

**INVITATION TO BID
ITB NKU-18-2023**



Steely Library Elevator Modernization

2/16/2023

Proposal NO: NKU-18-2023
Issue Date: 2/16/2023
Title: Steely Library Elevator Modernization
Purchasing Officer: Blaine Gilmore
Phone: 859.572.6449

RETURN ORIGINAL COPY OF PROPOSAL TO:

**Northern Kentucky University
Procurement Services
1 Nunn Drive
617 Lucas Administrative Center
Highland Heights, KY 41099**

IMPORTANT: BIDS MUST BE RECEIVED BY: 03/09/2023 BEFORE 2:00 P.M. HIGHLAND HEIGHTS, KY time.

NOTICE OF REQUIREMENTS

1. The University's General Terms and Conditions and Instructions to Bidders, viewable at <http://procurement.nku.edu/policies/terms-and-conditions.html>, apply to this Request for Proposal.
2. Contracts resulting from this RFP must be governed by and in accordance with the laws of the Commonwealth of Kentucky.
3. Any agreement or collusion among Offerors or prospective Offerors, which restrains, tends to restrain, or is reasonably calculated to restrain competition by agreement to bid at a fixed price or to refrain from offering, or otherwise, is prohibited.
4. Any person who violates any provisions of KRS 45A.325 shall be guilty of a felony and shall be punished by a fine of not less than five thousand dollars nor more than ten thousand dollars, or be imprisoned not less than one year nor more than five years, or both such fine and imprisonment. Any firm, corporation, or association who violates any of the provisions of KRS 45A.325 shall, upon conviction, may be fined not less than ten thousand dollars or more than twenty thousand dollars.

AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

I hereby swear (or affirm) under the penalty for false swearing as provided by KRS 523.040:

1. That I am the offeror (if the offeror is an individual), a partner, (if the offeror is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the offeror is a corporation);
2. That the attached proposal has been arrived at by the offeror independently and has been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other Contractor of materials, supplies, equipment or services described in the Request for Proposal, designed to limit independent bidding or competition;
3. That the contents of the proposal have not been communicated by the offeror or its employees or agents to any person not an employee or agent of the offeror or its surety on any bond furnished with the proposal and will not be communicated to any such person prior to the official closing of the RFP;
4. That the offeror is legally entitled to enter into contracts with the Northern Kentucky University and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 45A.330 to .340, 164.390, and
5. That the Offeror, and its affiliates, are duly registered with the Kentucky Department of Revenue to collect and remit the sale and use tax imposed by Chapter 139 to the extent required by Kentucky law and will remain registered for the duration of any contract award
6. That I have fully informed myself regarding the accuracy of the statement made above.

SWORN STATEMENT OF COMPLIANCE WITH FINANCE LAWS

In accordance with KRS45A.110 (2), the undersigned hereby swears under penalty of perjury that he/she has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to a bidder will not violate any provision of the campaign finance laws of the Commonwealth of Kentucky.

CONTRACTOR REPORT OF PRIOR VIOLATIONS OF KRS CHAPTERS 136, 139, 141, 337, 338, 341 & 342

The Contractor by signing and submitting a proposal agrees as required by 45A.485 to submit final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341 and 342 that have occurred in the previous five (5) years prior to the award of a contract and agrees to remain in continuous compliance with the provisions of the statutes during the duration of any contract that may be established. Final determinations of violations of these statutes must be provided to the University by the successful Contractor prior to the award of a contract.

CERTIFICATION OF NON-SEGREGATED FACILITIES

The Contractor, by submitting a proposal, certifies that he/she is in compliance with the Code of Federal Regulations, No. 41 CFR 60-1.8(b) that prohibits the maintaining of segregated facilities.

RECIPROCAL PREFERENCE

- (1) Prior to a contract being awarded to the lowest responsible and responsive bidder on a contract by a public agency, a resident bidder of the Commonwealth shall be given a preference against a nonresident bidder registered in any state that gives or requires a preference to bidders from that state. The preference shall be equal to the preference given or required by the state of the nonresident bidder.
- (2) A resident bidder is an individual, partnership, association, corporation, or other business entity that, on the date the contract is first advertised or announced as available for bidding:
 - (a) Is authorized to transact business in the Commonwealth; and
 - (b) Has for one (1) year prior to and through the date of the advertisement, filed Kentucky corporate income taxes, made payments to the Kentucky unemployment insurance fund established in KRS 341.490, and maintained a Kentucky workers' compensation policy in effect.
- (3) A nonresident bidder is an individual, partnership, association, corporation, or other business entity that does not meet the requirements of subsection (2) of this section.
- (4) If a procurement determination results in a tie between a resident bidder and a nonresident bidder, preference shall be given to the resident bidder.
- (5) This section shall apply to all contracts funded or controlled in whole or in part by a public agency.
- (6) The Finance and Administration Cabinet shall maintain a list of states that give to or require a preference for their own resident bidders, including details of the preference given to such bidders, to be used by public agencies in determining resident bidder preferences. The cabinet shall also promulgate administrative regulations in accordance with KRS Chapter 13A establishing the procedure by which the preferences required by this section shall be given.
- (7) The preference for resident bidders shall not be given if the preference conflicts with federal law.
- (8) Any public agency soliciting or advertising for bids for contracts shall make KRS 45A.490 to 45A.494 part of the solicitation or advertisement for bids

DEFINITIONS

As used in KRS 45A.490 to 45A.494: (1) "Contract" means any agreement of a public agency, including grants and orders, for the purchase or disposal of supplies, services, construction, or any other item; and

(2) "Public agency" has the same meaning as in KRS 61.805.

SIGNATURE REQUIRED: This proposal cannot be considered valid unless signed and dated by an authorized agent of the offeror. Type or print the signatory's name, title, address, phone number and fax number in the spaces provided. Offers signed by an agent are to be accompanied by evidence of his/her authority unless such evidence has been previously furnished to the issuing office. Your signature is acceptance to the Terms and conditions above.

| | | |
|---------------------------------------------------------------------|------------------------------------|---------------------|
| DELIVERY TIME: | NAME OF COMPANY: | DUNS # |
| PROPOSAL FIRM THROUGH: | ADDRESS: | Phone/Fax: |
| PAYMENT TERMS: | CITY, STATE & ZIP CODE: | E-MAIL: |
| SHIPPING TERMS: F.O.B. DESTINATION - PREPAID AND ALLOWED | TYPED OR PRINTED NAME: | WEB ADDRESS: |
| FEDERAL EMPLOYER ID NO.: | SIGNATURE: | DATE: |

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General Terms and Conditions and Instructions to Proposers:

<http://procurement.nku.edu/policies/terms-and-conditions.html>

NOTICE OF ADVERTISEMENT**BRIEF SCOPE OF WORK:**

Furnish all engineering, materials, labor, tools and equipment, transportation, supervision, testing and inspections to modernize 1 Steely Library Elevator in the specifications attached. In addition, perform full coverage preventive maintenance as specified within at the commencement of this Contract and continuing for 12 months after the last elevator is accepted. Furnish a pre-modernization traffic analysis and a post-modernization traffic analysis on elevator. The traffic analysis shall be for a two-week period before and after modernization.

PROJECT TIMETABLE:

| | |
|---------------------------|----------------------------------------------------------------|
| Invitation for Bid Issued | February 16, 2023 |
| Pre-Bid Meeting | February 23 at 2 PM, 1 st floor, NKU Steely Library |
| Last Day for Questions | March 1 at 12 Noon |
| BIDS DUE | March 9, 2023 at 2:00 PM EST |

SUBMITTAL OF BID:

The bidder shall submit, by the time and date specified via US Postal Service, courier or other delivery service, its bid response in a **sealed package** addressed to:

**Blaine Gilmore, MPA
Director, Procurement Services
Lucas Administrative Center, Suite 617
1 Nunn Drive
Northern Kentucky University
Highland Heights, KY 41099**

Both inner and outer envelopes/packages should bear respondent's name and address, and clearly marked on package(s) as follows:

**ITB NKU-18-2023
Steely Library Elevator Modernization**

Special Conditions to Proposers**QUESTIONS AND REQUESTS FOR INFORMATION**

Information relative to this project obtained from other sources, including other university administration, faculty or staff may not be accurate, will not be considered binding and could adversely affect the potential for selection of your bid. All requests for information, questions or comments relative to this project should be directed, in writing to:

Ryan Straus
Coordinator, Procurement Services
Lucas Administrative Center, Suite 617
Northern Kentucky University
Highland Heights, KY 41099
Strausr2@nku.edu

GENERAL TERMS AND CONDITIONS TO PROPOSERS:

The general terms and conditions linked below shall be applicable to this Bid and take precedence over any Contractor terms and conditions:

<http://procurement.nku.edu/policies/terms-and-conditions.html>

PARKING PERMITS:

Contractor must obtain parking permits for all vehicles that will be parked on campus. Permits can be obtained at the welcome center for \$28.75/month.

<http://parking.nku.edu/rules/guidelines.html>

GOVERNING LAW:

Proposers shall conform to and observe all laws, ordinances, rules and regulations of the United States of America, Commonwealth of Kentucky, and all other local governments, public authorities, boards or offices relating to the Project Site or the improvements upon same, or the use thereof, and will not permit the same to be used for any illegal or immoral purposes, business or occupation. The resulting Contract shall be governed by Kentucky Law and any claim relating to this Contract shall only be brought in the Franklin Circuit Court in Accordance with KRS 45A-245.

TOBACCO FREE CAMPUS

Effective January 1st, 2014, NKU will be a tobacco free campus. The use of all tobacco products shall be prohibited in all campus buildings and outside areas on campus.

STATUTORY AUTHORITY

Selection of firms to provide professional services to Northern Kentucky University are governed by the provisions of the Kentucky Revised Statutes, KRS 45A.085, <http://www.lrc.ky.gov/KRS/045A00/085.PDF>

FOREIGN CORPORATIONS

Foreign corporations are defined as corporations that are organized under laws other than the laws of the commonwealth of Kentucky. Foreign corporations doing business within the commonwealth of Kentucky are required to be registered with the Secretary of State, New Capitol Building, Frankfort, Kentucky and must be in good standing.

The Foreign Corporate Proposer, if not registered with the Secretary of State at the time of the bid submittal, shall be required to become registered and be declared in good standing prior to the issuance or receipt of a contract.

DOMESTIC CORPORATIONS

Domestic corporations are required to be in good standing

OCCUPATIONAL LICENCE

Northern Kentucky University was annexed by the city of Highland Heights in 2008. All contractors performing work for NKU must possess a Campbell County Occupational License and a city of Highland Heights Occupational License (administered by Campbell County) and must also pay applicable payroll taxes. For further information, call 859-572-6605.

PERMITS

The Contractor shall obtain all permits necessary for any or all parts of the work from the authorities governing such work. The Contractor shall procure building permits, when required but no fee shall be applicable on projects for the Commonwealth. Evidence that such permits have been issued shall be furnished to the Owner before beginning work.

BID BONDS:

A 5% bid bond is required with submission of this ITB.

COMPLETION DATES

It is understood and agreed that time is of the essence. The Contractor will efficiently, diligently, and expeditiously conduct the work in a manner that will satisfy compliance with approved project schedules and completion by the completion date appearing in the body of this bid.

COORDINATION OF WORK

The Vendor shall be responsible for coordinating all work with the **NKU Project Manager**. The Contractor shall cooperate completely with the Owner's security forces and measures.

DAMAGE AND REPAIRS

The Contractor shall exercise particular care to avoid damage to his own work, the Owner's property, and adjacent property of every description. He shall make good any damage resulting from or caused by the work under this contract at his sole expense in a manner satisfactory and without extra cost to the Owner including, but not limited to, finishes, furnishings, and landscaping.

HAZARDOUS MATERIALS

No asbestos containing materials, lead based paints, or other hazardous materials shall be furnished or installed in this work.

PAYMENT AND PERFORMANCE BONDS: 100% Payment and Performance Bonds will be required for work arising from this ITB.

EXAMINATION OF SITE

Each vendor shall fully acquaint and familiarize themselves with the conditions as they exist and the character of the operation to be carried on under the proposed contract and has made such investigation as may be reasonably necessary so that the vendor shall fully understand the facilities, physical conditions and restrictions attending to the work under the contract. The specifications furnished represent a fair approximation of the material needed but all quotations submitted should take into account knowledge gained as a result of the above referenced visual inspection.

EXAMINATION OF CONTRACT

Each vendor shall also thoroughly examine and become familiar with the specifications and associated contract documents. By submitting a bid, the vendor agrees that they have carefully examined the specifications and have thereupon decided that from their own investigation Contractor has satisfied themselves as to the nature and location of work, the general and local conditions and all matters which may in any way affect the work or its performance and that as a result of such examination and investigation, vendor fully understands the intent and purpose of the documents and conditions of the bidding. Claims for additional compensation and/or extension of

time because of the vendor's failure to follow the foregoing procedure and to familiarize themselves with the Contract Documents and all conditions which might affect work will not be allowed.

FIELD VERIFICATION

It is the Vendor's responsibility to verify all measurements.

HOURS OF WORK

Working days at Northern Kentucky University are Monday through Friday, 8:00am to 4:30pm. Deviation from these working hours must be approved by said project manager.

WARRANTY

Please see the Specifications

CANCELLATION

The resulting contract from this ITB may be cancelled by the University for Non-compliance with the terms and conditions of any part of the agreement.

TERMINATION FOR CONVENIENCE

Northern Kentucky University reserves the right to terminate the resulting contract without cause with a 30-day written notice. Upon receipt by the Contractor of "notice of termination" the Contractor shall discontinue all services with respect to the applicable contract. The cost of any agreed upon services provided by the Contractor will be calculated at the agreed upon rate prior to "notice of termination" and a fixed fee contract will be pro-rated (as appropriate).

INSURANCE

If awarded, bidder / proposer must provide NKU with an insurance certificate listing NKU as a certificate holder and additionally insured.

**Northern Kentucky University
617 Lucas Administrative Center
1 Nunn Drive
Highland Heights, KY 41099**

The Contractor shall furnish the University the Certificates of Insurance and guarantee the maintenance of such coverage during the term of the contract. The Contractor shall provide an original policy endorsement of its CGL insurance naming Northern Kentucky University and the directors, officers, trustees, and employees of the University as additional insured on a primary and non-contributory basis as their interest appears. Additionally, the Contractor shall provide an original policy endorsement for Waiver of subrogation in favor of the Northern Kentucky University its directors, officers, trustees, and employees as additional insured.

Our basic insurance requirements are:

Workers' Compensation insurance with Kentucky's statutory limits and Employers' Liability insurance with at least \$100,000 limits of liability.

Comprehensive General Liability (CGL) Insurance the limits of liability shall not be less than \$500,000 each occurrence for bodily injury and \$250,000 property damage.

Comprehensive Automobile Liability Insurance: To cover all owned, hired, leased or non-owned vehicles used on the Project. Coverage shall be for all vehicles including off the road tractors, cranes and rigging equipment and include pollution liability from vehicle upset or overturn. Policy limits shall not be less than \$500,000 for bodily injury and \$100,000 for property damage.

Excess liability insurance in an umbrella form for excess coverages shall have a minimum of \$1,000,000 combined single limits for bodily injury and property damage for each.

If accessing NKU Student, Employee, or other personal records, vendor needs Security and Privacy Liability Insurance with limits no less than \$1,000,000.

If accessing NKU Student, Employee, or other personal records, vendor needs Evidence Breach Response Services coverage with limits no less than \$5,000,000.

REFERENCES

Bidder Qualifications: The bidder is required to submit a list of completed projects where he has performed similar work to that specified herein.

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

Project Manager assigned to this project: _____

Brief Project Description: _____

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

Project Manager assigned to this project: _____

Brief Project Description: _____

Organization: _____

Contact Name: _____

Phone Number: _____

Date Work Completed: _____ **Value of Contract:** _____

Project Manager assigned to this project: _____

Brief Project Description: _____

SUBCONTRACTORS

SUBCONTRACTORS: The following is a list of subcontractors proposed by the bidder to be used to complete the project. All subcontractors are subject to approval by Northern Kentucky University. Failure to submit this list completely filled out may invalidate bid. **SUBCONTRACTORS MAY NOT BE CHANGED AFTER CONTRACT AWARD WITHOUT APPROVAL BY NKU.**

| <u>BRANCH OF WORK</u> | <u>NAME, ADDRESS AND TELEPHONE OF SUBCONTRACTORS</u> |
|------------------------------|-------------------------------------------------------------|
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |
| _____ | _____ _____ _____ |

List of Materials and Equipment

(Must be submitted within 24 hours after bid opening)

Every item listed under the different phases of this project must be clearly identified so that Northern Kentucky University will definitely know what the bidder proposes to furnish. Bidders be hereby advised that this list shall be required to be filled out completely by the apparent low bidder within twenty-four (24) hours from the close of the official reading of the bids.

The above requirement does not preclude any bidder from submitting this list, fully executed, at the time the bids are submitted.

The use of the manufacturers' dealer's name only, or stating "as per plans and specifications", will not be considered as sufficient identification. Where more than one "Make or Brand" is listed for any one item, the Owner has the right to select the one to be used.

Failure to submit a proper list may result in rejection of the Bidder's Proposal.

| Material And / Or Equipment | Manufacturer and Brand Name |
|-----------------------------|-----------------------------|
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NKU GENERAL SAFETY & COORDINATION REQUIREMENTS

1. The University strives to continuously maintain both a safe and secure work environment for its students, employees, and the employees of all Contractors assigned to our campus. Therefore, it is essential the following criteria be met by all Contractors (and all their subcontractors) working at NKU.
2. **BACKGROUND CHECKS:** The Contractor shall furnish the University upon request with written documentation that verifies each of their employees working on the property of the University has cleared a background check, has no felony convictions, is not a sex offender, and has the legal right to work in the United States.
3. **DRUG-FREE WORKPLACE:** Northern Kentucky University is a drug-free and alcohol-free workplace, and all employees of Contractors and subcontractors are subject to this policy while working on University property. If there is verifiable suspicion or probable cause that an employee of the contractor or subcontractor is under the influence of drugs or alcohol, the University reserves the right to require the Contractor to have the employee tested immediately at no expense to the University. If the test results are positive the employee will be prohibited from working on University property for a period of one (1) year from the positive test, or the duration of the project, whichever is longer. The banned employee of the Contractor must pass a drug and alcohol test before working again on university property. Effective January 1st, 2014, NKU will be a tobacco free campus. The use of all tobacco products shall be prohibited in all campus buildings and outside areas on campus.
4. **CONTRACTOR PRESENCE ON CAMPUS:** All persons working for (or on behalf of) the Contractor whose duties bring them on campus shall obey the rules and regulations that are established by the University and shall comply with the reasonable directions of the University representatives. Contractor's employees shall never enter or use existing areas of campus where they are not required to be performing work. Contractors and subcontractors are always responsible for providing and maintaining portable restroom facilities for all their workers working on the project. Contractor shall be responsible for the acts of his employees and agents while on campus. Accordingly, Contractor agrees to take all necessary measures to prevent injury and loss to persons or property located on campus. Contractor shall be responsible for all damages to persons or property caused by Contractor or any of his agents or employees. Contractor shall promptly repair any damage that he, or his employees or agent may cause to the campus or to the University equipment. Contractor agrees that in event of an accident of any kind on university property, Contractor will immediately notify the University's Department of Public Safety (859) 572-5770 and furnish a full written report of the accident. All Contractor employees and subcontractors shall present a neat and clean appearance while on University property, and be able to present proper identification upon request.
5. **PROJECT WORK SITE SAFETY & SECURITY:** The University does not, and will not, assume any responsibility for any tools, materials, equipment, or property belonging to the Contractor, his employees or agents, which may be lost or stolen from University property. All contractors and subcontractors are solely responsible for properly securing and protecting their tools and equipment. When working within or on top of an existing building, the Contractor shall work with the assigned University project manager in developing a strategy for securing the project work site and protecting the campus staff and community from the project work site. When working in an open area on campus, the Contractor shall provide securable barricades/fencing around the project site to protect the campus community from the dangers within the project work site. The Contractor shall maintain this project work site 24 hour a day, 7 days a week for the duration of the project.
6. **PARKING:** All Contractors and their subcontractors are required purchase a monthly parking pass from NKU at the rate of \$28.75/month, or at a daily rate of \$5.00/day. Weekly passes are also available. This will entitle workers to park at all NKU campus lots and garages, EXCEPT for faculty and staff lots which are noted accordingly. This pass also allows for parking in any of the garages if your vehicles will fit. Parking within the jobsite WILL NOT BE PERMITTED. Workers who do so will be subject to immediate towing, without warning, and at their cost. Vehicles may be parked near a worksite for reasonable times for loading and unloading, providing normal access and egress to buildings is not hindered. All workers shall park their personal vehicles in the Welcome Center parking garage, which is located just north of the Power Plant across from the Bank of Kentucky Center.
7. **GENERAL PROJECT COORDINATION:** All work and information requests by the Contractor shall be coordinated through the assigned NKU Project Manager. Any direction provided by the campus Operations & Maintenance Staff and/or the project user group shall NOT be considered official direction from the University unless authorized in writing from the assigned NKU Project Manager. Contractor will NOT be compensated for work performed without written authorization from the assigned NKU Project Manager.

8. **TEMPORARY USE OF CAMPUS UTILITIES:** As a general rule, utilities required by the Contractor to perform their work can be obtained from the University. However, the University reserves the right to require the Contractor to furnish a meter to record the usage of each provided utility for the duration of the project. For projects requiring utility metering, a deduct change order will be issued at the end of the Project to reimburse the University for the Contractor utility usage. The Contractor is responsible for determining and coordinating the procurement of any utility where the University cannot reasonably provide.
9. **CAMPUS UTILITY SHUTDOWNS:** Unless noted otherwise for a specific project, at least seven (7) calendar days notice is required for any campus utility shutdowns and/or any road/parking lot closures necessary for the Contractor to perform their work. All utility shutdowns and closures shall be coordinated with the assigned NKU Project Manager, and the University reserves the right to schedule these shutdowns and closures at night and/or on weekends to minimize disruptions to the campus community. All requests for assistance from NKU's Operations & Maintenance staff in locating existing utilities shall also be submitted to the assigned NKU project manager at least (7) calendar days in advance.

Bid Bond
5% of Contract Price

KNOW ALL MEN BY THESE PRESENTS, that we _____ (here insert full name and address or legal title of Contractor)
as Principal, hereinafter called the Principal, and _____ (here insert full name and address or legal title of Surety)
a corporation duly organized under the laws of the State of Kentucky as Surety, hereinafter called
Surety, are held and firmly bound unto **Northern Kentucky University** as Obligee, hereinafter
called Obligee, in the sum of :

_____ Dollars (\$ _____),
representing 5% of the Principal's total bid price and for the payment of which sum well and truly
to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for _____ (Here insert full name, address and description of project)
NOW THEREFORE, if the Obligee shall accept the bid of the Principal within the period specified, or if no period is
specified, within 45 days after its opening, and the Principal shall enter into a Contract with the Obligee in accordance
with the terms of such bid, and give such bid or bonds as may be specified in the bidding or Contract Documents with
good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and
material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and
give such bonds or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof
between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract
with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to
remain in full force and effect.

Signed and sealed this day of _____ 2023

| | | |
|-------------|--------|-----------|
| (Principal) | (Seal) | (Witness) |
|-------------|--------|-----------|

| | | |
|---------|--------|-----------|
| (Title) | (Seal) | (Witness) |
|---------|--------|-----------|

| | | |
|----------|--------|-----------|
| (Surety) | (Seal) | (Witness) |
|----------|--------|-----------|

| | | |
|---------|--------|-----------|
| (Title) | (Seal) | (Witness) |
|---------|--------|-----------|

THIS DOCUMENT MUST BE NOTORIZED

This is only an example. Other forms may be used.

FORM OF PROPOSAL

LUMP SUM BASE BID

The Bidder agrees to furnish all labor, materials, supplies, supervision and services required to perform this contract in a workmanlike manner. These services to be provided in accordance with Specifications and Contract Documents, and any duly issued Addenda for the **LUMP SUM BASE BID** set forth below:

_____ Dollars _____ Cents
(USE WORDS) (USE WORDS)

\$ _____
(USE NUMBERS)

This offer is for, at minimum, _____ calendar days from the date this offer is opened. In submitting the above it is expressly agreed that upon proper acceptance by Northern Kentucky University of any or all items offered, a contract shall thereby be created with respect to the items accepted.

THIS BID SUBMITTED BY:

(Name and Address of Bidder)

DATE: _____ AUTHORIZED SIGNATURE: _____

NOTE: *The Authentication of Bid and Statement of Non-Collusion and Non-Conflict of Interest must be properly executed for this Bid to be valid.*

This Bidder, in compliance with this Request for Bid, and having carefully examined the complete contract documents, as well as the specifications for the work as prepared by Northern Kentucky University, hereby proposes to furnish all labor, supervision, materials, supplies and services required to perform the specifics of the Contract Documents, within the time set forth herein and for the final negotiated price.

The Bidder, hereby acknowledges receipt of the following Addenda:

ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATE _____

ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATE _____

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SECTION 000200 –
REQUEST FOR QUOTATION

PART 1 - GENERAL

1.1 PROJECT: ELEVATOR MODERNIZATION

- A. Lerch Bates Inc. has been authorized by Pedco to request your firm to submit a quotation for:
1. All engineering, labor, materials, transportation, services, and equipment necessary and reasonably incidental to perform work required by Contract Documents.
 2. Interim preventive maintenance.
 3. Warranty preventive maintenance.

1.2 CONTRACT DOCUMENTS

- A. One set of electronic contract documents are provided for your use.
- B. Make inquiries to Lerch Bates Inc. Do not contact building personnel or the Purchaser, with the exception of requirement of item 1.2 C.
- C. Permission to review existing equipment and site conditions shall be secured from Matthew Raleigh at 513.782.4601.

1.3 CONSTRUCTION SCHEDULE

- A. See Section 003100, "Quotation Form" for project schedule.

1.4 ELECTRONIC QUOTATION

- A. Email quotations will be received until 2:00 pm prevailing local time on _____ identified as follows:

Contractor
Address
City/State/Zip

ELEVATOR MODERNIZATION

NKU Steely Library
Newport, KY

CONFIDENTIAL QUOTATION

Email quotation to: Attn: Matthew Raleigh
Project Manager
Pedco
E: Matthew.C.Raleigh@imegcorp.com

Email quotation to: Attn: Bill Moore
Consultant / Lerch Bates Inc.
E: Bill.Moore@LerchBates.com

- B. Quotations must be submitted on form provided as a part of Contract Documents, Section 003100. Quotations shall be subject to all requirements of Contract Documents, site conditions, General Conditions, Supplementary and Special Conditions and any other documents issued in connection with project. All blank spaces and questions on the quotation form must be completed and/or responded to. Failure to comply will constitute a non-responsive submittal.
- C. If Contractor desires to furnish items different from specified, Contractor shall submit substitution as an alternate quotation. Contractor shall supply Consultant with information in regard to proposed substitution of components or materials. Consultant shall decide whether the Contractor's substitution is equivalent to that specified. Deviation from requirements of Contract Documents shall be stated, in writing, in Contractor's transmittal letter submitted with quotation.

1.5 NOTICE OF INTENT TO SUBMIT A QUOTATION

- A. Quotations have been invited from a limited number of pre-approved Contractors. Contractors who elect not to provide a quotation after having reviewed Contract Documents and site conditions shall notify Consultant no later than ten working days prior to quotation due date. Failure to submit a quotation without prior notice will be construed as justifiable cause for elimination of such Contractor for future consideration.

1.6 OPENING

- A. Opening of quotations will be in private. Contractor selection will be based upon the following criteria:
 1. Cost of required work.
 2. Cost of interim maintenance.
 3. Cost of warranty maintenance.
 4. Completion schedule.
 5. Contractor's successful completion of similar projects and track record in the location of project.
 6. Contractor's maintenance capability in the location of the project.

1.7 QUOTATION

- A. All quotations shall be firm. Escalation will not be permitted if Contract is awarded within ninety days from quotation due date.
- B. If award is deferred beyond ninety days, Contractors' quotations shall be subject to adjustment to reflect changes in the cost of labor and material.

1.8 PURCHASER'S RIGHTS

- A. Purchaser reserves right to reject any or all quotations, to accept other than lowest quotation and to waive any informality in connection with opening and award of Contract.

1.9 INVITED CONTRACTORS

- A. Contractor shall be prepared to provide evidence of experience, qualifications, and financial ability to carry out requirements of Contract Documents.

- B. If Contractor's contact person is other than indicated above, Contractor shall notify Consultant within five days of receipt of this Request for Quotation.

Contact:

Company:

Address:

Phone:

END OF SECTION

SECTION 001000

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SECTION 001000 –
INSTRUCTIONS TO CONTRACTOR

PART 1 - GENERAL

1.1 EXAMINATION

- A. In order to discover and resolve conflicts or lack of definition which might create problems, Contractor must review Contract Documents, existing site conditions, and existing equipment specified to be retained for compatibility with its product prior to submitting quotation. Site review shall include, but not be limited to:
1. Adequacy of access.
 2. Retained equipment.
 3. Elevator hoistways.
 4. Pits.
 5. Machine rooms.
 6. Overhead clearances.
 7. Electrical power characteristics.
 8. Structural supports.
- B. Investigation and structural calculations required to determine compliance of existing elevator components, including machine support beams, with ASME A17.1, Rule 8.7.2.15.2 are responsibility of Contractor. The design of the scope of work included in the Contract Documents is not intended to result in a change in total car weight plus rated load of more than 5%.
- C. If Contractor is in doubt as to the meaning of any requirement included in the Contract Documents, they shall contact the Consultant in writing for clarification at least five working days prior to quotation due date.
- D. Compliance with all provisions of Contract Documents is assumed and required in absence of written exception.
1. Purchaser will not pay for change to building structure, structural supports, mechanical, electrical, or other systems required to accommodate Contractor's equipment.
- E. Submission of quotation is considered evidence that Contractor:
1. Has visited the site facilities and was allowed adequate time and access to comply with 1.1 A and B above.
 2. Is conversant with the site facilities, site conditions, requirements of the Contract Documents, pertinent state and local codes, state of labor and material markets, and has made due allowance in their quotation for all contingencies.
 3. Contractor shall contact the Consultant for clarification at least ten working days prior to the quotation due date if Contractor's investigation of site conditions or local code reveals:
 - a. Code requirements contrary to Contract Documents.
 - b. Any discrepancies or omissions from Contract Documents.
- F. No oral explanation will be made, and no oral instructions will be given before quotation due date. Contractor shall act promptly and allow sufficient time for Consultant to reply before submission of quotation. Any required interpretation or supplemental instructions will be issued in the form of an addendum to the specifications and forwarded to all pre-qualified Contractors.

- G. Provide everything necessary for and incidental to the satisfactory completion of work required by Contract Documents. All required preparations, hoisting and movement of new equipment, reused equipment, or removal of existing equipment shall be the responsibility of Contractor.

1.2 EXISTING MAINTENANCE CONTRACT

- A. The incumbent Maintenance Contractor will not be approved to provide a quotation for this project unless they arrange for, and provide evidence of, the suspension of the existing maintenance agreement until successful completion of the Warranty Maintenance period. If present Maintenance Contractor is not awarded the Contract for Modernization, Maintenance Contractor agrees to deliver existing as modified control wiring diagrams to Purchaser and immediately remove its equipment and materials from the premises with the Purchaser or Purchasers' representative present.

END OF SECTION

SECTION 003100

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SECTION 003100 –
QUOTATION FORM

DATE:

PROJECT: NKU Steely Library
Newport, KY

SUBMITTED BY:

Name of CONTRACTOR

CONTRACTOR'S Representative

Telephone Number

Street Address

City

State

Zip Code

Send electronic
copies to:

Attn: Matthew C Raleigh
Project Manager
Pedco
E: Matthew.C.Raleigh@imegcorp.com

Attn: Bill Moore
Consultant
Lerch Bates Inc.
Bill.Moore@lerchbates.com

PART 1 - GENERAL

1.1 CONTRACTOR'S BASE QUOTATION

- A. Having examined documents prepared by Lerch Bates Inc. dated _____, and having reviewed site conditions, applicable codes and all conditions affecting and governing the work, the Undersigned Contractor hereby offers to provide all engineering, labor, materials, transportation, services and equipment necessary and incidental to properly execute required work of the Contract Documents for the sum of:

ITEM 1: Modernize Passenger Elevator Car 2, Section 142500:

_____ dollars \$

ITEM 2: Related Work, Section 019000:

_____ dollars \$

ITEM 3: Total of Items 1-2:

_____ dollars \$

B. Maintenance:

1. Interim Maintenance: We agree to furnish interim, preventive maintenance during the period from written award of this Contract or verbal notice to proceed until all required work is complete for following amount per month per unit:

Passenger Elevator Car 2: \$ _____/Month

NOTE: Do not include the cost of interim maintenance in "A" above, Base Quotations.

2. Twelve-Month Warranty Preventive Maintenance: Amount included in base quotation Item A. above.

Total Included in Item A. \$ _____

Passenger Elevator Car 2: \$ _____/Month

NOTE: Purchaser reserves the right to pay warranty maintenance cost in a lump sum or on a monthly basis during period maintenance is actually performed.

- C. Enter a cost figure for all pricing requested. Failure to comply, subjects quotation to disqualification.

- D. Undersigned affirms that quotations provided represent entire cost including site conditions, code requirements, drawings, specifications, addenda, and any other Contract Documents, and no claim will be made due to any increase in wage scales, material prices, taxes, insurance, cost indexes or any other factors affecting the construction industry or this project except as expressly allowed in Owner's maintenance contract.

1.2 ADDENDA

- A. Undersigned acknowledges receipt of Addendum No. _____ through _____.

1.3 CONTRACTOR'S OTHER SUPPORTING ENCLOSURES

- A. Undersigned has enclosed the following (Check YES or NO):
 1. Separate letter containing any "Qualification" related to its Quotation. YES NO

1.4 PROPOSED MODERNIZATION INSTALLATION SCHEDULE

- A. Undersigned contractor submits the following completion schedule for project. Bidders are instructed to add additional rows to the following schedule grid to accommodate job specific phasing.

| PHASE | DESCRIPTION | DURATION |
|-------|------------------------------------------|----------|
| 1 | Engineering Surveys | weeks |
| 2 | Submittal Preparation | weeks |
| 3 | Client Approval Period | weeks |
| 4 | Engineering, Procurement and Fabrication | weeks |
| 5 | Mod Installation, Car 2 | weeks |
| 9 | Final Testing and Adjusting | weeks |
| 10 | Total Project Duration | weeks |

1.5 CONTRACTOR PROPOSED MODERNIZATION COMPONENTS AND TECHNOLOGY

- A. Undersigned Contractor will utilize the following modernization technology for the projects and submits these systems for approval. Upon acceptance of these systems by Purchaser/Consultant, no substitutions shall be made without written approval of Consultant.

| Modernization Systems and Components | Proposed Model Description/Vendor |
|--------------------------------------|-----------------------------------|
| Machine | |
| Control | |
| Door Operator | |
| Infrared Door Edge | |
| Fixtures | |
| Governor | |
| Safety | |
| Monitoring System | |
| Cab Interiors | |
| Door Panels/Entrances | |

1.6 CONTRACTOR'S LIST OF SUBCONTRACTORS

- A. The undersigned Contractor will utilize the following subcontractors for major components of work and submits these firms for approval. Upon acceptance of these Sub-Contractors by Purchaser/Consultant, no substitutions shall be made without written approval of Consultant.

| Subcontractor Name | Type of Work |
|--------------------|--------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

1.7 SUBMISSION AND ACCEPTANCE OF QUOTATIONS

- A. Undersigned Contractor agrees to Purchaser's right to reject any and all quotations without explanation.
- B. Undersigned Contractor declares that preparation and submission of quotations herein contained do not obligate Purchaser or Consultant in any way.
- C. Undersigned Contractor agrees and understands that Purchaser assumes no obligation to enter into a Contract.

1.8 ALTERNATES

- A. State net sum to be added to or deducted from Stipulated Sum (Base Quotation) in event any Alternate Quotation is accepted.
- B. Submit Alternate Quotations by filling in blank spaces provided herein.
- C. Purchaser reserves right to accept or reject any or all Alternates.
- D. Provide lump sum price for all alternates as described below and in Section 01030, Alternates.

ALTERNATE 1: Replace hydraulic Cylinder

_____ dollars \$ _____

Schedule Impact: _____

1.9 CONTRACTOR SIGNATURE

DATE: _____
SIGNED: _____
PRINT NAME: _____
TITLE: _____
NAME OF FIRM: _____
STATE LICENSE No: _____

LEGAL ADDRESS: _____

ORGANIZED AS A (MARK ONE):
 INDIVIDUAL
 PARTNERSHIP
 CORPORATION UNDER STATE LAW OF

TELEPHONE: _____

END OF SECTION

SECTION 008000

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SECTION 008000 –
SUPPLEMENTAL CONDITIONS

PART 1 - GENERAL

1.1 DEFINITION OF TERMS

- A. ELEVATOR CONSULTANT or CONSULTANT refers to Lerch Bates Inc. (Lerch Bates).
- B. PURCHASER refers to Northern Kentucky University.
- C. CONTRACT or CONTRACT DOCUMENTS consists of the Agreement, Conditions of Contract, Specifications, Addenda, Drawings if included, and Alternates if accepted.
- D. CONTRACTOR or ELEVATOR CONTRACTOR refers to any persons, partners, firm, or corporation having a contract with Purchaser to furnish labor and materials for the execution of work required.
- E. CONTRACT AWARD refers to Purchaser's verbal or written award for work required.
- F. SUBCONTRACTOR refers to any persons, partners, firm, or corporation having a contract with Contractor to furnish labor and materials for the execution of work required.
- G. PROVIDE means "furnish and install."
- H. MANUFACTURER means either the Original Equipment Manufacturer (OEM) or the principal manufacturer of a component or system.
- I. RETAIN means, unless otherwise specified, the existing equipment is to be left in place with no alterations and no change in the original manufacturer's designed performance or functionality. Items that are "retained" shall be thoroughly cleaned in place and adjusted to achieve originally designed function.
- J. REFURBISH means, unless otherwise specified, the existing equipment is to be cleaned, repainted, repaired, and parts replaced to put the equipment into a condition to provide the same appearance, performance, and functionality as the equipment provided when it was originally installed. Unless otherwise specified, the scope of replacement of components is limited to those items currently available for purchase as replacement parts from the manufacturer or after-market suppliers approved by the manufacturer.
- K. REUSE means that the Contractor shall carefully remove equipment from the existing installation, avoiding any damage or additional wear. Store in a safe location to maintain equipment in its pre-removal condition. Reinstall and incorporate into the modernized elevator installation using the same procedures and recommendations provided by the manufacturer of the equipment.
- L. CALL BACK means a request from the Purchaser to the Contractor to provide a technician on site to evaluate an elevator that is out of service or not functioning properly, rectify the root cause of the malfunction, and place the unit back into normal service.
- M. INCLUDES or INCLUDING means including the items specified but not limited solely to those items if additional work or components are required to achieve the specified outcome.
- N. Words in the singular shall include the plural whenever applicable or context so indicates.

- O. All technical terms in these Contract Documents are used as defined in the latest edition of American National Standard Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks ASME A17.1. and A17.2.

1.2 CONSULTANT'S STATUS

- A. Consultant shall act as Purchaser's and/or Building Management's representative on all matters pertaining to required work. Consultant shall interpret Contract Documents, analyze Contractor's quotations, review Contractor's suggested alternates, review all Contractor's submittals, approve billings, review technical details and construction procedure, perform work progress reviews, and review and test completed work for compliance with Contract Documents prior to acceptance of work by Purchaser.
- B. Field Review Scheduling: Schedule progress and final work reviews with Consultant. Reply promptly, in writing, to corrective work indicated on Consultant's progress and/or final review reports, indicating status and schedule for completion. Consultant anticipates scheduled site review appointments will be met.

1.3 CONTRACT

- A. Contract includes all engineering, labor, tools, and material required to complete the work in every respect. Contractor is cautioned to familiarize itself with existing site conditions and to include all incidental work that might occur or be required during the work. After Contract has been awarded, verbally or in writing, no extra charges will be allowed for any labor or material necessary to complete required work whether exactly described in these specifications.
- B. Any discrepancies or ambiguities found in Contract Documents or drawings shall be reported to the Consultant prior to Contractor's quotation submittal.

1.4 MEASUREMENTS AND DRAWINGS

- A. Drawings or measurements included with Contract Documents are for convenience of Contractor. Complete responsibility for detailed dimensions lies with Contractor. Contractor shall verify all dimensions with the actual on-site conditions. Where work of Contractor is to be coordinated with another trade, Contractor's shop drawings shall show actual dimensions and method of joining work of those trades.

1.5 CODES AND ORDINANCES

- A. All work covered by these Contract Documents is to be done in full accord with national code, state and local codes, ordinances, and elevator safety orders in effect at time elevator alteration permit issuance. All requirements of local Building Department and fire jurisdiction are to be fulfilled by Contractor and its Subcontractors. Also see Section 010400, Article 1.1.

1.6 CONTRACTOR'S INSURANCE

- A. Contractor shall take out and maintain during the life of this Contract Worker's Compensation Insurance with statutory limits set by the Commonwealth of Kentucky laws for protection of its employees.
- B. Contractor shall carry a comprehensive general liability policy including completed operations blanket contractual broad form property damage, and Purchaser's and Contractor's protective liability in a casualty or liability insurance company acceptable to Purchaser. Insurance policy shall fully protect

Contractor, its Subcontractors, Purchaser, and Consultant from all loss and liability. Refer to Northern Kentucky University Terms and Conditions provided.

- C. Prior to commencing work, Contractor shall secure required insurance, at its sole cost, and submit certificate of confirmation naming indemnified parties as additional insured. Said policies, including an endorsement which states that such insurance will not be cancelled or materially changed unless Purchaser is given thirty days notice, in writing, of the intention of said insurer to cancel or change any such policy. In the event Property is owned by a joint venture or other multi-party entity, all joint venture partners, or parties with an equity interest in the ownership shall be named as additional insureds. Contractor's insurance shall be primary to any applicable loss. With Purchaser's prior approval, an Owners & Contractors Protective Liability (OCPL) Policy may be substituted for commercial general liability coverage. Please refer to the attached appendix that states the project specific insurance requirements.
- D. Contractor shall file with Purchaser a certificate of insurance from its insurance company, stating that such insurance is being carried and that Purchaser will be notified at least ten days prior to any cancellation of said insurance.

1.7 PURCHASER INSURANCE

- A. Purchaser's insurance policy covers work and equipment in place in building and approved and accepted by Consultant and Purchaser. All material and equipment stored on site and not actually installed is not included in Purchaser's policy and such material and equipment shall be covered under Contractor's Property Damage Insurance.

1.8 TAXES, OLD AGE PENSIONS AND UNEMPLOYMENT INSURANCE

- A. Contractor's quotations for required work, materials and equipment shall include all local, state, and federal occupational and sales taxes, luxury taxes, excise taxes, federal and state old age pensions, unemployment insurance contributions, and any other similar taxes and contributions in effect at time of award of Contract.

1.9 LABOR LAWS

- A. Contractor and its Subcontractors performing work under this Contract shall comply with applicable provisions of all federal, state, and local labor laws.

1.10 PATENTS

- A. Contractor shall save and hold harmless Purchaser and its officers, agents, servants, employees, and Consultant from liability of any nature or kind on account of any patented or unpatented invention, process, article, or appliance manufactured or used in performance of Contract, including its use by Purchaser including all cost and expenses for defending any suits unless otherwise specifically stipulated in Contract Documents.
- B. Licenses which may be required for completion of required work are to be obtained and paid for by the Contractor.

1.11 ASSIGNMENTS

- A. Neither party to this Contract shall assign Contract or sublet it as a whole without written consent of other party, nor shall Contractor assign any payment due him or to become due to him hereunder without previous written consent of Purchaser.

1.12 ADVERTISING

- A. Advertising privileges will be retained by Purchaser. It is the duty of Contractor to keep premises free from posters, signs, decorations, etc., unless specifically approved by Purchaser.

1.13 PROTECTION OF WORK AND PROPERTY

- A. Contractor shall continuously maintain adequate protection of all its work from damage and shall protect Purchaser property from injury or loss arising out of this Contract. Contractor shall make good any such damages, injury, or loss, except such as may be directly caused by agents, subcontractors, or employees of the Purchaser. Contractor shall provide all barricades required to protect open hoistways or shafts per OSHA regulations. Design of barricades in public areas shall be approved by Purchaser prior to fabrication and installation.
- B. If Contract includes work which would be disruptive during normal business operations, or would be dangerous to building occupants, said work shall be performed during hours as building management dictates. Examples of such work include, without limitation, saw cutting of concrete, jack hammering, welding, metal cutting, pouring concrete, erecting steel, or hoisting equipment over occupied portions of the building, or performing tests requiring all elevators in a group. Contractor shall perform such work during off-hours and shall include all costs in its quotation.
- C. Contractor shall install a suitable protective covering on all finished floors whether marble, wood, carpet or other, in areas where work is being performed. No material handling equipment shall be permitted on or over finished floors unless said floors have been protected in a manner approved by building management.
- D. Portable fire extinguishers shall be provided throughout Contractor's area of work and shall be placed so as to be accessible at all times. Extinguishers shall be multi-purpose dry chemical type, provided on a basis of one 2A-20BC rated unit for each 3,000 square feet of floor area. Extinguishers will remain property of Contractor.
- E. Contractor shall at all times maintain work areas so all portions are accessible to fire department personnel and apparatus. Fire hydrants and fire department connections to building sprinkler systems must be kept free from obstruction at all times.
- F. Contractor shall strictly supervise any welding, metal cutting or other operations employing open flame work. All welding and cutting equipment shall be safely arranged and all combustibles in vicinity of any work being performed shall either be removed or protected by a noncombustible cover. Welding or cutting shall be attended by an assistant or fire watchman who is equipped with at least one 2A-20BC rated multi-purpose dry chemical fire extinguisher. Fire watchman will maintain strict surveillance during entire welding or cutting operation and extinguish flying sparks or burning slag. After welding or cutting operation fire watchman shall thoroughly search entire area for remnants of smoldering materials before he is released from his duty. Any welding or other operation employing open flame in any portion of building shall be scheduled with and receive approval of Purchaser. Hot work permits shall be scheduled and approved with Purchaser.
- G. Contractor shall keep noise level below 80 dBA level during normal building hours. When it is necessary to produce noise above this level, Contractor shall advise building management of such needs and times will be scheduled as directed. The Contractor shall anticipate and schedule excessive noise generating procedures and include allowance for same in its quotation and schedule. Anything above 80 dBA shall be conducted outside of normal building operation hours.

1.14 ACCIDENT REPORTS

- A. In the event of accidents of any kind, Contractor shall furnish Purchaser with copies of all accident reports. Reports shall be sent without delay and at same time that they are forwarded to any other parties.

1.15 STORAGE OF MATERIALS

- A. Contractor shall confine storage of materials on job site to limits approved by Purchaser and shall not unnecessarily encumber premises or overload any portion of building with materials to a greater extent than structure design load.

1.16 REMOVAL OF EQUIPMENT AND RUBBISH

- A. Contractor shall remove and properly dispose of all rubbish as fast as it accumulates including all existing parts and components not retained, keeping building and premises clean during progress of work and leave premises at completion in a condition acceptable to the Purchaser. Store parts and components identified by Consultant as useful for maintenance of units not being modernized as directed by Purchaser. All other parts and components not retained shall become property of Contractor. Dumpster shall be located in the loading dock area.

1.17 MATERIALS AND WORKMANSHIP

- A. All materials and equipment furnished shall be new and best quality. Installation shall be accurate, workmanlike, and subject to approval of Purchaser and Consultant. All materials and equipment provided shall conform to regulations of enforcement bodies having jurisdiction. Contractor shall furnish material samples for approval.

1.18 SUPERVISION

- A. Contractor shall assign a competent Project Manager, superintendent, and on-site foreman for project satisfactory to Purchaser and Consultant. Such persons shall represent Contractor and all instructions given to them shall be binding as if given to Contractor.

1.19 ROUTINE BUSINESS

- A. After award of Contract, all business relating to required work shall be transacted through Consultant, unless otherwise directed.

1.20 CHANGES AND EXTRA WORK

- A. Purchaser may at any time make changes to Contract Documents, plans and drawings, omit work, or require additional work by Contractor. For such additional work performed hereunder, Purchaser shall pay Contractor on the basis of a mutually agreed lump sum. See Article 1.25 for method of computing lump sum cost of additional work. Contractor shall make no additions, changes, alterations, or omissions, or perform extra work, without receipt of written authorization of Purchaser.

1.21 PAYMENTS

- A. Unless otherwise agreed, Contractor shall submit monthly applications for payment together with necessary data, information, waivers, and affidavits to Consultant. Consultant shall review data for accuracy and forward such applications to Purchaser for payment. Information shall be submitted with payment request and work progress forms.

- B. Applications for payments are to cover 90% of the value of labor performed and material installed and delivered during the preceding month or materials delivered to Contractor's storage facility.
- C. Balance (retention) shall be paid by Purchaser upon final acceptance of entire work by Consultant and Purchaser and after performance guarantees have been satisfactorily demonstrated. See Section 017000.

1.22 PAYMENT WITHHELD

- A. Purchaser and/or Consultant may withhold approval of payment on any Contractor request to such extent as may be necessary to protect Purchaser from loss on account of:
 - 1. Believed negligence on part of Contractor to execute the work properly or fail to perform any provision of Contract. Purchaser, after 15 days' written notice to Contractor, may without prejudice to any other remedy he may have, make good such deficiencies, and may deduct its cost from the overall Contract sum.
 - 2. Claims filed or reasonable evidence indicating probable filing of claims by other Contractors or Subcontractors.
 - 3. Failure of Contractor to make proper payments to its material suppliers or Subcontractors for material and labor.
 - 4. A reasonable doubt that required work can be completed by Contractor for balance then unpaid or in Contract time frame.
 - 5. Contractor's damage to building or another Contractor.
- B. When the above grounds are removed, payment shall be made in full, less retention.

1.23 LIENS AND AFFIDAVITS

- A. Neither final payment nor any part of billing retention shall become due until Contractor shall deliver to Purchaser a complete release of all liens arising out of this Contract or receipts marked paid in full in lieu thereof. In addition, Contractor shall furnish an affidavit to Purchaser that, so far as he has knowledge or information, releases, or receipts include all labor and materials for which a lien could be filed. If any lien remains unsatisfied after all payments are made by Purchaser, Contractor shall refund to Purchaser all monies the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fees.

1.24 CLAIMS FOR EXTRA COST

- A. Contractor claims for extra cost due to additions or changes to required work shall be submitted to Consultant in writing within a reasonable time after such additions or changes identified or are requested and in any event before proceeding with required work. No such claim shall be valid unless so made. Maximum charge for additions/changes to work shall be Contractor cost +10% for overhead and profit. Contractor's cost shall be verifiable from actual supplier invoices, purchase orders, time tickets, etc.

1.25 DELAYS AND EXTENSION OF TIME

- A. If Contractor progress is delayed due to acts of Purchaser or Consultant, acts of other Contractors, fire, floods, strikes or other casualties beyond the control or without fault or negligence of Contractor, time for completion of the work shall be extended for a period determined by Consultant to be equivalent to time of such delay. Contractor must notify Consultant, in writing, of such delay within 48 hours after delay commences, or no extension of time will be granted. Extension of time without written request within said period on one or more occasions shall not be deemed a waiver of provisions of this article.

1.26 PERMITS

- A. Contractor shall obtain and pay for or cause its Subcontractor to obtain and pay for all permits required to complete required work. In addition, Contractor shall arrange, schedule, and pay for or cause its Subcontractors to arrange, schedule and pay for all required final inspections by state, local or independent certified inspecting authorities necessary for issuance of all required Purchaser utilization permits in regard to completed work.

PART 2 - SPECIAL CONDITIONS

2.1 PROGRESS OF WORK

- A. Upon award, verbally or in writing, Contractor shall reconfirm in writing, starting and completion schedule including equipment delivery dates based upon the information submitted on its quotation form, Section 003100.
- B. Contractor shall submit in writing monthly reports with payment request, including current equipment delivery dates and anticipated completion dates for individual units and groups of units.

END OF SECTION

SECTION 010100

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SECTION 010100 –
SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Modernization of one (1) elevator, including new hydraulic pumping units, operational controls, door equipment, and signal fixtures.
- B. Provide all labor, engineering, tools, transportation, services, supervision, materials, and equipment necessary for and incidental to satisfactory completion of required work as indicated in Contract Documents.
- C. Provide all required staging, hoisting and movement of new equipment, reused equipment, or removal of existing equipment.
- D. Applicable conditions of Purchaser's General, Special, and Supplemental Conditions.
- E. Prime contracts are defined below and each is recognized to be a major part of required work to be performed concurrently in close coordination with work of other Contractors.
 - 1. This Contract: Elevator Modernization. Include associated work specified in Section 019000.
- F. Scope of Contract includes, but is not limited to, the following:
 - 1. Coordination, scheduling, and management of work of component suppliers and subcontractors.
 - 2. Furnish and install equipment as specified, utilizing existing and/or modified hoistways and machine rooms.
 - 3. Specific item of required work which cannot be determined to be included in another contract is thereby determined to be included in prime contract.

1.2 PRIME CONTRACTOR'S DUTIES

- A. Prime Contractor's duties include the following:
 - 1. Provide and pay for labor, materials and equipment, tools, construction equipment and machinery, and other facilities and services necessary for proper execution and completion of required work.
 - 2. Pay for legally required sales, consumer, and state remodel taxes.
 - 3. Secure and pay for required permits, fees, and licenses necessary for proper execution and completion of required work, as applicable at time of quotation due date.
 - 4. Give required notices.
 - 5. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities applicable to performance of required work.
 - 6. Promptly submit written notice to Consultant of observed variance of Contract Documents from legal requirements.
 - 7. Enforce strict discipline and good order among employees. Do not employ persons unskilled in assigned task.

1.3 WORK SEQUENCE

- A. Construct work in stages. Description and proposed sequence dates are as listed on Quotation Form Section 003100.

1.4 WORKING HOURS

- A. Unless otherwise stated below or elsewhere in the Contract Documents, Contractor shall have access to the building for work activities during the following regular building operating hours:
 - 1. 7:00 am – 5:00 pm Monday through Friday
- B. Contractor shall perform all work that has the potential to result in any of the following conditions outside of regular building operating hours at no additional cost to the Purchaser:
 - 1. More than one elevator out of service in a group of elevators (not including a second car out of service for more than sixty minutes for regular preventive maintenance during non-peak traffic periods).
 - 2. Interruptions or changes in normal group automatic operation.
 - 3. Activation of Firefighter's Emergency Operation Phase I.
 - 4. Activation of Standby Power Operation.
 - 5. Transport of large equipment through public or tenant spaces.

1.5 CONTRACTOR USE OF PREMISES

- A. Confine operations at site to areas permitted by law, ordinances, permits, Contract Documents, and Purchaser's specific instructions.
- B. Do not unreasonably encumber site with materials or equipment. Staging area will be located as directed by Purchaser.
- C. Do not load structure with weight that will endanger structure. Coordinate with Purchaser.
- D. Assume full responsibility for protection and safekeeping of tools and products stored on or off premises.
- E. Move stored products which interfere with operations of building or the operations of other trades.
- F. Obtain and pay for use of additional storage or work areas needed for operations.

1.6 CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION

- A. This project is a major elevator modernization in an existing building which is open for public business and will continue to operate throughout all phases of required work. It is essential that Contractor give special attention and priority to all matters concerning project safety, protection from dust and loose materials, reduction of noise level, protection from water and air infiltration into building, and maintenance of neat, sightly conditions in and around work areas inside and outside of building. Packaging, scrap materials, and demolition debris shall be promptly removed from building and site on a daily basis.
- B. Unless otherwise stated in the Contract Documents, Contractor shall allow only one elevator to be out of service in each elevator group at any time during regular building operating hours.
- C. At all times Contractor shall provide clearly visible warning and directions signs, full height barricades with locking doors, temporary lighting, overhead protection, and hazard-free walking surfaces throughout public area. At all times give special attention to building entrances, exits, and proper safe exiting through work areas as required by law.
 - 1. Barricade design must be approved by client prior to start of modernization work.
 - 2. Standard folding maintenance barricades are not acceptable.

- D. Contractor shall consult Purchaser and other Contractors to establish and maintain safe temporary routes, including, but not limited to proper barricades, walking surfaces, lighting, fire protection, exiting, warning, and directional signs, and general protection of persons from all hazards in accordance with OSHA Standards due wholly or partially to its operations.

END OF SECTION

SECTION 01030

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SECTION 01030

ALTERNATES

PART 1 GENERAL

1.01 SCOPE

- A. Provide material and labor required for complete execution of accepted alternates. Comply with all provisions of the Contract Documents.
- B. Alternates:
 - 1. Replace Hydraulic Cylinder and Associated Components
 - a. New Hydraulic Jack Assembly:
 - 1) Cylinder: Seamless steel pipe. Design head to receive unit-type packing and provide means to collect oil at cylinder head and return automatically to oil reservoir. Provide secondary containment/cylinder protection. Provide cylinder stabilizer bracketing between guide rails as required.
 - 2) Plunger: Single stage. Polished seamless steel tubing or pipe. If plunger length exceeds 24 feet, provide two or more sections not exceeding 16 feet in length, or coordinate installation of longer unit at the jobsite. Join sections by internal threaded couplings. Multiple section jack units shall be factory polished while assembled and marked for proper future reassembly. Isolate plunger from car frame.
 - b. New Jack Support and Fluid Shut-Off Valves: Provide steel pit channels to support jack assembly and transmit loads to building structure. Provide intermediate stabilizers as required. Provide manual on/off valves in oil line adjacent to pump unit and in pit adjacent to jack unit.
 - c. New Buffers: Spring type with blocking and support channels.
 - d. New Piping and Oil: Provide piping, connections and oil for the system. Buried piping shall be secondarily contained with watertight Schedule 40 PVC sleeves between elevator machine room and pit. A minimum of two (2) sound isolation couplings shall be provided between the pump unit and oil line and the oil line and jack unit. Provide isolated pipe stands or hangers as required.

END OF SECTION

SECTION 010400

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SECTION 010400
PROJECT PROCEDURES

PART 1 - GENERAL

1.1 APPLICABLE CODES

- A. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following Codes, laws, and/or Authorities, including revisions and changes in effect including those referenced in Section 142500.

1.2 STAGING AREA

- A. An equipment staging area will be available for use by Contractor. Contractor shall restrict usage to area designated and shall notify Purchaser/Property Management prior to storing of any large equipment which will impose heavy concentrated loading on floor area. Do not store such equipment until approval is received.

1.3 WORK PHASE

- A. See Section 003100, Quotation Form.

1.4 OCCUPANCY AND WORK BY OTHERS

- A. Contractor expressly affirms Purchaser's rights to let other contracts and employ other Contractors in connection with required work. Contractor will afford other Contractors and their workmen reasonable opportunity for introduction and storage of materials and equipment, for execution of their work, and will properly connect and coordinate its work with theirs. Contractor will also incorporate comparable provisions in all its subcontracts.
- B. Contractor declares that other Contractors employed by Purchaser on basis of separate contracts may proceed at such times as necessary to install items of work required by Purchaser.
- C. Contractor declares that it will cooperate with other Contractors employed by Purchaser and, in addition to other coordination and expediting efforts, will coordinate their work by written notices regarding necessity of such work to be done on or before certain dates.
- D. Contractor declares that it is responsible for review, stamped, and signed approval of all shop drawings for required work.
- E. Contractor hereby declares that content of foregoing paragraphs and influence they may have on project:
 - 1. Shall not cause a change in stipulated Contract Sum
 - 2. Shall not cause a change in Construction Time Schedule

END OF SECTION

SECTION 013000

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SECTION 013000 –
SUBMITTALS

PART 1 - GENERAL

1.1 ACTION SUBMITTALS

- A. Within thirty calendar days after award of contract and before beginning equipment fabrication submit field verified existing installation information for review.
1. Car and counterweight information:
 - a. Existing Total Car Weight:
 - 1) Documented on crosshead data tag, all cars.
 - 2) Field Verified: weigh single cars and one car per group of each identical duty type.
 - b. Field verified counterweight total weight: Weigh or balance verify at vertical center of hoistway, single cars and one car per group of each identical duty type.
 2. Power Confirmation Information: Field verified existing conditions at each elevator main disconnect:
 - a. Actual maximum available voltage and current.
 - b. Verify true earth ground value.
- B. Within sixty calendar days after award of contract and before beginning equipment fabrication submit planned modernization design information, shop drawings, and required material samples for review. Allow thirty days for response to initial submittal.
1. Indicate equipment lists, reactions, and design information on layouts, including:
 - a. Car:
 - 1) Total car weight to be included on new crosshead data tag.
 - 2) Written confirmation that designed modernization total combined weight of car and rated load:
 - a) Is or is not more than 5% less or more than that of the original installation.
 - 3) Verify buffer capacity via data tags or known manufacturing data.
 - b. Power Confirmation Information: Design for existing conditions.
 - 1) Motor horsepower and code letter designation.
 - 2) Motor drive starting current, full load running current, and demand factor.
 - 3) Engineered power consumption based on 90 starts per hour full load.
 - 4) Written confirmation that existing electrical provisions are adequate for post modernization installation equipment requirements.
 - c. Written confirmation that total planned modernization reactions on building structure do not exceed originally designed reactions by more than 5% post modernization weights of:
 - 1) Total car weight.
 - 2) Travelling cables.
 - 3) Car Capacity.
 - d. Product Data, Including:
 - 1) Capacities, sizes, performances, operation, control, signal systems operations, safety features, finishes, and similar information.
 - 2) Product data for car enclosures and hoistway entrances.
 - 3) Product data for signal fixtures, lights, graphics, tactile marking plates, and details of mounting.
 - 4) Two-way conversation devices.
 - 5) Post-modernization machine room heat emissions in BTU.
 2. Shop Drawings:
 - a. Fully Dimensioned Fixture Drawings:
 - 1) Car operating panels.
 - 2) Car floor indicators.

- 3) Hall stations.
- 4) Destination/landing input stations.
- 5) Position indicators.
- 6) Hall lanterns.
- 7) Access key switch.
- 8) Remote panels.

C. Samples for Verification:

1. For exposed car, hoistway door and frame, and signal equipment finishes.
2. Samples of Sheet Materials: 3" (75 mm) square.
3. Running Trim Members: 4" (100 mm) lengths.
4. Include full component samples, if requested:
 - a. Signal fixtures.
 - b. Lighting.
 - c. Graphics.
 - d. Braille plates.

D. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract.

1. Include any unique or product specific procedures or methods required to inspect or test the equipment.
2. Identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.

E. Submittal review shall not be construed as an indication that submittal is correct or suitable or that the work represented by submittal complies with the Contract Documents. Compliance with Contract Documents, Code requirements, dimensions, fit, and interface with other work is Contractor's responsibility.

F. Acknowledge and/or respond to review comments within fourteen calendar days of return.

1. Promptly incorporate required changes due to inaccurate data or incomplete definition so that delivery and installation schedules are not affected.
2. Identify and cloud drawing revisions including Contractor elective revisions on each re-submittal.

G. Contractor's revision response time is not justification for equipment delivery or installation delay.

1.2 FINAL CONTRACT DOCUMENTS

A. See Section 017000, Project Closeout.

END OF SECTION

SECTION 016000

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SECTION 016000 –
MATERIAL AND HANDLING

PART 1 - GENERAL

1.1 SITE CONDITION INSPECTION

- A. Prior to beginning installation of equipment, examine hoistway and machine room areas. Verify no irregularities exist which affect execution of work specified.
- B. Do not proceed with installation until work in place conforms to project requirements.

1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. General:
 - 1. The protection of all equipment and exposed finishes shall be the responsibility of the Contractor during delivery, handling, and installation until completion of project.
 - 2. The Elevator Contractor shall replace damaged materials with new at no additional cost for material and labor to Purchaser.
- B. Delivery and Storage:
 - 1. Manufacturers' original packing must adequately protect materials during delivery.
 - 2. Deliver materials to the site ready for use in the accepted manufacturer's original and unopened containers and packaging, bearing labels as to type of material, brand name, and manufacturer's name. Delivered materials shall be identical to accepted samples.
 - 3. Store materials in original protective packaging under cover in a dry and clean location off the ground. Remove delivered materials that are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials.
 - 4. It is the responsibility of the Contractor to properly store and protect all materials in space provided or designated by the Purchaser against damage, stains, scratches, corrosion, weather, construction debris, and environmental conditions.

1.3 INSTALLATION REQUIREMENTS

- A. Install all equipment in accordance with Manufacturer's instructions, referenced codes, specifications, and approved submittals.
- B. Install machine room equipment with clearances in accordance with referenced codes and specification.
- C. Install all equipment so it may be easily removed for maintenance and repair.
- D. Install all equipment for ease of maintenance.
- E. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
- F. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel:
 - 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
 - 2. Machine room equipment.
 - 3. Pit equipment.
 - 4. Neatly touch up damaged factory-painted surfaces with original paint color.
 - 5. Protect machine-finish surfaces against corrosion.

1.4 MANUFACTURER'S NAMEPLATES

- A. Manufacturer's name plates and other identifying markings shall not be affixed on surfaces exposed to public view. This requirement does not apply to Underwriter's Laboratories and code required labels.
- B. Each major component of mechanical and electrical equipment shall have identification plate with the Manufacturer's name, address, model number rating, and any other information required by governing codes.

1.5 COLORS OF FACTORY-FINISHED EQUIPMENT

- A. All colors will be selected from the Manufacturer's standard range unless custom colors are specified herein.
- B. Submit samples of all standard colors available and/or specified custom colors for review and approval. See Section 013000, Submittals.
- C. Submit samples of all specified architectural metals specified for review and approval. See Section 013000, Submittals.

1.6 MATERIALS AND FINISHES

- A. Steel:
 - 1. Sheet Steel (Furniture Steel for Exposed Work): Stretcher-leveled, cold-rolled, commercial quality carbon steel, complying with ASTM A366, matte finish.
 - 2. Sheet Steel (for Unexposed Work): Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A568/A568M-03.
 - 3. Structural Steel Shapes and Plates: ASTM A36.
- B. Stainless Steel: Type 302 or 304 complying with ASTM A240, with standard tempers and hardness required for fabrication, strength, and durability. Apply mechanical finish on fabricated work in the locations shown or specified, Federal Standard and NAAMM nomenclature, with texture and reflectivity required to match Architect's sample. Protect with adhesive paper covering.
 - 1. No. 4 Satin: Directional polish finish. Graining directions as shown or, if not shown, in vertical.
 - 2. No. 8 Mirror: Reflective polish finish with no visible graining.
 - 3. Textured: 2WL or 5WL as manufactured by Rigidized Metals or Windsor pattern 5-SM as manufactured by Rimex Metals or approved equal with .050 inches mean pattern depth with bright directional polish (satin finish).
 - 4. Burnished: Non-directional, random abrasion pattern.
- C. Bronze: Stretcher-leveled, re-squared sheets composed of 60% copper and 40% zinc similar to Muntz Metal, Alloy Group 2, with standard temper and hardness required for fabrication, strength, and durability. Clean and treat bronze surfaces before mechanical finish. After completion of the final mechanical finish on the fabricated work, use a chemical cleaner to produce finish, Federal Standard, and NAAMM nomenclature, matching Architect's sample:
 - 1. No. 4 Satin: Directional polish finish, fine-satin, clear-coated with clear-organic coating recommended by Fabricator. Provide graining direction as shown or, if not shown, in vertical dimension.
 - 2. No. 8 Mirror: Reflective polish finish with no visible graining, bright-polished, clear-coated finish with clear-organic lacquer coating recommended by Fabricator.
 - 3. Acid-Etched Pattern: Provide a No. 8 mirror reflective-polished background with selectively acid-etched, matte-textured, custom pattern as shown. Acid selection and dilution, if required, as

recommended by Fabricator. After final finishing, coat bronze with clear-organic lacquer coating recommended by Fabricator.

- D. Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
- E. Plastic Laminate: ASTM E84 Class A and NEMA LD3.1, Fire-Rated Grade (GP-50), Type 7, 0.050" ±.005" thick, color and texture as follows:
 - 1. Exposed Surfaces: Color and texture selected by Architect.
 - 2. Concealed Surfaces: Contractor's standard color and finish.
- F. Fire-Retardant Treated Particle Board Panels: Minimum 3/4" thick backup for natural finished wood and plastic laminate veneered panels, edged and faced as shown, provided with suitable anti-warp backing; meet ASTM E84 Class "I" rating with a flame-spread rating of 25 or less, registered with Local Authorities for elevator finish materials.
- G. Natural Finish Wood Veneer: Standard thickness, 1/40" thoroughly dried conforming to ASME/HPMA HP-1983, Premium Grade. Place veneer, tapeless spliced with grain running in direction shown, belt and polish sanded, book-matched. Species and finish designated and approved by Architect.
- H. Paint: Clean exposed metal parts and assemblies of oil, grease, scale, and other foreign matter and factory paint one shop coat of standard rust-resistant primer. After erection, provide one finish coat of industrial enamel paint. Galvanized metal need not be painted.
- I. Prime Finish: Clean all metal surfaces receiving a baked enamel paint finish of oil, grease, and scale. Apply one coat of rust-resistant primer followed by a filler coat over uneven surfaces. Sand smooth and apply final coat of primer.
- J. Baked Enamel Finish: Prime finish per above. Unless specified "prime finish" only, apply and bake three additional coats of enamel in the selected solid color.
- K. Entrance Field Paint: Clean all surfaces to remove dirt and grease. Sand and finish surfaces as necessary to remove pits and scratches and prepare surface for painting. Apply filler to ensure smooth surface; sand and apply one coat of electrostatic enamel in the selected solid color.
- L. Refinishing of natural metals: Remove existing protective finish. Buff as necessary to remove scratches. Regrain or finish as specified and protect as indicated for particular metal type.
- M. Entrance Support Equipment within Hoistway: Include strut angles, headers, sill support angles, fascia, hanger covers, etc. Clean, remove, and check for corrosive activity. Replace components which exhibit severe deterioration. Tighten all fastenings. Repaint exposed surfaces.
- N. Glass: Laminated safety glass, minimum 9/16" thick, conforming to ANSI Z97.1 and CPSC 16 CFR Part 1201.

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SECTION 017000 –
FINAL CONTRACT COMPLIANCE REVIEW

PART 1 - GENERAL

1.1 FINAL CLEANING

- A. See Section 008000, Supplemental Conditions, for contractual requirements governing site cleaning. As a minimum:
 - 1. Elevator hoistways and all equipment therein shall be cleaned and left free of rust, filings, welding slag, rubbish, loose plaster, mortar drippings, extraneous construction materials, dirt, and dust, including walls, building beams, sill ledges, and hoistway divider beams.
 - 2. Care shall be to not to mark, soil, or otherwise deface existing or new surfaces. Clean and restore such surfaces to their original condition.
 - 3. Clean down surfaces and areas which require final painting and finishing work. Cleaning includes removal of rubbish, broom cleaning of floors, removal of any loose plaster or mortar, dust, and other extraneous materials from finish surfaces, and surfaces which will remain visible after the work is complete.

1.2 CONSULTANT'S FINAL OBSERVATION AND REVIEW REQUIREMENTS

- A. Review procedure shall apply for individual elevators, portions of groups of elevators, and completed groups of elevators accepted on an interim basis, or elevators and groups of elevators completed, accepted, and placed in operation.
- B. Contractor shall perform review and evaluation of all aspects of its work prior to requesting Consultant's final review. Work shall be considered ready for Consultant's final contract compliance review when all Contractor's tests are complete, all deficiencies noted by the AHJ have been rectified, and all elements of work or a designated portion thereof are in place and elevator or group of elevators are deemed ready for service as intended.
- C. Contractor shall perform review and evaluation of all aspects of its work prior to requesting consultant's review.
- D. Furnish labor, materials, and equipment necessary for Consultant's review. Notify Consultant five working days in advance when ready for final review of elevator or group of elevators.
- E. Consultant's written list of observed deficiencies of materials, equipment, and operating systems will be submitted to Contractor for corrective action. Consultant's review shall include as a minimum:
 - 1. Workmanship and equipment compliance with Contract Documents.
 - 2. Contract speed, capacity, floor-to-floor times, and door performance compliance with Contract Documents.
 - 3. Performance of following is satisfactory:
 - a. Starting, accelerating, running.
 - b. Decelerating, stopping accuracy.
 - c. Door operation and closing force.
 - d. Equipment noise levels.
 - e. Signal fixture utility.
 - f. Overall ride quality.
 - g. Performance of door control devices.
 - h. Operations of emergency two-way communication device.
 - i. Operations of firefighters' service.
 - j. Operations of special security features and floor lock-off provisions.

4. Test Results:
 - a. In all test conditions, obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Purchaser and Consultant. Tests will be conducted under both no load and full load condition.
- F. Performance Guarantee: Should Consultant's review identify defects, poor workmanship, variance, or noncompliance with requirements of specified codes and/or ordinances, or variance or noncompliance with the requirements of Contract Documents, Contractor shall complete corrective work in an expedient manner to satisfaction of Purchaser and Consultant at no cost as follows:
 1. Replace equipment which does not meet code or Contract Document requirements.
 2. Perform work and furnish labor, materials, and equipment necessary to meet specified operation and performance.
 3. Perform retesting required by governing code authority, Purchaser, and Consultant.
- G. A follow-up final contract compliance review shall be performed by Consultant after notification by Contractor that all deficiencies have been corrected. Provide Consultant with copies of the initial deficiency report marked to indicate items which Contractor considers complete.

1.3 MANUFACTURER'S WARRANTY

- A. Manufacturer agrees to repair, restore, or replace elevator equipment that fails due to defective materials or poor workmanship within specified warranty period.
- B. Warranty Period: twelve (12) months from date of Substantial Completion:
- C. The Elevator Contractor guarantees that the materials and workmanship of the apparatus installed by them and any subcontractor, under this contract, is first class in every respect and that they will make good on any defects not due to ordinary wear and tear or improper use, which may develop within one year from the date of final acceptance of all equipment.
- D. Manufacturer's warranty to repair or replace defective products or their components in the event of defects within a specified period.
- E. Neither the final payment nor any provisions of the contract documents relieve the Elevator Contractor of any obligation provided by law. They shall remedy any defects and pay all expenses for any damage to other work.
- F. The warranty as outlined above, for all devices, starts from the date of final acceptance of each device, by the Consultant and the Owner, of all work specified and intended under these contract documents.

1.4 PURCHASER'S INFORMATION

- A. Provide electronic copies (flash drive or Consultant-approved equivalent) of written information necessary for proper maintenance and adjustment of equipment within 30 days following final acceptance. Final retention will be withheld until data is received by Purchaser and reviewed by Consultant. Include the following as minimums:
 1. Straight-line wiring diagrams of "as-installed" elevator circuits with index of location and function of components. Provide one set reproducible master. Mount one set wiring diagrams on panels, racked, or similarly protected, in elevator machine room. Provide remaining set rolled and in a protective drawing tube. Maintain all drawing sets with addition of all subsequent changes. These diagrams are Purchaser's property.
 2. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product-specific procedures or methods required to

- inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
3. Lubrication instructions, including recommended grade of lubricants.
 4. Parts catalogs for all replaceable parts, including ordering forms and instructions.
 5. Instructions explaining all operating features, including all apparatus in the car and lobby control panels.
 6. Maintenance Control Program documentation for all equipment.
- B. Provide Purchaser with the following:
1. Any interface cards required for equipment maintenance, code mandated testing, and troubleshooting.
 2. Four sets of keys for all switches and control features properly tagged and marked.
 3. Diagnostic equipment complete with access codes, adjusters' manuals, and set-up manuals for adjustment, diagnosis, and troubleshooting of elevator system, and performance of routine safety tests.
- C. Acceptance of such records by Purchaser/Consultant shall not be a waiver of any Contractor deviation from Contract Documents or shop drawings or in any way relieve Contractor from his responsibility to perform work in accordance with Contract Documents.

END OF SECTION

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SECTION 018000
MAINTENANCE

PART 1 - GENERAL

1.1 INTERIM MAINTENANCE

- A. Furnish preventive maintenance service on elevators described herein for a period from mobilization, verbal or written, until each unit is removed from building service for modernization. In addition, furnish interim preventive maintenance on completed units until the modernization of each group of elevators is complete and one-year warranty maintenance, defined in Item 1.02 below, is commenced. Cost of interim maintenance shall not be included as part of modernization quotation. Indicate costs on a per-unit basis for interim maintenance as requested on quotation form, Section 003100. Costs for interim maintenance shall be paid by Purchaser separately and monthly based upon the number of units in service. Perform interim maintenance based upon terms and conditions of Owner's existing maintenance agreement.
- B. Use competent personnel, acceptable to Purchaser, employed and supervised by the Contractor.

1.2 WARRANTY MAINTENANCE

- A. Provide preventive maintenance and 24-hour emergency callback service for one year commencing on date of final acceptance of all modernized elevators by Purchaser. Warranty maintenance should expire for concurrently for all elevators. Systematically examine, adjust, clean, and lubricate all equipment. Repair or replace defective parts using parts produced by the Contractor of installed equipment. Maintain elevator machine room, hoistway, and pit in clean condition.
- B. Use competent personnel, acceptable to the Purchaser, supervised and employed by Contractor.
- C. The warranty maintenance period specified in Item 1.02, A. above shall be extended one (1) month for each three (3) month period in which equipment related failures average more than .25 per unit per month.
- D. Purchaser retains the option to delete cost of warranty maintenance from modernization equipment contract and remit twelve (12) equal installments directly to Contractor during period in which maintenance is being performed.
- E. Warranty maintenance to be performed per the terms of Owner's existing maintenance agreement.

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SECTION 019000 –
RELATED WORK

PART 1 - GENERAL

1.1 RELATED WORK BY ELEVATOR CONTRACTOR

- A. Architectural and Structural, Hoistway and Hallway:
 - 1. Wall blockouts and fire rated closure for control and signal fixture boxes which penetrate walls.
 - 2. Cutting and patching walls and floors as required.
 - 3. Protect open hoistways and entrances during construction per OSHA Regulations.
 - 4. Protect car enclosure, hoistway entrance assemblies, and special metal finishes from damage.
 - 5. Glass enclosed hoistways. Confirm Laminated glass to meet the requirements of ANSI Z97.1. Interior ledges created by glass mullions not to exceed 4".
 - 6. Remove existing finished cab flooring. Install new flooring. Coordinate weight of flooring and sill height with elevator contractor.

- B. Architectural and Structural, Machine Room:
 - 1. Self-closing and locking rated access door. Include Signage: "ELEVATOR MACHINE ROOM" and "AUTHORIZED PERSONNEL ONLY."
 - 2. Class "ABC" fire extinguisher in each elevator machine room.
 - 3. Remove combustible material from machine room as required.
 - 4. Removed abandoned piping and wiring, and non-elevator related components from machine room as required.

- C. Plumbing and Fire Protection:
 - 1. Pit Sump or Drain: Indirect waste drain or sump with flush grate and pump. Sump pump/drain capacity minimum 3,000 gallons per hour per elevator.

- D. Mechanical:
 - 1. Machine Room or Control Space: Ventilation and heating. Maintain temperature range of 55°-90° F. Maintain maximum 80% relative humidity, non-condensing.

- E. Electrical Service, Conductors, and Devices:
 - 1. Machine Room or Control Space Lighting: Guarded LED fixtures to provide minimum 19 footcandles average illumination. Provide toggle switch adjacent to strike side of machine room door. Occupancy sensor is not allowed.
 - 2. Pit Lighting: Guarded LED fixtures to provide minimum 10 footcandles average illumination.
 - 3. GFCI convenience outlets in pit.
 - 4. Non-GFCI convenience outlet in pit for sump pump.
 - 5. GFCI convenience outlets in machine room or control space.
 - 6. GFCI convenience outlets in machine space.
 - 7. Heavy-duty three-phase mainline copper power feeder to terminals of each elevator controller in the machine room with protected lockable "open" disconnecting means.
 - 8. Single-phase copper power feeder to each elevator with individual protected lockable "open" disconnecting means located in machine room for utilization equipment:
 - a. Car lighting and blower.
 - b. Pit sump pump.
 - c. Elevator intercom amplifier in the elevator machine room.
 - 9. Emergency telephone line to each individual elevator control panel in elevator machine room.
 - 10. Automatic Fire Recall System:

- a. Fire alarm initiating devices in each elevator lobby, for each group of elevators or single elevator.
 - b. Fire alarm initiating devices in each elevator machine room.
 - c. Fire alarm initiating devices at top of hoistway if sprinklered.
 - d. Three Relay Activation Modules for each group of elevators or single elevator. Locate modules within three feet of controller designated by the Elevator Contractor to minimize un-supervised wiring. Program Modules as follows:
 - 1) PRIMARY: Activate when any hallway device, except primary floor, activates.
 - 2) ALTERNATE: Activate when hallway device at primary floor activates.
 - 3) FIRE HAT: Activate when machine room device activates.
 - e. Device in machine room and at top of hoistway (if provided) to provide signal for general alarm.
 - f. Provide technician from fire alarm contractor for pre-test of system during normal working hours.
 - g. Provide technician from fire alarm contractor for acceptance test of system with AHJ during normal or overtime working hours.
 - h. Remove fire alarm devices from pit where not required.
 - i. Remove fire alarm devices from hoistway overhead where not required.
11. Temporary power and illumination to install, test, and adjust elevator equipment.
 12. Firefighters' announcement speaker in car with connection to individual elevator control panels in elevator machine room.
 13. Means to automatically disconnect power to affected elevator drive unit and controller prior to activation of machine room fire sprinkler system and/or hoistway fire sprinkler system. Provide heat detectors, shunt trip breaker and all necessary equipment.
 14. When sprinklers are provided in the hoistway all electrical equipment, located less than 4'-0" above the pit floor shall be identified for use in wet locations. Exception: Seismic protection devices.
 15. Power for Mechanical Equipment: Provide power for HVAC and/or ventilation equipment where applicable.
 16. Remove abandoned electrical equipment from machine room and hoistway as required.
 17. Review power confirmation data, provided by the Elevator Contractor, on behalf of the Owner. Verify electrical supply to the controllers meets the stated requirements. Where applicable, review standby power generator capability to meet stated requirements and absorb regenerated power.
- F. Standby Power Provision:
1. Standby power of normal voltage characteristics via normal electrical feeders to run one elevator at a time in each elevator group and/or single elevator unit at full-rated car speed and capacity.
 2. Conductors from auxiliary form "C" dry contacts, located in the standby power transfer switch to a designated elevator control panel in each elevator group and/or single elevator unit to indicate utility or standby power active.
 3. Conductors from auxiliary form "C" dry contacts, located in the standby power transfer switch to a designated elevator control panel in each elevator group and/or single elevator unit. Provide a time delay of 30 - 45 seconds for pre-transfer signal in either direction.
 4. Standby single-phase power to group controller, and each elevator controller for car lighting, exhaust blower, and emergency signaling device.
 5. Standby power to machine room ventilation or air conditioning.
 6. Standby power to emergency communications device.
- G. Elevator Contractor Related Work
1. Pit access stationary ladder for each elevator. Retractable ladder if provided shall include an electrical contact conforming to ASME A17.1, Rule 2.2.2.4.2.7.

END OF SECTION

SECTION 14250

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SECTION 14250

HYDRAULIC ELEVATOR MODERNIZATION

PART 1 GENERAL

1.01 WORK INCLUDED

- A. One (1) hydraulic passenger elevator as follows:
 - 1. Car 2
- B. All engineering, equipment, labor, and permits required to satisfactorily complete elevator modernization required by Contract Documents.
- C. Applicable conditions of General, Special, and Supplemental Conditions, Division 1, and all sections listed in Contract Documents "Table of Contents."
- D. Preventive maintenance as described in Section 01800.
- E. Cartage and Hoisting: All required staging, hoisting and movement to, on, and from the site including new equipment, reused equipment, or dismantling and removal of existing equipment.
- F. Unless specifically identified as "Reuse," "Retain," or "Refurbish," provide new equipment.
- G. Hoistway, pit, and machine room barricades as required.

1.02 RELATED WORK PROVIDED UNDER OTHER SECTIONS

- A. See Section 01900, Related Work Provided Under Other Sections.

1.03 DEFINITIONS

- A. Terms used are defined in the latest edition of the Safety Code for Elevators and Escalators, ASME A17.1.
- B. Reference to a device or a part of the equipment applies to the number of devices or parts required to complete the installation.
- C. Provisions of this specification are applicable to all elevators unless identified otherwise.

1.04 QUALITY ASSURANCE

- A. Qualified Contractors: Alternate Contractors must receive approval of Architect, Purchaser, and/or Consultant at least 14 days prior to bid date. Approved Contractors: Alternate Contractors must receive approval of Purchaser and/or Consultant at least 14 calendar days prior to bid date.
 - 1. Hydraulic Elevator: CEMCOLift Elevator Systems, KONE, Minnesota Elevator Inc., Otis, Schindler, TK Elevator.
 - 2. Car Enclosure: Eklund's Inc., Gunderlin, Ltd., Hauenstein & Burmeister, KONE, Otis, Schindler, TK Elevator, Tyler.
 - 3. Hoistway Entrance: Hauenstein & Burmeister, KONE, Otis, Schindler, TK Elevator, Tyler.

- B. Compliance with Regulatory Agencies: See Section 01040, Project Procedures.
- C. Warranty:
 - 1. Material and workmanship of installation shall comply in every respect with Contract Documents. Correct defective material or workmanship which develops within one (1) year from date of final acceptance of all work to satisfaction of Architect, Purchaser and Consultant at no additional cost, unless due to ordinary wear and tear, or improper use or care by Purchaser. Perform maintenance in accordance with terms and conditions indicated in the Preventive Maintenance Agreement.
 - 2. Defective is defined to include, but not be limited to: operation or control system failures, car performance below required minimum, excessive wear, unusual deterioration, or aging of materials or finishes, unsafe conditions, the need for excessive maintenance, abnormal noise, or vibration, and similar unsatisfactory conditions.
 - 3. Retained Equipment: All retained components, parts, and materials shall be cleaned, checked, modified, repaired or replaced, so each component and its parts are in like new operating condition. Retained equipment must be compatible for integration with new systems. All retained equipment shall be covered under the warranty provisions, of Article 1.04, D., 1. & 2. above. No prorations of equipment or parts shall be allowed on preventive maintenance contract, between the Contractor and Purchaser.
 - 4. Make modifications, requirements, adjustments, and improvements to meet performance requirements of Sections 01700 and 14250.

1.05 DOCUMENT AND SITE VERIFICATION

In order to discover and resolve conflicts or lack of definition which might create problems, Contractor must review Contract Documents and site conditions for compatibility with its product prior to submittal of quotation. Review existing structural, electrical provisions, and mechanical provisions for compatibility with Contractor's products. Purchaser will not pay for change to structural, mechanical, electrical, or other systems required to accommodate Contractor's equipment.

1.06 SUBMITTALS

- A. See Section 01300, Submittals, and Section 01700, Final Contract Compliance Review, Article 1.03.

1.07 PERMIT, TEST AND INSPECTION

- A. Obtain and pay for permit, license, and inspection fee necessary to complete installation.
- B. Perform test required by governing authority in accordance with procedure described in ASME A17.2 Guide for Inspection of Elevators, Escalators, and Moving Walks in the presence of Authorized Representative.
- C. Supply personnel and equipment for test and final review by Consultant, as required in Section 01700.

1.08 MAINTENANCE

- A. Interim: See Section 01800, Maintenance, Article 1.01, A.
- B. Warranty Maintenance: See Section 01800, Maintenance, Article 1.02, A.

PART 2 PRODUCTS

2.01 SUMMARY

- A. One (1) Passenger Elevator
- B. Unless specifically identified as “retain existing,” provide new equipment.

| ALTERATION SUMMARY | | |
|---------------------------------------|-------------------------------------------|------------------------------------------------------|
| CAR 1 | EXISTING INSTALLATION | MODERNIZED INSTALLATION |
| Capacity: | 4,000 lbs. | Retain Existing Capacity |
| Class of Loading: | Class A | Retain Existing Class of Loading |
| Contract Speed: | 175 fpm | Retain Existing Contract Speed |
| Machine Type: | Hydraulic Pump | New Hydraulic Pump |
| Machine Location: | | No Change |
| Operation Control: | Two-button Selective collective automatic | New Two-button Selective collective automatic |
| Floors Served: | Front: 1*- 5 Rear: N/A | Retain Existing Floors Served |
| Total Entrances: | 5 front; 0 rear | Retain Existing Total Entrances |
| Entrance Type: | Single-speed, center-opening | Retain Existing Entrance Type |
| Entrance Size: | 42" wide x 84" high Field Verify | Retain Existing Entrance Size |
| Minimum Clear to Underside of Canopy: | Field Verify | Retain Existing Minimum Clear to Underside of Canopy |

2.02 MATERIALS

- A. See Section 01600, Materials.

2.03 CAR PERFORMANCE

- A. Car Speed: ± 10% of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone: ±1/4" under any loading condition.
- D. Door Opening Time: Seconds from start of opening to fully open:
 - 1. 2.1 seconds.
- E. Door Closing Time: Seconds from start of closing to fully closed:
 - 1. 2.4 seconds.

- F. Car Floor-to-Floor Performance Time: Seconds from start of doors closing until doors are 3/4 open (1/2 open for side opening doors) and car level and stopped at next successive floor under any loading condition or travel direction (12' typical floor height):
 - 1. 12.0 seconds.
- G. Pressure: Fluid system components shall be designed and factory tested for 500 p.s.i. Maximum operating pressure shall be 400 p.s.i.
- H. Noise and Vibration Control
 - 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 60 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed. Limit noise level in the machine room relating to elevator equipment and its operation to no more than 80 dBA. All dBA readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.
 - 2. Vibration Control: All elevator equipment provided under this contract, including power unit, controller, oil supply lines, and their support shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of objectionable noise and vibrations being transmitted to occupied areas of the building.

2.04 OPERATION

- A. Selective Collective Microprocessor-Based:
 - 1. Operate car without attendant from pushbuttons in car and located at each floor. When car is available, automatically start car and dispatch it to floor corresponding to registered car or hall call. Once car starts, respond to registered calls in direction of travel and in the order the floors are reached.
 - 2. Do not reverse car direction until all car calls have been answered, or until all hall calls ahead of car and corresponding to the direction of car travel have been answered.
 - 3. Slow car and stop automatically at floors corresponding to registered calls, in the order in which they are approached in either direction of travel. As slowdown is initiated for a hall call, automatically cancel hall call. Cancel car calls in the same manner. Hold car at arrival floor an adjustable time interval to allow passenger transfer.
 - 4. Answer calls corresponding to direction in which car is traveling unless call in the opposite direction is highest (or lowest) call registered.
 - 5. Illuminate appropriate pushbutton to indicate call registration. Extinguish light when call is answered.
- B. Other Items:
 - 1. Low Oil Control: In the event oil level is insufficient for travel to the top floor, provide controls to return elevator to the main level and park until oil is added.
 - 2. Independent Service: Provide controls for operation of each car from its pushbuttons only. Close doors by constant pressure on desired destination floor button or door close button. Open doors automatically upon arrival at selected floor.
- C. Firefighters' Service: Provide equipment and operation in accordance with code requirements.
- D. Automatic Car Stopping Zone: Stop car within 1/4" above or below the landing sill. Maintain stopping zone regardless of load in car, direction of travel, distance between landings.

- E. New - Remote Monitoring and Diagnostics: Equip the controller with standard ports, interface boards, and drivers to accept maintenance, data logging, fault finding diagnostic, and monitoring computers, keyboards, modems, and programming tools. The system shall be capable of driving remote color LED monitor that continually scan and display the status of each car and call. Provide output only. Do not provide EMS.
- F. New - Motion Control: AC type with unit valve suitable for operation specified and capable of providing smooth, comfortable car acceleration and retardation. Limit the difference in car speed between full load and no load to not more than $\pm 10\%$ of the contract speed in either direction of travel.
- G. New - Door Operation: Automatically open doors when car arrives at main floor. At expiration of normal dwell time, close doors. Reopen doors when car is designated for loading.
- H. New - Standby Lighting and Alarm: Car mounted battery unit with solid-state charger to operate alarm bell and car emergency lighting. Battery to be rechargeable with minimum 5-year life expectancy. Include required transformer. Provide constant pressure test button in service compartment of car operating panel. Provide lighting integral with portion of normal car lighting system.
- I. Standby Power Operation: Upon loss of normal power, adequate standby power will be supplied via building electrical feeders to simultaneously start and run one car in each group and single cars at contract car speed and capacity.
 - 1. Automatically return one car at a time in each group and single cars nonstop to designated floor, open doors for approximately 3.0 seconds, close doors, and park car. During return operation, car and hall call pushbuttons shall be rendered inoperative. As each car parks, system shall immediately select the next car until all cars in a group have returned to the designated floor. If a car fails to start or return within 30 seconds, system shall automatically select the next car in the group to automatically return.
 - 2. When all cars in a group have returned to the designated floor, one car in each group shall be designated for automatic operation. When a service demand exists for 30 seconds and designated car fails to start, next available car in the group shall be automatically selected for operation.
 - 3. Provide "EMERGENCY POWER" jewel in hall station at the designated landing.
 - 4. Successive Starting: When normal power is restored or there has been a power interruption, individual cars in each bank shall restart at five second intervals.
- J. Security System: Provide means to limit access as follows:
 - 1. Individual floor lockout means in main car operating panel to prevent registration of car calls to any selected secure floor, as is existing.
 - 2. Arrange system so that independent service overrides security system.
 - 3. Arrange system so that firefighters' service overrides security system.

2.05 MACHINE ROOM EQUIPMENT

- A. Arrange equipment in existing machine room spaces.
- B. New - Pump Units: Assembled unit consisting of positive displacement pump, induction motor, master-type control valves combining safety features, holding, direction, bypass, stopping, manual lowering functions, shut off valve, oil reservoir with protected vent opening, oil level gauge, outlet strainer, drip pan, muffler, all mounted on isolating pads. Provide oil cooling unit and oil

temperature thermostat to maintain oil at operating temperature. Enclose entire unit with removable sheet steel panels lined with sound-absorbing material. Design unit for 80 upstarts/hour.

- C. New - Landing Systems: Solid-state, magnetic, or optical type.
- D. New - Controller: UL/CSA labeled.
 - 1. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclose equipment with covers. Provide means to prevent overheating.
 - 2. Relay Design: Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear. Provide wiping action and means to prevent sticking due to fusion. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.
 - 3. Microprocessor-Related Hardware
 - a. Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
 - b. Provide power supplies with noise suppression devices.
 - c. Isolate inputs from external devices, such as pushbuttons, with opto-isolation modules.
 - d. Design control circuits with one leg of power supply grounded.
 - e. Safety circuits shall not be affected by accidental grounding of any part of the system.
 - f. System shall automatically restart when power is restored.
 - g. System memory shall be retained in the event of power failure or disturbance.
 - h. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.
 - 4. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
 - 5. Permanently mark components, relays, fuses, PC boards, etc., with symbols shown on wiring diagrams.
 - 6. Provide controller or pump unit mounted auxiliary lockable "open," disconnect if mainline disconnect is not in sight of controller and/or pump unit.
- E. New - Muffler: Provide in discharge oil line near pump unit. Design shall dampen and absorb pulsation and noise in the flow of hydraulic fluid.
- F. Piping and Oil: Retain existing piping and provide new oil for the system.
- G. New - Shutoff Valve: Manual valve in line adjacent to pump unit. Provide second valve in pit adjacent to jack unit.

2.06 HOISTWAY EQUIPMENT

- A. Guide Rails: Retain main guide rails in place.
 - 1. Clean rails and brackets. Remove rust.
 - 2. Check all rail and bracket fastenings and tighten.
 - 3. Realign rails as required to provide smooth car ride.
 - 4. Provide supplemental rail brackets and/or backing as required by code or to enhance car ride quality.
- B. Buffers: Retain existing.

1. Clean and paint.
- C. Hydraulic Jack Assembly: Retain existing.
 1. Cylinder: Retain existing. Provide means to collect oil at cylinder head and return automatically to oil reservoir. Provide cylinder stabilizer bracketing between guide rails as required.
 2. Plunger: Retain existing. Isolate plunger from car frame.
- D. Jack Support and Fluid Shut-Off Valve: Retain existing steel pit channels to support jack assembly and transmit loads to building structure. Provide manual on/off valves in oil line adjacent to pump unit and in pit adjacent to jack unit.
- E. New - Terminal Stopping: Provide normal and final devices.
- F. New - Electrical Wiring and Wiring Connections:
 1. Conductors and Connections: Copper throughout with individual wires coded and connections on identified studs or terminal blocks. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes. Provide 10% spare conductors throughout. Run spare wires from car connection points to individual elevator controllers in the machine room. Provide four (4) pair of spare shielded communication wires in addition to those required to connect specified items. Tag spares in machine room.
 2. Conduit: Painted or galvanized steel conduit, EMT, or duct. Conduit size, 1/2". Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices.
 3. Traveling Cables: Flame and moisture-resistant outer cover. Prevent traveling cable from rubbing or chafing against hoistway or equipment within hoistway.
 4. Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, and firefighters' phone in car controller in machine room.
- G. New - Entrance Equipment:
 1. Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
 2. Door Interlocks: Operable without retiring cam. Paint interlock box flat black.
 3. Door Closers: Spring, spirator, or jamb/strut mounted counterweight type. Design and adjust to insure smooth, quiet mechanical close of doors.
- H. New - Hoistway Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface where not existing.
- I. New - Hoistway Access Switches: Mount in wall or entrance frame side jamb at top and bottom floors. Provide switch with faceplate.
- J. Floor Numbers: Stencil paint 4" high floor designations in contrasting color on inside face of hoistway doors or hoistway fascia in location visible from within car.
- K. New - Pit Stop Switch – Provide new elevator stop switch inside the elevator pit entrance area, mounted in safe and convenient location.

2.07 HOISTWAY ENTRANCES

- A. Frames: Retain existing.
- B. Door Panels: Retain existing. Provide new door gibs with fire tabs at all floors. Minimum two gibs per panel, one at leading edge, and one at trailing edge of each panel
- C. Sight Guards: Retain existing. Replace damaged sight guards.
- D. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- E. Sill Supports: Retain existing. Check and tighten all fastenings.
- F. Fascia, Toe Guards, and Hanger Covers: Retain existing. Provide as required where damaged or missing. Check and tighten all fastenings.
- G. Struts and Headers: Retain existing. Check and tighten all fastenings.
- H. Finish of Frames and Doors: Retain existing.

2.08 CAR EQUIPMENT

- A. Frame: Retain Existing. Check and tighten all fastenings.
- B. Platform: Retain existing. Reinforce if required. Check and tighten all fastenings.
- C. New - Platform Apron: Provide new extended platform apron per code. Minimum 14 gauge steel, reinforced and braced to car platform with Contractor's standard finish.
- D. Guide Shoes: Retain existing. Check and tighten all fastenings. Replace rollers.
- E. New - Finish Floor Covering:
 - 1. As selected by Owner.
- F. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- G. Doors: Retain existing.
- H. New - Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
- I. Door Track: Retain existing. Clean and sand for smooth, quiet operation. Check and tighten all fastenings.
- J. New - Door Header: As required by new operator. Construct of minimum 12 gauge steel, shape to provide stiffening flanges.
- K. New - Door Electrical Contact: Prohibit car operation unless car door is closed.

- L. New - Door Clutch: Heavy-duty clutch, linkage arms, drive blocks and pickup rollers or cams to provide positive, smooth, quiet door operation. Design clutch so car doors can be closed, while hoistway doors remain open.
- M. New - Restricted Opening Device: Provide car-door interlock per code to prevent opening of car door outside unlocking zone. Plunger type restrictors not acceptable.
- N. New - Door Operator: Linear, High speed, heavy-duty door operator capable of opening doors at no less than 2-1/2 f.p.s. Accomplish reversal in no more than 2-1/2" of door movement. Provide solid-state door control with closed loop circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current. . Provide a minimum of four (4) controller-activated motion profiles, per floor, per door, to maintain consistent, smooth, and quiet door operation at all floors, regardless of door weight or varying air pressure.
- O. New - Door Control Device:
 - 1. Infrared Reopening Device: Black, fully enclosed device with full screen infrared matrix or multiple beams extending vertically along leading edge of each door panel to minimum height of 7'-0" above finished floor. Device shall prevent doors from closing and reverse doors at normal opening speed if beams are obstructed while doors are closing, except during nudging operation. In event of device failure, provide for automatic shutdown of car at floor level with doors open.
 - 2. Nudging Operation: After beams of door control device are obstructed for a predetermined time interval (minimum 20.0 - 25.0 seconds), warning signal shall sound and doors shall attempt to close with a maximum of 2.5 foot pounds kinetic energy. Activation of the door open button shall override nudging operation and reopen doors.
 - 3. Interrupted Beam Time: When beams are interrupted during initial door opening, hold door open a minimum of 3.0 seconds. When beams are interrupted after the initial 3.0 second hold open time, reduce time doors remain open to an adjustable time of approximately 1.0 - 1.5 seconds after beams are reestablished.
 - 4. Differential Door Time: Provide separately adjustable timers to vary time that doors remain open after stopping in response to calls.
 - a. Car Call: Hold open time adjustable between 3.0 and 5.0 seconds.
 - b. Hall Call: Hold open time adjustable between 5.0 and 8.0 seconds. Use hall call time when car responds to coincidental calls.
- P. New - Car Operating Panel:
 - 1. One (1) car operating panel with faceplate, consisting of a metal box containing vandal resistant operating fixtures, mounted behind the car stationary front return panel. Faceplate shall be hinged and constructed of stainless steel, satin finish.
 - 2. Suitably identify floor buttons, alarm button, door open button, door close button, and emergency push-to-call button with SCS Elevator Products, Inc. Visionmark cast tactile symbols recessed flush mounted. Configure plates per local building code accessibility standards including Braille. Locate operating controls no higher than 48" above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
 - 3. Provide minimum 3/4" diameter raised or flush floor pushbuttons which illuminate to indicate call registration.
 - 4. Provide alarm button to ring bell located on car. Illuminate button when actuated.
 - 5. Provide keyed stop switch at bottom of car operating panel in locked car service compartment. Mark device to indicate "run" and "stop" positions.
 - 6. Provide "door open" button to stop and reopen doors or hold doors in open position.

7. Provide "door close" button to activate door close cycle. Cycle shall not begin until normal door dwell time for a car or hall call has expired, except firefighters' operation.
 8. Provide firefighters' locked box as required by code.
 - a. Provide firefighters' Phase II key switch with engraved instructions filled red. Include light jewel, audible signal, and call cancel button.
 9. Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate. Inside surface of door shall contain an integral flush window for displaying the elevator operating permit.
 10. Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:
 - a. Inspection switch.
 - b. Light switch.
 - c. Three-position exhaust blower switch.
 - d. Independent service switch.
 - e. Constant pressure test button for battery pack emergency lighting.
 - f. 120-volt, AC, GFCI protected electrical convenience outlet.
 - g. Stop switch.
 11. Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:
 - a. Phase II firefighters' operating instructions on main operating panel above corresponding keyswitch filled red.
 - b. Car number on main car operating panel.
 - c. "No Smoking" on main car operating panel.
 - d. Car capacity in pounds on main car operating panel.
- Q. New - Car Top Control Station: Mount to provide safe access and utilization while standing in an upright position on car top.
- R. New - Work Light and Duplex Plug Receptacle: GFCI protected outlet at top and bottom of car. Include on/off switch and lamp guard.
- S. New - Communication System:
1. "Push to Call," two-way communication instrument in car with automatic dialing, tracking, and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with minimum two numbers.
 - a. "Push to Call" button or adjacent light jewel shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "PUSH TO CALL," "HELP ON THE WAY" engraved signage adjacent to button.
 - b. Provide "Push to Call" button tactile symbol, engraved signage, and Braille adjacent to button mounted integral with car front return panel.
 2. Provide two-way communication between car and machine room.

2.09 CAR ENCLOSURE

- A. Car Enclosure Passenger Elevator: Provide complete as specified herein. Provide the following features.
1. Shell: Retain Existing.
 2. Canopy: Retain Existing.
 3. Front Return Panels: Reinforced 14 gauge stainless steel satin finish with cutouts for car operating panel and other equipment.

4. Entrance Columns: Reinforced 14 gauge stainless steel satin finish.
5. Transom: Reinforced 14 gauge stainless steel satin finish full width of enclosure.
6. Car Door Panels: Reinforced minimum 16 gauge stainless steel satin finish. Same construction as hoistway door panels.
7. Base: Stainless steel with concealed ventilation cutouts.
8. Interior Wall Finish: Removable panels, faced and edged, with stainless steel satin finish. Include allowance of \$30,000 for interior car finishes. Labor to be included in the base bid.
9. Ventilation: Morrison Products, Inc. two-speed, SOE No. 06-01055, mounted to car canopy on isolated rubber grommets. Exhaust blower shall meet requirements of Item 2.03, I. Ventilation shall shut off after adjustable period (60 – 180 seconds) of no elevator demand.
10. Lighting: Provide LED fixtures with wiring and hookup. Coordinate with emergency lighting requirements. Lighting shall shut off after adjustable period (60 – 180 seconds) of no elevator demand. Provide emergency lighting integral with portion of normal car lighting system. Include required transformer. Provide temporary lighting as required.
11. Suspended Ceiling: Special design included in allowance in Item 8 above.
12. Handrails: Minimum 1-1/4" diameter stainless steel tubular grab bar across rear and side walls.
13. Elevator contractor to confirm glass panels are code compliant. Replace as required.

2.10 HALL CONTROL STATIONS

- A. Pushbuttons: Provide one (1) riser with flush mounted faceplates. Include pushbuttons for each direction of travel which illuminate to indicate call registration. Pushbutton design shall match car operating panel pushbuttons. Provide vandal resistant pushbutton and light assemblies. Provide enlarged faceplate to cover existing wall blackout and facilitate handicapped access requirements. Include approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency situation as part of faceplate. Provide any cutting and patching required.

2.11 SIGNALS

- A. New Hall Lanterns: Provide at each entrance to indicate travel direction of arriving car. Illuminate up or down LED lights and sound tone once for up and twice for down direction prior to car arrival at floor. Sound level shall be adjustable from 20 - 80 dBA measured at 5'-0" in front of hall control station and 3'-0" off floor. Illuminate light until the car doors start to close. Provide advanced hall lantern notification to comply with ADA hall call notification time. Car direction lenses shall be arrow shaped with faceplates. Lenses shall be minimum 2-1/2" in their smallest dimension. Provide vandal resistant lantern and light assemblies consisting of series of dots or lines for maximum visibility.
- B. New - Car Position Indicator: Alpha-numeric digital indicator containing floor designations and direction arrows a minimum of 1/2" high to indicate floor served and direction of car travel. Locate fixture in car operating panel. When a car leaves or passes a floor, illuminate indication representing position of car in hoistway. Illuminate proper direction arrow to indicate direction of travel. Provide multi-numeral vandal resistant indicator and light assemblies.
- C. New - Hall Position Indicator: Alpha-numeric digital indicator containing floor designations and direction arrows a minimum of 1/2" high to indicate floor served and direction of car travel. Mount integral with hall lanterns at all floors. Provide vandal resistant indicator and light assemblies.
- D. Faceplate Material and Finish: Stainless steel Satin finish all fixtures.

- E. Floor Passing Tone: Provide an audible tone of no less than 20 decibels and frequency of no higher than 1500 Hz, to sound as the car passes or stops at a floor served.

PART 3 EXECUTION

3.01 SITE CONDITION INSPECTION

- A. Prior to beginning installation of equipment, examine hoistway and machine room areas. Verify no irregularities exist which affect execution of work specified.
- B. Do not proceed with installation until work in place conforms to project requirements.

3.02 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver material in Contractor's original, unopened protective packaging.
- B. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
- C. Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.

3.03 INSTALLATION

- A. Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
- B. Install machine room equipment with clearances in accordance with referenced codes and specification.
- C. Install all equipment so it may be easily removed for maintenance and repair.
- D. Install all equipment for ease of maintenance.
- E. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
- F. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
 - 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
 - 2. Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.

3.04 FIELD QUALITY CONTROL

- A. Work at jobsite will be checked during course of installation. Full cooperation with reviewing personnel is mandatory. Accomplish corrective work required prior to performing further installation.
- B. Have Code Authority acceptance inspection performed and complete corrective work.

3.05 ADJUSTMENTS

- A. Install hydraulic jack assembly and guide rails plumb and align vertically with tolerance of 1/16" in 100'-0". Secure guide rail joints without gaps and file any irregularities to a smooth surface.
- B. Static balance car to equalize pressure of guide shoes on guide rails.
- C. Lubricate all equipment in accordance with Contractor's instructions.
- D. Adjust motors, valves, controllers, leveling switches, limit switches, stopping switches, door operators, interlocks, and safety devices to achieve required performance levels.

3.06 CLEANUP

- A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
- B. Remove all loose materials and filings resulting from work.
- C. Clean machine room equipment and floor.
- D. Clean hoistways, car, car enclosure, entrances, operating and signal fixtures.

3.07 ACCEPTANCE REVIEW AND TESTS

- A. See Section 01700, Article 1.02, Consultant's Final Observation and Review Requirements.

3.08 PURCHASER'S INFORMATION

- A. See Section 01700, Article 1.03, Final Contract Compliance Review.

END OF SECTION

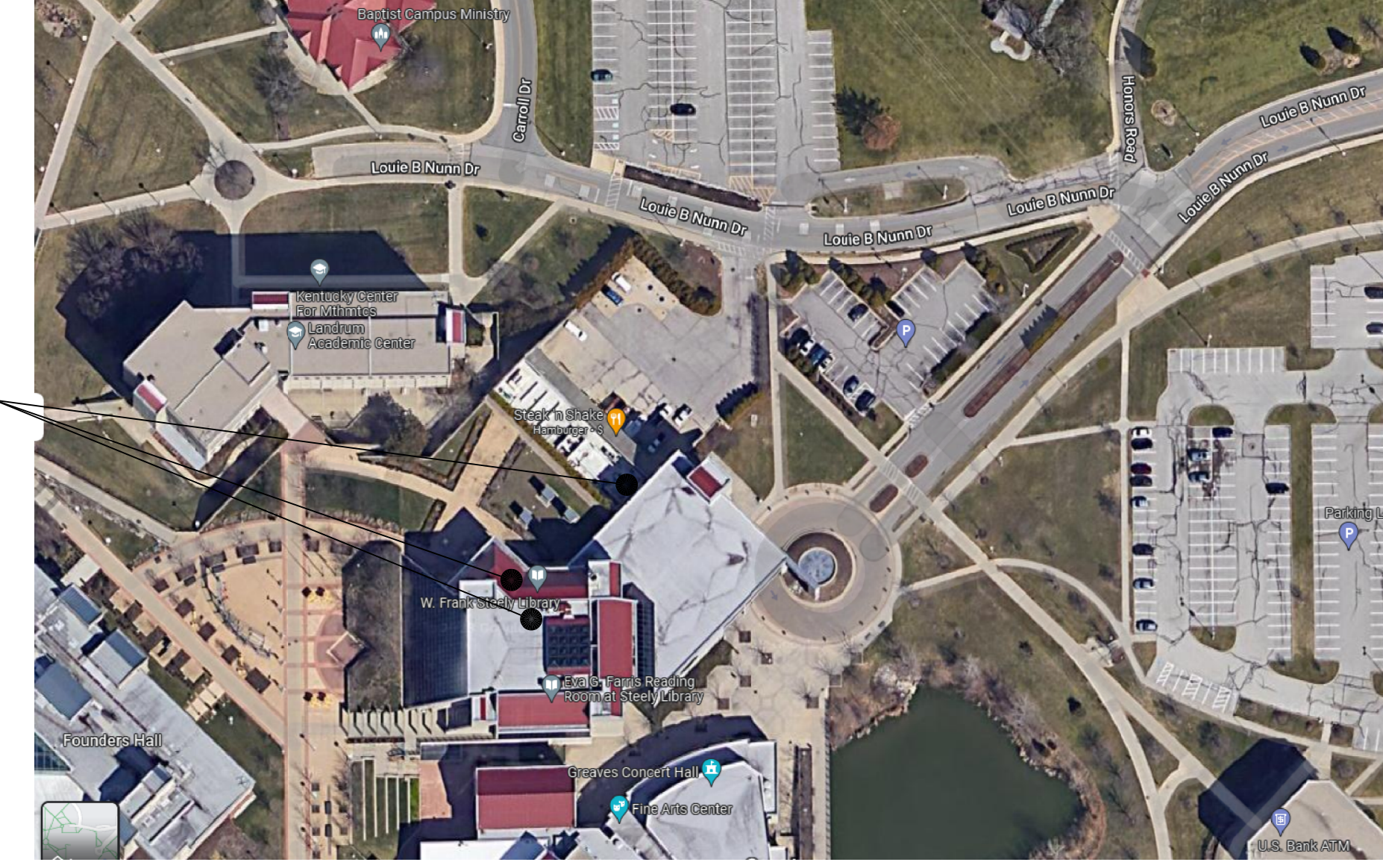
ELEVATOR REPLACEMENT UPGRADES FOR NORTHERN KENTUCKY UNIVERSITY

1 LOUIE B NUNN DR, HIGHLAND HEIGHTS, KY 41099

PEDCO | now IMEG

ENGINEERS

PROJECT LOCATIONS




SITE PLAN
NORTHERN KENTUCKY UNIVERSITY
NOT TO SCALE

SHEET INDEX

| SHT # | DISCIPLINE | SHEET NAME | ISSUE DATE | REV # | REV DATE |
|-------|------------|-----------------------------------------------|------------|-------|----------|
| T001 | ALL TRADES | TITLE SHEET | 02-13-23 | 0 | 02-13-23 |
| E100 | ELECTRICAL | NOTES, LEGENDS, SCHEDULE, SINGLE LINE DIAGRAM | 02-13-23 | 0 | 02-13-23 |
| E200 | ELECTRICAL | NEW WORK POWER PLANS | 02-13-23 | 0 | 02-13-23 |
| M001 | MECHANICAL | GENERAL NOTES AND LEGEND | 02-13-23 | 0 | 02-13-23 |
| M101 | MECHANICAL | DEMOLITION AND NEW WORK PLANS | 02-13-23 | 0 | 02-13-23 |

| NO. | REVISIONS | DATE | APPROVED |
|-----|-------------------------|----------|----------|
| 0 | ISSUED FOR CONSTRUCTION | 02/13/23 | MCR |

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ELEVATOR REPLACEMENT UPGRADES


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TITLE SHEET

DRAWN
A. JACOBS

CHECKED
S. JONES

PROJECT NO.
RENKU-00005

ISSUE DATE
02/13/23



SHEET NO.
T001

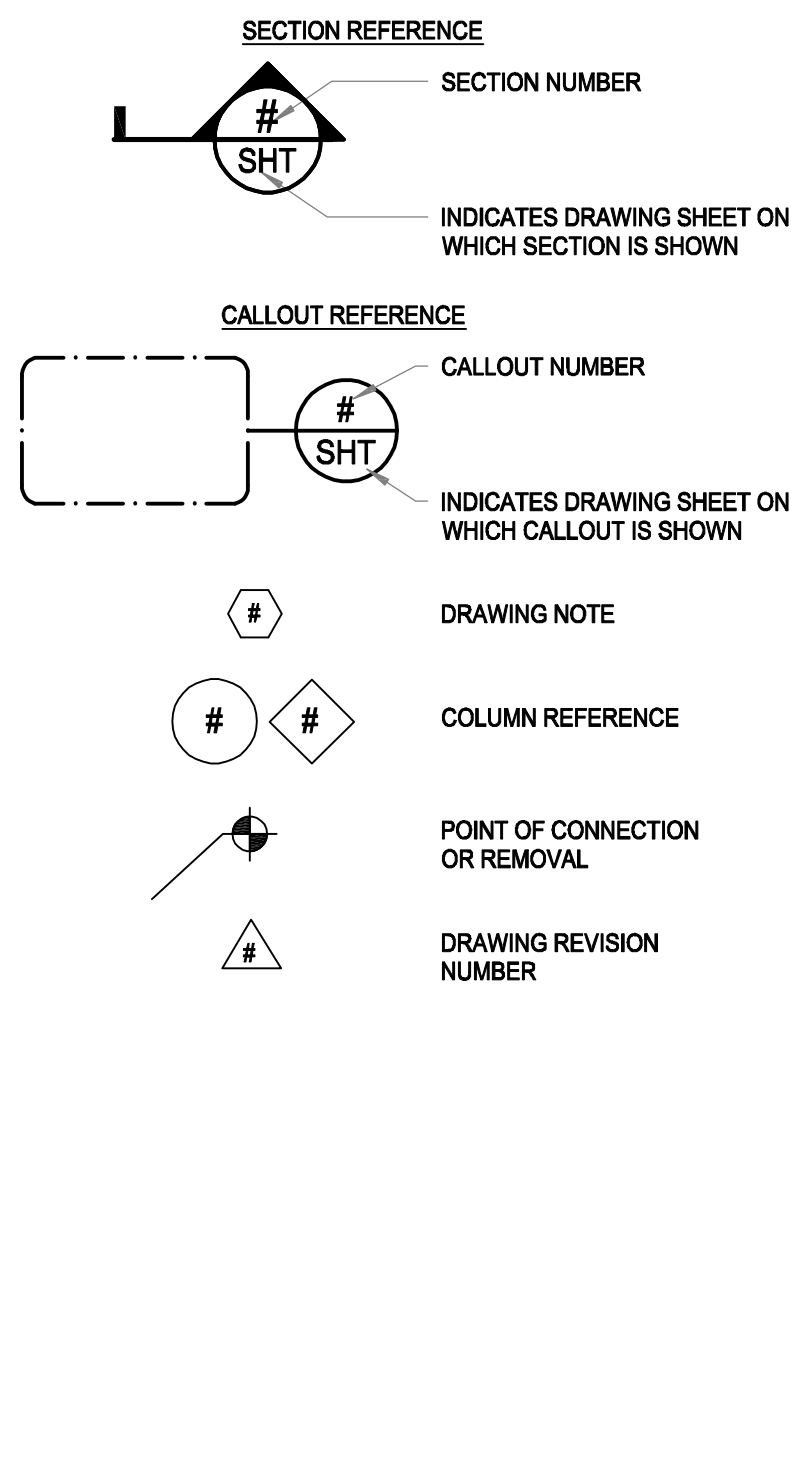
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MECHANICAL ABBREVIATIONS

| | | | | | |
|--------|----------------------------|-------|-----------------------------|---------|-------------------------------------|
| AVV | AUTOMATIC AIR VENTILATOR | °F | DEGREE FAHRENHEIT | PI | PRESSURE INDICATOR |
| AC | ADMITTANCE VALVE | F&T | FLOAT & THERMOSTATIC (TRAP) | PRV | PRESSURE REDUCING VALVE |
| ACC | ALTERNATING CURRENT | FDD | FIRE DAMPER | PLBG | PLUMBING |
| ACCD | ACCESS DOOR | PH | FIRE HYDRANT, FUME HOOD | PPM | PARTS PER MILLION |
| AD | AREA DRAIN | FHC | FIRE HOSE CABINET | PRESS | PRESSURE |
| AF | ABOVE FINISHED FLOOR | FHR | FIRE HOSE RACK | PSF | POUNDS PER SQUARE FOOT |
| AMP | AMPERE | FLR | FLOOR | PSIA | POUNDS PER SQUARE INCH ABSOLUTE |
| AP | ACCESS PANEL | FLG | FLANGE | PSI | POUNDS PER SQUARE INCH (TYP. GAUGE) |
| APPROX | APPROXIMATE | FFM | FEET PER MINUTE | PVC | POLYVINYL CHLORIDE |
| ARCH | ARCHITECTURAL | FFS | FEET PER SECOND | PSF | POUNDS PER SQUARE FOOT |
| AUTO | AUTOMATIC | FSD | SMOKE/FIRE DAMPER | Q | VOLUME FLOW RATE |
| AVG | AVERAGE | FSP | IRE STANDPIPE | QTY | QUANTITY |
| AWG | AMERICAN WIRE GAUGE | FT | FOOT | RTN | RETURN |
| BA | BALANCE | GA | GAUGE (MATERIAL THICKNESS) | RCP | REINFORCED CONCRETE PIPE |
| BD | BALANCING DAMPER | GAL | GALLON | REQ | REQUIRED |
| BDD | BACKDRAFT DAMPER | GALV | GALVANIZED | REV | REVOLUTION |
| BFV | BUTTERFLY VALVE | GPH | GALLONS PER HOUR | RH | RELATIVE HUMIDITY |
| BHP | BRAKE HORSEPOWER | GPM | GALLONS PER MINUTE | RPM | REVOLUTIONS PER MINUTE |
| BLDG | BUILDING | H2O | WATER | SAT | SUPPLY AIR TEMPERATURE |
| BOD | BOTTOM OF DUCT | HD | HUB OUTLET | SD | SMOKE DAMPER |
| BOP | BOTTOM OF PIPE | HP | HORSEPOWER | SEC | SECOND |
| BSMT | BASEMENT | HSTAT | HUMIDISTAT | SEW | SEWER |
| BTU | BRITISH THERMAL UNIT | HTG | HEATING | SEW | SPECIFIC GRAVITY |
| BTU/H | BTU PER HOUR | HW | HOT WATER | SHA | SHOCK ABSORBER |
| BWV | BACKWATER VALVE | IB | INVERTED BUCKET (TRAP) | SP HT | SPECIFIC HEAT |
| C | DEGREE CENTIGRADE | ID | INSIDE DIAMETER | SPEC | SPECIFICATION |
| C/C | CENTER TO CENTER | IN | INVERT ELEVATION | SQ FT | SQUARE FOOT |
| COW | COUNTERCLOCKWISE | IN WC | INCHES OF WATER COLUMN | SQ IN | SQUARE INCH |
| CPM | CUBIC FEET PER MINUTE | IN WG | INCHES OF WATER GAUGE | ST | STAINLESS STEEL |
| CHV | CHECK VALVE | IN | INCHES | STD | STANDARD |
| CI | CAST IRON | INS | INSULATION | TEMP, T | TEMPERATURE |
| CL | CEILING | IPS | IRON PIPE SIZE | TO | TRANSFER GRILLE |
| CO2 | CARBON DIOXIDE | KW | KILOWATT | TI | TEMPERATURE INDICATOR |
| COL | COLLUM | KWH | KILOWATT HOUR | TR | TON(S) OF REFRIGERATION |
| COP | COPPER | LAT | LEAVING AIR TEMPERATURE | TSP | TOTAL STATIC PRESSURE |
| CU FT | CUBIC FEET | LBS | POUND(S) | TSTAT | THERMOSTAT |
| CJ | CUBIC INCH | LD | LINEAR DIFFUSER | TXV | THERMAL EXPANSION VALVE |
| CW | CLOCKWISE/COLD WATER | LF | LINEAR FEET | TYR | TYPICAL |
| CY | CUBIC YARD | LOUV | LOUVER | VB | VACUUM BREAKER |
| D | DAMPER | LPG | LIQUEFIED PETROLEUM GAS | VCP | VITRIFIED CLAY PIPE |
| DB | DECIBEL | LWT | LEAVING WATER TEMPERATURE | VLT | VOLUME DAMPER |
| DC | DRY BULB TEMPERATURE | M | THOUSAND | VEL | VELOCITY |
| DC | DIRECT CURRENT | MA | MIXED AIR | VEL | VERTICAL INTEGRAL FACE BYPASS |
| DEG | DEGREE | MAV | MANUAL AIR VENT | VISC | VISCOSITY |
| DG | DOOR GRILLE | MAX | MAXIMUM | VOL | VOLUME |
| DIA | DIAMETER | MIN | MINIMUM | VTR | VENT THROUGH ROOF |
| DP | DEW POINT TEMPERATURE | MBH | BTU PER HOUR, THOUSANDS | W | WATT |
| DTW | DRAIN TO WASTE | MCF | THOUSAND CUBIC FEET | WB | WET BULB TEMPERATURE |
| DWG | DRAWING | NC | NORMALLY CLOSED | | |
| EA | EXHAUST AIR | NO | NORMALLY OPEN | | |
| EAT | ENTERING AIR TEMPERATURE | NTS | NOT TO SCALE | | |
| EFF | EFFICIENCY | OA | OUTDOOR AIR | | |
| ELEV | ELEVATION | OD | OUTSIDE DIAMETER | | |
| EMD | END OF MAIN DRIP | OS&Y | OUTSIDE SCREW & YOKE | | |
| ESP | EXTERNAL STATIC PRESSURE | OZ | OUNCE | | |
| EW | ENTERING WATER TEMPERATURE | | | | |
| EX | EXISTING, EXHAUST | | | | |

*NOTE: NOT ALL SYMBOLS ARE USED.

GENERAL SYMBOLS



*NOTE: NOT ALL SYMBOLS ARE USED.

GENERAL NOTES:

- ALL NOTES ON THIS PAGE ARE INTENDED TO SUPPLEMENT ANY AND ALL SPECIFICATION SECTIONS ASSOCIATED WITH THIS PROJECT. THESE NOTES DO NOT SUPERCEDE OR TAKE PRECEDENCE OVER FORMAL SPECIFICATION SECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO QUESTION ANY AND ALL SPECIFICATION NOTE CONFLICTS AND DISPARITIES AT BID TIME. IF QUESTIONS ARE NOT RAISED AND CLARIFIED PRIOR TO BID TIME, THE MOST STRINGENT INTERPRETATION OF ANY SPECIFICATION NOTE CONFLICT WILL BE CONSIDERED THE APPLICABLE REQUIREMENT.
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND LAWS.
- OBTAIN ALL PERMITS AND INSPECTIONS AS REQUIRED.
- COORDINATE WORK WITH OTHER TRADES TO MINIMIZE AND RESOLVE POTENTIAL CONFLICTS.
- THE CONTRACTOR SHALL PROVIDE FITTINGS, OFFSETS, ETC. AS NECESSARY TO PROVIDE A COMPLETE MECHANICAL SYSTEM. COMPLETED SYSTEMS SHALL BE TESTED, BALANCED AND GUARANTEED.
- THE DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE THE GENERAL ARRANGEMENT OF THE SYSTEMS AND ARE TO BE FOLLOWED INsofar AS POSSIBLE. IF DEVIATIONS FROM THE LAYOUTS ARE NECESSITATED BY FIELD CONDITIONS, DETAILED LAYOUTS OF THE PROPOSED DEPARTURES SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW BEFORE PROCEEDING WITH THE WORK.
- ALL WORK AND MATERIALS SHALL BE GUARANTEED IN WRITING FOR NOT LESS THAN ONE YEAR FROM PROJECT COMPLETION.
- PROVIDE ALL VALVING FOR THE PROPER SECTIONALIZING AND OPERATION OF PIPING SYSTEMS. PROVIDE ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES.
- IN AREAS WHERE HARD CEILINGS ARE INDICATED, PROVIDE CEILING ACCESS PANELS FOR ALL MECHANICAL EQUIPMENT AND DUCT ACCESSORIES REQUIRING PERIODIC ACCESS. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO MANUAL BALANCING DAMPERS, AUTOMATIC CONTROL DAMPERS, DUCT SENSORS AND VALVES.
- ALL PIPES PASSING THROUGH FINISHED WALLS, PARTITIONS AND FLOORS SHALL BE FITTED WITH ADJUSTABLE ESCUTCHEONS AND APPROPRIATE FIRE STOPPING WHERE REQUIRED. PROVIDE APPROPRIATE FIRE STOPPING MATERIALS WHERE FIRE RATED ASSEMBLIES ARE PENETRATED.
- THE DRAWINGS INDICATE THE APPROXIMATE LOCATION AND ARRANGEMENT OF DUCTWORK, PIPING AND EQUIPMENT. DO NOT SCALE DRAWINGS BUT CHECK MEASUREMENTS AT SITE AND ADJUST THE WORK TO FIT THE ACTUAL CONDITIONS. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO DETECT THE WORK IN SCOPE. THE LOCATION, QUANTITY AND QUALITY OF WORKMANSHIP ARE NOT INTENDED TO SHOW OR DESCRIBE IN MINUTE DETAIL ALL TRADES AND ACCESSORIES NECESSARY FOR THE PROPER AND COMPLETE EXECUTION OF WORK.
- FINAL LOCATION OF ALL CEILING FEATURES SHALL BE LOCATED PER REFLECTED CEILING PLAN.
- MANUFACTURERS: THE DESIGN SHOWN ON THE DRAWING IS BASED UPON PRODUCTS OF THE MANUFACTURER SCHEDULED. ALTERNATE EQUIPMENT MANUFACTURERS WILL BE ACCEPTABLE IF THE EQUIPMENT MEETS THE SCHEDULED PERFORMANCE AND COMPLIES WITH THE SPECIFICATIONS. IF EQUIPMENT MANUFACTURED BY OTHER THAN THE BASIS OF DESIGN IS UTILIZED, THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND ALL AFFECTED SUBCONTRACTORS TO ENSURE PROPER PROVISIONS FOR INSTALLATION OF THE FURNISHED EQUIPMENT. THIS COORDINATION SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:
 - STRUCTURAL SUPPORT FOR EQUIPMENT.
 - PIPING SIZES AND CONNECTION REQUIREMENTS.
 - ELECTRICAL POWER REQUIREMENTS AND WIRE/CONDUIT AND OVERCURRENT PROTECTION SIZES.
 - CONTROL SYSTEM REQUIREMENTS. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY THE GENERAL CONTRACTOR, SUBCONTRACTORS, AND CONSULTANTS TO MODIFY THE BUILDING PROVISIONS TO ACCEPT FURNISHED EQUIPMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FLUE PIPING FOR ANY GAS-BURNING APPLIANCE AND THAT THE COMBUSTION AIR SUPPLY FOR ANY AND ALL FUEL BURNING EQUIPMENT FULLY MEETS ALL CODE REQUIREMENTS, MEETS ALL REQUIREMENTS FOR THE EQUIPMENT IT SERVES, AND THE STRUCTURE IN WHICH IT WILL BE INSTALLED.
- FLASH AND SEAL WEATHER TIGHT ALL ROOF AND SIDEWALL MOUNTED EQUIPMENT SUPPORTS, CURBS, AND PENETRATIONS. COORDINATE ALL EQUIPMENT OPENINGS WITH THE GENERAL CONTRACTOR AND OTHER TRADES.
- PROVIDE SHOP DRAWINGS FOR REVIEW AS DIRECTED BY ENGINEERS AND ARCHITECTS.
- REVIEW OF SHOP DRAWINGS BY THE ENGINEER AND/OR ARCHITECT DOES NOT RELIEVE THE CONTRACTOR FROM 100% COMPLIANCE WITH ALL ASPECTS OF THE CONTRACT DOCUMENTS.
- ALL CONCRETE HOUSEKEEPING PADS AND CURBS TO BE BY MECHANICAL AND ELECTRICAL CONTRACTORS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS.
- ALL FINISHED AND PATCHED SURFACES SHALL BE SMOOTH, CONTINUOUSLY FREE OF IMPERFECTIONS AND IN PROPER CONDITION TO RECEIVE THE SPECIFIED FINISH, PATCHED AREAS SHALL MATCH THE ADJACENT MATERIALS CONSTRUCTIONS AND FINISH.
- EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN, DEMOLISHED MATERIALS SHALL BECOME CONTRACTORS PROPERTY AND SHALL BE IMMEDIATELY REMOVED FROM THE PROJECT SITE AND PROPERLY DISPOSED OF. STORE AND/OR DISPOSE OF MATERIAL AS INSTRUCTED BY THE OWNER'S REPRESENTATIVE.
- PROVIDE TEMPORARY BARRICADES AND OTHER FORMS OF PROTECTION TO PROTECT OWNER'S PERSONNEL AND GENERAL PUBLIC FROM INJURY DUE TO SELECTIVE DEMOLITION WORK.
- CONTRACTORS SHALL NOTE THAT THE OWNER WILL OCCUPY ADJACENT AREAS FOR PERFORMANCE OF NORMAL BUSINESS ACTIVITIES DURING CONSTRUCTION. CONTRACTORS SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ADJACENT SPACES, EQUIPMENT, SERVICES, ETC. FROM DAMAGE DURING THE WORK. COORDINATE DEMOLITION AND CONSTRUCTION WORK TO ALLOW ADJACENT AREAS TO REMAIN OPERATIONAL AND SECURED, MAKE PROVISIONS TO PREVENT MIGRATION OF DEMOLITION AND CONSTRUCTION CONTAMINANTS INTO THE OCCUPIED AREAS. EMERGENCY EXIT PATHS SHALL BE MAINTAINED AT ALL TIMES.
- PENETRATIONS THROUGH STRUCTURAL MEMBERS, ROOF ASSEMBLY AND FLOOR SLABS, NOT INDICATED ON THE DRAWINGS, SHALL REQUIRE APPROVAL BY THE OWNER PRIOR TO PERFORMING THE WORK. SEAL CONDUITS, PIPES, AND SYSTEMS WHICH PENETRATE FIRE-RATED WALLS AND PARTITIONS WITH CLASSIFIED SYSTEMS BY UNDERWRITERS LABORATORIES, INC.
- THE CONTRACTOR SHALL EXAMINE THE SITE AND PORTIONS THEREOF WHICH AFFECT THE WORK AND SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS. NO ADDITIONAL EXPENSE SHALL BE ALLOWED WHICH RESULTS FROM THE FAILURE TO PERFORM THIS EXAMINATION.
- CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING M.E.P. ITEMS AND COORDINATE THE DISCONNECTING, CAPPING, PLUGGING, ETC. WITH BOTH OWNERS REPRESENTATIVE AND M.E.P. CONTRACTORS PRIOR TO STARTING DEMOLITION WORK. MAINTAIN CONTINUITY OF ALL SERVICES, CIRCUITS AND EQUIPMENT NOT SCHEDULED FOR DEMOLITION OR REWORK. MAINTAIN ALL FIRE PROTECTIONS SERVICES DURING SELECTIVE DEMOLITION OPERATIONS. PROVIDE TEMPORARY LIGHTING FIXTURES AS REQUIRED FOR SAFETY, SECURITY AND PERFORMANCE OF WORK BY ALL TRADES.

PLUMBING AND PIPING NOTES:

- FIELD VERIFY ALL SITE LOCATIONS.
- LAY OUT PLUMBING WORK TO AVOID CONFLICTS WITH OTHER BUILDING COMPONENTS.
- INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
- PROVIDE DIELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE CONNECTED.
- MAKE ARRANGEMENTS WITH AND PAY ALL CHARGES REQUIRED BY UTILITY COMPANIES FOR GAS, WATER AND SEWER SERVICES.
- PROVIDE SUPPORT FOR UTILITY METERS IN ACCORDANCE WITH THE REQUIREMENTS OF UTILITY COMPANIES.
- ALL GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL. CONTRACTOR SHALL SUPPLY AND INSTALL ANY AND ALL PRESSURE REGULATORS AND SAFETY VALVES AS REQUIRED BY THE EQUIPMENT MANUFACTURER AND/OR CODE, TO DELIVER GAS TO EACH PIECE OF EQUIPMENT AT THE REQUIRED DELIVERY PRESSURE FOR PROPER OPERATION.
- ENSURE THAT THE GAS PRESSURE BEFORE THE METER, AFTER THE METER, AND TO EACH GAS-BURNING APPLIANCE IS ADEQUATE TO PROVIDE A FULLY FUNCTIONAL SYSTEM.
- PROVIDE A GAS SHUTOFF VALVE, COMPLETE WITH DIRT LEG, AT EACH PIECE OF GAS FIRED EQUIPMENT.
- TEST ALL NEW DOMESTIC HOT AND COLD WATER LINES FOR LEAKS. SANITIZE PER LOCAL WATER DEPARTMENT REQUIREMENTS AND FLUSH SYSTEM. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROPER LEAK-FREE OPERATION OF SYSTEM. SOLDER CANNOT CONTAIN LEAD.
- DOMESTIC HOT AND COLD WATER PIPING SHALL BE PROVIDED WITH ENLARGERS OR REDUCERS AS REQUIRED TO MEET MINIMUM FLOW AND EQUIPMENT CONNECTION SIZE REQUIREMENTS AS SHOWN ON THE PLUMBING FIXTURE CONNECTION SCHEDULE.
- PROVIDE SHUTOFF VALVES ON HOT AND COLD WATER BRANCH PIPING TO FULLY ISOLATE BRANCH LINES. PROVIDE INDOOR SHUTOFF VALVES AT ALL OUTDOOR HOSE BIBBS. PROVIDE HOSE BIBBS WITH LOCKABLE HOUSING IN EACH TOILET ROOM CONTAINING FLOOR DRAINS.
- INSTALL POTABLE WATER PROTECTION DEVICES ON PLUMBING LINES WHERE CONTAMINATION OF DOMESTIC WATER MAY OCCUR. EXAMPLES WOULD BE, BUT ARE NOT LIMITED TO, JANITORS CLOSETS, FIRE SYSTEMS, IRRIGATION SYSTEMS, FLUSH VALVES, INTERIOR AND EXTERIOR HOSE BIBBS.

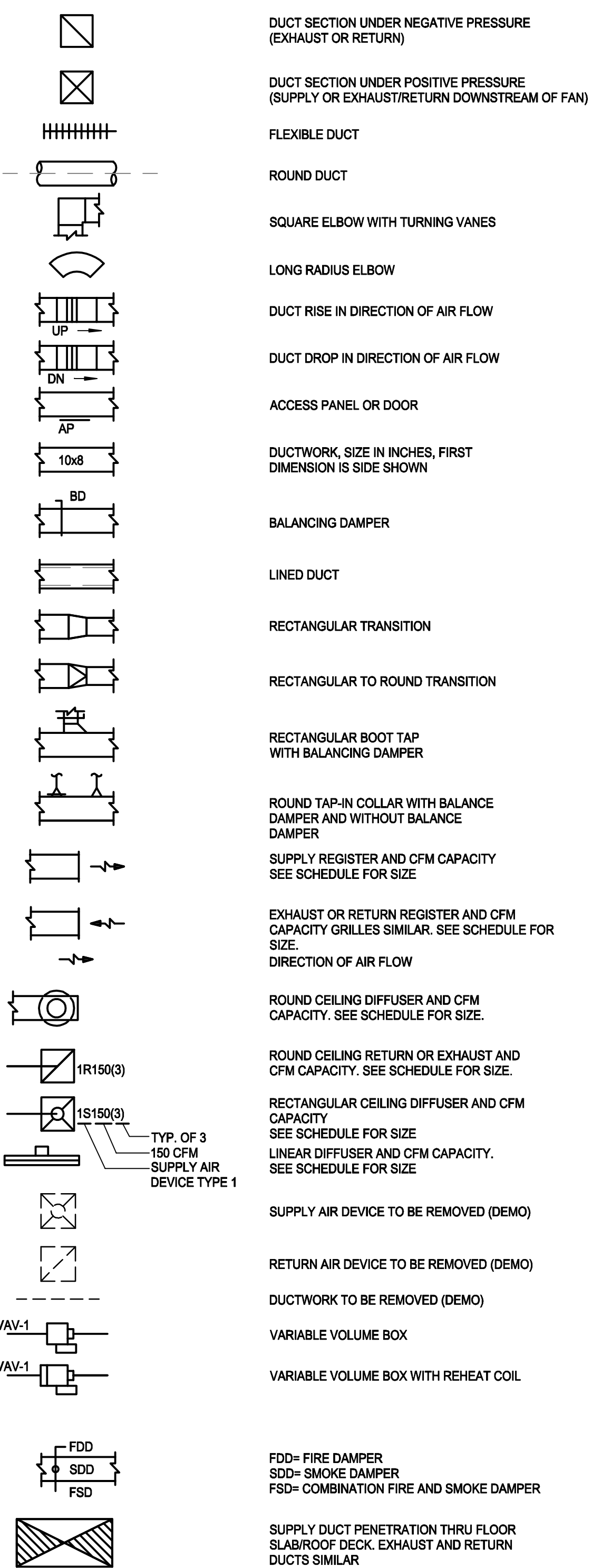
MECHANICAL NOTES:

- INSTALL ALL DUCTWORK PER SMACNA STANDARDS. METAL DUCT SHALL BE ADEQUATELY SUPPORTED TO AVOID DEFLECTION IN DUCT. SUPPORT DIFFUSERS AND GRILLES INDEPENDENTLY OF DUCT.
- RUN ALL DUCTS ABOVE THE CEILING IN AREAS WHERE CEILINGS ARE INSTALLED, UNLESS INSTRUCTED OTHERWISE BY THE ENGINEER AND/OR ARCHITECT.
- PROVIDE ALL NECESSARY DUCT FITTINGS AND TRANSITIONS FOR A COMPLETE SYSTEM.
- MAXIMUM LENGTH OF ANY FLEXIBLE DUCT RUN IS 5 FEET.
- DUCT DIMENSIONS INDICATED ON THE PLANS REFER TO ACTUAL CLEAR INSIDE DIMENSION OF DUCTWORK.
- PROVIDE BALANCING DAMPERS ON EVERY DUCT TAKE-OFF TO DIFFUSERS, GRILLES AND REGISTERS WHETHER INDICATED OR NOT.
- PAINT DUCT VISIBLE BEHIND AIR OUTLETS AND INLETS MATTE BLACK.
- INSTALL DIFFUSERS WITH AIRTIGHT CONNECTIONS.
- PROVIDE SMOKE AND/OR FIRE DAMPERS AT ALL FIRE RATED PARTITION PENETRATIONS.
- SUBMIT CERTIFIED TEST AND BALANCE REPORTS OF AIR AND HYDRONIC DISTRIBUTION SYSTEMS.

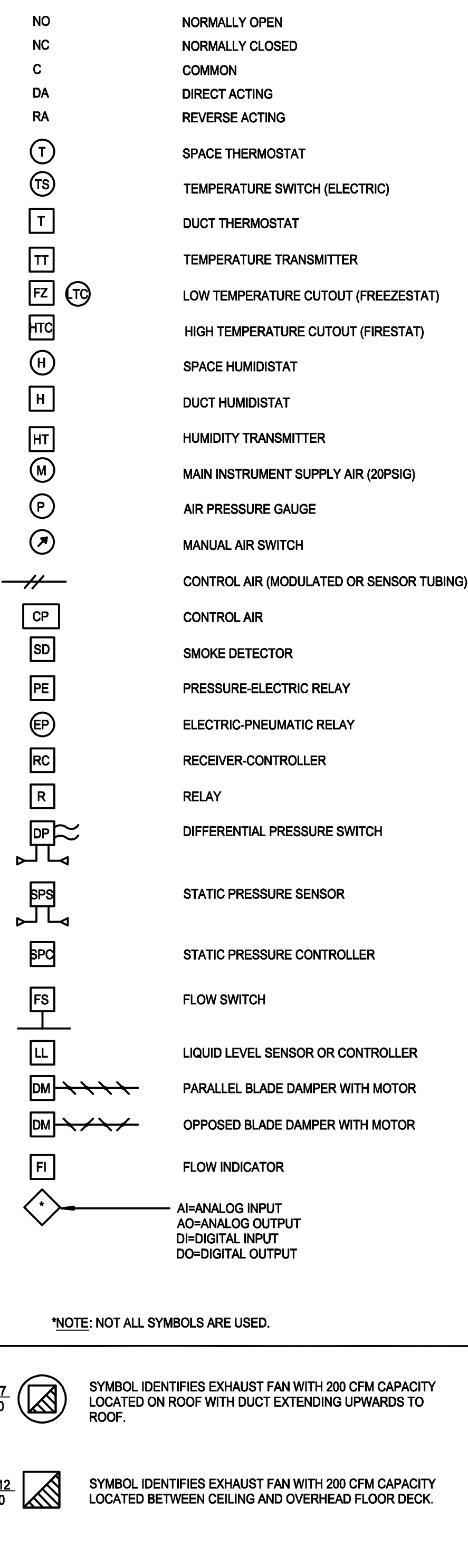
FIRE PROTECTION NOTES:

- DESIGN, CALCULATE AND INSTALL FIRE PROTECTION SYSTEM FOR SPECIFIED BUILDING AREA IN ACCORDANCE WITH ALL NFPA REGULATIONS AND ALL LOCAL CODES.
- PROVIDE SPRINKLERS HEADS IN ALL AREAS AS NECESSARY FOR CODE COMPLIANCE.
- REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR AND REFLECTED CEILING PLANS AND SECTIONS.
- AFTER WORK IS COMPLETED AS DESCRIBED AND REQUIRED BY NFPA, THE SYSTEM SHALL BE TESTED. REPRESENTATIVE OF THE LOCAL AUTHORITY HAVING JURISDICTION SHALL WITNESS THE TEST. PROVIDE THE OWNER WITH A WRITTEN REPORT DESCRIBING THE TESTING AND THE TEST RESULTS. VERIFY AND STATE IN THE REPORT THAT ALL TEST BLANKS WERE REMOVED AFTER THE TEST IS COMPLETED.

MECHANICAL HVAC SYMBOLS

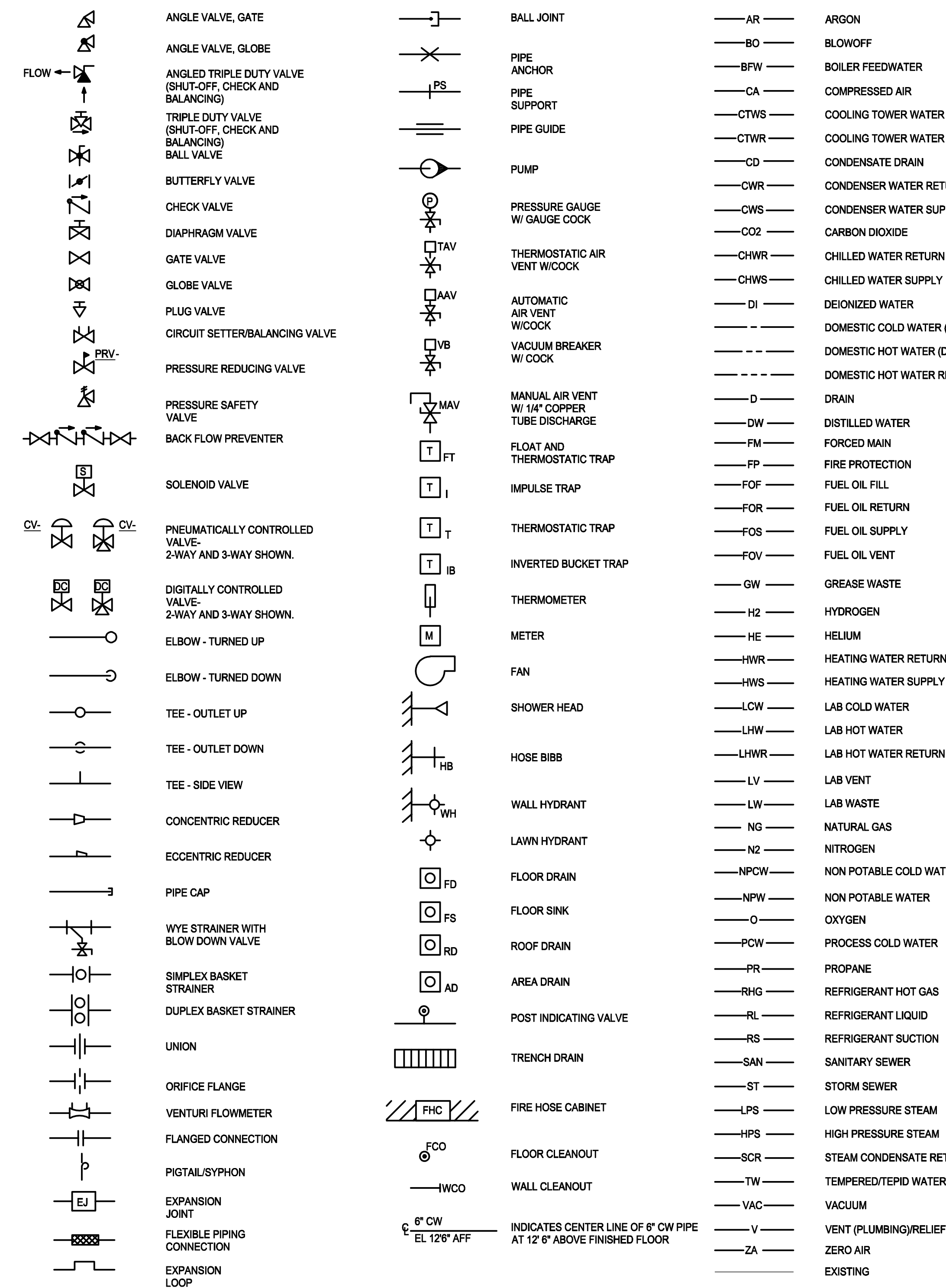


MECHANICAL CONTROL SYMBOLS



*NOTE: NOT ALL SYMBOLS ARE USED.

MECHANICAL PIPING SYMBOLS



*NOTE: NOT ALL SYMBOLS ARE USED.

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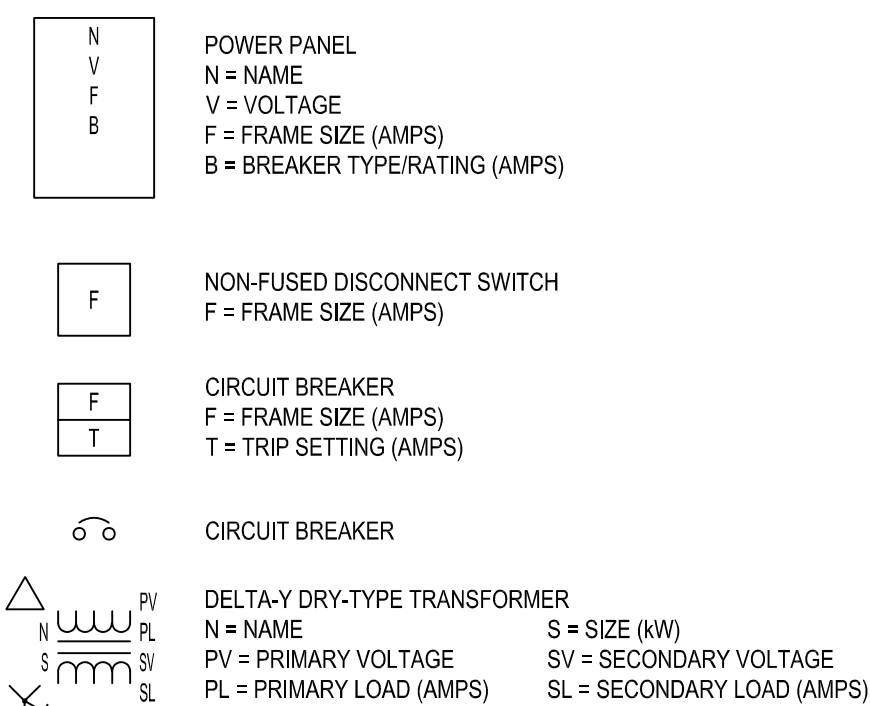
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MECHANICAL NOTES AND LEGEND

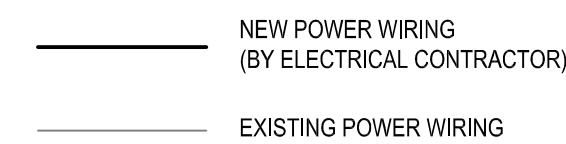
PROJECT TITLE: NORTHERN KENTUCKY UNIVERSITY W. FRANK STEELY LIBRARY 1 NUNN DR., HIGHLAND HEIGHTS, KY 41076 ELEVATOR REPLACEMENT UPGRADES
 DRAWING TITLE: MECHANICAL NOTES AND LEGEND

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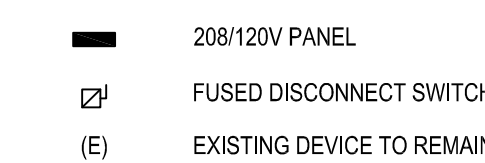
SINGLE LINE DIAGRAM SYMBOLS:



SINGLE LINE DIAGRAM WIRE TYPES:



POWER SYMBOLS:



SPECIFICATIONS:

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

RELATED DOCUMENTS: THE GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND GENERAL REQUIREMENTS, APPLY TO THE WORK SPECIFIED IN THIS SECTION.

ALL WORK SHALL BE ACCOMPLISHED UNDER THE STRICT APPLICATION OF LOCKOUT/TAGOUT (LOTO) PROCEDURES SET FORTH IN THE MANUFACTURING STANDARD #274 AND OSHA 1910.147.

DESCRIPTION OF WORK: WORK CONCEALED BEHIND OR WITHIN OTHER WORK, IN A NON-ACCESSIBLE ARRANGEMENT. MAINS AND BRANCHES OF WIRING SYSTEMS, WITH SWITCHGEAR, PANELBOARDS AND CONTROL DEVICES LOCATED AND NUMBERED, WITH CONCEALED SPLICES LOCATED, AND WITH DEVICES REQUIRING MAINTENANCE LOCATED.

A WRITTEN PROPOSED WORK PLAN SHALL BE SUBMITTED FOR APPROVAL TO THE ELECTRICAL SITE MANAGER FOR ALL WORK THAT WILL BE PERFORMED ON ENERGIZED ELECTRICAL EQUIPMENT.

THE FOLLOWING WORK IS NOT INCLUDED AS A PART OF THE ELECTRICAL WORK: FURNISHING POWER MANAGEMENT CENTERS OR MATRIX SECURITY EQUIPMENT PAINTING (EXCEPT TOUCH-UP) SOUND SYSTEMS

CONTROL, WIRING AND WIRING CONNECTIONS TO THE BUILDING MANAGEMENT AND SECURITY SYSTEMS (EXCEPT AS DETAILED ON THE DRAWINGS) TELEPHONE AND DATA COMMUNICATIONS WIRING FIRE PROTECTION SYSTEM WIRING EXCEPT FOR 120V POWER AND TIE-IN TO EMERGENCY POWER OFF CIRCUIT

QUALITY, UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW AND OF THE BEST GRADE AND QUALITY AVAILABLE. ANY SPECIFICATIONS BY MANUFACTURER'S NAME ARE INTENDED ONLY TO ESTABLISH STANDARDS OF QUALITY, TYPE, AND CHARACTERISTICS.

DRAWINGS AND SPECIFICATIONS: THE DRAWINGS ARE AN OUTLINE TO INDICATE THE APPROXIMATE LOCATION AND ARRANGEMENT OF RACEWAY, WIRING, AND EQUIPMENT. DO NOT SCALE DRAWINGS, BUT CHECK MEASUREMENTS AT SITE AND ADJUST WORK TO FIT SPACE ALLOTTED.

CONTRACTOR SHALL BECOME FULLY INFORMED REGARDING ANY AND ALL REGULARITIES AND LIMITATIONS OF THE SPACES AVAILABLE FOR THE INSTALLATION OF ALL WORK AND MATERIALS FURNISHED AND INSTALLED UNDER THE CONTRACT.

PERMITS AND REGULATIONS: PERMITS: THE CONTRACTOR WILL OBTAIN AND PAY FOR ALL PERMITS, TEMPORARY RELEASES, INSPECTIONS AND LICENSES, REQUIRED FOR THE ELECTRICAL WORK.

DEMONSTRATION OF SYSTEMS: DEMONSTRATE THAT ALL ELECTRICAL SYSTEMS FUNCTION ACCORDING TO PLANS AND SPECIFICATIONS.

INSTRUCTIONS SHALL BE GIVEN TO THE OWNER'S PERSONNEL IN THE OPERATION AND MAINTENANCE OF THE ELECTRICAL SYSTEMS.

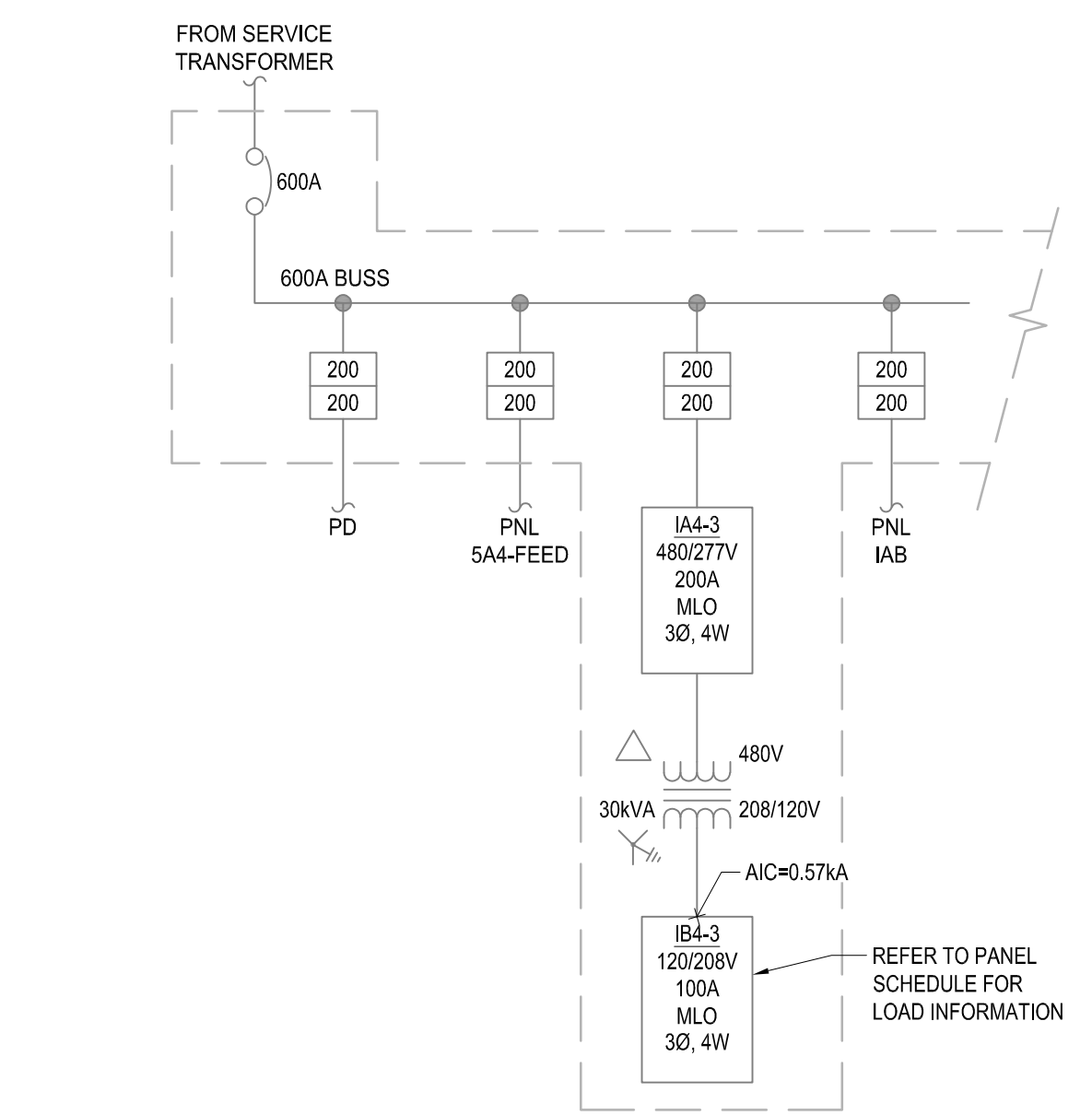
WHERE IT HAS BEEN DETERMINED THAT ELECTRICAL SYSTEMS DO NOT OR WILL NOT PERFORM IN COMPLIANCE WITH THE SPECIFIED PERFORMANCE, AFTER CONSULTATION WITH OWNER'S REPRESENTATIVE, PROCEED WITH ADJUSTMENTS OR CORRECTION OF THE WORK AS NECESSARY TO ACHIEVE REQUIRED PERFORMANCE, MODIFYING OR REPLACING UNITS OF ELECTRICAL WORK AS NECESSARY.

COORDINATION OF ELECTRICAL INSTALLATION: GENERAL: SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF ELECTRICAL WORK SO THAT THE ELECTRICAL SYSTEM WILL PERFORM AS INDICATED AND IN HARMONY WITH THE OTHER WORK OF THE PROJECT AND THE BUILDING.

CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AND BE RESPONSIBLE FOR THEM. CONTRACTOR SHALL REFER TO ARCHITECTURAL, STRUCTURAL, SPECIAL EQUIPMENT AND MECHANICAL DRAWINGS, SPECIFICATIONS AND APPROVED PRINTS FOR DETAILS, DIMENSIONS, AND LOCATION OF OTHER TRADES' WORK. COORDINATE ELECTRICAL INSTALLATION WITH ALL TRADES.

CUTTING AND PATCHING: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE AND/OR RESTORE TO THEIR ORIGINAL UNDAMAGED CONDITION ALL FACILITIES OF EVERY DESCRIPTION WHICH BECOME DAMAGED OR DISTURBED DURING THE PROGRESS OF THE WORK SPECIFIED HEREIN.

THOROUGHLY CLEAN ALL WIRES BEFORE ANY JOINTS ARE MADE UP SO THAT JOINT WILL CARRY FULL CAPACITY OF CONDUCTOR WITH NO PERCEPTIBLE TEMPERATURE RISE.



PARTIAL SINGLE LINE DIAGRAM NOT TO SCALE ALL EQUIPMENT SHOWN ON SINGLE LINE DIAGRAM IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

Tables for PANEL: IB4-3 (EXISTING) and SERVICE: IA4-3. Includes columns for CT NO, AMP, and LOAD SERVED. Includes sub-totals for kVA, amp, and wire.

Tables for PANEL CONNECTED LOAD and CIRCUIT BREAKER NOTES. Includes columns for DEMAND FACTOR, CONNECTED KVA, and DEMAND KVA.

EXISTING PANEL IS CONTINENTAL ARROW HEART CLASS CTL PANELBOARD. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING CIRCUIT BREAKER TYPE AND INTERRUPTING RATING.

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF A HVAC SPLIT SYSTEM UNIT TO BE INSTALLED TO SERVE THE ELEVATOR MACHINE ROOM LOCATED IN NKU STEELY LIBRARY IN HIGHLAND HEIGHTS, KY.

PROJECT GENERAL NOTES:

- A. ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE UNLESS OTHERWISE DIMENSIONED OR NOTED.
B. ALL JUNCTION AND PULL BOXES SHALL BE SIZED PER NEC ARTICLE 314.16 AND 314.28.
C. COORDINATE ALL POWER OUTAGES WITH CONSTRUCTION MANAGER.
D. PANELBOARDS SHALL BE UPDATED WITH TYPED PANEL SCHEDULES AT PROJECT COMPLETION.
E. ALL ELECTRICAL PANELBOARDS SHALL BE CLEAN AND FREE OF DEBRIS AT PROJECT COMPLETION.
F. DISPOSE OF ITEMS AS DIRECTED BY CONSTRUCTION MANAGER.
G. CIRCUIT NUMBERS ARE FOR DESIGN INTENT ONLY. UTILIZE CIRCUITS MADE SPARE DURING DEMOLITION TO SERVE NEW ELECTRICAL DEVICES.
H. LOCATE ALL LOCAL DISCONNECTS IN SUCH A MANNER AS TO PROVIDE 3" WIDE BY 42" DEEP WORKING CLEARANCE PER NEC.
I. ALL PENETRATIONS THROUGH FIRE-RATED FLOORS AND WALLS SHALL BE PROPERLY SEALED WITH FIRE-RATED SEALANT.
J. PROVIDE CIRCUIT IDENTIFICATION ON ALL EQUIPMENT WITH BLACK 3/16" HIGH LETTERS ON WHITE BACKING.
K. PRIOR TO ANY CORE DRILLING, THE ELECTRICAL CONTRACTOR SHALL COORDINATE FLOOR PENETRATION LOCATIONS WITH LOCATIONS OF EXISTING STRUCTURAL BEAMS.
L. ALL NEW DEVICES AND COVERPLATES SHALL MATCH EXISTING IN AREA.
M. CONTRACTOR SHALL VERIFY ALL ACTIVE CIRCUITS PRIOR TO DEMOLITION TO ELIMINATE NUISANCE POWER OUTAGES TO OCCUPANTS OUTSIDE THE PROJECT AREA.
N. CONTRACTOR SHALL NOTE THAT THE OWNER MAY OCCUPY ADJACENT AREAS FOR PERFORMANCE OF NORMAL BUSINESS ACTIVITIES DURING CONSTRUCTION.
O. CONTRACTOR SHALL FIELD VERIFY THE INFORMATION AND DIMENSIONS INDICATED ON THE DRAWING PRIOR TO FABRICATING ANY MATERIAL OR BEGINNING CONSTRUCTION.
P. CONTRACTOR SHALL SCHEDULE AND ARRANGE FOR ALL REQUIRED LEGAL INSPECTIONS.
Q. SPECIFICATIONS AND ADDENDUMS ARE MADE AN INTEGRAL PART OF THESE DRAWINGS.
R. NEW CONSTRUCTION ABUTTING EXISTING CONSTRUCTION IN THE SAME PLANE SHALL BE FLUSH UNLESS NOTED OTHERWISE.
S. IN THE EVENT THAT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS, THEN THE CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS THE CONSTRUCTION OF SIMILAR CONDITIONS THAT ARE SHOWN OR NOTED ON THE DRAWINGS AND SPECIFICATIONS.
T. CONTRACTOR MAY PROVIDE ALTERNATE COSTS AND JOB SPECIFICATIONS OUTSIDE OF DESCRIBED REQUIREMENTS.
U. CONTRACTOR SHALL PROVIDE ALL FUSES AS NECESSARY FOR THIS PROJECT.
V. CONTRACTOR SHALL VERIFY FUSE SIZE BASED ON MANUFACTURER'S RECOMMENDATIONS.

TRAIN AND LACE WIRING INSIDE EQUIPMENT AND PANELBOARDS WITH PLASTIC TIES FOR A NEAT APPEARANCE. RUN SUFFICIENT SPARE CONDUCTORS AS INDICATED ON DRAWINGS WITH SUFFICIENT LENGTH AT TERMINATIONS FOR FUTURE CONNECTIONS.
DO NOT PULL WIRE UNTIL CONDUIT SYSTEM IS COMPLETE AND THOROUGHLY SWABBED. USE CABLE GRIPS WHEN PULLING CABLES AND LARGER. LUBRICATE ALL CONDUCTORS WITH NONACTIVE COMPOUNDS AS RECOMMENDED BY CABLE MANUFACTURER FOR PULLING-UP OPERATIONS.
INSTALL ENCLOSURES, INCLUDING ELECTRICAL CONNECTIONS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS SERVE THE INTENDED FUNCTION.
COORDINATE INSTALLATION OF ENCLOSURES WITH CABLE AND RACEWAYS INSTALLATION WORK.
ANCHOR ENCLOSURES FIRMLY TO WALLS AND STRUCTURAL SURFACES ENSURING THAT THEY ARE PERMANENTLY AND MECHANICALLY SECURED.
INSTALL ELECTRICAL BOXES AND FITTINGS AS INDICATED, IN COMPLIANCE WITH NEC REQUIREMENTS.
ELECTRIC MOTOR: ELECTRIC MOTORS WILL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. MAKE CONNECTION TO ALL MOTORS AND ASSOCIATED CONTROL EQUIPMENT AS INDICATED ON THE DRAWINGS.

Revision table with columns for NO., REVISIONS, DATE, and APPROVED. Shows revision 0 issued for construction on 02/13/23.

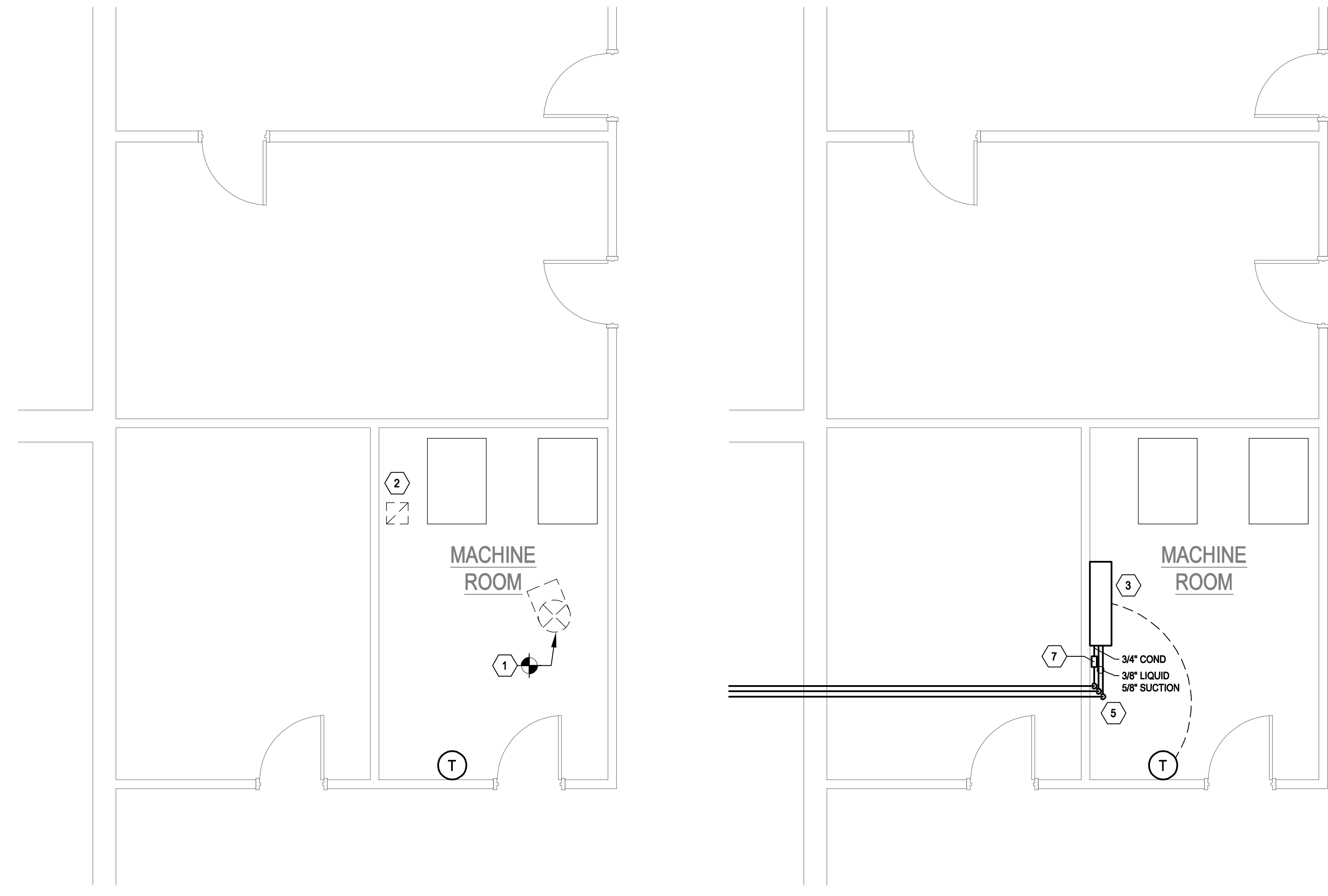
REVISIONS: 0 ISSUED FOR CONSTRUCTION 02/13/23

Logo for pedco and IMEG. Address: 11499 Chester Road, Suite 501 | Cincinnati, OH 45246. Phone: 513.782.4920 | Fax: 513.782.4920 | www.pedceo.com

ELECTRICAL NOTES, LEGENDS, SCHEDULE, SINGLE LINE DIAGRAM

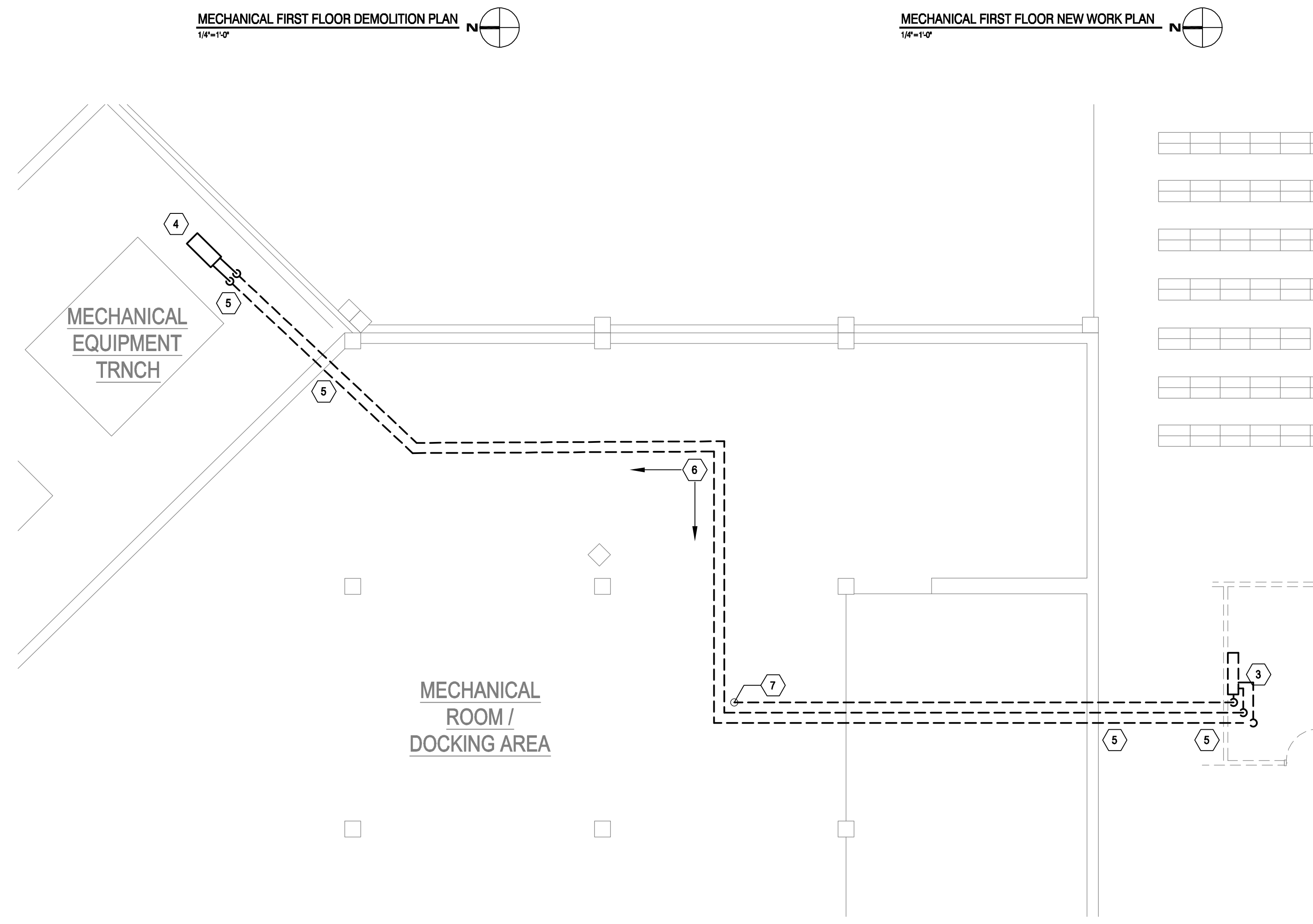
NORTHERN KENTUCKY UNIVERSITY W. FRANK STEELY LIBRARY 1 NUNN DR, HIGHLAND HEIGHTS, KY 41076 ELEVATOR REPLACEMENT UPGRADES

Project metadata table and professional seal for Michael P. Walsh, State of Kentucky Professional Engineer No. 20083. Includes fields for DRAWN, CHECKED, PROJECT NO., ISSUE DATE, and SHEET NO.



- GENERAL NOTES:**
- FIELD VERIFY ALL SITE LOCATIONS.
 - SUBMIT CERTIFIED TEST AND BALANCE REPORTS OF AIR DISTRIBUTION SYSTEMS.
 - RUN ALL DUCTS ABOVE THE CEILING IN AREAS WHERE CEILINGS ARE INSTALLED, UNLESS INSTRUCTED OTHERWISE BY THE ENGINEER AND/OR ARCHITECT.
 - PROVIDE ALL NECESSARY DUCT FITTINGS AND TRANSITIONS FOR A COMPLETE SYSTEM.
 - MAXIMUM LENGTH OF ANY FLEXIBLE DUCT RUN IS 5 FEET.
 - DUCT DIMENSIONS INDICATED ON THE PLANS REFER TO CLEAR INSIDE DIMENSION OF DUCTWORK.
 - PROVIDE SPIN-IN TAP COLLARS WITH BALANCING DAMPER AT EACH BRANCH DUCT TAKE-OFF TO SUPPLY DIFFUSERS, GRILLES, AND REGISTERS.
 - PAINT DUCT VISIBLE BEHIND AIR OUTLETS AND INLETS MATTE BLACK.
 - INSTALL DIFFUSERS WITH AIRTIGHT CONNECTIONS.
 - CONTRACTOR IS TO COVER ALL DIFFUSER PRIOR TO CONSTRUCTION.
 - CONTRACTOR IS TO CLEAN ALL DUCTWORK AFTER CONSTRUCTION IS COMPLETE.

- NOTES THIS DRAWING:**
- REMOVE AND CAP EXISTING SUPPLY DUCTWORK FEEDING SPACE AS INDICATED. COORDINATE DEMOLITION WITH SITE CONTROLS MANAGER.
 - DEMOLISH EXISTING RETURN GRILLE AND FILL HARD CEILING.
 - INSTALL NEW MINI SPLIT INDOOR EVAPORATING UNIT AS SCHEDULED AND PER MANUFACTURER'S REQUIREMENTS. PROVIDE AND INSTALL NEW ASSOCIATED THERMOSTAT WITH INDOOR UNIT AND SET TEMPERATURE CONTROLS TO 65 F > 80 F ADJUSTABLE.
 - INSTALL NEW MINI SPLIT OUTDOOR CONDENSING UNIT AS SCHEDULED AND PER MANUFACTURER'S REQUIREMENTS.
 - CORE DRILL NEW PENETRATION AND SEAL AROUND REFRIGERANT LINESETS.
 - ROUTE REFRIGERANT LINESET AS INDICATED. CONTRACTOR SHALL ENSURE THAT REFRIGERANT PIPING IS INSTALLED WITHIN THE SPECIFIED LIMITATIONS AND REQUIREMENTS PER MANUFACTURER.
 - INSTALL NEW CONDENSATE PUMP ON MECHANICAL ROOM WALL NEAR SPLIT SYSTEM UNIT. ROUTE CONDENSATE LINE THROUGH WALL INTO MECHANICAL SPACE AND TERMINATE AT FLOOR FLOOR DRAIN.

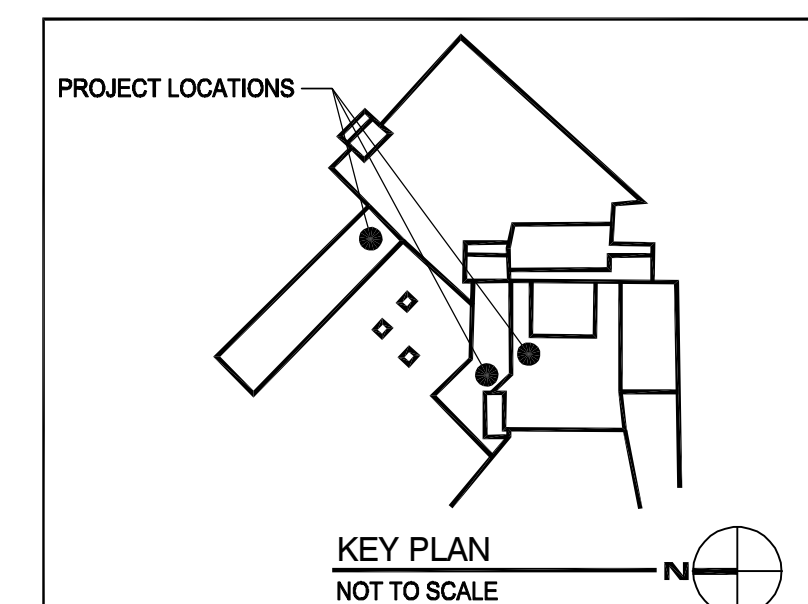


AIR COOLED CONDENSING UNIT SCHEDULE

| SYMBOL | SERVICES | CAPACITY (TONS) | REFRIGERANT | ELECTRICAL DATA | | FUSE SIZE REC. (A) | MCA | MOCP | VPH/Hz | BASIS OF DESIGN | | REMARKS |
|----------|-------------|-----------------|-------------|-----------------|------------|--------------------|------|------|----------------|-----------------|-----------------|---------|
| | | | | QUANTITY | FANS/COMPR | | | | | MANUFACTURER | MODEL | |
| ACU-ST-1 | STEELY IND | 2.5 | R410A | 1 | | 1.0 | 1.0 | - | 208/230, 1, 60 | DAIKIN | TKP40A0301KA70A | |
| CU-ST-1 | STEELY OUTD | 2.5 | R410A | 1 | | 25 | 19.0 | 26 | 208/230, 1, 60 | DAIKIN | TRUZ0301HA70A | |

PUMP SCHEDULE

| SYMBOL | SERVICE | GPM | INLET/IMPEL. SIZE IN. | ELECTRICAL | | | MANUFACTURER | MODEL | REMARKS |
|---------|------------|------|-----------------------|------------|------|----------|--------------|---------|---------|
| | | | | MOTOR HP | AMPS | VOLT. HZ | | | |
| CP-ST-1 | CONDENSATE | 0.05 | 0.31" | 0.04 | 0.02 | 230-60 | BLUE DIAMOND | X87-721 | |



SUMMARY OF MECHANICAL WORK

GENERAL: MECHANICAL WORK CONSISTS OF HVAC AND PIPING WORK AS INDICATED ON THE DRAWINGS AND IN THE FOLLOWING SPECIFICATIONS. ALL WORK SHALL BE ACCOMPLISHED IN COMPLIANCE WITH NKU STANDARDS AND PROCEDURES, CODE REQUIREMENTS AND STANDARD INDUSTRY PRACTICE.

HVAC WORK: DEMOLITION AND CAPPING OF EXISTING VENTILATION AIR DUCT FEED INTO SPACE. INSTALLATION OF NEW DUCTLESS MINI SPLIT SYSTEM.

PIPING WORK: ROUTE REFRIGERANT PIPING AND CONDENSATE PIPING IN CONJUNCTION WITH INSTALLATION OF NEW MINI SPLIT SYSTEM.

MECHANICAL GENERAL CONDITIONS

COORDINATION: THE CONTRACTOR MUST INSPECT EXISTING CONDITIONS PRIOR TO BIDDING AND EACH INSTALLER MUST INSPECT THE SITE PRIOR TO PROCEEDING WITH WORK. ALL MECHANICAL WORK SHALL BE COORDINATED WITH OTHER WORK, IF ANY, ACCOMPLISHED BY OWNER'S PERSONNEL. LIMITED SPACE IN THE PROJECT AREA REQUIRES COORDINATION OF EQUIPMENT DELIVERY WITH PROJECT CONSTRUCTION SCHEDULE. OWNER'S REPRESENTATIVE MUST BE NOTIFIED AT LEAST 72 HOURS IN ADVANCE OF ANY SYSTEM SHUTDOWN.

PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, SUPPLIES, TRANSPORTATION, SUPERINTENDENCE, SERVICES, AND ALL APPURTENANCES NECESSARY FOR AND INCIDENTAL TO THE COMPLETION OF THE MECHANICAL WORK REQUIRED FOR ALL CONSTRUCTION AS SHOWN, INDICATED OR NOTED ON DRAWINGS.

QUALITY: UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE WORK SHALL BE NEW AND OF THE BEST GRADE AND QUALITY AVAILABLE. ANY SPECIFICATIONS BY MANUFACTURER'S NAME ARE INTENDED ONLY TO ESTABLISH STANDARDS OF QUALITY, TYPE, AND CHARACTERISTICS. SIMILAR PRODUCTS PRODUCED BY OTHER MANUFACTURERS WILL BE ACCEPTABLE PROVIDED THE ESTABLISHED STANDARDS ARE MET. THE ITEM IS SUBMITTED FOR REVIEW TO THE OWNER AND APPROVED IN WRITING BY THE OWNER PRIOR TO BID DATE. SHOULD ANY QUESTION ARISE AS TO THE ACCEPTABILITY OF A PARTICULAR PRODUCT, THE OWNER WILL MAKE THE DETERMINATION.

DRAWINGS AND SPECIFICATIONS: THE DRAWINGS INDICATE THE APPROXIMATE LOCATION AND ARRANGEMENT OF DUCTWORK, PIPING, AND EQUIPMENT. DO NOT SCALE DRAWINGS; BUT CHECK MEASUREMENTS AT SITE AND ADJUST WORK TO FIT SPACE ALLOTTED. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO DEPICT THE INTENT OF THE WORK IN SCOPE, LAYOUT, AND QUALITY OF WORKMANSHIP AND ARE NOT INTENDED TO SHOW OR DESCRIBE IN MINUTE DETAIL ALL TRADES AND ACCESSORIES NECESSARY FOR THE PROPER AND COMPLETE EXECUTION OF THE WORK.

CONTRACTOR SHALL BECOME FULLY INFORMED REGARDING ANY AND ALL PECULIARITIES AND LIMITATIONS OF THE SPACES AVAILABLE FOR THE INSTALLATION OF ALL WORK AND MATERIALS FURNISHED AND INSTALLED UNDER THE CONTRACT. EXERCISE DUE AND PARTICULAR CAUTION TO DETERMINE THAT ALL PARTS OF WORK ARE MADE QUICKLY AND EASILY ACCESSIBLE.

PERMITS: PEDCO WILL OBTAIN AND PAY FOR THE BUILDING PERMIT. THE CONTRACTOR WILL OBTAIN AND PAY FOR ALL OTHER PERMITS, TEMPORARY RELEASES, INSPECTIONS, AND LICENSES, REQUIRED FOR THE MECHANICAL WORK. NORTHERN KENTUCKY UNIVERSITY REQUIRES THAT A HOT WORK PERMIT SHALL BE OBTAINED FROM THE APPROPRIATE NORTHERN KENTUCKY UNIVERSITY CONTRACT PRIOR TO ANY HOT WORK BEING PERFORMED.

HAZARDOUS MATERIALS: THE CONTRACTOR SHALL COMPLY WITH ALL CURRENT "HAZARDOUS MATERIALS COMMUNICATIONS" (HAZCOM) REQUIREMENTS WHEN EXECUTING CONSTRUCTION WORK WITHIN NORTHERN KENTUCKY UNIVERSITY FACILITIES. THE CONTRACTOR SHALL OBTAIN "MATERIAL SAFETY DATA SHEETS" (MSDS) FOR ALL HAZARDOUS MATERIALS TO BE USED ON THE PROJECT. OBTAIN DATA SHEETS FROM THE MANUFACTURERS AND DELIVER TO THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL ALSO COMPLY WITH LAWS, ORDINANCES, RULES, AND REGULATIONS OF FEDERAL, STATE, REGIONAL, AND LOCAL AUTHORITIES REGARDING HANDLING, STORING, TRANSPORTING AND DISPOSING OF HAZARDOUS MATERIALS.

PIPING MATERIALS: THE CONTRACTOR SHALL SUBMIT COPIES OF MANUFACTURER'S MATERIAL TEST REPORTS FOR ALL PRESSURE (NON-DRAIN) PIPING BEFORE INSTALLATION.

COORDINATION OF MECHANICAL INSTALLATION:

GENERAL: SEQUENCE, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF MECHANICAL WORK SO THAT THE MECHANICAL SYSTEM WILL PERFORM AS INDICATED AND IN HARMONY WITH THE OTHER WORK OF THE PROJECT AND THE BUILDING.

CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AND BE RESPONSIBLE FOR SAME. CONTRACTOR SHALL REFER TO ARCHITECTURAL, STRUCTURAL, SPECIAL EQUIPMENT AND ELECTRICAL DRAWINGS, SPECIFICATIONS AND APPROVED PRINTS FOR DETAILS, DIMENSIONS, AND LOCATION OF OTHER WORK.

CUTTING AND PATCHING: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE AND/OR RESTORE TO THEIR ORIGINAL UNDAMAGED CONDITION ALL FACILITIES OF EVERY DESCRIPTION WHICH BECOME DAMAGED OR DISTURBED DURING THE PROGRESS OF THE WORK SPECIFIED HEREIN. SUCH REPLACEMENT OR RESTORATION APPLIES TO BOTH SURFACE AND SUBSURFACE INSTALLATIONS, AND MATERIALS AND INSTALLATION METHODS USED ARE TO MATCH THE EXISTING RESPECTIVE INSTALLATIONS AND OTHERWISE MEET THE REQUIREMENTS OF THE OWNER. WORK SHALL BE PERFORMED BY WORKMEN TRAINED AND SKILLED IN THE TRADE(S) INVOLVED.

SHOP DRAWINGS: SUBMIT FOR APPROVAL. ELECTRONIC COPIES OF SHOP DRAWINGS TO NORTHERN KENTUCKY UNIVERSITY PLUS ADDITIONAL COPIES AS REQUIRED BY THE CONTRACTOR FOR ITS OWN USE FOR PIPING MATERIAL TEST REPORTS AND THE FOLLOWING EQUIPMENT: MITSUBISHI DUCTLESS SPLIT AIR CONDITIONING SYSTEM (1).

PROVIDE U-1 FORMS FOR ALL ASME STAMPED EQUIPMENT AT TIME OF SHIPMENT.

INSTALLATION WORK: COMPLY WITH PRODUCT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. STANDARD INDUSTRY PRACTICE SHALL BE FOLLOWED FOR INSTALLATION OF PIPING ALONG BUILDING LINES, PITCHING PIPING REQUIRED TO BE DRAINABLE, ETC.

WORK ASSOCIATED WITH EQUIPMENT OR MATERIAL FURNISHED BY OWNER OR OTHERS: WHERE IT IS SPECIFIED THAT CERTAIN ITEMS OF EQUIPMENT OR MATERIALS WILL BE FURNISHED BY OWNER OR OTHERS FOR INSTALLATION UNDER THIS CONTRACT, RECEIVE SUCH EQUIPMENT OR MATERIALS AND PROVIDE FOR STORAGE, PROTECTION, AND HANDLING. COMPLETE THE INSTALLATION AND MAKE ALL CONNECTIONS IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS AND THE WRITTEN INSTRUCTIONS AND RECOMMENDATIONS OF THE MANUFACTURER AS REVIEWED BY THE OWNER.

MAINTENANCE MANUALS: 3 SETS OF WRITTEN MAINTENANCE AND OPERATING DATA SHALL BE SUBMITTED FOR ALL MECHANICAL COMPONENTS OF THE WORK, INCLUDING ITEMS FURNISHED BY THE OWNER. THEY SHALL BE ORGANIZED AND CLEARLY IDENTIFIED IN THREE-RING BINDERS. INCLUDE ADDRESSES AND PHONE NUMBERS OF PARTS SUPPLIERS AND VENDORS.

DEMONSTRATION OF SYSTEMS: DEMONSTRATE THAT ALL MECHANICAL SYSTEMS FUNCTION ACCORDING TO PLANS AND SPECIFICATIONS.

WHERE IT HAS BEEN DETERMINED THAT MECHANICAL SYSTEMS DO NOT OR WILL NOT PERFORM IN COMPLIANCE WITH SPECIFIED PERFORMANCE CHARACTERISTICS, AFTER CONSULTATION WITH OWNER'S REPRESENTATIVE, PROCEED WITH ADJUSTMENTS OR CORRECTION OF THE WORK AS NECESSARY TO ACHIEVE REQUIRED PERFORMANCE, MODIFYING OR REPLACING UNITS OF MECHANICAL WORK.

SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC AND EQUIPMENT

PROVIDE FACTORY-FABRICATED HORIZONTAL PIPE HANGERS AND VERTICAL PIPE CLAMPS COMPLYING WITH MSS SP-58, INSTALLED IN ACCORDANCE WITH MSS SP-68. USE HANGERS OF METAL MATCHING PIPE MATERIAL AND APPROPRIATE FOR INSULATED PIPE AS REQUIRED. PROVIDE OVERSIZED HANGERS WITH SHEET METAL SUPPORTS FOR ALL INSULATED PIPING. PIPE HANGERS AND CLAMPS SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE WITH SUITABLE CLAMPS AND OTHER FASTENERS. WELDING TO BUILDING STEEL IS NOT ALLOWED.

SECTION 230553 - IDENTIFICATION FOR HVAC AND EQUIPMENT

NEW PIPING SHALL BE IDENTIFIED IN ACCORDANCE WITH NKU SPECIFICATIONS AND ANSI 13.1 "SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS," USING PLASTIC PIPE MARKERS PREFORMED TO FIT AROUND PIPE OR PIPE COVERING. LETTERING HEIGHT SHALL BE 1/2" FOR PIPE SIZES 3/4" TO 1-1/4", 3/4" FOR PIPE SIZES 1-1/2" TO 2" AND 1-1/4" FOR PIPE SIZES 2-1/2" TO 6". IDENTIFY PIPING, COVERED OR EXPOSED, FOR SERVICE, FLOW DIRECTION AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE SUCH AS NOT TO EXCEED 20 FEET ON STRAIGHT RUNS. PROVIDE BLACK-ON-WHITE LAMINATED PLASTIC NAMEPLATES PERMANENTLY ATTACHED (WITHOUT ADHESIVE) TO NEW EQUIPMENT. IDENTIFY EACH CONTRA DEVICE OR INSTRUMENT WITH A MECHANICALLY FASTENED PLASTIC NAMEPLATE. METAL TAGS MAY BE USED FOR SMALL PIPING OR DEVICES.

SECTION 232300 - REFRIGERANT PIPING

BASIC PIPES AND PIPE FITTINGS:

GENERAL: PROVIDE PIPES AND PIPE FITTINGS IN ACCORDANCE WITH THE FOLLOWING LISTING:

TUBE SIZE 3/4" AND SMALLER: COPPER TUBE, TYPE ACR, SOFT ANNEALED TEMPER. WROUGHT-COPPER, SOLDER-JOINT FITTINGS; BRAZED JOINTS.

BRAZED JOINTS: BRAZE JOINTS USING AMERICAN WELDING SOCIETY (AWS) CLASSIFICATION BCUP-4 FOR BRAZING FILLER METAL, (15% MINIMUM SILVER).

BALL SHUTOFF VALVES: FORGED BRASS, TEFLON SEALS, 500 PSI WORKING PRESSURE.

CHECK VALVES: FORGED BRASS, ACCESSIBLE INTERNAL PARTS, SOFT SYNTHETIC SEAT, FULLY GUIDED BRASS PISTON AND STAINLESS STEEL SPRING, 250F (121C) TEMPERATURE RATING, 500 PSI WORKING PRESSURE. MANUFACTURED BY HENRY VALVE CO., PARKER HANFNN CORP., OR SPORLAN VALVE CO.

2-WAY SOLENOID VALVES: FORGED BRASS, DESIGNED TO CONFORM TO ARI 760, NORMALLY CLOSED, TEFLON VALVE SEAT, NEMA 1 SOLENOID ENCLOSURE, 24VOLT (1) 28VOLT, 60-Hz, UL-LISTED, 1/2" CONDUIT ADAPTER, 250F (121C) TEMPERATURE RATING, 400 PSI WORKING PRESSURE. MANUFACTURED BY ALCO CONTROLS DIVISION, EMERSON ELECTRIC CO.; AUTOMATIC SWITCH CO.; OR SPORLAN VALVE CO.

REFRIGERANT STRAINERS: BRASS SHELL AND END CONNECTIONS, BRAZED JOINTS, MONEL SCREEN, 100 MESH, UL-LISTED, 350 PSI WORKING PRESSURE.

MOISTURE-LIQUID INDICATORS: FORGED BRASS, SINGLE PORT, REMOVABLE CAP, POLISHED OPTICAL GLASS, SOLDER CONNECTIONS, UL-LISTED, 200F (93C) TEMPERATURE RATING, 500 PSI WORKING PRESSURE.

REFRIGERANT FILTER-DRIERS: STEEL SHELL, CERAMIC FIRED DESICCANT CORE, SOLDER CONNECTIONS, UL-LISTED, 500 PSI WORKING PRESSURE.

PROVIDE REFRIGERATION STRAINERS, MOISTURE-LIQUID INDICATORS AND FILTER-DRIERS MANUFACTURED BY ALCO CONTROLS DIVISION, EMERSON ELECTRIC CO.; HENRY VALVE CO.; PARKER-HANFNN CORP.; OR SPORLAN VALVE CO.

PRESSURE TEST: PIPING SYSTEM SHALL BE NITROGEN PRESSURE TESTED TO 350 PSIG. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH AIR HANDLING UNIT MANUFACTURER'S TEST PROCEDURES. ISOLATE COMPRESSOR AS REQUIRED DURING TEST.

VACUUM: THE SYSTEM SHALL BE EVACUATED TO A MINIMUM PRESSURE OF 5 MICRONS BEFORE CHARGING.

INSULATION: INSULATION FOR EXPOSED REFRIGERANT PIPING SHALL BE 3/4" ARMAFLEX.

SECTION 232600 - AIR-COOLED CONDENSING UNITS

AIR-COOLED CONDENSING UNIT (CU-1): CONDENSING UNIT TO BE FACTORY ASSEMBLED AND TESTED CONSISTING OF CASING, COMPRESSOR, CONDENSER COILS, CONDENSER FANS AND MOTORS, AND UNIT CONTROLS. UNIT CASING SHALL BE CONSTRUCTED FOR OUTDOOR INSTALLATION AND COMPLETE WITH WEATHER PROTECTION FOR COMPONENTS AND CONTROLS. COMPLETE WITH REMOVABLE PANELS FOR REQUIRED ACCESS TO COMPRESSORS, CONTROLS, CONDENSER FANS, MOTORS AND DRIVES.

COMPRESSOR SHALL BE RECIPROCATING HERMETIC-TYPE DESIGNED FOR AIR-COOLED CONDENSING COMPLETE WITH CRANKCASE SIGHT GLASS, CRANKCASE HEATER, AND BACKSEATING SERVICE ACCESS VALVES ON SUCTION AND DISCHARGE PORTS.

OPERATING AND SAFETY CONTROLS SHALL INCLUDE HIGH AND LOW PRESSURE CUTOFFS, OIL PRESSURE CUTOFF, COMPRESSOR WINDING THERMOSTAT CUTOFF AND CONDENSER FAN MOTORS WITH THERMAL AND OVERLOAD CUTOFFS.

CONDENSING COILS SHALL BE SEAMLESS COPPER TUBING MECHANICALLY BONDED TO HEAVY-DUTY ALUMINUM FINS WITH A MAXIMUM SPACING OF 10 FINS PER INCH. CONDENSER COILS SHALL BE FACTORY TESTED TO 450 PSIG, VACUUM DEHYDRATED, AND FILLED WITH A HOLDING CHARGE OF NITROGEN.

CONDENSER FANS SHALL BE PROPELLER-TYPE WITH VERTICAL AIR DISCHARGE, DIRECT DRIVE, WITH PERMANENTLY LUBRICATED BEARINGS.

UNIT SHALL BE SUPPLIED WITH HOT GAS BYPASS TO ALLOW FOR LOW LOAD. OPERATION VALVES AND LINES FOR HOT GAS BYPASS SHALL BE SIZED TO MATCH SYSTEM CAPACITIES AND INSTALLED AT FACTORY.

UNIT SHALL BE SUPPLIED WITH LOW AMBIENT CONTROL ALLOWING OPERATION OF UNIT DOWN TO -20F.

AIR-COOLED CONDENSING UNIT SHALL BE MANUFACTURED BY MCQUAY CO., TSI, YORK OR CARRIER AND MEET THE PERFORMANCE CHARACTERISTICS SCHEDULED ON THE DRAWINGS.

PROJECT TITLE: **NORTHERN KENTUCKY UNIVERSITY W. FRANK STEELY LIBRARY 1 NUNN DR, HIGHLAND HEIGHTS, KY 41076 ELEVATOR REPLACEMENT UPGRADES**


DRAWING TITLE: **MECHANICAL DEMOLITION AND NEW WORK PLANS**

PROJECT NO.: **RENKU-00005**

ISSUE DATE: **02/13/23**

SHEET NO.: **M101**

REVISION NO.: **0**



11499 Chester Road, Suite 501 | Cincinnati, OH 45246
513.762.4920 | 513.762.4930 fax | www.pedco.com

DATE: 02/13/23

ISSUED FOR CONSTRUCTION

DATE PLOTTED: 02/13/23

DRAWING FILE: \\FILES\CORPORATE\OFFICES\CIN\NORTH\NORTH KENTUCKY UNIVERSITY\RENKU-00005\9817.FLT

APPROVED: _____

DATE: _____

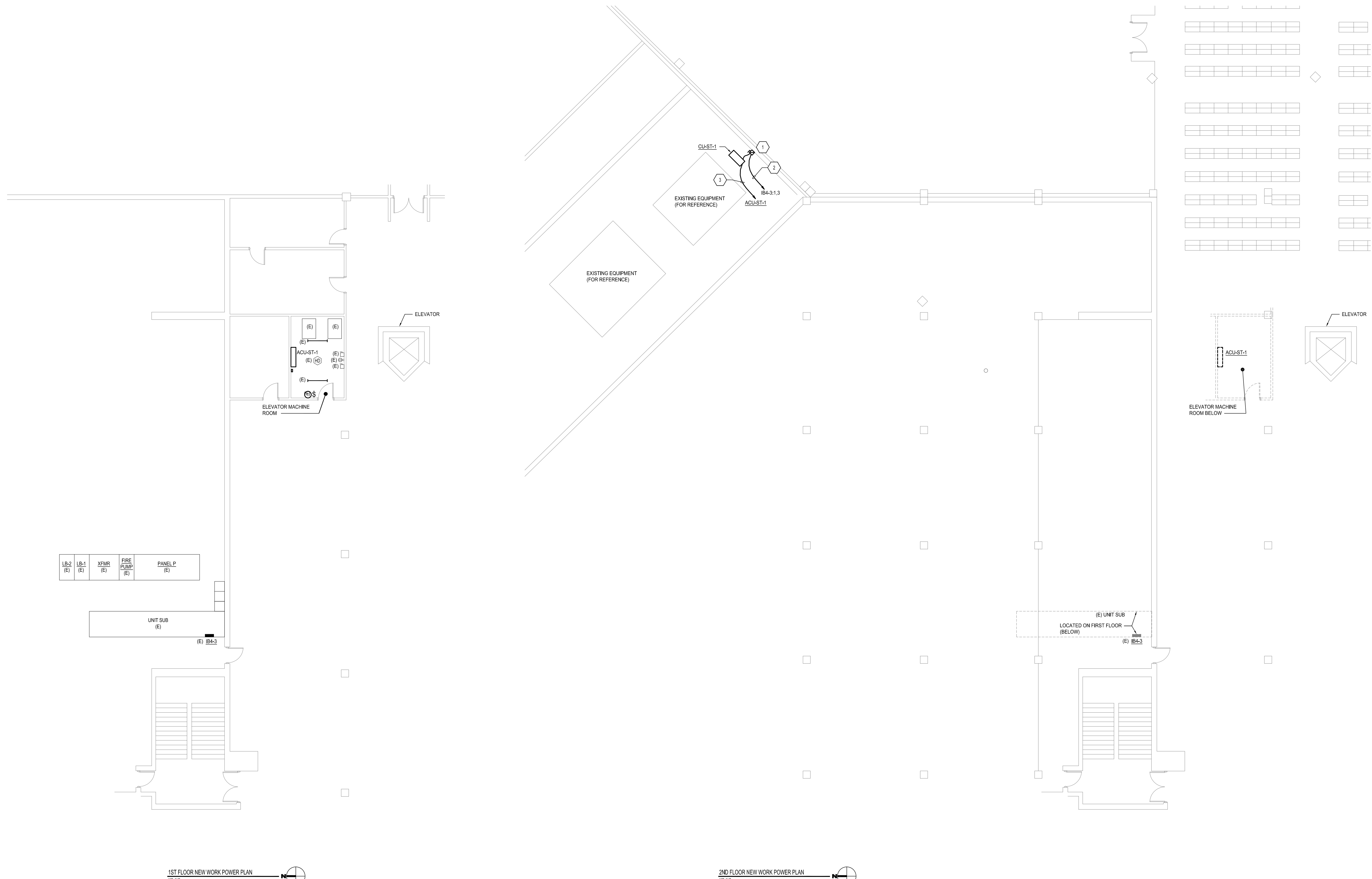
REVISIONS: _____

DATE: _____

ISSUED FOR CONSTRUCTION: _____

DATE PLOTTED: _____

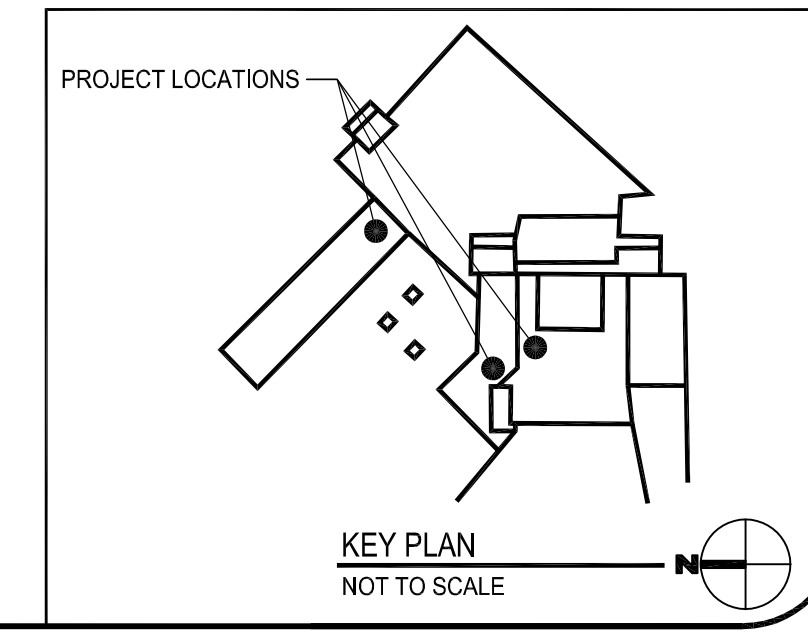
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1ST FLOOR NEW WORK POWER PLAN
181412

2ND FLOOR NEW WORK POWER PLAN
181412

- NOTES THIS DRAWING:**
1. PROVIDE A 30A FUSED LOCAL DISCONNECT WITH 25A FUSES IN A NEMA 3R ENCLOSURE WITH LOCK-OUT-TAG-OUT PROVISIONS.
 2. PROVIDE (2) #8, #10 GND IN A 3/4" CONDUIT TO CU-ST-1.
 3. PROVIDE CONDUIT FROM CU-ST-1 TO ACU-ST-1 FOR LOW VOLTAGE FAN POWER AND CONTROL CABLE FURNISHED WITH EQUIPMENT. COORDINATE CONDUIT SIZE, LOCATION AND INTERCONNECTION WITH MECHANICAL CONTRACTOR



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| NO. | REVISIONS | DATE | APPROVED |
| 0 | ISSUED FOR CONSTRUCTION | 02/13/23 | MCR |

DATE PLOTTED: 02/10/23
DRAWING FILE: P:\E200\181412\181412-NEW WORK POWER PLANS FOR ELEVATOR REPLACEMENT UPGRADES.dwg

pedco **IMEG**
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PROJECT TITLE
NORTHERN KENTUCKY UNIVERSITY
W. FRANK STEELY LIBRARY
1 NUNN DR, HIGHLAND HEIGHTS, KY 41076
ELEVATOR REPLACEMENT UPGRADES

DRAWING TITLE
ELECTRICAL
NEW WORK POWER PLANS

DRAWN: A. JACOBS
CHECKED: S. JONES
PROJECT NO.: RENKU-00005
ISSUE DATE: 02/13/23

STATE OF KENTUCKY
MICHAEL P. WALSH
20003
REGISTERED PROFESSIONAL ENGINEER

SHEET NO. **E200** REVISION NO. **0**