



# UNIVERSITY OF KENTUCKY

## Purchasing Division

### INVITATION FOR BIDS

CCK-2695-23

ADDENDUM # 1

2/16/2023

**ATTENTION: This is not an order. Read all instructions, terms and conditions carefully.**

**IMPORTANT: BID AND ADDENDUM MUST BE RECEIVED BY 3/1/2023 @ 3:00 P.M. LEXINGTON, KY TIME**

Bidder must acknowledge receipt of this and any addendum as stated in the Invitation for Bids.

1. Please refer to and incorporate within the offer, the attached drawings and specifications.

**OFFICIAL APPROVAL**  
**UNIVERSITY OF KENTUCKY**

*Patricia Pflug*

Contracting Officer

**SIGNATURE**

Typed or Printed Name

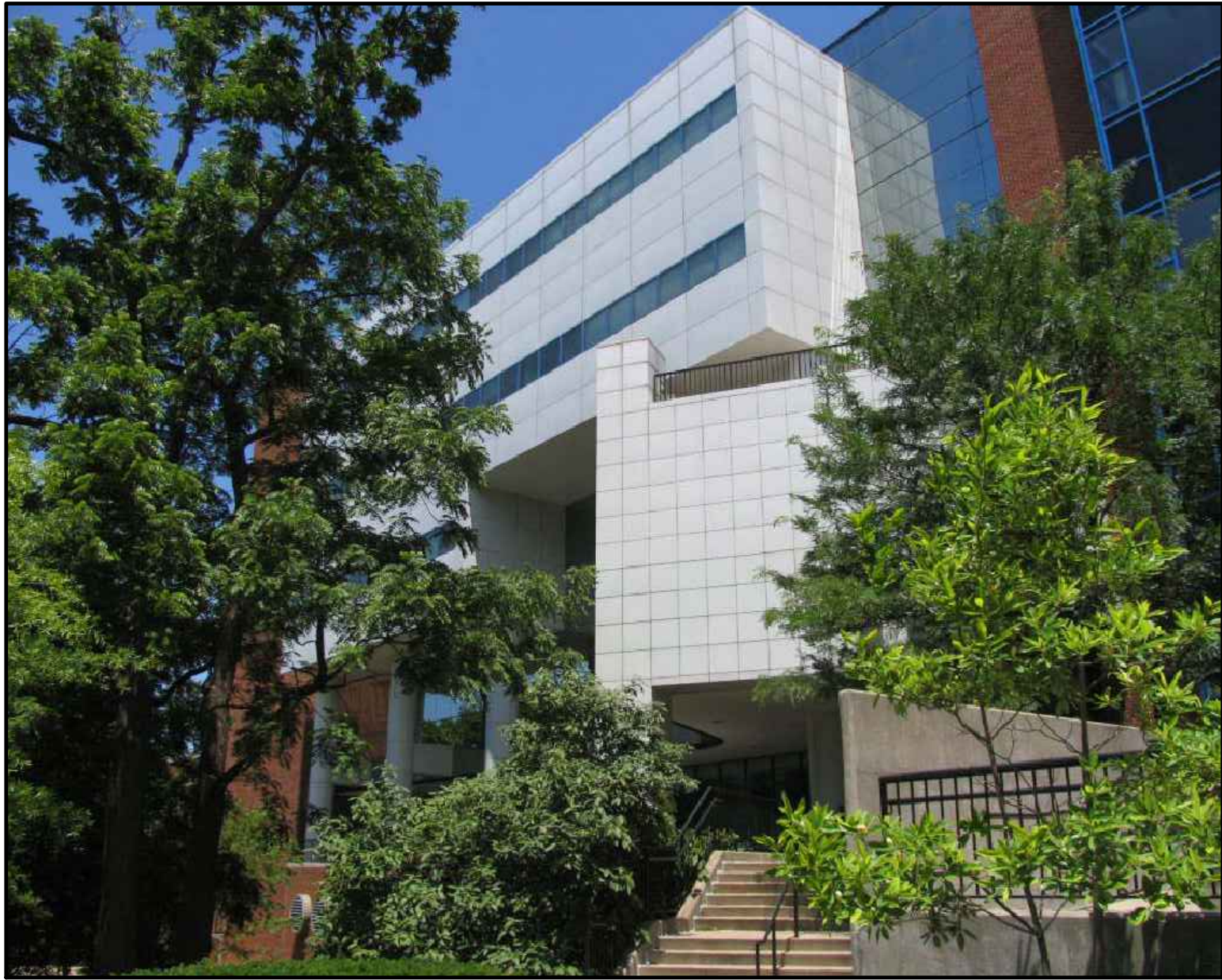


# CENTER FOR ROBOTICS AND MANUFACTURING SYSTEMS

## MODIFY ROOMS R9, R112 AND R112C FOR NEW EQUIPMENT

UNIVERSITY OF KENTUCKY  
LEXINGTON, KENTUCKY

DESIGN AND CONSTRUCTION ADMINISTRATION PROVIDED BY:  
**FACILITIES ENGINEERING AND ASSET MANAGEMENT**  
211 PETERSON SERVICE BUILDING  
LEXINGTON, KY 40506



### DRAWING INDEX

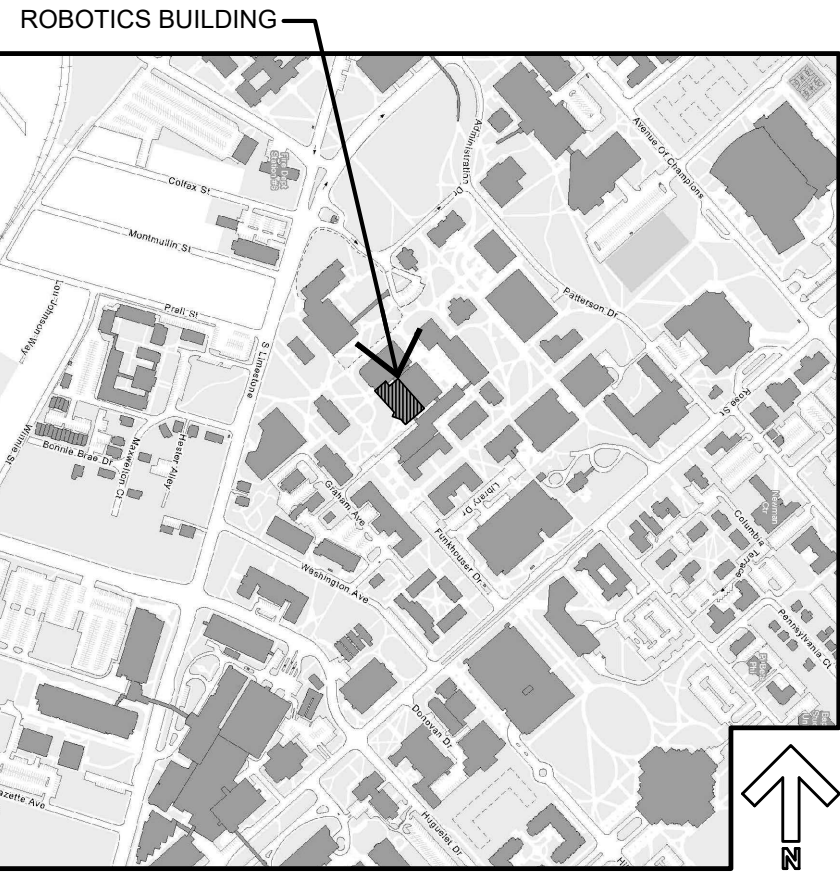
|        |   |
|--------|---|
| T-100  | TITLE SHEET AND DRAWING INDEX SHEET   |
| A-001  | ARCHITECTURAL GENERAL NOTES, ABBREVIATIONS, AND LEGEND                            |
| A-002  | ARCHITECTURAL FINISH AND DOOR SCHEDULES AND DETAILS                               |
| AD-110 | ARCHITECTURAL DEMOLITION PLANS  |
| AD-111 | ARCHITECTURAL DEMOLITION PLANS  |
| AD-112 | ARCHITECTURAL DEMOLITION PLANS  |
| A-110  | ARCHITECTURAL PLANS   |
| A-111  | ARCHITECTURAL PLANS   |
| A-112  | ARCHITECTURAL REFLECTED CEILING PLANS   |
| A-113  | EQUIPMENT LOCATION PLAN   |
| A-115  | ARCHITECTURAL DETAILS   |
| A-116  | ARCHITECTURAL DETAILS   |
| M-001  | MECHANICAL GENERAL NOTES AND LEGEND   |
| M-100  | MECHANICAL NEW WORK PLAN - BASEMENT FLOOR COMPRESSED GASES PIPING AND HVAC PIPING |
| M-110  | MECHANICAL NEW WORK PLAN - FIRST FLOOR  |
| M-111  | MECHANICAL NEW WORK PLAN - FIRST FLOOR  |
| M-112  | MECHANICAL NEW WORK PLAN - BASEMENT AND FIRST FLOOR - AIR COMPRESSOR              |
| M-400  | MECHANICAL DETAILS  |
| M-500  | MECHANICAL SCHEDULES  |
| IC-001 | HVAC CONTROLS   |
| F-110  | FIRE PROTECTION PLAN  |
| P-001  | PLUMBING GENERAL NOTES AND LEGEND   |
| P-100  | PLUMBING NEW WORK PLAN - BASEMENT   |
| P-110  | PLUMBING NEW WORK PLAN - FIRST FLOOR - SANITARY                                   |
| P-400  | PLUMBING DETAILS, AND SCHEDULES   |
| E-001  | ELECTRICAL GENERAL NOTES AND LEGEND   |
| ED-110 | ELECTRICAL DEMOLITION AND NEW WORK PLANS  |
| E-100  | ELECTRICAL DEMOLITION AND NEW WORK PLAN - BASEMENT POWER                          |
| E-110  | ELECTRICAL NEW WORK PLAN - FIRST FLOOR - LIGHTING                                 |
| E-111  | ELECTRICAL NEW WORK PLAN - FIRST FLOOR - POWER                                    |
| E-400  | ELECTRICAL SCHEDULES AND DETAILS  |

### PROJECT DESCRIPTION

THIS PROJECT PREPARES ROOMS IN THE BASEMENT AND FIRST FLOOR FOR NEW EQUIPMENT. WORK INCLUDES CHANGES TO ELECTRICAL, MECHANICAL, PLUMBING AND PROCESS PIPING UTILITIES. A NEW MAKE-UP AIR UNIT AND EXHAUST FAN WILL ALSO BE INSTALLED.

[ALTERNATE 1] - PROVIDE AND INSTALL STAIRWAY.  
PROVIDE & INSTALL NEW STOREFRONT DOOR.

### VICINITY MAP



UNIVERSITY OF KENTUCKY  
Physical Plant Division  
Facilities Engineering



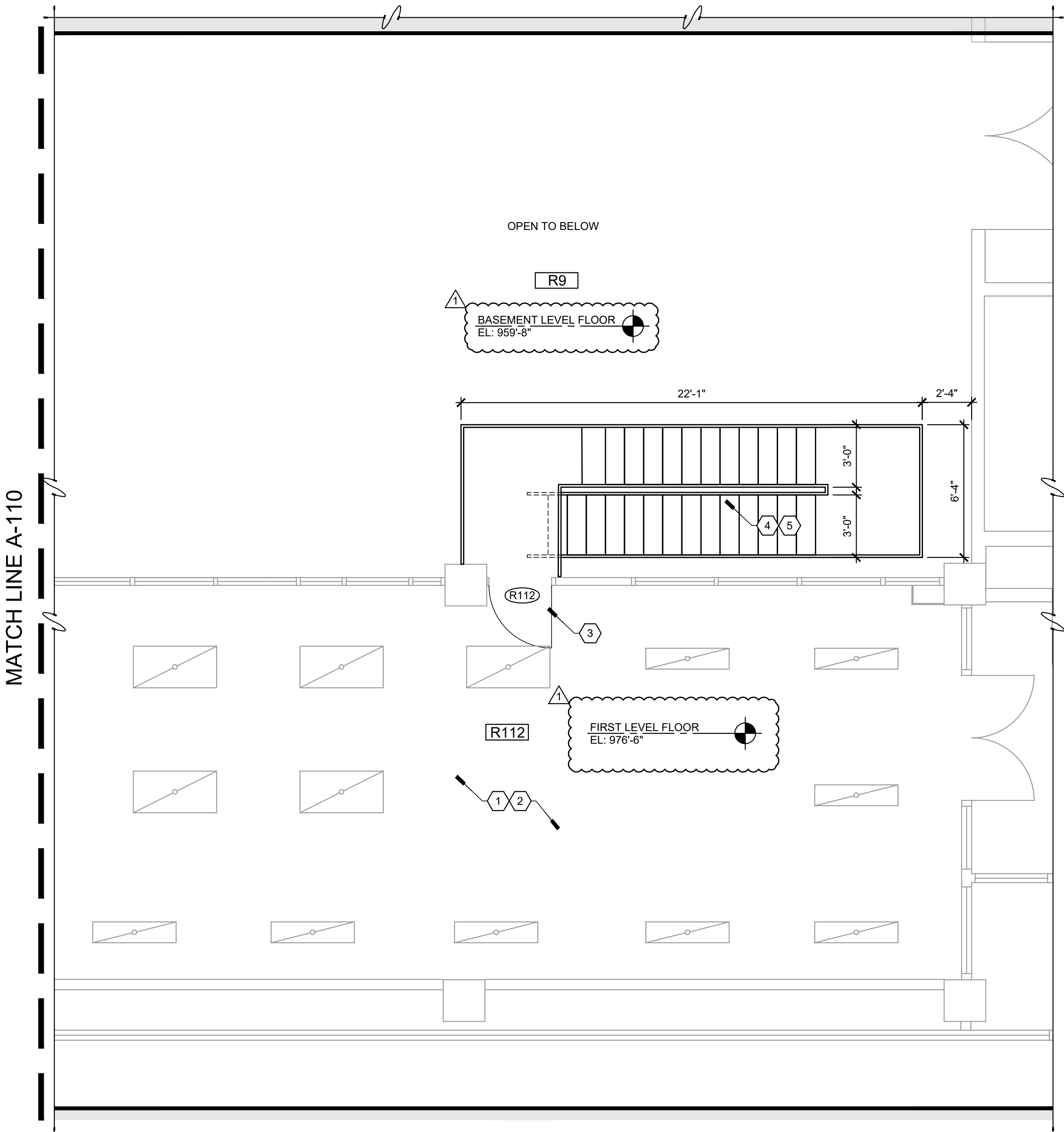
CENTER FOR ROBOTICS AND MANUFACTURING SYSTEMS  
MODIFY ROOMS R9, R112 AND R112C FOR NEW EQUIPMENT

BUILDING NUMBER: 0108

TITLE SHEET AND DRAWING INDEX

| REVISIONS       |              |
|-----------------|--------------|
| #               | DATE         |
| 1               | 02/16/2023   |
|                 |              |
|                 |              |
|                 |              |
|                 |              |
| DESIGNED BY:    | STAFF        |
| DRAWN BY:       | STAFF        |
| CHECKED BY:     | ST-W         |
| APPROVED BY:    | BL           |
| PROJECT NO.:    | 807003784590 |
| DATE:           | 02/2023      |
| DRAWING NUMBER: | T-100        |





## GENERAL NOTES

- A. SEE SHEET A-001 FOR ARCHITECTURAL GENERAL NOTES AND LEGEND.  
B. SEE SHEET M-001 FOR MECHANICAL GENERAL NOTES AND LEGEND.  
C. SEE SHEET E-001 FOR ELECTRICAL GENERAL NOTES AND LEGEND

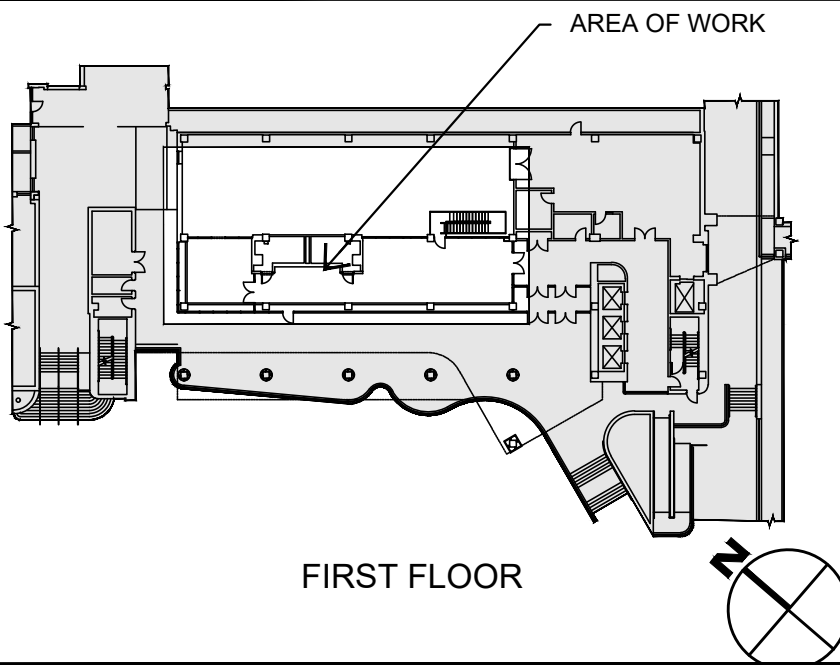
## STAIRWAY REQUIREMENTS

- STAIRWAY REQUIREMENTS  
DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN STRAINS, LANDINGS, AND RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION.
- A. STRUCTURAL PERFORMANCE OF STAIRS: METAL OR FRP STAIRS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
- UNIFORM LOAD: 100 LBF/SF.
  - CONCENTRATED LOAD: 300 LBF APPLIED ON AN AREA OF 4 SQ IN.
  - UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
  - STAIR FRAMING: CAPABLE OF WITHSTANDING STRESSES RESULTING FROM RAILING LOADS IN ADDITION TO LOADS SPECIFIED ABOVE.
  - LIMIT DEFLECTION OF TREADS, PLATFORMS, AND FRAMING MEMBERS TO L/360 OR 1/4 INCH, WHICHEVER IS LESS.
- B. STRUCTURAL PERFORMANCE OF RAILINGS: RAILINGS SHALL WITHSTAND THE EFFECT OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
- HANDRAILS AND TOP RAILS OF GUARDS:
    - UNIFORM LOAD OF 50 LBF/FT APPLIED IN ANY DIRECTION
    - CONCENTRATED LOAD OF 200 LBF APPLIED IN ANY DIRECTION.
    - UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.

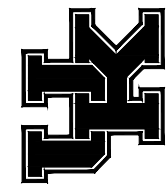
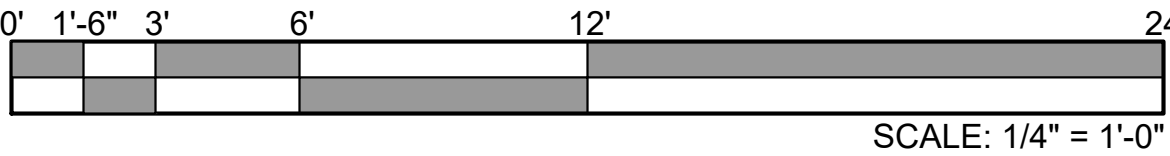
## SHEET NOTES

- PATCH AND REPAIR FLOOR AS NEEDED.
- STRIP, POLISH, AND SEAL CONCRETE FLOORS.
- [ALTERNATE 1] PROVIDE AND INSTALL NEW DOOR AND FRAME. SEE A-002 FOR ADDITIONAL INFORMATION. MATCH EXISTING STOREFRONT DOORS.
- [ALTERNATE 1] PROVIDE AND INSTALL SHOP FABRICATED METAL OR FRP STAIRS, HANDRAILS AND GUARDRAILS. ANCHOR AND DESIGN TO MEET ALL APPLICABLE CODES AND REQUIREMENTS. HEIGHT FROM TOP STAIRS DECK TO FLOOR IS 16'-10"±. FIELD VERIFY HEIGHT BEFORE FABRICATION.
- MODIFY AS NECESSARY TO AVOID EXISTING UTILITIES.

## KEY PLAN



1  
A-111  
NEW WORK PLAN  
SCALE: 1/4" = 1'-0"



| LOUVER SCHEDULE |         |           |      |                  |                        |                   |        |       |           |       |          |         |             |
|-----------------|---------|-----------|------|------------------|------------------------|-------------------|--------|-------|-----------|-------|----------|---------|-------------|
| MARK            | SERVICE | LOCATION  | TYPE | AIRFLOW<br>[CFM] | MAX P.D.<br>[IN. W.C.] | NOMINAL SIZE [IN] |        |       | AREA [SF] |       | MATERIAL | REMARKS | ACCESSORIES |
|                 |         |           |      |                  |                        | WIDTH             | HEIGHT | DEPTH | NET       | FREE  |          |         |             |
| LV-009          | INTAKE  | WEST WALL | 1    | 630              | 0.05                   | 44                | 72     | 6     | 22        | 12.95 | AL       | ALL     | 1-4         |
|                 |         |           |      |                  |                        |                   |        |       |           |       |          |         |             |

TYPE:  
1. DRAINABLE  
FIXED 45 DEGREE BLADES,  
HINGED CONSTRUCTION  
(OPENS OUTWARD)

REMARKS:  
1. BASIS OF DESIGN: UNITED ENERTECH MODEL FL-D-6.1  
2. VERTICAL HINGE ON LEFT JAMB, LOCKABLE

ACCESSORIES:  
1. ALUMINUM BIRDSCREEN, 1/2 IN X 0.05" MESH  
2. FILTER RACK, INTERIOR  
3. PROVIDE 1" PLEATED MERV-8 FILTERS  
4. GALVANIZED SLEEVE, FULL DEPTH OF OPENING, 24. GA. MIN.  
5. MOTORIZED DAMPER WITH END SWITCHES, 24V

| AIR DEVICE SCHEDULE |      |         |                         |                              |                   |             |           |                              |         |             |         |          |         |             |
|---------------------|------|---------|-------------------------|------------------------------|-------------------|-------------|-----------|------------------------------|---------|-------------|---------|----------|---------|-------------|
| MARK                | TYPE | SERVICE | MAX<br>AIRFLOW<br>[CFM] | MAX<br>AIR P.D.<br>[IN W.G.] | NECK<br>SIZE [IN] | MODULE SIZE |           | THROW<br>(FT/50 FPM)<br>[FT] | PATTERN | MAX<br>[NC] | FRAME   | MATERIAL | REMARKS | ACCESSORIES |
|                     |      |         |                         |                              |                   | L<br>[IN]   | W<br>[IN] |                              |         |             |         |          |         |             |
| R                   | 1    | RETURN  | 1040                    | 0.10                         | -                 | 20          | 16        | -                            | -       | 29          | SURFACE | AL       | 3,4     | 1           |
|                     |      |         |                         |                              |                   |             |           |                              |         |             |         |          |         |             |

TYPE:  
1. LOUVERED FACE RETURN, 3/4" BAR SPACING,  
45° DEFLECTION

REMARKS:  
1. BASIS OF DESIGN: PRICE 630D SERIES  
2. FINISH: POWDERED-COATED, COLOR: WHITE

ACCESSORIES:  
1. BALANCING DAMPER AT LOUVER FACE

| DAMPER SCHEDULE |         |          |      |                  |                        |                   |        |       |           |       |          |         |             |
|-----------------|---------|----------|------|------------------|------------------------|-------------------|--------|-------|-----------|-------|----------|---------|-------------|
| MARK            | SERVICE | LOCATION | TYPE | AIRFLOW<br>[CFM] | MAX P.D.<br>[IN. W.C.] | NOMINAL SIZE [IN] |        |       | AREA [SF] |       | MATERIAL | REMARKS | ACCESSORIES |
|                 |         |          |      |                  |                        | WIDTH             | HEIGHT | DEPTH | NET       | FREE  |          |         |             |
| DP-009          | INTAKE  | ROOM 009 | 1    | 630              | 0.05                   | 36                | 32     | 5     | 8         | 12.95 | GALV     | ALL     | 1           |
|                 |         |          |      |                  |                        |                   |        |       |           |       |          |         |             |

TYPE:  
1. CONTROL DAMPER,  
2. RECTANGULAR, PARALLEL MULTI-BLADE

REMARKS:  
1. BASIS OF DESIGN: RUSKIN MODEL CD60

ACCESSORIES:  
1. MOTORIZED ACTUATOR WITH END SWITCH OUTPUTS,  
24V, BELIMO OR APPROVED EQUAL.

| FAN SCHEDULE - UPDATED 1.26.2023 |          |      |      |             |     |       |       |          |            |      |     |              |         |             |
|----------------------------------|----------|------|------|-------------|-----|-------|-------|----------|------------|------|-----|--------------|---------|-------------|
| MARK                             | SERVICE  | TYPE | CFM  | S.P.<br>IN. | RPM | DRIVE | MOTOR |          | ELECTRICAL |      |     | SOUND<br>dBA | REMARKS | ACCESSORIES |
|                                  |          |      |      |             |     |       | HP    | VOLTS/PH | FLA        | MCA  | MOP |              |         |             |
| EF-112                           | ROOM 112 | 1    | 5000 | 1.00        | 687 | BELT  | 2     | 208/1    | 7.5        | 9.38 | 15  | 64           | ALL     | 1-7         |
|                                  |          |      |      |             |     |       |       |          |            |      |     |              |         |             |

FAN TYPE:  
1. CENTRIFUGAL SIDEWALL EXHAUSTER

REMARKS:  
1. BASIS OF DESIGN: GREENHECK CUBE-300HP-20  
2. ALUMINUM HOUSING  
3. ALUMINUM FAN WHEEL  
4. TEFC MOTOR  
5. MOTOR ISOLATORS  
6. CORROSION-RESISTANT FASTENERS  
7. EXHAUST FAN PROVIDED BY OWNER, INSTALLED BY MECHANICAL CONTRACTOR.

ACCESSORIES:  
1. ELECTRICAL DISCONNECT SWITCH  
2. MOTOR WITH THERMAL OVERLOAD  
3. ALUMINUM BIRDSCREEN  
4. WIRING PIGTAIL  
5. DAMPER, GRAVITY-OPERATED  
6. CURB CAP

| MAKEUP AIR UNIT SCHEDULE |                     |            |                      |
|--------------------------|---------------------|------------|----------------------|
| MARK                     |                     |            | MAU-112              |
| TYPE                     |                     |            | 1                    |
| SERVICE                  |                     |            | ROOM 112             |
|                          |                     |            | COLD SPRAY ENCLOSURE |
| MOUNTING                 |                     |            | SUSPENDED            |
| ORIENTATION              |                     |            | HORIZONTAL           |
| FAN                      |                     |            |                      |
|                          | AIRFLOW             | [CFM]      | 5000                 |
|                          | EXTERNAL S.P.       | [IN W.C.]  | 1.0                  |
|                          | SPEED               | [RPM]      | 1110                 |
| COOLING                  |                     |            |                      |
| CAPACITY                 | NET TOTAL           | [MBH]      | 393.69               |
|                          | NET SENSIBLE        | [MBH]      | 202.42               |
| AIR TEMPERATURES         | EAT, DB/WB          | [°F]       | 95/78                |
|                          | LAT, DB/WB          | [°F]       | 54.02/53.23          |
| WATER                    | FLOW                | [GPM]      | 80                   |
|                          | PRESS. DROP         | [FT HD]    | 16.48                |
| ROWS                     |                     |            | 4                    |
|                          |                     |            |                      |
| HEATING                  |                     |            |                      |
| SOURCE                   |                     | HOT WATER  |                      |
| CAPACITY                 | TOTAL               | [MBH]      | 606.7                |
| AIR TEMPERATURES         | EAT, DB/WB          | [°F]       | 0/-1                 |
|                          | LAT, DB/WB          | [°F]       | 101.2/57.1           |
| WATER                    | EWT, DB             | [°F]       | 160                  |
|                          | LWT, DB             | [°F]       | 139.3                |
|                          | FLOW                | [GPM]      | 60                   |
|                          | PRESS. DROP         | [FT HD]    | 7.0                  |
|                          |                     |            |                      |
| FILTER SECTION           | TYPE                |            | N/A                  |
|                          | SEE LOUVER SCHEDULE |            |                      |
| ELECTRICAL               |                     |            |                      |
| POWER                    | VOLTS/PH            | [VOLTS/PH] | 208/3                |
| FLA                      |                     |            | 9                    |
| MCA                      |                     |            | 10                   |
| MOP                      |                     |            | 15                   |
| REMARKS                  |                     |            | ALL                  |

TYPE:  
1. MAKEUP AIR UNIT, CHILLED WATER COOLING, HOT WATER HEAT

REMARKS:  
1. BASIS OF DESIGN: AAON H3-ERB-8-0-24FC-62F  
2. FACTORY-MOUNTED CONTROLS WITH BACNET INTERFACE.  
3. CONDENSATE OVERFLOW SWITCH  
4. PROOF-OF-AIRFLOW SENSOR  
5. OUTSIDE AIR SENSOR  
6. DISCHARGE AIR SENSOR

7. MAKEUP AIR UNIT PROVIDED BY OWNER, INSTALLED BY MECHANICAL CONTRACTOR