

# Project Manual:

## New Theater Lobby Renovations 536 North 7<sup>th</sup> Street Terre Haute, Indiana 47809

Owner:



**Indiana State  
University**

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

MEP Engineer/Designer:



**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 B0026302**



## Bid Request

Bid # B0026302**BID REQUEST NOTICE TO BIDDERS**

Sealed proposals are requested for the New Theater Lobby Renovation, Bid Number B0026302. 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, July 19, 2018 and then will be opened and read aloud.

Bidding Documents may be downloaded from the ISU Plan Room at <http://www.indstateplanroom.com/> on July 3, 2018 at no cost. Bidders must register for a free account the first time they access the website. Bid Documents on CD's may be ordered for purchase from Rapid Reproductions, Inc, 129 South 11<sup>th</sup> Street Terre Haute, IN 47807 (812-238-1681 Toll Free 800-736-7084) at a cost of \$7.50 per CD.

Proposals are to be made on the Bid Form published in the Bid Request. 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.

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No Bid may be withdrawn after the opening of Bids without the consent of Indiana State University for a period of One Hundred Twenty (120) days after the time of opening Bids.

A Pre-bid conference has been scheduled for 3:00pm, Local Time, July 10, 2018, in the New Theater Building Green Room, 536 North 7<sup>th</sup> Street, Terre Haute, Indiana 47809. *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 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 or by the next business day following the 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.

**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

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**FORMS FOR BIDDING**

Submit pages 3-9 of this form, Section 001020 Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion, Section 001045 Bidders Certification of Authorized Employment, a certified check; cashier's check or a Bid Bond and your most current audited financial statement with your Bid.

Submit Section 001040 Diversity Participation List for Prime and Subcontractors by noon on the next business day following the Bid Opening.

**BID SUBMITTED BY:**

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

Company Address: \_\_\_\_\_

Company Contact Name: \_\_\_\_\_

Phone number: \_\_\_\_\_ Email Address: \_\_\_\_\_

Signed: \_\_\_\_\_ Title \_\_\_\_\_ Date: \_\_\_\_\_

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 _____

**OFFER**

Pursuant to and in compliance with Bid Request Form', and other Bidding Documents prepared by the ISU Facilities Management Department or their authorized Agent for the above mentioned project, the undersigned, 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:**

New Theater Lobby Renovation per Specifications and Drawings

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

ALTERNATE BID(S) No Alternates Requested

**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.

**Bid Request**

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**ALLOWANCE(S)**

*List any allowances requested*

**UNIT PRICE(S)**

No Unit Prices

**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 herein. 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 this 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 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.

**MBE/WBE/VBE BIDDING:**

See Section 001030 for requirements for MBE/WBE/VBE Compliance. Section 001040 must be completed by the Apparent Low Bidder(s) or any MBE/WBE/VBE Bidder(s) and submitted by 12:00 noon local time on the next working day following the Bid opening to the ISU Purchasing Department. Fax to (812)-237-3599

Yes  No  Is the Bidder (Prime Contractor) or any Subcontractor MBE, WBE or VBE Compliant?

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**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 #)

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

If yes, where and why?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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 Quote, of all such litigation(s) and name(s) of Institutions and/or Parties involved with complete contact information. Failure to submit information may result in disqualification of your Quote.

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?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**Bid Request**

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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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**INSTRUCTIONS TO BIDDERS**

**1. GENERAL**

- A. Respondents shall carefully read the Bid Request with regard to preparation of proposals, which includes the forms required to be submitted.
- B. Bid Bond
  - 1) As a mandatory requirement the Bid shall be accompanied by a certified check; cashier's check or an acceptable Bid Bond (AIA A310) for an amount not less than 5% of the total Bid price for the Base Bid(s) and all add Alternates.
  - 2) 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 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. 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.
- D. The Contractor shall begin Work within seven (7) after Award and shall be substantially completed by August 31, 2018. Final closeout shall be within thirty (30) calendar days thereafter.
- E. 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.
- F. 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. Such Addendum, if any, issued before submission of the Quotes, shall be taken into account and included in the Proposal.
- G. Any Bidder may withdraw their Bid at any time prior to the scheduled time for the receipt of Bids.
- H. No Bidder may withdraw their Bid for a period of One Hundred Twenty (120) calendar days after date and time set for receipt of the Bids.
- I. The Owner reserves the right to accept or reject any bid and to waive any irregularities in bidding.

**Bid Request****Bid # B0026302****2. 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 for any Project in excess of \$50,000 a Contract for Construction. Prior to issuance of the Purchase Order the Contractor shall provide to the Director of Purchasing a Performance and Payment Bond (see Section 002020 Supplementary General Conditions 1.02) and the policies of insurance or insurance certificates as required by the Contract Documents (see Section 002020 Supplementary General Conditions 1.03) and listed in the Award Letter.
- 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.
- 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, 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.

**3. INDEMNIFICATION**

- A. Bidders, in consideration of the privilege of Bidding, shall 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.

**4. ALLOWABLE CONTRACTOR MARK-UPS FOR PROJECT CHANGES**

- A. When a change in the Work is contemplated which may affect the Contract Sum or duration of the Work, the Architect/Engineer/Owner 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 Proposal,' stipulating the change in cost of Project and/or duration as a result of the proposed change.
- B. The 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.
- C. 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 Item B by the Contractor actually performing the Work. Each succeeding Contractor may mark up their direct labor and material costs as indicated in Item B. 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.
- D. 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."

**5. ADDENDA**

- A. All Addenda (if any) for the Project will be will be posted to the ISU Plan Room.

**Bid Request**

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

**6. RESPONSIBILITY FOR DOCUMENTS.**

A. The prime Contractor and all their Subcontractors are responsible for all documents provided with this Bid Request.

**7. E-VERIFY REQUIREMENTS**

A. 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.

B. 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.

C. Bidders shall submit a signed copy of Section 001045 Bidders Certification of Authorized Employment with their Bid to certify compliance with this requirement.

**8. SCOPE OF WORK BASE BIDS**

- A. Selective demolition, ceilings, lighting and flooring.
- B. Protection of existing fire alarm devices in the lobby area during construction and cleaning at conclusion of the Project.
- C. Cleaning, patching if required and sealing of concrete floor
- D. Painting of walls
- E. Installation of new acoustical ceiling
- F. Installation of new lighting system

**9. SCOPE OF WORK ALTERNATE Bids**

No Alternates

**10. SUBCONTRACTOR LIST**

Bidder shall provide the names of all applicable Subcontractors

Description	Subcontractor
General Construction	_____
Ceiling Work	_____
Painting Work	_____
Flooring Work	_____
Electrical Work	_____
FP Sprinkler Work	_____

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11. SUPPLIER MANUFACTURER LIST

Bidder shall provide the names of all applicable Suppliers and Manufacturers

Product Description	Supplier	Manufacturer
Ceiling Grid	_____	_____
Acoustical Tile	_____	_____
Floor Sealer	_____	_____
Lighting Controls	_____	_____
Lighting-Can Lights	_____	_____
Lighting-Track Lights	_____	_____

12. PRE-CONSTRUCTION MEETING

- A. A pre-construction meeting will be held as soon as possible after Award of the Project at which time the Contractor shall have a proposed schedule of work to complete the work within the allowable time given.

End of BR B0026302

Attachments

Bid Request

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Bid # B0026302

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CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND  
VOLUNTARY EXCLUSION

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).

Is your organization, or its principals, debarred, suspended, 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, debarred, suspended, 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 001020

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CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND  
VOLUNTARY EXCLUSION

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MBE, WBE AND VBE COMPLIANCE INSTRUCTIONS

PART 1 – CONSTRUCTION SERVICES – INSTRUCTION TO BIDDERS

1.01 MBE, WBE AND VBE COMPLIANCE INSTRUCTIONS

- A. Indiana State University is committed to providing minority owned, women owned and veteran owned firms every opportunity to compete for its business. Efforts will be made to identify, solicit Bids, and communicate with minority owned, women owned and veteran owned Bidders regarding the University requirements and the Bidding process, so that they may become more viable Bidders. Bidding shall be conducted according to the "Governor's Commission on Minority Business Development," Indiana Statute 4-13-16.5, Indiana Veteran Owned Small Business Program Statute IC 5-22-14-3.5 and by Federal Uniform Procurement Guidance 2 CFR 200.320, concerning minority, women, and veteran owned business enterprises. The Governor's Commission is charged with establishing annual goals for the use of minority and women owned business enterprises. Goals for Veteran Owned Business shall be the same as those established by the State of Indiana's Indiana Department of Administration (IDOA).
- B. "Minority Owned Business Enterprise" (MBE), "Women Owned Business Enterprise" (WBE) and "Veteran Owned Business Enterprise" (VBE) means an individual, partnership, corporation, limited liability company, or joint venture of any kind that is owned and controlled by one or more persons who are United States citizens and are certified by the State of Indiana to be affiliated with a Minority Owned Business Enterprise, Women Owned Business Enterprise and Veteran Owned Business Enterprise firm.
1. "Owned and controlled" means having:
- a. Ownership of at least fifty-one percent (51%) of the enterprise, including corporate stock of a corporation;
  - b. Control over the management and active in the day-to-day operations of the business; and
  - c. An interest in the capital, assets, and profits and losses of the business proportionate to the percentage of Ownership.
2. "Minority group" means:
- a. Black Americans;
  - b. Native American;
  - c. Hispanic Americans;
  - d. Asian-Pacific Americans;
  - e. Subcontinent Asian Americans
- C. Bidders shall take all necessary and reasonable steps to ensure that Minority Owned Business Enterprise (MBE), Women Owned Business Enterprise (WBE) and Veteran Owned Business Enterprise (VBE) have the maximum opportunity to compete for and perform work included in this project.
- D. Bidders shall indicate qualifying business enterprises by placing (MBE), (WBE) or (VBE) after the prime contractor's and subcontractor's name listed on the "Participation List of Prime/Subcontractors" submitted with the bid. ISU reserves the right to verify all information included in the "Participation List of Prime/Subcontractors." Bidders are expected to make a good faith effort to meet the Minority Owned Business Enterprise (MBE), Women Owned Business Enterprise (WBE) and Veteran Owned Business Enterprise (VBE) participation goals or indicate on the "Participation List of Prime/Subcontractors" the reasons for a lack of Minority Owned Business Enterprise (MBE), Women Owned Business Enterprise (WBE) and Veteran Owned Business Enterprise (VBE) participation in the project.
- E. Bidders shall submit proof of MBE, WBE and VBE certification for each MBE, WBE, and VBE listed. Certification shall be by the appropriate State of Indiana Department or any other certifying entity



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MBE, WBE AND VBE COMPLIANCE INSTRUCTIONS

recognized by the state or federal government. ISU will consider MBE, WBE and VBE participation from non-certified entities.

- F. The Prime Contractor receiving the Bid award will be expected to report each quarter using ISU's Subcontractor Tracking System located on the Internet.
- G. The Owner, at its discretion, may waive in part or in whole the minority business enterprise, women business enterprise and/or veteran business enterprise requirement if in the opinion of the Owner it would be impractical, or not in the best interest of the Owner.

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 001030

001040  
 MBE/WBE/VBE PARTICIPATION LIST OF PRIME AND SUBCONTRACTORS

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

Date \_\_\_\_\_

This Form must be completed by the Apparent Low Bidder(s) or any MBE/WBE/VBE Bidder(s) and submitted by 12:00 noon local time on the day following the Bid opening to the ISU Purchasing Department.

Fax (812)-237-3599

Prime Contractor's Name

Circle if an MBE, WBE and/or a VBE

	MBE	WBE	VBE	MBE	WBE
<u>Subcontractor's Name</u>	<u>Circle if an MBE, WBE and/or a VBE</u>		<u>Amount To Be Paid to Subcontractor</u>	<u>Percentage of Total Bid Amount</u>	
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %
	MBE	WBE	VBE	\$ _____	_____ %

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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

END OF SECTION 001040

001040  
MBE/WBE/VBE PARTICIPATION LIST OF PRIME AND SUBCONTRACTORS

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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 002011 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)

\_\_\_\_\_  
(Title)

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

\_\_\_\_\_  
(Date)

END OF SECTION 001045

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BIDDER'S CERTIFICATION OF AUTHORIZED EMPLOYMENT

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002020  
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 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) ~~must~~ 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) ~~shall~~ 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 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. 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.
4. 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 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.

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<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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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.
- C. Nothing contained in the Contract shall create any contractual relationship between any Subcontractor and the Owner, and no Subcontractor will be recognized as a party to the Contract.

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- 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 001010 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.
- 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

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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.

1.10 SUBSURFACE CONDITIONS

- A. Boring information, water levels, indications of surface and subsurface conditions and similar information given on the drawings or in the specifications are furnished only for the convenience of the Prime Contractors. Logs of available subsurface explorations, borings and drawings of existing site conditions may be examined by arrangement with the Owner. The Owner, Owner's Representative and their Consultants make no representation regarding the character and extent of the soil data or other surface or subsurface data and conditions to be encountered during the work and assume no responsibility and make no guarantee as to the accuracy or completeness of the information.
- B. Each Contractor by careful examination, shall inform itself as to the nature and location of the work, the conformation of the ground, subsoil and ground water conditions, the character, quality and quantity of the materials to be encountered, the character of equipment and the facilities needed preliminary to and during the prosecution of the work, the general and local conditions and all other matters which can in any way affect the work under his Contract. Each Contractor shall make its own deductions of surface and subsurface conditions which may affect methods or cost of construction of the work of its Contract and Contractor agrees that it will make no claim for damages or other compensation, should it encounter conditions during the progress of the work different from those as calculated and/or anticipated by it.

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.

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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 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.

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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.

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.

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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.

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 002020

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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 Section 011510 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 of Section 011510 as long as records are kept as defined in 011510.
- 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 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.



ISU SPECIAL REQUIREMENTS AND INFORMATION

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.

## 1.07 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 (200 Spruce Street) 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.

## 1.08 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.

ISU SPECIAL REQUIREMENTS AND INFORMATION

- 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.

## 1.09 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 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

ISU SPECIAL REQUIREMENTS AND INFORMATION

- 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.
  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.

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- 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"

#### 1.10 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.

#### 1.11 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.

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- 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.**

## 1.12 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 3:30pm 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 3:30pm 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.
- 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 – \$100.00 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.

## 1.13 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.

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## 1.14 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:

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 five (5) copies for each Application for Payment.
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.
  - 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%.

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- 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 002011 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.
  2. Contact the ISU Office of the Controller to set up this account.
  3. 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 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.
  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.

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1.15 CONTRACTOR'S BID

- A. Contractor shall submit Bid for Base Bid and any Alternate Bids as listed in Section 002000.

1.16 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: Pat Teeters

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

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

- B. 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.

1.17 SITE LOCATION(S)

- A. **New Theater Building, 536 North 7th Street, Terre Haute, Indiana 47809**

1.18 PROJECT CONTACT

- 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 E-mail [dale.warner@redimond.com](mailto:dale.warner@redimond.com)

PART 2 – NOT USED

PART 3 – NOT USED

END OF SECTION 003000



003000

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PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Removal of designated building equipment and fixtures.
- B. Removal of designated construction.
- C. Disposal or storage of removed materials.
- D. Identification of utilities.
- E. Refer to items as indicated.

1.02 SUBMITTALS FOR CLOSEOUT

- A. Project Record Documents: Accurately record actual locations of capped utilities and subsurface obstructions.

1.03 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.

1.04 SCHEDULING

- A. Perform work between the hours of 7 a.m. and 4 p.m.

1.05 PROJECT CONDITIONS

- A. Conduct demolition to minimize interference with adjacent and occupied building areas.
- B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.
- C. Maintain protected egress and access to the Work.

PART 2 – NOT USED

PART 3 – EXECUTION

3.01 PREPARATION

- A. Provide, erect, and maintain temporary insulated partitions at required locations.
- B. Erect and maintain weatherproof closures for exterior openings.
- C. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy.
- D. Protect existing materials which are not to be demolished.
- E. Prevent movement of structure; provide bracing and shoring.
- F. Notify affected utility companies before starting work and comply with their requirements.

- G. Mark location and termination of utilities.
- H. Provide appropriate temporary signage including signage for exit or building egress.

3.02 DEMOLITION

- A. Disconnect, remove, cap, and identify designated utilities within demolition areas.
- B. Demolish in an orderly and careful manner. Protect existing supporting structural members.
- C. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
- D. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
- E. Remove temporary Work.

3.03 PROTECTION OF SALVAGED ITEMS

- A. Remove, store and protect the materials and equipment scheduled to be re-used.

END OF SECTION 024114

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Concrete floor sealer.

1.02 RELATED SECTIONS

- A. Section 033113 - Cast-in-Place Concrete.

1.03 SUBMITTALS

- A. Comply with Section 013200 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including surface preparation and application instructions.
- C. Maintenance Instructions: Submit manufacturer's maintenance and cleaning instructions.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying manufacturer and product name.
- B. Storage: Store materials in a clean, dry area indoors in accordance with manufacturer's instructions. Keep containers sealed until ready for use. Keep away from ignition sources. Do not allow to freeze.
- C. Handling: Protect materials during handling and application to prevent damage or contamination.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply sealer when air or surface temperature is below 55 degrees F

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Kemiko Concrete Products
- B. Approved equal

2.02 CONCRETE FLOOR SEALER

- A. Concrete Floor Sealer: Kemiko Stone Tone Sealer.
  - 1. Acrylic water-based urethane clear sealer.
  - 2. Solids Content: 30 percent.
  - 3. Nonyellowing.
  - 4. Resistant to blush.
  - 5. Satin finish.
  - 6. VOC compliant.
  - 7. Quick drying.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to receive sealer. Notify Architect if surfaces are not acceptable.
- B. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.02 SURFACE PREPARATION

- A. Prepare concrete surface in accordance with manufacturer's instructions.
- B. Concrete shall be as specified in Section 03300. Ensure concrete is a minimum of 28 days old.
- C. Ensure concrete surface is clean, dry, structurally sound, and free from dirt, dust, oil, grease, solvents, paint, wax, asphalt, concrete curing compounds, sealing compounds, surface hardeners, bond breakers, adhesive residue, and other surface contaminants.

3.03 APPLICATION

- A. Apply sealer in accordance with manufacturer's instructions at locations indicated on the drawings.
- B. Do not dilute sealer.
- C. Apply sealer in a thin uniform film.
- D. Apply second coat of sealer if required by manufacturer's instructions. Apply second coat after first coat is dry.
- E. Keep sealer film build-up to a minimum.
- F. Keep material containers closed when not in use to avoid contamination.

3.04 PROTECTION

- A. Protect concrete surfaces from foot traffic for a minimum of 24 hours.
- B. Avoid washing concrete surfaces for a minimum of 48 hours.

END OF SECTION 033513

PART 1 -GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system and perimeter trim.
- B. Acoustical tile and panels.
- C. Non-fire rated assembly.
- D. Supplementary acoustical insulation over system units.

1.02 REFERENCES

- A. ASTM C635 - Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
- B. ASTM C636 - Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
- C. ASTM E580 - Practice for Application of Ceiling Suspended Systems for Acoustical Tile and Lay-in panels in areas requiring seismic restraint.
- D. ASTM E1264 - Classification of Acoustical Ceiling Products.
- E. Ceilings and Interior Systems Contractors Association (CISCA) - Acoustical Ceilings: Use and Practice.

1.03 SUBMITTALS

- A. Submit under provisions of Section 013200.
- B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other work or ceiling finished, interrelation of mechanical and electrical items related to system and wall layouts.
- C. Product Data: Provide data on metal grid system components, acoustical units and accessories.
- D. Samples: Submit two samples full size illustrating material and finish of acoustical units.
- E. Samples: Submit two samples each, 12 inches (300 mm) long, of suspension system main runner, cross runner, edge trim, and hold down clips.
- F. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

1.04 QUALIFICATIONS

- A. Grid Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Acoustical Unit Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for combustibility requirements for materials.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Maintain uniform temperature of minimum 60 degrees F (16 degrees C), and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

1.07 SEQUENCING

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Install acoustical units after interior wet work is dry.

1.08 EXTRA MATERIALS

- A. Furnish under provisions of Section 017700.
- B. Provide 10 percent of total acoustical unit area of extra tile panels to Owner.

PART 2 – PRODUCTS

2.01 MANUFACTURERS - SUSPENSION SYSTEM

- A. Chicago Metallic Corp.
- B. Armstrong Contract Interiors.
- C. Donn by U.S.G. Interiors, Inc.

2.02 SUSPENSION SYSTEM MATERIALS

- A. Non-fire Rated Grid: ASTM C635, heavy duty; exposed T as indicated: components die cut and interlocking.
- B. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
- C. Exposed Grid Surface Width: 15/16 inch (24 mm).
- D. Grid Finish: White and color as indicated.
- E. Accessories: Stabilizer bars clips splices edge moldings hold down clips and for suspended grid system.
- F. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, a ceiling system flatness requirement specified.

2.03 MANUFACTURERS - ACOUSTICAL UNITS

- A. U.S.G. Interiors, Inc. Product as schedule.
- B. Armstrong Contract Interiors Product as scheduled.
- C. Celotex Building Products Product as scheduled.

2.04 ACOUSTICAL UNIT MATERIALS

- A. Armstrong Type 737
  - 1. Recessed Angular Tegular
  - 2. Size: 24" x 24" x 5/8"
  - 3. Grid: 15/16" DX
  - 4. Color: White

2.05 ACCESSORIES

- A. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify site conditions.
- B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - LAY IN GRID SUSPENSION SYSTEM

- A. Install suspension system in accordance with manufacturer's instructions and as supplemented in this section.
- B. Install system in accordance with ASTM E580.

- C. Install system capable of supporting imposed loads to a deflection of 1/240 maximum.
- D. Lay out system as indicated on reflected ceiling plans.
- E. Supply hangers or inserts for installation with instructions for their correct placement.
- F. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.
- G. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.
- H. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- I. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- J. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches (150 mm) of each corner; and support components independently.
- K. Do not eccentrically load system, or produce rotation of runners.
- L. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.
- M. Form expansion joints as required. Maintain visual closure.

### 3.03 INSTALLATION - CONCEALED GRID SUSPENSION SYSTEM

- A. Install suspension system in accordance with manufacturer's instructions and as supplemented in this section.
- B. Install system in accordance with ASTM E580.
- C. Install system capable of supporting imposed loads to a deflection of 1/240 maximum.
- D. Lay out system to a balanced grid design as indicated on reflected ceiling plans and/or electrical lighting plans.
- E. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.
- F. Supply hangers or inserts for installation with instructions for their correct placement.
- G. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.
- H. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- I. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- J. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located with 6 inches (150 mm) of each corner; and support components independently.
- K. Do not eccentrically load system, or produce rotation of runners.
- L. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.
- M. Form expansion joints as required. Maintain visual closure.



3.04 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Lay directional patterned units one way with pattern parallel to shortest room axis. Fit border trim neatly against abutting surfaces.
- D. Install units after above ceiling work is complete.
- E. Install acoustical units level, in uniform plane, and free from twist, warp and dents.
- F. Cut tile panels to fit irregular grid and perimeter edge trim. Field rabbett tile panel edge. Double cut and field paint exposed edges of tegular units.
- G. Where bullnose concrete block corners round obstructions occur, provide preformed closers to match edge molding.
- H. Lay acoustical insulation for a distance of 48 inches (1 200 mm) either side of acoustical partitions.
- I. Install hold-down clips to retain panels tight to grid system within 20 ft (6 m) of an exterior door.

3.05 ERECTION TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation from Plumb Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION 095113

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section includes resilient wall base and flooring accessories.
- B. See Division 09 Sections "Resilient Tile Flooring".

1.02 SUBMITTALS

- A. Product Data: For each product indicated.
- B. Below assumes manufacturer's standard-size Samples are acceptable. Revise to suit Project.
- C. Samples: For each product and for each color, pattern, and texture required.

1.03 PROJECT CONDITIONS

- A. Maintain a temperature of not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C) in spaces to receive resilient accessories for at least 48 hours before installation, during installation, and for at least 48 hours after installation, unless manufacturer's written recommendations specify longer time periods.
- B. After installation, maintain a temperature of not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).
- C. Install resilient accessories after other finishing operations, including painting, have been completed.

1.04 EXTRA MATERIALS

- A. Extra materials may not be allowed for publicly funded projects.
- B. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Furnish not less than 10 linear feet (3 linear m) of each different type, color, pattern, and size of resilient product installed.

PART 2 – PRODUCTS

2.01 WALL BASE

- A. See "Listed Manufacturers" Article in the Evaluations for cautions about naming manufacturers and products.
- B. Retain above for nonproprietary or below for semiproprietary specification. Refer to Division 01 Section "Product Requirements."
- C. Products: Subject to compliance with requirements, provide one of the following:
  - 1. Armstrong World Industries, Inc.
  - 2. Roppe Corporation.
  - 3. Johnsonite, Division of Duramax, Inc.
  - 4. Others as approved equal.
- D. For proprietary or semiproprietary specification, delete descriptive wall base requirements below that are determined by product designations inserted above.
- E. Wall Base: Rubber, FS SS-W-40, Type I.
  - 1. Color and Pattern: As selected from manufacturer's full range.
  - 2. Style: Cove with top-set toe
  - 3. Minimum Thickness: 1/8 inch

4. Height: 6 inches
5. Lengths: Coils in lengths standard with manufacturer, but not less than 96 feet
6. Outside Corners: Job formed.
7. Inside Corners: Job formed.
8. Surface: Smooth.

#### 2.02 RESILIENT ACCESSORY MOLDING

- A. See "Listed Manufacturers" Article in the Evaluations for cautions about naming manufacturers and products.
- B. Retain above for nonproprietary or below for semiproprietary specification. Refer to Division 01 Section "Product Requirements."
- C. Products: Subject to compliance with requirements, provide one of the following:
  1. Johnsonite, Division of Duramax, Inc.
  2. Roppe Corporation.
  3. Others as approved equal.
- D. For proprietary or semiproprietary specification, delete descriptive requirements below that are determined by product designations inserted above.
- E. Description: Carpet edge for glue-down applications, reducer strip for resilient flooring.
  1. Material: Rubber.
  2. Color: As selected from manufacturer's full range.
  3. Profile and Dimensions: as required for application.

#### 2.03 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement-based or blended hydraulic cement-based formulation provided or approved by resilient product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

### PART 3 – EXECUTION

#### 3.01 INSTALLATION

- A. Before installing resilient wall base and accessories:
  1. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
  2. Move resilient products and installation accessories into spaces where they will be installed at least 48 hours before installation, unless longer conditioning periods are recommended in writing by manufacturer. Install products only after they are at the same temperature as the space where they are to be installed.
- B. Use trowelable leveling and patching compounds to fill cracks, holes, and depressions in substrates.
  1. Broom and vacuum clean substrates to be covered immediately before installing resilient products. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

SECTION 09 65 13  
RESILIENT WALL BASE AND ACCESSORIES

2. Adhesively install resilient wall base and accessories. Place resilient products so they are butted to adjacent materials.
3. Apply resilient wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
4. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
5. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
6. Do not stretch base during installation.
7. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
8. Form outside corners on job, from straight pieces of maximum lengths possible, without whitening at bends. Shave back of base at points where bends occur and remove strips perpendicular to length of base that are only deep enough to produce a snug fit without removing more than half the wall base thickness.
9. Form inside corners on job, from straight pieces of maximum lengths possible, by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.
10. Install reducer strips at edges of flooring that otherwise would leave exposed edges.
  - a. At doors, install reducer strips to be hidden by the closed door.
11. Immediately after installing resilient products, remove adhesive and other surface blemishes using cleaner recommended by resilient product manufacturers.

END OF SECTION 096513

SECTION 09 65 13  
RESILIENT WALL BASE AND ACCESSORIES

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PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Carpet squares with adhesive back.
- B. Accessories

1.02 REFERENCES

- A. ASTM D2859 - Test method for flammability of finished textile floor covering materials.
- B. ASTM E84 - Surface burning characteristics of building materials.
- C. ASTM E648 - Critical Radiant flux of floor covering systems using a radiant heat energy source.
- D. NFPA 253 - Test for critical radiant flux of floor covering systems.

1.03 SUBMITTALS

- A. Submit under provisions of Section 013200.
- B. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet.
- C. Product Data; Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation, and layout of flat wire system.
- D. Samples: Submit two samples 18 x 18 inch (450 x 450 mm) in size illustrating color and pattern for each carpet material specified.
- E. Submit two, 12 inch (300 mm) long samples of edge strip, material for each color specified.
- F. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

1.04 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing specified carpet with minimum three years documented experience.
- B. Installer: Company specializing in installing carpet with minimum three years documented experience.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame/smoke rating requirements in accordance with ASTM E84.
- B. Conform to NFPA 253, ASTM E648, Class I for flooring radiant panel test.
- C. Conform to ASTM D2859 for surface flammability ignition test.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for 3 days prior to installation in area of installation to achieve temperature stability.
- B. Maintain minimum 70 degrees F (21 degrees C) ambient temperature 3 days prior to, during and 24 hours after installation.

1.07 MAINTENANCE DATA

- A. Submit under provisions of Section 017700.
- B. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.08 EXTRA MATERIAL

- A. Furnish under provisions of Section 017700.
- B. Provide 10% extra of carpet squares, but not less than 8, of each type, color, and pattern specified.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS – CARPET SQUARES

- A. Mohawk
- B. Shaw
- C. Milliken
- D. All others must submit for approval

2.02 MATERIALS - CARPET

- A. Refer to the Room Finish Schedule for Carpet Material for this Project

2.03 ACCESSORIES

- A. Sub-Floor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. "Pressure Sensitive Adhesive" designed for use with carpet squares

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are smooth and flat with maximum variation of ¼ inch in 10 ft. (6 mm in 3 m), and are ready to receive work.
- B. Verify concrete floors are dry to a maximum moisture content of 7 percent; and exhibit negative alkalinity, carbonization, or dusting.

3.02 PREPARATION

- A. Vacuum clean substrate.
- B. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- C. Prime any patched areas, dirty, dusty or porous floors with a latex milk additive such as Parachem 615 or 620.

3.03 ADHESIVE APPLICATION

- A. Adhesive must be used in a full spread application
- B. Apply with a 1/16 x 1/16 x 1/16 square notched trowel. Do not apply with a paint roller.
- C. Allow adhesive to dry to a clear and tacky state before laying carpet squares.

3.04 INSTALLATION

- A. Install carpet squares per Manufacturer's instructions.
- B. Install tiles immediately after adhesive has dried
- C. Lay carpet squares tight and flat on subfloor.
- D. Fit carpet squares tight to intersection with vertical surfaces without gaps.
- E. Where wall bases are scheduled, cut carpet squares tight to walls.
- F. Fit carpet squares tight to vertical surfaces to form base.
- G. Carpet squares shall be installed in a quarter turn configuration.

3.05 CLEANING

- A. Clean work under provisions of 017700.
- B. Remove excess adhesives without damage, from floor, base, and wall surfaces.
- C. Clean and vacuum carpet surfaces.

END OF SECTION 096813



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PART 1 – GENERAL

1.01 DESCRIPTION

A. Includes But Not Limited To-

1. Finishing elements of the building shown on attached Finish Schedule or specified below.
2. Back prime work to be installed against concrete or masonry or subjected to moisture.
3. Paint mechanical and electrical items located in classrooms as determined by Owner.

B. Related Documents-

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Section in Division 01, General Requirements, of these Specifications.

1.02 DESCRIPTION OF SYSTEMS:

- A. It is the intent of this Specification to require all existing painted wall surfaces, except those explicitly exempted herein, to be painted under this contract.

1.03 SUBMITTALS

A. Product Data-

1. Written list of specific products proposed along with Manufacturer's certification that products meet specified requirements.
  - a. Data shall be specific as to Manufacturer's brand name and identifying numbers.
  - b. Indicate square footage to be covered by each product, Manufacturer's recommended coverage rates, and amount of product required based on average coverage.
  - c. Indicate items to be finished as work of each painting Section.
  - d. Outline, preparation and application procedures to be followed including application methods, time between coats, and environment
  - e. Provide Manufacturer's cut sheets which indicate paint components. As a minimum, specification requirements for paint composition shall be given on cut sheets submitted.
2. Color selection data.
3. Maintenance instructions.

B. Samples-

1. Provide paint card for each color and for each paint system. Card to show each component of system as well as total system.

1.04 QUALITY ASSURANCE

A. Pre-installation Meeting-

1. Schedule meeting after delivery of paint but prior to application of field samples or paint.

B. Field Samples-

1. Prior to application of any paint system meet on Project site with Owner's representative. Owner may select one surface for application of each paint system specified.
2. Apply paint systems to surfaces indicated following procedures outlined in Contract Documents and Product Data submission specified above.
3. After approval of samples, proceed with application of paint system throughout Project.

- C. Applicator shall have experience in application of specified products for five years minimum and be acceptable to Owner and Manufacturer.

1.05 DELIVERY, STORAGE, & HANDLING

- A. Deliver specified products in original containers with labels intact on each container. Deliver amount of material indicated on submittal for Project in single shipment. Notify Owner two working days prior to delivery.
- B. Store materials in single place.
- C. Keep storage area clean and rectify any damage to area at completion of work of this Section.

1.06 PROJECT/SITE CONDITIONS

- A. Environmental Conditions-
  - 1. Maintain temperature of paint storage area at 55 deg. F minimum.
  - 2. Perform painting operations at temperature conditions recommended by Manufacturer for each operation.

1.07 SCHEDULING

- A. Coordinate by room painting schedules with Owner.
- B. Examine Contract Documents for painting requirements of other trades. Become familiar with their painting provisions and the painting of finish surfaces left unfinished by the requirements of other Sections.
- C. Contractor may work in facilities during normal hours of 6 a.m. to 6 p.m., or with approval of Owner after 6 p.m.

1.08 MAINTENANCE

- A. Extra Materials-
  - 1. Provide one gallon of each finish coat material in Manufacturer's original container in each color used. Provide one gallon of each primer and of each undercoat in each color used.

PART TWO – PRODUCTS

2.01 MATERIALS

- A. Linseed oil, shellac, turpentine, and other painting materials shall be pure, of highest quality, and bear identifying labels on containers.
- B. Tinting color shall be best grade of type recommended by Manufacturer of paint or stain used on Project.
- C. Paint compositions shall not only meet specified requirements but also contain sufficient miscellaneous components to promote proper drying and performance during and after application.

PART THREE – EXECUTION

3.01 INSPECTION

- A. Prior to installation of work of this Section, inspect classrooms to verify that space is ready for commencing painting.
- B. If inspection reveals deficiencies in work areas such that painting cannot be successfully completed, for not proceed with work of this Section in area of deficiency until resolved.
- C. Starting painting work will be construed as acceptance of surfaces and conditions within any particular area.

### 3.02 PREPERATION

#### A. Protection-

1. Remove all oily rags and waste from building each night. Take every precaution to avoid danger of fire.
2. Protect finish work and adjacent materials during painting.
3. Good painting practice excludes splattering, dripping or painting any surfaces not intended to be painted. These items will not be spelled out in detail but pay special attention to the following-
  - a. Do not paint finish copper, bronze, chromium plate, nickel, stainless steel, anodized aluminum, or monel metal except as explicitly specified.
  - b. Keep cones of ceiling speakers completely free of paint. If it is required that metal speaker grilles are to be painted, paint prior to mounting grilles to speakers. Mask of metal grilles installed on ceiling speakers if ceiling is being spray painted.

#### B. General Surface Preparation-

1. Surfaces to be painted shall be clean and free of loose dirt. Clean and dust surfaces before painting or finishing.
2. Do no exterior painting while surface is damp, unless recommended by Manufacturer, nor during rainy or frosty weather. Interior surfaces shall be dry before painting.
3. Apply barrier coats over incompatible primers.
4. Remove hardware, electrical device covers, lighting fixtures, and similar in place work or provide surface applied protection prior to surface preparation and painting. After completion of painting, reinstall any removed work.
5. Fill holes and cracks in surfaces to receive paint or stain.

#### C. Metal Surfaces-

1. Wash metal surfaces with mineral spirits to remove dirt and grease before applying materials.
2. Where rust or scale is present, use wire brush or sandpaper to clean before painting.
3. Clean shop coats of paint that have become marred and touch up with proper type primer.
4. Treat galvanized metal and zinc surfaces as specified and in accordance with Manufacturer's directions before applying first paint coat.

#### D. Wood Surfaces-

1. Sand woodwork smooth with 220 sandpaper and clean surfaces before proceeding with stain or first coat application.
2. Use fine sandpaper between coats to produce smooth, even surfaces.

#### E. Cementitious & Masonry Surfaces-

1. Clean to remove efflorescence, chalk, dust, dirt, grease, oils, and the like.
2. Roughen where required to remove glaze.
3. Clean concrete floors with etching cleaner and flush with clean water.
4. Pay particular attention to the paint manufacturer's preparation instructions.
5. Except for steam cured products, allow surfaces to cure from 30 to 90 days according to manufacturer's recommendations before painting.

3.03 APPLICATION

- A. Carefully follow Specifications and color schedule, painting complete all surfaces to be painted.
- B. Spread materials smoothly and evenly.
- C. Putty nail holes in wood after application of first finish coat using natural colored type to match wood finish. Bring putty flush with adjoining surfaces.
- D. Finished work shall be uniform, of approved color, smooth, and free from runs, sags, defective brushing, rolling, clogging, and excessive flooding.
- E. Read color schedule for rooms before priming walls. Tint priming coat and undercoat to approximate shade of final coat, but with enough difference so it is possible to check application of specified number of coats.
- F. Touch up suction spots after application of first coat.
- G. Use fine sandpaper between coats as necessary to produce even, smooth surfaces.
- H. Paint shall be thoroughly dry and surfaces clean before applying succeeding coats.
- I. Make edges of paint adjoining other materials or colors clean, sharp, and without overlapping.

3.04 ADJUSTMENT

- A. At completion of Project, touch up work to match specified finish. Repaint are damaged during construction with specified finish at no additional cost to Owner.

3.05 CLEANING

- A. Do not discard paint containers without Owner's written approval to allow count to determine if paint delivered was applied.
- B. Upon completion of work of this Section, remove paint spots from floors, walls, glass, or other surfaces and leave work clean, orderly, and in acceptable condition. Remove debris caused by work of this Section from premises.

END OF SECTION 099010

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included:

1. The type of material to be used and the number of coats to be applied are listed in the Part 2 of this Section or as noted on the Drawings.
2. Prepare and paint or finish surfaces as hereinafter described, including, but not limited to the following:
  - a. Concrete Unit Masonry
  - b. Gypsum plaster
  - c. Cement plaster
  - d. Wood doors, finish wood carpentry, and trim
  - e. Hollow metal doors, frames

B. Other exposed surfaces that are not specifically indicated to be factory finished or finished by others.

1.02 JOB CONDITIONS

A. Temperature Restrictions: Do not paint or finish in damp, rainy weather or when ambient temperature is below 50 degrees F.

1.03 QUALITY ASSURANCE

A. Qualifications of Painters: Use only qualified journeymen painters for the mixing and application of paint on exposed surfaces; in the acceptance or rejection of installed painting, no allowance will be made for lack of skill on the part of the painters.

1.04 SUBMITTALS

A. Materials list:

1. Before any paint materials are delivered to the job site, submit to the Architect in accordance with the provisions of Section 01320 of these specifications a complete list of all materials proposed to be furnished and installed under this portion of the work.
2. This shall in no way be construed as permitting substitution of materials for those specified or approved for this work by the Architect.

C. Samples: Accompanying the materials list, submit to the Architect two copies of the full range colors available in each of the proposed products.

1.05 PRODUCT HANDLING

A. Delivery: Deliver all paint materials to the job site in their original unopened containers with all labels intact and legible at time of use.

B. Protection:

1. Store only the approved materials at the job site, and store only in a suitable and designated area restricted to the storage of paint materials and related equipment.
2. Use all means necessary to ensure the safe storage and use of paint materials and the prompt and safe disposal of waste. Comply with health and fire regulations.
3. Use all means necessary to protect paint materials before, during, and after application and to protect the installed work and materials of all other trades.

D. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Manufacturer

1. All paint materials selected for coating systems for each type of surface shall be the product of a single manufacturer.
2. Primers shall be by the same manufacturer as the paint used for the final coats and shall be of the type recommended by that manufacturer for the particular application.
3. Thinners, when used, shall be only those thinners recommended for that purpose by the manufacturer of the material to be thinned.

B. Standards:

1. Sherwin-Williams
2. M.A.B.
3. Porter Paint
4. Devoe Paint

2.02 GUIDE TO APPROVED PRODUCTS

A. General: The following list of manufacturers and products is approved by the Architect for use on the project. Such a list shall serve as a guide to the quality of the types of materials to be used and shall not be construed as a basis for limiting competition.

B. Materials list:

1. Metal Primer:
  - a. Sherwin-Williams - Kemk Kromik Metal Primer
2. Metal Finish coat:
  - a. Sherwin-Williams - Pro-Mar Alkyd
3. Latex Wall and Ceiling Primer:
  - a. Sherwin-Williams - Pro-Mar Latex Wall Primer
4. Semi-Gloss Finish:
  - a. Sherwin-Williams - Style Perfect Latex Semi-Gloss Enamel
5. Flat Finish:
  - a. Sherwin-Williams - Pro-Mar 400 Latex Wall
6. Wood Varnish:
  - a. Sherwin-Williams - S-W Oil Base Gloss Varnish
  - b. Sherwin-Williams - S-W Oil Base Satin Finish
7. Wood Stain Interior:
  - a. Sherwin-Williams - S-W Interior Wood Stain
8. Paste Filler:
  - a. Sherwin-Williams - S-W Paste Wood Filler
9. Galvanized Metal Primer:
  - a. Sherwin-Williams - S-W Galvanized Iron Primer
10. Galvanized Metal Finish Coat:
  - a. Sherwin-Williams - Pro-Mar Alkyd Semi-Gloss Enamel

C. Finish color as Scheduled or selected by Owner

PART 3 – EXECUTION

2.01 SURFACE CONDITIONS

- A. Inspection:
  - 1. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
  - 2. Verify that paint finishes may be applied in strict accordance with all pertinent codes and regulations and the requirements of these specifications is complete to the point where this installation may properly commence.
- B. Discrepancies:
  - 1. In the event of discrepancy, immediately notify the Architect.
  - 2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PREPARATION OF SURFACES, GENERAL

- A. Protection: Prior to all surface preparation and painting operations, completely mask, remove, or otherwise adequately protect all hardware, accessories, machined surfaces, nameplates, U.L. labels lighting fixtures, and similar items in contact with painted surfaces but not scheduled to receive paint.
- B. Smoothing: Unless specifically noted to be left rough, smooth all finished wood surfaces exposed to view, using the proper sandpaper.
- C. Dryness: Unless specifically approved by the Architect, do not proceed with the painting of wood surfaces until the moisture content of the wood is 12% or less.

3.03 PREPARATION OF METAL SURFACES

- A. Galvanized Metal:
  - 1. Clean all surfaces thoroughly with solvent until they are completely free from dirt, oil, and grease.
  - 2. Thoroughly treat the cleaned surface with phosphoric acid etch.
  - 3. Remove all excess etching solution and allow to dry completely before application of paint.
- B. Other Metals:
  - 1. Thoroughly clean all surfaces until they are completely free from rust, dirt, oil, and grease.
  - 2. Allow to dry thoroughly before application of paint.

3.04 PREPARATION OF GYPSUM DRYWALL

- A. Remove dirt, dust, and other foreign matter. Smooth all apparent deposits of spackling compound, taking care not to damage the paper cover of the gypsum drywall.

3.05 PREPARATION OF WOOD SURFACES

- A. Cleaning: Clean all wood surfaces until they are free from dirt, oil, and all other foreign substance.
- B. Knots:
  - 1. On small, dry, seasoned knots, thoroughly scrape and clean the surface and apply one coat of good quality knot-sealer before application of the priming coat.
  - 2. On large, open, unseasoned knots, scrape off all pitch and thoroughly clean the area, followed by an application of one coat of good quality knot-sealer.
  - 3. Remove and treat all pitch surface as required for large knots.
- C. Dryness: Unless specifically approved by the Architect, do not proceed with the painting of wood surfaces until the moisture content of the wood is 12% or less.



3.06 PREPARATION OF MASONRY SURFACES

- A. Cleaning: Cleaning all masonry surfaces until they are free from dirt, oil, and all other foreign substances.
- B. Spot prime existing masonry as required for complete coating.

3.07 PAINT APPLICATION

- A. General:
  - 1. Paint all surfaces except glass, and similar items not finished and not called out for as unfinished.
  - 2. Paint all grilles and other pre-finished items where the factory finish is not in accordance with the "Painting Schedule".
  - 3. All painting of mechanical piping shall be by the Mechanical Prime Contractor.
- B. Drying:
  - 1. Allow sufficient drying time between coats.
  - 2. Modify the periods as recommended by the material manufacturer to suit adverse weather conditions.
  - 3. Oil-base and oleo-resinous solvent-type paints shall be considered dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Environmental Conditions:
  - 1. Comply with the Manufacturers recommendations as to environmental conditions under which the coating systems may be applied.
  - 2. Do not apply paint in areas where dust is being generated.
- D. Moisture Content:
  - 1. Use a moisture meter approved by the Architect to test surfaces.
  - 2. Do not apply the initial coating until moisture meter reading is within limits recommended by the paint materials manufacturer.
- E. Defects: Sand and dust between coats to remove all defects visible to the unaided eye from a distance of five feet.
- F. Color of undercoats: Slightly vary the color of succeeding coats.

3.08 INSPECTION

- A. General: Do not apply additional coat until completed coat has been inspected and approved by the Architect.
- B. Number of coats: Only inspected and approved coats of paint will be considered in determining the number of coats applied.

3.09 CLEANING UP

- A. General:
  - 1. During progress of the work, do not allow the accumulation of empty containers or other excess items except in areas specifically set aside for that purpose.
  - 2. Prevent accidental spilling of paint materials and, in event of such spill, immediately remove all spilled material and the waste or other equipment used to clean up the spill, and wash the surfaces to their original undamaged condition, all at no additional cost to the Owner.
- B. Prior to final inspection: Upon completion of this portion of the work, visually inspect all surfaces and remove all paint and traces of paint from surfaces not scheduled to be painted.

3.10 EXTRA MATERIAL

- A. Provide the Owner with a minimum of one gallon of each color of paint utilized for their use in maintenance work.
- B. The paint containers shall be clearly identified with the paint color number and name.

END OF SECTION 099113

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## PART 1 - GENERAL

### 1.1 SUMMARY

- A. This Section includes the following fire-suppression piping inside the building:
  - 1. Wet-pipe sprinkler systems.

### 1.2 SYSTEM DESCRIPTIONS

- A. Wet-Pipe Sprinkler System: Automatic sprinklers are attached to piping containing water and that is connected to water supply. Water discharges immediately from sprinklers when they are opened. Sprinklers open when heat melts fusible link or destroys frangible device.

### 1.3 PERFORMANCE REQUIREMENTS

- A. Standard Piping System Component Working Pressure: Listed for at least 175 psig.
- B. Fire-suppression sprinkler system design shall be approved by authorities having jurisdiction.
  - 1. Margin of Safety for Available Water Flow and Pressure: 10 percent, including losses through water-service piping, valves, and backflow preventers.
  - 2. Sprinkler Occupancy Hazard Classifications:
    - a. Auditoriums: Ordinary Hazard, Group 1.
    - b. Building Service Areas: Ordinary Hazard, Group 1.
    - c. Classrooms: Light Hazard.
    - d. Corridors: Light Hazard.
    - e. Display Cases: Light Hazard.
    - f. Electrical Equipment Rooms: Ordinary Hazard, Group 1.
    - g. General Storage Areas: Ordinary Hazard, Group 1.
    - h. Janitors: Ordinary Hazard, Group 1.
    - i. Laundries: Ordinary Hazard, Group 1.
    - j. Libraries, Except Stack Areas: Light Hazard.
    - k. Library Stack Areas: Ordinary Hazard, Group 2.
    - l. Mechanical Equipment Rooms: Ordinary Hazard, Group 1.
    - m. Office and Public Areas: Light Hazard.
    - n. Residential Living Areas: Light Hazard.
    - o. Restaurant Service Areas: Ordinary Hazard, Group 1.
    - p. Restrooms: Light Hazard.
    - q. Stages/Stagecraft: Ordinary Hazard, Group 2.
    - r. Stairs: Light Hazard.
  - 3. Minimum Density for Automatic-Sprinkler Piping Design:

- a. Light-Hazard Occupancy: 0.10 gpm/sq.ft. over 1500 sq. ft.
  - b. Ordinary-Hazard, Group 1 Occupancy: 0.15 gpm/sq.ft. over 1500 sq. ft.
  - c. Ordinary-Hazard, Group 2 Occupancy: [0.20 gpm/sq. ft. over 1500 sq. ft.
  - d. Remote area may be reduced without revising the density where listed quick response sprinklers are used throughout the system an in accordance with NFPA 13.
4. Maximum Protection Area per Sprinkler:
- a. Office Spaces: 225 sq. ft.
  - b. Storage Areas: 130 sq. ft.
  - c. Mechanical Equipment Rooms: 130 sq. ft.
  - d. Electrical Equipment Rooms: 130 sq. ft.
  - e. Other Areas: According to NFPA 13 recommendations, unless otherwise indicated.
  - f. When using extended coverage sprinkler heads, maximum protection area per sprinkler may be increased up to 400 sq. ft. in unobstructed light hazard and ordinary hazard locations and as allowable based on hydraulic calculations.
5. Total Combined Hose-Stream Demand Requirement: According to NFPA 13, unless otherwise indicated:
- a. Light-Hazard Occupancies: 100 gpm for 30 minutes.
  - b. Ordinary-Hazard Occupancies: 250 gpm for 60 to 90 minutes.
- C. Seismic Performance: Fire-suppression piping shall be capable of withstanding the effects of earthquake motions determined according to NFPA 13 and ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads."

#### 1.4 SUBMITTALS

- A. Product Data: For each product indicated.
- B. Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by authorities having jurisdiction, including hydraulic calculations, if applicable, and as follows:
  1. Areas to be sprinkled.
  2. Type of hazards and hazard locations.
  3. Type and locations of valves, drains, and test pipes.
  4. Alarm devices.
  5. Riser diagrams.
  6. Fire department connections.
  7. Location and coordination of electrical connections.
  8. Coordination with other trades.
  9. Seismic restraints.
- C. Field test reports and certificates.

- D. Field quality-control test reports.
- E. Operation and maintenance data.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Installer's responsibilities include designing, fabricating, and installing fire-suppression systems and providing professional engineering services needed to assume engineering responsibility. Base calculations on results of fire-hydrant flow test. Work shall be performed by a Sprinkler Contractor engaged in the fire suppression industry for a minimum of five (5) years.
- B. Equipment Qualifications
  - 1. Each item of equipment shall be capable of performing its function over an extended period of time with a minimum of attention and maintenance. All equipment shall be constructed using new materials designed and built in accordance with the best practices of the industry.
  - 2. The equipment manufacturer shall have been engaged in the fire suppression industry for a minimum of five (5) years.
- C. NFPA Standards: Fire-suppression-system equipment, specialties, accessories, installation, and testing shall comply with the following:
  - 1. NFPA 13, "Installation of Sprinkler Systems"; 1999 version.
  - 2. NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height"; 1999 version.
  - 3. NFPA 14, "Installation of Standpipe, Private Hydrant, and Hose Systems"; 2000 version.
  - 4. NFPA 24, "Installation of Private Fire Service Mains and Their Appurtenances"; 1995 version.

### PART 2 - PRODUCTS

#### 2.1 SPRINKLER SPECIALTY FITTINGS

- A. Sprinkler specialty fittings shall be UL listed or FMG approved, with 175-psig minimum working-pressure rating, and made of materials compatible with piping.
- B. Outlet Specialty Fittings:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Anvil International, Inc.
    - b. Central Sprinkler Corp.
    - c. National Fittings, Inc.

- d. Star Pipe Products; Star Fittings Div.
  - e. Victaulic Co. of America.
  - f. Ward Manufacturing.
- 2. Mechanical-T and -Cross Fittings: UL 213, ductile-iron housing with gaskets, bolts and nuts, and threaded, locking-lug, or grooved outlets.
  - 3. Snap-On and Strapless Outlet Fittings: UL 213, ductile-iron housing or casting with gasket and threaded outlet.
- C. Sprinkler Branch-Line Test Fittings: Brass body with threaded inlet, capped drain outlet, and threaded outlet for sprinkler.
- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Elkhart Brass Mfg. Co., Inc.
    - b. Fire-End and Croker Corp.
    - c. Potter-Roemer; Fire-Protection Div.
- D. Drop-Nipple Fittings: UL 1474, adjustable with threaded inlet and outlet, and seals.
- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. CECA, LLC.
    - b. Merit.

## 2.2 LISTED FIRE-PROTECTION VALVES

- A. Valves shall be UL listed or FMG approved, with 175-psig minimum pressure rating.
- B. Gate Valves with Wall Indicator Posts:
- 1. Gate Valves: UL 262, cast-iron body, bronze mounted, with solid disc, nonrising stem, operating nut, and flanged ends.
  - 2. Indicator Posts: UL 789, horizontal-wall type, cast-iron body, with hand wheel, extension rod, locking device, and cast-iron barrel.
  - 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Grinnell Fire Protection.
    - b. McWane, Inc.; Kennedy Valve Div.
    - c. NIBCO.
    - d. Stockham.
- C. Butterfly Valves: UL 1091.
- 1. NPS 2 and Smaller: Bronze body with threaded ends.

- a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1) Global Safety Products, Inc.
  - 2) Milwaukee Valve Company.
- 2. NPS 2-1/2 and Larger: Bronze, cast-iron, or ductile-iron body; wafer type or with grooved ends.
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Central Sprinkler Corp.
    - 2) McWane, Inc.; Kennedy Valve Div.
    - 3) Mueller Company.
    - 4) NIBCO.
    - 5) Victaulic Co. of America.
- D. Check Valves NPS 2 and Larger: UL 312, swing type, cast-iron body with flanged or grooved ends.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Central Sprinkler Corp.
    - b. Crane Co.; Crane Valve Group; Crane Valves.
    - c. Crane Co.; Crane Valve Group; Jenkins Valves.
    - d. Grinnell Fire Protection.
    - e. Hammond Valve.
    - f. McWane, Inc.; Kennedy Valve Div.
    - g. Mueller Company.
    - h. NIBCO.
    - i. Potter-Roemer; Fire Protection Div.
    - j. Reliable Automatic Sprinkler Co., Inc.
    - k. Star Sprinkler Inc.
    - l. Stockham.
    - m. Victaulic Co. of America.
    - n. Watts Industries, Inc.; Water Products Div.
- E. Gate Valves: UL 262, OS&Y type.
  - 1. NPS 2 and Smaller: Bronze body with threaded ends.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Crane Co.; Crane Valve Group; Crane Valves.
      - 2) Hammond Valve.
      - 3) NIBCO.



2. NPS 2-1/2 and Larger: Cast-iron body with flanged ends.
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Crane Co.; Crane Valve Group; Crane Valves.
    - 2) Crane Co.; Crane Valve Group; Jenkins Valves.
    - 3) Hammond Valve.
    - 4) Milwaukee Valve Company.
    - 5) Mueller Company.
    - 6) NIBCO.

F. Indicating Valves: UL 1091, with integral indicating device and ends matching connecting piping.

1. Indicator: Electrical, 115-V ac, prewired, single-circuit, supervisory switch.
2. NPS 2 and Smaller: Ball or butterfly valve with bronze body and threaded ends.
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Milwaukee Valve Company.
    - 2) NIBCO.
    - 3) Victaulic Co. of America.
3. NPS 2-1/2 and Larger: Butterfly valve with cast- or ductile-iron body; wafer type or with flanged or grooved ends.
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Central Sprinkler Corp.
    - 2) Grinnell Fire Protection.
    - 3) McWane, Inc.; Kennedy Valve Div.
    - 4) Milwaukee Valve Company.
    - 5) NIBCO.
    - 6) Victaulic Co. of America.

### 2.3 UNLISTED GENERAL-DUTY VALVES

- A. Check Valves NPS 2 and Smaller: MSS SP-80, Type 4, Class 125 minimum, swing type with bronze body, nonmetallic disc, and threaded ends.
- B. Gate Valves NPS 2 and Smaller: MSS SP-80, Type 2, Class 125 minimum, with bronze body, solid wedge, and threaded ends.
- C. Globe Valves NPS 2 and Smaller: MSS SP-80, Type 2, Class 125 minimum, with bronze body, nonmetallic disc, and threaded ends.

## 2.4 SPECIALTY VALVES

- A. Sprinkler System Control Valves: UL listed or FMG approved, cast- or ductile-iron body with flanged or grooved ends, and 175-psig minimum pressure rating.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. AFAC Inc.
    - b. Central Sprinkler Corp.
    - c. Grinnell Fire Protection.
    - d. Reliable Automatic Sprinkler Co., Inc.
    - e. Star Sprinkler Inc.
    - f. Victaulic Co. of America.
    - g. Viking Corp.
  2. Alarm Check Valves: UL 193, designed for horizontal or vertical installation, with bronze grooved seat with O-ring seals, single-hinge pin, and latch design. Include trim sets for bypass, drain, electrical sprinkler alarm switch, pressure gages, retarding chamber, and fill-line attachment with strainer.
    - a. Drip Cup Assembly: Pipe drain without valves and separate from main drain piping.

## 2.5 SPRINKLERS

- A. Sprinklers shall be UL listed or FMG approved, with 175-psig minimum pressure rating.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Central Sprinkler Corp.
  2. Grinnell Fire Protection.
  3. Reliable Automatic Sprinkler Co., Inc.
  4. Star Sprinkler Inc.
  5. Victaulic Co. of America.
  6. Viking Corp.
- C. Automatic Sprinklers: With heat-responsive element complying with the following:
1. UL 199, for nonresidential applications.
  2. UL 1626, for residential applications.
  3. UL 1767, for early-suppression, fast-response applications.
- D. Sprinkler Types and Categories:
1. Nominal 1/2-inch orifice for standard flow sprinkler head.
  2. Nominal 17/32-inch orifice extended coverage sprinkler head.

3. "Ordinary" temperature classification rating, unless otherwise indicated or required by application.

E. Sprinkler types, features, and options as follows:

1. Concealed ceiling sprinklers, including cover plate.
2. Pendent sprinklers.
3. Quick-response sprinklers.
4. Recessed sprinklers, including escutcheon.
5. Sidewall sprinklers.
6. Upright sprinklers.
7. Dry sidewall sprinklers.
8. Dry pendent sprinklers.

F. Sprinkler Finishes: Chrome plated, bronze, and painted.

G. Special Coatings: Wax, lead, and corrosion-resistant paint.

H. Sprinkler Escutcheons: Materials, types, and finishes for the following sprinkler mounting applications. Escutcheons for concealed, sidewall, and recessed-type sprinklers are specified with sprinklers.

1. Ceiling Mounting: Chrome-plated steel, 2 piece, with 1-inch vertical adjustment.
2. Sidewall Mounting: Chrome-plated steel, one piece, flat.

I. Sprinkler Guards: Wire-cage type when head is installed below 7'-6" or in areas subject to physical damage, including fastening device for attaching to sprinkler.

## 2.6 ALARM DEVICES

A. Alarm-device types shall match piping and equipment connections.

B. Water-Flow Indicator: UL 346, electrical-supervision, paddle-operated-type, water-flow detector with 250-psig pressure rating and designed for horizontal or vertical installation. Include two single-pole, double-throw circuit switches for isolated alarm and auxiliary contacts, 7 A, 125-V ac and 0.25 A, 24-V dc; complete with factory-set, field-adjustable retard element to prevent false signals and tamperproof cover that sends signal if removed.

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

- a. ADT Security Services, Inc.
- b. Grinnell Fire Protection.
- c. ITT McDonnell & Miller
- d. Potter Electric Signal Company.
- e. System Sensor.
- f. Viking Corp.
- g. Watts Industries, Inc.; Water Products Div.

- C. Valve Supervisory Switch: UL 753, electrical, single-pole, double-throw switch with normally closed contacts. Include design that signals controlled valve is in other than fully open position.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. McWane, Inc.; Kennedy Valve Div.
    - b. Potter Electric Signal Company.
    - c. System Sensor.

### PART 3 - EXECUTION

#### 3.1 GENERAL

- A. Inspect preceding work. Verify all dimensions before proceeding with work and coordinate all work and placement of components with other trades.
- B. Be responsible for all measurements, fitting and assembly of all work. Prefabrication is done at the Contractor's risk.
- C. Installation
  - 1. Drawings indicate general intent and location. Piping shall be installed in the most direct and straight manner as possible. All lines shall be run high enough to permit relocation of lights without moving ceiling grid.
  - 2. Coordinate exact pipe locations with Drawings and other trades before design approval and fabrication of piping. This Contractor shall be responsible for any redesign and fabrication required to fit system into allowable space.
  - 3. Sprinkler piping that passes through a non-sprinkled area shall be adequately protected as required by NFPA 13.
  - 4. Do not route any piping over electrical panels, transformers, or other equipment requiring a clear space above per NEC and NFPA Codes.
  - 5. All piping in finished areas shall be concealed unless shown otherwise on the Drawings.
  - 6. All vertical lines shall be plumb and horizontal lines shall run parallel to building construction.
  - 7. Install horizontal piping to slope to low points so that entire system may be emptied to facilitate testing.
  - 8. Pipe drains to terminate outside the building wherever possible. Location of drains to the building exterior shall be as shown on Drawings or as approved by the Owner.
  - 9. Pipe and fittings shall be inspected for soundness and cleaned of all dirt and other foreign matter prior to be installed. All damaged pipe and fittings will be rejected.
  - 10. Protect open pipe ends whenever work is suspended during construction to prevent foreign material from entering.
  - 11. Chrome plated or other polished finished components shall be installed with care so that marring does not occur to the finish.

D. Zoning

1. Sprinkler system shall be zoned on a floor-by-floor basis. In addition, systems protecting special hazards shall be zoned separately.

E. Pipe Supports

1. All piping shall be supported from the structure above with UL approved hangers. Sizing, spacing, and installation shall be in accordance with NFPA 13 except as otherwise shown on the Drawings or specified herein. Comply with other sections of this specification relating to Basic Mechanical Materials and Methods for basic pipe installation.

F. Ball Drip Valves

1. Provide where shown and as required. Locate ball drips in accessible locations and pipe discharge full size to nearest floor drain.

G. Valve Supervisory Switches

1. Provide valve supervisory switches for all water supply shut-off valves.

H. Sprinkler Heads

1. Sprinkler heads shall be installed per manufacturer's recommendations. Heads shall be installed to satisfy all code requirements for head spacing and as herein specified.
2. Finishes shall be protected against scratches, dents and discoloration. Defective items will not be acceptable.

I. Wet Sprinkler System

1. Fire sprinklers shall be provided for the entire building except as follows:
  - a. Do not install sprinkler piping or heads in elevator shafts or elevator equipment rooms.
  - b. Do not install sprinkler heads in transformer vault.
  - c. Provide sprinklers at all stair landings, except intermediate landings.

J. Instructions

1. When required approvals of this work have been obtained, and at time designated by the Owner, demonstrate to the Owner's personnel the operation and maintenance of the systems.

3.2 VALVE APPLICATIONS

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:

1. Listed Fire-Protection Valves: UL listed and FMG approved for applications where required by NFPA 13 and NFPA 14.
  - a. Shutoff Duty: Use butterfly or gate valves.
2. Unlisted General-Duty Valves: For applications where UL-listed and FMG-approved valves are not required by NFPA 13 and NFPA 14.
  - a. Shutoff Duty: Use butterfly or gate valves.
  - b. Throttling Duty: Use globe valves.

### 3.3 PIPING INSTALLATION

- A. Refer to Division 20 Section "Pipe, Valves, Fittings, and Hangers for Fire Suppression, Plumbing, and HVAC" for basic piping installation.
- B. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated, as far as practical.
  1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
- C. Use approved fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.
- D. Install unions adjacent to each valve in pipes NPS 2 and smaller. Unions are not required on flanged devices or in piping installations using grooved joints.
- E. Install flanges or flange adapters on valves, apparatus, and equipment having NPS 2-1/2 and larger connections.
- F. Install "Inspector's Test Connections" in sprinkler system piping, complete with shutoff valve, sized and located according to NFPA 13.
- G. Install sprinkler piping with drains for complete system drainage.
- H. Install sprinkler zone control valves, test assemblies, and drain risers adjacent to standpipes when sprinkler piping is connected to standpipes.
- I. Install drain valves on standpipes.
- J. Install ball drip valves to drain piping between fire department connections and check valves. Drain to floor drain or outside building.
- K. Install alarm devices in piping systems.
- L. Hangers and Supports: Comply with NFPA 13 for hanger materials.

1. Install standpipe system piping according to NFPA 14.
  2. Install sprinkler system piping according to NFPA 13.
- M. Earthquake Protection: Install piping according to NFPA 13 to protect from earthquake damage.
- N. Install pressure gages on riser or feed main, at each sprinkler test connection, and at top of each standpipe. Include pressure gages with connection not less than NPS 1/4 and with soft metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal, and install where they will not be subject to freezing.
- O. Fill wet-standpipe system piping with water.
- P. Fill wet-pipe sprinkler system piping with water.

### 3.4 VALVE INSTALLATION

- A. Install listed fire-protection valves, unlisted general-duty valves, specialty valves and trim, controls, and specialties according to NFPA 13 and NFPA 14 and authorities having jurisdiction.
- B. Install listed fire-protection shutoff valves supervised-open, located to control sources of water supply except from fire department connections. Install permanent identification signs indicating portion of system controlled by each valve.
- C. Install backflow preventers in potable-water supply sources.
- D. Alarm Check Valves: Install in vertical position for proper direction of flow, including bypass check valve and retarding chamber drain-line connection.

### 3.5 SPRINKLER APPLICATIONS

- A. Drawings indicate sprinkler types to be used. Where specific types are not indicated, use the following sprinkler types:
1. Rooms without Ceilings: Upright sprinklers.
  2. Rooms with Suspended Ceilings: Concealed sprinklers.
  3. Wall Mounting: Sidewall sprinklers.
  4. Sprinkler Finishes:
    - a. Upright Sprinklers: Rough bronze; wax coated where exposed to acids, chemicals, or other corrosive fumes.
    - b. Recessed Pendent, and Sidewall Sprinklers: Factory painted white, with white escutcheon.
    - c. Concealed Sprinklers: Rough brass, with factory-painted white cover plate.
    - d. Residential Sprinklers: Factory painted white.

### 3.6 SPRINKLER INSTALLATION

- A. Install sprinklers in suspended ceilings in center of narrow dimension of acoustical ceiling panels and tiles.
- B. Do not install pendent or sidewall, wet-type sprinklers in areas subject to freezing. Use dry-type sprinklers with water supply from heated space.

### 3.7 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment to allow service and maintenance.
- C. Connect water-supply piping to fire-suppression piping.
- D. Install ball drip valves at each check valve for fire department connection. Drain to floor drain or outside building.
- E. Connect piping to specialty valves, hose valves, specialties, fire department connections, and accessories.
- F. Electrical Connections: Power wiring is specified in Division 26.
- G. Connect alarm devices to fire alarm.
- H. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."
- I. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

### 3.8 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
  - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  - 2. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.
  - 3. Flush, test, and inspect standpipe systems according to NFPA 14, "System Acceptance" Chapter.
  - 4. Coordinate with fire alarm tests. Operate as required.
  - 5. Verify that equipment hose threads are same as local fire department equipment.
- B. Report test results promptly and in writing to Architect and authorities having jurisdiction.
- C. Sterilization



SECTION 21 10 00  
WATER BASED FIRE PROTECTION

1. Contractor shall sterilize all piping upstream of fire protection backflow preventer.
  - a. Flush system thoroughly until water runs clear.
  - b. Entire system shall be filled with a water/chlorine solution containing 50 parts per million of chlorine. The system or part thereof shall be valved off and allowed to stand for 24 hours; or the system or part thereof shall be filled with a water/chlorine solution containing at least 200 parts per million of chlorine and allowed to stand for three hours.
  - c. Following the allowed standing time, the system shall be flushed with clean potable water until chlorine does not remain in the water coming from the system.
  - d. After the above requirements are satisfied, submit samples to Indiana State Board of Health for approval.
  - e. Sterilization shall be redone until approval from the State Board of Health is obtained. Include copies of the approval in the Operations and Maintenance Manuals.

D. Testing

1. Testing to comply with NFPA 13 Standard.
2. Test backflow preventer to ensure proper operation. Inspection shall be performed by a registered inspector in accordance with the Indiana Department of Environmental Management. Submit reports to the Owner and include a copy in the Operations and Maintenance manuals.
3. Test all piping hydrostatically at not less than 200 psi for 2 hours without loss of pressure.
4. Retest piping that initially fails after corrective actions have been made.
5. All tests shall be made in the presence of the Owner's Representative or as directed by the Engineer. Allow for at least 24 hours notice of all tests.
6. Complete and sign "Contractor's Material and Test Certificates". Make arrangements and pay for all costs for all inspections by the authority having jurisdiction and obtain approval of the installation. Include copies of the certificates in the Operations and Maintenance Manuals.

END OF SECTION 21 10 00

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 CD or DVD. The following is a list, but not limited to, of required documentation to be included on the CD or DVD:
  - 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. Additionally submit one hard copy of the O&M's in a 3-ring binder and unfolded Record Drawings.
- C. 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.

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. Globetray

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 (1/4") 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 which ever 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. Lanaloid 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 260519 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 260500

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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.

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SELECTIVE ELECTRICAL DEMOLITION

- 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 260502

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

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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 260513
- 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.

SECTION 26 05 26  
GROUNDING AND BONDING

- 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 260526

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 1 - 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 260533

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 260500 Common Work Results for Electrical
- B. Section 260519 Low Voltage Wire and Cable
- C. Section 260533 Raceway and Boxes
- D. Section 265100 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) CD 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-N3/120V 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.

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.**

END OF SECTION 260923

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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 duplex 2 pole 3 wire grounding type unless loads require 20 amp.
- B. All switches shall be specification grade quiet switches, 120-277 volt 15 amp.
- C. Device colors shall be a 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, Bryant, Arrow Hart, Leviton and Pass & Seymour are the only acceptable manufacturers.
- B. The following is an approved list of receptacles by type (based on Hubbell).
  - 1. 15 amp duplex- # HBL5262 or approved equal
  - 2. 20 amp duplex- # HBL5362 or approved equal
  - 3. 15 amp isolated ground- #IG5262 (orange) or approved equal
  - 4. 20 amp isolated ground- #IG5362 (orange) or approved equal
  - 5. 15 amp single- # HBL5261 or approved equal

6. 20 amp single- # HBL5361 or approved equal
  7. 15 amp GFCI - # GF5262 or approved equal
  8. 20 amp GFCI - # GF5362 or approved equal
- C. The following is the approved list of switches by type (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
- 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 install 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 262726

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 260500 Common Work Results Electrical
- C. Section 260533 Raceway and Boxes
- D. Section 260529 Low Voltage Wiring
- E. Section 260923 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 lamp type to be provided
- C. The Electrical 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 LIGHTING FIXTURE MANUFACTURERS

- A. Acceptable Manufacturers
  - 1. Lithonia
  - 2. Hubbell
  - 3. Columbia
  - 4. Daybrite
  - 5. Cooper
- B. All others must submit for approval.

2.02 FIXTURE SCHEDULE

- A. Refer to 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

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 265100