal cable tray penetrations in fire rated walls using fire sealant bags approved by a Nationally Recognized Testing Laboratory.
  - 2. Seal conduit penetrations in fire rated walls using firesealing caulk approved by a Nationally Recognized Testing Laboratory.
  - 3. Seal conduit penetrations in non-rated walls using masonry materials that match the wall construction.
  - 4. Fire seal between recessed outlet boxes located on opposite sides of a fire rated wall if the box openings are over 16 square inches and the boxes are less than 24 inches apart.

### 3.06 EXPANSION FITTINGS

- A. Provide expansion fittings at all building expansion joints.
- B. Provide expansion fittings, in accordance with manufacture recommendations, in all areas subject to swings in temperature of more than 15 degrees C.
- C. Install expansion fittings in all locations where expected expansion difference is ¼", or more, between boxes

### 3.07 IDENTIFICATION

- A. Provide nameplates and labels in accordance with Article 2.6.
  - 1. Labeled labels shall be mechanically secured in place with sheet metal screws and/or bolts and nuts
  - 2. Labels shall be neatly centered. Place labels in like positions on similar equipment.

- B. Color code wiring as noted in Section 26 05 19 3.01 B
- C. Color code junction boxes and box covers of
  - 1. Emergency power circuits with red paint
  - 2. Fire alarm circuits with red paint.
  - 3. Temperature control circuits with blue paint.
  - 4. Phone and Data circuits with orange paint.

END OF SECTION 26 05 00

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## SECTION 26 05 02 – SELECTIVE ELECTRICAL DEMOLITION

### PART 1 – GENERAL

#### 1.01 SCOPE OF WORK

- A. Demolition of electrical items and associated materials as indicated herein or as indicated on the drawings.

#### 1.02 SECTION INCLUDES

- A. Removal of designated equipment and devices.
- B. Removal of designated construction.
- C. Disposal or storage of removed materials.
- D. Identification of utilities.
- E. Refer to items as indicated.

#### 1.03 SUBMITTALS FOR CLOSEOUT

- A. Project Record Documents: Accurately record actual locations of terminated utilities and subsurface obstructions.

#### 1.04 REGULATORY REQUIREMENTS

- A. Conform to applicable code for demolition work, safety of structure, dust control, products requiring electrical disconnection and re-connection.
- B. Obtain required permits from authorities.
- C. Do not close or obstruct egress width to any building or site exit.
- D. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.
- E. Conform to procedures applicable when hazardous or contaminated materials are discovered.

#### 1.05 SCHEDULING

- A. Perform work between the hours of 7 a.m. and 7 p.m.

#### 1.06 PROJECT CONDITIONS

- A. Conduct demolition to minimize interference with adjacent and occupied areas.
- B. Maintain protected egress and access to the Work.

### PART 2 – NOT USED

### PART 3 – EXECUTION

#### 3.01 PREPARATION

- A. Protect existing materials which are not to be demolished.
- B. Notify affected utility companies before starting work and comply with their requirements.
- C. Utilize OSHA lockout/tag-out procedures for disconnecting means.
- D. Label all wiring to remain (phase and device fed) to assure proper re-connection.

- E. Mark location and termination of utilities.

### 3.02 DEMOLITION

- A. Disconnect, remove, cap, identify designated utilities to remain and demolish in an orderly and careful manner.
- B. Remove demolished materials from site except where specifically noted otherwise.
- C. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

### 3.03 PROTECTION OF SALVAGED ITEMS

- A. Remove, store and protect the materials and equipment scheduled to be re-used.
- B. Protect wiring to be re-used by means of a Junction Box
  - 1. Junction Box shall be of sufficient size to permit reconnection of existing wiring to new wiring per NEC Requirements.
  - 2. In outdoor locations the junction box shall be NEMA 3R or a custom junction box with welded seams and gasketed cover.

END OF SECTION 26 05 02

SECTION 26 05 19 – LOW VOLTAGE WIRE AND CABLE

PART 1- GENERAL

1.01 DESCRIPTION OF WORK

- A. Extent of electrical wire and cable work is indicated by the Project drawings.
- B. Types of wire, cable and connectors in this section include the following
  - 1. 600 volt insulated copper conductors
  - 2. Twist on insulated metal spring connectors
  - 3. Compression connectors
  - 4. Split Bolt connectors

1.02 QUALITY ASSURANCE

- A. Manufacturers: Firms regularly engaged in manufacture of electrical wire and cable of types sizes and ratings required, whose products have been in satisfactory use in similar service for not less than five (5) years.
- B. Installers: Firm with at least five (5) years of successful installation experience with projects utilizing electrical wiring and cabling work similar to those required for this Project.
- C. NEC Compliance: Comply with NEC requirements as applicable to construction, installation and color coding of electrical wires and cable.
- D. U.L. Compliance: Comply with applicable requirements of UL Standard 83, "Thermoplastic-Insulated Wires and Cables", and UL Standard 486A, "Wire Connectors and Soldering Lugs For Use With Copper Conductors".
- E. UL Labels: Provide wire, cable and connectors which are UL listed and labeled.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver wire and cable properly packaged in factory-fabricated type containers or wound on NEMA Specified type non-returnable wire and cable reels.
- B. Store wire and cable in a clean dry space. Protect products from weather, damaging fumes, construction debris and traffic.
- C. Handle wire and cable carefully to avoid abrading, puncturing, or tearing wire and cable insulation and sheathing. Ensure that dielectric resistance integrity of wire and cable is maintained.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufactures offering products which may be used on this Project include, but not limited to, the following:
  - 1. Low Voltage Wire:
    - a. American Insulated Wire and Cable

- b. Southwire Company
  - c. Others as Approved
- 2. Electronic Cable
  - a. Belden
  - b. Alpha
  - c. Anixter
- 3. Twist on insulated metal spring connectors
  - a. Ideal
  - b. Thomas and Betts Corp
  - c. 3M Company
- 4. Compression
  - a. Square D / Anderson
  - b. Thomas and Betts

## 2.02 DESCRIPTION THHN / THWN

### A. Conductor:

- 1. Bare, soft annealed copper per ASTM B-3.
- 2. Sizes 14 - 10 AWG: Solid, bunched, unilay concentric combination unilay or compressed stranded (class C) alternate ASTM B-787, ASTM B-3 or ASTM B-8 and UL-83.
- 3. Sizes 8 - 2 AWG: Concentric, compressed stranded (class C) alternate ASTM B-787, ASTM B-8, UL-83 and UL-1063.
- 4. Sizes 1 AWG - 750 KCMIL: Concentric, compressed stranded (class B) ASTM B-8, UL-83 and UL-1063.

### B. Insulation:

- 1. High dielectric polyvinyl chloride (PVC) per UL-83 and UL-1063.
- 2. Overall Jacket: Nylon per UL-83 and UL-1063.

### C. Cable Identification:

- 1. Ink print on jacket for Sizes 14 - 10 AWG (solid conductors): "(size) AWG Type THHN or THWN GAS AND OIL RES II 600V(UL) or AWM VW-1---(Company Name).---C-UL Type T90 NYLON or TWN 75"
- 2. Ink print on jacket for Sizes 14 AWG - 750 KCMIL (stranded): "(size) AWG (or KCMIL) Type MTW or THHN or THWN or GAS AND OIL RES II 600V (UL) or AWM---(Company Name).---C-UL Type T90 NYLON or TWN 75."
- 3. Also "VW-1" and "FT1" on sizes 14 through 6 AWG and "for CT USE SUN RES" on sizes 1/0 AWG and larger in black.

### D. Cables conform to the following standards:

1. UL-83 for THHN-THWN, UL-1063 for MTW (stranded conductors only)
2. Federal Specification J-C-30B, NEMA WC-5, UL-758 for AWM Styles 1316 through 1321, 1408 through 1414, 1452 and 1453.

#### 2.03 ELECTRONIC CABLE - COMMUNICATION AND SIGNAL

- A. Shall conform to the recommendations of the manufacturers of the communication and signal systems; however, not less than what is shown.
- B. Wiring shown is for typical systems. Provide wiring as required for the systems being furnished.
- C. Multi-conductor cables shall have the conductors color coded.

#### 2.04 CABLES AND CONNECTORS

- A. General: Provide electrical cables and connectors of Manufacturer's standard materials, as indicated by published product information.
- B. Provide copper conductors with conductivity of not less than 98% at 68° F (20° C).
- C. Electronic cable shall be Plenum rated and as recommended by the Equipment Supplier
- D. Connectors shall be for copper to copper connections
- E. Insulation: All connectors shall be fully insulated to match insulation type and rating of conductors being spliced.

### PART 3 – EXECUTION

#### 3.01 INSTALLATION OF WIRES AND CABLES

- A. General: Install electrical cables, wires and wiring connectors as indicated, in compliance with applicable requirements of NEC, NEMA, UL and NECA's "Standard of Installations", and in accordance with recognized industry practices.
- B. Feeder phase identification from left to right or front to back facing front of equipment shall be one of the following:

Phase A	Phase B	Phase C	Neutral	System
X	Y	Z	N	Any voltage
BLACK	RED	BLUE	WHITE	120/208 volt feeders
BROWN	ORANGE	YELLOW	GRAY	277/480 volt feeders

- C. Install all wiring in conduit except as indicated on the drawings or directed by Owner.
- D. Pull conductors together where more than one is being installed in a raceway.
- E. Use pulling compound or lubricant where necessary. Compound must not deteriorate conductor or insulation. Use of soap is not permitted as a pulling lubricant.
- F. Pulling means must not damage cable or raceway.



3.02 COMPRESSION CONNECTORS

- A. Use only compression indenter tools designed for the type of connector used.
- B. For multiple indentations start at center and indent outward.

3.03 FIELD QUALITY CONTROL

- A. Prior to energizing, test all cables and wires with “Megger” to determine insulation resistance levels to ensure insulation integrity.
- B. Prior to energizing, test wires and cables for electrical continuity and for short circuits.

END OF SECTION 26 05 19

## SECTION 26 05 26 – GROUNDING AND BONDING

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Provide grounding for all systems and equipment.

#### 1.02 GROUNDING SYSTEM REQUIREMENTS

- A. Each ground rod shall have a maximum resistance to ground of 10 ohms before connection to the other ground rods. If reading is above 10-ohms, drive one extension. Further testing of that individual rod is not needed.
- B. The total grounding system with all connections completed shall have a maximum resistance to ground of 2 ohms for primary services or 5 ohms for secondary services.

#### 1.03 CONNECTION REQUIREMENTS

- A. Provide exothermic weld type, or Burndy Hyground, ground connections for concealed, underground, and concrete encased ground connections, for ground connections to structural steel, connections between sections of the main ground bus and all connections to the substation room ground bus bars.
- B. Exposed ground connections (except connections to structural steel and substation room ground bus bars) may be made with copper or bronze compression ground fittings or bolted compression ring lugs.
- C. Provide exothermic weld type, or Burndy Hyground ground connections for splices and taps of grounding conductors No. 8 AWG and larger. Exposed splices and taps shall be taped.

### PART 2 - PRODUCTS

#### 2.01 GROUND RODS

- A. Unless shown otherwise, ground rods shall be 3/4" diameter by 10' long, copper clad steel. Ground rods shall be capable of being extended when additional length is required.

#### 2.02 GROUNDING CONDUCTORS

- A. Grounding conductors for direct burial underground, for encasement in concrete, and for grounding of unit substations shall be No. 4/0 AWG minimum, bare, stranded copper.
- B. Grounding conductors for general use shall be stranded, copper conductor, sized in accordance with the NEC unless shown otherwise on the drawings, and insulated with green NEC Type THHN insulation rated 90 degrees C, 600 volts.

#### 2.03 GROUND CONNECTIONS

- A. Ground connections shall be Burndy Hyground, Cadweld, Thermo-weld or Thomas & Betts Blackburn only.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION REQUIREMENTS

- A. Ground duct banks and manholes in accordance with Specification Section 26 05 13

- B. Provide bare copper grounding conductors from duct banks, manholes, unit substations, primary switches, transformers, switchgear, panelboards, motor control centers and control panels to the building grounding system. Equipment rated above 480 volts or 600 amps shall be grounded by a minimum of two independent grounding conductors.
- C. Bond transformer, UPS system, central battery/inverter system, emergency generator, and separately derived electrical system neutrals to the building grounding system.
- D. Ground motors rated 460 volts and below by motor feeder equipment grounding conductors. Stranded copper grounding conductors connected to building steel shall also bond motors rated over 460 volts.
- E. Provide green insulated equipment grounding conductors in all service, feeder, and branch circuits for connection of load devices to the power source ground. Raceways shall not be used as equipment grounding conductors.
- F. Equipment grounding conductors shall not be daisy-chained.
- G. Bond equipment-grounding conductors in boxes and enclosures where the grounding conductors are terminated or spliced.
- H. Bond conduits, cable trays, wireways, surface raceways, boxes, and enclosures together, and to the building grounding system. Provide bonding bushings and bonding jumpers to bond conduits where they enter a box or enclosure.
- I. Ground the lightning protection system with separate ground rods. The building grounding system ground rods shall not be used. After completion of both systems, the lightning protection system shall be bonded to the building grounding system.
- J. Protect separately routed grounding conductors subject to damage or physical abuse by Schedule 40 PVC nonmetallic conduits. Grounding conductors shall not be routed in metallic conduits except when routed with phase conductors.

END OF SECTION 26 05 26

## SECTION 26 05 33 – RACEWAY AND BOXES

### PART 1 – GENERAL

#### 1.01 SUMMARY

- A. This Section specifies raceways and boxes for building and structure electrical systems under 600 volts.
- B. Provide all labor, materials, and equipment as necessary to complete all work as indicated on the drawings, and as specified herein.
- C. Related Sections:
  - 1. Division 01 - General Requirements
  - 2. Applicable sections of Division 26 - Electrical

### PART 2 – PRODUCTS

#### 2.01 GENERAL INFORMATION

- A. All boxes, brackets, bolts, clamps, etc., shall be galvanized or electro-galvanized.
- B. All hardware used outdoors shall be hot dipped galvanized.

#### 2.02 CONDUIT

- A. Rigid galvanized conduit shall be installed in poured concrete slabs, walls and partitions. Rigid or I.M.C. shall be installed in damp locations and inaccessible places.
- B. All rigid conduit, I.M.C. and E.M.T. shall be hot dipped galvanized or electro-galvanized.
- C. E.M.T. may only be installed exposed, above suspended ceilings, or in partitions.
- D. Flexible steel conduit may be used for short runs to individual pieces of equipment.
- E. Flexible sheathed metallic conduit shall be used for runs less than 6' in length to individual pieces of equipment in mechanical rooms, penthouses, etc.
- F. MC Cable is permitted in existing walls where installation of EMT is not possible to devices
- G. No E.M.T. or aluminum conduit shall be used in concrete, direct burial or in corrosive locations.
- H. Aluminum conduit may only be used in sizes 1-1/2 inch and larger. No aluminum conduit will be permitted in concrete. When aluminum conduit is used, all bends shall be galvanized steel.
- I. Size and type of conduit shall comply with the National Electric Code. Where conduits are indicated on the drawing to be larger than required by Code, the larger conduit shall be used.
- J. Minimum conduit size shall be 3/4 inch in all runs.

#### 2.03 PULL AND JUNCTION BOXES

- G. All pull boxes shall be galvanized sheet steel, sized as required, with thickness not less than no. 14 gauge.

#### 2.04 OUTLET BOXES

- A. All outlets, except as otherwise specified, shall consist of approved galvanized steel boxes of pattern adapted to the special requirements of each outlet, securely fastened in place in an approved manner.

### PART 3 – EXECUTION

#### 3.01 CONDUIT

- A. Conduit shall be concealed in all new walls and run above suspended ceilings.
- B. Use Wiremold type metal raceway where necessary to run exposed on existing walls and/or ceilings in finished areas as shown on the drawings.
- C. All conduit shall be fastened or suspended from structural members, slabs, or walls only. It shall not be run on or fastened to tee bars of suspended lay-in ceilings.
- D. All conduit shall be supported by approved hangers at spaced per NEC.
- E. All exposed conduit shall be run parallel to the structural members of the building in a neat manner, securely fastened in place.
- F. When metal conduit extends below the bottom of a slab on the ground, the slab shall be thickened in the area of the conduit so as to encase the conduit in concrete by at least 2 inches on all sides. The responsibility for and expense of this work shall be borne by the Contractor.

#### 3.02 OUTLET BOXES

- A. Recessed outlet boxes for single gang or 2-gang installations shall be 4" square with appropriate device ring or plaster ring for the required number of devices.
  - 1. All device rings and plaster rings shall be installed vertically unless instructed otherwise by the A/E or Owner.
  - 2. All plaster rings shall not extend past flush with wall surface or be recessed more than ¼" from wall surface.
  - 3. For installations of more than two devices use the appropriate wall box for the number of devices required. If approved by the Owner the use of gangable wall boxes is allowed.
  - 4. For surface installations in Mechanical Area or similar locations 4" square boxes shall be used with ¼" raised cover.

#### 3.03 PULL AND JUNCTION BOXES

- A. Pull boxes shall not be installed in inaccessible locations.

END OF SECTION 26 05 33

## SECTION 26 09 23 – LIGHTING CONTROLS

### PART 1 – GENERAL

#### 1.01 SCOPE

- A. The Contractor shall furnish and install a lighting control as specified and as shown on the contract drawings.

#### 1.02 RELATED SECTIONS

- A. Section 26 05 00 Common Work Results for Electrical
- B. Section 26 05 19 Low Voltage Wire and Cable
- C. Section 26 05 33 Raceway and Boxes
- D. Section 26 51 00 Interior Lighting

#### 1.03 SUBMITTALS -- FOR REVIEW/APPROVAL

- A. The following information shall be submitted to the Architect/Engineer and Owner
  - 1. Manufacturer's product cut-sheet
- B. Submit electronically in PDF format.

#### 1.04 SUBMITTALS -- FOR INFORMATION

- A. When requested by the Engineer the following product information shall be submitted:
  - 1. Descriptive bulletins
  - 2. Product sheets.
- B. Submit electronically in PDF format.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. One (1) copy of these instructions shall be included with the equipment at time of shipment.

#### 1.06 OPERATION AND MAINTENANCE MANUALS

- A. One (1) paper copy and one (1) USB flash Drive of the equipment operation and maintenance manuals shall be provided.
- B. Operation and maintenance manuals shall include the following information:
  - 1. Instruction books and/or leaflets
  - 2. Recommended renewal parts list
  - 3. Drawings and information required by section 1.06.

### PART 2 – PRODUCTS

#### 2.01 TIME CLOCK

- A. Manufacturers

1. Paragon
2. Tork

B. Ratings

1. Like Paragon Model EC71st /120V Electronic Sun Tracker
2. 120 volt ac control voltage
3. Single Channel control
4. Contact Rating, 15 amp
5. NEMA 1 enclosure

2.02 PHOTOCONTROL

A. Manufacturers

1. Tork
2. Precision

B. Ratings

1. Weatherproof Lexan® housing
2. Photocell: 1 inch cadmium sulfide light sensitive element.
3. Turn on: 1 to 3 foot-candles. External light level slide allows field adjustment between 3 to 10 foot-candles.
4. Turn on / turn off ratio 1:3
5. Minimum 15 second time delay.
6. Single-pole, single-throw switch. Contact position at night normally closed.
7. Temperature Range -40 to 158 degree F
8. ½'-14 threaded stem.

2.03 LIGHTING CONTACTOR

A. Manufacturers

1. ASCO
2. Cutler Hammer
3. Square D

B. Ratings

1. 30 amp minimum
2. Number of poles as required
3. Control/coil voltage 120 volt
4. Electrical held
5. Installed in NEMA 1 enclosure or as required for location.

2.04 OCCUPANCY SENSORS

A. Wall Mounted

1. Wall Mounted occupancy sensors shall be a multi-technology (Ultrasonic & PIR) wall switch that turns lights on and off based upon occupancy and ambient light levels. Type 2 sensors shall contain two separate relays and manual override controls for dual level switching of light fixture. Sensors shall have built-in light level sensor, adjustable time delays, zero crossing switching, and smart technology. Provide necessary device box. Type 1 sensors shall be Hubbell Building Automation #LHMTS1 or pre approved equal. Type 2 sensors shall be Hubbell Building Automation #LHMTD2 or pre approved equal. Color of devices shall be as selected by owner but generally shall match color of wiring devices.
  - B. Ceiling Mounted
    1. Ceiling Mounted occupancy sensors, indicated by OS on plans, shall be a multi-technology (ultrasonic & PIR) sensor that turns lights on and off based upon occupancy. Sensor shall have adjustable time delays, zero crossing switching, and smart technology. Provide necessary back-box. Sensor shall be Hubbell Building Automation #OMNIDT2000 or pre approved equal.
  - C. Power Packs and Relays
    1. The power packs shall provide both the 24VDC power supply to operate sensors as well as the 20 amp line voltage relay to control the load. Power pack shall be mounted to a junction box located above accessible ceiling. Housing shall be plenum rated. Power packs shall be Hubbell Building Automation #UVPP Universal Voltage Power Pack, or pre approved equal.
- 2.05 WALL BOX DIMMERS
- A. Wall box dimmers shall be Leviton Renoir II series or approved equal.
  - B. Shall be compatible with light fixture/driver and shall be capable of multi-location applications.
- 2.06 COMBINATION WALL BOX DIMMER AND OCCUPANCY SENSOR
- A. Wall box device providing both digital PIR occupancy sensor and 0-10V dimming shall be Hubbell LHDMIRS-3 series or approved equal.
  - B. 3 buttons provide on/off, raise and lower light levels.
- 2.07 ELECTRONIC WALL BOX TIMERS
- A. Timer shall be like Hubbell DT300 or Legrand TS-400
    1. Multiple timer intervals
    2. Energy code presets for Title 24, IECC, and ASHRAE 90.1
    3. Visual and audio turnoff warning
    4. 3 Way and Multiple Way Switching
    5. No Neutral Required
    6. No Load Requirement
  - B. Do not use in unconditioned spaces where temperature may fall below 30 degrees F.



PART 3 – EXECUTION

3.01 INSTALLATION

- A. The Contractors shall install all equipment per the manufacturer's recommendations and the contract drawings.
- B. Protect the equipment from damage and keep clean and dry during construction.
- C. **Installation of in wall switch replacement occupancy sensors must be approved by the Owner.**
- D. Install power packs above accessible ceilings and locate near door to room. If space has no ceiling, install power pack within a minimum 4" square junction box and locate near the door to the room, as neatly as possible. Coordinate with manufacturer.

END OF SECTION 26 09 23

## SECTION 26 27 26 – WIRING DEVICES

### PART 1 – GENERAL

#### 1.01 DESCRIPTION OF WORK

- A. Types and locations of wiring devices are indicated by the Project drawings.
- B. Types of wiring devices in this section include the following
  - 1. Receptacles
  - 2. Switches
  - 3. Cover plates

#### 1.02 QUALITY ASSURANCE

- A. Manufacturers: Firms regularly engaged in manufacture of wiring devices, whose products have been in satisfactory use in similar service for not less than five (5) years.
- B. Installers: Firm with at least five (5) years of successful installation experience with projects utilizing wiring device work similar to those required for this Project.
- C. NEC Compliance: Comply with NEC requirements as applicable to construction, installation and coding of wiring devices.
- D. UL Labels: Provide wiring devices that are UL listed and labeled.

#### 1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver wiring devices properly packaged in factory–fabricated type containers.
- B. Store wiring devices in a clean dry space. Protect products from weather, damaging fumes, construction debris and traffic.

### PART 2 – PRODUCTS

#### 2.01 GENERAL

- A. General use receptacles shall be heavy-duty 20-amp duplex 2 pole 3 wire grounding type.
- B. All switches shall be specification grade quiet switches, 120-277 volt 15 amp.
- C. Device colors shall be as selected by the Owner but generally all devices shall be white on painted walls and brown on wood walls unless for special application.
- D. Devices on emergency circuits shall be red.
- E. All exterior receptacles and any receptacle within six (6) feet of any water shall be GFCI.

#### 2.02 MANUFACTURERS AND CATALOG NUMBERS

- A. Hubbell, legrand, Leviton and Pass & Seymour are the only acceptable manufacturers.
- B. The following is an approved list of receptacles by type (based on Hubbell).
  - 1. 20 amp duplex- # HBL5362 or approved equal
  - 2. 20 amp isolated ground- #IG5362 (orange) or approved equal

3. 20 amp single- # HBL5461 or approved equal
4. 20 amp duplex with two USB charging ports- # USB20X2 or approved equal
5. 20 amp GFCI - # GFR5362SG or approved equal
- C. The following is the approved list of switches by type 15 amp (based on Hubbell).
  1. Single pole toggle switch-# HBL1201 or approved equal
  2. 2 pole toggle switch - # HBL1202 or approved equal
  3. 3 way toggle switch-# HBL1203 or approved equal
  4. 4 way toggle switch- # HBL1204 or approved equal
  5. Single pole key switch with key- # HBL1201L
  6. 2 pole key switch with key- # HBL1202L
  7. 3 way key switch with key- # HBL1203L
  8. 4 way key switch with key- # HBL1204L
  9. Maintained contact 3 position, 2 circuit, center off, single pole, double throw 20 amp- # HBL1385
  10. Momentary contact 3 position, 2 circuit, center off, 20 amp- # HBL1557
- D. All interior device cover plates are to be nylon (plastic not allowed), color to match device color unless otherwise noted.
- E. All exterior device cover plates shall be weatherproof type unless otherwise noted.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION OF WIRING DEVICES

- A. General: Install wiring devices as indicated, in compliance with applicable requirements of NEC, NEMA, UL and NECA's "Standard of Installations", and in accordance with recognized industry practices.
- B. Install all wiring in approved boxes or enclosures.
- C. For vertically install receptacles with ground up and on horizontal receptacles the ground on the left.
- D. Verify proper orientation of all switches
- E. Cover plates must cover all openings around devices and boxes.
- F. All devices must be installed plumb with the surroundings
- G. All device cover plate screws slots shall be vertical.

END OF SECTION 26 27 26

## SECTION 26 51 00 – INTERIOR LIGHTING

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General, Supplementary, and Special Conditions apply to all lighting installations.
- B. Section 26 05 00 Common Work Results Electrical
- C. Section 26 05 33 Raceway and Boxes
- D. Section 26 05 19 Low Voltage Wiring
- E. Section 26 09 23 Lighting Controls

#### 1.02 REQUIREMENTS OF WORK

- A. The Basic Electrical Requirements apply to all electrical materials, equipment, installations and services supplied under Dimmer package.
- B. The Electrical Contractor shall obtain a Bill of Materials from the Lighting Supplier(s) listed herein or proposed for substitution. The Bill of Materials shall be submitted with the Contractor's bid and shall include, but not limited to, the following.
  - 1. All lighting fixtures
  - 2. All fixture accessories
  - 3. Number, fixture type and luminaire type to be provided
- C. The Electrical Contractor (Sub-Contractor) and the Lighting Supplier(s) are responsible for the installation of a complete and operating lighting system in accordance with the intent of the Contract Documents.

#### 1.03 SUBMITTALS

- A. The following items shall be submitted for approval prior to ordering.
  - 1. Lighting Fixtures
- B. All submittals shall be submitted electronically in PDF format

#### 1.04 INSTALLER QUALIFICATIONS

- A. A firm with at least five (5) years of successful installation experience on projects with electrical works similar to this project.

### PART 2 – PRODUCTS

#### 2.01 FIXTURE SCHEDULE

- A. See fixture schedule on Drawings

### PART 3 – EXECUTION

#### 3.01 GENERAL

- A. All equipment shall be installed in a workmanlike manner and shall conform to industry Standards for this type on installation.
- B. All fixtures shall be plumb and square with ceilings and walls
- C. Support for fixtures in or on a grid type ceiling. Use grid for support.
  - 1. Install grid support wires on all four corners of each fixture.
  - 2. Install support wires or support chains, minimum of two, independent of the ceiling grid to each fixture not more than 6 inches from the corner on diagonally opposite corners of each fixture.
- D. Flange mounted fixture installation shall be per Manufacturer's instruction.

### 3.02 TESTING

- A. "Megger" all wiring prior to energizing.
- B. Test all switches and sensors for proper operation
- C. Verify proper operation of each fixture.
- D. Test each emergency fixture by interrupting the power to the fixture.

### 3.03 CLOSEOUT

- A. Prior to final acceptance and Project closeout the Contractor shall:
  - 1. Clean all fixtures and lenses inside and outside
  - 2. Replace any burned out lamps or LED arrays.

### 3.04 WARRANTY

- A. As Specified on each individual fixture listed herein.
- B. In lieu of a specific fixture warranty, all parts and labor on this Project shall be warranted for a period of one (1) year after start-up and Owner acceptance.

END OF SECTION 26 51 00

## SECTION 26 53 00 – EXIT LIGHTING

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General, Supplementary, and Special Conditions apply to all lighting installations.
- B. Section 26 05 00 Common Work Results Electrical
- C. Section 26 05 33 Raceway and Boxes
- D. Section 26 05 19 Low Voltage Wiring

#### 1.02 REQUIREMENTS OF WORK

- A. The Basic Electrical Requirements apply to all electrical materials, equipment, installations and services supplied under Dimmer package.
- B. The Electrical Contractor shall obtain a Bill of Materials from the Lighting Supplier(s) listed herein or proposed for substitution. The Bill of Materials shall be submitted with the Contractor's bid and shall include, but not limited to, the following.
  - 1. All exit lighting fixtures
  - 2. All exit lighting fixture accessories
  - 3. Number of exit fixtures
- C. The Electrical Sub-Contractor and the Lighting Supplier(s) are responsible for the installation of a complete and operating exit lighting system in accordance with the intent of the Contract Documents.

#### 1.03 SUBMITTALS

- A. The following items shall be submitted for approval prior to ordering.
  - 1. Lighting Fixtures
- B. All submittals shall be submitted electronically in PDF format

#### 1.04 INSTALLER QUALIFICATIONS

- A. A firm with at least five (5) years of successful installation experience on projects with electrical works similar to this project.

### PART 2 – PRODUCTS

#### 2.01 LIGHTING FIXTURE MANUFACTURERS

- A. Acceptable Manufacturers
  - 1. Lithonia
  - 2. Dual-Lite
- B. All others must submit for approval.

## 2.02 EXIT LIGHTING STANDARDS

- A. All exit lighting shall be Red illumination
- B. All exit lighting shall include battery back-up even if connected to an emergency circuit
- C. All Exit lighting shall include a self-test/self-diagnostic feature

## 2.03 EXIT LIGHTING

### A. THERMOPLASTIC CONSTRUCTION (Based on DUAL LITE EV Series)

#### 1. CONSTRUCTION

- a. Flame-rated, UV stable thermoplastic housing with a lightly textured white or black finish
- b. Housing and canopy are made from durable injection molded ABS thermoplastic
- c. Universal directional chevron inserts are easily removed and reinserted.
- d. Letters 6" high with 3/4" stroke.
- e. Available with special worded options
- f. Weight: 2.5 lbs

#### 2. COMPLIANCES

- a. Listed to UL924 Standard
- b. NFPA 101
- c. NFPA 70
- d. UL Damp Location Listed
- e. CEC T20 Compliant

#### 3. WARRANTY

- a. Fixture: 5-year warranty
- b. Battery: 3 years full, 7 years pro-rata

#### 4. SPECIFICATIONS ELECTRICAL

- a. Available in AC only or emergency operation which includes a nickel metal hydride(NiMH) battery and provides a full 90 minutes of emergency exit illumination in the event of power failure
- b. Includes a constant current charger
- c. Accepts 120/277VAC input at 60Hz and optional 220-240VAC input at 50 or 60 Hz with self-diagnostics option

#### 5. INSTALLATION

- a. Can be wall mounted by use of backplate with molded-in template, ceiling or end mounted with the use of supplied canopy to standard 3-½" or 4" square or octagonal electrical boxes
- b. Pre-stripped AC input leads provided

#### 6. ILLUMINATION

- a. Provides bright and uniform exit panel illumination by using energy saving, long-life red or green LEDs with a 10 year lifecycle

- b. The panel face exceeds UL924 requirements for brightness and uniformity

### PART 3 – EXECUTION

#### 3.01 GENERAL

- A. All equipment shall be installed in a workmanlike manner and shall conform to industry Standards for this type on installation.
- B. All fixtures shall be plumb and square with ceilings and walls
- C. Support for fixtures in or on a grid type ceiling. Use grid for support.

#### 3.02 TESTING

- A. “Megger” all wiring prior to energizing.
- B. Verify proper operation of each exit fixture.
- C. Test each emergency exit fixture by interrupting the power to the fixture.

#### 3.03 CLOSEOUT

- A. Prior to final acceptance and Project closeout the Contractor shall:
  - 1. Clean all fixtures and lenses inside and outside
  - 2. Replace any defective exit fixtures

#### 3.04 WARRANTY

- A. As Specified on each individual fixture listed herein.
- B. In lieu of a specific fixture warranty, all parts and labor on this Project shall be warranted for a period of five (5) years after start-up and Owner acceptance.

END OF SECTION 26 53 00



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