



JOLIET JUNIOR COLLEGE

— 1901 —

(Business & Auxiliary Services)
1215 Houbolt Road
Joliet, Illinois 60431-8938

INSTRUCTIONS TO BIDDERS

Sealed proposals are invited for **MISCELLANEOUS CAPITAL IMPROVEMENT PROJECTS REBID** pursuant to specifications.

PROPOSALS:

Proposals will be received and publicly read aloud by the Joliet Junior College District #525, Joliet, Will County, Illinois, at the place, date and time hereinafter designated.

PLACE: [CLICK HERE TO JOIN THE PUBLIC BID OPENING AT THE SPECIFIED DATE/TIME](#)

DATE: **APRIL 28, 2022**

FAXES ARE NOT ACCEPTABLE

TIME: **9:00 AM**

Proposals received after this time will not be accepted.

Proposals must be submitted through the ESM Solutions electronic sourcing site. Please note that all vendors will have to complete an on-line registration process prior to submitting your proposal. A step-by-step supplier registration guide is posted to the college's website for your reference. General supplier guides are also available on the ESM website. If you have any questions during the registration process, contact ESM Solutions Customer Support (877) 969-7246 Option 3.

Registration Link:

<https://supplier.esmsolutions.com/registration#/registration/contactInformation/>

General Supplier Guide (ESM Documents):

<https://support.esmsolutions.com/hc/en-us/sections/115000917048-Supplier-Guides>

Supplier Registration Guide (JJC Document):

<https://www.jjc.edu/sites/default/files/Purchasing/FY2019/Supplier%20Registration%20Screenshots%20Final.pdf>

PRE-BID MEETING:

An optional pre-bid meeting will be held virtually through Microsoft Teams on **APRIL 21, 2022 at 9:00 AM**. [CLICK HERE TO JOIN THE PRE-BID MEETING AT THE SPECIFIED DATE AND TIME](#)

DELIVERY:

All prices must be quoted F.O.B., Joliet Junior College, 1215 Houbolt Road, Joliet, IL 60431 unless

otherwise noted.

TAX EXEMPTION:

Joliet Junior College District #525 is exempt from Federal, State, and Municipal taxes.

SIGNATURE ON BIDS:

Joliet Junior College District #525 requires the signature on bid documents to be that of an authorized representative of said company.

Each bidder, by making his bid, represents that he has read and understands the bidding documents and that these instructions to bidders are a part of the specifications.

BIDDING PROCEDURES:

1. No bid shall be modified, withdrawn, or cancelled for sixty (60) days after the bid opening date without the consent of the College Board of Trustees.
2. Changes or corrections may be made in the bid documents after they have been issued and before bids are received. In such case, a written addendum describing the change or correction will be issued by the College to all bidders of record. Such addendum shall take precedence over that portion of the documents concerned, and shall become part of the bid documents. Except in unusual cases, addendum will be issued to reach the bidders at least five (5) days prior to date established for receipt of bids.
3. Each bidder shall carefully examine all bid documents and all addenda thereto, and shall thoroughly familiarize themselves with the detailed requirements thereof prior to submitting a proposal. Should a bidder find discrepancies or ambiguities in, or omissions from documents, or should they be in doubt as to their meaning, they shall, at once, and in any event, not later than ten (10) days prior to bid due date, notify the College who will, if necessary, send written addendum to all bidders. The college will not be responsible for any oral instructions. All inquiries shall be directed to the Director of Business & Auxiliary Services. After bids are received, no allowance will be made for oversight by bidder.

SUBSTITUTIONS:

1. Each bidder represents that his bid is based upon the materials and equipment described in the bidding documents.
2. Any dealer bidding an equal product must specify brand name, model number, and supply specifications of product. The Board shall be the sole judge of whether an article shall be deemed to be equal.
3. A bidder's failure to meet the minimum specifications as listed may result in disqualification of his bid.

REJECTION OF BIDS:

The bidder acknowledges the right of the College Board to reject any or all proposals and to waive informality or irregularity in any proposal received and to award each item to different bidders or all items to a single bidder. In addition, the bidder recognizes the right of the College Board to reject a proposal if the proposal is in any way incomplete or irregular. The College Board may also award, at its discretion, only certain items quoted on. The College Board also reserves the right to reject the proposal of a Bidder who has previously failed to perform properly or complete on time contracts of a

similar nature or a bid of a Bidder when investigation shows that Bidder is not in a position to perform the contract.

BUSINESS ENTERPRISE PROGRAM (BEP):

MINORITIES, FEMALES, AND PERSONS WITH DISABILITIES PARTICIPATION AND UTILIZATION PLAN:

Joliet Junior College will make every effort to use local business firms and contract with small, minority-owned, and/or women-owned businesses in the procurement process. This solicitation contains a goal to include businesses owned and controlled by minorities, females, and persons with disabilities in the College's procurement and contracting processes in accordance with the State of Illinois' Business Enterprise for Minorities, Females, and Persons with Disabilities Act (30 ILCS 575).

Because these goals vary by business ownership status and category of procurement, we urge interested businesses to visit the Department of Central Management Services (CMS), [Business Enterprise Program \(BEP\)](https://www2.illinois.gov/cms/business/sell2/bep/Pages/Vendor_Registration.aspx) web site to obtain additional details. **To qualify, prime vendors or subcontractors must be certified by the state of Illinois or the city of Chicago prior to contract award.** Go to (https://www2.illinois.gov/cms/business/sell2/bep/Pages/Vendor_Registration.aspx) for complete requirements for BEP certification.

For all construction related projects, the following companies must submit a [utilization plan](#) and/or [letter of intent](#) that meets or exceeds the identified goal.

- **Certified contractors meeting the goal through self-performance**
- **Any contractor utilizing subcontractors for the project**

If a vendor cannot meet the goal, documentation and explanation of good faith efforts to meet the specified goal is required within the utilization plan. Visit: for instructions on completing the form.

PROPRIETARY INFORMATION:

Vendor should be aware that the contents of all submitted bids are subject to public review and will be subject to the Illinois Freedom of Information Act. All information submitted with your bid will be considered public information unless vendor identifies all proprietary information in the proposal by clearly marking on the top of each page so considered, "Proprietary Information." The Illinois Attorney General shall make a final determination of what constitutes proprietary information or trade secrets. While JJC will endeavor to maintain all submitted information deemed proprietary within JJC, JJC will not be liable for the release of such information.

ACKNOWLEDGEMENT OF ADDENDA:

Signature of company official on original document shall be construed as acknowledgement of receipt of any and all addenda pertaining to this specific proposal. Identification by number of addenda and date issued should be noted on all proposals submitted.

FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA ON PROPOSAL SUBMITTED MAY RESULT IN DISQUALIFICATION OF PROPOSAL.

Bidders who obtain a copy of the bid from our web site are responsible for checking back on the site for any addenda issued.

CLERICAL ERRORS:

If applicable, all errors in price extensions will be corrected by Joliet Junior College and totals for award determination corrected accordingly, unless the bidder specifies that no change be made in the total submitted. In this case, all incorrect price extensions will be noted at "lot", and award determination made on the basis of total price submitted.

SAMPLES:

Bidder may be required to furnish samples upon request and without charge to the College.

BID SECURITY:

A certified check or bank draft or bid bond, made payable to Joliet Junior College District #525, Will County, Illinois, **MUST** be submitted with the bid in the amount of **ten (10) percent of your total bid**. The bid security will be forfeited by the successful bidder in the event of the bidders failure to enter into a contract. Checks or drafts of unsuccessful bidders will be returned as soon as practicable after opening and checking the bids.

PAYMENTS:

Certified Payroll

1. With each pay application, contractors shall submit certified payroll in a format acceptable to Junior College District #525.

Partial Lien Waivers

1. The contractors' partial lien waiver, for the full amount of the payment, shall accompany the first payment application. Each subsequent payment application shall be accompanied by the contractor's partial waiver, and by partial waivers from all subcontractors and suppliers who were included in the immediately preceding payment application, to the extent of that payment.
2. Lien waivers from the Contractor and all subcontractors and suppliers shall accompany the first payment application when the amount of payment exceeds 50 percent of the total contract sum.

Final Lien Waivers: The contractor's request for final payment shall include:

1. The contractor's final lien waiver in the full amount of the contract.
2. Final lien waivers in the full amount of their contracts from all subcontractors and suppliers for which final lien waivers have not previously been submitted.

INSURANCE:

The successful bidder will be required to furnish a certificate of insurance in the following amounts:

The insurance coverage required here-in-under shall be the minimum amounts maintained by the Contractor and Subcontractors until all Work is completed and accepted by the Owner.

The Contractor will purchase and maintain "all risks" Builder's Risk property insurance, where applicable, subject only to such exclusions as have been specifically approved by the Owner in writing.

A. Workers Compensation

1. State: Statutory

2. Applicable Federal: Statutory
3. Employer's Liability:
 - a. \$1,000,000 per Accident
 - b. \$1,000,000 Occupational Disease

B. Commercial Comprehensive Liability

1. Each Occurrence: \$1,000,000
2. Products/Completed Operations Aggregate: \$2,000,000
3. Personal/Advertising Injury: \$1,000,000
4. General Aggregate: \$2,000,000
5. Policy shall include: \$2,000,000
 - a. Premises: Operations
 - b. Independent Contractors Liability
 - c. Products and Completed Operations: Maintained for minimum of one year after date of final Certificate for Payment, in full amount of the limits specified above.
 - d. Contractual Liability
 - e. Coverage for explosion (x), collapse (c), and underground (u).
6. The Commercial Comprehensive Liability policy shall include a contractual liability endorsement insuring the indemnity required by the contract. The indemnities shall be named as additional insured on the Contractor's Commercial Comprehensive Liability policy using Form CG 20 10 or its equivalent and shall name Joliet Junior College, its Board of Trustees, officers, employees and agents as additional named insured's at a minimum. The Contractor hereby agrees to effectuate the naming of such additional insured's as unrestricted additional insured's on the Contractor's policy. The additional insured endorsement shall provide the following:
 - a. That the coverage afforded the additional insurance will be primary/non-contributory insurance for the additional insurance with respect to claims arising out of operations performed by or on behalf of the Contractor.
 - b. That the policy shall contain a thirty (30) day notice of cancellation prior to the effective date thereof.
 - c. That the additional insureds have other insurance which is applicable to the loss, such other insurance will be on an excess or contingent basis.
 - d. That the amount of the company's liability under the insurance policy will not be reduced by the existence of such other insurance.
 - e. That the additional insureds will not be given less than thirty (30) days prior written notice of any cancellation thereof.
 - f. That the Contractor agrees to indemnify the College for any applicable deductibles.
 - g. That the insurance policy from an A.M. Best rated "secured" Illinois State licensed insurer.
 - h. The Contractor shall provide the College with a copy of its insurance policy or in the alternative and subject to the College's agreement, an excerpt of a page from the actual policy evidencing the additional insureds as provided for herein.
 - i. Contactor acknowledges that failure to obtain such insurance on behalf of the College constitutes a material breach of the contract and subjects Contractor to liability for damages, indemnification and all other legal remedies available to College. The Contractor is to provide the College

at all times with a certificate of insurance, evidencing the above requirements have been met. The failure of the College to object to the contents of the certificate or the absence of it shall not be deemed a waiver of any and all rights held by the College.

- j. That enclosed is a copy of the endorsement providing additional insured's status and that the Contractor will furnish a Certificate of insurance evidencing the foregoing provisions.
- k. Please include clause below in the policy:
It is agreed that Joliet Junior College, its Board of Trustees, officers, employees, agents and (Architect/Engineer Name) are additional insureds on the policy.

C. Business Auto Liability (including owned, non-owned and hired vehicles).

- 1. Bodily injury
 - a. \$1,000,000 per person
 - b. \$2,000,000 per accident
- 2. Property damage: \$1,000,000 OR
- 3. Combined Single limit: \$1,000,000

D. Umbrella

- 1. Umbrella Excess Liability: \$4,000,000
- 2. If the Contractor's Workers Compensation, Commercial General Liability and Business Auto policies do not have these minimum limits, an Umbrella policy written by an insurance company acceptable to the Owner may be used to meet the minimum limits required.
- 3. Follow-form or Primary/Non-Contributory (PNC) status and Waiver of Subrogation (WOS) for Joliet Junior College

All such policies of insurance shall be written by companies approved by the College and Certificates of Insurance shall be furnished to the College. The College shall be listed as an additional named insured under such policies. Each policy shall require at least 30 days' notice to the College in the event of cancellation. The contractor agrees to indemnify, defend, and hold harmless the College from and against all suits or claims, which may be based upon any injury to or death of any person or persons or damage to property, which may occur or which may be alleged to have occurred in the course of the performance of this Agreement by the Contractor, whether such sum claim shall be made by an employee of the Contractor, by a third person or their representatives, or whether or not it shall be claimed that the said injury, death, or damage or cause through a negligence act or omission of the Contractor; and the all charges of attorneys and all costs and other expenses arising there from or incurred in connection therewith; and if any judgment shall be rendered against the College in any such action or actions, the Contractor, at its own expense, shall satisfy and discharge the same.

PERFORMANCE BONDS:

The successful bidder on this proposal must furnish a performance bond and a labor and material payment bond made out to Junior College District #525, prepared on an approved form, as security for the faithful performance of their contract, within ten (10) days of their notification that their bid has been accepted. The surety thereon must be such surety company or companies as are authorized and licensed to transact business in the State of Illinois and have an A-XIV best rating. Attorneys in fact who sign bid bonds must file with each bond a certified copy of their power of attorney to sign

said bonds. The performance bond is an amount equal to one hundred and ten percent (110%) of the contract sum. Such bonds shall be in force from the date of signing of the contract until one year after issuing of final certificate of payment. The cost of the bonds shall be included in the bidder's proposal.

LAWS AND ORDINANCES:

In execution of the work, the Contractor shall comply with applicable state and local laws, ordinances and regulation, the rules and regulations of the Board of Fire Underwriters, and OSHA standards.

SEX OFFENDER REGISTRATION REQUIREMENT NOTIFICATION:

Illinois Compiled Statutes (730 ILCS 150/2) requires that any person who is required by law to register as a sex offender and who is either a student or an employee at an institution of higher education, must also register with the police department of the institution they are employed by or attending. For purposes of this act, a student or employee is defined as anyone working at or attending the institution for a period of five (5) days or an aggregate period of more than thirty (30) days during a calendar year. This includes persons operating as or employed by an outside contractor at the institution. Anyone meeting the above requirements is required to register at the Campus Police Department located in G1013, within five (5) days of enrolling or becoming employed. Persons failing to register are subject to criminal prosecution.

DAMAGE AND NEGLIGENCE:

The Contractor agrees to indemnify and save harmless the College and employees from and against all loss, including costs and attorney's fees, by reasons or liability imposed by law upon the College for damages because of bodily injury, including death at any time resulting therefrom, sustained by any person or persons or on account of damage to property including loss of use thereof as provided in the General Conditions and Supplementary Conditions.

College shall not be responsible for damages, delays, or failure to perform on its part resulting from acts or occurrences of force majeure. "Force majeure" means any (a) act of God, landslide, lightning, earthquake, hurricane, tornado, blizzard, floods and other adverse and inclement weather conditions; (b) fire, explosion, flood, acts of a public enemy, war, blockade, insurrection, riot or civil disturbance; (c) labor dispute, strike, work slow down, picketing, primary boycotts, secondary boycotts or boycotts of any kind and nature, or work stoppages; (d) any law, order, regulation ordinance, or requirement of any government or legal body or any representative of any such government or legal body; (e) inability to secure necessary materials, equipment, parts or other components of the project as a result of transportation difficulties, fuel or energy shortages, or acts or omission of any common carriers; or (f) any other similar cause or similar event beyond the reasonable control of College.

INVESTIGATION OF BIDDERS:

The College will make any necessary investigation to determine the ability of the bidder to fulfill the proposal requirements. Joliet Junior College reserves the right to reject any proposal if it is determined that the bidder is not properly qualified to carry out the obligation of the contract.

DISCLOSURE:

Vendor shall note any and all relationships that might be a conflict of interest and include such information with the bid.

APPRENTICESHIP AND TRAINING PROGRAMS:

The bidder and all bidder's subcontractors must participate in applicable apprenticeship and training programs approved by and registered with the United States Department of Labor Bureau of Apprenticeship and Training. The apprenticeship and training programs(s) must be in the same trade in which the firm shall be performing work on behalf of the College under the Contract. This provision shall not apply to federally funded construction projects if, in the opinion of College, such application would jeopardize the receipt or use of federal funds in support of such project.

A STATEMENT TO THE ABOVE EFFECT HAS BEEN ADDED TO THE BID FORM. BIDDERS MUST BE A MEMBER OF AN APPROVED APPRENTICESHIP PROGRAM PRIOR TO BID OPENING ON THE PROJECT. FAILURE TO LIST REQUIRED INFORMATION MAY RESULT IN DISQUALIFICATION OF BID”.

SUBCONTRACTORS:

Bidders must state on the proposal form all subcontractors he intends to use for this project. Failure to do so may be cause for rejection of bid.

PREVAILING WAGE RATE:

The successful bidder must pay not less than the prevailing hourly wage rate determined by the Illinois Department of Labor for the county where the contract is executed and the craft or type of worker needed to execute the contract. See the prevailing wage scale attached.

If, during the course of work under this contract, the Department of Labor revises the prevailing rate hourly wages to be paid under this contract for any trade or occupation, Owner, will notify Contractor and each Subcontractor of the changes in the prevailing rate of hourly wages. Contractor shall have the sole responsibility and duty to ensure that the revised prevailing rate of hourly wages is paid by contractor and all Subcontractors to each worker to whom a revised rate is applicable. Revisions to the prevailing wage as set forth above shall not result in an increase in the Contract Sum.

In compliance with the Office of the Attorney General the following is also required of all bidders:

Payment of Prevailing Wage:

- The Act requires that all laborers, workers and mechanics employed by or on behalf of a public body in the construction of public works be paid the general prevailing rate of hourly wages (including allotments for training and approved apprenticeship programs, health and welfare, insurance, vacation and pension benefits) for work of a similar character in the locality in which the work is performed. See 820 ILCS 103/3. The Act contains all relevant definitions, including those for the terms “public body”, “public works” and “general prevailing rate of hourly wages”, which will assist you in the understanding its requirements and your responsibilities. See 820 ILCS 130/2.
- The Illinois Department of Labor publishes the current prevailing wage rate. See <http://www.state.il.us/agency/idol/rates/rates.htm>. The rate is revised regularly and such revision takes effect immediately.

Specifications and Contractual Language:

- Public bodies must insert a provision or stipulation requiring the payment of the prevailing wage rate into every public works resolution or ordinance, call for bids, project specification and contract. See 820 ILCS 130/4(a).
- Contractors and subcontractors must insert a provision or stipulation regarding the payment of the prevailing wage rate into every public works project and bid specification, subcontract,

and contractor's bond. See 820 ILCS 130/4(b), (c).

- Contractors or construction managers who have been awarded public works contracts must post the relevant prevailing wage rate(s) at a location on the project site that is easily accessible by workers. See 820 ILCS 130/4(f).

Record-Keeping Responsibilities:

- All contractors and subcontractors must create and keep for at least three years, records of all laborers, mechanics, and other workers employed by them on a public works project. See 820 ILCS 130/5(a) (1).
- These records must include each worker's name, address, telephone number (if available), social security number, classification(s), hourly wages paid in each pay period, number of hours worked each day, and the starting and ending times of each work day. Each contractor and subcontractor is required to make these records available for inspection by the public body's agents or Illinois Department of Labor officials at a reasonable time and place upon seven business days notice. See 820 ILCS 130/5(a) (1), (b).

Certified Payroll Records:

- A contractor or subcontractor participating in a public works project must also submit a Certified Payroll the public body every month. This Certified Payroll must consist of a complete copy of the records required to be kept under Section 5(a)(1) of the Act, discussed above (with the exception of daily work starting and ending times). See 820 ILCS 130/5(a)(2).
- The monthly Certified Payroll shall also include a statement signed by the contractor or subcontractor submitting that: (1) the records are true and accurate; (2) the hourly rate paid to each worker is not less than the general prevailing wage rate required; and (3) the contractor or subcontractor is aware that filing a Certified Payroll that he or she knows to be false is a class B misdemeanor. See 820 ILCS 130/5(a)(2).
- The Act requires that a public body shall keep all Certified Payrolls submitted pursuant to the Act for at least three years. See 820 ILCS 130/5(a)(2). The retention of these monthly Certified Payroll submissions for three years by public bodies is crucial to the State of Illinois' efforts to enforce the Act and will be of particular interest to the Attorney General's office in the coming months.

Failure to comply with the Act's Requirements:

- No public works project may be instituted unless the provisions of the Act have been met. The Illinois Department of Labor is empowered to sue for injunctive relief against the awarding of any public works contract, or continuation of work under any such contract, if it is not in compliance with the Act's prerequisites. Contracts that are not in compliance with the Act's prerequisites are void as against public policy. See 820 ILCS 103/11.

Please note that this is not a complete list of all relevant requirements and prerequisites under the Act. All contractors and subcontractors rendering services under this contract must comply with all requirements of the Act, including but not limited to, all wage, notice and record keeping duties. For a full understanding of all of the Act's requirements and prerequisites, as well as the text of the Act and all related regulations, please see the Illinois Department of Labor's website at www.state.il.us/agency/idol/laws/Law130.htm.

BLACKOUT PERIOD:

After the College has advertised for bids, no pre-bid vendor shall contact any College officer(s) or employee(s) involved in the solicitation process, except for interpretation of bid specifications,

clarification of bid submission requirements or any information pertaining to pre-bid conferences. Such bidders or sub-bidders making such request shall be made in writing at least seven (7) days prior to the date for receipt of bids. No vendor shall visit or contact any College officers or employees until after the bids are awarded, except in those instances when site inspection is a prerequisite for the submission of a bid. During the black-out period, any such visitation, solicitation or sales call by any representative of a prospective vendor in violation of this provision may cause the disqualification of such bidder's response.

BID QUANTITIES:

The College Board will reserve the right to increase or decrease, within reasonable limits, such quantities as need requires and at the unit price stated.

BID AWARDS:

The successful contractor, and/or any contractor shall not proceed on this bid until it receives a purchase order from the college. Failure to comply is the risk of that contractor.

TERMINATION OF FUNDING:

JJC's contractual obligations will be subject to termination and cancellation without penalty, accelerated payment, or other recoupment mechanism as provided herein in any fiscal year for which the Illinois General Assembly or other legally applicable funding source fails to make an appropriation to make payments under the terms of this Contract. In the event of termination for lack of appropriation, the Vendor shall be paid for services performed under this Contract up to the effective date of termination. JJC shall give notice of such termination for funding as soon as practicable after JJC becomes aware of the failure of funding.

CHANGES TO CONTRACT AFTER BID AWARD:

There shall be no deviations from any work without a written change order. All change orders must be approved by the Director of Business & Auxiliary Services or Vice President of Administrative Services as well as executed by the successful contractor.

If a change order or aggregate of change orders are 10% or more of the contract price, and such change orders are not approved, in writing, by either the Director of Business & Auxiliary Services or Vice President of Administrative Services, the successful contractor shall not be entitled to any type of compensation for services or materials provided.

GENERAL:

Joliet Junior College is committed to a policy of non-discrimination on the basis of sex, handicap, race, color, and national or ethnic origin in the admission, employment, educational programs, and activities it operates. Inquiries should be addressed to the Director of Human Resources.

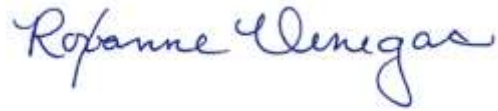
The contractor (or vendor) shall agree to save and hold harmless the Joliet Junior College District #525, the members of its College Board, its agents, servants and employees, from any and all actions or causes of action, or claim for damages, including the expense of defending suit, arising or growing out of the performance of, or failure to perform its contract.

The parties to any contract (inclusive of subcontractors) resulting from this bid hereto shall abide by the requirements of Executive Order 11246, 42 U.S.C. Section 2000d and the regulations thereto, as may be amended from time to time, the Illinois Human Rights Act, and the Rules and Regulations of the Illinois Department of Human Rights. Any vendor awarded a contract as a result of this bid must comply with the Illinois Department of Human Rights Equal Opportunity Act/Rules Sections 750.5 and 5/2-105.

Pursuant to Section 50-80 of the Illinois Procurement Code, each bidder who submits a bid or offer

for a State of Illinois contract under this Code shall have a sexual harassment policy in accordance with paragraph (4) of subsection (A) of Section 2-105 of the Illinois Human Rights Act. A copy of the policy shall be provided to the college entering into the contract upon request.

The Customer reserves the right to request additional information after your proposal has been submitted.



Roxanne Venegas
Purchasing Manager

JOLIET JUNIOR COLLEGE
ILLINOIS COMMUNITY COLLEGE DISTRICT #525
(Business & Auxiliary Services)
1215 Houbolt Road
Joliet, Illinois 60431-8938
Telephone: (815) 280-6640
Fax: (815) 280-6631

INFORMATION PERTAINING TO OUR BIDS CAN BE FOUND AT THE FOLLOWING WEBSITE:
<http://www.jjc.edu/community/vendors>

**QUESTIONS PERTAINING TO OUR BIDS CAN BE SUBMITTED THROUGH THE ESM
ELECTRONIC SOURCING SOLUTION.**

**PROJECT MANUAL
FOR**

**JOLIET JUNIOR COLLEGE – CIP, ANNUAL IMPROVEMENT
PROJECTS
JOLIET, ILLINOIS**

OWNER

JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, ILLINOIS 60431

ARCHITECT / ENGINEER

KLUBER, INC.
41 WEST BENTON STREET
AURORA, ILLINOIS 60506



**SECTION 00 01 01
PROJECT TITLE PAGE
PROJECT MANUAL**

FOR

**JOLIET JUNIOR COLLEGE - CIP, ANNUAL IMPROVEMENT PROJECTS
1215 HOUBOLT ROAD
JOLIET, IL 60431**

OWNER

**JOLIET JUNIOR COLLEGE
1215 HOUBOLT ROAD
JOLIET, IL 60431**

ARCHITECT / ENGINEER

**KLUBER ARCHITECTS + ENGINEERS
41 W. BENTON STREET
AURORA, ILLINOIS 60506**

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END OF DOCUMENT

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PART 1 GENERAL

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- A. Building demolition excluding removal of hazardous materials and toxic substances.
- B. Selective demolition of built site elements.
- C. Selective demolition of building elements for alteration purposes.
- D. Abandonment and removal of existing utilities and utility structures.

1.02 REFERENCE STANDARDS

- A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

1.03 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - 1. Minimum of five years of documented experience.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Use of explosives is not permitted.
 - 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 5. Provide, erect, and maintain temporary barriers and security devices.
 - 6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 8. Do not close or obstruct roadways or sidewalks without permit.
 - 9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.

- E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- F. If hazardous materials are discovered during removal operations, stop work and notify Architect/Engineer and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- G. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Dismantle existing construction and separate materials.
 - 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.02 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect/Engineer before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete uncovered during the course of removal operations; replace with new construction specified.
 - 2. Remove items indicated on drawings.

- E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- F. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 07 71 00 ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured roof specialties, including roof portals.

1.02 RELATED REQUIREMENTS

- A. Section 07 72 00 - Roof Accessories: Equipment rails.
- B. Section 07 92 00 - Joint Sealants.

1.03 REFERENCE STANDARDS

- A. NRCA (RM) - The NRCA Roofing Manual 2019.
- B. NAAMM (MFM) - Metal Finishes Manual; National Association of Architectural Metal Manufacturers; 1988.
- C. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.04 SUBMITTALS

- A. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.
- B. Manufacturer's Installation Instructions: Indicate special procedures, fasteners, supporting members, and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Pipe and Penetration Flashings:
 - 1. Conn-Fab Sales, Inc.: www.connfab.com.
 - 2. The Pate Company: www.patecurbs.com.
 - 3. Portals Plus: www.portalsplus.com.

2.02 COMPONENTS

- A. Prefabricated Roof Portal Systems: Consisting of a circular metal base flashing and a rubber cap.
 - 1. Base Flashing: Circular, unitized spun aluminum, with a double bead weatherseal at opening collar to accept manufacturer's standard molded rubber cap, forming a weatherproof seal without additional clamps or sealant.
 - a. Diameter: Suitable to penetration(s) to be flashed.
 - b. Height: Sufficient to maintain roofing system warranty.
 - 2. Cap: Molded EPDM rubber sized to fit base flashing, with molded weatherseal grooves to fit weatherseal beads on base flashing collar. Provide manufacturer's standard cap(s) and adapter insert(s) of the appropriate size and shape to properly seal penetration(s).
 - 3. Clamp(s): Stainless steel pipe clamping rings for securing cap(s) and adapters around penetration(s).

2.03 FINISHES

2.04 ACCESSORIES

- A. Sealant for Joints in Linear Components: As recommended by component manufacturer.
- B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.
- C. Roof Cement: ASTM D4586/D4586M, Type I.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.02 INSTALLATION

- A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Install components in accordance with existing roofing system manufacturer's requirements and so as not to void existing roofing warranty.
- C. Conform to drawing details included in NAAMM, NRCA and SMACNA manuals.
- D. Coordinate installation of components of this section with installation of stacks, vents, piping, conduits and other items penetrating roof membrane. Ensure items penetrating roof membrane are adequately and properly supported by roof structure. Do not allow roof portals to provide support for penetrating items.
- E. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.

END OF SECTION

SECTION 07 72 00 ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Equipment rails.

1.02 RELATED REQUIREMENTS

- A. Section 07 71 00 - Roof Specialties: Other manufactured roof items.

1.03 REFERENCE STANDARDS

- A. NRCA (RM) - The NRCA Roofing Manual 2019.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used.
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
 - 4. Maintenance requirements.
- B. Shop Drawings: Submit detailed layout developed for this project and provide dimensioned location and number for each type of roof accessory.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store products under cover and elevated above grade.

PART 2 PRODUCTS

2.01 ROOF CURBS

- A. Equipment Rail Curbs: Straight curbs on each side of equipment, with top of curbs horizontal and level with each other for equipment mounting.
 - 1. Base Rail: 18 gauge, galvanized steel sheet complying with ASTM A653; straight sided; with base plate and 14 gauge internal gussets. Welded corners and gussets, and mitred corners to form unitized construction. Welded areas coated with zinc-rich paint.
 - a. Width: 3½ inches unless noted otherwise on the Drawings or unless wider unit is required to accommodate equipment mount.
 - b. Nailer: 2x (nom.) pressure-preservative-treated softwood; factory attached to top of rails with concealed screws.
 - 2. Cap Flashing: 18 gauge galvanized steel; all corners mitred and welded.
 - 3. Height Above Finished Roof Surface: 8 inches, minimum.
 - 4. Height Above Roof Deck: 14 inches, minimum.
 - 5. Fabrication: Taper rails supporting mechanical equipment to match slope of roof so that tops of rails are dead level when installed on roof.
 - 6. Manufacturers:
 - a. MKT Metal Manufacturing: www.mktduct.com.
 - b. Portals Plus: www.portalsplus.com.

- c. Substitutions: See Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect/Engineer of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

3.03 INSTALLATION

- A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.
- C. Install components in accordance with existing roofing system manufacturer's requirements and so as not to void existing roofing warranty.

3.04 CLEANING

- A. Clean installed work to like-new condition.

3.05 PROTECTION

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

END OF SECTION

SECTION 07 84 00 FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Firestopping systems.
- B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.
- C. Smoke-stopping of penetrations and joints in horizontal and vertical assemblies designed to resist the passage of smoke and hot gasses, whether indicated on drawings or not, and other openings indicated.

1.02 REFERENCE STANDARDS

- A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
- B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).
- C. ITS (DIR) - Directory of Listed Products current edition.
- D. FM 4991 - Approval Standard for Firestop Contractors 2013.
- E. FM (AG) - FM Approval Guide current edition.
- F. SCAQMD 1168 - Adhesive and Sealant Applications 1989 (Amended 2017).
- G. UL 1479 - Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.
- H. UL (DIR) - Online Certifications Directory Current Edition.
- I. UL (FRD) - Fire Resistance Directory Current Edition.

1.03 DEFINITIONS

- A. Assembly: Particular arrangement of materials specific to given type of construction described or detailed in referenced documents.
- B. Barriers: Time rated fire walls, smoke barrier walls, time rated ceiling/floor assemblies and structural floors.
- C. Firestopping: Methods and materials applied as a system around penetrations and in unprotected openings to limit spread of heat, fire gasses and smoke.
- D. Penetration: Opening or foreign material passing through or into barrier or structural floor such that full thickness of rated materials is not obtained.
- E. Joint: Interruption to a fire-rated assembly occurring at interface between 1) adjacent sections of wall, 2) intersecting walls, 3) top of wall and ceiling, structural floor or roof deck, 4) wall and edge of structural floor, 5) adjacent sections of structural floor.
- F. System: Specific products and applications, classified and numbered by Underwriters Laboratories, Inc. to close specific barrier penetrations and joints.

- G. Sleeve: Metal fabrication or pipe section extending through thickness of barrier and used to permanently guard penetration. Sleeves are described as part of penetrating system in other sections and may or may not be required.

1.04 SYSTEM DESCRIPTION

A. Design Requirements:

1. Fire-rated construction: Maintain barrier and structural floor fire resistance ratings including resistance to cold smoke at all penetrations, connections with other surfaces or types of construction, at separations required to permit building movement and sound or vibration absorption, and at other construction gaps.
2. Smoke barrier construction: Maintain barrier and structural floor resistance to cold smoke at all penetrations, connections with other surfaces and types of construction and at all separations required to permit building movement and sound or vibration absorption, and at other construction gaps.

1.05 SUBMITTALS

- A. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
 1. Provide manufacturer's qualified engineering judgements for non-standard applications.
- B. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- C. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.
- D. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- F. Manufacturer's qualification statement.
- G. Installer's qualification statement.

1.06 QUALITY ASSURANCE

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
 1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
 3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and:
 1. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
 2. Verification of minimum five years documented experience installing work of this type.
 3. Verification of at least five satisfactorily completed projects of comparable size and type.

4. Licensed by local authorities having jurisdiction (AHJ).

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original, unopened packaging with legible manufacturer's identification.
- B. Coordinate delivery with scheduled installation date to minimize storage time at site.
- C. Store materials in a clean, dry, ventilated location. Protect materials from freezing if required by manufacturer.

1.08 FIELD CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.
- B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Firestopping Manufacturers:
 1. 3M Fire Protection Products: www.3m.com/firestop.
 2. A/D Fire Protection Systems Inc: www.adfire.com.
 3. Hilti, Inc: www.us.hilti.com.
 4. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.

2.02 MATERIALS

- A. Firestopping Materials: Any materials meeting requirements.
- B. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.
- C. Mold and Mildew Resistance: Provide firestoppping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.
- D. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- E. Fire Ratings: Refer to drawings for required systems and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

- A. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
 1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOPPING SYSTEMS

- A. Firestopping: Any material meeting requirements.
 1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other

specified requirements.

- B. Acceptable Manufacturers: As listed in UL (FRD) for specific UL Design Number.
- C. Fill, Void or Cavity Materials: Conform to UL (FRD) - XHHW.
- D. Firestop Devices: Conform to UL (FRD) - XHJI.
- E. Forming Materials: Conform to UL (FRD) - XHKU.
- F. Mechanical Joint Assemblies: Conform to UL (FRD) - XHLP.
- G. Packing Material: As required by specific UL Design Number for joint system or through-penetration firestop system.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify openings are ready to receive the work of this section.
 - 1. Verify barrier joints and penetrations are properly sized and in suitable condition for application of materials.

3.02 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.
- C. Install backing materials to prevent liquid material from leakage.

3.03 INSTALLATION

- A. Install materials in manner described in UL (FRD) or fire test report and in accordance with manufacturer's instructions, completely closing openings.
- B. Do not cover installed firestopping until inspected by authorities having jurisdiction.

3.04 CLEANING

- A. Clean adjacent surfaces of firestopping materials.

3.05 PROTECTION

- A. Protect adjacent surfaces from damage by material installation.
- B. Patch or replace firestopping damaged by work of other sections.

END OF SECTION

SECTION 07 92 00 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping: Firestopping sealants.

1.03 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015.
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2018.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- E. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants 2018.

1.04 SUBMITTALS

- A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
 - 6. Substrates for which laboratory adhesion and/or compatibility testing is required.
 - 7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 8. Sample product warranty.
 - 9. Certification by manufacturer indicating that product complies with specification requirements.
 - 10. SWRI Validation: Provide currently available sealant product validations as listed by SWRI (VAL) for specified sealants.
- B. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

- D. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect/Engineer and submit at least two physical samples for verification of color of each required sealant.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years experience.
- B. Installer Qualifications: Company specializing in performing the work of this section and with at least five years of documented experience.

1.06 WARRANTY

- A. Correct defective work within a five year period after Date of Substantial Completion.
- B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 1. Dow Corning Corporation: www.dowcorning.com/construction.
 2. Hilti, Inc: www.us.hilti.com.
 3. Master Builders Solutions by BASF: www.master-builders-solutions.basf.us/en-us.
 4. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
 5. Pecora Corporation: www.pecora.com.
 6. Sika Corporation: www.usa-sika.com.
 7. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.
 8. W.R. Meadows, Inc: www.wrmeadows.com.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed.
 - a. Wall expansion and control joints.
 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between countertop back and side splashes and adjacent wall construction.
 - c. Joints between window sills and adjacent window and wall construction.
 - d. Joints between plumbing fixtures and adjacent construction.
 - e. Other joints indicated below.
- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.
- C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.

2.03 JOINT SEALANTS - GENERAL

2.04 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
 - 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 - 4. Color: To be selected by Architect/Engineer from manufacturer's standard range.
 - 5. Cure Type: Single-component, neutral moisture curing.
 - 6. Manufacturers:
 - a. Dow Chemical Company; DOWSIL 790 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html.
 - b. Sika Corporation; Sikasil WS-290: www.usa-sika.com.
 - c. Sika Corporation; Sikasil 728NS: www.usa-sika.com.
 - d. Tremco Commercial Sealants & Waterproofing; Spectrem 1: www.tremcosealants.com.
 - e. Tremco Commercial Sealants & Waterproofing; Tremsil 200: www.tremcosealants.com.
- B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 50 percent, minimum.
 - 2. Hardness Range: 35 to 45, Shore A, when tested in accordance with ASTM C661.
 - 3. Manufacturers:
 - a. Sika Corporation; Sikaflex-15 LM: www.usa-sika.com.
 - b. Sika Corporation; Sikaflex-2c NS: www.usa-sika.com.
 - c. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com.

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - 1. ASTM C1330; Type B - Bi-Cellular Polyethylene.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 POST-OCCUPANCY

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at low temperature in thermal cycle. Report failures immediately and repair.

END OF SECTION

SECTION 08 71 00 DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Thresholds.
- B. Weatherstripping, seals and door gaskets.

1.02 REFERENCE STANDARDS

- A. BHMA A156.2 - Bored and Preassembled Locks and Latches 2017.
- B. BHMA A156.21 - Thresholds 2019.
- C. BHMA A156.22 - Gasketing 2021.
- D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

1.03 SUBMITTALS

- A. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project. Include catalog cuts, installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

1.04 QUALITY ASSURANCE

- A. Hardware Supplier Qualifications: Company specializing in supplying the type of products specified in this section with at least three years documented experience and approved by manufacturer.
- B. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC), certified by DHI, to prepare hardware schedules, perform Post Installation Inspection, and otherwise assist in the work of this section.
- C. Hardware Installer: Factory-authorized personnel certified for installation of the Products of this Section.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Provide door hardware specified, or as required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.
- B. Provide items of a single type of the same model by the same manufacturer.

C. Provide products that comply with the following:

1. Applicable provisions of federal, state, and local codes.
2. Fire-Rated Doors: NFPA 80.

2.02 GASKETING AND THRESHOLDS

A. Manufacturers - Gasketing and Thresholds:

1. Assa Abloy Brands, McKinney: www.assaabloydss.com.
2. Hager Companies: www.hagerco.com.
3. National Guard Products, Inc: www.ngpinc.com.
4. Pemko Manufacturing Co: www.pemko.com.
5. Reese Enterprises, Inc.: www.reeseusa.com.
6. Zero International, Inc: www.zerointernational.com.

B. Gaskets: Comply with BHMA A156.22 requirements.

1. On existing doors to air compressor rooms, provide sound-rated gaskets and automatic door bottom; make gaskets completely continuous, do not cut or notch gaskets for installation.

a. Products:

- 1) National Guard Products; Self-Adhesive Silicone Bulb Smoke Seal #2525B: www.ngp.com.
- 2) National Guard Products; Anodized Aluminum Automatic Door Bottom with Neoprene Seal #220NA-36: www.ngp.com.

C. Thresholds: Comply with BHMA A156.21 requirements.

1. Field cut threshold to frame for tight fit.
 2. On doors with automatic door bottoms, provide flat plate type thresholds to provide surfaces for door bottoms to seal against.
- a. Product: National Guard Products; Aluminum Threshold 1/4" x 3": www.ngp.com.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive work and are securely and properly installed.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Install hardware on existing fire-rated doors and frames in accordance with code and NFPA 80.

3.03 FIELD QUALITY CONTROL

A. Post Installation Inspection: Provide an Architectural Hardware Consultant to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

1. Submit report to Architect/Engineer after inspection has been made.

3.04 ADJUSTING

A. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.05 CLEANING

- A. Clean adjacent surfaces soiled or marred by hardware installation. Clean finished hardware per manufacturer's instructions after final adjustments has been made. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.06 PROTECTION

END OF SECTION

SECTION 09 21 16 GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient sound isolation clips.
- B. Acoustic insulation, sheilding, and accessories.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping: Top-of-wall assemblies and penetration assemblies at fire-resistance-rated walls.
- B. Section 07 92 00 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

- A. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017.
- B. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.
- C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
- D. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- E. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- F. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2020.
- G. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.
- H. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- I. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2016.
- J. GA-216 - Application and Finishing of Gypsum Panel Products 2016, with Errata.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate special details associated with acoustic seals.
- B. Product Data: Provide data on metal framing, gypsum board, accessories, joint finishing system, and acoustical sheet.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum five years of experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 METAL FRAMING MATERIALS

- A. Manufacturers - Metal Framing, Connectors, and Accessories:
 1. ClarkDietrich Building Systems: www.clarkdietrich.com.
 2. Marino\WARE: www.marinoware.com.
 3. Phillips Manufacturing Co: www.phillipsmfg.com.
 4. Steel Construction Systems: www.steelconsystems.com.
 5. The Steel Network, Inc: www.steelnetwork.com.
 6. Super Stud Building Products, Inc: www.buysuperstud.com.
- B. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
 1. Ceiling Furring Members: Hat-shaped sections, minimum depth of 7/8 inch.
 2. Resilient Furring Channels: Single leg configuration; 1/2 inch channel depth.
 - a. Products:
 - 1) ClarkDietrich Building Systems; RC Deluxe Resilient Channel: www.clarkdietrich.com.
 - 2) Phillips Manufacturing Co; RC-2 Resilient Sound Channel: www.phillipsmfg.com.
 3. Resilient Sound Isolation Clips: Steel resilient clips with molded rubber isolators, attaches to framing; improves noise isolation performance of wall and floor-ceiling assemblies.
 - a. Products:
 - 1) ClarkDietrich; Sound Clip (CDSC): www.clarkdietrich.com.
 - 2) Keene Building Products; Cylent Assurance Clip: www.keenebuilding.com.
 - 3) PAC International, Inc; RSIC-1: www.pac-intl.com.

2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 1. American Gypsum Company: www.americangypsum.com.
 2. CertainTeed Corporation: www.certainteed.com.
 3. Continental Building Products: www.continental-bp.com.
 4. Georgia-Pacific Gypsum: www.gpgypsum.com.
 5. National Gypsum Company: www.nationalgypsum.com/.
 6. USG Corporation: www.usg.com.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - a. Mold resistant board is required at all locations.

3. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 - b. Ceilings: 5/8 inch.
4. Mold Resistant Paper Faced Products:
 - a. American Gypsum Company; M-Bloc Type X: www.americangypsum.com.
 - b. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall: www.certainteed.com.
 - c. Continental Building Products; Mold Defense Type X: www.continental-bp.com.
 - d. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold-Guard: www.gpgypsum.com.
 - e. National Gypsum Company; Gold Bond XP Gypsum Board: www.nationalgypsum.com.
 - f. USG Corporation; USG Sheetrock Brand EcoSmart Panels Mold Tough Firecode X: www.usg.com.

2.04 GYPSUM WALLBOARD ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 inch unless indicated otherwise on the Drawings.
- B. Acoustical Shielding: Mineral-filled recycled polyvinyl chloride (PVC) or viscoelastic polymer sheet membrane; applied between studs and gypsum board.
 1. Thickness: 1/8 inch, nominal.
 2. Products:
 - a. Acoustiblok; Blok16: www.acoustiblok.com
 - b. AcoustiGuard – WILREP LTD; Noise-Blok: www.acoustiguard.com.
- C. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
 1. Products:
 - a. Franklin International, Inc; Titebond GREENchoice Professional Acoustical Smoke and Sound Sealant: www.titebond.com.
 - b. Liquid Nails, a brand of PPG Architectural Coatings: www.liquidnails.com.
 - c. Specified Technologies Inc; Smoke N Sound Acoustical Sealant: www.stifirestop.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- D. Finishing Accessories: ASTM C1047, paper-faced galvanized steel, unless noted otherwise.
 1. Types: As detailed or required for finished appearance.
 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
 3. Manufacturers: As for framing materials.
- E. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 1. Tape: 2 inch wide, coated glass fiber tape or creased paper tape for joints and corners, except as otherwise indicated.
 2. Joint Compound: Drying type, vinyl-based, ready-mixed, OR
 3. Joint Compound: Setting type, field-mixed.
- F. High Build Drywall Surfer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.

- G. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- H. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 - 1. Place continuous bead at perimeter of each layer of gypsum board.
 - 2. Seal around all penetrations by conduit, pipe, ducts, rough-in boxes, and structural and supporting elements, except where firestopping is provided.
- C. Acoustical Shielding: Install in accordance with manufacturer's instructions for application on resilient or furring channels, beneath gypsum board.

3.03 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 - 1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- C. Installation on Metal Framing: Use screws for attachment of gypsum board.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.05 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
 - 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 3. Level 3: Walls to receive textured wall finish.
 - 4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.

- 5. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
- B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- C. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.
- D. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.06 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 51 00 ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 RELATED REQUIREMENTS

- A. Section 23 37 00 - Air Outlets and Inlets: Air diffusion devices in ceiling.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- B. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2017.
- C. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2019.

1.04 SUBMITTALS

- A. Product Data: Provide data on suspension system components and acoustical units.
- B. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 QUALITY ASSURANCE

- A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years experience.
- B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years experience.

1.06 FIELD CONDITIONS

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

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Panels:
 - 1. USG: www.usg.com.
 - 2. Substitutions: Not permitted.
- B. Suspension Systems:
 - 1. Rockfon, LLC; Chicago Metallic: www.rockfon.com.

2. Substitutions: Not permitted.

2.02 ACOUSTICAL UNITS

- A. Acoustical Units - General: ASTM E1264, Class A.
- B. Acoustical Panels: Painted mineral fiber, with the following characteristics:
 1. Classification: ASTM E1264 Type III.
 - a. Form: 1 - nodular and 2 - wet-felted.
 - b. Pattern: "G" - smooth.
 2. Size: 24 by 24 inches.
 3. Thickness: 5/8 inches.
 4. Light Reflectance: 86 percent, determined in accordance with ASTM E1264.
 5. NRC: 0.55, determined in accordance with ASTM E1264.
 6. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
 7. Panel Edge: Angled tegular.
 8. Color: White.
 9. Suspension System: Exposed grid.
 10. Product:
 - a. USG Corporation; Astro Acoustical Panels #8223: www.usg.com/ceilings.
 - b. Substitutions: Not permitted.

2.03 SUSPENSION SYSTEM(S)

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, stabilizer bars, clips, and splices as required.
 1. Materials:
 - a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.
- B. Exposed Suspension System: Hot-dipped galvanized steel grid with aluminum cap.
 1. Structural Classification: Heavy Duty (HD) or Intermediate Duty (ID), when tested in accordance with ASTM C635/C635M.
 2. Profile: Tee; 15/16 inch face width.
 3. Finish: Baked enamel.
 4. Color: White.
 5. Product:
 - a. Rockfon, LLC; Chicago Metallic 200 Snap Grid 15/16": www.rockfon.com.
 - b. Substitutions: Not permitted.

2.04 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Perimeter Moldings: Same metal and finish as grid.
 1. Size: As required for installation conditions.
 2. Angle Molding: L-shaped, for mounting at same elevation as face of grid.

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

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPA

- A. Install after major above-ceiling work is complete.
- B. Coordinate the location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M and ASTM E580/E580M and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Lay out system as shown on the Drawings.
- D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
 - 2. Overlap and rivet corners.
- E. Suspension System, Non-Seismic: 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.
- F. 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.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- I. Do not eccentrically load system or induce rotation of runners.

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. Fit border trim neatly against abutting surfaces.
- D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:

1. Cut to fit irregular grid and perimeter edge trim.
2. Make field cut edges of same profile as factory edges.
3. Double cut and field paint exposed edges to match appearance of factory tegular eds.

F. Where round obstructions occur, provide preformed closures to match perimeter molding.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 09 91 23 INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

1.02 RELATED REQUIREMENTS

1.03 DEFINITIONS

- A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications 2019.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.
- D. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board 2007.
- E. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.
- F. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- G. SCAQMD 1113 - Architectural Coatings 1977 (Amended 2016).

1.05 SUBMITTALS

- A. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. MPI product number (e.g., MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
- B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
- C. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.

1.06 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 1. PPG Paints: www.ppgpaints.com.
 2. Sherwin-Williams Company: www.sherwin-williams.com.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
 2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and

field experience.

4. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
5. Supply each paint material in quantity required to complete entire project's work from a single production run.
6. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:

1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. SCAQMD 1113 Rule.
 - c. CARB (SCM).
 - d. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
 - 1) Opaque, Flat: 50 g/L, maximum.
 - 2) Opaque, Nonflat: 150 g/L, maximum.
 - 3) Opaque, High Gloss: 250 g/L, maximum.
 - e. Architectural coatings VOC limits of the State in which the Project is located.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect/Engineer from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.

1. Selection to be made by Architect/Engineer after award of contract.
2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
3. Extend colors to surface edges; colors may change at any edge as directed by Architect/Engineer.

2.03 PAINT SYSTEMS - INTERIOR

A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, and aluminum.

1. Two top coats and one coat primer.
2. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #143, 144, 145, 146, 147, or 148.
 - a. Products:
 - 1) PPG Paints Speedhide Zero Interior Latex, 6-4310XI Series, Eggshell.
 - 2) PPG Paints Speedhide Zero Interior Latex, 6-4410XI Series, Satin.
 - 3) PPG Paints Pure Performance Interior Latex, 9-110XI Series, Flat. (MPI #143)
 - 4) PPG Paints Pure Performance Interior Latex, 9-310XI Series, Eggshell. (MPI #144)
 - 5) PPG Paints Pure Performance Interior Latex, 9-510XI Series, Semi-Gloss. (MPI #147)

- 6) Sherwin-Williams Harmony Interior Acrylic Latex, Flat. (MPI #143)
 - 7) Sherwin-Williams Harmony Interior Acrylic Latex, Eg-Shel. (MPI #144)
 - 8) Sherwin-Williams ProMar 200 HP Series, Low Gloss Eg-Shel. (MPI #144)
 - 9) Sherwin-Williams ProMar 200 HP Series, Eg-Shel. (MPI #145)
 - 10) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Flat.
 - 11) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Low Sheen. (MPI #144)
- 3. Top Coat Sheen:
 - a. Flat: MPI gloss level 1; use this sheen for ceilings and other overhead surfaces.
 - b. Eggshell: MPI gloss level 3; use this sheen for gypsum board wall surfaces at all locations.
 - c. Satin: MPI gloss level 4; use this sheen as an alternative to eggshell for gypsum board wall surfaces at all locations.
 - 4. Primer: As recommended by top coat manufacturer for specific substrate.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.
 - 2. Plaster and Stucco: 12 percent.
 - 3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
 - 4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or repair existing paints or finishes that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 22 15 00 GENERAL-SERVICE COMPRESSED-AIR SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pipe and pipe fittings.

1.02 REFERENCE STANDARDS

- A. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300 2016.
- B. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings 2018.
- C. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2018.
- D. ASME B31.1 - Power Piping 2020.
- E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2020.
- F. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service 2019.
- G. ASTM B32 - Standard Specification for Solder Metal 2020.
- H. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2020.
- I. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric) 2020.

PART 2 PRODUCTS

2.01 PIPE AND PIPE FITTINGS

- A. Steel Pipe: ASTM A53/A53M, Schedule 40 black.
 - 1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
 - 2. Joints: Threaded or welded to ASME B31.1.
- B. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), drawn.
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, solder, Grade Sn95.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install equipment in accordance with manufacturer's instructions.
- B. Install compressor unit on vibration isolators. Level and bolt in place. Refer t
- C. Make air cock and drain connection on horizontal casing.

3.02 FIELD QUALITY CONTROL

- A. Compressed Air Piping Leak Test: Prior to initial operation, clean and test compressed air piping in accordance with ASME B31.1.

- B. Repair or replace compressed air piping as required to eliminate leaks, and retest to demonstrate compliance.
- C. Cap and seal ends of piping when not connected to mechanical equipment.

END OF SECTION

SECTION 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Testing, adjustment, and balancing of air systems.
- B. Measurement of final operating condition of HVAC systems.

1.02 REFERENCE STANDARDS

- A. AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition 2016.
- B. ASHRAE Std 110 - Methods of Testing Performance of Laboratory Fume Hoods 2016.
- C. ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems 2008, with Errata (2019).
- D. NEBB (TAB) - Procedural Standards for Testing Adjusting and Balancing of Environmental Systems 2015, with Errata (2017).
- E. SMACNA (TAB) - HVAC Systems Testing, Adjusting and Balancing 2002.

1.03 SUBMITTALS

- A. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
 - 1. Revise TAB plan to reflect actual procedures and submit as part of final report.
 - 2. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect/Engineer and for inclusion in operating and maintenance manuals.
 - 3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
 - 4. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
 - 5. Units of Measure: Report data in both I-P (inch-pound) and SI (metric) units.
 - 6. Include the following on the title page of each report:
 - a. Name of Testing, Adjusting, and Balancing Agency.
 - b. Address of Testing, Adjusting, and Balancing Agency.
 - c. Telephone number of Testing, Adjusting, and Balancing Agency.
 - d. Project name.
 - e. Project location.
 - f. Project Architect/Engineer.
 - g. Project Contractor.
 - h. Report date.
- B. Project Record Documents: Record actual locations of flow measuring stations and balancing valves and rough setting.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION****3.01 GENERAL REQUIREMENTS**

- A. Perform total system balance in accordance with one of the following:
 - 1. AABC (NSTSB), AABC National Standards for Total System Balance.
 - 2. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.
 - 3. NEBB Procedural Standards for Testing Adjusting Balancing of Environmental Systems.
 - 4. SMACNA (TAB).
- B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.
- C. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.
- D. TAB Agency Qualifications:
 - 1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.
 - 2. Having minimum of three years documented experience.
 - 3. Certified by one of the following:
 - a. AABC, Associated Air Balance Council: www.aabc.com/#sle; upon completion submit AABC National Performance Guaranty.
 - b. NEBB, National Environmental Balancing Bureau: www.nebb.org/#sle.
 - c. TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute: www.tabbcertified.org/#sle.
- E. TAB Supervisor Qualifications: Certified by same organization as TAB agency.

3.02 EXAMINATION

- A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
 - 1. Systems are started and operating in a safe and normal condition.
 - 2. Temperature control systems are installed complete and operable.
 - 3. Proper thermal overload protection is in place for electrical equipment.
 - 4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
 - 5. Duct systems are clean of debris.
 - 6. Fans are rotating correctly.
 - 7. Fire and volume dampers are in place and open.
 - 8. Air coil fins are cleaned and combed.
 - 9. Access doors are closed and duct end caps are in place.
 - 10. Air outlets are installed and connected.
 - 11. Duct system leakage is minimized.
- B. Submit field reports. Report defects and deficiencies that will or could prevent proper system balance.

C. Beginning of work means acceptance of existing conditions.

3.03 ADJUSTMENT TOLERANCES

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

3.04 RECORDING AND ADJUSTING

- A. Ensure recorded data represents actual measured or observed conditions.
- B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- C. Mark on drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.
- D. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
- E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

3.05 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.
- B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
- C. Measure air quantities at air inlets and outlets.
- D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.
- F. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
- G. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.

3.06 SCOPE

- A. Test, adjust, and balance the following:
 - 1. Air Cooled Refrigerant Condensers/ Condensing Units.
 - 2. Computer Room Air Conditioning Units.

3. Air Inlets and Outlets.

END OF SECTION

SECTION 23 07 13 DUCT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Duct insulation.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping.

1.03 REFERENCE STANDARDS

- A. ASTM C411 - Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.
- B. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.
- C. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications 2013 (Reapproved 2019).
- D. ASTM C916 - Standard Specification for Adhesives for Duct Thermal Insulation 2020.
- E. ASTM C1071 - Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material) 2019.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- G. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015 (Reapproved 2021)e1.
- H. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2020.
- I. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- B. Manufacturer's Instructions: Indicate installation procedures necessary to ensure acceptable workmanship and that installation standards will be achieved.

1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified in this section, with minimum three years of experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site in original factory packaging, labelled with manufacturer's identification, including product density and thickness.

- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.07 FIELD CONDITIONS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, UL 723, ASTM E84, or UL 723.
- B. Insulation minimum thickness shall meet or exceed requirements as listed in International Energy Conservation Code, 2018.

2.02 GLASS FIBER, FLEXIBLE

- A. Manufacturers:
 - 1. CertainTeed Corporation.
 - 2. Johns Manville Corporation.
 - 3. Knauf Insulation.
 - 4. Owens Corning Corp.
- B. Insulation: ASTM C553; flexible, noncombustible blanket.
 - 1. K value: 0.25 at 75 degrees F, when tested in accordance with ASTM C518.
 - 2. Maximum Service Temperature: 450 degrees F.
 - 3. Maximum Water Vapor Absorption: 5.0 percent by weight.
- C. Vapor Barrier Jacket:
 - 1. Kraft paper with glass fiber yarn and bonded to aluminized film.
 - 2. Moisture Vapor Permeability: 0.04 perm inch 0.04 perm inch, when tested in accordance with ASTM E96/E96M.
 - 3. Secure with pressure sensitive tape.
- D. Vapor Barrier Tape:
 - 1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.
- E. Tie Wire: Annealed steel, 16 gauge, 0.0508 inch diameter.

2.03 DUCT LINER

- A. Manufacturers:
 - 1. CertainTeed Corporation.
 - 2. Johns Manville Corporation.
 - 3. Knauf Insulation.
 - 4. Owens Corning Corporation.

- B. Glass Fiber Insulation: Non-corrosive, incombustible glass fiber complying with ASTM C1071; flexible blanket, rigid board, and preformed round liner board; impregnated surface and edges coated with poly vinyl acetate polymer, acrylic polymer, or black composite.
 - 1. Fungal Resistance: No growth when tested according to ASTM G21.
 - 2. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
 - 3. Service Temperature: Up to 250 degrees F.
 - 4. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
 - 5. Minimum Noise Reduction Coefficients:
 - a. 1/2 inch Thickness: 0.30.
 - b. 1 inch Thickness: 0.45.
- C. Adhesive: Waterproof, fire-retardant type, ASTM C916.
- D. Liner Fasteners: Galvanized steel, self-adhesive pad with integral head.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Test ductwork for design pressure prior to applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. Insulated Ducts Conveying Air Below Ambient Temperature:
 - 1. Provide insulation with vapor barrier jackets.
 - 2. Finish with tape and vapor barrier jacket.
 - 3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
 - 4. Insulate entire system, including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
- D. Insulated Ducts Conveying Air Above Ambient Temperature:
 - 1. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.
- E. External Duct Insulation Application:
 - 1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
 - 2. Secure insulation without vapor barrier with staples, tape, or wires.
 - 3. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
 - 4. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
 - 5. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.
- F. Duct Liner Application:
 - 1. Adhere insulation with adhesive for 90 percent coverage.
 - 2. Secure insulation with mechanical liner fasteners. Refer to SMACNA (DCS) for spacing.
 - 3. Seal and smooth joints. Seal and coat transverse joints.

4. Seal liner surface penetrations with adhesive.
5. Duct dimensions indicated are net inside dimensions required for air-flow. Increase duct size to allow for insulation thickness.

3.03 SCHEDULES

- A. Supply Ducts:
 1. Flexible Glass Fiber Duct Insulation: 2 inches thick.
- B. Return Ducts with sound requirement:
 1. Duct Liner: 1 inches thick.
- C. Air Transfer Ducts:
 1. Duct Liner: 1/2 inches thick.

END OF SECTION

SECTION 23 07 19 HVAC PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping insulation.
- B. Jackets and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping.
- B. Section 23 21 13 - Hydronic Piping: Placement of hangers and hanger inserts.

1.03 REFERENCE STANDARDS

- A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus 2019.
- B. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2017.
- C. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form 2020a.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- E. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.
- F. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- B. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum three years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.07 FIELD CONDITIONS

- A. Maintain ambient conditions required by manufacturers of each product.
- B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, UL 723, ASTM E84, or UL 723.
- B. Insulation minimum thickness shall meet or exceed requirements as listed in International Energy Conservation Code, 2018.

2.02 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A. Manufacturer:
 - 1. Aeroflex USA, Inc.
 - 2. Armacell LLC.
 - 3. K-Flex USA LLC; Insul-Tube.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
 - 1. 'K' Value: ASTM C177, 0.25 at 75 degrees F.
 - 2. Minimum Service Temperature: Minus 40 degrees F.
 - 3. Maximum Service Temperature: 180 degrees F.
 - 4. Maximum Moisture Absorption: ASTM C209, 0.2 percent by volume.
 - 5. Moisture Vapor Permeability: ASTM E96/E96M, 0.01 perm-inch.
 - 6. Connection: Waterproof vapor barrier adhesive.
- C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

2.03 JACKETS

- A. PVC Plastic.
 - 1. Jacket: One piece molded type fitting covers and sheet material, color as scheduled.
 - a. Minimum Service Temperature: 0 degrees F.
 - b. Maximum Service Temperature: 150 degrees F.
 - c. Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E96/E96M.
 - d. Thickness: 10 mil.
 - e. Connections: Brush on welding adhesive.
 - 2. Covering Adhesive Mastic: Compatible with insulation.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Test piping for design pressure, liquid tightness, and continuity prior to applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. Exposed Piping: Locate insulation and cover seams in least visible locations.
- D. Inserts and Shields:
 - 1. Application: Piping 1-1/2 inches diameter or larger.
 - 2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
 - 3. Insert location: Between support shield and piping and under the finish jacket.
 - 4. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
 - 5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
- E. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions.
- F. Exterior Applications: Provide vapor barrier jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement. Cover with PVC jacket with seams located on bottom side of horizontal piping. For refrigerant piping, provide PVC jacket with seams located on the bottom side of horizontal piping.
- G. Installation of flexible elastomeric insulation
 - 1. Insulation Installation on Piping Systems:
 - a. Install pipe insulation by sliding non-slit sections over the open ends of pipe when possible or by slitting tubular sections and applying onto piping.
 - b. Pipe shall be sealed while slipping on insulation to prevent foreign matter from entering the tube. Insulation shall be pushed onto the pipe, never pulled. Stretching of insulation may result in open seams and joints.
 - c. All longitudinal seams shall be installed facing down to reduce weight / pressure on the seam.
 - d. All edges shall be clean cut. Rough or jagged edges shall not be permitted. Proper tools such as sharp, non-serrated knives must be used.
 - e. All seams, butts and ends shall be completely sealed to retard moisture vapor from entering the system using compatible contact adhesive. Do not tape insulation joints.
 - f. On below-ambient applications, insulation shall be adhered directly to the pipe using a two-inch strip of compatible contact adhesive on the ID of the insulation and on the pipe at the following locations: high end of the pipe run, every termination point (supports, valves, flanges, end of pipe run), and every 18 feet of the pipe run.
 - 2. Insulation Installation on Fittings, Valves and Flanges:
 - a. All fittings (elbows, tees, p-traps, grooved) shall be insulated with the same insulation thickness as the adjacent piping. All seams and mitered joints shall be adhered with compatible contact adhesive. Screwed fittings shall be sleeved and adhered with a minimum 1" overlap onto the adjacent insulation.
 - b. Valves, flanges, strainers and couplings shall be insulated using fabricated insulation pieces that shall then be covered with sheet or oversized tubular insulation.

3. Insulation Installation on pipe hangers/supports:
 - a. Insulated pipe supports, comprised of high-density rigid foam inserts with elastomeric foam collars, shall be installed at all pipe hanger locations to prevent the insulation from compressing. The pipe support shall have with the same insulation thickness as the pipe insulation. All joints shall be sealed with compatible contact adhesive. Saddles shall be installed under all insulated lines at locations where the hanger may move due to movement in the piping from expansion and contraction.
4. Insulation Installation on Exposed Outdoor Piping:
 - a. Outdoor insulation shall be protected by a field supplied jacket as specified.
 - b. All outdoor exposed pipe seams shall face downward.

3.03 SCHEDULE

- A. Cooling Systems:
 1. Condensate Drains from Cooling Coils:
 - a. Flexible Elastomeric Cellular Insulation:
 - 1) Pipe Size Range: All sizes.
 - a) Thickness: 1/2 inch.
 2. Refrigerant Suction:
 - a. Flexible Elastomeric Cellular Insulation:
 - 1) Pipe Size Range: All sizes.
 - a) Thickness: 1 inch.
 3. Refrigerant Liquid, Outdoors:
 - a. Flexible Elastomeric Cellular Insulation:
 - 1) Pipe Size Range: All sizes.
 - a) Thickness: 3/4 inch.
 4. Refrigerant Hot Gas:
 - a. Flexible Elastomeric Cellular Insulation:
 - 1) Pipe Size Range: All sizes.
 - a) Thickness: 3/4 inch.
- B. All exterior refrigerant piping insulation shall be provided with a white PVC jacket.

END OF SECTION

SECTION 23 21 13 HYDRONIC PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Equipment drains and overflows.
- B. Pipe hangers and supports.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping.
- B. Section 23 07 19 - HVAC Piping Insulation.

1.03 REFERENCE STANDARDS

- A. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings 2018.
- B. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2018.
- C. ASME B31.9 - Building Services Piping 2020.
- D. ASTM B32 - Standard Specification for Solder Metal 2020.
- E. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2020.
- F. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric) 2020.
- G. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers 1992, with Editorial Revision (2018).
- H. AWWA C606 - Grooved and Shouldered Joints 2015.
- I. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018.

1.04 DELIVERY, STORAGE, AND HANDLING

PART 2 PRODUCTS

2.01 EQUIPMENT DRAINS AND OVERFLOWS

- A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), drawn; using one of the following joint types:
 - 1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings; ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.
 - 2. Grooved Joints: AWWA C606 grooved pipe, fittings of same material, and mechanical couplings.

2.02 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
 - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.

PART 3 EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare piping connections to equipment using jointing system specified.
- D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Route piping in orderly manner, parallel to building structure, and maintain gradient.
- C. Sleeve pipe passing through partitions, walls, and floors.
- D. Slope piping and arrange to drain at low points.
- E. Pipe Hangers and Supports:
 - 1. Install in accordance with ASME B31.9, ASTM F708, or MSS SP-58.
 - 2. Support horizontal piping as scheduled.
 - 3. Place hangers within 12 inches of each horizontal elbow.

END OF SECTION

SECTION 23 23 00 REFRIGERANT PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping.
- B. Refrigerant.
- C. Moisture and liquid indicators.
- D. Valves.
- E. Strainers.
- F. Filter-driers.
- G. Flexible connections.

1.02 RELATED REQUIREMENTS

- A. Section 23 81 24 - Computer Room Air Conditioners - Floor Mounted.
- B. Section 23 81 25 - Computer Room Air Conditioners - Ceiling Mounted.

1.03 REFERENCE STANDARDS

- A. AHRI 710 - Performance Rating of Liquid-Line Driers 2009.
- B. ASHRAE Std 15 - Safety Standard for Refrigeration Systems 2019, with All Amendments and Errata.
- C. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2018.
- D. ASME B16.26 - Cast Copper Alloy Fittings for Flared Copper Tubes 2018.
- E. ASME B31.5 - Refrigeration Piping and Heat Transfer Components 2020.
- F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- G. ASTM B280 - Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service 2020.
- H. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding 2019.

1.04 SYSTEM DESCRIPTION

- A. Where more than one piping system material is specified ensure system components are compatible and joined to ensure the integrity of the system is not jeopardized. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- B. Liquid Indicators:
 - 1. Use line size liquid indicators in main liquid line leaving condenser.
- C. Filter-Driers:

1. Use a filter-drier immediately ahead of liquid-line controls, such as thermostatic expansion valves, solenoid valves, and moisture indicators.
2. Use sealed filter-driers in low temperature systems.
3. Use sealed filter-driers in systems utilizing hermetic compressors.
4. Use replaceable core filter-driers in lines of 1/2 inch outside diameter or greater.
5. Use replaceable core liquid-line filter-driers in systems utilizing receivers.

D. Flexible Connectors: Utilize at or near compressors where piping configuration does not absorb vibration.

1.05 SUBMITTALS

- A. Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.
- B. Design Data: Submit design data indicating pipe sizing. Indicate load carrying capacity of trapeze, multiple pipe, and riser support hangers.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store piping and specialties in shipping containers with labeling in place.
- B. Protect piping and specialties from entry of contaminating material by leaving end caps and plugs in place until installation.
- C. Dehydrate and charge components such as piping and receivers, seal prior to shipment, until connected into system.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

2.02 PIPING

- A. Copper Tube: ASTM B280, H58 hard drawn or O60 soft annealed.
 1. Fittings: ASME B16.22 wrought copper.
 2. Joints: Braze, AWS A5.8M/A5.8 BCuP silver/phosphorus/copper alloy.
- B. Pipe Supports and Anchors:
 1. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
 2. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
 3. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
 4. Rooftop Supports for Low-Slope Roofs: Steel pedestals with bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified; and as follows:
 - a. Bases: High density, UV tolerant, polypropylene or reinforced PVC.
 - b. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
 - c. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
 - d. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports; corrosion resistant material.
 - e. Height: Provide minimum clearance of 6 inches under pipe to top of roofing.

2.03 REFRIGERANT

- A. Refrigerant: Use only refrigerants that have ozone depletion potential (ODP) of zero and global warming potential (GWP) of less than 50.
- B. Refrigerant: R-410A as defined in ASHRAE Std 34.

2.04 MOISTURE AND LIQUID INDICATORS

- A. Indicators: Single port type, UL listed, with copper or brass body, flared or solder ends, sight glass, color coded paper moisture indicator with removable element cartridge and plastic cap; for maximum temperature of 200 degrees F and maximum working pressure of 500 psi.

2.05 VALVES

- A. Manufacturers:
 - 1. Hansen Technologies Corporation.
 - 2. Henry Technologies.
 - 3. Danfoss Automatic Controls.
- B. Ball Valves:
 - 1. Two piece bolted forged brass body with teflon ball seals and copper tube extensions, brass bonnet and seal cap, chrome plated ball, stem with neoprene ring stem seals; for maximum working pressure of 500 psi and maximum temperature of 300 degrees F.
- C. Service Valves:
 - 1. Forged brass body with copper stubs, brass caps, removable valve core, integral ball check valve, flared or solder ends, for maximum pressure of 500 psi.

2.06 STRAINERS

- A. Straight Line or Angle Line Type:
 - 1. Brass or steel shell, steel cap and flange, and replaceable cartridge, with screen of stainless steel wire or monel reinforced with brass; for maximum working pressure of 430 psi.

2.07 FILTER-DRIERS

- A. Performance:
 - 1. Flow Capacity - Liquid Line: As indicated in schedule, minimum, rated in accordance with AHRI 710.
 - 2. Pressure Drop: 2 psi, maximum, when operating at full connected evaporator capacity.
 - 3. Design Working Pressure: 350 psi, minimum.
- B. Cores: Molded or loose-fill molecular sieve desiccant compatible with refrigerant, activated alumina, activated charcoal, and filtration to 40 microns, with secondary filtration to 20 microns; of construction that will not pass into refrigerant lines.
- C. Construction: UL listed.
 - 1. Replaceable Core Type: Steel shell with removable cap.
 - 2. Connections: As specified for applicable pipe type.

2.08 FLEXIBLE CONNECTORS

- A. Manufacturers:

1. Circuit Hydraulics, Ltd.
 2. Flexicraft Industries.
 3. Penflex.
- B. Corrugated stainless steel hose with single layer of stainless steel exterior braiding, minimum 9 inches long with copper tube ends; for maximum working pressure of 500 psi.

PART 3 EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.02 INSTALLATION

- A. Install refrigeration specialties in accordance with manufacturer's instructions.
- B. Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.
- C. Install piping to conserve building space and avoid interference with use of space.
- D. Group piping whenever practical at common elevations and locations. Slope piping one percent in direction of oil return.
- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- F. Pipe Hangers and Supports:
 1. Install in accordance with ASME B31.5.
 2. Support horizontal piping as indicated.
 3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
 4. Place hangers within 12 inches of each horizontal elbow.
 5. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
 6. Provide copper plated hangers and supports for copper piping.
- G. Arrange piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.
- H. Provide clearance for installation of insulation and access to valves and fittings.
- I. Insulate piping; refer to Section 23 07 19.
- J. Follow ASHRAE Std 15 procedures for charging and purging of systems and for disposal of refrigerant.
- K. Install flexible connectors at right angles to axial movement of compressor, parallel to crankshaft.
- L. Fully charge completed system with refrigerant after testing.

3.03 FIELD QUALITY CONTROL

- A. Test refrigeration system in accordance with ASME B31.5.
- B. Pressure test system with dry nitrogen to 200 psi. Perform final tests at 27 inches vacuum and 200 psi using halide torch. Test to no leakage.

3.04 SCHEDULES

- A. Hanger Spacing for Copper Tubing.
 - 1. 1/2 inch, 5/8 inch, and 7/8 inch OD: Maximum span, 5 feet; minimum rod size, 1/4 inch.
 - 2. 1-1/8 inch OD: Maximum span, 6 feet; minimum rod size, 1/4 inch.
 - 3. 1-3/8 inch OD: Maximum span, 7 feet; minimum rod size, 3/8 inch.
 - 4. 1-5/8 inch OD: Maximum span, 8 feet; minimum rod size, 3/8 inch.

END OF SECTION

SECTION 23 31 00 HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal ductwork.
- B. Duct cleaning.

1.02 RELATED REQUIREMENTS

- A. Section 07 84 00 - Firestopping.
- B. Section 23 07 13 - Duct Insulation: External insulation and duct liner.
- C. Section 23 33 00 - Air Duct Accessories.
- D. Section 23 37 00 - Air Outlets and Inlets.

1.03 REFERENCE STANDARDS

- A. ASHRAE (FUND) - ASHRAE Handbook - Fundamentals Most Recent Edition Cited by Referring Code or Reference Standard.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- D. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems 2021.
- E. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2020.
- F. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors current edition, including all revisions.

1.04 SUBMITTALS

- A. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

1.05 REGULATORY REQUIREMENTS

- A. Construct ductwork to NFPA 90A standards.

1.06 FIELD CONDITIONS

- A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
- B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G90/Z275 coating.
- B. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
 - 1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
 - 2. VOC Content: Not more than 250 g/L, excluding water.
 - 3. Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.
- C. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.
- D. Ducts: Galvanized steel, unless otherwise indicated.
- E. Low Pressure Supply (System with Cooling Coils): 2 inch w.g. pressure class, galvanized steel.
- F. Return and Relief: 1 inch w.g. pressure class, galvanized steel.
- G. Ductmate or WDCI duct connection systems are acceptable. Ductwork constructed using these systems shall refer to manufacturer's recommendations for sheet metal gage intermediate and joint reinforcement.
- H. Interior gaskets for flanged connections shall be Ductmate 440 butyl rubber.

2.02 DUCTWORK FABRICATION

- A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.
- B. Transfer Air and Sound Boots: 1/2 inch w.g. pressure class, lined galvanized steel.
- C. No variation of duct configuration or size permitted except by written permission. Size round duct installed in place of rectangular ducts in accordance with ASHRAE (FUND) Handbook - Fundamentals.
- D. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- E. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes of perforated metal with glass fiber insulation.
- F. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- G. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).
- H. Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.

2.03 MANUFACTURED DUCTWORK AND FITTINGS

- A. Flexible Ducts: Multiple layers of aluminum laminate supported by helically wound spring steel wire.
 - 1. Insulation: Fiberglass insulation with aluminized vapor barrier film.
 - 2. Maximum Velocity: 4000 fpm.
 - 3. Temperature Range: Minus 20 degrees F to 210 degrees F.
- B. Transverse Duct Connection System: SMACNA "E" rated rigidly class connection, interlocking angle and duct edge connection system with sealant, gasket, cleats, and corner clips in accordance with SMACNA (DCS).

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install, support, and seal ducts in accordance with SMACNA (DCS).
- B. Install in accordance with manufacturer's instructions.
- C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- D. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- E. Duct sizes indicated shall be of sizes indicated. However, necessary changes in shape offsets or crossovers to clear piping, lighting, building construction obstructions, etc. shall be made without additional cost.
- F. Provide openings in ductwork where required to accommodate thermometers and controllers.
Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- H. Use double nuts and lock washers on threaded rod supports.
- I. Connect terminal units to supply ducts directly or with 1 foot maximum length of flexible duct. Do not use flexible duct to change direction.
- J. Connect diffusers or light troffer boots to low pressure ducts directly or with 5 feet maximum length of flexible duct held in place with strap or clamp.

END OF SECTION

SECTION 23 33 00 AIR DUCT ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Air turning devices/extractors.
- B. Flexible duct connectors.
- C. Volume control dampers.

1.02 REFERENCE STANDARDS

- A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems 2021.
- B. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2020.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Protect dampers from damage to operating linkages and blades.

PART 2 PRODUCTS

2.01 AIR TURNING DEVICES/EXTRACTORS

- A. Multi-blade device with blades aligned in short dimension; steel construction; with individually adjustable blades, mounting straps.

2.02 FLEXIBLE DUCT CONNECTORS

- A. Fabricate in accordance with SMACNA (DCS) and as indicated.
- B. Flexible Duct Connections: Fabric crimped into metal edging strip.
 - 1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd.

2.03 VOLUME CONTROL DAMPERS

- A. Manufacturers:
 - 1. Ruskin Company.
 - 2. Pottorff.
 - 3. Greenheck.
- B. Fabricate in accordance with SMACNA (DCS) and as indicated.
- C. Single Blade Dampers:
 - 1. Fabricate for duct sizes up to 6 by 30 inch.
 - 2. Blade: 24 gage, 0.0239 inch, minimum.
- D. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 by 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
- E. End Bearings: Except in round ducts 12 inches and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon, thermoplastic elastomer, or sintered bronze

bearings.

F. Quadrants:

1. Provide locking, indicating quadrant regulators on single and multi-blade dampers.
2. On insulated ducts mount quadrant regulators on stand-off mounting brackets, bases, or adapters.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS). Refer to Section 23 31 00 for duct construction and pressure class.
- B. At fans and motorized equipment associated with ducts, provide flexible duct connections immediately adjacent to the equipment.
- C. At equipment supported by vibration isolators, provide flexible duct connections immediately adjacent to the equipment.
- D. Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 duct widths from duct take-off.
- E. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

END OF SECTION

**SECTION 23 37 00
AIR OUTLETS AND INLETS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Diffusers:
 - 1. Square ceiling diffusers.
- B. Registers/grilles:
 - 1. Ceiling-mounted, egg crate exhaust and return register/grilles.

1.02 REFERENCE STANDARDS

- A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems 2021.
- B. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.03 SUBMITTALS

- A. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Price Industries.
- B. Titus.
- C. Tuttle and Bailey.
- D. Metalaire.

2.02 SQUARE CEILING DIFFUSERS

- A. Type: Provide square, stamped, multi-core diffuser to discharge air in four way pattern.
- B. Connections: Round.
- C. Frame: Provide inverted T-bar type.
- D. Fabrication: Steel with baked enamel finish.
- E. Color: As selected by Architect/Engineer from manufacturer's standard range.
- F. Accessories: Provide radial opposed blade volume control damper; removable core with damper adjustable from diffuser face.
- G. Titus Model TMS.

2.03 PERFORATED FACE CEILING RETURN REGISTERS/GRILLES

- A. Type: Perforated face.
- B. Frame: Inverted T-bar type.
- C. Fabrication: Steel with steel frame and baked enamel off-white finish.
- D. Color: As selected by Architect with manufacturer's standard range.
- E. Titus Model PAR.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Comply with SMACNA (ASMM) for flashing/counter-flashing of roof penetrations and supports for roof curbs and roof mounted equipment.
- C. Install diffusers to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.

END OF SECTION

SECTION 23 81 24 COMPUTER ROOM AIR CONDITIONERS - FLOOR MOUNTED

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Air conditioning units.
- B. Controls and control panels.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS

- A. Product Data: Provide for manufactured products and assemblies. Indicate water, drain, refrigeration, rough-in connections, and electrical characteristics and connection requirements.
- B. Shop Drawings: Indicate manufactured products and assemblies. Indicate water, drain, refrigeration, rough-in connections, and electrical characteristics and connection requirements.
- C. Manufacturer's Instructions: Indicate assembly, support details, connection requirements, and include start-up instructions.
- D. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, and maintenance and repair data.
- E. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Filters: One set for each individual unit.

1.05 WARRANTY

- A. Warranty: Include 5-year coverage of refrigeration compressors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Data Aire: Model GTAU.
- B. Liebert, a brand of Vertiv Co.

2.02 AIR CONDITIONING UNITS

- A. General:
 - 1. The environmental control, direct expansion Computer Room Air Conditioning (CRAC) equipment shall be provided with a high sensible cooling system, self-contained, factory assembled, piped, wired, and factory tested prior to shipment. Units shall include an enclosure/cabinet assembly, fan section, filter section, cooling coil, controls, and interconnecting piping internal to unit.

2. Cabinet and Frame:
 - a. Frame: Constructed of welded 14 gauge tubular steel, braced for rigidity, supporting mechanical equipment. Coated with a heavy corrosion inhibiting finish for long life.
 - b. Front and Side Access: The unit shall have complete front and side access by means of steel doors with heavy-duty hinges.
 - c. Doors: Fabricated of 18-gauge steel for superior sound attenuation. All doors shall be easily removable via lift-off hinges for easier service access.
 - d. Door Latches: Two (2) manually actuated via a hand tool, sure close ¼ turn door latches.
 - e. Gaskets: Each door shall be provided with polyurethane gaskets to prevent air leakage.
 - f. Finish of Exterior Surfaces: Powder coated with a heavy corrosion inhibiting finish for long life. The unit shall be the color selected from the manufacturers standard color selection chart.
 - g. Rear panel: Fabricated with 18-gauge steel sheet metal for superior sound attenuation.
 - h. Insulation: Thermally and acoustically insulate cabinet interior lined with 1 inch (25.4mm) thick, 1-1/2-pound (0.68 kg) density fiber insulation.
 - i. Condensate Drain Pan: Constructed of stainless steel and provide a positive drain to prevent standing water in the condensate pan.
3. Fan Section:
 - a. The supply air fans shall be single width, single inlet plenum fan with backward inclined blades. Fan wheel shall be directly connected to its motor for greater efficiency. Fan/motor assembly shall be statically and dynamically balanced for quiet, vibration-free operation. Fan shall be maintenance free throughout its operating life.
 - b. The fan motor shall be an electronically commutated (EC) synchronous DC motor; commonly referred to as EC fans, having soft start capability and shall be controlled via the unit mounted dap4™ controller and automatically regulated through all modes of operation.
 - c. Each fan shall have fault monitoring circuitry and integral speed controller for a level of redundancy.
 - d. The fan shall be mounted within the unit and fully enclosed in a sheet metal enclosure to prevent access to moving parts.
 - e. The system shall be designed for draw through air arrangement to ensure even air distribution to the entire face of the coil.
 - f. Belt drive fans with variable frequency drives are not considered equal or acceptable.
4. Filtration:
 - a. The filter chamber shall be an integral part of the system, designed within the unit for easy front accessibility.
 - b. An initial set of filters shall be factory installed in the unit.
 - c. Filters shall be 4-inch (100mm) deep, disposable, pleated design, extended-surface, nonwoven, reinforced synthetic fibers; supported and bonded to welded-wire grid; enclosed in a heavy-duty moisture-resistant beverage board frame design.
 - d. Rated not less than MERV 8 per ASHRAE Std. 52.2.
 - e. A filter differential switch for alarm activation shall be included.
5. R-410A Refrigerant:
 - a. The system shall be designed for use with R-410A refrigerant, which meets the U.S. Clean Air Act for phase-out of HCFC refrigerants. Refrigerant shall be field-supplied and field-charged by the installing contractor.
6. Refrigeration System:

- a. The refrigeration system shall consist of one (1) refrigeration circuit, scroll compressor with vibration isolating grommets, evaporator coils, thermostatic expansion valve, liquid solenoid valve, high and low pressure safety switches, liquid line filter drier, and refrigerant sight glass with moisture indicator. Compressor shall be located outside the airstream and shall be removable and serviceable from the front of the unit. The high and low-pressure safety switches shall be installed with Schrader type fittings with valve core that allows replacement without affecting the refrigerant charge, making recovery unnecessary.
 - 1) Fixed Speed Compressor
 - a) The unit shall be configured with a suction gas cooled motor fixed speed hermetic scroll compressor based on temperature set-point plus dead band control through the micro-processor controller.
 - b) The compressor shall have a complete overload protection on all three power lines, internal thermostats, rotolock service valve, crankcase heater, sight-glass, and low pressure override timer for positive starting at low temperatures.
 - 2) Direct Expansion Evaporator Cooling Coil
 - a) Arrangement: The direct expansion cooling coil shall be in an "A" frame arrangement to allow maximum coil surface in a small cabinet.
 - b) Coils: Shall be constructed of seamless, rifled copper tubes expanded into enhanced style aluminum fins for maximum heat transfer.
 - c) Face Velocity: Shall be less than 500 feet per minute (2.54 m/sec).
 - d) Maximum Working Pressure: Shall be 450 PSI (31 bar).
 - e) Drain Pan: Coil shall sit in a stainless steel drain pan sloped for drainage. A properly sized condensate drain trap shall be furnished by manufacturer and externally piped by the installing contractor.
 - f) The suction or discharge (hot gas) and liquid refrigerant piping ports are sealed and pressurized with dry nitrogen for shipment to indicate a leak-free system at installation.
 - g) Refrigerant pipe connections shall be terminated three (3) inches inside the bottom of the cabinet for field connection to piping coming from below.
 - 3) Expansion Valve
 - a) The expansion valve controls the amount of refrigerant flow into the evaporator thereby controlling the superheating at the outlet of the evaporator.
 - b) Thermal Expansion Valve (TXV) - STANDARD
 - c) An externally equalized expansion valve which uses a temperature sensing bulb, filled with a similar gas as in the system.
 - 4) Air Cooled Split System (with Remote Outdoor Air-Cooled Condenser)
 - a) The refrigeration system shall be a split system consisting of an indoor evaporator and remote air-cooled outdoor condenser.
 - b) Remote Outdoor Air-Cooled Condenser
 - (1) The remote outdoor air-cooled condenser shall be a low profile with direct drive axial fans with electronically commutated (EC) synchronous DC motors; commonly referred to as EC fans. The EC motors have soft start capability.
 - (2) The condenser housing shall be constructed of aluminum and contain a seamless rifled copper tube expanded into aluminum fin coil for maximum heat transfer.
 - (3) The air discharge shall be vertical to minimize the effects of wind blowing through the coil at low ambient temperatures.

- (4) The condenser shall have the ability to control the fan speed via a pressure transducer feedback signal to modulate the speed of the fans and provide positive start-up and operation at ambient temperatures down to -20°F (-29°C).
 - (5) All controls including the fan speed control shall be factory mounted in the air cooled condenser in an integral factory wired and tested control panel.
 - (6) The air cooled condenser shall be manufactured by the manufacturer of the indoor evaporator unit.
 - (7) The evaporator and condenser shall be factory assembled and tested.
 - (8) Piping and wiring between the indoor evaporator and the remote outdoor air-cooled condenser shall be field provided by the installing contractor.
7. Return Air Temperature and Humidity Sensor:
- a. The environmental control units shall come standard with an all in one combination return air temperature and humidity sensor.
 - b. The return air temperature shall interface with the dap4™ microprocessor controller for precision temperature and humidity monitoring and control.
 - c. Discharge air temperature monitoring can be used by selecting the Discharge Air Temperature Sensor option.
8. Electrical:
- a. All electrical components, including contactors, relays and control transformers shall be pre-wired and contained in a unit-mounted electrical enclosure with piano-hinged door that shall swing out for easy access and servicing.
 - b. The control circuit voltage shall be 24 volts AC.
 - c. The input electrical power shall be as detailed on the project plans and schedule.
9. Electric Reheat:
- a. The reheat shall be of the finned enclosed, sheath type, fabricated of stainless steel core sheath with plated fins to withstand moist conditions.
 - b. The reheat shall be installed on the air discharge side of the cooling coil and shall have three (3) stages.
 - c. The reheat shall be capable of maintaining room dry bulb conditions when the system is calling for dehumidification.
 - d. The reheat section shall include a safety switches to protect the system from overheating.
 - e. Low-watt density coils eliminate ionization associated with open air electric resistance heating.
10. Humidifier:
- a. The unit shall be provided with a self-contained, microprocessor-controlled steam generator type humidifier. The steam generating humidifier shall use disposable cylinder type with electronic controls.
 - b. The humidifier shall discharge pure steam with no material dust carry-over and have a self-regulating automatic flush cycle. Cylinders shall be disposable not requiring cleaning or maintenance. The humidifier fill level, water conductivity and flush rate shall automatically adapt, both in frequency and duration, to variations in the incoming water.
 - c. Field-adjustable maximum capacity; with high-water probe.
 - d. Drain duration and drain interval shall be field-adjustable.
 - e. Humidifiers using an open reservoir in the air stream are not acceptable.
11. Water Detection Sensor:
- a. Each unit shall be provided with one (1) under floor water detection sensor.

- b. The solid-state water detection sensor shall be mounted under the unit by the installing contractor to sense the presence of water.
- c. The water detector shall become an integral part of the microprocessor panel and shall display "WATER DETECTED IN UNDER FLOOR AREA" message and activate an audible alarm when the sensor is activated.
- d. Additionally, three (3) adjustable action settings shall be available when an alarm is detected: Alarm only, shutdown unit or lockout compressor.

12. High Temperature Sensor:

- a. The high temperature sensor (Firestat) shall be factory-installed in the unit and shall be factory-set to 125°F (52°C). It shall immediately shut down the environmental control system when activated. The sensor shall be mounted with the sensing element in the return air.

B. Microprocessor Control System:

1. The environmental control system shall be furnished with a microprocessor based Mini-Dap 4 panel. The panel shall include unit control functions and display normal functions and service diagnostics on a backlit liquid crystal display (LCD). The panel shall allow recall and display of the high and low temperature for the last 24 hours, high and low humidity for the last 24 hours, current percent of usage for the last hour of operation for cool 1, cool 2, reheat, humidification, chilled water valve, component runtimes for fan motor, cooling stages, reheat, humidification, dehumidification and chilled water valve. Programming shall have multilevel password access to prevent unauthorized access. Programming shall be accomplished entirely from the front of the unit without the need to access, set or program switches inside the unit (front door of the unit does not need to be opened). Programmable functions shall be entered on flash memory to ensure program retention should power fail. Likewise the historical database shall be stored on flash memory and can be recalled for system diagnostic or maintenance. Multiple status screens shall be displayed by automatically scrolling from each message to the next. Alarm conditions shall be displayed by automatically scrolling from each message to the next. Alarm conditions, in addition to being displayed, shall enunciate an audible alarm. A programmable summary contacts shall be available for remote alarm monitoring. Additional test or service terminal shall not be required for any functions. The control shall include temperature, humidity or dew-point control, humidity anticipation and automatic flush cycles.
2. An alarm condition shall continue to be displayed until the malfunction is corrected. Multiple alarms shall be displayed sequentially. Alarms that have not been acknowledged, shall activate an audible signal. 100 latest alarm events are recorded in historical data menu. Recorded alarm events have time stamp of when the alarm occurred and the space condition that can be used for system diagnostic. Panel time clock is maintained by back-up battery. The Mini-Dap 4 panel shall perform an automatic self-test on system start-up. A user accessible diagnostic program shall aid in system component trouble shooting by displaying on the unit LCD screen the name of the controlled item, output number, terminal plug and pin number of each controlled function.
3. The Mini-Dap4 system shall support Bacnet IP or MS/TP for integration into the building automation system.

C. Options:

1. Remote Temperature & Humidity Sensors: Units shall be provided with remote temperature and humidity sensor. The sensor shall be provided in a plastic case for remote mounting. Cable shall be provided for field wiring in 35 feet length.
2. Discharge Air Temperature Sensor: The environmental control unit shall be provided with a discharge air temperature sensor for field installation on the supply air side air temperature

display via dap4™ controller.

3. Thru-Door Locking Disconnect Switch: The environmental control unit shall include a non-automatic disconnect switch mounted in the high voltage section of the electrical panel. The operating mechanism shall prevent access to the high voltage electrical components until switched to the "OFF" position. The operating mechanism shall protrude through the exterior door and be lockable in the OFF position.
4. Smoke Detector: The environmental control unit shall be provided with a smoke detector. The smoke detector shall be mounted with the sensing element in the return air stream. When the smoke detector is activated, it shall immediately shut down the unit.
5. Condensate Pump: Units shall be provided with dual float condensate pump. If condensate pump fails control panel shall enunciate an alarm and display. Pumps shall be factory mounted/wired and shall include sump, motor, and automatic control. A factory installed high condensate water level alarm switch will disable the unit prior to condensate pan overflow should the drain become plugged with debris. The audio alarm is activated and a "HIGH CONDENSATE WATER LEVEL" message shall be displayed on the display module. The pumps shall be rated for 130 GPH (8.2 l/min) at 20 foot of water [4° C] (60 kPa) maximum head (or 40 GPH (2.5 l/min) at 20 foot of water [4° C] (60 kPa) maximum head with check valve).
6. Vibration Isolation Pads: Vibrations isolation pads consisting of high density cork sandwiched between two layers of neoprene shall be supplied for field mounting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that flooring system is ready to receive work and opening dimensions are as indicated on shop drawings.
- B. Verify that proper power supply is available and of the correct characteristics.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Coordinate installation of computer room air conditioning units with computer room raised floor installer.

3.03 FIELD QUALITY CONTROL

- A. Provide the services of the manufacturer's field representative to start and adjust systems and equipment and instruct operating personnel.

3.04 SYSTEM STARTUP

- A. Prepare and start systems. Set initial temperature and humidity set points.

END OF SECTION

SECTION 23 81 25
COMPUTER ROOM AIR CONDITIONERS - CEILING MOUNTED

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Air conditioning units.
- B. Controls.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 83 - Wiring Connections: Electrical characteristics and wiring connections.

1.03 SUBMITTALS

- A. Product Data: Provide manufacturers literature and data indicating water, drain, and electrical characteristics and connection requirements.
- B. Manufacturer's Instructions: Indicate procedures required for rigging and making service connections.
- C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data.
- D. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Filters: One set for each individual unit.

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.
- B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.05 WARRANTY

- A. Provide a five year warranty to include coverage for refrigeration compressor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Data Aire: Model; DAPA.
- B. Liebert, a brand of Vertiv Co.
- C. Stulz.

2.02 AIR CONDITIONING UNITS

- A. Description: The environmental control, Computer Room Air Conditioning units shall be provided with a high sensible cooling system, self-contained, factory assembled, piped, wired, and factory

tested prior to shipment. Units shall include an enclosure/cabinet assembly, fan section, filter section, cooling coil, controls, and interconnecting piping internal to unit.

B. Cabinet and Frame:

1. The frame shall be constructed of 18 gauge welded tubular steel and be coated with a heavy corrosion inhibiting finish for long life. The side panels shall be of galvanized steel. The cabinet shall be insulated with one-quarter inch (1/4") thick, closed cell insulation.
2. An integral return air filter box with duct connection shall be factory installed.
3. The unit shall come in either vertical or horizontal air flow direction. The vertical air flow unit is to be ceiling mounted and sized to fit a standard 2ft x 4ft T-bar ceiling grid opening. The horizontal supply/return air unit is to be ceiling hung with duct work attached to supply and return openings.
4. The plenum (2.5 and 3 ton vertical unit only) shall be of cold rolled steel and painted in a cloud white finish. The plenum shall be field mounted.
5. Removal of the unit from the ceiling space shall not be required for access.

C. Refrigeration Circuit:

1. Air Cooled Split System (Outdoor Condensing Unit) The refrigeration system shall be split type consisting of an indoor evaporator and a remote outdoor air-cooled condensing unit. The evaporator and condensing unit shall be factory assembled and tested.
2. Indoor Evaporator:
 - a. Shall have a cooling coil constructed with copper tubes and aluminum fins for maximum heat transfer. The single refrigeration circuit shall include the expansion valve with external equalizer, filter drier and sight glass. The condensate drain pan shall be constructed of stainless steel and provide a positive drain to prevent standing water in the condensate pan. The evaporator shall be mounted in the ceiling space with ducted supply and return air as required on the project drawings.
3. Remote Condensing Unit:
 - a. Shall be low profile, slow speed and direct drive propeller fan type. The condensing unit shall be constructed of aluminum and contain a copper tube and aluminum fin condenser coil for maximum heat transfer. The air discharge shall be vertical to minimize the effects of wind blowing through the coil at low ambient temperatures. The condensing unit shall include a single or dual refrigeration circuit. The compressor(s) shall be hermetic scroll type, with complete overload protection on all three power lines, internal thermostat for winding protection, crankcase heater(s), sight-glass(es), high and low safety pressure switches and low pressure override timer(s) for positive starting at low temperatures. The high and low pressure safety switches are connected to the refrigerant system with a Schrader fitting that allows replacement without affecting the refrigerant charge, making recovery unnecessary. The condensing unit shall have fan speed control with transducer(s) to modulate the speed of the first condenser fan motor and provide positive start-up and operation at ambient temperatures to -20°F (-29°C). Additional condenser fan motors are to be controlled by ambient thermostats. All controls including the fan speed control shall be factory mounted, wired and tested in the condensing unit. The condensing unit shall be manufactured by the manufacturer of the indoor unit.
4. Blower Assembly:
 - a. The evaporator blower assembly shall be a double width, double inlet, blower with belt drive and variable pitch sheave and self-aligning ball bearings rated for an average life of 100,000 hours.

- b. The system shall be designed for draw through air arrangement to insure even air distribution over the entire face of the coil.
 - c. Air delivery as detailed on the project plans and schedule.
- 5. Filter:
 - a. An integral return air filter box with duct connection shall be factory installed and contain 2-inch (2") thick MERV 8 filters (based on ASHRAE Std. 52.2).
- 6. Microprocessor Control System:
 - a. The environmental control system shall be furnished with a microprocessor based Mini-Dap 4 panel. The panel shall include unit control functions and display normal functions and service diagnostics on a backlit liquid crystal display (LCD). The panel shall allow recall and display of the high and low temperature for the last 24 hours, high and low humidity for the last 24 hours, current percent of usage for the last hour of operation for cool 1, cool 2, reheat, humidification, chilled water valve, component runtimes for fan motor, cooling stages, reheat, humidification, dehumidification and chilled water valve. Programming shall have multilevel password access to prevent unauthorized access. Programming shall be accomplished entirely from the front of the unit without the need to access, set or program switches inside the unit (front door of the unit does not need to be opened). Programmable functions shall be entered on flash memory to ensure program retention should power fail. Likewise the historical database shall be stored on flash memory and can be recalled for system diagnostic or maintenance. Multiple status screens shall be displayed by automatically scrolling from each message to the next. Alarm conditions shall be displayed by automatically scrolling from each message to the next. Alarm conditions, in addition to being displayed, shall enunciate an audible alarm. A programmable summary contacts shall be available for remote alarm monitoring. Additional test or service terminal shall not be required for any functions. The control shall include temperature, humidity or dew-point control, humidity anticipation and automatic flush cycles.
 - b. An alarm condition shall continue to be displayed until the malfunction is corrected. Multiple alarms shall be displayed sequentially. Alarms that have not been acknowledged, shall activate an audible signal. 100 latest alarm events are recorded in historical data menu. Recorded alarm events have time stamp of when the alarm occurred and the space condition that can be used for system diagnostic. Panel time clock is maintained by back-up battery. The Mini-Dap 4 panel shall perform an automatic self-test on system start-up. A user accessible diagnostic program shall aid in system component trouble shooting by displaying on the unit LCD screen the name of the controlled item, output number, terminal plug and pin number of each controlled function.
 - c. The Mini-Dap4 system shall support Bacnet IP or MS/TP for intrgration into the building automation system.
- 7. Electrical:
 - a. All electrical components, including capacitors, contactors, relays and control transformers shall be pre-wired and contained in a hinged electrical box that shall swing out for easy access and servicing.
 - b. The control circuit voltage shall be 24 volts.
 - c. A factory installed micro-switch will disable the unit prior to condensate pan overflow should the drain become plugged with debris.
- 8. Electric Reheat:
 - a. The unit shall include electric reheat. The reheat shall be of the finned enclosed sheath type, fabricated of stainless steel core sheath with pleated fins to withstand moist conditions. The

reheat shall be installed on air discharge side of the evaporator.

9. Options:

a. Disconnect Switch:

- 1) Provide units with disconnect switch. The disconnect switch with 1/4 turn latch shall be factory installed and wired. The switch must be in the "OFF" position to remove panel and access electrical compartment.

b. Condensate Pump:

- 1) A condensate pump shall be provided with the unit and shall have a capacity of 60 GPH at 8 feet of head. The condensate pump shall be installed and wired from the factory.

c. Bacnet: building automation system integration.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that ceiling system is ready to receive work and opening dimensions are as indicated on shop drawings.
- B. Verify that electric power is available and of the correct characteristics.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Coordinate installation of air conditioning unit with computer room ceiling installer.

END OF SECTION

SECTION 26 05 00 BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

- A. Basic Electrical Requirements and materials specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements. Section includes:
 - 1. Electrical Identification.
 - 2. Minor Demolition.
 - 3. Conductors and Devices.
 - 4. Raceways and Boxes.
 - 5. Supporting Devices.

1.03 REGULATORY REQUIREMENTS

- A. Conform to NFPA 70 - National Electrical Code, latest edition with admendments as adopted by the City of Joliet, IL.
- B. Conform to building codes as adopted by the City of Joliet, IL.
- C. Install electrical Work in accordance with the NECA Standard of Installation.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.
- B. Ship products to the job site in their original packaging. Receive and store products in a suitable manner to prevent damage or deterioration. Keep equipment upright at all times.
- C. Investigate the spaces through which equipment must pass to reach its final destination. Coordinate with the manufacturer to arrange delivery at the proper stage of construction and to provide shipping splits where necessary.

1.05 PROJECT/SITE CONDITIONS

- A. Install work in locations shown on Drawings, unless prevented by Project conditions. Drawings have omitted certain branch circuitry in areas for ease of reading. All branch circuitry is to be provided by Contractor.
- B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission from Architect/Engineer before proceeding as specified under modification procedures.

1.06 QUALITY ASSURANCE

- A. Provide Work as required for a complete and operational electrical installation.

- B. All products shall be designed, manufactured, and tested in accordance with industry standards. Standards, organizations, and their abbreviations as used hereafter, include the following:
 1. American National Standards Institute, Inc (ANSI).
 2. American Society for Testing and Materials (ASTM).
 3. National Electrical Manufacturers Association (NEMA).
 4. Underwriters Laboratories, Inc. (UL).
- C. Install all Work in accordance with the NECA Standard of Installation.

1.07 SUBMITTALS

- A. Submit all requested items in Division 26 Sections under provisions of Section 01 30 00.

1.08 SUBSTITUTIONS

- A. Substitutions will be considered only as allowed within the provisions of Section 01 60 00.

1.09 PROJECT MANAGEMENT AND COORDINATION

- A. Proper project management and coordination is critical for a successful project. Manage and coordinate the Work with all other trades in accordance with Section 01 30 00 requirements. Reliance on the Drawings and Specifications only for exact project requirements is insufficient for proper coordination.

PART 2 PRODUCTS

2.01 WIRING METHODS

- A. All locations: Building wire in raceway.
- B. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 14 AWG for control wiring.
 1. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 100 feet. Use minimum #10 AWG conductor wire in all the following locations:
 - a. All programmable panel branch circuits (larger where indicated).
 - b. All emergency lighting and exit branch circuits.

2.02 WIRE AND CABLE

- A. Manufacturers:
 1. Okonite.
 2. Southwire.
 3. Collyer.
- B. Building Wire:
 1. Feeders and Branch Circuits Larger Than 6 AWG: Copper, stranded conductor, 600 volt insulation.
 2. Feeders and Branch Circuits 6 AWG and Smaller: Copper conductor, 600 volt insulation. 6 and 8 AWG, stranded conductor; smaller than 8 AWG, stranded conductor (solid for device terminations).
 3. Control Circuits: Copper, stranded conductor, 600 volt insulation.
 4. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
 5. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.

6. Use conductor not smaller than 12 AWG for power and lighting circuits.
7. Use conductor not smaller than 16 AWG for control circuits.

C. Locations:

1. Concealed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.
2. Exposed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.
3. Above Accessible Ceilings: Use only building wire with Type THHN insulation in raceway.
4. Wet or Damp Interior Locations: Use only building wire with Type THWN insulation in raceway.
5. Exterior Locations: Use only building wire with Type XHHW insulation in raceway.
6. Underground Installations: Use only building wire with Type XHHW insulation in raceway.

2.03 RACEWAY REQUIREMENTS

A. Use only specified raceway in the following locations:

1. Branch Circuits and Feeders:
 - a. Concealed Dry Interior Locations: Electrical metallic tubing.
 - b. Exposed Dry Interior Finished Locations: Electrical metallic tubing.
 - c. Exposed Dry Interior Unfinished Locations: Electrical metallic tubing.
 - d. All other locations: Galvanized Rigid Metallic Conduit.

B. Size raceways for conductor type installed.

1. Minimum Size Conduit Homerun to Panelboard: 3/4-inch.

2.04 METALLIC CONDUIT AND FITTINGS

A. Conduit:

1. Rigid Steel Conduit: ANSI C80.1.
2. Electrical metallic tubing: ANSI C80.3.
3. Flexible Conduit: UL 1, zinc-coated steel.
 - a. Liquidtight Flexible Conduit: UL360. Fittings shall be specifically approved for use with this raceway.

B. Conduit Fittings:

1. Metal Fittings and Conduit Bodies: NEMA FB 1.
 - a. EMT fittings: Use set-screw indentor-type fittings.

2.05 NONMETALLIC TUBING

A. Manufacturers:

1. Carlon Co.
2. LCP National Plastics, Inc.
3. Pacific Western Extruded Plastics Co.

B. Description: UL651A "Type EB and A PVC Conduit and HDPE Conduit."

1. Conduit: Schedule 40. Suitable for exposure to sunlight and direct burial.

2.06 CONDUIT HANGERS

A. Manufacturers:

1. Minerrallac Electric Company.
2. Substitutions: Or Approved Equal.

B. Description:

1. Standard conduit hanger, zinc-plated steel with bolts.
2. Threaded rod and hardware: Plated finish, size and length as required for loading and conditions.

2.07 BEAM CLAMPS

A. Manufacturers:

1. Appleton.
2. Midwest.
3. Racor.

B. Description: Malleable beam clamp, zinc plated steel.

2.08 ELECTRICAL BOXES

A. Manufacturers:

1. Racor.
2. Steel City.
3. Appleton.
4. Substitutions: Or Approved Equal.

B. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, galvanized steel, suitable for installation in masonry:

C. Equipment Support Boxes: Rated for weight of equipment supported; include 2 inch male fixture studs where required.

D. Wet Location Outlet Boxes: Cast aluminum: Cast alloy, deep type, gasket cover, threaded hubs.

2.09 POP-OPEN ENCLOSURE

A. Manufacturers:

1. FSR
2. Hubbell
3. Wiremold

B. Description

1. Recessed table top enclosure with pop-open cover.
2. (1) Double duplex receptacle.
3. Up to 8 Communications devices.
4. Can be installed in any table surface with thickness ranging from .75" to 2.75"

C. Cover:

1. Flush type.
2. Color as selected by Architect.

2.10 PENETRATION SEALANTS

A. Fire-rated assemblies: Provide firestopping of all penetrations made by Work under this Contract in accordance with provisions of Section 07 84 00 requirements.

B. Thermal and Moisture Protection: Provide thermal and moisture protection made by Work under this Contract of all exterior wall, floor and roof penetrations in accordance with Division 7 requirements.

2.11 NAMEPLATES AND LABELS

- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Locations:
 - 1. Each electrical distribution and control equipment enclosure.
- C. Letter Size:
 - 1. Use 1/8 inch letters for identifying individual equipment and loads.
 - 2. Use 1/4 inch letters for identifying grouped equipment and loads.
- D. Labels: Embossed adhesive tape, with 3/16 inch white letters on a black background. Use only for identification of individual wall switches and receptacles and control device stations.

2.12 WIRE AND CABLE MARKERS

- A. Manufacturers:
 - 1. Brady Model PCPS.
 - 2. Panduit Model PCM.
 - 3. T & B Model WM.
- B. Description: Cloth type wire markers.
- C. Locations: Each conductor at panelboard gutters, pull boxes, and each load connection.
- D. Legend:
 - 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.

2.13 CONDUIT MARKERS

- A. Location: Furnish markers for each conduit longer than 6 feet.
- B. Spacing: 20 feet on center.
- C. Color:
 - 1. 480 Volt System: Orange
 - 2. 208 Volt System: Black
 - 3. Fire Alarm System: Red.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Demolition Drawings are based on casual field observation and are intended to identify the limits of the construction site. Remove all electrical systems in their entirety in proper sequence with the Work.
- B. Disconnect electrical systems in walls, floors, and ceilings for removal.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Electrical Service and Emergency Electrical Service: Maintain existing system in service. Disable system only to make switchovers and connections. Obtain permission from Owner and Architect at least 24 hours before partially or completely disabling system. Minimize outage

duration. Make temporary connections to maintain service in areas adjacent to work area.

- E. Existing Fire Alarm System: Maintain existing system in service. Disable system only to make switchovers and connections. Notify Owner, Architect/Engineer and local fire service at least 24 hours before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.
- F. Beginning of demolition means installer accepts existing conditions.
- G. Verify that supporting surfaces are ready to receive work.
- H. Electrical boxes are shown on Drawings, in approximate locations, unless dimensioned.
 - 1. Obtain verification from Architect/Engineer for locations of outlets throughout prior to rough-in.
- I. Degrease and clean surfaces to receive wire markers.
- J. Verify that interior of building is physically protected from weather.
- K. Verify that mechanical work which is likely to injure conductors has been completed.
- L. Completely and thoroughly swab raceway system before installing conductors.

3.02 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove all existing electrical installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- D. Relocate existing fire alarm devices affected by wall, ceiling and floor demolition.
- E. Repair adjacent construction and finishes damaged during demolition and extension work.

3.03 APPLICATION

- A. Install nameplate and label parallel to equipment lines.
- B. Secure nameplate to equipment front using screws.
- C. Neatly train and secure wiring inside boxes, equipment, and panelboards.
- D. Route wire and cable as required to meet project conditions.
 - 1. Wire and cable routing indicated is approximate unless dimensioned.
 - 2. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.
- E. Pull all conductors into raceway at same time.
- F. Protect exposed cable from damage.
- G. Neatly train and lace wiring inside boxes, equipment and panelboards.
- H. Support cables above accessible ceilings to keep them from resting on ceiling tiles.
- I. Make splices, taps, and terminations to carry full ampacity of conductors without perceptible temperature rise.

- J. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
- K. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- L. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- M. Do not use powder-actuated anchors.
- N. Do not drill or cut structural members.
- O. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- P. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- Q. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch off wall.
- R. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.
- S. Terminate spare conductors with electrical tape.
- T. Do not share neutral conductor on load side of dimmers.

END OF SECTION

SECTION 26 05 83 WIRING CONNECTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical connections to equipment and devices not and integral part of the electrical distribution system.

1.02 REFERENCE STANDARDS

- A. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2020).
- B. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2016.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Provide conduit rough-in and electrical connection to powered equipment and devices identified in the Project Manual and on the Drawings. Refer specifically, but not limited to, these Specification Sections for further information:
 - 1. Section 23 81 24 - Computer Room Air Conditioners - Floor Mounted
 - 2. Section 23 81 25 - Computer Room Air Conditioners - Wall Mounted
- B. Coordination: Determine connection locations and requirements for furniture, equipment and devices furnished or provided under other sections.
 - 1. Do not rely solely on the Drawings and Project Manual for execution of the Work of this Section.
 - 2. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions.
 - 3. Include necessary field evaluation time to inspect connection requirements.
 - 4. Coordinate with other trades to determine exact rough-in requirements.
- C. Sequencing:
 - 1. Install rough-in of electrical connections before installation of furniture and equipment is required.
 - 2. Make electrical connections before required start-up of equipment.

1.04 SUBMITTALS

- A. Product Data: Provide wiring device manufacturer's catalog information showing dimensions, configurations, and construction.
- B. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
 - 1. Colors: Comply with NEMA WD 1.
 - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
 - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
 - 4. Product: Carol.

2.02 EQUIPMENT CONNECTIONS

- A. Computer Room Air Conditioning Unit (CRAC-1):
 - 1. Electrical Connection: Flexible conduit.
 - 2. Thru-door type disconnect provided with unit.
 - 3. Voltage: 480 volts, 3 phase, 60 Hz.
 - 4. FLA: 9.1 amperes.
 - 5. Branch Circuit: 20 ampere, maximum.
 - 6. Location: Above ceiling, corridor 100.
- B. Air-Cooled Condensing Unit(ACCU-1):
 - 1. Electrical Connection: Flexible conduit.
 - 2. Thru-door type disconnect provided with unit.
 - 3. Voltage: 480 volts, 3 phase, 60 Hz.
 - 4. FLA: 10.1 amperes.
 - 5. Branch Circuit: 20 ampere, maximum.
 - 6. Location: Rooftop.
- C. Computer Room Air Conditioning Unit (CRAC-1):
 - 1. Electrical Connection: Flexible conduit.
 - 2. Thru-door type disconnect provided with unit.
 - 3. Voltage: 208 volts, 3 phase, 60 Hz.
 - 4. FLA: 35.8 amperes.
 - 5. Branch Circuit: 50 ampere, maximum.
 - 6. Location: Mechanical Room C2021.
 - 7. Accessories: Condensate Pump (powered by unit)
- D. Air-Cooled Condenser (ACC-2):
 - 1. Electrical Connection: Flexible Conduit.
 - 2. Thru-door type disconnect provided with unit.
 - 3. Voltage: 208 volts, 3 phase, 60 Hz.
 - 4. FLA: 3.3 amperes.
 - 5. Branch Circuit: 15 ampere, maximum.
 - 6. Location: Rooftop
- E. Air Compressor (AC-1)
 - 1. Electrical Connection: Flexible Conduit (existing to remain, extend to new location).

2. Relocate and reinstall existing disconnect switch at new compressor location.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.02 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

END OF SECTION



JOLIET JUNIOR COLLEGE
— 1901 —

CONTRACT AGREEMENT

Purchase Order#: XXXXXX Account #: XXX-XXX-XXX.XXX

Date: XXXXXX

Project: XXXXX

Between:

Joliet Junior College
1215 Houbolt Road
Joliet, Illinois 60431

AND

Contractor
Address
Address

In the amount of \$ xxxxxxxxxxxxxxxxxxxxxxxxxxxx and 00/100

ARTICLE 1

THE WORK

1.1 The Trade Contractor and JJC agree that the materials and equipment to be furnished and the work to be done by the Trade Contractor are as follows:

The Contract Sum includes, but is not limited to the following:

- 110% Performance and payment bond to Joliet Junior College, Illinois Community College District No. 525
- Insurance in accordance with Schedule "A" Insurance Requirements.

The Contract Sum excludes the following:

- All sales, consumer, use and other similar taxes on equipment and materials incorporated into the work for this project. Tax Exempt No E9992-4773-06 for Joliet Junior College, Illinois Community College District No. 525

1.2 The Trade Contractor shall be held accountable for the following Project related responsibilities: furnish all labor and supervision; furnish, supply and install all equipment, material supplies, tools, scaffolding, hoisting, transportation, unloading and handling; do all things required to complete the work described above on the Project all in accordance with the drawings, documents and specifications prepared by the Architect/Engineer/Owner; and furnish all necessary information, shop drawings, details, samples, brochures,

etc. for Owner/Architect approval, as may be required.

ARTICLE 2

TIME OF COMMENCEMENT AND COMPLETION

2.1 Trade Contractor shall start the work upon notice to proceed and shall execute the work with diligence and so as to maintain such schedules and milestones as established by JJC's Construction Manager. The Trade Contractor agrees to complete portions and the whole of the work by the following anticipated dates:

2.2 The Trade Contractor is cautioned that schedules and milestones are subject to review and revision. It is the sole responsibility of the Trade Contractor to attend job meetings, keep itself informed of any revisions, and conform to any such revisions.

2.3 In the event that the Trade Contractor should fail to maintain JJC's progress schedule or the schedule as established above, the JJC Construction Manager reserves the right, after 48 hours formal notice, either by letter or confirmed email to the Trade Contractor, to procure the materials, equipment, and labor necessary to proceed with, or to complete the work, or any portion thereof from other sources and charge the cost thereof to the Trade Contractor.

ARTICLE 3

THE CONTRACT SUM

3.1 JJC agrees to pay the Trade Contractor for the satisfactory performance of his work the total sum of:

Contract Amount: \$.00

Contract amount is made up of the following:

- Base Bid\$
- Alternate Bid No.\$
- Total Contract Amount.....\$

Allowances (if applicable):

Unit Prices (furnished and installed unless stated otherwise)

In current funds subject to additions and deductions for changes, as may be agreed upon, and to make payments on account thereof as follows:

- 3.2 On the established day of each month, the Trade Contractor shall deliver to the JJC Construction Manager (2) completed copies of the JJC Payment Application Package showing values of all materials delivered and work completed up to the established billing date for which payment is being requested. It is specifically understood and agreed that prior to submission of the first statement the Trade Contractor will deliver to the JJC Construction Manager, for review and approval, a detailed breakdown of this contract sum showing a schedule of values for the various parts of the work. Once accepted, this schedule of values will be used as a basis for checking the Trade Contractor's monthly statement.
- 3.3 The Trade Contractor shall, with the second and each succeeding monthly request for payment, submit a waiver of lien showing all payments made for labor and materials and on account for all work covered in the previous months request for payment. Affidavit and waiver of liens may be required to be submitted from Trade Contractors, suppliers, and/or Trade-Trade Contractors (all tier).
- 3.3.1 The Trade Contractor shall, with the second and each succeeding monthly request for payment, submit certified payroll for all labor and sub labor.
- 3.4 Ten percent (10%) of each payment shall be retained, unless specific provisions to the contrary are indicated in the contract documents.
- 3.5 No payment made under this Agreement, including the final payment, shall be conclusive evidence of the performance of the work, either wholly or in part, and no payment shall be construed as an acceptance of defective work or improper materials.
- 3.6 The Trade Contractor shall save and keep JJC's property free from all mechanics' and material liens and all other liens and claims, legal or equitable, arising out of the Trade Contractors work hereunder. In the event any such lien or claim is filed by anyone claiming by, through, or under the Trade Contractor, the Trade Contractor shall remove and discharge same, by bonding or otherwise, within five (5) days of the filing thereof.

ARTICLE 4

THE CONTRACT DOCUMENTS

- 4.1 The contract documents consist of this Agreement and any exhibits attached hereto; general conditions, supplementary, special and other conditions, the drawings, specifications, general instructions to bidders, supplements to bidder's documents, form of proposal, all addenda issued prior to and all modifications issued after execution of the Agreement. Any post bid review and/or pre-construction document shall be considered part of this Agreement.
- 4.2 The Trade Contractor agrees to perform the work under the general direction of the JJC Construction Manager.
- 4.3 If there is a provision for liquidated damages in the contract documents, the Trade Contractor shall be liable for any liquidated damages by reason of the failure of the Trade Contractor to prosecute the work diligently and properly.
- 4.4 No extra work shall be performed under this Agreement, except upon receipt of a written change

order from JJC. Should the Trade Contractor proceed with any work they consider extra to this contract without a fully executed JJC change order form, it is considered at their own risk and cost.

ARTICLE 5

INSURANCE AND INDEMNITY

5.1 The Trade Contractor agrees to at the time of execution of this Agreement furnish the Construction Manager with certificates of an insurance company (or other source). These certificates should certify that the Trade Contractor is protected on the work with worker's compensation and employer's liability, public liability and bodily injury, property damage insurance, and any other insurance as required by the contract documents and in accordance with the attachment to this Agreement entitled "Insurance Specifications". The Trade Contractor will not be permitted to start work at the site until these certificates are filed with the JJC Construction Manager. Compliance by the Trade Contractor with the foregoing requirements, as to carrying insurance and furnishing certificates, shall not relieve the Trade Contractor of its liabilities and obligations.

ARTICLE 6

PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

6.1 The Trade Contractor agrees to furnish and pay for a 110% Performance Bond and a 110% Labor and Material Payment Bond. The bonds are to be delivered within 10 days of receipt of a purchase order and execution of this agreement.

ARTICLE 7

WARRANTY

7.1 The Trade Contractor agrees to promptly make good, without cost to the JJC, any and all defects, due to faulty workmanship and/or materials, which may appear within the guarantee or warranty period so established in the contract documents. If no such period be stipulated in the contract documents, then such guarantee shall be for a period of one (1) year from date of completion and acceptance of the work by JJC. The Trade Contractor further agrees to provide any and all guarantees as required by the terms of the contract documents, as a condition precedent to final payment.

ARTICLE 8

CHANGES IN THE WORK

- A. 8.1 The Trade Contractor may be ordered in writing by JJC, without invalidating this Agreement, to make changes in the work within the general scope of this Agreement. These changes may consist of additions, deletions, or other revisions, the contract sum and the contract time being adjusted accordingly. The Trade Contractor, prior to the commencement of such changed or revised work, shall submit promptly to the JJC Construction Manager written copies of any claim for adjustment

to the contract sum and contract time for such revised work in a manner consistent with the contract documents. Any extra work done by the Contractor will be considered performed at no extra cost to JJC unless a written JJC change order form has been fully executed and signed by the Director of Business and Auxiliary Services. A contractor shall not be entitled to any compensation for extra work/material based on verbal conversations or email exchanges (the contractor is considered proceeding with extra work at their own risk without a fully executed JJC change order form). It is the contractor's responsibility to obtain a fully executed change order form from JJC. A change order or a combination of multiple change orders may not exceed 10% of the original contract without JJC seeking approval from the Board of Trustees.

8.2 Where changes in the work involve both additions and deletions, percentages for overhead and profit shall be applied to the net increase only of such values for labor and materials.

8.3 The amount to be paid by the Owner for changes in the work, as outlined in paragraph 8.1 above, shall be made on the basis of one of the following methods:

- (a) by mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation and agreed upon by the JJC Construction Manager and the Trade Contractor, or
- (b) by unit prices stated in the contract documents, or
- (c) if no such unit prices are set forth and if the parties cannot agree upon a lump sum, then the actual net cost in money to the Trade Contractor of materials and labor (including insurance and applicable taxes) required, plus rental of plant equipment (other than small tools and small equipment) plus compensation for overhead and for profit as noted in Article 12, field overhead will not be considered as part of actual net cost, or
- (d) by the method provided in subparagraph 8.4.

8.4 If none of the above methods set forth in clauses 8.3 (a), 8.3 (b), 8.3 (c) is agreed upon, the Trade Contractor, provided he receives a written order signed by JJC shall promptly proceed with the work involved. The cost of such work shall be determined by the JJC Construction Manager on the basis of reasonable expenditures and savings of those performing the work attributable to the change, including, in the case of an increase in the contract sum, a reasonable allowance for overhead and profit as set forth in the bid documents. In such case, and also under clauses 8.3 (c) and 8.3 (d) above, the Trade Contractor shall keep and present, in such form as the JJC Construction Manager may prescribe, an itemized accounting together with appropriate supporting data for inclusion in a change order. Unless otherwise provided in the contract documents, cost shall be limited to the following: cost of materials including sales tax and cost of delivery, cost of labor including social security, old age and unemployment insurance and fringe benefits required by Agreement or custom; workers or workmen's compensation insurance; bond premiums; rental value of equipment and machinery; and the additional costs of supervision and field office personnel directly attributable to the change. Pending final determination of cost, payments, on account shall be made as determined by the JJC. The amount of credit to be allowed by the Trade Contractor for any deletion or change which results in a net decrease in the contract sum will be the amount of the actual net cost as confirmed by JJC when both additions and credits covering related work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any with respect to that

change.

8.5 For work performed by a Trade-Trade Contractor, the Trade Contractor will be allowed to add 5% only and said Trade-Trade Contractor mark-up shall not exceed the agreed upon percentages noted in Article 11 for overhead and profit.

ARTICLE 9

TRADE CONTRACTOR RESPONSIBILITIES

9.1 The Trade Contractor shall provide sufficient, safe, and proper facilities at all times for the inspection of the work by JJC. The Trade Contractor shall, within a 24-hour notice from the JJC Construction Manager, proceed to take down all portions of the work and remove from the grounds or buildings, all materials, whether worked or unworked, which the JJC Construction Manager shall condemn as unsound or improper, or as in any way failing to conform to the contract documents. The Trade Contractor shall make good at its own expense, all work damaged or destroyed thereby.

9.2 The Trade Contractor agrees, in the performance of this Agreement, to comply with all federal, state, municipal, and local laws, ordinances, codes and governing regulations, to pay all costs and expenses required thereby; to pay all fees, charges, assessments, and taxes, including sales and use taxes, and to pay all fringe and other benefits required by Agreement or law.

9.3 The Trade Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save JJC harmless from loss on account thereof, except that JJC shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified, but if the Trade Contractor has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the JJC Construction Manager.

9.4 Should the Trade Contractor become insolvent, or at any time, refuse or neglect to supply a sufficiency of properly skilled workers, or equipment and materials of the proper quality, or fail in any respect to prosecute the work with promptness and diligence, or fail in the performance of any of the Agreements herein contained, JJC shall be at liberty, after 48 hours written notice to the Trade Contractor, to provide any such labor, equipment, and materials and deduct the cost thereof, from any money then due or thereafter to become due to the Trade Contractor, under this Agreement if such refusal, neglect, or failure is sufficient ground for such actions, JJC shall also be at liberty to terminate the employment of the Trade Contractor. Consequently, JJC may enter upon the premises to take possession, for the purpose of completing the work included under this Agreement, of all materials, tools, and appliances thereon, and to employ any other person or persons to finish the work and provide the materials therefore. In case of such discontinuance of the employment, the Trade Contractor shall not be entitled to receive any further payment under this Agreement until the said work shall be wholly finished. If such expense shall exceed such unpaid balance, the Trade Contractor shall pay the difference to JJC. The expense incurred by JJC, as herein provided, either for furnishing materials, or finishing the work, and any damage incurred through such default, shall be chargeable to the Trade Contractor. In the event that a Termination for Cause is not upheld by a properly empowered judicial or arbitral authority, then the Termination for Cause shall be deemed a Termination for Convenience and construed under Section 9.4.1. hereof.

9.4.1 Notwithstanding the above paragraph, JJC reserves the right to terminate this Agreement for its convenience upon written notice to the Trade Contractor. In such instance the Trade Contractor will be paid

its share of the contract amount proportionate to the percentage of its work completed and other reasonable cancellation costs incurred as a result of said termination. No payments shall be made for anticipated overhead and profit. Prior to making any payments under this clause, JJC shall have the right to audit the records of the Trade Contractor.

9.5 The Trade Contractor agrees to adhere to the federal occupational safety act, state and local safety regulations and JJC's safety and health program so as to avoid injury or damage to persons or property, and to be directly responsible for damage to persons and property resulting from failure to do so.

9.6 In the event the Trade Contractor after a 24-hour written notice from JJC fails to take corrective action to insure compliance with said safety regulations or removal of rubbish and debris resulting from his work, JJC shall undertake these obligations and charge the cost of same to the Trade Contractor's account without further notice to the Trade Contractor.

9.7 The Trade Contractor agrees to notify the JJC Construction Manager of all accidents which may occur to persons or property and shall provide a copy of all accident reports on appropriate forms. All reports shall be signed by the Trade Contractor or his authorized representative and submitted within five (5) days of occurrence.

9.8 The Trade Contractor shall procure its materials from such sources, and employ such labor subject to contract terms and conditions in order to ensure harmonious labor relations on the site and prevent strikes or labor disputes by its employees or other trade employees. The Trade Contractor, in the event of a labor dispute including strikes, shall take whatever action is required in order to prevent the disruption of work on the Project site.

9.9 The Trade Contractor will not assign this Agreement or any moneys due or to become due under this Agreement, or sublet the whole or any part of the work to be performed hereunder, without the written consent of the Owner. In the event of such consent, a Trade-Trade Contractor must comply with all the requirements of this Agreement.

9.10 The Trade Contractor agrees that all disputes concerning the jurisdiction of trades shall be adjusted in accordance with any plan for the settlement of jurisdictional disputes which may be in effect either nationally or in the locality in which the work is being done. The Trade Contractor shall be bound by, and shall abide by, all such adjustments and settlements of jurisdictional disputes, whether or not the Trade Contractor is signature bound by the Agreement establishing the impartial jurisdictional disputes board and/or its successors. The Trade Contractor agrees not to cause work stoppage, due to the jurisdictional assignment of work.

9.11 The Trade Contractor shall submit to the JJC Construction Manager upon request, copies of orders placed for the various materials required for the Project or authentic stock lists if such material is normally a stock item. Order copies need not reflect prices but should indicate type of material, quantity, vendor name, and address, etc. The Trade Contractor shall be required to submit to the JJC Construction Manager a monthly material status report, or more often if required by the JJC Construction Manager, as a prerequisite for the monthly progress payment. The Trade Contractor shall notify the JJC Construction Manager immediately upon learning of a change of status of any material, equipment, or supplies.

9.12 The Trade Contractor shall continuously and adequately protect all his work and will immediately replace all damaged and defective work.

9.13 The Trade Contractor agrees to maintain an adequate force of experienced workers and the necessary materials, supplies, and equipment to meet the requirements of the JJC Construction Manager and other trades in order to maintain construction progress schedules, as established by the JJC Construction Manager. In the event that his force is, in the judgment of the JJC Construction Manager, inadequate to meet the established schedules during the regular working hours, the Trade Contractor agrees to work sufficient overtime hours or increase his work force to meet such schedules at no extra cost to JJC. If for reasons not already stated, the JJC Construction Manager requires and directs the Trade Contractor to work overtime, including Saturdays, Sundays or Holidays, the Trade Contractor will be reimbursed the net premium rate only. The net premium rate is understood to mean the actual premium labor cost, including applicable taxes and wage additives required by trade Agreement or by law, but without additives for overhead, labor efficiency, or profit.

9.14 The Trade Contractor agrees to employ competent administrative, supervisory, and field personnel to accomplish the work, including layout, engineering, and preparation and checking of shop drawings. If required, the Trade Contractor shall substantiate this employment of competent personnel to JJC's Construction Manager's satisfaction before initiating any work.

9.15 The Trade Contractor shall insure that all construction tools, equipment, temporary facilities, and other items used in accomplishing the work, whether purchased, rented, or otherwise provided by the Trade Contractor or provided by others, are in a safe, sound, and good condition, must be capable of performing the functions for which they are intended and must be maintained in conformance with applicable laws and regulations.

9.16 If the Trade Contractor is delayed at any time in the progress of the work by any act or neglect of JJC, the Architect/Engineer, or by any employee of either, or by any separate contractor employed by JJC, or by changes ordered in the work, or by labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonably anticipatable, unavoidable casualties or any causes beyond the Trade Contractor's control, or by delay authorized by JJC, or by any other cause which the JJC Construction Manager determines may justify the delay, then the contract time shall be extended by amendment for such reasonable time as the JJC Construction Manager may determine. In the event that a conflict exists between this section (9.16) and a like clause contained in a document having higher precedence, such like clause shall have preference to the extent of the conflict.

9.17 Right-To-Know- each Trade Contractor is required to implement the provisions of the right-to-know law, if any, as enacted by the state in which the work is being performed. Before using on site any material listed in the right-to-know substance list, each Trade Contractor will furnish the Construction Manager a copy of the material safety data sheet for that substance.

9.18 In the event the Trade Contractor employs independent contractors, as well as payroll labor, to discharge its obligations hereunder, the Trade Contractor acknowledges and understands that it does so at its own risk and that federal, state and/or local agencies may dispute the independent contractor status and assess penalties, fines, and costs should there be a determination to reclassify such workers. In that event, the Trade Contractor agrees that it will defend, indemnify and hold JJC harmless from any fines, costs, damages, penalties, attorneys fees, and causes of action, including without limitation, personal injury or property damage, arising out of or relating in any way to such a determination.

9.19 The Trade Contractor will have competent supervision on site at all times when work is proceeding. No subcontractor should be working on site without representation/supervision by this Trade Contractor. The JJC Construction Manager reserves the right to hire proper supervision of subcontractors, and fully back charge

this Trade Contractor for such services.

ARTICLE 10

EQUAL OPPORTUNITY

10.1 During the performance of this Agreement, the Trade Contractor agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Trade Contractor will take affirmative action to insure that applicants are employed without regard to their race, color, religion, sex, or national origin. The Trade Contractor will comply with all provisions of Executive Order No. 11246, Section 503 of the Rehabilitation Act of 1973, as Amended, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as Amended, (38 U.S.C. 4212) and their implementing regulations at 41 CFR Chapter 60.

ARTICLE 11

ALTERATIONS

11.1 The overhead and profit allowable under Article 8.3. A, 8.3 B, 8.3 C is:

- For the Trade Contractor, for any Work performed by the Trade Contractor's own forces- 12 percent of the cost
- For the Trade Contractor, for Work performed by his Subcontractor - 5 percent of the amount due the Subcontractor

11.2 All proposals, except those less than \$200 shall be accompanied by a complete itemization of costs including, labor, materials and subcontractors. Labor and material shall be itemized in the manner prescribed in Article 11.1. Where major cost items are subcontracts, they shall be itemized also. In no case will a change involving over \$200 be approved without such itemization.

ARTICLE 12

COMPLETE AGREEMENT

12.1 This Agreement, together with all documents, specifications, drawings, incorporated herein by reference, constitutes the entire Agreement between JJC and Trade Contractor. There are no terms, conditions, or provisions, either oral or written, between the parties hereto, other than those contained herein. This Agreement supersedes any and all written representations, inducements, or understandings of any kind or nature between the parties hereto, relating to the particular Project involved herein.

12.2 The said parties for themselves, their heirs, successors, executors, administrators and assigns, do hereby agree to the full performance of the covenants herein contained.

12.3 Governing Law; Venue - The validity, construction and interpretation of this Agreement shall be governed by the laws of the State of Illinois. The parties hereto irrevocably agree that all actions or proceedings in any way, manner or respect arising out of or from or related to his Agreement shall be litigated only in the Circuit Court, Twelfth Judicial Circuit, Will County, Illinois. Each party hereby consents and submits to personal jurisdiction in the State of Illinois and waives any rights such party may have to transfer the venue of any such action or proceeding.

In witness whereof they have hereunder set their hands the day and date first above written.
In the presence of

Trade Contractor

Witness

Accepted by: _____ (Signature)

Name: _____ (Print name)

Title: _____

Date: _____

Joliet Junior College
Owner

Witness

By: _____ (Signature)

Joliet Junior College

Name: _____ (Print name)

Title: _____

Date: _____

Date:

Time:

Project Title / Location:

Project Number:

FOR

1. **Introductions:** All project members are to introduce themselves including their name, organization, title, and role on the project.

A. Joliet Junior College Personnel:

1. Construction Manager:

- a. Phone:
- b. Cell:
- c. Email:

2. Alternate Contact:

- a. Phone:
- b. Cell:
- c. Email:

B. Contractor Personnel

1. Project Manager:

- a. Phone:
- b. Cell:
- c. Email

2. Construction Superintendent:

- a. Phone:
- b. Cell:
- c. Email:

2. **Communications:**

- A. Communications related to the project between Joliet Junior College and the Contractor shall be conducted through the Joliet Junior College Construction Manager (CM) only, unless directed otherwise.
- B. In the event of an emergency the Contractor is to contact Campus Police at 815-280-2234, or may pick-up any campus phone and dial 2911.
- C. RFI's: Requests for Information (RFI's): All Requests for Information shall be in written form to JJC's CM with a copy to the A/E when required. All responses will come from JJC or the A/E in writing addressed to the Contractor's Project Manager

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- D. Weekly Construction Reports: Contractor is to provide a weekly construction report to JJC CM. This report is to be inclusive of daily activities, potential delays, stoppage, problems, accidents, near misses, significant decisions, meetings, requests by JJC, etc.
- E. Correspondence: All correspondence shall be directed to the Construction Manager

Joliet Junior College
Facilities Services Department
ATTN: _____
1215 Houbolt Road
Joliet, IL 60431

Include Project Title, Project Number, Purchase Order Number on ALL correspondence.

3. Construction Schedule:

- A. Schedule of Values: Contractor is to provide a schedule of values (AIA document recommended) broken down into each division of the work as a minimum. The schedule of values will include as a minimum a listing of the work elements or branch values, the cost of each work element, and the percentage of total project "award" cost that the work element represents. The schedule of values will become the basis for "work elements" a.k.a. "branch values" of the Construction Schedule. These same "work elements" shall be used as the basis for the "branch values" of the Construction Progress Report as listed in item #2D above.
- B. Construction Schedule: Contractor is to submit within one week of pre-construction meeting, a fully developed gantt chart type construction schedule.
 - 1. Provide a task for each construction activity or "work element".
 - 2. No progress payment will be processed until the construction schedule is submitted and approved.
 - 3. Provide a revised, updated schedule with each progress payment request.

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Performance:

A. Commencement, Prosecution & Completion of Work

1. Purchase order/notice to proceed received: _____
2. Contract Amount: _____
3. Total Amount of Alternates Accepted: _____
4. Proposed start/mobilization date : _____
5. Preconstruction Submittals Received: Check one Y _____ N _____
6. Bonding & Insurance Requirements Received: Check one Y _____ N _____
7. Completion date: _____
8. Delays and time extensions: The Contractor is responsible for the completion of project work within the time designated above and in the construction schedule. Justified change orders may qualify a delay and require a time extension which must be discussed and approved by the JJC CM. Failure to complete the project on time will result in a negative evaluation of Contractor performance on the JJC project close-out documents.
9. All shop drawings will be submitted to the JJC CM or A/E when required. Material samples shall be submitted for approval when required.
10. The JJC CM and/or the A/E will provide a list of punch list items. The final punch list shall be completed within 2 weeks upon substantial completion. 10% of the contract amount will be withheld until all punch list items are completed.
11. Construction status meetings between the Contractor and JJC CM shall be held on a weekly basis in the JJC CM's office. At the JJC CM's discretion, this weekly meeting may be held via conference telephone call as the project dictates.
12. As-built drawings shall be maintained and kept on-site daily. Final as-built drawings are required to be turned over to the JJC CM at project completion. When AutoCAD drawings are available from the A/E, the Contractor will revise the drawings to reflect as-built conditions. Final payment will not be processed until all as-built drawings are received.

B. Coordination of Work:

1. The Contractor is responsible for coordination of all elements of the work and every aspect of the coordination of his subcontractors work.
2. The Contractor is required to have a competent construction supervisor in charge of the work at all times. Construction supervisor may be a working foreman. It is required that the contractor have their own supervisor on site anytime they have a subcontractor on site.
3. When the shut down of utilities is required, the Contractor shall coordinate with the JJC CM to schedule the shut down process. Allow a minimum of 5 days notice

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to allow for a shut down. Unless otherwise stated during the bidding process, a utility shut down will be required between the hours of 10:00 p.m. to 6:00 a.m.

4. The contractor is to consider any loud construction noise that may be disruptive to classes, faculty, students and staff (including but not limited to loud demolition, hammer drilling, concrete cutting/drilling, rock breaking, shooting of metal stud track into floors and ceilings, etc.). Such work shall be performed during the maintenance hours of 10:00 p.m. to 6:00 a.m.
5. The contractor will be responsible for providing and maintaining portable toilet facilities when the scope of work is an outdoor project. Location of the portable toilet(s) shall be coordinated with JJC.
6. Any project requiring excavation with remaining spoils shall be hauled off site as part of the contractor's base scope of work. Leaving/spreading spoils on site shall not be permitted.

C. Contractor Evaluation:

At the completion of the project, the JJC CM will complete a contractor evaluation. This evaluation is kept on file and is taken into consideration when considering the Contractor for future projects.

13. Mobilization: Prior to the Contractor mobilizing on site, the following requirements must be met and reviewed.

A. Pre-mobilization requirements:

1. Safety plan submitted and approved. Safety plan should address issues of excavation, crane lifts, hot work and other construction hazards that may apply to their work.
2. Schedule of Values and Construction Schedule submitted and approved.
3. Review Contractor's plan for mobilizing on site, including phasing, timing elements, crane operations, dumpster locations, gang box locations, deliveries, parking, storage of material, etc.
4. Contractor check-in with Facility Services. The Contractor's employees are required to obtain vehicle tags and I.D. badges. Any ticketing by Campus Police as a result of no vehicle tag will be the responsibility of the Contractor.

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14. Maintenance, Housekeeping and Clean-up: The Contractor is primarily responsible for housekeeping in its respective work areas, and for work performed by its employees and subcontractors. This means the Contractor's work area is required to be maintained in an orderly, safe and productive condition at all times.

- A. Accumulation of combustibles, flammable liquids, chemical products, tools not in use, trash and/or refuse is not acceptable and will not be allowed.
- B. Parking, staging and storage of materials and equipment shall be confined to designated areas only.
- C. When a Contractor's work material may be dislodged by wind and could create a hazard when left in an open area, it shall be secured by the Contractor.
- D. The Contractor will police its work area(s) at the end of the shift and leave the area in a condition that is acceptable to the JJC CM.
- E. In the event that housekeeping in a Contractor's work area is found to be in an unacceptable condition by the JJC CM, the CM will give notice once verbally to the Contractor's on-site supervisor or foreman. If the deficiency is not corrected in a timely manner (and no later than the end of the day's work shift), the JJC Facility Services Department may make provisions for clean-up (which may or may not be done by outside services), and fully back charged to the Contractor. The Contractor will be liable for all costs associated with clean-up at a minimum rate of \$125/man hour plus materials.
- F. The Contractor shall provide and install safety fencing or barricades around areas requiring protecting (including but not limited to trees, plantings, etc.). This includes installing cyclone fencing for outdoor projects to prevent anyone from entering the construction zone.
- G. The Contractor will be responsible for daily cleaning of mud off roadways where required, or caused by this Contractor.
- H. The Contractor will provide tree protection and install silt fencing when working in areas that such protection or erosion control is required.
- I. The Contractor will provide berms around storm drains to prevent mud run-off from entering the lake.

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- J. The contractor shall provide floor protection where necessary when the potential of damage to flooring may occur as a result of this contractors work. Contractor is to determine the necessary means, material and extent of floor protection required. Contractor should also photograph and document existing floor conditions prior to any work.
- K. Any landscape/lawn areas disturbed or damaged (inclusive of ruts, damaged trees, bushes, grass/turf, etc) as a result of this contractors work shall be repaired and/or replaced to original condition. Contractor shall take necessary means to protect such areas whenever possible.
- L. Where necessary, this contractor shall provide dust protection in all areas that may be impacted by their work. Means and methods of dust protection is to be determined by this contractor. Contractor will be fully responsible for cleaning all dust in any and all areas impacted by this project.

15. Conduct and Behavior:

The Contractor's employees and representatives must take into consideration the environment around them when holding conversations with fellow associates as well as JJC staff as to not interrupt classes that may be in session, or students in concourses that may be studying. Profanity/foul language, derogatory remarks or harassment of faculty, staff and/or students will not be tolerated and will be an immediate means for the employee dismissal from the project by JJC.

16. Progress Payments/Invoicing and Change Orders:

- A. A "pencil" copy of progress invoicing shall be submitted to the JJC CM & the A/E by the 1st of every month for review and approval. Final invoicing shall be in by the second week of the month for processing and board approval. No invoice will be processed without lien waiver(s) and certified payroll.
- B. Any extra work done by the Contractor will be considered performed at no extra cost to JJC unless a written JJC change order form has been fully executed and signed by the Director of Business and Auxiliary Services. A contractor shall not be entitled to any compensation for extra work/material based on verbal conversations (the contractor is considered proceeding with extra work at their own risk without a fully executed JJC change order form). It is the contractor's responsibility to obtain a fully executed change order form from JJC. A change order, or a combination of multiple change orders may not exceed 10% of the original contract without JJC seeking approval from the Board of Trustees.

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17. Miscellaneous:

- A. Soliciting or canvassing and posting or distributing printed material (except as permitted by law) is prohibited.
- B. Smoking and chewing tobacco is strictly prohibited on JJC property.
- C. Drinking, using, possessing or being under the influence of alcohol or controlled substances are prohibited, and a cause for immediate dismissal.
- D. No radios, CD Players or MP3 players shall be used during normal working hours.
- E. The Contractor shall perform his/her work in accordance to no less than the minimum requirements as established by the Occupational Safety and Health Association. Personal Protection equipment shall be provided by the Contractor and worn at all times.
- F. The Contractor will be responsible for securing materials and tools and shall be solely responsible for any such theft or damage.

By signing below, the Contractor certifies that he, his employees, subcontractors, or assigns will abide to this Preconstruction Conference Checklist during the course of the project. This document shall be attached and included as part of the contract for this project.

Contractor: _____
Print name: _____
Sign name: _____
Title: _____
Date signed: _____

JJC CM: _____
Sign name: _____
Date signed: _____

August 2008

Safety Requirements for Contractors and Subcontractors

Environmental Health and Safety
Facility Service Department
(815) 280-2384

Environmental Health and Safety

Safety Requirements for Contractors And Subcontractors

Environmental Health and Safety

Facility Services Department

1215 Houbolt Rd.

Joliet, IL 60431

Phone: (815) 280-2384 Fax (815) 280-6673

http: // www.jjc.edu/ehs

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Introduction

EHS Information

The mission of Environmental Health and Safety (EHS) is to:

- Work toward providing a safe and healthful living, learning, and working environment for every member of the greater college community by assuring safe work practices through educating, training, and assisting individuals and departments;
- Help individuals and departments achieve compliance with all health and safety state and federal regulations and college policies as economically as possible and
- Act as liaison with external regulatory agencies, and to monitor college compliance with mandatory health and safety standards whenever necessary.

Purpose

Joliet Junior College developed *Safety Requirements for Contractors and Subcontractors* to assure the safety of college employees and the public who may be in proximity to renovation, demolition, installation, or maintenance operations performed by Contractors or Subcontractors. Every Contractor is expected to take steps as necessary to protect the safety and health of college employees, students, and visitors during the performance of their work. Each Contractor that coordinates the work of Subcontractors shall assure that they abide by the requirements outlined herein.

Application

Each department that coordinates or uses the services of a Contractor to perform maintenance, repair, installation, renovation or construction-related operations is expected to designate one or more persons to coordinate this program within his or her department. These coordinators are expected to assure that the Contractor is:

- Informed of the presence of hazards in or near the work area.
- Informed about JJC's requirements related to lead, confined space entry, lockout/tagout, hot work, and excavation operations.
- Aware of the colleges' expectations regarding safety compliance and the control of worksite hazards.

A representative from EHS will serve as the coordinator for the purposes of this program on capital renovation and construction projects.

Scope

This program applies to all JJC properties, and to all work performed by Contractors and Subcontractors in or on property owned, leased or occupied by JJC or employees of JJC.

General Requirements

Contractual Obligations

A copy of this document shall be made available upon request to prospective bidders/offerors at the pre-bid/pre-proposal conference for the work. This document shall be either included with, or referenced in, the contract documents.

Contractors performing building, facilities or equipment-related construction, repair, installation, renovation or maintenance activities shall attend a safety orientation as follows:

- On capital projects, this orientation will be conducted during the pre-construction conference or as determined by the Project Manager.
- For non-capital construction/renovation work, the Project Coordinator shall arrange the safety orientation with EHS and the Contractor prior to the start of work by contacting EHS at (815) 280-2384. Contractors retained on a term contract need only attend one safety orientation held prior to the award of the first project under that contract.

The Contractor shall provide the Project Manager/Coordinator with emergency contact phone number(s), usable 24 hours a day, for the Contractor's representative. These phone numbers shall be copied to EHS and the JJC Police Department prior to the work.

The Contractor bears sole responsibility for the safety of his or her employees. The Contractor is expected to take all steps necessary to establish, administer, and enforce safety rules that meet the regulatory requirements of the Illinois Department of Labor (IDOL) and the Occupational Safety and Health Administration (OSHA). These regulations include, but are not limited to:

- Title 29 of the Code of Federal Regulations (CFR) Parts 1910, Occupational Safety and Health Administration (OSHA) Standards for General Industry,
- Title 29 of the Code of Federal Regulations (CFR) Parts 1926, Occupational Safety and Health Administration (OSHA) Standards for the Construction Industry.

The Contractor bears sole responsibility for communication of safety-related information and requirements to his or her Subcontractors. Contractors shall assure that their Subcontractors comply with the requirements outlined herein.

Submittals

Submittals, where required from the Contractor by this document, shall be made in writing, directly to the Project Manager/Coordinator and copied to EHS. Submittals shall be made sufficiently in advance to avoid delay of the project. Where review, approval, or coordination of submittals is required, submittals shall be made at least ten (10) working days prior to the start of the project unless prior arrangements have been made. Post-job submittals, where required

as outlined in this document, shall be made no later than fifteen (15) working days after completion of the project or as specified herein.

Control of Fugitive Emissions

The Contractor shall take all reasonable precautions necessary to control fugitive emissions from the job site. Fugitive emissions include, but are not limited to: nuisance dust, chemical odors/vapors/gases, hazardous materials (such as lead dust or asbestos), and noise.

Where the product(s) or material(s) to be used by the Contractor has a permissible exposure limit (PEL) established by OSHA or IDOL and where college employees or the public may be exposed to the product or material, the Contractor shall take all reasonable steps to maintain exposures below the PEL where an exposure condition during use exceeding the PEL could reasonably be anticipated. In such instances, the Contractor shall monitor, or shall contract to have monitored, work area exposure conditions. Monitoring shall occur, at a minimum, during the start of work and whenever there is a change in procedure, process, or chemical or material used. If it is deemed not practicable to maintain exposures below the PEL, the Contractor shall restrict access to all areas where exposures exceed the PEL to authorize personnel only.

Accidental Spills and Releases

In the event of an accidental release or spill of chemicals or other hazardous materials the Contractor shall:

- Immediately take action as appropriate to contain the spill if this action can be taken without jeopardizing the health or safety of employees,
- Notify the fire department, campus police, or other entities as needed or required,
- Contact EHS, and
- Contact the Project Manager/Coordinator.

EHS emergency response personnel may be reached after normal business hours by contacting the Campus Police Department at (815) 280-2234 or 2811 from a house phone.

The following phone numbers may be used in the event of an emergency during normal working hours:

	Outside	On-Campus
Joliet Fire Department and Ambulance		911
JJC Campus Police	(815) 280-2911	Extension 2911
North Campus-Romeoville Fire/Ambulance	911	911
Morris Fire/Ambulance	911	911
Environmental, Health and Safety	(815) 280-2384	Extension 2384
East Joliet Fire/Ambulance	(815) 723-1504	911
Facility Services	(815) 280-2332	Extension 2332

All college costs associated with responding to or remediation of a chemical or hazardous material spill or release may be assessed by the Contractor.

General Work Requirements

The Contractor shall abide by the requirements of any sign posted in a building that requires the use of specific personal protective equipment, that restricts access to qualified or authorized persons only, or that establishes other requirements for entry.

The Contractor shall not conduct work or operations that obstruct exits or the means of egress from an occupied building without the prior approval of EHS and the Project Manager/Coordinator. Equipment and materials are not to be stored in exits or exit stairwells at any time, and may not be stored in the means of egress without prior approval. Fire rated doors shall not be chocked or blocked open except temporarily and event of a building fire alarm or similar emergency.

Compressed gases shall be stored, used and transported in accordance of the NFPA, OSHA and DOT. New compressed gas installations shall comply with these agency requirements.

All tents, stages and temporary structures shall comply with the requirements of the NFPA.

Contractors shall not use College equipment or vehicles nor shall the Contractor allow college employees to use the Contractors' equipment or vehicles without the approval of Risk Management and EHS. If an employee of a Contractor needs to use specialized equipment owned by JJC, such as powered industrial trucks, the Contractor must provide suitable documentation that the employee has been trained and certified (if required) to use such equipment.

Specific Program Requirements

Non-capital Projects

Asbestos and Suspect Asbestos Containing Building Materials

It is the responsibility of the Contractor to provide his or her own asbestos awareness program which shall include, but is not limited to, the information contained in this section and the OSHA asbestos-related regulations (29 CFR 1926.1101). Verification that this training has been conducted shall be supplied to the college upon request.

Contractors employed by the college to perform building or facilities-related maintenance, repair or renovation shall be informed by the Project Coordinator of the location of suspect and known asbestos-containing materials (ACM) in the work area(s) to which they are assigned by one of the following means:

- The Project Coordinator shall provide the Contractor with a copy of a completed "Work Order Review Form" or an asbestos inspection report specific to their work and the materials that are to be distributed, or
- Where the construction documents for a project clearly detail asbestos material locations within the work area, these documents may serve in lieu of the "Work Order Review Form" or inspection report.

The "Work Order Review Form" is used internally at the College to document that the proposed scope of work has been reviewed for the presence of suspect or known ACM. The "Work Order Review Form" will be completed by either EHS or the individual within the Department approved by EHS to perform this review. Questions related to this issue should be addressed to EHS at (815) 280-2384. An asbestos inspection report may, at the discretion of the Contracting Department, be prepared by an asbestos consultant licensed in Illinois to perform the duties of Asbestos Inspector and Asbestos Management Planner, this report shall be copied to EHS upon receipt.

Contractors shall, under no circumstances, damage or disturb suspect or known *friable* ACM unless they are a licensed Illinois Asbestos Abatement Contractor and have been specifically employed to perform asbestos repair or removal. Contractors may remove *non-friable* ACM, or perform work that will potentially disturb non-friable ACM, only with prior approval by EHS of the Contractors proposed work methods, employee training and waste disposal site. If suspect asbestos materials are discovered during the course of the work, the Contractor shall stop work immediately and notify the Project Coordinator or other person as indicated in the contract documents.

The Contractor shall not proceed with any change in work which requires a material to be disturbed that the "Work Order Review Form", asbestos inspection report, or construction documents show has not previously been tested (e.g., "suspect" ACM). If a change in the scope of work becomes necessary, the revised scope of work shall be reviewed and pre-approved by EHS or other authorized person.

Asbestos materials may not be used or installed in College facilities.

Lead-Containing Building Materials

Contractors employed by the college to perform building or facilities-related maintenance, repair or renovation shall be informed by the Project Coordinator of the location of lead-containing building materials in the work area(s) to which they are assigned by one of the following means:

- The Project Coordinator shall provide the Contractor with a copy of the completed “Work Order Review Form” or a lead inspection report specific to their work and the materials that are to be disturbed, or
- Where the construction documents for a project clearly detail the location of lead-containing building materials within the work area, these documents may serve in lieu of the “Work Order Review Form” or inspection report.

The Project Coordinator may obtain information regarding the location of lead materials within a work site from the Department Safety Representative or by contacting EHS at (815) 280-2384. A lead inspection report may, at the discretion of the Contracting Department, be prepared by a lead consultant licensed in Illinois to perform the duties of Lead Inspector, this report shall be copied to EHS upon receipt. Contractors that will disturb lead-containing building materials during the course of work shall take all necessary precautions to protect college employees and the public from exposure to lead dust or contamination. These measures shall conform, at a minimum, to the OSHA requirements detailed in 29 CFR 1926.62 and applicable local, state and federal regulation. The Contractor shall submit a copy of his or her lead compliance program, as required by 29 CFR 1926.62(e), with required supporting documentation for prior review and approval to EHS. This submittal shall be made sufficiently in advance of construction to avoid delay of the project. Where the Contractor is engaged in work in child-occupied facilities (as defined by 40 CFR Part 745), such work shall be performed in accordance with 40 CFR Part 745, and clearance testing shall be performed by EHS or a licensed consultant at the conclusion of the project in accordance with the requirements of this regulation.

A copy of the analytical report(s) for any personal air samples taken during the course of the work shall be provided to EHS.

The Contractor shall not proceed with any change in work that requires a material be disturbed that the “Work Order Review Form”, lead inspection report, or construction documents shows has not previously been tested unless pre-approved work procedure will be followed.

On projects where lead-containing materials will be disturbed or removed during the course of work, the Project Designer shall contact EHS at (815) 280-2384 to determine disposal requirements. If the lead-containing materials will constitute a hazardous waste, disposal of these materials shall be coordinated with EHS. The disposal requirements must be established during the design of the project.

Confined Spaces

When the College arranges to have a Contractor perform work that involves entry into a confined space, the Project Coordinator shall:

- Inform the Contractor that the workplace contains confined spaces and that the entry is allowed only through compliance with a confined space program meeting the requirements set forth by the DOL and the OSHA.
- Apprise the Contractor of the elements, including the hazard(s) identified and the college's experience with the space.
- Apprise the Contractor of any precautions or procedures that the college has implemented for the protection of college employees in or near confined spaces where contractor personnel will be working.
- Coordinate entry operations with the Contractor when both College personnel and contractor personnel will be working in or near confined spaces.
- Debrief the Contractor at the conclusion of the entry operations regarding the confined space program followed and any hazards confronted or created in confined spaces during entry operations
- Provide a copy of JJC Confined Space Entry Program to the Contractor upon request.

Information on JJC Confined Space Program and information on specific confined spaces on JJC Properties may be obtained by contacting EHS at (815) 280-2384.

Each Contractor who is retained to perform work that will require permit space entry operations shall:

- Coordinate entry operations with the Project Coordinator when both the Contractor and College personnel will be working in or near permit spaces;
- Inform the Project Coordinator in writing of the permit space program the Contractor will follow;
- Inform the Project Coordinator of any hazards confronted or created in permit spaces during entry operations;
- Provide a copy of the Contractor's Confined Space Program to the College upon request;
- Inform the Project Coordinator in writing of the rescue services/team they will be using during permit entry; and
- Provide a copy of the canceled permit(s) to the Project Coordinator and EHS at the conclusion of entry operation.

Confined Spaces

The Contractor shall maintain, on-site, Material Safety Data Sheets (MSDS's) for all chemicals used or stored at his or her job site as required by IDOL/OSHA regulations and the contract documents. The Contractor shall provide copies of MSDS's to the Project Coordinator and EHS upon request.

Chemicals are used extensively on the JJC campus. Chemicals use and/or storage is routine in, but not limited to, the following areas or locations:

- Laboratories
- Fume hood exhausts on the roofs of laboratory buildings. (In general, signs have been posted on the roof access hatch or door restricting access to the roofs of buildings where fume hood exhausts are located).
- Chemical stock rooms.
- Agricultural Shops, Areas, and Chemical Storage.
- Chemical waste accumulation areas.
- Facility Services and Kitchen, paint and chemical storage areas.
- Custodial Closets.

The Project Coordinator shall inform the Contractor of the following:

- Known hazards and any required safety procedures that must be followed in the Contractor's work area.
- Methods for obtaining access to Material Safety Data Sheets (MSDS) for hazardous chemicals present in the Contractor's work area.
- Information about the labeling system used in the work area (NFPA 701).
- Emergency procedures that the Contractor is to follow in the event of accidental exposures or releases of hazardous chemicals.

If the work will be conducted on the roof of a building where fume hood exhausts are located, the Project Coordinator shall coordinate access with Facility Services, the departments within the building, and EHS, as necessary to ensure that:

- Fume hoods within, or adjacent to, the work area are shut down,
- No experiments are in-progress that would generate toxic or hazardous airborne contaminants;
- All chemicals stored within the fume hoods are capped or otherwise sealed; and
- The Contractor is informed of any special precautions that must be taken to prevent employee exposure to hazardous chemicals.

A minimum of seven days advance notice is generally required to coordinate fume hood shutdowns. In emergency situations (for example, when the Contractor's personnel must conduct work on, or in proximity to, active fume hood exhausts), the Contractor may access these roof areas if appropriate personal protective equipment is used. The Contractor shall be

informed in writing by the Project Coordinator of the precautions that should be taken to protect his or employees while conducting such work. This information may be obtained by contacting EHS at (815) 280-2384.

Given the number of chemicals used, and changing work within chemical laboratories, it is impractical for the college to provide the Contractor with a MSDS for any chemical potentially in-use within any given laboratory. However, MSDS's are required to be maintained and to be accessible to employees in each work area, and MSDS's for all chemicals may be obtained from Campus Police or EHS.

The Contractor shall assume that all hazardous chemicals or materials are handled and disposed of in accordance with federal and state regulations. Where a hazardous waste disposal manifest is required by these regulations, the Contractor shall contact EHS at (815) 280-2384 to assure that manifesting, storage, and the proposed disposal method and disposal site meet college and EPA requirements. The Contractor shall supply a copy of the completed waste manifest to EHS within 24 hours of receipt.

Where the Contractor has secured air samples documenting employee exposure to airborne chemical or particulate hazards during the course of his or her work, a copy of all air sample results shall be provided to EHS within 24-hours of receipt by the Contractor.

Electrical Safety and Lockout/Tagout

If College employees will be present on the Contractors worksite, and employees of either JJC and/or the Contractor will be performing work that requires the use of lockout and/or tagout devices, the following requirements shall apply:

- The Project Coordinator and Contractor shall inform each other of their respective lockout/tagout procedures.
- The Project Coordinator and Contractor shall each inform their personnel regarding the energy control procedures that are to be followed on the project site.
- A copy of JJC 's Electrical Safety and Lockout/Tagout programs shall be provided to the Contractor upon request.
- A copy of the Contractors electrical safety and lockout/tagout program shall be made available to the college upon request.

Trenching and Excavations

The Contractor shall coordinate trenching and excavation work with the Project Coordinator, Facility Services, and JULIE to assure the coordination of work and shutdown of utilities if necessary.

The design of sloping and benching systems, support systems, shield systems or other protective systems shall confirm, at a minimum, to the OSHA requirements detailed in 29 CFR 1926 Subpart P requirements.

Trenching or excavations below the level of the base or footing of any foundation or retaining wall, or adjacent to any utility, sidewalk or roadway, will not be permitted unless:

- A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure, or
- The excavation is in stable rock, or
- A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees or the structure.

This determination is the responsibility of the Contractor except as permitted, required or otherwise allowed by the project specifications or drawings

The Contractor shall notify the Project Coordinator of the name of the individual that is to serve as the Contractor's competent person as defined by this program and the OSHA regulations. The Contractor's designated competent person shall maintain a written log of the daily inspections made of excavations, adjacent areas, and protective systems. A copy of this written log shall be made available to the college upon request.

Where the design of a sloping and benching system, support system, shield systems or other protective systems requires review and approval by a registered professional engineer, the Contractor shall submit a copy of the completed review to the Project Coordinator and EHS prior to the start of work.

Hot Work

Contractors performing hot work shall maintain a Hot Work Permit Program and employee-training program that meets the OSHA requirements found in 29 CFR 1926.352 and ANSI Z49.1-88 and NFPA 51B. Examples of hot work include, but are not limited to, use of open flames, compressed gasses or supplied fuel burning, brazing, cutting, grinding, soldering, thawing, pipe, torch applied roofing, and welding.

A copy of the canceled permit(s) shall be provided to the Project Coordinator and EHS after completion of the work.

Capital Projects

Asbestos and Suspect Asbestos Containing Building Materials

It is the responsibility of the Contractor to provide his or her own asbestos awareness program which shall include, but is not limited to, the information contained in this section and the OSHA asbestos-related regulations (29 CFR 1926.1101). Verification that this training has been conducted shall be supplied to the Architect/Engineer of record for the project and/or the college upon request.

The location of asbestos materials, where present within the jobsite, will be detailed in the construction documents for that project.

Asbestos materials may not be used or installed in College facilities.

Lead-containing Building Materials

The location of lead materials, where present, will be detailed in the construction documents for that project.

Contractors that will disturb lead-containing building materials during the course of work shall take all necessary precautions to protect college employees and the public from exposure to lead dust or contamination. These measures shall conform, at a minimum, to the OSHA requirements detailed in 29 CFR 1926.62 and applicable local, state and federal regulations related to health, safety, transportation and disposal.

Confined Spaces

Where the work of the Contractor involves entry into confined spaces, the Contractor shall perform such entry in accordance with the OSHA (e.g., 29 CFR 1926.20 and/or 1910.146) requirements. Where the work involves an existing college permit-required confined space, the Project Manager and/or Field Engineer shall coordinate with EHS to assure that:

- The Contractor is apprised of the elements, including the hazard(s) identified and the college's experience with the space, that make it a permit-required confined space.
- The Contractor is apprised of any precautions or procedures that the college has implemented for the protection of college employees in or near permit spaces where contractor personnel will be working.
- The Contractor is debriefed at the conclusion of the entry operations regarding the permit space program followed and any hazards confronted or created in permit spaces during entry operations.

The Contractor shall provide at least 24-hours advance notice to the Field Engineer when both college personnel and the Contractor's personnel will be working in or near permit-required confined spaces. The Field Engineer shall notify EHS at (815) 280-2384, and EHS shall assure that the college personnel have been informed of the precautions and procedures to be followed during entry operations. Under these circumstances the Contractor shall:

- Inform EHS of the permit space procedures the Contractor will follow;
- Inform EHS of any hazards confronted or created in permit spaces during entry operations.

Hazard Communication

SAFETY REQUIREMENTS FOR CONTRACTORS AND SUBCONTRACTORS

The Contractor shall maintain, on-site, Material Safety Data Sheets (MSDS's) for all chemicals used or stored at the job site as required by IDOL/OSHA regulations and the contract documents.

Chemicals are used extensively on the JJC campus. Chemical use is routine in, but not limited to, the following areas or locations:

- Laboratories.
- Fume hood exhausts on the roofs of laboratory buildings. (In general, signs have been posted on the roof access hatch or door restricting access to the roofs of buildings where fume-hood exhausts are located).
- Chemical stock rooms.
- Agricultural shop, areas, and chemical storage.
- Chemical waste accumulation areas.
- Facility Services and Residential and Dining Programs paint and chemical storage areas.
- Custodial closets.

Where necessitated by the work, the Field Engineer and/or Project Manager shall coordinate with EHS to assure that the Contractor is informed of the following:

- Known hazards and any required safety procedures that must be followed in the Contractor's work area.
- Methods for obtaining access to Material Safety Data Sheets (MSDS) for hazardous chemicals present in the Contractor's work area.
- Information about the labeling system used in the work area (NFPA 701).
- Emergency procedures that the Contractor is to follow in the event of accidental exposures or releases of hazardous chemicals.

If work will be conducted on the roof of a building, where fume hood exhausts are located, the Field Engineer shall coordinate access with Facility Services, the departments within the building and EHS as necessary to ensure that:

- Fume hoods within, or adjacent to, the work area are shut down,
- No experiments are in-progress that would generate toxic or hazardous airborne contaminants;
- All chemicals stored within the fume hoods are capped or otherwise sealed; and,
- The Contractor is informed of any special precautions that must be taken to prevent employee exposure to hazardous chemicals.

A minimum of seven days advance notice is generally required to coordinate fume hood shutdowns. In emergency situations (for example, when the Contractor's personnel must conduct work on, or in proximity to, active fume hood exhausts), the Contractor may access these roof areas if appropriate personal protective equipment is used. The Contractor shall be informed in writing by EHS of the precautions that should be taken to protect his or her

employees while conducting such work. The Field Engineer may request this information by contacting EHS at (815) 280-2384.

Given the number of chemicals used, and changing work within chemical laboratories, it is impractical for the college to provide the Contractor with a MSDS for any chemical potentially in-use within any given laboratory. However, MSDS's are required to be maintained and to be accessible to employees in each work area, and MSDS's for all chemicals may be obtained from EHS.

The Contractor shall assure that all hazardous chemicals or materials are handled and disposed of in accordance with federal and state regulations and the contract requirements.

Electrical Safety and Lockout/Tagout

If college employees will be present on the Contractors worksite, and employees of either JJC and/or the Contractor will be performing work that requires the use of lockout and/or tagout devices, the following requirements shall apply:

- The EHS representative and the Contractor shall inform each other of their respective lockout/tagout procedures.
- The Project Manager and/or Field Engineer will coordinate with the EHS representative to assure that college personnel understand the energy control procedures that are to be followed in the project site.
- The Contractor shall assure that his/her personnel understand the energy control procedures that are to be followed on the project site.
- A copy of JJC's Electrical Safety and Lockout/Tagout programs shall be provided to the Contractor upon request.
- A copy of the Contractors electrical safety and lockout/tagout procedures shall be made available to the college upon request.

Trenching and Excavations

The Contractor shall coordinate trenching and excavation work with the Project Manager and/or Field Engineer and JULIE to assure the coordination of work and shutdown of utilities as necessary.

The design of sloping and benching systems, support systems, shield systems or other protective systems shall conform, at a minimum, to the OSHA requirements detailed in 29 CFR 1926 Subpart P, and the requirements of the contract.

Hot Work

Contractors performing hot work shall maintain a Hot Work Permit Program and employee-training program that meets the OSHA requirements found in 29 CFR 1926.352 and ANSI Z49.1-88 and NFPA 51B. Examples of hot work include, but are not limited to, use of open

flames, compressed gases or supplied fuel burning, brazing, cutting, grinding, soldering, thawing pipe, torch applied roofing, and welding.

Agencies/Firms With No Contractual Relationship with JJC

All agencies/firms conducting work on JJC property shall comply with the requirements of NFPA, EPA, DOL, OSHA and this program, even where no formal contractual relationship exists between JJC and the agency/firm. The agency/firm shall maintain appropriate insurance, including general liability, auto liability, and workers compensation insurance. Verification of insurance shall be coordinated with JJC's Director of Risk Management, who may be reached at (815) 280-2325, prior to the start of work. Such agencies/firms shall not, without prior written approval of EHS:

- Use a product(s) or material(s) that has a permissible exposure limit (PEL) established by OSHA.
- Perform work on JJC property that may damage or disturb known or suspect asbestos materials,
- Perform work on JJC property that may damage or disturb known or suspect lead-containing materials,
- Perform work on JJC property that involves entry into a permit-required confined space,
- Perform work on any electrical system or utility,
- Construct nor enter excavations, nor
- Perform hot work.

Work Site Inspections

Non-capital Projects

Work site inspections may be conducted by EHS or other designated college personnel. These inspections are conducted solely for the benefit of the college, and shall not relieve the contractor of responsibility for enforcement of, and compliance with, OSHA, NFPA or EPA regulations.

In the event that work site conditions exist that potentially impact the safety of college employees, students, or the public, the college inspector shall issue a verbal or written warning to the Contractor and shall notify the Project Coordinator. If the unsafe conditions cannot be immediately corrected and represent a danger or have a potential to harm college employees, students or the public, then the college inspector will:

- Detail the NFPA, EPA or OSHA violations that were noted, and explain the potential impact upon college employees, students or the public,
- Require that the Project Coordinator have the Contractor either stop work or implement measures to isolate the hazardous condition until the unsafe condition can be mitigated,
- Issue a formal written report of the violation(s) to the Contractor. This report shall be copied to the Project Coordinator.

Reports of deficiencies may be factored into the evaluation of the contract by the college, and may be included in a vendor complaint file that is available for review by other state agencies. Repeat safety violations of a similar nature and/or a single serious willful safety violation by a Contractor may warrant review and termination of the contract.

Capital Projects

Work site inspections may be conducted by EHS or other designated college representatives. Such inspections shall be coordinated with the Field Engineer and/or Project Manager. These inspections are conducted solely for the benefit of college personnel who may be working on the site and shall not relieve the contractor of responsibility for enforcement of, and compliance with NFPA, EPA, and OSHA regulations.

In the event that work site conditions exist that potentially impact the safety of college employees or the public, EHS shall notify the college Field Engineer and the Contractor of the hazard, and will assure that other college personnel present on-site are warned to avoid the area of the hazardous condition. The Contractor shall take prompt action to correct the hazardous condition. If the hazardous condition cannot be immediately corrected, the Contractor shall take effective steps to isolate the hazardous condition and/or shall stop work that is causing the hazardous condition until the hazard can be mitigated.

In the event that work site conditions exist that present an immediate safety hazard for the Contractors personnel, EHS may, as a courtesy, notify the Field Engineer and the Contractor of the hazardous condition. The Contractor shall take prompt action to correct the hazardous condition as required by the *General Conditions of the Construction Contract*.

Agencies/Firms Where No Formal Contractual Relationship Exists

When hazardous condition are identified by EHS related to work performed by agencies/firms conducting work on JJC property where no formal contractual relationship exists between JJC and the agency/firm, the hazardous condition shall be immediately corrected. If the hazardous condition cannot be immediately corrected, the agency/firm shall stop work and shall take effective steps to isolate the hazardous condition from personnel and the public. Repeat safety violations of a similar nature or willful disregard for the NFPA, EPA or OSHA requirements or the requirements outlined in this program will result in immediate removal from JJC property.

Definitions

Capital Project: A capital project is one whose total project cost exceeds \$500,000.

Competent Person: As related to excavation, trenching or shoring work, the Contractor's "competent person" means one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Confined Space: A confined space is a space that is large enough for a person to enter, that has limited means for entry or exit, and that is not designed for continuous occupancy. Example include tanks, silos, storage bins or hopper, utility vaults and pits.

Contracting Department: The Department at the college that has contracted for work to be performed by a Contractor. In regards to agencies/firms conducting work on JJC property, where no formal contractual relationship exists between JJC and the agency/firm, the department that is coordinating or approving the work of the agency/firm is the Contracting Department.

Contractor: An entity or agency employed by the college to perform the installation or maintenance of equipment or the renovation or construction of a building, room or space on college property, or that provides services to the college on college property including, but not limited to, vending, supplies, erection of tents and other services.

Field Engineer: The representative from JJC's Facility Services department that oversees capital construction and/or renovation activities.

Friable Asbestos: An asbestos material that is capable of being reduced to powder by hand pressure when dry, or a nonfriable asbestos material that is subject to grinding, sanding, cutting or abrading or that is otherwise rendered by mechanical means.

Lockout/Tagout: A program used to ensure that employees are protected from sources of potentially hazardous energy. The program requires that hazardous energy sources be identified and locked and/or tagged-out before work is done on the system(s).

Permit-required confined space: A permit-required confined space is a confined space that contains potential or known safety hazards that must be dealt with prior to or during entry to assure the safety of those employees performing the work.

Project Coordinator: The individual(s) within a Department that has been assigned duties related to oversight or coordination of work performed by a Contractor as defined in this program.

Project Manager: The representative from JJC's Facility Services department that coordinates the work of the Field Engineer and the Architect/Engineer related to capital construction and/or renovation projects.

Serious, willful safety violation: “Serious, willful safety violation” is defined, for the purposes of this program, as a work activity with a substantial probability that death or serious physical harm could result and where the hazard was known or should have been known, but where the work activity was continued regardless of the existence of the safety hazard.

LABOR MANAGEMENT PROJECT AGREEMENT

This Agreement is entered into this ____ day of ____, 20__ by and between Joliet Junior College, Illinois Community College District 525 of Will, Grundy, Kendall, LaSalle, Kankakee, Livingston, and Cook, Illinois, (hereinafter called the "Owner"); and _____ (hereinafter called the "Project Contractor"); and the _____ Building Trades Council (hereinafter called the "Union"), acting in their own behalf and on behalf of their respective affiliates and members; and the THREE RIVERS CONSTRUCTION ALLIANCE, acting on their own behalf and on the behalf of their respective affiliates and members, with respect to all construction projects at Joliet Junior College, which includes the Master Plan and Capital Improvement Plans thru August 2013, located in Will County, Illinois.

WITNESSETH:

WHEREAS, to accomplish the goals of quality, cost effectiveness and timelessness requires that all participants exhibit a positive attitude intent on success; and

WHEREAS, there must exist amongst all parties a willingness to cooperate fully in devoting themselves to the goals of the Project; and

WHEREAS, this program has no room for adverse relationships, but only a true spirit of cooperation and commitment; and

WHEREAS, it is essential that the work required to construct this Project be accomplished in an efficient and economical manner so as to provide productivity, the highest levels of quality and the total elimination of delays thereby fostering new plateaus in labor/management cooperation; and

WHEREAS, Joliet Junior College, Illinois Community College District 525 of Will, Grundy, Kendall, LaSalle, Kankakee, Livingston, and Cook, Illinois, (hereinafter referred to as

the "Owner"), its general Contractor(s), its subcontractor(s) of whatever tier, the local Building Trades Council, the THREE RIVERS CONSTRUCTION ALLIANCE dedicate themselves to the goal that together, in full cooperation, local labor, and management will produce a project of excellent quality, as economically as possible, in a safe environment, under favorable working conditions; and

WHEREAS, nothing contained herein shall prevent the Owner from considering bids for the Project so long as the General Contractor and its Subcontractors agree to abide by the terms and provisions of this Agreement.

NOW, THEREFORE, for and in consideration of the mutual covenants above-contained and other good and valuable consideration, as hereinafter set forth, the parties do hereby agree as follows:

SECTION 1. Introduction

It is understood by the parties to this Agreement that other contractors awarded construction work directly or indirectly by the Owner will execute this Agreement and become signatory contractors for the purpose of this work.

The intent of the parties to this Agreement is to establish labor and management cooperation between the Owner, Project Contractor, all Contractors and Subcontractors performing construction work in this Project site, and the appropriate Unions signatory to this Agreement for the express purpose of producing a quality project on schedule, and, as economically as possible, in a safe environment under favorable working conditions.

SECTION 2. Scope of the Agreement.

A. This Project Agreement shall apply and is limited to the recognized and accepted historical definition of new construction work under the direction of and performed by the

Contractor(s), of whatever tier, which may include the Project Contractor, who have contracts awarded for such work on the Project. Such work shall include site preparation work and dedicated off-site work.

It is agreed that the Project Contractor shall require all Contractors of whatever tier who have been awarded contracts for work covered by this Agreement, to accept and be bound by the terms and conditions of this Agreement by executing the Letter of Assent (Attachment A) prior to commencing work. The Project Contractor shall assure compliance with this Agreement by the Contractors. It is further agreed that, where there is a conflict, the terms and conditions of this Agreement shall supersede and override terms and conditions of any and all other national, area, or local collective bargaining agreements, except for all work performed under the NTL Articles of Agreement, and the National Stack/Chimney Agreement, the National Cooling Tower Agreement. All instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, and the National Agreement of the International Union of Elevator Constructors, with the exception of Section 4, 5 and 6 of this Agreement, which shall apply to such work.

B. Nothing contained herein shall be construed to prohibit, restrict or interfere with the performance of any other operation, work, or function which may occur at the Project site or be associated with the development of the Project.

C. This Agreement shall only be binding on the signatory parties hereto and shall not apply to their parents, affiliates or subsidiaries.

D. The Owner and/or the Project Contractor have the absolute right to select any qualified bidder for the award of contracts on this Project without reference to the existence or non-existence of any agreements between such bidder and any party to this Agreement;

provided, however, only that such bidder is willing, ready and able to become a party to and comply with this Agreement, should it be designated the successful bidder.

E. The provisions of this Agreement shall not apply to Owner, and nothing contained herein shall be construed to prohibit or restrict Owner or its employees from performing work not covered by this Agreement on the Project site. As areas and systems of the Project are inspected and construction tested by the Project Contractor or Contractors and accepted by the Owner, the Agreement will not have further force or effect on such items or areas, except when the Project Contractor or Contractors are directed by the Owner to engage in repairs, modifications, check-out, and warranty functions required by its contract with the Owner during the term of this Agreement.

F. It is understood that the Owner, at its sole option, may terminate, delay and/or suspend any or all portions of the Project at any time.

G. It is understood that the liability of any employer and the liability of the separate unions under this Agreement shall be several and not joint. The unions agree that this Agreement does not have the effect of creating any joint employer status between or among the Owner, Contractor(s) or any employer.

SECTION 3. Labor-Management Cooperation Committee

The parties to this Agreement hereby reaffirm the necessity for joint cooperation and participation by Labor and Management in interpreting and analyzing the effectiveness of management's application of this Agreement as well as Labor's response and any other matter affecting quality, safety, working conditions and productivity. Therefore, to secure this end, it is hereby agreed that a "Labor-Management Cooperation Committee" will be established composed of three representatives from Labor and three representatives from Management; one

representative from labor and one from Management shall be Co-Chairpersons of this Committee.

The Labor-Management Cooperation Committee shall meet a minimum of once each month, at the job site, and shall discuss the following; reports concerning any violation, dispute, questions or interpretation of the application of practices arising out of this Agreement; safety; working conditions; absenteeism; labor turnover; availability of qualified journeymen; need for training; and any other matter affecting productivity and efficiency on this project.

In the event a dispute is not resolved by the Labor-Management Cooperation Committee, such matter shall then be settled as outlined by the grievance procedure and/or arbitration provisions contained in Section 6 or 7 of this Agreement. The Labor-Management Cooperation Committee shall have no authority to render a decision involving a jurisdictional dispute.

SECTION 4. Contractor's Commitment

A Work assignments will be made in accordance with area practice, consistent with the efficient and economical performance of the work.

B. Before performing the work at the job site, the Contractor or Subcontractors of whatever tier actually performing the work will become signatory to the appropriate collective bargaining agreement.

C. The Contractors and Subcontractors shall exercise their management rights. These rights shall include planning, directing, hiring, dismissal, lay-off, transferring, appointing foremen and general foremen and otherwise directing the work force.

D. The Project Contractor agrees that neither it nor any of its contractors or subcontractors will subcontract any work to be done on the Project except to a person, firm or corporation who is or agrees to become party to this Agreement. Any contractor or subcontractor

working on the Project shall, as a condition to working on said Project, become signatory to and perform all work under the terms of this Agreement.

SECTION 5. Union (Craftsman) Commitment

A. Qualified and skilled craftsmen will be furnished as required by the Contractor in the fulfillment of its obligations of the Owner.

B. Craftsmen shall be at their place of work at the regular starting time and shall remain at their place of work until quitting time. There shall be no limit on production by Craftsmen nor restrictions on the use of tools or equipment other than that which may be required by safety practice.

C. Where stewards are appointed by respective unions, the steward shall be qualified craftsmen performing the work of his craft who shall exercise no supervisory functions. There shall be no non-working stewards.

SECTION 6. Disputes and Grievances

A. This Agreement is intended to provide close cooperation between management and labor. Each of the Unions will assign a representative to this Project for the purpose of completing the construction of the Project economically, efficiently, continuously, and without interruptions, delays, or work stoppages.

B. The Contractors, Unions, and the employees, collectively and individually, realize the importance to all parties to maintain continuous and uninterrupted performance of the work of the Project, and agree to resolve disputes in accordance with the grievance-arbitration provisions set forth in this Article.

C. Any question or dispute arising out of and during the term of this Project Agreement (other than grievances not covered by a local Collective Bargaining Agreement or trade

jurisdictional disputes) shall be considered a grievance and subject to resolution under the following procedures:

Step 1. (a) When any employee subject to the provisions of this Agreement feels he or she is aggrieved by a violation of this Agreement, he or she, through his or her local union business representative or job steward, shall, within five (5) working days after the occurrence of the violation, give notice to the work-site representative of the involved Contractor stating the provision(s) alleged to have been violated. The business representative of the local union or the job steward and the work-site representative of the involved Contractor and the Project Contractor shall meet and endeavor to adjust the matter within three (3) working days after timely notice has been given. The representative of the Contractor shall keep the meeting minutes and shall respond to the Union representative in writing (copying the Project Contractor) at the conclusion of the meeting but not later than twenty-four (24) hours thereafter. If they fail to resolve the matter within the prescribed period, the grieving party may, within forty-eight (48) hours thereafter, pursue Step 2 of the Grievance Procedure, provided the grievance is reduced to writing, setting forth the relevant information concerning the alleged grievance, including a short description thereof, the date on which the grievance occurred, and the provision(s) of the Agreement alleged to have been violated.

(b) Should the Local Union(s) or the Project Contractor or any Contractor have a dispute with the other party and, if after conferring, a settlement is not reached within three (3) working days, the dispute may be reduced to writing and proceed to Step 2 in the same manner as outlined herein for the adjustment of an employee complaint.

Step 2. The International Union Representative and the involved Contractor shall meet within seven (7) working days of the referral of a dispute to this second step to arrive at a

satisfactory settlement thereof. Meeting minutes shall be kept by the Contractor. If the parties fail to reach an agreement, the dispute may be appealed in writing in accordance with the provisions of Step 3 within seven (7) calendar days thereafter.

Step 3. (a) If the grievance has been submitted but not adjusted under Step 2, either party may request in writing, within seven (7) calendar days thereafter, that the grievance be submitted to an Arbitrator mutually agreed by them. The Contractor and the involved Union shall attempt mutually to select an arbitrator, but if they are unable to do so, they shall request the American Arbitration Association to provide them with a list of arbitrators from which the Arbitrator shall be selected. The rules of the American Arbitration Association shall govern the conduct of the arbitration hearing. The decision of the Arbitrator shall be final and binding on all parties. The fee and expenses of such Arbitration shall be borne equally by the Contractor and the involved Local Union(s).

(b) Failure of the grieving party to adhere to the time limits established herein shall render the grievance null and void. The time limits established herein may be extended only by written consent of the parties involved at the particular step where the extension is agreed upon. The Arbitrator shall have the authority to make decisions only on issues presented to him or her, and he or she shall not have authority to change, amend, add to or detract from any of the provisions of this Agreement.

D. The Project Contractor and Owner shall be notified of all actions at Steps 2 and 3 and shall, upon their request, be permitted to participate in all proceedings at these steps.

SECTION 7. Jurisdictional Disputes

A. The assignment of work will be solely the responsibility of the Contractor performing the work involved; and such work assignments will be in accordance with the Plan for the

Settlement of Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor Plan.

B. All jurisdictional disputes on this Project, between or among Building and Construction Trades Unions and employers, parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Contractors and Unions parties to this Agreement.

C. All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, or slow-down of any nature, and the Contractor's assignment shall be adhered to until the dispute is resolved. Individuals violating this section shall be subject to immediate discharge.

D. Each Contractor will conduct a pre-job conference with the appropriate Building and Construction Trades Council prior to commencing work. The Project Contractor and the Owner will be advised in advance of all such conferences and may participate if they wish.

SECTION 8. Joint Commitment (Contractor/Union)

A. Utilization of Union apprentices will be maximized consistent with the best interest of the job in compliance with Local Union Agreements. The high level of union apprenticeship training will be maintained to provide the Industry with productive and knowledgeable craftsmen for the long term.

B. Every reasonable and practicable measure, consistent with the protection of human-dignity, will be taken to assure a work place free of alcohol and drugs. The use of liquor, drugs or any other illegal activities at the Project site, including parking lots, is strictly prohibited.

C. Employees will take their breaks only in their immediate work areas.

D. Acknowledging the safety concerns of Owner and its risk management professionals, we assure the Owner that the parties are committed to safe working practices on the project. The parties, drawing upon the comprehensive safety programs and resources developed by the union construction community, will comply with federal, state and local safety regulations. Both contractors and union craftsmen are well trained in safety practices and commit themselves to applying such practices on this job.

E. The Contractors and Unions agree that there will be no lockouts or work stoppages.

(1) The Contractors and Subcontractors shall not cause, incite, encourage or participate in any lockout of employees on the project during the term of this Agreement.

(2) The Union and its members, agents, representatives, and employees shall not allow, incite, encourage, condone or participate in any strike, walkout, slowdown, picketing, sympathy strike or other work stoppage of any nature whatsoever, whether jurisdictional or otherwise, or observe any picket of any nature during the term of this Agreement. Any such action by the Union or its members, agents, representatives or employees shall be considered a violation of this Agreement.

(3) All employees shall continue to work and to perform all their obligations on the project despite the expiration of any local or other collective bargaining agreement. Any future wage or fringe benefit increase, decrease or modification legally negotiated and established by appropriate local collective bargaining agreement of the Local Unions which are signatories to this Agreement shall be paid retroactively to the expiration date of the preceding local Agreement.

(4) Should any unauthorized strike, slowdown, stoppage of work or interference with construction occur, the Union shall take all necessary steps to bring such activity to a prompt resolution.

SECTION 9. Helmets To Hardhats

A. The Contractors and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Contractors and Unions agree to utilize the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

B. The Unions and Contractors agree to coordinate with the Center to create and maintain an integrated database of veterans interested in working on this Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

SECTION 10. Term of Agreement.

A. This Agreement shall become effective on _____, 20____, and shall remain in full force and effect as long as signatory contractors are working on this project.

B. Any of the undersigned parties shall have the right to terminate this Agreement by notifying all other parties in writing, within at least thirty (30) calendar days from the proposed termination date.

SECTION 11. Notices

The address and telephone number of all of the undersigned shall be on file with Owner's Director of Facility Services at the Highland Building, 1215 Houbolt Road, Joliet, Illinois, 60431, Attention: Patrick VanDuyne. All notices, request and other communications under this Agreement shall be in writing and shall be personally served or sent by certified mail, postage prepaid, return receipt requested, facsimile, or by licensed overnight courier to the appropriate party at the address set forth below or as may otherwise be on file with the Director of Physical Plant as provided herein. Notice shall be deemed given at the time delivered, if personally delivered, at the time indicated on the duly completed postal service return receipt, if delivered, at the time indicated on the duly completed postal service return receipt, if delivered by certified mail, at the time the facsimile is transmitted, if delivered by facsimile, or on the next business day after such notice is sent, if delivered by overnight courier. If a person elects to change their address, they shall do so by notifying the Owner's Director of Facility Services in the manner as provided for herein for the delivery of a notice.

SECTION 12. Miscellaneous Provisions.

A. Assignment. No party may assign its rights hereunder without the prior written consent of the other parties.

B. Entire Agreement. This Agreement contains the entire agreement between the parties with respect to the subject matter hereof and may not be modified, except in writing signed by the parties hereto. Furthermore, the parties hereto specifically agree that all prior agreements, whether written or oral, relating to the subject matter hereof shall be of no further force or effect from and after the date hereof.

C. Non-Partnership. This Agreement shall not create a partnership, joint venture or other joint enterprises between the parties hereto.

D. Severability. If any phrase, clause or provision of this Agreement is declared invalid or unenforceable by a court of competent jurisdiction, such phrase, clause or provisions shall be deemed severed from this Agreement, but will not affect any other provision of this Agreement, which shall otherwise remain in full force and effect. If any restriction or limitation in this Agreement is deemed to be unreasonable, onerous and unduly restrictive by a court of competent jurisdiction, it shall not be stricken in its entirety and held totally void and unenforceable, but shall not be deemed rewritten and shall remain effective to the maximum extent permissible within reasonable bounds.

E. Prevailing Party. The prevailing party or parties in any litigation arising out of or from this Agreement shall be entitled to recover from the non-prevailing party or parties all costs and expenses reasonably incurred litigating such action, including without limitation, reasonable attorneys' and paralegals' fees and court cost.

F. Neutral Reading. It is the intent of the parties that this Agreement be deemed to have been prepared by all of the parties hereto.

G. Waiver. No waiver of any breach or default hereunder shall be considered valid unless in writing and signed by the party given such waiver and no such waiver shall be deemed a waiver of any subsequent breach or default of the same or similar nature.


H. Headings. The section and subsection headings contained herein are for convenience of the parties only and are not intended to define or limit the context of said Sections and subsections.

I. Governing Law; Venue. The validity, construction and interpretation of this Agreement shall be governed by the State of Illinois. The parties hereto irrevocably agree that all actions or proceedings in any way, manner or respect arising out of or from or related to this Agreement shall be litigated only in the Circuit Court Twelfth Judicial Circuit, Will County, Illinois.

J. Counterparts. This Agreement may be executed in two or more counterparts, each of which may be deemed to be an original.

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year first above written.

SIGNED FOR THE OWNER:



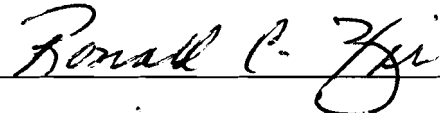
Firm: Joliet Junior College

Title: Director of Facility Services

Date: 4-15-09

Address: 1215 Houbolt Road
Joliet, Illinois 60431

SIGNED FOR THE UNION:




 Building Trades Council

Title: President

Date: 4-15-09

Address: 2082 Oakleaf St.
Joliet IL 60436

SIGNED FOR THE ALLIANCE:



Firm: Three River's Construction Alliance

Title: Co-Chair TRCA

Date: 4/15/09

Address: 2134 Maxim Dr.
Rockdale IL 60436

SIGNED FOR BY THE CONTRACTOR:

Firm: _____

Title: _____

Date: _____

Address: _____



*Skilled Union Craftsmen
Professional Union Contractors*

BLUEPRINT FOR SUCCESS

A Labor-Management Project Agreement

I. Preamble

To accomplish the goals of quality, cost effectiveness and timeliness requires that all participants exhibit a positive attitude intent on success. There must exist amongst all parties a willingness to cooperate fully in devoting themselves to the goals of the project.

This program has no room for adverse relationships, but only a true spirit of cooperation and commitment. It is essential that the work required to construct this project be accomplished in an efficient and economical manner so as to provide productivity, the highest levels of quality, and the total elimination of delays. This commitment will establish new plateaus in labor/management cooperation.

Therefore, Joliet Junior College, Illinois Community College District 525, of Will, Grundy, Kendall, LaSalle, Kankakee, Livingston and Cook, Illinois, (hereinafter referred to as the "Owner"), its subcontractor(s) of whatever tier, the Will & Grundy Counties Building Trades Council, and the THREE RIVERS' CONSTRUCTION ALLIANCE dedicate themselves to the goal that together, in full cooperation, local labor and management will produce a project of excellent quality, as economically as possible, in a safe environment, under favorable working conditions.

II. Introduction

This Agreement is entered into this day of by and between Joliet Junior College (hereinafter called the "Owner"); and (hereinafter called and the "Project Contractor"; and the Will & Grundy Counties Building Trades Council (hereinafter called the "Union"), acting in their own behalf and on behalf of their respective affiliates and members; and the THREE RIVERS CONSTRUCTION ALLIANCE, acting on their own behalf and on behalf of their respective affiliates and members, with respect to all construction projects at Joliet Junior College, which includes the Master Plan and Capital Improvement Plan projects thru located in Will County, Illinois.

It is understood by the parties to this Agreement that other contractors awarded construction work directly or indirectly by the "Owner" will execute this Agreement and become signatory contractors for the purpose of this work.

The intent of the parties to this Agreement is to establish labor and management cooperation between the Project Contractor, all Contractors and Subcontractors performing construction work on this project site, and the appropriate Unions signatory to this Agreement for the express purpose of producing a quality project on schedule and as economically as possible, in a safe environment under favorable working conditions.

III. Scope Of The Agreement

A. This Project Agreement shall apply and is limited to the recognized and accepted historical definition of new construction work under the direction of and performed by the Contractor(s), of whatever tier, which may include the Project Contractor, who have contracts awarded for such work on the Project. Such work shall include site preparation work and dedicated off-site work.

It is agreed that the Project Contractor shall require all Contractors of whatever tier who have been awarded contracts for work covered by this Agreement, to accept and be bound by the terms and conditions of this Project Agreement by executing the Letter of Assent (Attachment A) prior to commencing work. The Project Contractor shall assure compliance with this Agreement by the Contractors. It is further agreed that, where there is a conflict, the terms and conditions of this Project Agreement shall supersede and override terms and conditions of any and all other national, area, or local collective bargaining agreements, except for all work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, all instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, and the National Agreement of the International Union of Elevator Constructors, with the exception of Article V, VI, and VII of this Project Agreement, which shall apply to such work.

B. Nothing contained herein shall be construed to prohibit, restrict or interfere with the performance of any other operation, work, or function which may occur at the Project site or be associated with the development of the Project.

C. This Agreement shall only be binding on the signatory parties hereto and shall not apply to their parents, affiliates or subsidiaries.

D. The Owner and/or the Project Contractor have the absolute right to select any qualified bidder for the award of contracts on this Project without reference to the existence or non-existence of any agreements between such bidder and any party to this Agreement; provided, however, only that such bidder is willing, ready and able to become a party to and comply with this Project Agreement, should it be designated the successful bidder.

E. It is understood that the Owner, at its sole option, may terminate, delay and/or suspend any or all portions of the Project at any time.

F. It is understood that the liability of any employer and the liability of the separate unions under this Agreement shall be several and not joint. The unions agree that this Agreement does not have the effect of creating any joint employer status between or among the Owner, Contractor(s) or any employer.

IV. Labor-Management Cooperation Committee

The parties to this Agreement hereby reaffirm the necessity for joint cooperation and participation by Labor and Management in interpreting and analyzing the effectiveness of management's application of this Agreement as well as Labor's response and any other matter affecting quality, safety, working conditions and productivity. Therefore, to secure this end, it is hereby agreed that a "Labor-Management Cooperation Committee" will be established composed of three representatives from Labor and three representatives from Management; one representative from Labor and one from Management shall be Co-Chairmen of this Committee.

The Labor-Management Cooperation Committee shall meet a minimum of once each month, at the jobsite, and shall discuss the following: reports concerning any violation, dispute, questions or interpretation of the application of practices arising out of this Agreement; safety; working conditions; absenteeism; labor turnover; availability of qualified journeymen; need for training; and any other matter affecting productivity and efficiency on this project.

In the event a dispute is not resolved by the Labor-Management Cooperation Committee, such matter shall then be settled as outlined by the grievance procedure and/or arbitration provisions contained in Articles VII or VIII of this Agreement. The Labor-Management Cooperation Committee shall not have authority to render a decision involving a jurisdictional dispute.

V. Contractors' Commitment

A. Work assignments will be made in accordance with area practice, consistent with the efficient and economical performance of the work.

B. Before performing work at the job site, the Contractor or Subcontractors of whatever tier actually performing the work will become signatory to the appropriate collective bargaining agreement.

C. The Contractors and Subcontractors shall exercise their management rights. These rights shall include planning, directing, hiring, dismissal, lay-off, transferring, appointing foremen and general foremen and otherwise directing the work force.

D. The Project Contractor agrees that neither it nor any of its contractors or subcontractors will subcontract any work to be done on the Project except to a person, firm or corporation who is or agrees to become party to this Agreement. Any contractor or subcontractor working on the Project shall, as a condition to working on said Project, become signatory to and perform all work under the terms of this Agreement.

VI. Union (Craftsmen) Commitment

A. Qualified and skilled craftsmen will be furnished as required by the Contractor in the fulfillment of its obligations to the Owner.

B. Craftsmen shall be at their place of work at the regular starting time and shall remain at their place of work until quitting time. There shall be no limit on production by Craftsmen nor restrictions on the use of tools or equipment other than that which may be required by safety practice.

C. Where stewards are appointed by respective unions, the steward shall be a qualified craftsman performing the work of his craft who shall exercise no supervisory functions. There shall be no non-working stewards.

VII. Owner Commitment

A. The Owner agrees that during the life of this agreement he shall assign construction work on this project only to contractors who are signatory to this agreement and applicable local collective bargaining agreements.

VIII. Disputes & Grievances

A. This Agreement is intended to provide close cooperation between management and labor. Each of the Unions will assign a representative to this Project for the purpose of completing the construction of the Project economically, efficiently, continuously, and without interruptions, delays, or work stoppages.

B. The Contractors, Unions, and the employees, collectively and individually, realize the importance to all parties to maintain continuous and uninterrupted performance of the work of the Project, and agree to resolve disputes in accordance with the grievance-arbitration provisions set forth in this Article.

C. Any question or dispute arising out of and during the term of this Project Agreement (other than grievances not covered by a local Collective Bargaining Agreement or trade jurisdictional disputes) shall be considered a grievance and subject to resolution under the following procedures:

Step 1. (a) When any employee subject to the provisions of this Agreement feels he or she is aggrieved by a violation of this Agreement, he or she, through his or her local union business representative or job steward, shall, within five (5) working days after the occurrence of the violation, give notice to the work-site representative of the involved Contractor stating the provision(s) alleged to have been violated. The business representative of the local union or the job steward and the work-site representative of the involved Contractor and the Project Contractor shall meet and endeavor to adjust the matter within three (3) working days after timely notice has been given. The representative of the Contractor shall keep the meeting minutes and shall respond to the Union representative in writing (copying the Project Contractor) at the conclusion of the meeting but not later than twenty-four (24) hours thereafter. If they fail to resolve the matter within the prescribed period, the grieving party may, within forty-eight (48) hours thereafter, pursue Step 2 of the Grievance Procedure, provided the grievance is reduced to writing, setting forth the relevant information concerning the alleged grievance, including a short description thereof, the date on which the grievance occurred, and the provision(s) of the Agreement alleged to have been violated.

(b) Should the Local Union(s) or the Project Contractor or any Contractor have a dispute with the other party and, if after conferring, a settlement is not reached within three (3) working days, the dispute may be reduced to writing and proceed to Step 2 in the same manner as outlined herein for the adjustment of an employee complaint.

Step 2. The International Union Representative and the involved Contractor shall meet within seven (7) working days of the referral of a dispute to this second step to arrive at a satisfactory settlement thereof. Meeting minutes shall be kept by the Contractor. If the parties fail to reach an agreement, the dispute may be appealed in writing in accordance with the provisions of Step 3 within seven (7) calendar days thereafter.

Step 3. (a) If the grievance has been submitted but not adjusted under Step 2, either party may request in writing, within seven (7) calendar days thereafter, that the grievance be submitted to an Arbitrator mutually agreed upon by them. The Contractor and the involved Union shall attempt mutually to select an arbitrator, but if they are unable to do so, they shall request the American Arbitration Association to provide them with a list of arbitrators from which the Arbitrator shall be selected. The rules of the American Arbitration Association shall govern the conduct of the arbitration hearing. The decision of the Arbitrator shall be final and binding on all parties. The fee and expenses of such Arbitration shall be borne equally by the Contractor and the involved Local Union(s).

(b) Failure of the grieving party to adhere to the time limits established herein shall render the grievance null and void. The time limits established herein may be extended only by written consent of the parties involved at the particular step where the extension is agreed upon. The Arbitrator shall have the authority to make decisions only on issues presented to him or her, and he or she shall not have authority to change, amend, add to or detract from any of the provisions of this Agreement.

D. The Project Contractor and Owner shall be notified of all actions at Steps 2 and 3 and shall, upon their request, be permitted to participate in all proceedings at these steps.

IX. Jurisdictional Disputes

A. The assignment of work will be solely the responsibility of the Contractor performing the work involved; and such work assignments will be in accordance with the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor Plan.

B. All jurisdictional disputes on this Project, between or among Building and Construction Trades Unions and employers, parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department or any other plan or method of procedure that may be

adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Contractors and Unions parties to this Agreement.

C. All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, or slow-down of any nature, and the Contractor's assignment shall be adhered to until the dispute is resolved. Individuals violating this section shall be subject to immediate discharge.

D. Each Contractor will conduct a pre-job conference with the appropriate Building and Construction Trades Council prior to commencing work. The Project Contractor and the Owner will be advised in advance of all such conferences and may participate if they wish.

X. Joint Commitment (Contractor/Union)

A. Utilization of Union apprentices will be maximized consistent with the best interest of the job in compliance with Local Union Agreements. The high level of union apprenticeship training will be maintained to provide the Industry with productive and knowledgeable craftsmen for the long term.

B. Every reasonable and practicable measure, consistent with the protection of human dignity, will be taken to assure a work place free of alcohol and drugs. The use of liquor, drugs or any other illegal activities at the Project site, including parking lots, is strictly prohibited.

C. Employees will take their breaks only in their immediate work areas.

D. Acknowledging the safety concerns of today's construction Owner and its risk management professionals, we assure the Owner that the parties are committed to safe working practices on the project. The parties, drawing upon the comprehensive safety programs and resources developed by the Union construction community, will comply with federal, state, and local safety regulations. Both contractors and union craftsmen are well trained in safety practices and commit themselves to applying such practices on this job.

E. The Contractors and Unions agree that there will be no lockouts or work stoppages.

(1) The Contractors and Subcontractors shall not cause, incite, encourage or participate in any lockout of employees on the project during the term of this Agreement.

(2) The Union and its members, agents, representatives, and employees shall not allow, incite, encourage, condone or participate in any strike, walkout, slowdown, picketing, sympathy strike or other work stoppage of any nature whatsoever, whether jurisdictional or otherwise, or observe any picket of any nature during the term of this Agreement. Any such action by the Union or its members, agents, representatives or employees shall constitute a violation of this Agreement.

(3) All employees shall continue to work and to perform all their obligations on the project despite the expiration of any local or other collective bargaining agreement. Any future wage or fringe benefit increase, decrease or modification legally negotiated and established by appropriate local collective bargaining agreements of the Local Unions which are signatories to this Agreement shall be paid retroactively to the expiration of the preceding local Agreement.

(4) Should any unauthorized strike, slowdown, stoppage of work or interference with construction occur, the Union shall take all necessary steps to bring such activity to a prompt resolution.

XI. Helmets To Hardhats

A. The Employers and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Employers and Unions agree to utilize the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

B. The Unions and Employers agree to coordinate with the Center to create and maintain an integrated database of veterans interested in working on this Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

XII. Term of Agreement

A. This Agreement shall become effective on April 15, 2009, and shall remain in full force and effect as long as signatory contractors are working on this project.

B. Either party shall have the right to terminate this Agreement by notifying all other parties, in writing, within at least thirty (30) calendar days from the proposed termination date.

FOR THE OWNER:


JOLIET JUNIOR COLLEGE

TITLE: President

DATE: 4-15-09

FOR THE PROJECT CONTRACTOR:

TITLE: _____

DATE: _____

FOR THE ALLIANCE:


THREE RIVERS CONSTRUCTION

TITLE: Co-Chair TRCA

DATE: 4/15/09

FOR THE BUILDING TRADES:


WILL & GRUNDY BUILDING TRADES

TITLE: Presid.

DATE: 4-15-09



*Skilled Union Craftsmen
Professional Union Contractors*

BLUEPRINT FOR SUCCESS

A Labor-Management Project Agreement

Addendum To TRCA/JJC Project Labor Agreement Dated 4-15-09

1. It is agreed to by all parties that while the College has completed their Master Plan projects, the parties to the Agreement wish to continue on with the 'Blueprint for Success, A Labor-Management Project Agreement' signed on April 15, 2009. The conditions of the existing Agreement shall remain in effect thru April 2018 until such time as both parties have the opportunity to evaluate current and future construction projects at the College as explained in Article XII of the Agreement.
2. The pre-job conferences called for in Article IX Section D will apply to all bids with a gross value in excess of \$25,000.00. Bids less than the stated \$25,000.00 will be exempt from the pre-job conference but the OWNER agrees to notify TRCA of any such bid lettings in a timely manner.
3. This Agreement covers all new construction and improvement projects but is not intended to nor will it interfere with the OWNER's right to perform general routine maintenance on their facilities.

FOR THE OWNER:

Judy Mitchell
Joliet Junior College

Judy Mitchell, EdD
Printed Name

TITLE: *VP Administrative Svcs*

DATE: *3-9-15*

FOR THE BUILDING TRADES

Don Gregory
Will & Grundy Counties Building Trades Council

Don Gregory
Printed Name

TITLE: *President*

DATE: *3-9-15*

FOR THE ALLIANCE:

Thomas A. White
T.R.C.A.

Thomas A. White
Printed Name

TITLE: *Executive Director*

DATE: *3-9-15*

Will County Prevailing Wage Rates posted on 3/7/2022

Trade Title	Rg	Type	C	Base	Foreman	Overtime				H/W	Pension	Vac	Trng	Other Ins
						M-F	Sa	Su	Hol					
ASBESTOS ABT-GEN	All	ALL		45.90	46.90	1.5	1.5	2.0	2.0	16.55	14.71	0.00	0.90	
ASBESTOS ABT-MEC	All	BLD		38.85	41.96	1.5	1.5	2.0	2.0	14.42	12.61	0.00	0.82	
BOILERMAKER	All	BLD		52.61	57.34	2.0	2.0	2.0	2.0	6.97	22.34	0.00	1.40	
BRICK MASON	All	BLD		48.56	53.42	1.5	1.5	2.0	2.0	11.70	21.06	0.00	1.03	
CARPENTER	All	ALL		50.86	55.95	2.0	2.0	2.0	2.0	11.79	27.24	0.00	0.79	
CEMENT MASON	All	ALL		45.00	47.00	2.0	1.5	2.0	2.0	11.15	29.32	0.00	0.55	
CERAMIC TILE FINISHER	All	BLD		42.80	42.80	1.5	1.5	2.0	2.0	11.45	14.27	0.00	0.94	
COMMUNICATION TECHNICIAN	All	BLD		40.00	44.00	1.5	1.5	2.0	2.0	16.19	14.91	0.00	0.75	1.96
ELECTRIC PWR EQMT OP	All	ALL		56.55	62.05	1.5	1.5	2.0	2.0	12.94	19.11	0.00	3.17	
ELECTRIC PWR GRNDMAN	All	ALL		44.11	62.05	1.5	1.5	2.0	2.0	10.10	14.91	0.00	2.48	
ELECTRIC PWR LINEMAN	All	ALL		56.55	62.05	1.5	1.5	2.0	2.0	12.94	19.11	0.00	3.17	
ELECTRICIAN	All	BLD		48.50	52.87	1.5	1.5	2.0	2.0	16.64	20.26	0.00	1.23	4.21
ELEVATOR CONSTRUCTOR	All	BLD		60.42	67.97	2.0	2.0	2.0	2.0	15.87	19.31	4.83	0.64	
GLAZIER	All	BLD		47.60	49.10	1.5	2.0	2.0	2.0	14.99	23.55	0.00	1.43	
HEAT/FROST INSULATOR	All	BLD		51.80	54.91	1.5	1.5	2.0	2.0	14.42	15.36	0.00	0.82	
IRON WORKER	All	ALL		46.00	50.60	2.0	2.0	2.0	2.0	12.71	28.01	0.00	1.00	
LABORER	All	ALL		45.90	46.65	1.5	1.5	2.0	2.0	16.55	14.71	0.00	0.90	
LATHER	All	ALL		50.86	55.95	2.0	2.0	2.0	2.0	11.79	27.24	0.00	0.79	
MACHINIST	All	BLD		50.68	53.18	1.5	1.5	2.0	2.0	8.93	8.95	1.85	1.47	
MARBLE FINISHER	All	ALL		37.00	50.10	1.5	1.5	2.0	2.0	11.70	19.10	0.00	0.93	
MARBLE MASON	All	BLD		47.71	52.48	1.5	1.5	2.0	2.0	11.70	20.53	0.00	1.02	
MATERIAL TESTER I	All	ALL		35.90		1.5	1.5	2.0	2.0	16.55	14.71	0.00	0.90	
MATERIALS TESTER II	All	ALL		40.90		1.5	1.5	2.0	2.0	16.55	14.71	0.00	0.90	
MILLWRIGHT	All	ALL		50.86	55.95	2.0	2.0	2.0	2.0	11.79	27.24	0.00	0.79	
OPERATING ENGINEER	All	BLD	1	53.60	57.60	2.0	2.0	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	BLD	2	52.30	57.60	2.0	2.0	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	BLD	3	49.75	57.60	2.0	2.0	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	BLD	4	48.00	57.60	2.0	2.0	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	BLD	5	57.35	57.60	2.0	2.0	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	BLD	6	54.60	57.60	2.0	2.0	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	BLD	7	56.60	57.60	2.0	2.0	2.0	2.0	21.40	18.60	2.00	2.40	

OPERATING ENGINEER	All	FLT	1	59.35	59.35	1.5	1.5	2.0	2.0	20.90	17.85	2.00	2.15	
OPERATING ENGINEER	All	FLT	2	57.85	59.35	1.5	1.5	2.0	2.0	20.90	17.85	2.00	2.15	
OPERATING ENGINEER	All	FLT	3	51.50	59.35	1.5	1.5	2.0	2.0	20.90	17.85	2.00	2.15	
OPERATING ENGINEER	All	FLT	4	42.80	59.35	1.5	1.5	2.0	2.0	20.90	17.85	2.00	2.15	
OPERATING ENGINEER	All	FLT	5	60.85	59.35	1.5	1.5	2.0	2.0	20.90	17.85	2.00	2.15	
OPERATING ENGINEER	All	FLT	6	41.00	59.35	1.5	1.5	2.0	2.0	20.90	17.85	2.00	2.15	
OPERATING ENGINEER	All	HWY	1	51.80	55.80	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	2	51.25	55.80	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	3	49.20	55.80	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	4	47.80	55.80	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	5	46.60	55.80	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	6	54.80	55.80	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	7	52.80	55.80	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
PAINTER	All	ALL		49.30	55.46	1.5	1.5	1.5	2.0	13.01	14.74	0.00	1.87	
PAINTER - SIGNS	All	BLD		40.74	45.75	1.5	1.5	2.0	2.0	3.04	3.90	0.00	0.00	
PILEDRIIVER	All	ALL		50.86	55.95	2.0	2.0	2.0	2.0	11.79	27.24	0.00	0.79	
PIPEFITTER	All	BLD		52.00	55.00	1.5	1.5	2.0	2.0	11.60	21.85	0.00	2.92	
PLASTERER	All	BLD		45.50	48.23	1.5	1.5	2.0	2.0	16.75	19.04	0.00	1.25	
PLUMBER	All	BLD		52.80	55.95	1.5	1.5	2.0	2.0	16.45	16.75	0.00	1.47	
ROOFER	All	BLD		46.70	50.70	1.5	1.5	2.0	2.0	11.58	14.56	0.00	0.96	
SHEETMETAL WORKER	All	BLD		51.83	54.42	1.5	1.5	2.0	2.0	11.22	19.08	0.00	1.45	2.46
SPRINKLER FITTER	All	BLD		52.25	55.00	1.5	1.5	2.0	2.0	14.20	18.60	0.00	0.75	
STONE MASON	All	BLD		48.56	53.42	1.5	1.5	2.0	2.0	11.70	21.06	0.00	1.03	
TERRAZZO FINISHER	All	BLD		44.54	44.54	1.5	1.5	2.0	2.0	11.45	16.64	0.00	0.97	
TERRAZZO MASON	All	BLD		48.38	51.88	1.5	1.5	2.0	2.0	11.45	18.10	0.00	1.00	
TILE MASON	All	BLD		49.75	53.75	1.5	1.5	2.0	2.0	11.45	17.98	0.00	1.02	
TRAFFIC SAFETY WORKER	All	HWY		38.50	40.10	1.5	1.5	2.0	2.0	8.90	8.90	0.00	0.90	
TRUCK DRIVER	All	ALL	1	41.70	42.25	1.5	1.5	2.0	2.0	10.15	11.39	0.00	0.15	
TRUCK DRIVER	All	ALL	2	41.85	42.25	1.5	1.5	2.0	2.0	10.15	11.39	0.00	0.15	
TRUCK DRIVER	All	ALL	3	42.05	42.25	1.5	1.5	2.0	2.0	10.15	11.39	0.00	0.15	
TRUCK DRIVER	All	ALL	4	42.25	42.25	1.5	1.5	2.0	2.0	10.15	11.39	0.00	0.15	
TUCKPOINTER	All	BLD		48.25	49.25	1.5	1.5	2.0	2.0	8.79	20.47	0.00	1.01	

Legend**Rg** Region**Type** Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers

C Class**Base** Base Wage Rate**OT M-F** Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.**OT Sa** Overtime pay required for every hour worked on Saturdays**OT Su** Overtime pay required for every hour worked on Sundays**OT Hol** Overtime pay required for every hour worked on Holidays**H/W** Health/Welfare benefit**Vac** Vacation**Trng** Training**Other Ins** Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations WILL COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice, sound and vision production and reproduction, telephone and telephone interconnect, facsimile, equipment and appliances used for domestic, commercial, educational and entertainment purposes, pulling of wire through conduit but not the installation of conduit.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Heavy Duty Self-Propelled Transporter or Prime Mover; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Operation of Tie Back Machine; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators (remodeling or renovation work); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types: Creter Crane: Spider Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dredges; Elevators, Outside type Rack & Pinion and Similar Machines; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Heavy Duty Self-Propelled Transporter or Prime Mover; Hydraulic Backhoes; Backhoes with shear attachments up to 40' of boom reach; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Operation of Tieback Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Traffic Barrier Transfer Machine; Trenching; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Vacuum Trucks (excluding hose work); Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. SkidSteer Loader (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Dowell Machine with Air Compressor; Gradall and machines of like nature.

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Master Mechanic; Diver/Wet Tender; Engineer; Engineer (Hydraulic Dredge).

Class 2. Crane/Backhoe Operator; Boat Operator with towing endorsement; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender.

Class 3. Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more); Tug/Launch Operator; Loader/Dozer and like equipment on Barge, Breakwater Wall, Slip/Dock, or Scow, Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks; Deck Hand, Tug Engineer, Crane Maintenance (50 Ton Capacity and Under) or Backhoe Weighing (115,000 pounds or less); Assistant Tug Operator.

Class 5. Friction or Lattice Boom Cranes.

Class 6. ROV Pilot, ROV Tender

TRAFFIC SAFETY - Effective November 30, 2018, the description of the traffic safety worker trade in this County is as follows:
Work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary, non-temporary or permanent lane, pavement or roadway markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

Notwithstanding the difference in the classification title, the classification entitled "Material Tester I" involves the same job duties as the classification entitled "Material Tester/Inspector I". Likewise, the classification entitled "Material Tester II" involves the same job duties as the classification entitled "Material Tester/Inspector II".

STATE OF ILLINOIS
BUSINESS ENTERPRISE PROGRAM
MINORITIES, FEMALES, PERSONS WITH
DISABILITY PARTICIPATION AND UTILIZATION
PLAN FOR ILLINOIS COMMUNITY COLLEGES

The Business Enterprise Program Act for Minorities, Females and Persons with Disabilities (BEP) establishes a goal for contracting with businesses that have been certified as owned and controlled by persons who are minorities, female, or persons with disabilities (BEP certified vendor). 30 ILCS 575.

Contract goal to be achieved by Vendor: This solicitation includes a specific **BEP** participation goal of 30% based on the availability of BEP certified vendors to perform or provide the anticipated services and/or supplies required by this solicitation.

The BEP participation goal is applicable to all bids or offers. In addition to the other award criteria established for this solicitation, the Community College will award this contract to a Vendor that meets the goal or makes reasonable good faith efforts to meet the goal. If the Vendor is BEP certified, the entire goal is met and no subcontracting with a BEP certified vendor is required; however, **Vendor must submit a Utilization Plan indicating that the goal will be met by self-performance.**

For more information on the State of Illinois Central Management Services' Business Enterprise Program, please visit: <https://www2.illinois.gov/cms/business/sell2/bep/Pages/Default.aspx>

Vendor should include any additional information that will add clarity to Vendor's proposed utilization of certified BEP vendors to meet the targeted goal. Any submission of good faith efforts by Vendor shall be considered as a request for a full or partial waiver. At the time of bid or offer, Vendor, or Vendor's proposed Subcontractor, must be certified with CMS as a BEP certified vendor.

Good Faith Effort Procedures: Vendor must submit a Utilization Plan and Letters of Intent that meet or exceed the published goal. If Vendor cannot meet the stated goal, Vendor must document and explain within the Utilization Plan the good faith efforts it undertook to meet the goal. Utilization Plans are due at the time of bid or offer submission.

Contract Compliance: Compliance with this section is an essential part of the contract. The following administrative procedures and remedies govern Vendor's compliance with the contractual obligations established by the Utilization Plan. After approval of the Plan and award of the contract, the Utilization Plan becomes part of the contract. If Vendor did not succeed in obtaining BEP certified vendor participation to achieve the goal and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of BEP certified vendor work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the contract goal. The Utilization Plan may not be amended after contract execution without the Community College's prior written approval.

If it becomes necessary to substitute a BEP certified vendor the Vendor must notify the Community College in writing of the request to substitute a BEP certified vendor or otherwise change the Utilization Plan. The request must state specific reasons for the substitution or change.

Vendor shall maintain a record of all relevant data with respect to the utilization of BEP certified vendors, including but without limitation, payroll records, invoices, canceled checks and books of account for a period of at least three years

after the completion of the contract. Full access to these records shall be granted by Vendor upon 48 hours written demand by the Community College to any duly authorized representative thereof, or to any municipal, state or federal authorities. The Community College shall have the right to obtain from Vendor any additional data reasonably related or necessary to verify any representations by Vendor.

The Community College reserves the right to periodically review Vendor's compliance with these provisions and the terms of its contract. Without limitation, Vendor's failure to comply with these provisions or its contractual commitments as contained in the Utilization Plan, failure to cooperate in providing information regarding its compliance with these provisions or its Utilization Plan, or provision of false or misleading information or statements concerning compliance, certification status or eligibility of the BEP certified vendor, good faith efforts or any other material fact or representation shall constitute a material breach of this contract and entitle the Community College to declare a default, terminate the contract, or exercise those remedies provided for in the contract or at law or in equity.

**ILLINOIS COMMUNITY COLLEGE
UTILIZATION PLAN**

_____ submits the following Utilization Plan as part of our bid or offer in accordance with the requirements of the BEP Program Status and Participation section of the solicitation for _____, Community College Reference Number _____. We understand that all subcontractors listed must be certified with the CMS BEP Program at the time of submission of all bids and offers. **We understand that compliance with this section is an essential part of this contract and that the Utilization Plan will become a part of the contract, if awarded.**

Vendor makes the following assurance and agrees to include the assurance in each agreement, subcontract and purchase order with a subcontractor or supplier utilized on this contract: We shall not discriminate on the basis of race, color, national origin, sexual orientation or sex in the performance of this contract. Failure to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the Community College deems appropriate.

Vendor submits the following statement:

- ☐ Vendor is a BEP certified firm and plans to fully meet the goal through self-performance.
- ☐ Vendor has identified BEP certified subcontractor(s) to fully meet the established goal and submits the attached executed Letter(s) of Intent; or
- ☐ Vendor has made good faith efforts towards meeting the entire goal, or a portion of the goal, and hereby requests a waiver (complete checklist below).
- ☐ Vendor is not a certified firm and has no need for subcontracting to complete this project.

Vendor's person responsible for compliance with this BEP goal:

Name: _____

Title: _____

Phone: _____

Email: _____

DEMONSTRATION OF GOOD FAITH EFFORTS TO ACHIEVE GOAL AND REQUEST FOR WAIVER

If the BEP participation goal was not achieved, good faith efforts must be demonstrated. Vendors providing Good Faith Effort documentation and request for waiver must complete and submit the Good Faith Effort Contact Log with the bid or offer. Failure to submit Good Faith Effort documentation in its entirety shall render Vendor's bid or offer non-responsive or not responsible and cause it to be rejected or render Vendor ineligible for contract award.

Below is a checklist of actions that will be used to evaluate a Vendor's Demonstration of Good Faith Efforts and Request for Waiver. **Please check the actions which you completed.** If any of the following actions are not completed, please attach a detailed written explanation indicating why such action was not completed. If any other efforts were made to obtain BEP participation in addition to the items listed below, attach a detailed description of such efforts.

- ☐ Utilize the Sell2Illinois website: <https://cms.diversitycompliance.com/> to identify BEP certified vendors within the respective commodity/service codes denoted above and at a minimum email all listed vendors and solicit quotes from all vendors who express an interest via follow-up emails or telephone calls.
- ☐ Solicit through all reasonable and available means (e.g., attendance at a vendor conference, advertising and/or written notices) the interest of BEP certified vendors that have the capability to perform the work of the contract. Vendor must solicit this interest within sufficient time to allow the BEP certified vendors to respond to the solicitation. Vendor must determine with certainty if the BEP certified vendors are interested by taking appropriate steps to follow up initial solicitations and encourage them to submit a bid or proposal. Vendor must provide interested BEP certified vendors with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding promptly to the solicitation.
- ☐ Select portions of the work to be performed by BEP certified vendors in order to increase the likelihood that the goal will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate BEP certified vendor participation, even when Vendor might otherwise prefer to perform these work items with its own forces.
- ☐ Make a portion of the work available to BEP certified vendors and selecting those portions of the work or material needs consistent with their availability, so as to facilitate BEP certified vendor participation.
- ☐ Negotiate in good faith with interested BEP certified vendors. Evidence of such negotiation must include the names, addresses, email addresses, and telephone numbers of BEP certified vendors that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting and evidence as to why additional agreements could not be reached for BEP certified vendors to perform the work. A Vendor using good business judgment may consider a number of factors in negotiating with BEP certified vendors and may take a firm's price and capabilities into consideration. The fact that there may be some additional costs involved in finding and using BEP certified vendors may not be in itself sufficient reason for a Vendor's failure to meet the goal, as long as such costs are reasonable. Vendors are not required to accept higher quotes from BEP certified vendors if the price difference is excessive or unreasonable.
- ☐ Thoroughly investigate the capabilities of BEP certified vendors and not reject them as unqualified without documented reasons. The BEP certified vendor's memberships in specific groups, organizations, or associations and political or social affiliations are not legitimate causes for the rejection or non-solicitation of bids and proposals in Vendor's efforts to meet the goal.
- ☐ Make efforts to assist interested BEP certified vendors in obtaining lines of credit or insurance as required by the Community College.
- ☐ Make efforts to assist interested BEP certified vendors in obtaining necessary equipment, supplies, materials, or related assistance or services.

GOOD FAITH EFFORTS CONTACT LOG

Use this Log to document all contacts and responses (telephone, e-mail, etc.) regarding the solicitation of BEP certified vendors within the specific scope of work selected. It is not necessary to show contacts with BEP certified vendors who are identified on the Letter(s) of Intent. **Keep and submit copies of all emails sent and received from prospective BEP vendors. Include a copy of the commodity list or scope of work you solicited prospective BEP vendors to perform.** Duplicate this log as necessary; do not limit your contacts to the number of spaces shown.

[illegible]

LETTER OF INTENT

BUSINESS ENTERPRISE PROGRAM OR VETERAN SMALL BUSINESS

The Prime Vendor is required to submit a separate, signed Letter of Intent (LOI) from each BEP/VSB certified vendor. **LOIs must be submitted with the bid/offer and must be signed by both parties.** The Prime Vendor shall not prohibit or otherwise limit the BEP/VSB certified vendor(s) from providing subcontractor quotes to other potential bidders/vendors. Each LOI must include the negotiated contract percentage, a detailed scope of work to be performed by each identified BEP/VSB certified vendor and the amount of the subcontract, if known. All LOI's shall be subject to Agency approval. Any changes involving or affecting the identified BEP/VSB certified vendor may not be permitted without written approval of the procuring Agency.

Project Name: _____ Project/Solicitation Number: _____

Name of Prime Vendor: _____ BEP/VSB Compliance Contact: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ Fax: _____ Email: _____

Name of Certified ☐ BEP or ☐ VSB Vendor: _____

Address: _____ BEP/VSB Compliance Contact: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ Fax: _____ Email: _____

Type of agreement: ☐ Services ☐ Supplies ☐ Both Services/Supplies

Anticipated start date of the Certified BEP/VSB Vendor: _____

Proposed ____ % of Contract to be performed by the BEP/VSB Vendor.

Proposed Subcontract Amount, if known \$ _____

NOTE: The Prime Vendor must indicate the percentage of the estimated contract award that will be subcontracted to the certified BEP/VSB Vendor.

Detailed description of work to be performed or goods/equipment to be provided by the BEP/VSB Vendor:

The Vendor and the certified vendor above hereby agree that upon the execution of a contract for the above-named project between the Vendor and the State of Illinois, the Certified ☐ BEP ☐ VSB Vendor will perform the scope of work for the amount/percentage as indicated above.

Vendor (Company Name and D/B/A): _____

Certified BEP/VSB Vendor (Company Name and D/B/A): _____

Signature _____

Signature _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

CERTIFICATION OF CONTRACT/BIDDER

The below signed contractor/bidder hereby certifies that it is not barred from bidding on this or any other contract due to any violation of either Section 33E-3 or 33E-4 of Article 33E, Public Contracts, of the Illinois Criminal Code of 1961, as amended. This certification is required by Public Act 85-1295. This Act relates to interference with public contracting, bid rigging and rotating, kickbacks and bribery.

SIGNATURE OF CONTRACTOR/BIDDER

TITLE

DATE

THIS FORM **MUST** BE SCANNED AND SUBMITTED WITH YOUR BID

CERTIFICATE OF COMPLIANCE WITH
ILLINOIS DRUG-FREE WORKPLACE ACT

_____, does hereby certify pursuant to the *Illinois Drug-Free Workplace Act* (30 ILCS 580/) that [he, she, it] shall provide a drug-free workplace for all employees engaged in the performance of work under the contract by complying with the requirements of the *Illinois Drug-Free Workplace Act* and, further certifies, that [he, she, it] is not ineligible for award of this contract by reason of debarment for a violation of the *Illinois Drug-Free Workplace Act*.

 By Authorized Agent

 Date

SUBSCRIBED AND SWORN TO before me
 This ____ day of _____, 20__.

 NOTARY PUBLIC

EXECUTE AND ATTACH TO PROPOSAL FORM**JOLIET JUNIOR COLLEGE – REQUEST FOR BID****DRAWINGS ARE AVAILABLE ON THE FOLLOWING WEBSITE:****WWW.JJC.EDU/COMMUNITY/VENDORS****BID FORM**

To: Joliet Junior College
 1215 Houbolt Road
 Joliet, IL 60431-8938

Project: _____

Date: _____

Submitted by:

 (Full Name)

 (Address)

 (City, State, Zip)

 (Phone)

 (Fax)

 (Email)

PART 1 OFFER

Having examined the site and having familiarized itself with the conditions affecting the cost of the work associated with the _____, and with the bidding documents, Bidder hereby proposes to perform everything required and to furnish all labor, materials, necessary tools, expendable equipment and transportation services necessary to complete in a workmanlike manner the subdivision of work stated above in accordance with the bidding documents for the following sums:

Base Bid:	
Allowance:	\$7,500.00
Total Base Bid with Allowance:	

Base Bid with Allowance:

 Dollars(\$_____)

Write amount in both alpha and numeric, in case of discrepancy the lesser amount shown will govern.

We have included herewith, the Security Deposit as required by the Instructions to Bidders.

PART 2 ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for thirty (30) days from the Bid closing date.

If the bid is accepted by the Owner within the time period stated above, we will:

- A. Execute the Agreement within ten (10) days of receipt of Notice of Award.
- B. Furnish the required bonds within ten (10) days of receipt of Notice of Award in the form described in the Instruction to Bidders.
- C. Furnish the required Certificate of Insurance within ten (10) days of receipt of Notice of Award in the form and amounts described in the Instruction to Bidders.
- D. Commence work as established by the written Notice to Proceed.

If this Bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bonds(s), the Security Deposit shall be forfeited as damages to the Owner by reason of our failures.

In the event our Bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

PART 3 CONTRACT TIME

If the Bid is accepted, we will:

- A. Complete the work in manner consistent to meet the requirements of the schedule (_____) consecutive calendar days from the date established as the Date of Commencement in the Notice to Proceed.
- B. Contractor has examined the Schedule included in these documents and takes no exception, or records the following exceptions:

PART 4 CONTRACTOR'S FEES FOR CHANGES IN THE WORK

Lump Sum of Time and Materials Changes: We the undersigned bidder agree that the following percentages for overhead and profit shall be added to job costs for the

net amount of work added to or deleted from the contract by written lump sum or time and material change orders recommended by the Engineer and approved by the Owner:

Add to net extra for job costs for additional work performed by:

Our own forces 12%

Our subcontractor 5% (including assigned subcontractors)

Note: Insurance, bond, and taxes are considered as job cost items and are not included in the percentages listed above.

PART 5 ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted therein have been considered and all costs thereto are included in the Bid Sum.

Addendum # _____ Dated _____

Addendum # _____ Dated _____

Addendum # _____ Dated _____

PART 6 SUBCONTRACTORS

- A. The following work will be performed (or provided) by the Subcontractors we have indicated below:

	<u>Name of Subcontractor</u>	<u>Work Performed</u>
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

- B. We understand, and hereby agree, that we are obligated to use the indicated subcontractors, unless prior written permission to change has been obtained from the Owner.

PART 7 RELATED WORK EXPERIENCE

List a minimum of three jobs of similar type and scope performed in the last five years:

1. Client: _____
Building: _____
Phone: _____
Contact Name: _____
Dollar Amount: _____

2. Client: _____
Building: _____
Phone: _____
Contact Name: _____
Dollar Amount: _____

3. Client: _____
Building: _____
Phone: _____
Contact Name: _____
Dollar Amount: _____

PART 8 BID FORM ADDITION

Apprenticeship and Training Certification

In accordance with the Illinois Procurement Code, the Bidder certifies that the work to be performed by it and/or its subcontractors shall, at the time of such bid opening and at the time of the performance of work pursuant to the terms of this Contract, shall have participated in the approved apprenticeship and training programs as provided for above. The bidder shall list, in the space below, the official name of the program sponsor holding the certificate of registration or all types of work or crafts in which the bidder is a participant and that will be performed by the bidder and its sub-contractor's employees. Work that will be sub-contracted shall be indicated to be subcontracted work as provided for herein. **Failure to list required information may result in disqualification of bid.**

PART 9 CONTRACTOR EVALUATION

Upon completion of the project, a Construction Contractor Performance Evaluation form will be completed by the A/E and the JJC Project Coordinator. The contractor will be evaluated in the following categories:

- Professionally Administered and Supervised Work
- Business Practices
- Overall Performance
- Workmanship
- Timeliness
- Project Management

PART 10 BID FORM SIGNATURES(S)

The Corporate Seal of:

(Bidder – please print the full name of your Proprietorship, Partnership, or Corporation)

Was hereunto affixed in the presence of:

<hr/> (Authorized signing officer)	<hr/> (Title)
------------------------------------	---------------

(Seal)

<hr/> (Authorized signing officer)	<hr/> (Title)
------------------------------------	---------------

If the bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF SECTION