0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE

DRAWING LIST PH-2

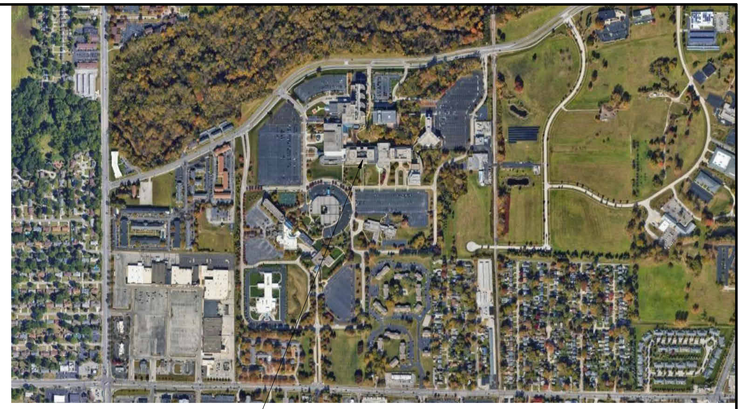
DRAWING NO.	DESCRIPTION	REV	ISSUE	DATE
G-2-001	PHASE TWO COVER SHEET AND DRAWING LIST	1	BULLETIN 1	08/29/2024
S-2-001	STRUCTURAL GENERAL NOTES	0	CONFORMED DOCUMENTS	07/26/2024
SF-2-101	EXIST SHIP LADDER #10 MEZZANINE CLOSURE FRAMING PLANS, SECTIONS, & DETAILS	0	CONFORMED DOCUMENTS	07/26/2024
SF-2-102	OVERALL FILTER AND FAN FRAMING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
SF-2-103	ENLARGED FILTER AND FAN FRAMING PLANS	0	CONFORMED DOCUMENTS	07/26/2024
SF-2-501	STEEL SECTIONS AND DETAILS	0	CONFORMED DOCUMENTS	07/26/2024
SF-2-502	STEEL SECTIONS AND DETAILS	0	CONFORMED DOCUMENTS	07/26/2024
AD-2-101	PHASE TWO DEMO PLAN	0	CONFORMED DOCUMENTS	07/26/2024
AD-2-102	PHASE TWO DEMO RCP	0	CONFORMED DOCUMENTS	07/26/2024
A-2-101	PHASE TWO FLOOR PLAN	0	CONFORMED DOCUMENTS	07/26/2024
A-2-102	PHASE TWO FLOOR PLAN	0	CONFORMED DOCUMENTS	07/26/2024
A-2-103	PHASE TWO REFLECTED CEILING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
A-2-104	PHASE TWO EQUIPMENT PLAN	0	CONFORMED DOCUMENTS	07/26/2024
A-2-105	PHASE TWO ROOF PLAN AND SECTIONS	0	CONFORMED DOCUMENTS	07/26/2024
A-2-201	PHASE TWO INTERIOR ELEVATIONS	0	CONFORMED DOCUMENTS	07/26/2024
A-2-202	PHASE TWO INTERIOR ELEVATIONS	0	CONFORMED DOCUMENTS	07/26/2024
A-2-401	PHASE TWO ENLARGED FLOOR PLANS	0	CONFORMED DOCUMENTS	07/26/2024
A-2-501	MISCELLANEOUS DETAILS	0	CONFORMED DOCUMENTS	07/26/2024
A-2-601	PHASE TWO DOOR, HARDWARE, & FINISH SCHEDULE	0	CONFORMED DOCUMENTS	07/26/2024
FP-2-101	OVERALL FIRE PROTECTION PLAN	0	CONFORMED DOCUMENTS	07/26/2024
P-2-101	PHASE TWO PLUMBING DOMESTIC WATER PIPING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
P-2-102	PHASE TWO MEDICAL GAS PIPING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
P-2-110	PHASE TWO PLUMBING SANITARY PLAN	0	CONFORMED DOCUMENTS	07/26/2024
P-2-401	PHASE TWO ENLARGED DOMESTIC WATER PIPING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
P-2-410	PHASE TWO ENLARGED SANITARY PLAN	0	CONFORMED DOCUMENTS	07/26/2024
P-2-601	PHASE TWO PLUMBING DETAILS & SCHEDULES	0	CONFORMED DOCUMENTS	07/26/2024
P-2-701	PHASE TWO PLUMBING ISOMETRIC	0	CONFORMED DOCUMENTS	07/26/2024
PD-2-101	PHASE TWO DEMO PLUMBING DOMESTIC WATER PIPING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
PD-2-110	PHASE TWO DEMO PLUMBING SANITARY PLAN	0	CONFORMED DOCUMENTS	07/26/2024
M-2-101	PHASE TWO MECHANICAL FLOOR PLAN	0	CONFORMED DOCUMENTS	07/26/2024
M-2-110	PHASE TWO MECHANICAL ROOF PLAN, ENLARGED DEMO PLAN AND ENLARGED ROOF PLAN	0	CONFORMED DOCUMENTS	07/26/2024
M-2-401A	PHASE TWO ENLARGED MECHANICAL FLOOR PLAN	0	CONFORMED DOCUMENTS	07/26/2024
M-2-401B	PHASE TWO ENLARGED MECHANICAL FLOOR PLAN	0	CONFORMED DOCUMENTS	07/26/2024
M-2-402A	PHASE TWO ENLARGED MECHANICAL FLOOR PLAN	0	CONFORMED DOCUMENTS	07/26/2024
M-2-402B	PHASE TWO ENLARGED MECHANICAL FLOOR ROOM	0	CONFORMED DOCUMENTS	07/26/2024
M-2-403	PHASE TWO ENLARGED MECHANICAL STEAM & CONDENSATE PIPING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
M-2-501	PHASE TWO MECHANICAL DETAILS	0	CONFORMED DOCUMENTS	07/26/2024
M-2-502	PHASE TWO MECHANICAL DETAILS	0	CONFORMED DOCUMENTS	07/26/2024
M-2-503	PHASE TWO MECHANICAL DETAILS	0	CONFORMED DOCUMENTS	07/26/2024
M-2-601	PHASE TWO AIR FLOW DIAGRAM	0	CONFORMED DOCUMENTS	07/26/2024
M-2-602	PHASE TWO MECHANICAL SCHEDULES	1	BULLETIN 1	08/29/2024
M-2-603	PHASE TWO FILTER HOUSING REFERENCE	0	CONFORMED DOCUMENTS	07/26/2024
M-2-604	LABORATORY AIRFLOW CONTROL SYSTEM	0	CONFORMED DOCUMENTS	07/26/2024
E-2-001	PHASE TWO ELECTRICAL LEGENDS, SYMBOLS AND SCHEDULES	0	CONFORMED DOCUMENTS	07/26/2024
E-2-004	PHASE TWO ONE-LINE DIAGRAM	0	CONFORMED DOCUMENTS	07/26/2024
ED-2-101	PHASE TWO ELECTRICAL DEMO PLAN	0	CONFORMED DOCUMENTS	07/26/2024
E-2-101	PHASE TWO OVERALL ELECTRICAL PLAN	0	CONFORMED DOCUMENTS	07/26/2024
EP-2-101	PHASE TWO POWER PLAN	0	CONFORMED DOCUMENTS	07/26/2024
EP-2-102	PHASE TWO ELECTRICAL ROOF PLAN, DEMO AND NEW - BSL3 FANS	0	CONFORMED DOCUMENTS	07/26/2024
EL-2-101	PHASE TWO LIGHTING PLAN	0	CONFORMED DOCUMENTS	07/26/2024
ET-2-101	PHASE TWO SECURITY & LOW-VOLTAGE PLAN	0	CONFORMED DOCUMENTS	07/26/2024
E-2-601	PANEL SCHEDULES ROOM 90	0	CONFORMED DOCUMENTS	07/26/2024
E-2-602	PANEL SCHEDULES ROOM 90	0	CONFORMED DOCUMENTS	07/26/2024
E-2-603	PANEL SCHEDULES ROOM 90	0	CONFORMED DOCUMENTS	07/26/2024
E-2-604	PANEL SCHEDULES ROOM 90B	0	CONFORMED DOCUMENTS	07/26/2024
E-2-605	PANEL SCHEDULES ROOM 90B	0	CONFORMED DOCUMENTS	07/26/2024

THE UNIVERSITY OF TOLEDO
1872

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS

3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

EXHIBIT C



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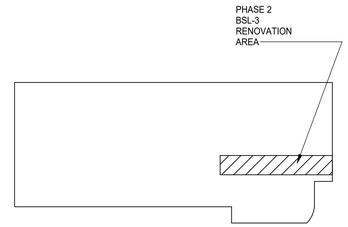
LOCATION MAP



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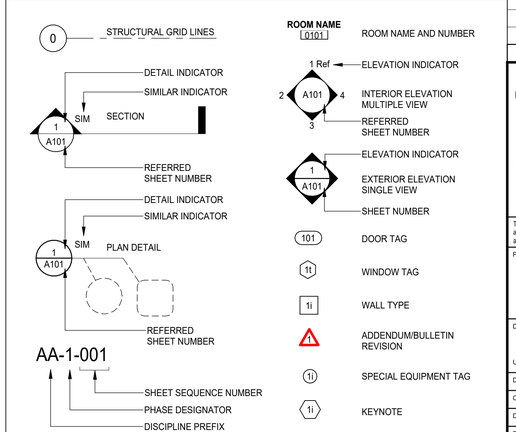
KEY PLAN

DRAWING KEYS



REV	DATE	DESCRIPTION	APPROVAL
1	08/29/2024	BULLETIN 1	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO COVER SHEET AND DRAWING LIST

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	12" = 1'-0"	

JDI PROJECT NO. UOT23-001
DRAWING NO. G-2-001
REV 1

8/28/2024 8:26:24 AM

P:\University of Toledo\2023 Projects\UOT23-001 BSL3 and DLAR Renovations\Project Drawings\Revit\Architectural\UOT23-001 ARCH.rvt

0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
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0 8' 16' 32' — 1/16"=1'-0" SCALE

GENERAL NOTES

CODES AND DESIGN CRITERIA:

GOVERNING CODE: 2024 OHIO BUILDING CODE
USE GROUP I-I

SNOW LOADS
I = 1.0
Ce = 1.1 (SHELTERED)
GROUND SNOW LOAD (Pg) = 20 PSF
FLAT ROOF SNOW LOAD (Pf) = 16.9 PSF
Ct = 1.1
DRIFTS CALCULATED PER ASCE 7-16 REQUIREMENTS

WIND LOADS
I = 1.0
ULTIMATE DESIGN WIND SPEED = 108 MPH
EXPOSURE CATEGORY B
RISK CATEGORY = II
GCPi = 0.18

SEISMIC LOADS
RISK CATEGORY = II
Ss = 0.132
S1 = 0.053
Sds = 0.14
Sd1 = 0.086
Cs = 0.067 (MECHANICAL COMPONENTS)
V = CsW
IMPORTANCE FACTOR = 1.0
R = 2.5 (MECHANICAL COMPONENTS)
OCCUPANCY CATEGORY II
DESIGN CATEGORY B
SITE CLASSIFICATION D
ANALYSIS PROCEDURE = ELF

FOR GRAVITY AND SPECIAL LOADS, SEE PLANS.

GENERAL BUILDING NOTES:

1. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER'S REPRESENTATIVE AS REQUIRED TO MINIMIZE DISRUPTION OF OTHER CONTRACTOR'S WORK.
2. ALL SITE AREAS DISTURBED BY WORK OF THIS CONTRACT SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER.
3. THE CONTRACTOR SHALL FIELD VERIFY THE SIZES, LOCATIONS, ELEVATIONS AND DETAILS OF ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
4. SHOULD EXISTING CONDITIONS OTHER THAN THOSE INDICATED ON THE DRAWINGS BE ENCOUNTERED, THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY SO THAT CORRECTIVE MEASURES MAY BE RECOMMENDED.
5. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH, BUT NOT LIMITED TO, THE FOLLOWING STANDARDS AND SPECIFICATIONS: A.C.I., A.I.S.C., A.S.T.M., A.N.S.I., A.W.S. AND O.S.H.A.
6. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR ALL SHORING, BRACING, APPLICABLE TEMPORARY SUPPORTS, AND OTHER MEANS REQUIRED TO PROTECT THE SAFETY, INTEGRITY AND STABILITY OF ALL NEW CONSTRUCTION AND/OR ALL EXISTING RELEVANT FEATURES.
7. **THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL DEMOLITION DEBRIS OFF SITE.**
8. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A CLEAN CONSTRUCTION AREA. INCLUDING THE REMOVAL OF DEBRIS RESULTING FROM THEIR OPERATIONS.
9. COORDINATE EQUIPMENT ANCHORAGE REQUIREMENTS WITH THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.
10. ADEQUATE BRACING AND TEMPORARY SUPPORTS FOR THE STABILITY OF ALL EXISTING RELEVANT FEATURES SHALL BE PROVIDED BY THE CONTRACTOR.

CAST-IN-PLACE CONCRETE:

1. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO THE GOVERNING ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" AND IS HEREBY MADE A PART OF THESE DRAWINGS.
2. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE IN 28 DAYS SHALL BE AS FOLLOWS:

EXTERIOR FOOTINGS BELOW FROST:	3,000 PSI	
INTERIOR FOOTINGS AND PIERS:	3,000 PSI	
EXTERIOR GRADE WALLS:	3,500 PSI	MAX W/CM RATIO 0.55
INTERIOR FLOOR SLABS:	4,000 PSI	MAX W/CM RATIO 0.50
STRUCTURAL CONCRETE SUBJECT TO FREQUENT EXPOSURE TO WATER: (SHOWER FLOORS)	4,500 PSI	MAX W/CM RATIO 0.45

3. FOR PATCHING USE HIGH EARLY STRENGTH CONCRETE COMPOSED OF EITHER HIGH EARLY STRENGTH PORTLAND CEMENT PER ASTM C 150, TYPE III OR USE A NON CHLORIDE ACCELERATING ADMIXTURE. ALL PATCHES SHALL UTILIZE A W/C RATIO OF 0.45. CONCRETE DESIGN STRENGTH SHALL BE 4500 PSI.
4. USE AN AIR-ENTRAINING ADMIXTURE IN ALL CONCRETE EXPOSED TO THE WEATHER OR IN A LOCATION VULNERABLE TO DE-ICERS. THE AMOUNT OF ENTRAINED AIR SHALL BE 6% ± 1%.
5. REINFORCING BARS: A615 GRADE 60, fy = 60,000 PSI.
6. WELDED WIRE REINFORCING (WWR): ASTM A185.
7. FIBER - REINFORCED CONCRETE: ASTM C1116.
8. CONCRETE COVER ON REINFORCEMENT UNLESS NOTED OTHERWISE:

A. CONCRETE CAST AGAINST AND EXPOSED TO EARTH	3"
B. CONCRETE EXPOSED TO EARTH OR WEATHER	
1. #6 BARS AND LARGER	2"
2. #5 BARS AND SMALLER	1 1/2"
C. SLABS, WALLS, AND JOISTS	
1. #14 AND #18 BARS	1 1/2"
2. #11 BARS AND SMALLER	3/4"
D. BEAMS AND COLUMNS	1 1/2"
E. SHELLS, FOLDED PLATE MEMBERS	
1. #6 BARS AND LARGER	3/4"
2. #5 BARS AND SMALLER	1/2"

9. PROVIDE CORROSION RESISTANT ACCESSORIES SUCH AS GRAY PLASTIC CHAIRS, OR CHAIRS WITH GRAY PLASTIC COATED TIPS, IN ALL EXPOSED CONCRETE CONSTRUCTION. PRECAST CONCRETE CUBES (MASONRY BRICK NOT ALLOWED FOR SLABS ON GRADE) OR SAND PLATE CHAIRS SHALL BE USED FOR THE SUPPORT OF REINFORCING ON GRADE.
10. REINFORCING BARS REQUIRED FOR PROPER SUPPORT OF PRINCIPAL REINFORCING SHALL BE DETAILED AND SUPPLIED BY THE CONTRACTOR WHETHER OR NOT THEY ARE INDICATED ON THE DRAWINGS. THE MINIMUM BAR SIZE SHALL BE #4 AND MAXIMUM SPACING SHALL BE 36" ON CENTER FOR ALL BARS THAT NEED SUPPORT. WELDED WIRE FABRIC SHALL NOT BE USED FOR THE SUPPORT OF PRINCIPAL REINFORCING.
11. ALL CONCRETE SHALL BE CURED USING A LIQUID MEMBRANE CURING COMPOUND WITH A MAXIMUM UNIT MOISTURE LOSS OF 0.039 GR./SQ. CM @ 72 HOURS AND APPLIED AT A MAXIMUM COVERAGE RATE OF 200 SQ. FT./GAL. CURING COMPOUND SHALL BE APPLIED WITHIN 1 HOUR AFTER FINAL TROWELLING OR FORM REMOVAL ALL CONCRETE SHALL BE CURED FOR NOT LESS THAN 7 DAYS. CURING COMPOUNDS SHALL BE COMPATIBLE WITH FINISHED AND COATINGS TO BE APPLIED TO THE CONCRETE SURFACE.
12. EXPANSION JOINT MATERIAL WHERE SPECIFIED ON THE DRAWINGS SHALL BE 1/2" FLEX CELL MANUFACTURED BY CELOTEX OR AN ENGINEER OF RECORD APPROVED EQUAL.
13. ALL SLAB JOINTS SHALL BE SEALED WITH SIKADUR-58 CJR OR APPROVED EQUAL EPOXY CONTROL JOINT RESIN.
14. PLACE CONSTRUCTION JOINTS AS SHOWN ON DRAWINGS AND IN LOCATIONS WHICH LEAST IMPAIR STRENGTH OF STRUCTURE. OBTAIN APPROVAL FROM ENGINEER OF RECORD FOR CONSTRUCTION JOINTS NOT SHOWN ON DRAWINGS.
15. SAWCUT CONTROL JOINTS TO BE LOCATED IN APPROXIMATELY SQUARE PATTERNS AT A MAXIMUM SPACING OF 15 FOOT CENTERS UNLESS NOTED OTHERWISE.
16. DETERMINE SIZE AND LOCATION OF MECHANICAL EQUIPMENT, AND MAKE PROVISIONS FOR BOLTS, SLEEVES, PADS, ETC., IN ACCORDANCE WITH THE MANUFACTURER'S CERTIFIED DRAWINGS. THIS WORK SHALL BE COORDINATED WITH THE ENGINEER OF RECORD PRIOR TO ANY CONCRETE PLACEMENT.
17. PROVIDE A 3/4" x 45° CHAMFER ON ALL EXPOSED EDGES OF CONCRETE (U.N.O.)
18. PROVIDE ACI 301 SMOOTH RUBBED FORM FINISH ON EXPOSED CONCRETE SURFACES. POINT AND PATCH ALL TIE HOLES AND DEFECTS.
19. PROVIDE CORNER BARS TO MATCH HORIZONTAL WALL & FOOTING REINFORCEMENT AT ALL CORNERS. LAP CORNER BARS WITH HORIZONTAL REINFORCEMENT.
20. PROVIDE SMOOTH FINISH ON EXPOSED CONCRETE SURFACES. ALL SIDEWALK AND STOOPS ARE TO BE FLOATED AND BROOM FINISHED WITH CROSS JOINTS SPACED EQUAL TO THE WIDTH OF THE SIDEWALK. PROVIDE EXPANSION JOINTS AT JUNCTION OF THE BUILDING WALLS AND AT INTERVALS NOT TO EXCEED 20'-0".
21. LAP REINFORCING BARS IN ACCORDANCE WITH THE LATEST ACI CODES AND SPECIFICATIONS. FABRICATE BENT BARS WITH MINIMUM LENGTH STANDARDS HOOKS AND EMBED IN ACCORDANCE WITH THE LATEST ACI CODES AND SPECIFICATIONS.
22. FLOOR FLATNESS AND LEVELNESS

	FF	FL	SLOPE PER 10'
A. FLOOR SURFACE CLASSIFICATION FOR SLABS ON GRADE			
1. CONVENTIONAL	20	15	1/2"
2. MODERATELY FLAT	25	20	3/8"
3. FLAT	35	25	1/4"
4. VERY FLAT	45	35	N/A
5. SUPER FLAT	60	40	N/A

B. MEASURE FLOOR FLATNESS AND LEVELNESS IN ACCORDANCE WITH ASTM E1155 WITHIN 72 HOURS OF PLACING THE SLAB.

23. VAPOR BARRIER/RETARDER BELOW CONCRETE SLABS ON GRADE SHALL BE STEGO WRAP CLASS A VAPOR RETARDER 6 MIL ASTM-E1745, WITH MANUFACTURER'S ADHESIVE TAPE AND ACCESSORIES BY STEGO INDUSTRIES. INSTALL ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS OR ENGINEER OF RECORD APPROVED EQUAL.
24. SUBMITTALS:
A. SPECIAL INSPECTIONS REPORT
B. CONCRETE DESIGN MIXTURES
C. STEEL REINFORCEMENT SHOP DRAWINGS
D. MATERIAL CERTIFICATES AND TEST REPORTS
E. FLOOR SURFACE FLATNESS AND LEVELNESS MEASUREMENTS
F. FIELD QUALITY-CONTROL TEST REPORTS

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHALL BE DESIGNED, DETAILED, FABRICATED, ERECTED AND WELDED IN ACCORDANCE WITH THE REQUIREMENTS OF AISC SPECIFICATIONS AND CODES OF STANDARD PRACTICE, AWS D1.1 (STRUCTURAL WELDING CODE - STEEL), AND THE CONTRACT DOCUMENTS, EXCEPT AS NOTED HEREIN.
2. THE LOCATION, SIZE AND CONDITION OF EXISTING STRUCTURES, EQUIPMENT, UTILITIES, SERVICE AND OTHER RELEVANT ENGINEERING FEATURES SHALL BE VERIFIED PRIOR TO FABRICATION OR ERECTION TO DETERMINE CLEARANCES, DIMENSIONS AND FABRICATION OR ERECTION PROCEDURES.
3. ALL STRUCTURAL STEEL MATERIALS SHALL CONFORM TO:

STEEL CHANNELS, ANGLES, BARS, PLATES	ASTM A36
STEEL WIDE FLANGE SHAPES	ASTM A992
STEEL TUBES	ASTM A500, GRADE B, OR ASTM A1085
STEEL PIPES	ASTM A53 OR ASTM A501
THREADED RODS	ASTM A36
NUTS	ASTM A563, HEAVY HEX
WASHER	ASTM F436, HARDENED

4. BOLTS: EXCEPT WHERE NOTED ALL STRUCTURAL BOLTS TO BE:
A. 3/4" DIAMETER, UNLESS NOTED OTHERWISE
B. ASTM A325-N TYPE 1, FOR ALL BEAM AND COLUMN CONNECTIONS
C. ASTM F1554 GRADE 55 FOR ALL ANCHOR BOLTS
5. CONNECTIONS:
A. ALL SHOP CONNECTIONS SHALL BE WELDED
B. ALL PRINCIPAL FIELD CONNECTIONS SHALL BE BOLTED UNLESS NOTED OTHERWISE.
C. CONNECTIONS OF ALL MEMBERS SHALL BE BEARING TYPE UNLESS NOTED OTHERWISE.
D. CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL CONFORM TO THE REQUIREMENTS OF THE CITED AISC SPECIFICATION.
E. IF BEAM REACTIONS ARE NOT SHOWN, CONNECTIONS SHALL BE DESIGNED AS DESCRIBED IN THE GENERAL NOTES. UNDER NO CIRCUMSTANCES SHALL THE NUMBER OF ROWS OF BOLTS IN A FRAMED BEAM CONNECTION BE LESS THAN THE NUMBER GIVEN IN **TABLE 5.E** BELOW ACCORDING TO BEAM SIZE UNLESS APPROVED BY ENGINEER OF RECORD
F. THE MINIMUM LENGTH OF CONNECTION ANGLES SHALL BE NOT LESS THAN EQUAL TO ONE -HALF THE "I" DIMENSION OF THE MEMBER TO BE SUPPORTED.
G. ONE-SIDED CONNECTIONS WILL NOT BE PERMITTED, UNLESS SPECIFICALLY DETAILED ON THE DRAWINGS.
H. THE MINIMUM NUMBER OF BOLTS IN BOLTED CONNECTIONS SHALL BE TWO.
I. THE MINIMUM ANGLE THICKNESS SHALL NOT BE LESS THAN 1/4".
6. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER OF RECORD, HIGH-STRENGTH BOLTS SHALL BE TIGHTENED BY MEANS OF LOAD INDICATOR WASHERS. HARDENED WASHERS SHALL BE USED AS RECOMMENDED BY THE MANUFACTURER OF THE LOAD INDICATOR WASHERS. IF CALIBRATED WRENCH TIGHTENING IS USED, CALIBRATION AND TIGHTENING PROCEDURES SHALL COMPLY WITH THE AISC SPECIFICATION.
7. EXPANSION BOLTS SHALL BE 3/4" DIA. HILTI KWIK BOLT WITH 3 1/4" MINIMUM EMBEDMENT UNLESS OTHERWISE NOTED.
8. COLUMNS AND BEAMS WITH END PLATES SHALL HAVE SQUARE CUT OR MILLED ENDS.
9. GROUT FOR STRUCTURAL ITEMS SHALL BE TYPE 1, MINIMUM COMPRESSIVE STRENGTH, f'c = 5,000 PSI.
10. THE LINE OF FORCE SHALL BE THROUGH THE CENTERS OF GRAVITY OF CONNECTED MEMBERS.
11. STEEL FRAMING RELIES ON ATTACHMENT TO ROOF DIAPHRAGMS, FLOOR DIAPHRAGMS, AND SHEAR WALLS FOR STRUCTURAL STABILITY.
12. SUBMITTALS
A. SHOP DRAWINGS AND ERECTION PLANS FOR APPROVAL
B. SPECIAL INSPECTIONS REPORT

TABLE 5.E - BOLTED CONNECTIONS

NOMINAL DEPTH	NO. OF BOLTS	NOMINAL DEPTH	NO. OF BOLTS
8	2	24	5
10	2	27	5
12	3	30	6
14	3	33	6
16	3	36	7
18	4	40	7
21	4	44	8

WELDING:

1. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS AND ALL WELDING DOCUMENTATION SHALL BE PROVIDED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF AWS.
2. ALL FILLER METALS SHALL HAVE A MINIMUM SPECIFIED TENSILE STRENGTH OF NOT LESS THAN 70,000 PSI.
3. WELDING ELECTRODES - AWS E70XX

GALVANIZING:

1. ALL NEW STEEL TO BE HOT-DIP GALVANIZED PER ASTM A123 / A123M - 12 STANDARD SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS.
2. AREAS OF GALVANIZED STEEL THAT ARE DAMAGED DURING INSTALLATION SHALL BE TOUCHED-UP WITH A ZINC-RICH PAINT.
3. SHEAR PLATES CONNECTED TO EXISTING STEEL DO NOT NEED TO BE GALVANIZED. HOWEVER, AFTER FIELD WELDING THESE PLATES, THE PLATES AND ANY DISTURBED AREAS ON THE EXISTING STEEL SHALL BE TOUCHED-UP WITH A ZINC-RICH PAINT.

PAINTING:

1. CLEAN, PREPARE AND SHOP PRIME ALL STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH THE OWNER'S PAINTING SPECIFICATION. DO NOT PRIME SURFACES TO BE FIELD WELDED OR IN CONTACT WITH CONCRETE.
2. AFTER ERECTION FINISH PAINT ALL STRUCTURAL STEEL IN FIELD IN ACCORDANCE WITH THE OWNER'S PAINTING SPECIFICATIONS.
3. **SEE ARCHITECTURAL PLANS FOR ADDITIONAL PAINTING SPECIFICATIONS.**

MASONRY:

1. ALL REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES SHALL COMPLY WITH THE LATEST ACI530/TMS 402/ASCE 5 CODES AND SPECIFICATIONS.
2. NORMAL WEIGHT AND LIGHT WEIGHT CONCRETE BLOCK SHALL CONFORM TO ASTM C90.
3. INSTALLED CONCRETE UNIT MASONRY COMPRESSIVE STRENGTH SHALL EQUAL **XXXX** PSI.
4. MASONRY REINFORCING SHALL BE ZINC COATED HOHMANN AND BARNARD 220 LADDER-MESH (ASTM A82) 9-GA. OR OWNER APPROVED EQUAL AT 16 INCH VERTICAL SPACING IN EXTERIOR OR LOAD BEARING WALLS AND 24 INCH VERTICAL SPACING IN INTERIOR OR NONBEARING WALLS.
5. IN MASONRY WALLS, PROVIDE BOND BEAM FILLED WITH GROUT REINFORCED WITH (2) #5 BARS CONTINUOUS AT TOP OF WALLS. TYPICAL UNLESS OTHERWISE NOTED.
6. PROVIDE LINTELS IN ACCORDANCE WITH LINTEL SCHEDULE FOR ALL OPENINGS LONGER THAN ONE MASONRY BLOCK. PROVIDE THREE COURSES OF GROUTED CMU UNDER LINTEL BEARINGS FOR OPENINGS LESS THAN 4 FEET WIDE. GROUT JAMBS OF OPENINGS FULL HEIGHT UNDER LINTEL BEARING FOR OPENINGS 4 FEET WIDE OF WIDER WITH (2) #6 BARS.
7. DOWELS SHALL BE PROVIDED TO MATCH VERTICAL WALL REINFORCING. DOWELS SHALL MATCH SIZE AND SPACING OF VERTICAL BARS AND SHALL BE PROVIDED BETWEEN THE FOUNDATIONS AND WALLS.
8. MORTAR FOR MASONRY SHALL CONFORM TO ASTM C270, TYPE M OR S.
9. MORTAR - BELOW GRADE AND REINFORCED WALLS - TYPE S. ALL OTHER LOCATIONS UNO - TYPE M. NO ADMIXTURES SHALL BE USED.
10. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, AND ALL LAPS SHALL BE PER ACI 318. LATERAL TIE WIRE FOR PILASTERS SHALL CONFORM TO ASTM A82.
11. REINFORCED MASONRY CORES SHALL BE FILLED WITH GROUT IN LIFTS OF 48" MAXIMUM UNLESS CLEAN-OUT HOLES ARE APPROVED FOR HIGH-LIFT GROUTING. GROUT SHALL BE PUDDLED OR VIBRATED IN PLACE.
12. MASONRY REINFORCING MUST BE CONTINUOUS. MAINTAIN MINIMUM LAP WHERE SPLICES OCCUR. SUPPORT REINFORCING VERTICALLY AT A DISTANCE NOT EXCEEDING 192 BAR DIAMETERS AND MAINTAIN 1/4" MINIMUM CLEARANCE BETWEEN THE STEEL AND MASONRY.
13. GROUT FOR REINFORCED CORES AND BOND BEAMS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI.
14. ALL CONTROL JOINTS TO BE INSTALLED PER NCMA TEK 3 & 53 AND EXACT LOCATIONS TO BE APPROVED BY THE ENGINEER OF RECORD.
15. DURING ERECTION, COVER TOPS OF WALLS, PROJECTIONS, AND SILLS WITH WATERPROOF SHEETING AT END OF EACH DAY'S WORK. COVER PARTIALLY COMPLETED MASONRY WHEN CONSTRUCTION IS NOT IN PROGRESS.
16. CMU WALLS SHALL BE CLEANED AFTER COMPLETION. OPENINGS SHALL BE CAULKED.
17. NON REINFORCED CMU CORES SHALL BE FILLED WITH EXPANDABLE FOAM INSULATION.
18. GROUT BOND BEAMS, MASONRY CORES, AND COLLAR JOINTS CONTAINING REINFORCEMENT, ANCHORS, AND TIES, AND IN OTHER LOCATIONS INDICATED. GROUT MASONRY COURSE IMMEDIATELY BELOW CHANGE IN WALL THICKNESS AND IMMEDIATELY BELOW LEDGES. FULLY GROUT MASONRY BELOW GRADE. PROVIDE THREE COURSES OF FULLY GROUTED CMU BELOW BEAM, JOIST, AND OTHER CONCENTRATED LOAD BEARINGS.
19. SUBMITTALS:
A. SPECIAL INSPECTIONS REPORT
B. SHOP DRAWINGS SHOWING MASONRY REINFORCEMENT, ANCHORS, EMBEDS, BOND BEAMS, LINTELS, AND OTHER DETAILS OF THE MASONRY
C. GROUT AND MORTAR MIX DESIGNS

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
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360 W. Dussel Dr.
Maumee, OH 43537
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE TOLEDO, OH 43614

DRAWING TITLE
STRUCTURAL GENERAL NOTES

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	NGH	04/17/2024
CHECKED BY	NGH	05/22/2024
DRAWN BY	RCM	04/17/2024
PROJ. MGR.	SP	
SCALE	12" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. S-2-001

REV 0

7/23/2024 10:31:33 AM

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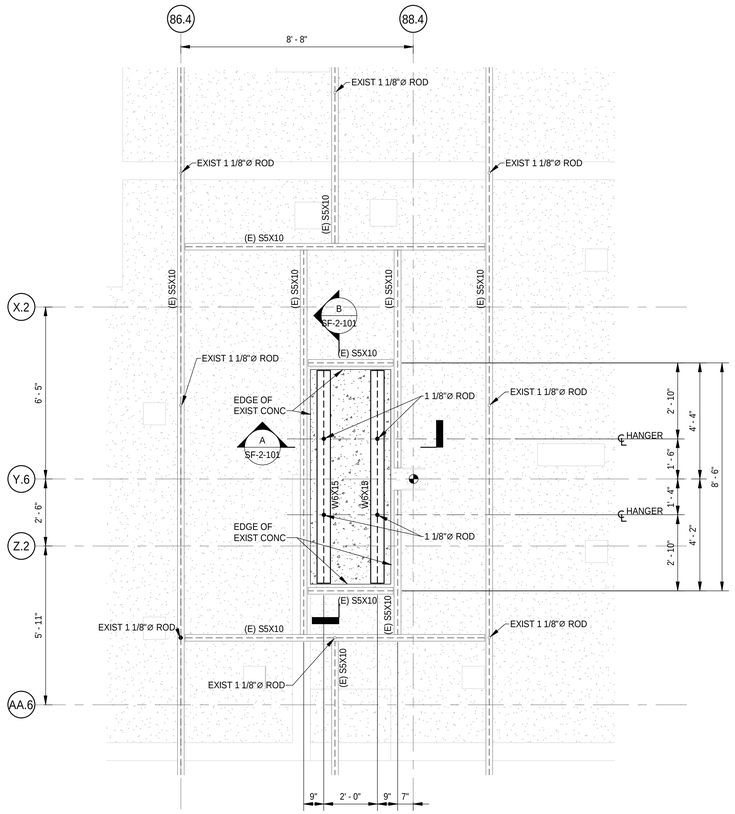
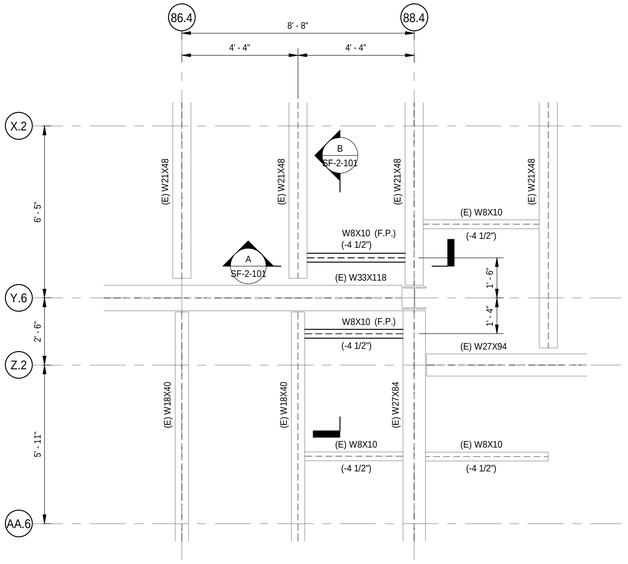
0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1' 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1' 2' — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



MEZZANINE FRAMING PLAN

3/8" = 1'-0"

(T/ ST'L ELEVATION 109'-6 1/2" U.N.O. + OR-)



1ST FLOOR-LOW- FRAMING PLAN

3/8" = 1'-0"

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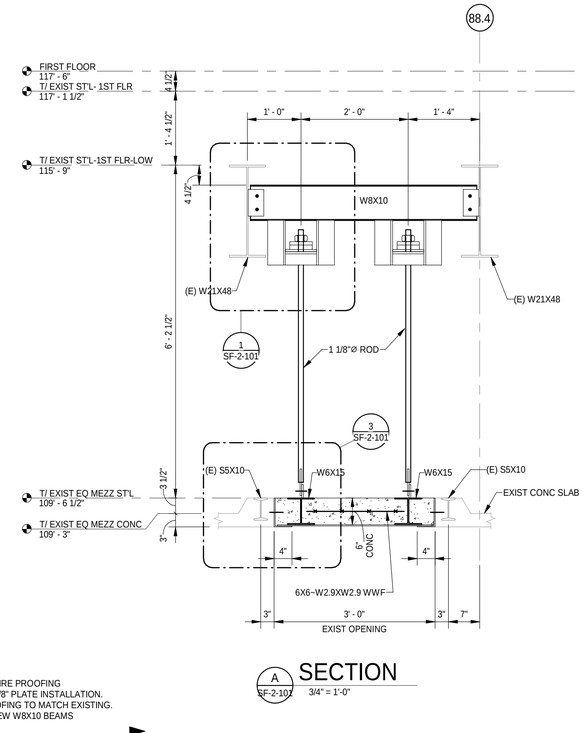
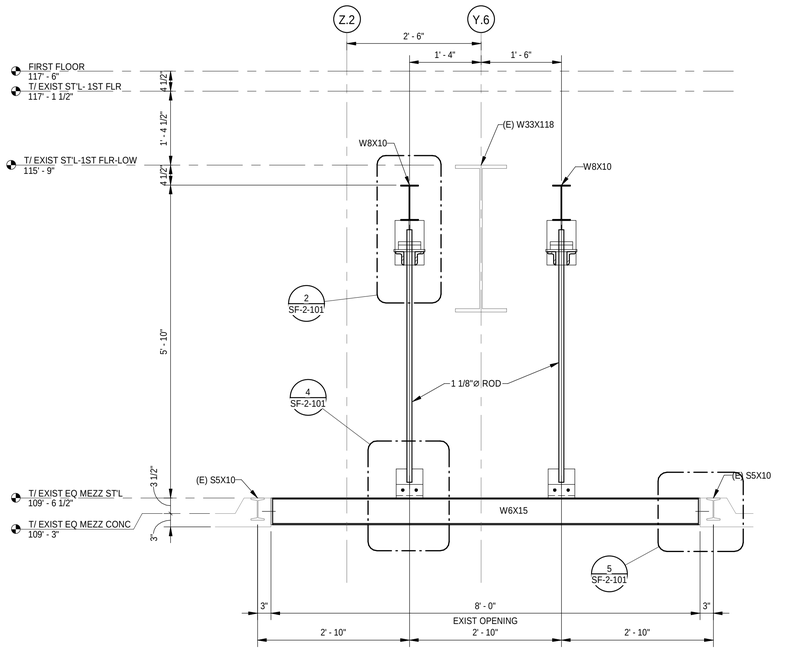


A SECTION

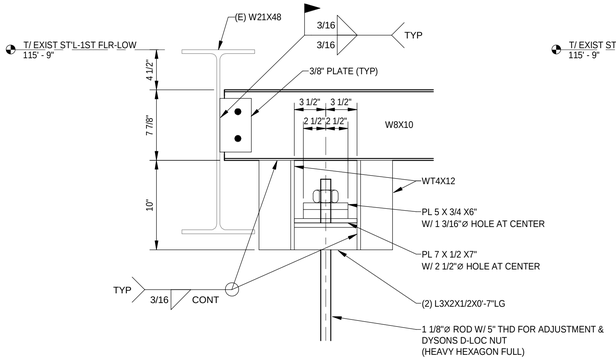
A SF-2-101 — 3/4" = 1'-0"



B SECTION

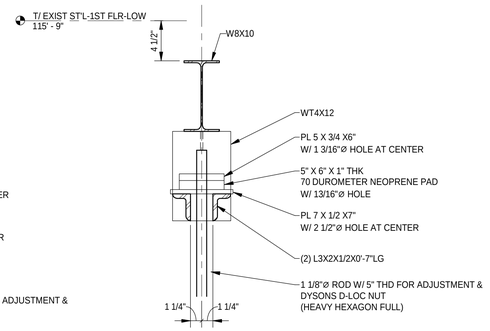
B SF-2-101 — 3/4" = 1'-0"

NOTE:
REMOVE EXISTING FIRE PROOFING
AS REQUIRED FOR 3/8" PLATE INSTALLATION.
REPLACE FIRE PROOFING TO MATCH EXISTING.
FIRE PROOF (F.P.) NEW W8X10 BEAMS



1 DETAIL

1 SF-2-101 — 1 1/2" = 1'-0"



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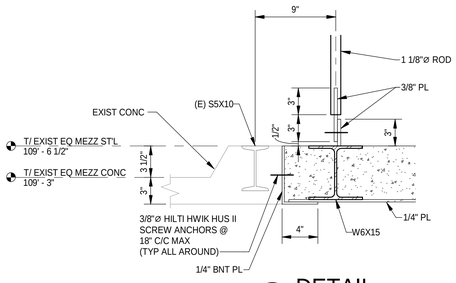
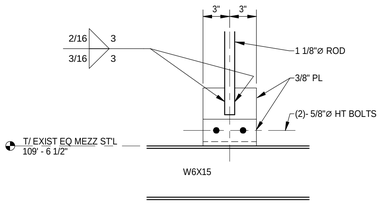


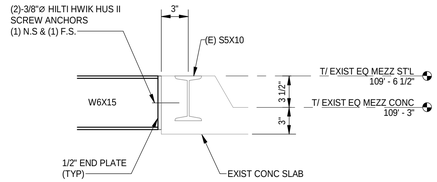
3 DETAIL

3 SF-2-101 — 1 1/2" = 1'-0"



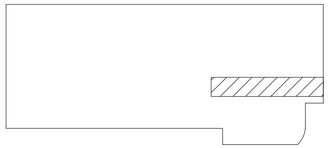
4 DETAIL

4 SF-2-101 — 1 1/2" = 1'-0"



5 DETAIL

5 SF-2-101 — 1 1/2" = 1'-0"



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
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Maumee, OH 43537
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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE TOLEDO, OH 43614

DRAWING TITLE

EXIST SHIP LADDER #10 MEZZANINE
CLOSURE FRAMING PLANS, SECTIONS, & DETAILS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TRW	04/17/2024
CHECKED BY	TRW	05/22/2024
DRAWN BY	RCM	04/17/2024
PROJ. MGR.	SP	
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. SF-2-101

REV 0

7/2/2024 10:31:46 AM

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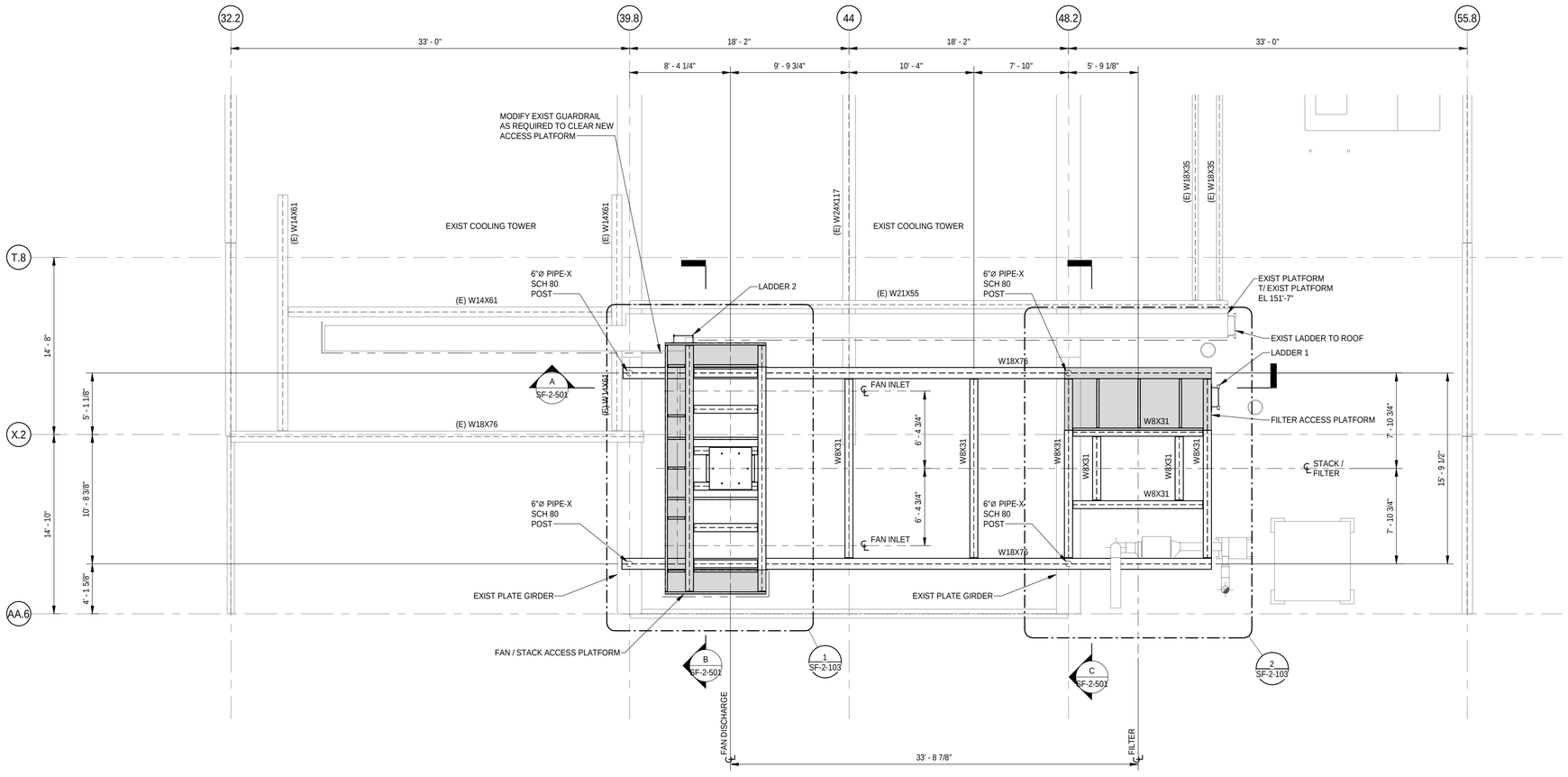
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



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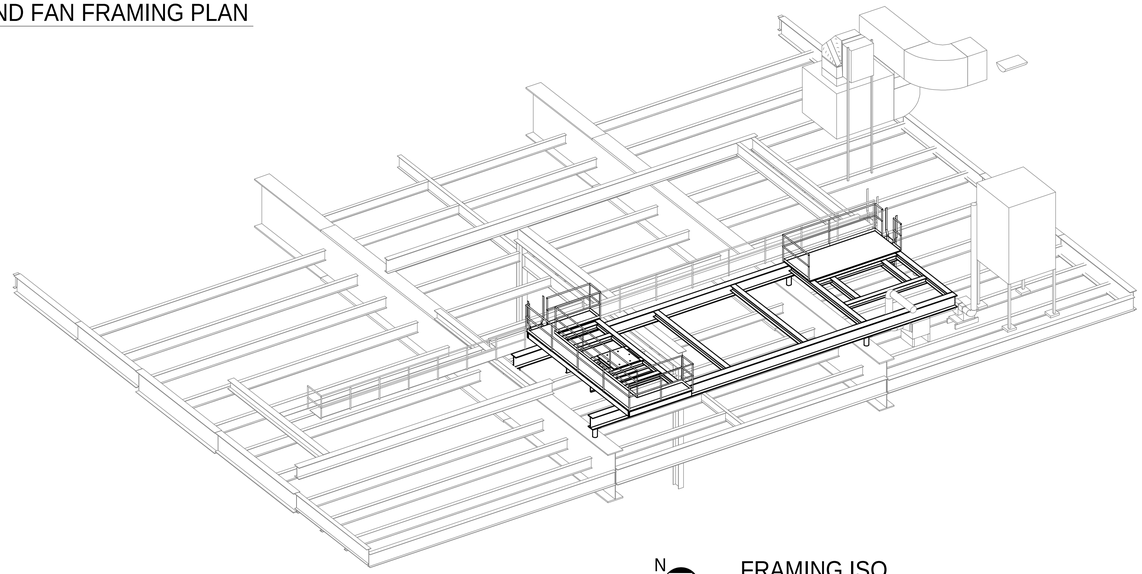
OVERALL FILTER AND FAN FRAMING PLAN

3/16" = 1'-0"



N

FRAMING ISO

SCALE: NONE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE TOLEDO, OH 43614

DRAWING TITLE

OVERALL FILTER AND FAN FRAMING PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	NGH	04/08/2024
CHECKED BY	NGH	05/22/2024
DRAWN BY	RCM	04/08/2024
PROJ. MGR.	SP	
SCALE	3/16" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. SF-2-102

REV 0

7/23/2024 10:51:46 AM

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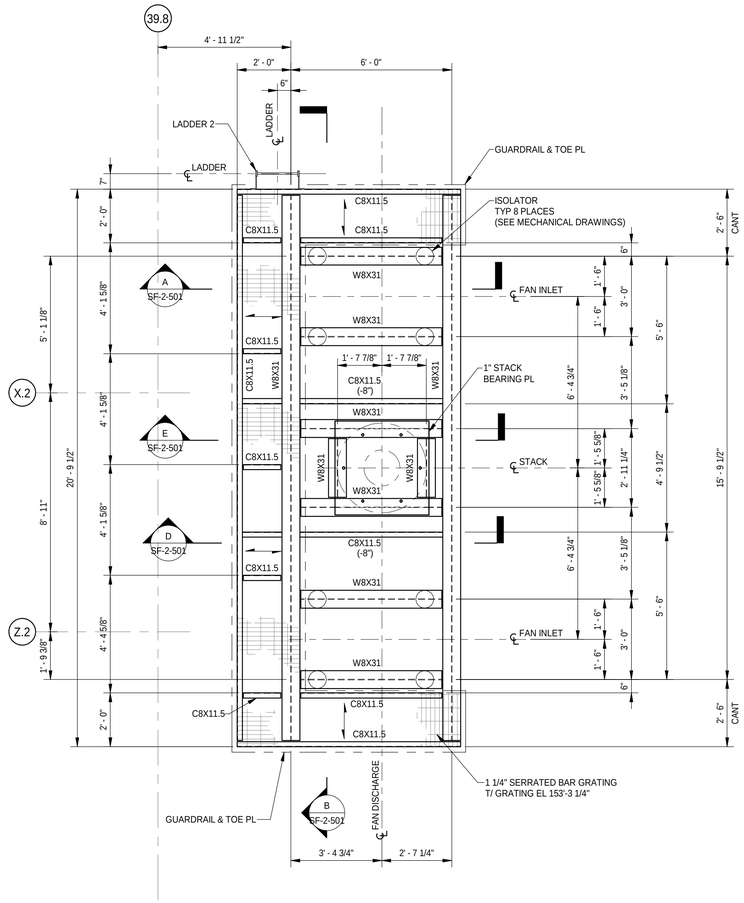
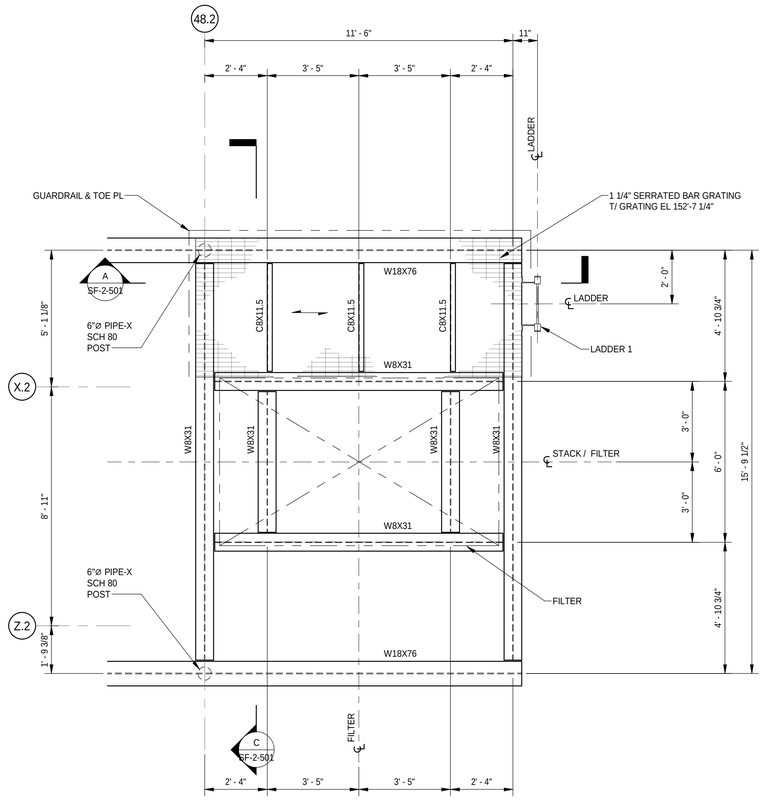


N

ENLARGED FAN/ STACK PLATFORM FRAMING PLAN

3/8" = 1'-0"
(T/ST'L EL 153'-2" U.N.O. + OR -)



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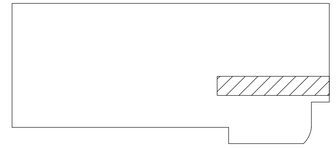
FILTER ACCESS PLATFORM FRAMING PLAN

3/8" = 1'-0"
(T/ST'L EL 152'-6" U.N.O. + OR -)



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
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360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE TOLEDO, OH 43614

DRAWING TITLE

ENLARGED FILTER AND FAN FRAMING PLANS

UOT PROJECT NO.	5003-23-1915		
DESIGNED BY	NGH	04/08/2024	JDI PROJECT NO. UOT23-001
CHECKED BY	NGH	05/22/2024	
DRAWN BY	RCM	04/08/2024	DRAWING NO. SF-2-103
PROJ. MGR.	SP		REV 0
SCALE	3/8" = 1'-0"		

7/23/2024 10:31:51 AM

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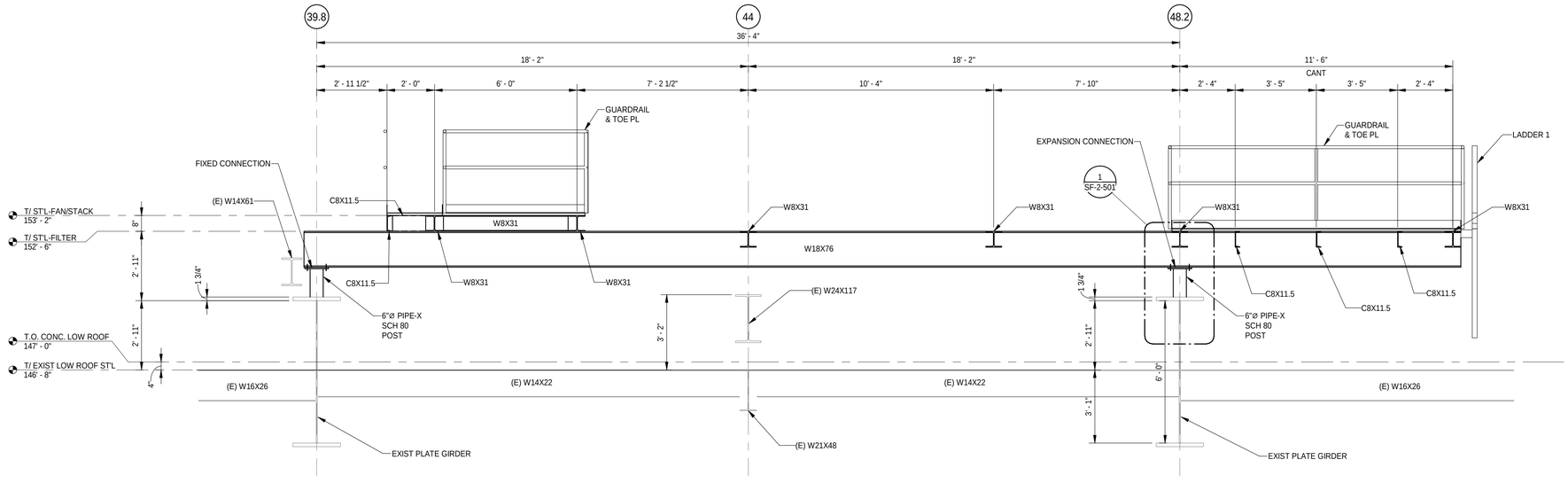
0 1/2" 1' 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1' 2' — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



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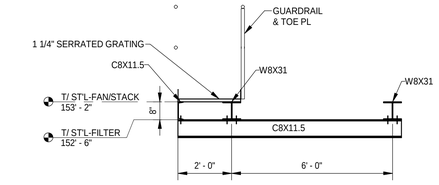
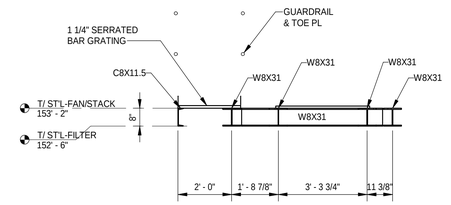
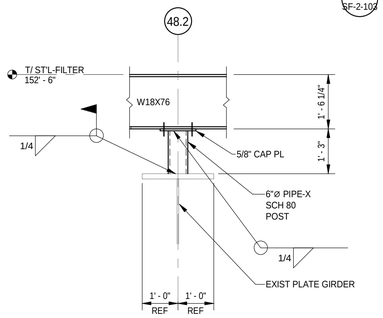
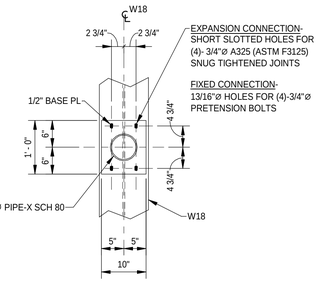


D SF-2-102 **SECTION** 3/8" = 1'-0"

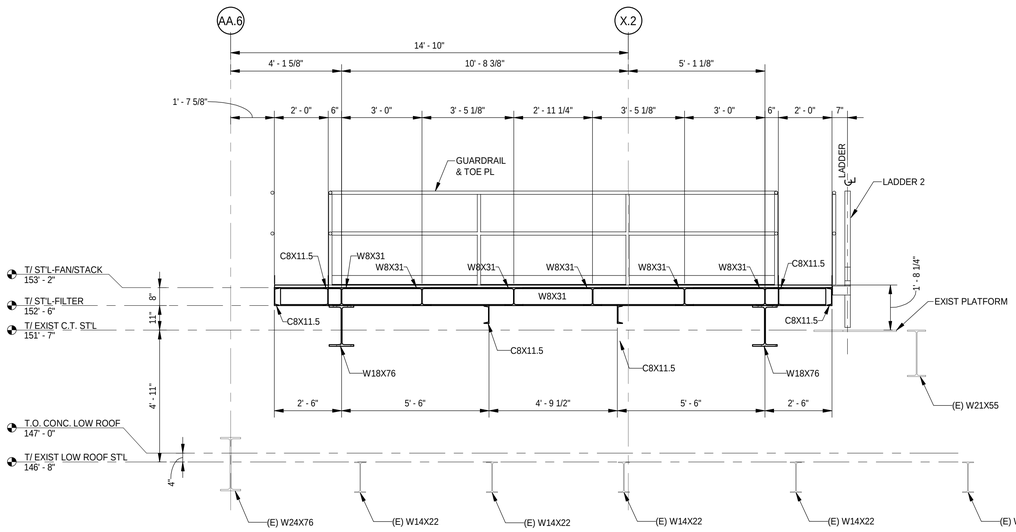


E SF-2-102 **SECTION** 3/8" = 1'-0"



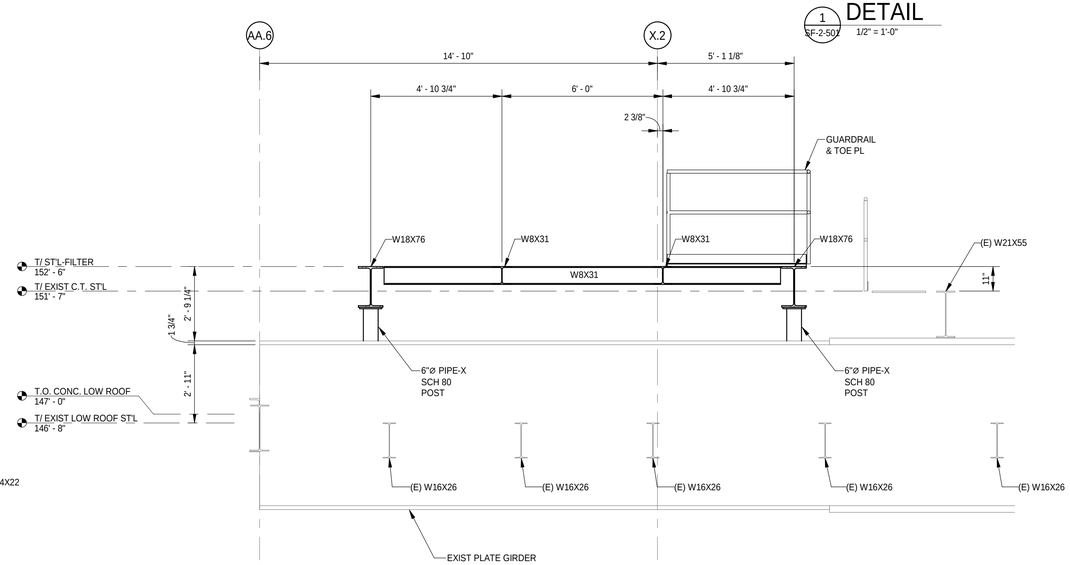


CAP PLATE DETAIL
3/4" = 1'-0"



B SF-2-102 **SECTION** 3/8" = 1'-0"

1 SF-2-501 **DETAIL** 1/2" = 1'-0"



C SF-2-102 **SECTION** 3/8" = 1'-0"

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE TOLEDO, OH 43614

DRAWING TITLE

STEEL SECTIONS AND DETAILS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	NGH	04/08/2024	JDI PROJECT NO. UOT23-001
CHECKED BY	NGH	05/22/2024	
DRAWN BY	RCM	04/08/2024	DRAWING NO. SF-2-501
PROJ. MGR.	SP		REV 0
SCALE	As indicated		

7/23/2024 10:31:57 AM

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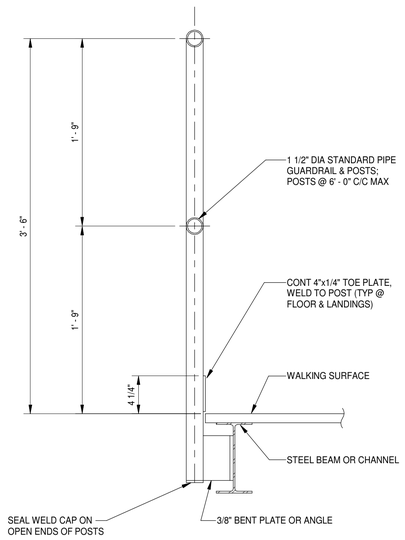
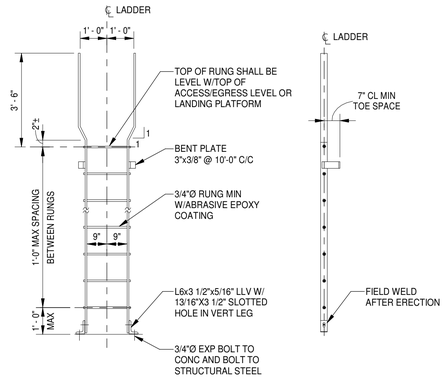
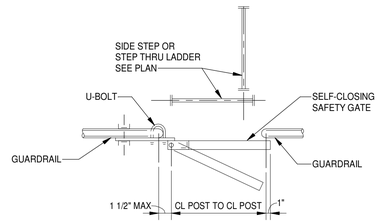
0 1/2" 1' 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1' 2' — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE

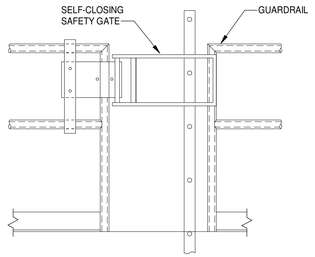


TYPICAL GUARDRAIL DETAIL
1 1/2" = 1'-0"



STANDARD LADDER DETAIL
3/8" = 1'-0"

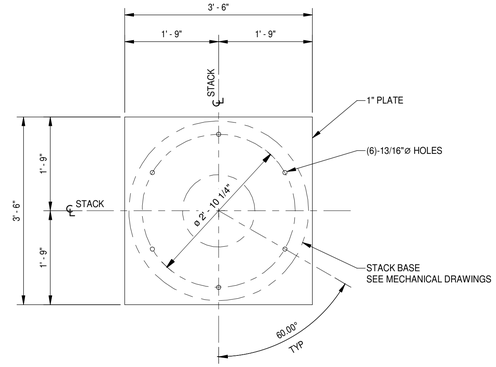




SAFETY GATE BY:

FABENCO MODEL A71 SAFETY GATE AS FURNISHED BY
1. FABENCO
   2012 KARBACK, HOUSTON, TX 77092
   TEL: 1-800-962-6111
2. INTREPID INDUSTRIES (DOUBLE BAR GATE)
   P.O. BOX 5460 PASADENA, TX 77508
3. OR SIMILAR

LADDER SAFETY GATE
3/4" = 1'-0"



STACK BEARING PLATE DETAIL
3/4" = 1'-0"

TYP LADDER BASE PL DETAIL
3" = 1'-0"

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE TOLEDO, OH 43614

DRAWING TITLE

STEEL SECTIONS AND DETAILS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	NGH	04/08/2024	JDI PROJECT NO. UOT23-001
CHECKED BY	NGH	05/22/2024	
DRAWN BY	RCM	04/08/2024	DRAWING NO. SF-2-502
PROJ. MGR.	SP		REV 0
SCALE	As indicated		

7/23/2024 10:53:12 AM

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0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE

0 1/2" 1" 2" — 1"=1'-0" SCALE

0 1' 2' 3' — 3/4"=1'-0" SCALE

0 1' 2' 4' — 1/2"=1'-0" SCALE

0 2' 4' 6' — 3/8"=1'-0" SCALE

0 2' 4' 8' — 1/4"=1'-0" SCALE

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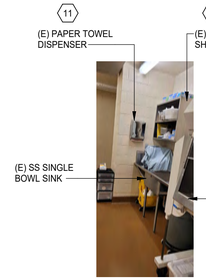
0 8' 16' 32' — 1/16"=1'-0" SCALE



ROOM # 85 - WEST WALL

ROOM # 87 - SOUTH WALL

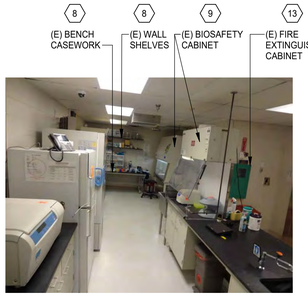
ROOM # 87A - SOUTH WALL

ROOM # 87A - EAST WALL

ROOM # 88 - SOUTH WALL

ROOM # 89 - EAST WALL

ROOM # 89B - NORTH WALL



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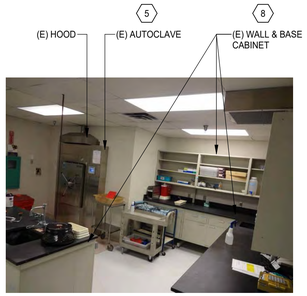

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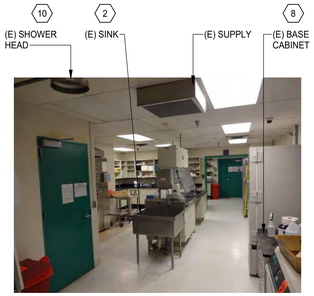

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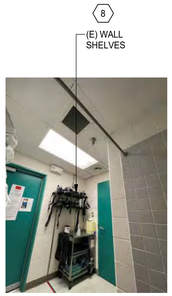
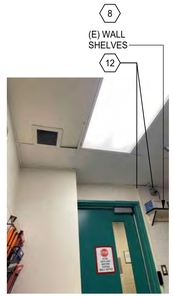


ROOM # 89D - SOUTH/WEST WALL

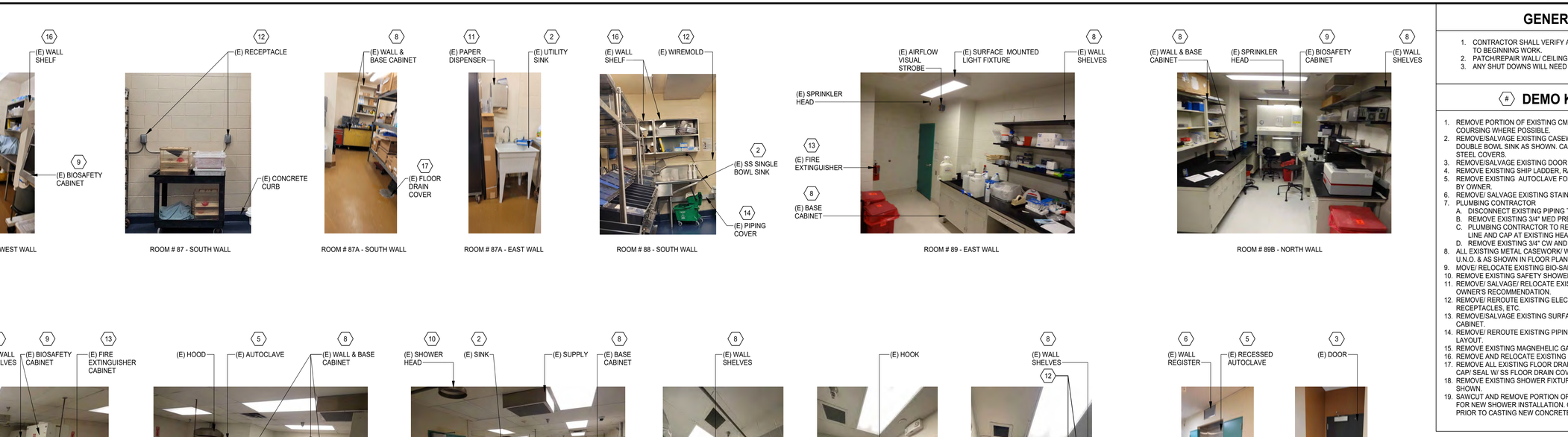
ROOM # 89D - EAST WALL



ROOM # 89E - NORTH WALL

CORRIDOR # 177 - SOUTH WALL

(E) MEZZANINE ACCESS



N

PHASE TWO
DEMOLITION FLOOR PLAN

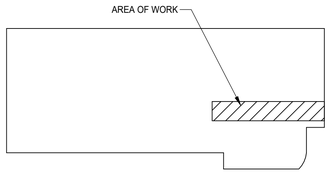
1/8" = 1'-0"

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING WORK.
2. PATCH/REPAIR WALL/ CEILING AS REQUIRED TO MATCH EXISTING.
3. ANY SHUT DOWNS WILL NEED TO BE SCHEDULED IN ADVANCE.

(#) DEMO KEYNOTES

1. REMOVE PORTION OF EXISTING CMU WALL AS REQUIRED FOR NEW WORK, AT COURSING WHERE POSSIBLE.
2. REMOVE/SALVAGE EXISTING CASEWORK SINK, UTILITY SINK, SS SINGLE/ DOUBLE BOWL SINK AS SHOWN. CAP PLUMBING AS NEEDED W/ STAINLESS STEEL COVERS.
3. REMOVE/SALVAGE EXISTING DOOR AND FRAME.
4. REMOVE EXISTING SHIP LADDER, RAILING, AND CLOSE MEZZANINE OPENING
5. REMOVE EXISTING AUTOCLAVE FOR RELOCATION. REMOVAL OF AUTOCLAVE BY OWNER.
6. REMOVE/ SALVAGE EXISTING STAINLESS STEEL WALL REGISTER AT CORRIDOR.
7. PLUMBING CONTRACTOR
   A. DISCONNECT EXISTING PIPING TO AUTOCLAVE
   B. REMOVE EXISTING 3/4" MED PRESS STEAM AND CAP AT EXISTING HEADER
   C. PLUMBING CONTRACTOR TO REMOVE EXISTING 1/2" MED PRESS COND. LINE AND CAP AT EXISTING HEADER
   D. REMOVE EXISTING 3/4" CW AND CAP AT BRANCH
8. ALL EXISTING METAL CASEWORK/ WALL CABINET TO BE REMOVED/SALVAGED U.N.O. & AS SHOWN IN FLOOR PLAN THIS SHEET.
9. MOVE/ RELOCATE EXISTING BIO-SAFETY CABINET
10. REMOVE EXISTING SAFETY SHOWER.
11. REMOVE/ SALVAGE/ RELOCATE EXISTING PAPER TOWEL DISPENSER PER OWNER'S RECOMMENDATION.
12. REMOVE/ REROUTE EXISTING ELECTRICAL CONDUIT, WIREMOLD, RECEPTACLES, ETC.
13. REMOVE/SALVAGE EXISTING SURFACE MOUNTED FIRE EXTIGUISHER AND CABINET.
14. REMOVE/ REROUTE EXISTING PIPING AND COVER AS NEEDED FOR NEW LAYOUT.
15. REMOVE EXISTING MAGNEHELIC GAUGE.
16. REMOVE AND RELOCATE EXISTING STAINLESS STEEL WALL SHELF
17. REMOVE ALL EXISTING FLOOR DRAIN STRAINER/GRATES IN THE BSL-3 AREA. CAP/ SEAL W/ SS FLOOR DRAIN COVER PLATE
18. REMOVE EXISTING SHOWER FIXTURE, CERAMIC TILES, AND ACCESSORIES AS SHOWN.
19. SAWCUT AND REMOVE PORTION OF EXISTING CONCRETE FLOOR AS SHOWN FOR NEW SHOWER INSTALLATION. CLEAN THROUGHLY, USE BONDING AGENT PRIOR TO CASTING NEW CONCRETE.



N

KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO DEMO PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. AD-2-101

REV 0

7/20/2024 9:08:34 AM

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3"=1'-0" SCALE

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1-1/2"=1'-0" SCALE

0 1/2" 1" 2"
1"=1'-0" SCALE

0 1' 2' 3'
3/4"=1'-0" SCALE

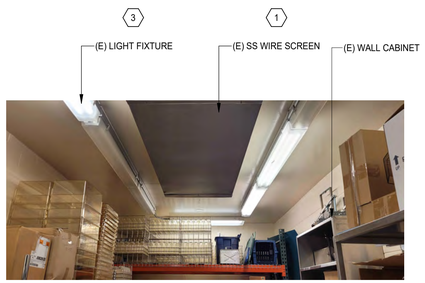
0 1' 2' 4'
1/2"=1'-0" SCALE

0 2' 4' 6'
3/8"=1'-0" SCALE

0 2' 4' 8'
1/4"=1'-0" SCALE

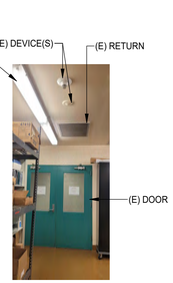
0 4' 8' 16'
1/8"=1'-0" SCALE

0 8' 16' 32'
1/16"=1'-0" SCALE



ROOM # 84 - SOUTH WALL

ROOM # 87A - SOUTH WALL



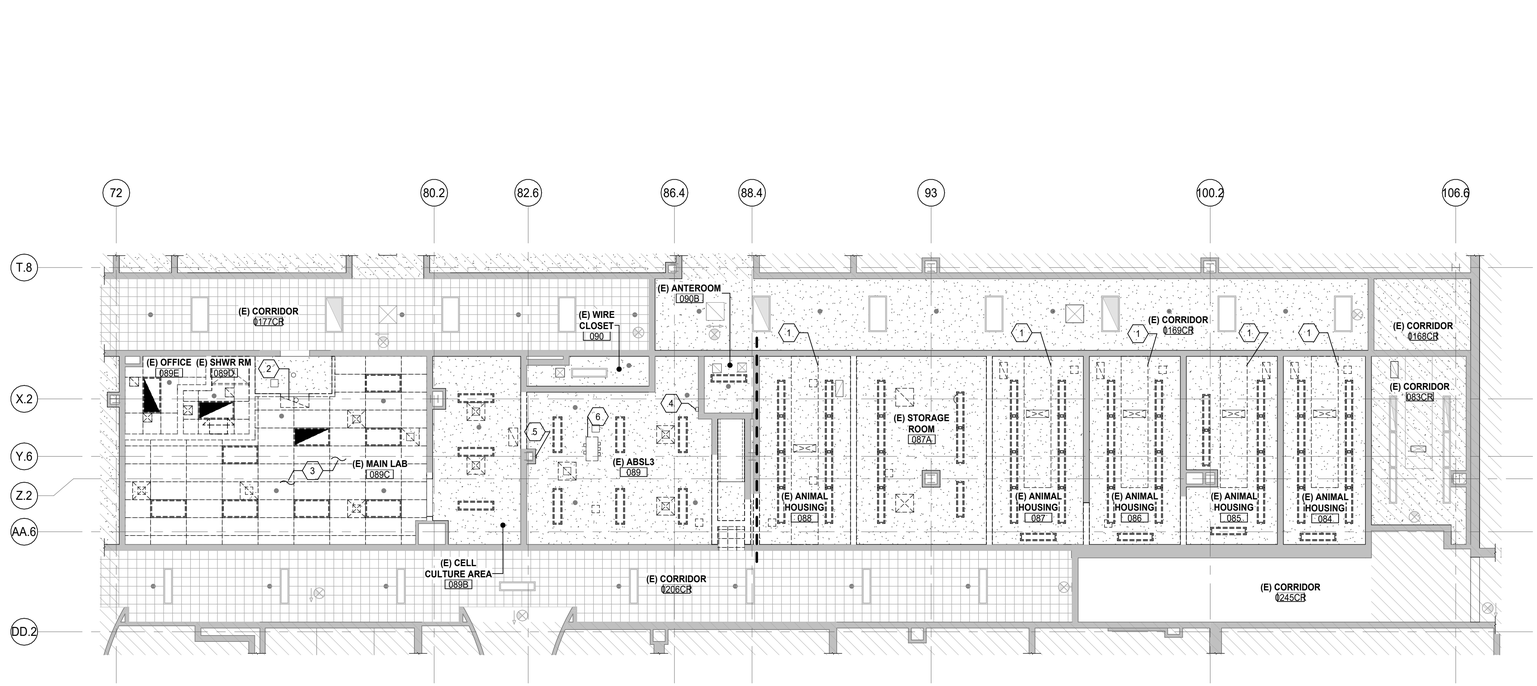
ROOM # 87A - NORTH WALL

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING WORK.
2. PATCH AND REPAIR CEILING TO MATCH EXIST. AND PREP FOR PAINT.
3. ALL CAULKING TO BE RTV LONG LIFE SILICONE

⟨#⟩ DEMO RCP KEYNOTES

1. REMOVE/ SALVAGE EXISTING SUSPENDED SS WIRE SCREEN AS REQUIRED FOR NEW LAYOUT.
2. REMOVE/ SALVAGE AUTOCLAVE HOOD FOR RELOCATION
3. REMOVE EXISTING CEILING GRID SYSTEM, LIGHT FIXTURE(S), CAMERAS, ELECTRICAL WIRING, AS SHOWN
4. REMOVE/ RELOCATE EXISTING VISUAL ALARM
5. REMOVE/ RELOCATE EXISTING ANNUNCIATOR
6. REMOVE/ SALVAGE EXISTING UTILITY CHASE.

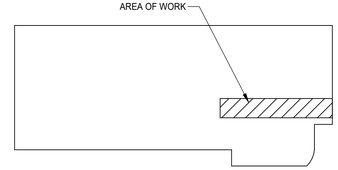


PHASE TWO
DEMO REFLECTED CEILING PLAN

1 / A-1-201 — 1/8" = 1'-0"

DEMO REFLECTED CEILING LEGEND

- DEMO 1x1 ACT CEILING GRID
- (E) GYP. BD. CEILING
- DEMO/DISPOSE LIGHTING FIXTURE
- DEMO/DISPOSE LIGHTING FIXTURE
- (E) SUPPLY AIR DIFFUSER, RECESSED
- (E) RETURN AIR DIFFUSER, SURFACE MOUNTED
- (E) EXIT SIGN/ EMERGENCY LED LIGHT FIXTURE
- DEMO DUAL-HEAD EMERGENCY WALLPACK LIGHT FIXTURE
- (E) FIRE SPRINKLER HEAD TO REMAIN



N

KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO DEMO RCP

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. AD-2-102

REV 0

7/23/2024 9:08:37 AM

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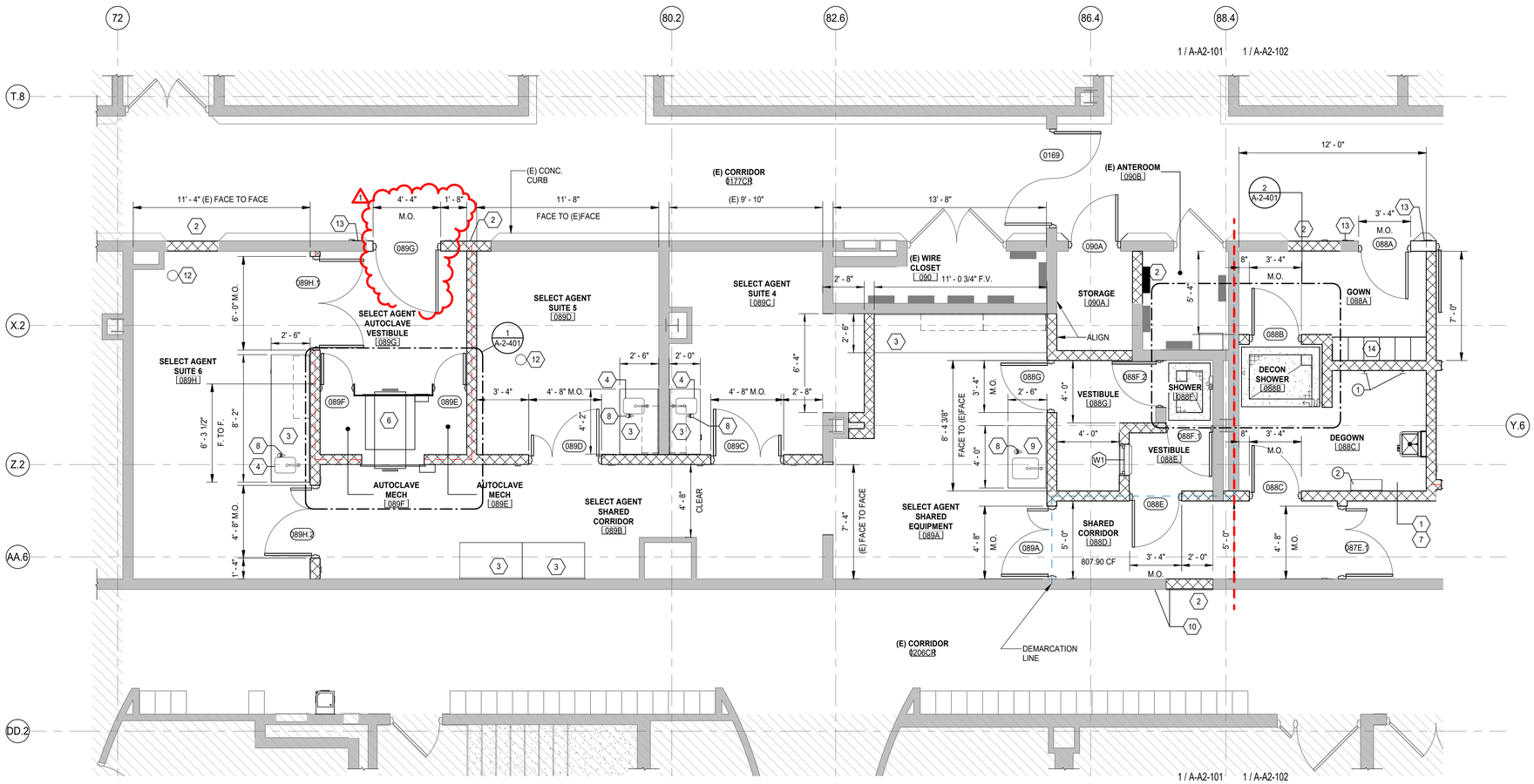
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



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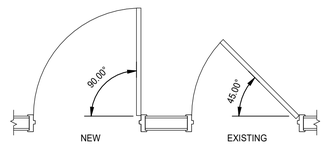
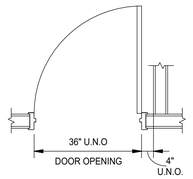
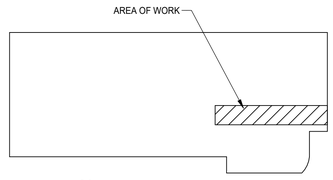
PHASE TWO FLOOR PLAN
1/4" = 1'-0"



TYPICAL INTERIOR DOOR LEGEND
1/2" = 1'-0"



TYPICAL INTERIOR DOOR LOCATION PLAN
1/2" = 1'-0"



N

KEY PLAN

DEGOWN ACCESSORY SCHEDULE

(X) (ALL ACCESSORIES ARE TO BE MANUFACTURED BY BOBRICK, AS NOTED OR APPROVED EQUAL)

No.	ITEM	MODEL	DESCRIPTION
1	ROBE HOOK (304 STAINLESS STEEL)	B-6727	DOUBLE ROBE HOOK, SURFACE MOUNTED
2	SHELF (304 STAINLESS STEEL)	B-298-24	24" W STAINLESS STEEL SHELF, SURFACE MOUNTED
3			
4			

WALL TYPE

EXISTING CMU WALL

NEW 8" CMU WALL FULL HEIGHT OR TO FILL OPENING

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING WORK.
2. PATCH/ REPAIR WALL DUE TO NEW WORK TO MATCH EXISTING W/ CAULK/FILLER TO PROVIDE AIR TIGHT SEAL. PROVIDE PATCHING AND REFINISHING AS REQUIRED TO MATCH ADJACENT SURFACES
3. PROVIDE STAINLESS STEEL PIPING COVER TO EXPOSED EXISTING AND NEW PIPING.
4. INSTALLATION OF TUNNEL WASHER BY OTHERS. VERIFY CLEAN/SOILED SIDE LOCATION WITH MANUFACTURING.

(#) FLOOR PLAN KEYNOTES

1. INSTALL NEW KNEE ACTUATED HAND WASH SINK.
2. INFILL OPENING WITH CMU TO MATCH EXISTING.
3. NEW STAINLESS STEEL CABINETRY AND COUNTER TOP.
4. INSTALL UNDER COUNTER MOUNTED SINK.
5. RELOCATED SALVAGED AUTOCLAVE.
6. NEW AUTOCLAVE (BY OWNER).
7. STAINLESS STEEL PLUMBING CHASE.
8. SURFACE MOUNTED EYE WASH
9. INSTALL 2'-6" x 4'-0" WIDE STAINLESS STEEL WORKBENCH WITH INTEGRATED UTILITY SINK
10. NEW WALL TO MATCH ADJACENT FINISH. COLOR TO MATCH EXISTING.
11. PROVIDE SECURITY FENCING FOR GAS BOTTLE STORAGE
12. CAP/ SEAL W/ SS FLOOR DRAIN COVER PLATE
13. BIOHAZARD SIGNAGE LOCATION (BY OWNER)
14. NEW LOCKER(S) WITH 4" CONCRETE BASE

REV	DATE	DESCRIPTION	APPROVAL
1	10/22/2024	FIELD INSTRUCT #3	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO FLOOR PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-101

REV 1

10/22/2024 8:20:07 AM

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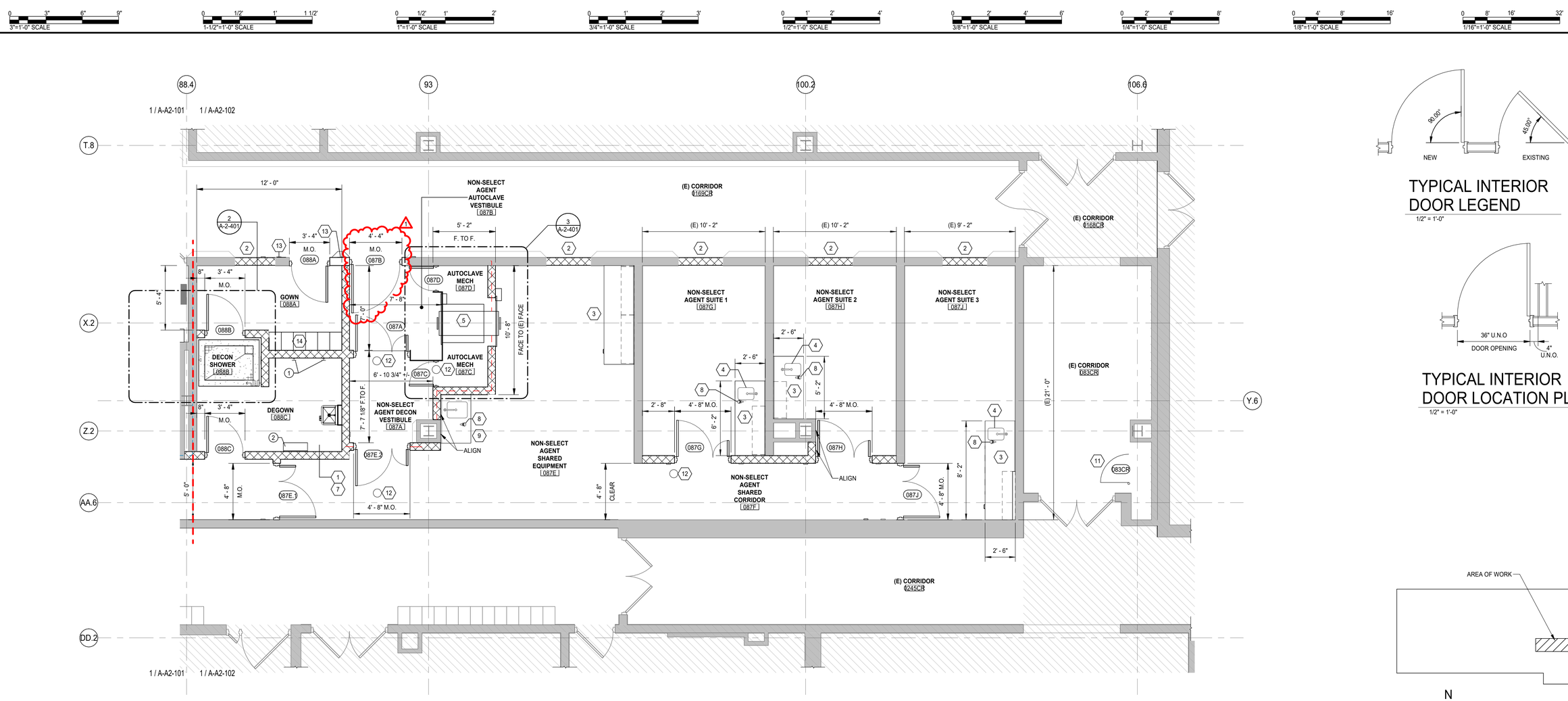

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PHASE TWO FLOOR PLAN

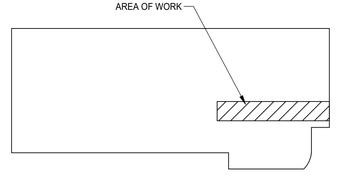
1/4" = 1'-0"

TYPICAL INTERIOR DOOR LEGEND

1/2" = 1'-0"

TYPICAL INTERIOR DOOR LOCATION PLAN

1/2" = 1'-0"



N

KEY PLAN

DEGOWN ACCESSORY SCHEDULE

(X) (ALL ACCESSORIES ARE TO BE MANUFACTURED BY BOBRICK, AS NOTED OR APPROVED EQUAL)

No.	ITEM	MODEL	DESCRIPTION
1	ROBE HOOK (304 STAINLESS STEEL)	B-6727	DOUBLE ROBE HOOK, SURFACE MOUNTED
2	SHELF (304 STAINLESS STEEL)	B-298-24	24" W STAINLESS STEEL SHELF, SURFACE MOUNTED
3			
4			

WALL TYPE

EXISTING CMU WALL

NEW 8" CMU WALL FULL HEIGHT OR TO FILL OPENING

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING WORK.
2. PATCH/ REPAIR WALL DUE TO NEW WORK TO MATCH EXISTING W/ CAULK/FILLER TO PROVIDE AIR TIGHT SEAL. PROVIDE PATCHING AND REFINISHING AS REQUIRED TO MATCH ADJACENT SURFACES
3. PROVIDE STAINLESS STEEL PIPING COVER TO EXPOSED EXISTING AND NEW PIPING.
4. INSTALLATION OF TUNNEL WASHER BY OTHERS. VERIFY CLEAN/SOILED SIDE LOCATION WITH MANUFACTURING.

(#) FLOOR PLAN KEYNOTES

1. INSTALL NEW KNEE ACTUATED HAND WASH SINK.
2. INFILL OPENING WITH CMU TO MATCH EXISTING.
3. NEW STAINLESS STEEL CABINETRY AND COUNTER TOP.
4. INSTALL UNDER COUNTER MOUNTED SINK.
5. RELOCATED SALVAGED AUTOCLAVE.
6. NEW AUTOCLAVE (BY OWNER).
7. STAINLESS STEEL PLUMBING CHASE.
8. SURFACE MOUNTED EYE WASH
9. INSTALL 2'-6" x 4'-0" WIDE STAINLESS STEEL WORKBENCH WITH INTEGRATED UTILITY SINK
10. NEW WALL TO MATCH ADJACENT FINISH. COLOR TO MATCH EXISTING.
11. PROVIDE SECURITY FENCING FOR GAS BOTTLE STORAGE
12. CAP/ SEAL W/ SS FLOOR DRAIN COVER PLATE
13. BIOHAZARD SIGNAGE LOCATION (BY OWNER)
14. NEW LOCKER(S) WITH 4" CONCRETE BASE

REV	DATE	DESCRIPTION	APPROVAL
1	10/22/2024	FIELD INSTRUCT #3	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE

PHASE TWO FLOOR PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-102

REV 1

10/22/2024 8:20:08 AM

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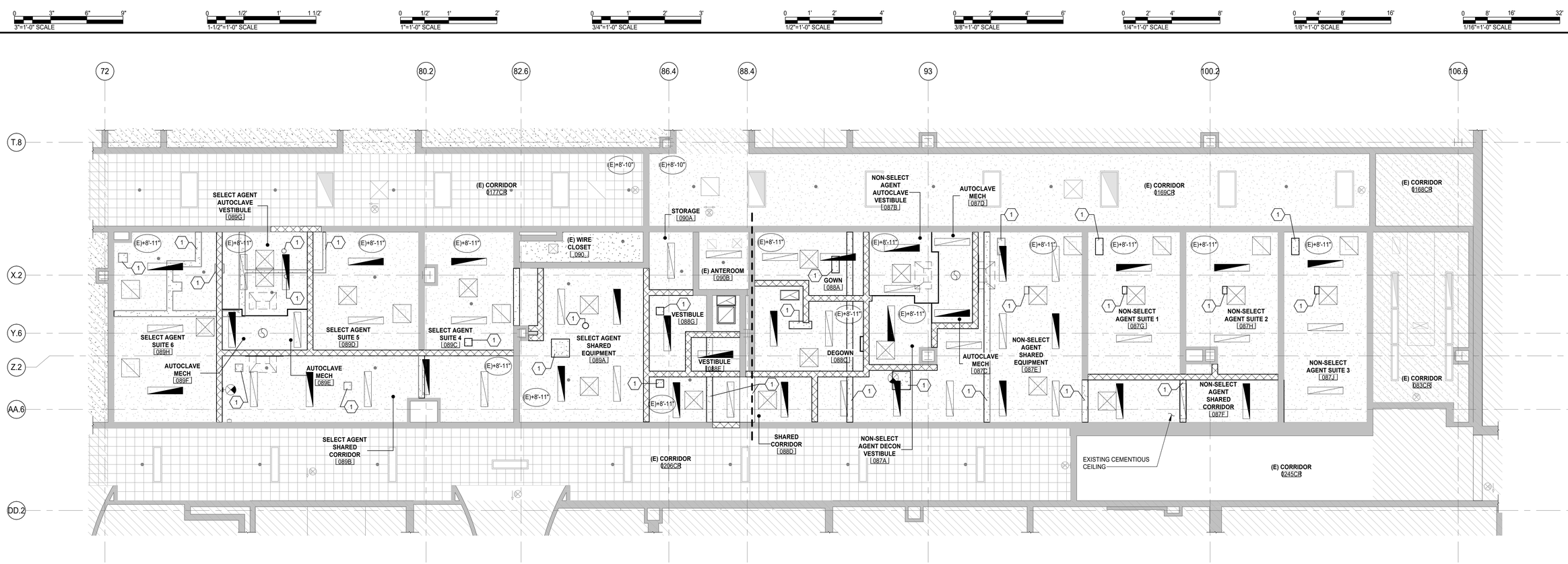

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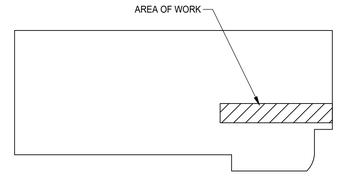
PHASE TWO REFLECTED CEILING PLAN

1 / A-2-103 — 3/16" = 1'-0"



N

KEY PLAN

REFLECTED CEILING LEGEND

- (E) 2x2 ACT CEILING GRID
- GYP. BD. CEILING
- (E) 2x4 LIGHTING FIXTURE
- (E) 1x4 LIGHTING FIXTURE
- 1x4 SURFACE MOUNTED LED LIGHTING FIXTURE
- SUPPLY AIR DIFFUSER
- EXIT SIGN/ EMERGENCY LED LIGHT FIXTURE

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING WORK.
2. PATCH AND REPAIR CEILING TO MATCH EXIST. AND PREP FOR PAINT.
3. ALL CAULKING TO BE RTV LONG LIFE SILICONE

(#) CEILING PLAN KEYNOTES

1. PATCH/ REPAIR CEILING DUE TO NEW WORK TO MATCH EXISTING W/ CAULK/FILLER TO PROVIDE AIR TIGHT SEAL. SEE DETAIL 8/A-2-501 AND 9/A-2-501 FOR DETAILS.
2. PROVIDE APPROVED LED LIGHT FIXTURE. REWORK POWER AND LIGHTING APPROPRIATELY. SEE ELECTRICAL DRAWINGS FOR SPECIFICATIONS.
3. RELOCATE/ REROUTE EXISTING EXHAUST DUCT WORK AND SUPPLY AIR ACCORDINGLY. SEE MECHANICAL DRAWINGS.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
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Maumee, OH 43537
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO REFLECTED CEILING PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	TF	09/20/2023	
DRAWN BY	ANC/DOA	09/20/2023	DRAWING NO. A-2-103
PROJ. MGR.	SP	09/20/2023	REV. 0
SCALE	As indicated		

7/23/2024 9:11:55 AM

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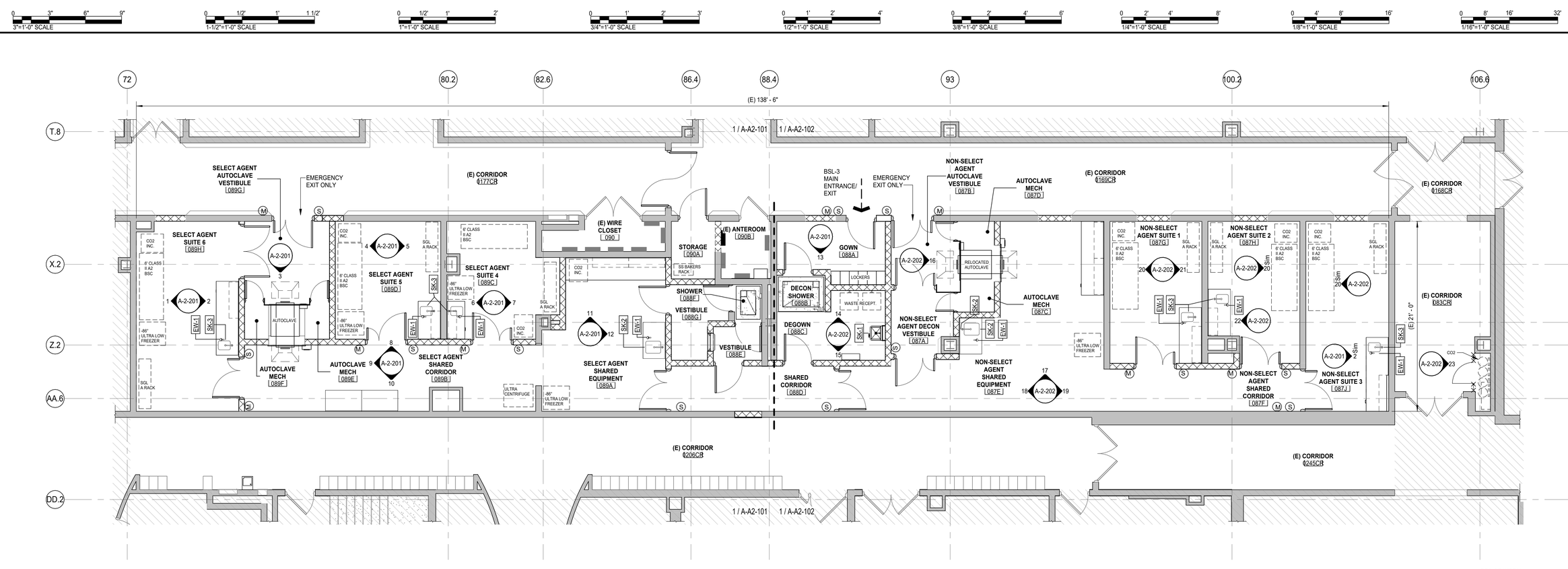

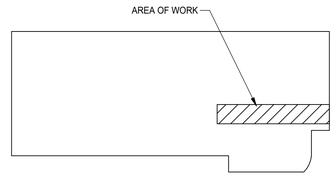

N

KEY PLAN

N

PHASE TWO EQUIPMENT PLAN

3/16" = 1'-0"

FLOOR PLAN ACRONYMS

M	=	MAGNEHELIC GAUGE (SURFACE MOUNTED)
S	=	KEYPAD/PROX READER (SURFACE MOUNTED)
CO2	=	GAS CYLINDERS WITH STANDS (SURFACE MOUNTED)
SGL A RACK	=	SINGLE ANIMAL CAGE RACK
CO2 INC.	=	CO2 INCUBATOR
6' II A2 BSC	=	BIO SAFETY CABINET

PHASE 2 - MAJOR EQUIPMENT LIST

No	EQUIPMENT	MANUFACTURING	MODEL	SIZE	NEW	EXIST.	ELECTRIC REQ.			GAS	AIR	H2O	EXH	STEAM	CONV	COMMENTS
								CONTROLS	GENERATOR							
1	*AUTOCLAVE (PASS THRU STERILIZER) *	CONSOLIDATED STERILIZER SYSTEMS	PT-SR-24D	24"W x 36"H x 48"D (CHAMBER)	X		120V/ 1Φ	110V	208V/ 3Φ				X	X	X	BY OWNER
2	BIO-SAFETY CABINET BAKER CLASS II	STERILGARD® 604ARS E	SG604-ATS	88"W x 33/7/8"D	X		115V/ 20A/ 1Φ									BY OWNER
3	ULTRA LOW FREEZER -86-C (SMALL)	VIP ECO	MDF-DU502VHA-PA	31.1"W x 34.7"D x 78.5"H	X		115V/ 20A/ 1Φ									BY OWNER
4	ULTRA LOW FREEZER -86-C (LARGE)	VIP ECO	MDF-DU702VHA-PA	40.6"W x 34.7"D x 78.5"H	X		115V/ 20A/ 1Φ									BY OWNER
5	DRY HEAT STERELIZATION CO2 INCUBATOR (STACKABLE)	PHCb CELL-IQ	MCO-170AICUVDL-PA	26.4W x 31.7D x 35.6"H	X		115V/ 15A/ 1Φ									BY OWNER
6	ULTRA CENTRIFUGE				X		208V									BY OWNER
7	MOUSE CAGE RACKS				X		110V						X			BY OWNER

* INSTALLED UNDER THIS CONTRACT

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING WORK.
2. COORDINATE INSTALLATION OF AUTOCLAVE W/ MANUFACTURER AND OTHER TRADES. INSTALLATION MUST BE SEALED.
3. CAULK ALL AROUND RECEPTACLES, LIGHT FIXTURES, SWITCHES, CONTROL DEVICES, ETC. WITH SILICONIZED ACRYLIC LATEX SEALANT WHERE SURFACE MOUNTED TO WALL OR CEILING. APPLY ON FINISHED SURFACE. SEALANT TO BE 'TREMFLEX 834' OR EQUAL. COLOR TO BE **WHITE**.
4. RECEPTACLE ORIENTATION - ALL RECEPTACLES INSTALLED 5'-0" A.F.F. SHALL BE HORIZONTALLY ORIENTATED.
5. RECESSED RECEPTACLE - ALL CONDUIT ENTRIES AND ANY CRACK OR HOLE IN EACH BOX SHALL BE SEALED INTERNALLY WITH SILICONE, SO THAT NO LAB AIR CAN LEAVE TROUGH THE BOX.
6. ALL CASEWORK "BASIS OF DESIGN" IS **HAMILTON LABORATORY** SOLUTIONS, INSET STEEL STYLE. COLOR(S) AS SELECTED BY OWNER.
7. ALL WALL CASEWORK TO HAVE FINISHED BOTTOMS
8. PULL TYPES TO BE STAINLESS STEEL WIRE PULLS. HORIZONTAL ON DRAWERS, VERTICAL ON DOORS.
9. PROVIDE GOOSENECK FAUCETS WITH INTEGRAL ATMOSPHERIC VACUUM BREAKER AND LAMINAR FLOW. NON-AERATING, OR NON SPLASH OUTLET IS NOT ACCEPTABLE U.N.O.
10. ALL ADJUSTABLE 304 STAINLESS STEEL TABLE "BASIS OF DESIGN" IS **JOHN BOOS**, 16 GAUGE, #4 FINISH. GALVANIZED METAL IS NOT ACCEPTABLE.
11. ALL LOCKER(S) SHALL HAVE SLOPED TOPS AND SOLID BASES. LOCKER(S) "BASIS OF DESIGN" IS "**HALLOWELL READY-BUILT II** " AS SELECTED BY OWNER.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE

PHASE TWO EQUIPMENT PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	3/16" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-104

REV. 0

7/23/2024 9:11:57 AM

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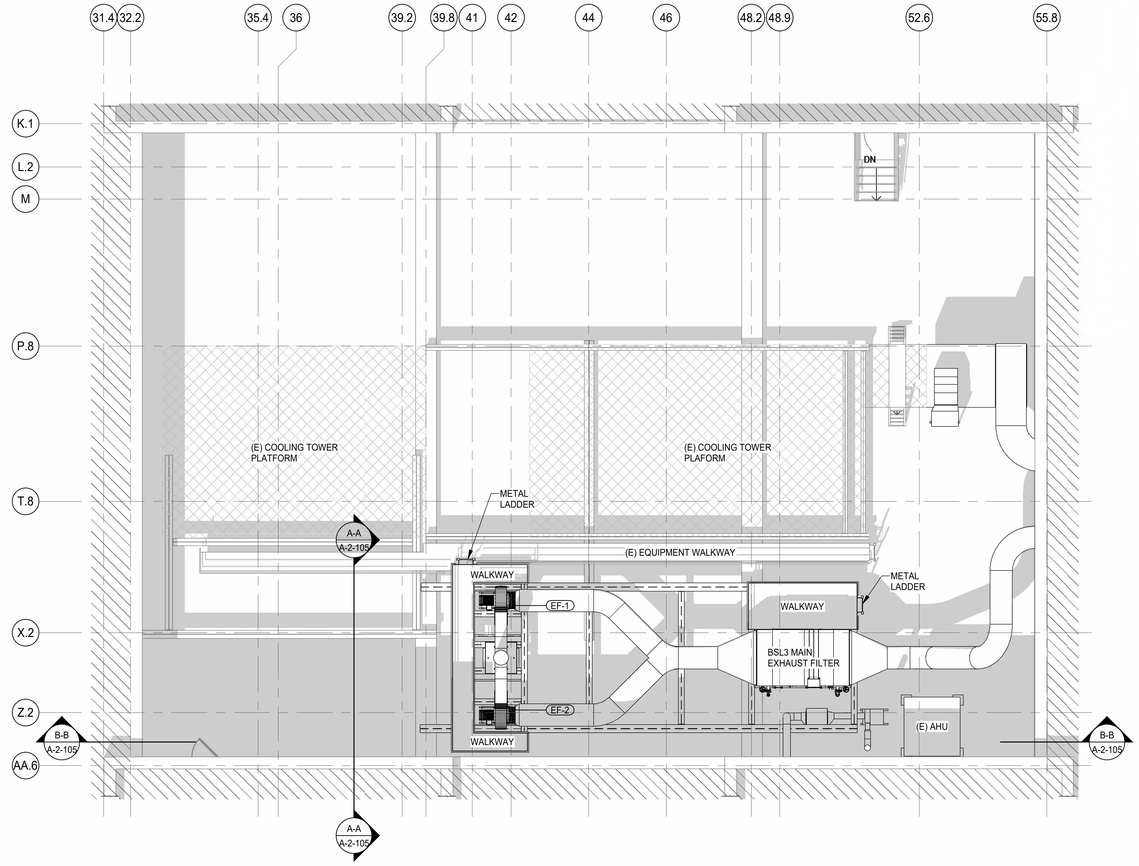
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1" 2" 3" — 3/4"=1'-0" SCALE
0 1" 2" 4" — 1/2"=1'-0" SCALE
0 2" 4" 6" — 3/8"=1'-0" SCALE
0 2" 4" 8" — 1/4"=1'-0" SCALE
0 4" 8" 16" — 1/8"=1'-0" SCALE
0 8" 16" 32" — 1/16"=1'-0" SCALE



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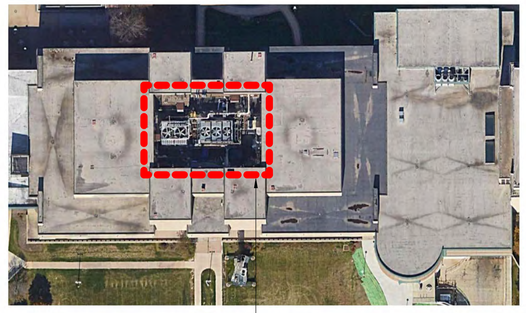
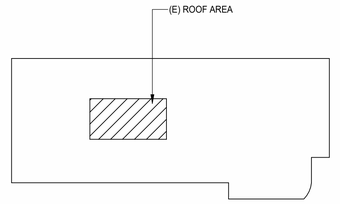
PARTIAL ROOF PLAN
1/8" = 1'-0"





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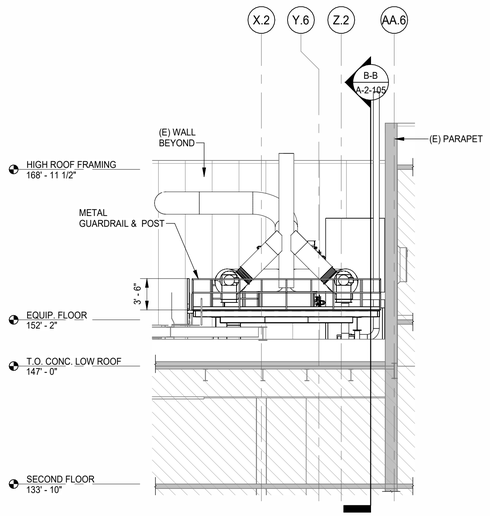
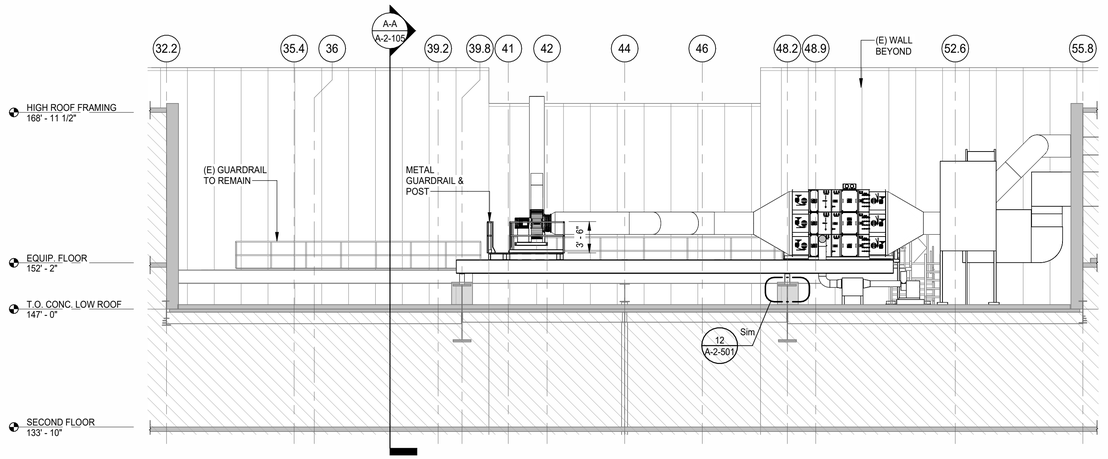
KEY PLAN



A-A A-2-105 BUILDING SECTION
1/8" = 1'-0"



B-B A-2-105 BUILDING SECTION
1/8" = 1'-0"

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO ROOF PLAN AND SECTIONS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	1/8" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-105

REV 0

7/25/2024 9:09:01 AM

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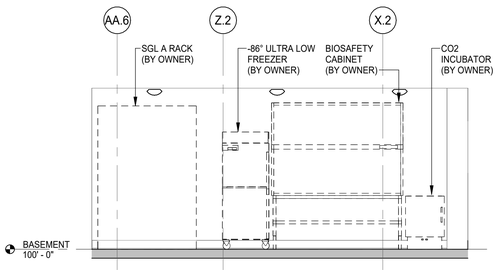
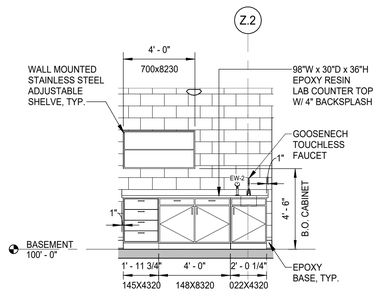
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



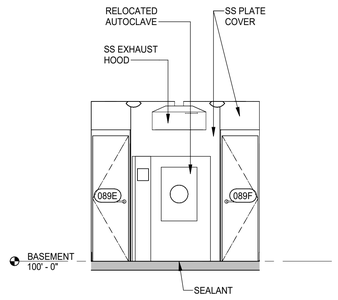
INTERIOR ELEVATION RM # 89H

1 A-2-104 — 1/4" = 1'-0"



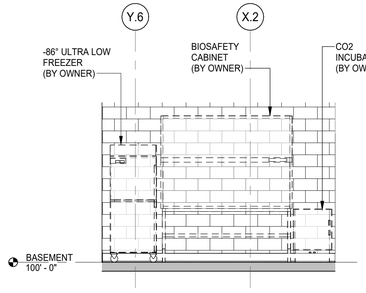
INTERIOR ELEVATION RM # 89H

2 A-2-104 — 1/4" = 1'-0"



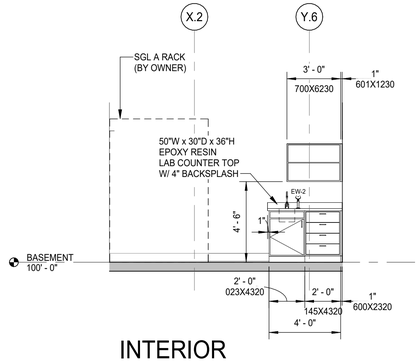
INTERIOR ELEVATION RM # 89G

3 A-2-104 — 1/4" = 1'-0"



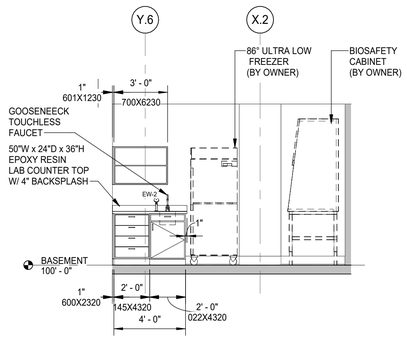
INTERIOR ELEVATION RM # 89D

4 A-2-104 — 1/4" = 1'-0"



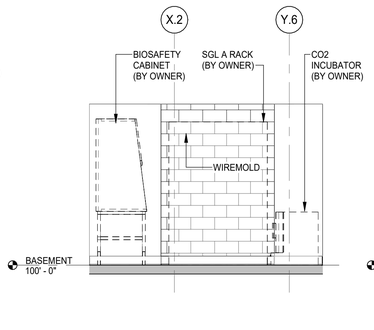
INTERIOR ELEVATION RM # 89D

5 A-2-104 — 1/4" = 1'-0"



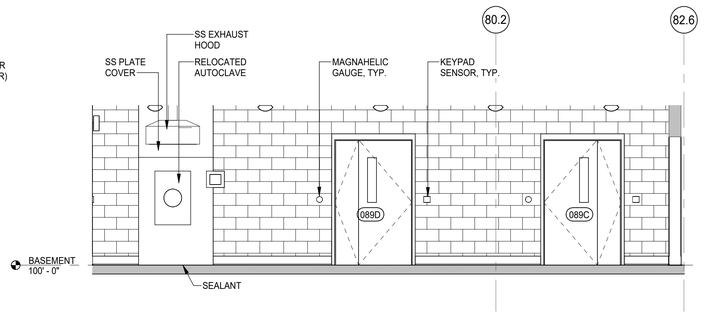
INTERIOR ELEVATION RM # 89C

6 A-2-104 — 1/4" = 1'-0"



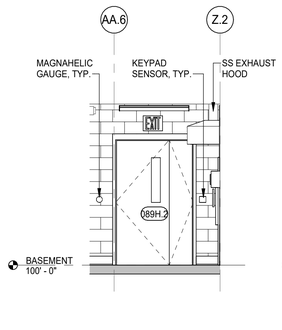
INTERIOR ELEVATION RM # 89C

7 A-2-104 — 1/4" = 1'-0"



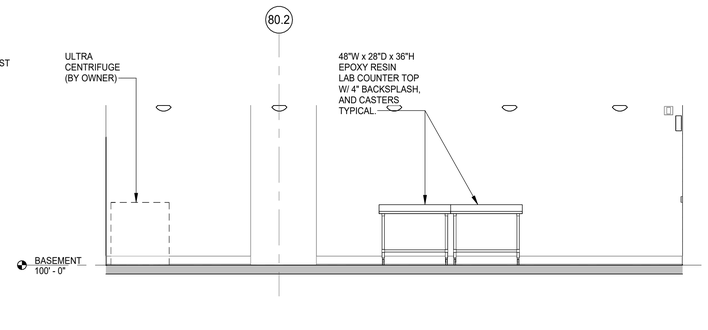
INTERIOR ELEVATION RM # 89B

8 A-2-104 — 1/4" = 1'-0"



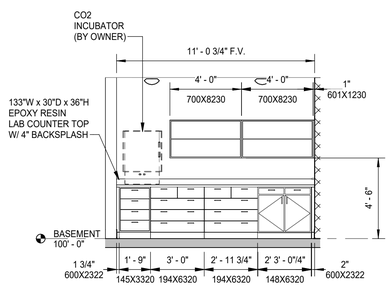
INTERIOR ELEVATION RM # 89B

9 A-2-104 — 1/4" = 1'-0"



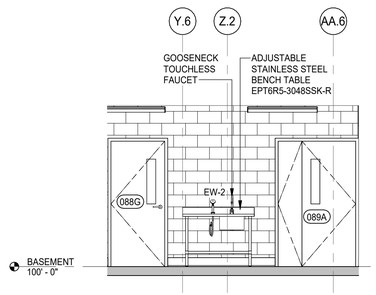
INTERIOR ELEVATION RM # 89B

10 A-2-104 — 1/4" = 1'-0"



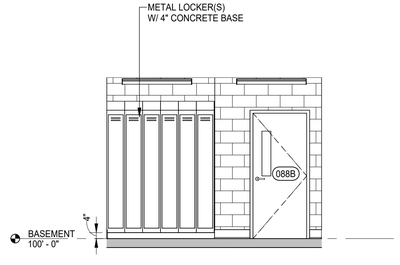
INTERIOR ELEVATION RM # 89A

11 A-2-104 — 1/4" = 1'-0"



INTERIOR ELEVATION RM # 89A

12 A-2-104 — 1/4" = 1'-0"



INTERIOR ELEVATION RM # 88A

13 A-2-104 — 1/4" = 1'-0"

GENERAL NOTES

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2. COORDINATE INSTALLATION OF AUTOCLAVE W/ MANUFACTURER AND OTHER TRADES. INSTALLATION MUST BE SEALED.
3. CAULK ALL AROUND RECEPTACLES, LIGHT FIXTURES, SWITCHES, CONTROL DEVICES, ETC. WITH SILICONIZED ACRYLIC LATEX SEALANT WHERE SURFACE MOUNTED TO WALL OR CEILING. APPLY ON FINISHED SURFACE. SEALANT TO BE TREMFLEX 834® OR EQUAL. COLOR TO BE **WHITE**.
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7. ALL WALL CASEWORK TO HAVE FINISHED BOTTOMS
8. PULL TYPES TO BE STAINLESS STEEL WIRE PULLS. HORIZONTAL ON DRAWERS, VERTICAL ON DOORS.
9. PROVIDE GOOSENECK FAUCETS WITH INTEGRAL ATMOSPHERIC VACUUM BREAKER AND LAMINAR FLOW. NON-AERATING, OR NON SPLASH OUTLET IS NOT ACCEPTABLE U.N.O.
10. ALL ADJUSTABLE 304 STAINLESS STEEL TABLE "BASIS OF DESIGN" IS **JOHN BOOS**, 16 GAUGE, #4 FINISH. GALVANIZED METAL IS NOT ACCEPTABLE
11. ALL LOCKER(S) SHALL HAVE SLOPED TOPS AND SOLID BASES. LOCKER(S) "BASIS OF DESIGN" IS "**HALLOWELL READY-BUILT II** " AS SELECTED BY OWNER.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO INTERIOR ELEVATIONS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	1/4" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-201

REV 0

7/23/2024 9:12:01 AM

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0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
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0 1" 2" 4" — 1/2"=1'-0" SCALE
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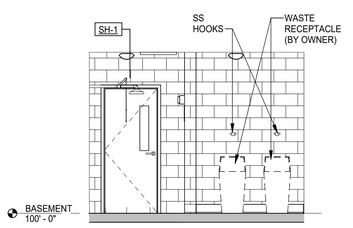
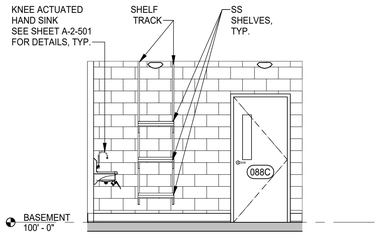
0 2" 4" 8" — 1/4"=1'-0" SCALE
0 4" 8" 16" — 1/8"=1'-0" SCALE
0 8" 16" 32" — 1/16"=1'-0" SCALE



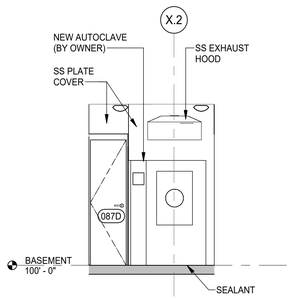
INTERIOR ELEVATION RM # 88

14 A-2-104 1/4" = 1'-0"



INTERIOR ELEVATION RM # 88

15 A-2-104 1/4" = 1'-0"



INTERIOR ELEVATION RM # 87B

16 A-2-104 1/4" = 1'-0"

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING WORK.
2. COORDINATE INSTALLATION OF AUTOCLAVE W/ MANUFACTURER AND OTHER TRADES. INSTALLATION MUST BE SEALED.
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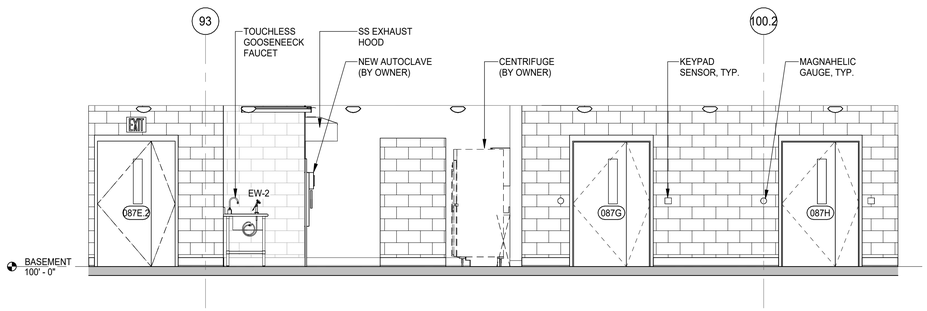
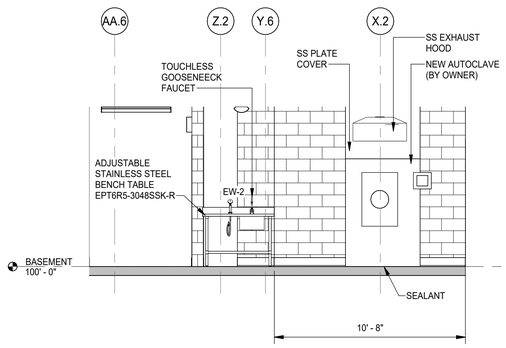


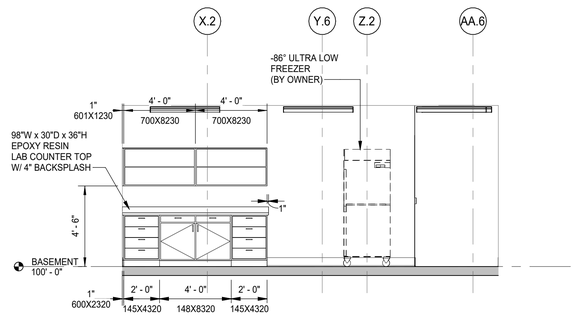
INTERIOR ELEVATION RM # 87C

17 A-2-104 1/4" = 1'-0"



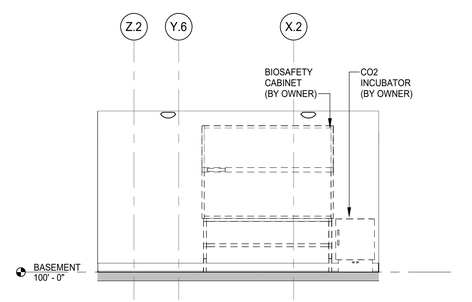
INTERIOR ELEVATION RM # 87C

18 A-2-104 1/4" = 1'-0"



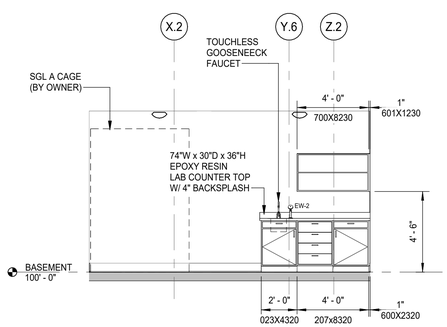
INTERIOR ELEVATION RM # 87C

19 A-2-104 1/4" = 1'-0"



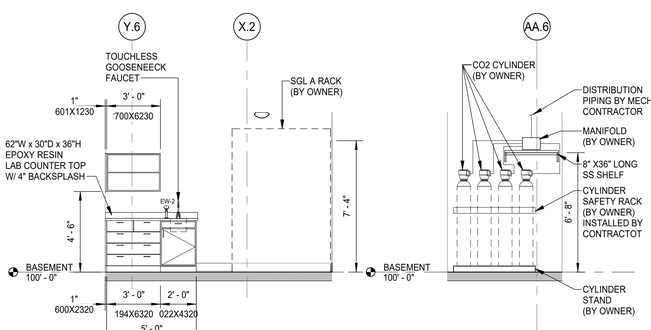
INTERIOR ELEVATION RM # 86

20 A-2-104 1/4" = 1'-0"



INTERIOR ELEVATION RM # 86

21 A-2-104 1/4" = 1'-0"



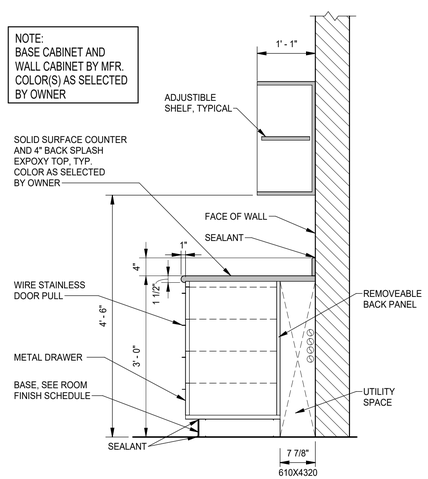
INTERIOR ELEVATION RM # 85

22 A-2-104 1/4" = 1'-0"

INTERIOR ELEVATION RM # 83CR

23 A-2-104 1/4" = 1'-0"

NOTE:
BASE CABINET AND WALL CABINET BY MFR. COLOR(S) AS SELECTED BY OWNER



TYPICAL CASEWORK SECTION

24 3/4" = 1'-0"

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
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360 W. Dussel Dr.
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO INTERIOR ELEVATIONS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-202 REV 0

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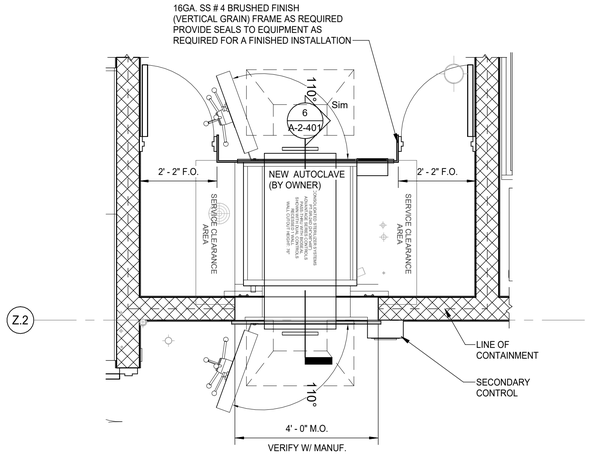
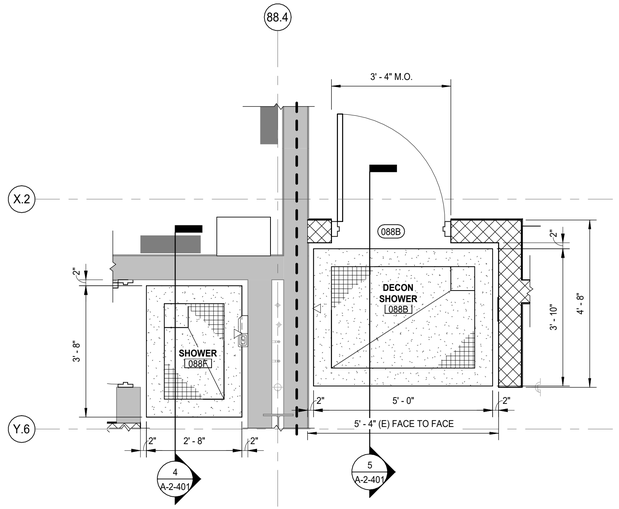


N

1 A-2-401 ENLARGED UTILITY ROOM PLAN

1/2" = 1'-0"



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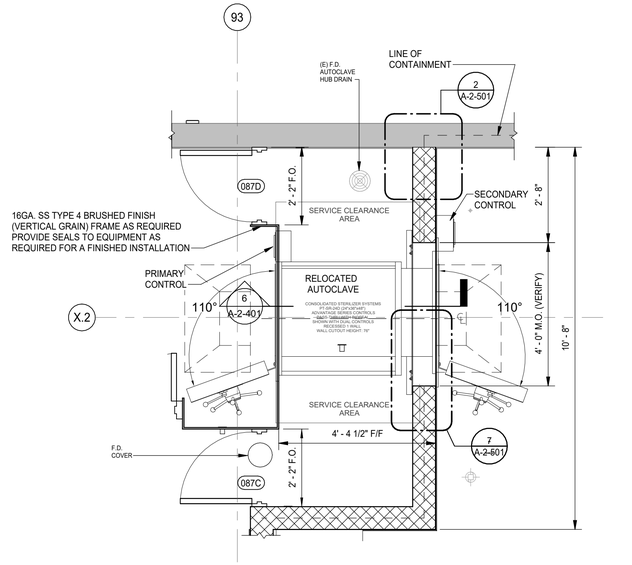
2 A-2-401 ENLARGED SHOWER PLAN

1/2" = 1'-0"



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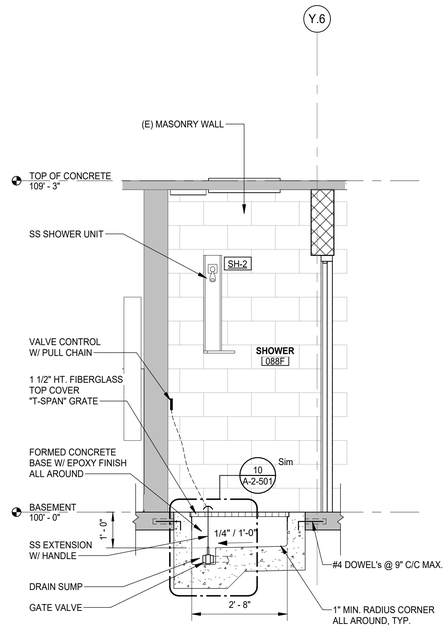
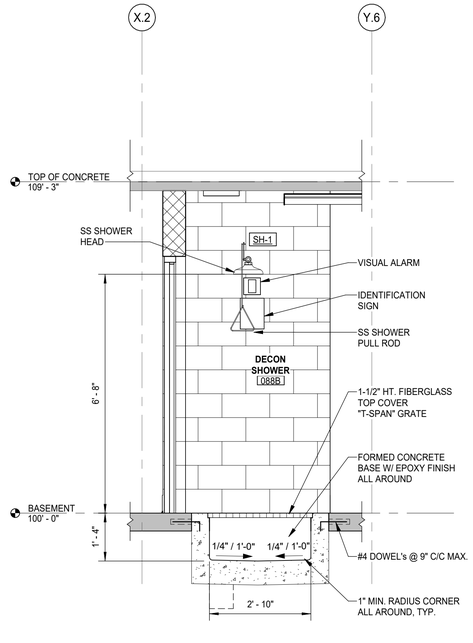
3 A-2-401 ENLARGED UTILITY ROOM PLAN

1/2" = 1'-0" *VERIFY ALL DIMENSIONS W/ MANUFACTURER



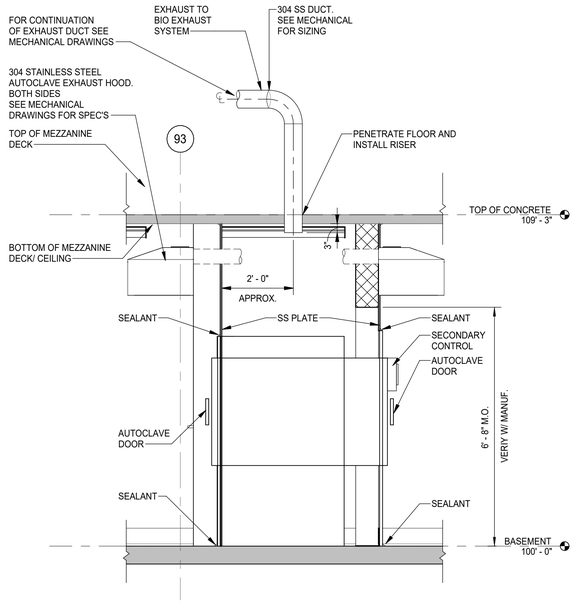
4 A-2-401 SHOWER SECTION

1/2" = 1'-0"



5 A-2-401 DECON SHOWER SECTION

1/2" = 1'-0"



6 A-2-401 AUTOCLAVE SIDE VIEW

1/2" = 1'-0" *VERIFY ALL DIMENSIONS W/ MANUFACTURER

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE

PHASE TWO ENLARGED FLOOR PLANS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	1/2" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-401

REV. 0

7/23/2024 9:12:07 AM

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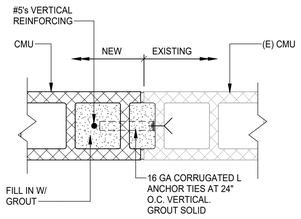
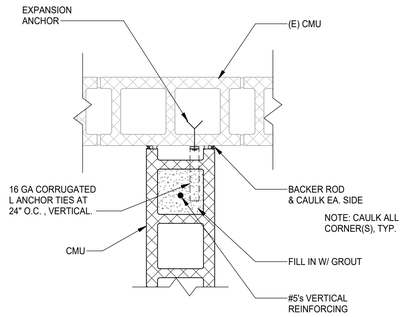
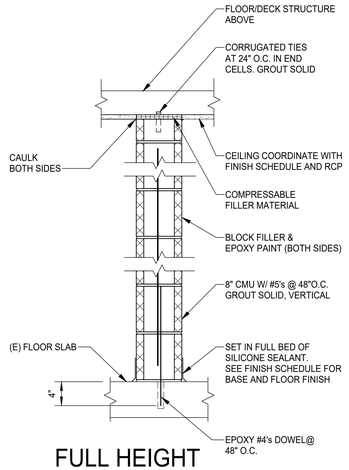
0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1" 2" 3" — 3/4"=1'-0" SCALE
0 1" 2" 4" — 1/2"=1'-0" SCALE
0 2" 4" 6" — 3/8"=1'-0" SCALE
0 2" 4" 8" — 1/4"=1'-0" SCALE
0 4" 8" 16" — 1/8"=1'-0" SCALE
0 8" 16" 32" — 1/16"=1'-0" SCALE



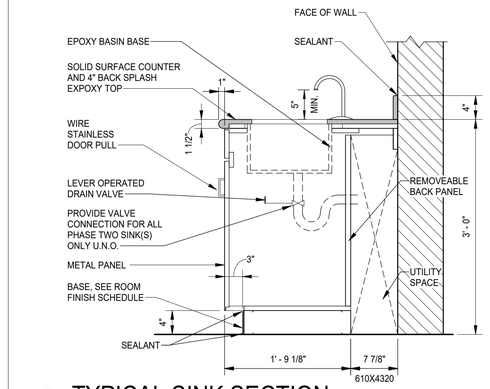
1 NEW/ OLD MASONRY DETAIL, TYP.
1 1/2" = 1'-0"



2 NEW/ OLD MASONRY DETAIL, TYP.
A-2-401 — 1 1/2" = 1'-0"

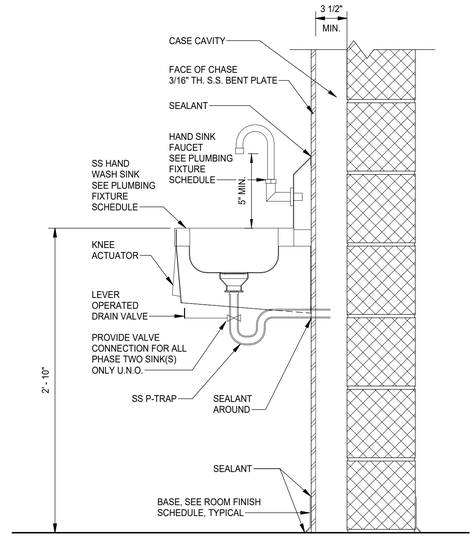


3 FULL HEIGHT CMU PARTITION WALL
1" = 1'-0"



4 TYPICAL SINK SECTION
1" = 1'-0"

NOTE:
-BASE CABINET BY MFR.
-LEVER - THREADED INLET SHALL BE COMMERCIAL GRADE



5 TYPICAL S.S. HAND SINK DETAIL
1 1/2" = 1'-0"

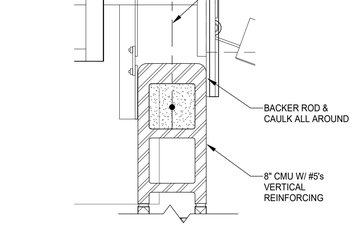
NOTE:
LEVER - THREADED INLET SHALL BE COMMERCIAL GRADE
EXPOSED CARRIER- SHALL BE STAINLESS STEEL HARDWARE

U-BLOCK LINTEL SCHEDULE

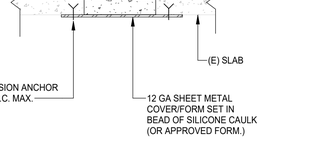
OPENING WIDTH	LINTEL HEIGHT	8" WALL	12" WALL
0' TO 3'-11"	8" LINTEL BLOCK	(2) #4	(2) #4
4'-0" TO 5'-11"	8" LINTEL BLOCK	(2) #5	(2) #5
6'-0" TO 7'-11"	16" LINTEL BLOCK	(2) #5 (T&B)	(2) #5 (T&B)
8'-0" TO 9'-11"	16" LINTEL BLOCK	(2) #6 (T&B)	(2) #6 (T&B)
10'-0" OR MORE	CONCRETE OR STEEL DESIGNED FOR SPECIFIC CONDITION		

NOTES:
1. U-BLOCK LINTELS ARE DESIGNED FOR WALL LOADS ONLY. SIZES MUST BE DESIGNED FOR SPECIFIC CONDITIONS WHEN FLOOR OR ROOF LOADS ARE DISTRIBUTED ON THE LINTEL. MINIMUM BEARING 8" EACH JAMB UP TO 8'-0" OPENINGS.
2. F'm FOR MASONRY IS 1500 PSI
3. FULL ALLOWABLE STRESSES HAVE BEEN USED IN DESIGN OF THE CONCRETE MASONRY UNITS. APPLICABLE PARAGRAPHS IN THE BUILDING CODE SHALL BE ADHERED TO.

6 U-BLOCK LINTEL SCHEDULE
12" = 1'-0"



7 AUTOCLAVE/WALL JUNCTURE DETAIL
A-2-401 — 1 1/2" = 1'-0"

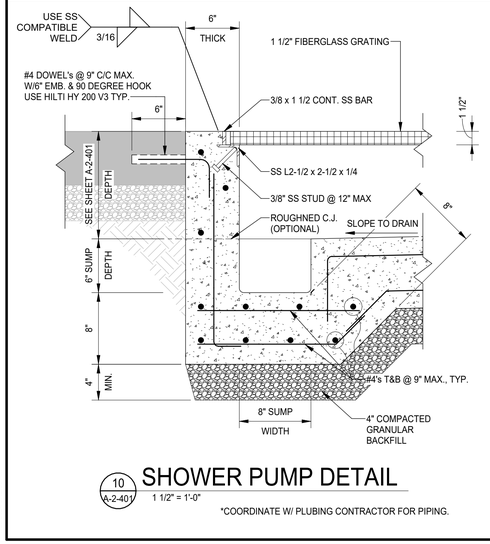


8 FILLING OF EXISTING CMU PENETRATION DETAIL, TYPICAL
1 1/2" = 1'-0" — AT CEILING

**REMOVE FORM AFTER CONCRETE CURE. FINISH TO MATCH ADJACENT SURFACE. SUFACE TO BE SMOOTH. FILL ALL CRACKS W/ APPROVED FILLER PRIOR TO PAINTING. SEE STRUCTURE GENERAL NOTES FOR HIGHL STRENGTH CONCRETE FOR PATCHING.

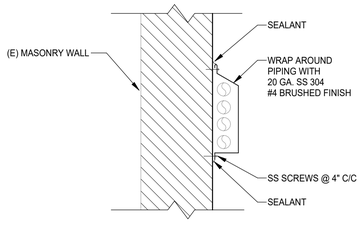
**REMOVE FORM AFTER CONCRETE CURE. FINISH TO MATCH ADJACENT SURFACE. SUFACE TO BE SMOOTH. FILL ALL CRACKS W/ APPROVED FILLER PRIOR TO PAINTING. SEE STRUCTURE GENERAL NOTES FOR HIGHL STRENGTH CONCRETE FOR PATCHING.

9 FILLING OF EXISTING DUCTWORK PENETRATION DETAIL, TYPICAL
1 1/2" = 1'-0" — AT CEILING

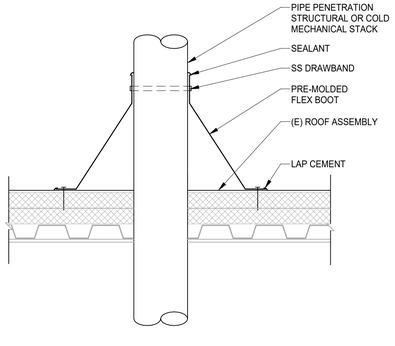


10 SHOWER PUMP DETAIL
A-2-401 — 1 1/2" = 1'-0"

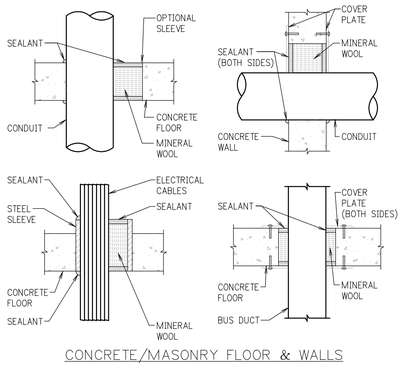
*COORDINATE W/ PLUBING CONTRACTOR FOR PIPING.



11 TYPICAL PIPING S.S. COVER
1 1/2" = 1'-0"



12 TYPICAL ROOF PIPE PENETRATION DETAIL
A-2-105 — 1 1/2" = 1'-0"



CONCRETE/MASONRY FLOOR & WALLS

NOTES:

A. CABLE AND CONDUIT PENETRATION DETAILS ARE BASED ON A UL LISTED 2 HOUR FIRE RATED ASSEMBLY (MINIMUM) UTILIZING SPEC SEAL FIRESTOP PRODUCTS. REFER TO MANUFACTURER'S SPECIFICATIONS AND INSTALLATION DETAILS FOR EXACT INSTALLATION METHODS.

B. PACKING AND SEALANT DEPTHS SHALL BE PER MANUFACTURER'S SPECIFICATIONS FOR UL ASSEMBLY RATING COMPLIANCE.

C. JOINT SEALANT - PROVIDE NON-HALOGENATED LATEX-BASED ELASTOMERIC SEALANT ASTM C920

13 CONDUIT/ CABLE PENETRATIONS THROUGH RATED ASSEMBLIES
SCALE: NONE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
MISCELLANEOUS DETAILS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	As indicated	

PROJECT NO. UOT23-001
DRAWING NO. A-2-501
REV 0

7/23/2024 9:12:09 AM
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3"=1'-0" SCALE | 1-1/2"=1'-0" SCALE | 1"=1'-0" SCALE | 3/4"=1'-0" SCALE | 1/2"=1'-0" SCALE | 3/8"=1'-0" SCALE | 1/4"=1'-0" SCALE | 1/8"=1'-0" SCALE | 1/16"=1'-0" SCALE

HARDWARE SCHEDULE

HARDWARE SET NO. 1: DOORS # 087B, 088A, 089G

1 EA CONT. HINGE	HAGER	780HD	BHMA 628 FINISH
1 EA LOCKSET	SCHLAGE	L9080-064 (STOREROOM FUNCTION) KEYED TO HSC KEYING SYSTEM 03 TUBULAR LEVER HANDLE	BHMA 626 FINISH
1 EA CLOSER	LCN	4040XP	BHMA 628 FINISH
1 EA ELECTRIC STRIKE	VONDUPRIN	6211	
1 EA DOOR SENSOR	(WIRED TO SECURITY)		
1 EA DOOR KEY PAD	(WIRED TO SECURITY)	PER HSC STANDARDS	
1 SET WEATHERSTRIP	NGP	103 NA	BHMA 628 FINISH
1 EA DOOR SWEEP	HAGER	802S	BHMA 630 FINISH
1 EA KICKPLATE	IVES	8400 10" HIGH	BHMA 630 FINISH
1 EA DOOR GUARD	ROCKWOOD	320 SERIES	BHMA 630 FINISH
1 EA PROTECTOR BAR	ROCKWOOD	R115LPB	BHMA 630 FINISH
1 EA WALL STOP	IVES	407	BHMA 630 FINISH

-- PROVIDE TAMPER-RESISTANT HIGH SECURITY CYLINDER EVEREST "PRIMUS XP"
-- DOOR/ FRAME/PANE TO BE 15 MINUTES FORCED-ENTRY RESISTANT RATED

HARDWARE SET NO. 2: DOORS # 088B, 088C, 088E, 088F.1, 088F.2, 088G

1 EA CONT. HINGE	HAGAR	780HD	BHMA 628 FINISH
1 EA LOCKSET	SCHLAGE	L9080-064 (STOREROOM FUNCTION) KEYED TO HSC KEYING SYSTEM 03 TUBULAR LEVER HANDLE	BHMA 626 FINISH
1 EA ELECTRIC STRIKE	VONDUPRIN	6211	
1 EA DOOR SENSOR	(WIRED TO SECURITY)		
1 EA DOOR KEY PAD	(WIRED TO SECURITY)	PER HSC STANDARDS	
1 EA CLOSER	LCN	4040XP	BHMA 628 FINISH
1 EA WALL STOP	IVES	407	BHMA 630 FINISH
1 SET WEATHERSTRIP	NGP	103 NA	BHMA 628 FINISH
1 EA DOOR SWEEP	HAGER	802S	BHMA 630 FINISH
1 EA KICKPLATE	IVES	8400 10" HIGH	BHMA 630 FINISH

-- PROVIDE TAMPER-RESISTANT HIGH SECURITY CYLINDER EVEREST "PRIMUS XP"
-- DOOR/ FRAME/PANE TO BE 15 MINUTES FORCED-ENTRY RESISTANT RATED

HARDWARE SET NO. 3: DOORS # 087J, 087H, 087G, 087E.1, 087E.2, 089A, 089C, 089D, 089H.1, 089H.2

2 EA CONT. HINGES	HAGER	780HD	BHMA 628 FINISH
1 EA LOCKSET	SCHLAGE	L9080-064 (STOREROOM FUNCTION) KEYED TO HSC KEYING SYSTEM 03 TUBULAR LEVER HANDLE	BHMA 626 FINISH
2 EA CLOSER	LCN	4040XP	BHMA 628 FINISH
1 SET FLUSH BOLT	IVES	458 (T&B) INACTIVE LEAF	BHMA 626 FINISH
1 EA ASTRAGAL	NGP	158 NA	BHMA 628 FINISH
1 SET ASTRAGAL WEATHERSTRIPPING			
1 EA ELECTRIC STRIKE	VONDUPRIN	6223	
2 EA DOOR SENSOR	(WIRED TO SECURITY)		
1 EA DOOR KEY PAD	(WIRED TO SECURITY)	PER HSC STANDARDS	
1 EA POWER TRANSFER	VONDUPRIN	EPT	BHMA 689 FINISH
1 EA KICKPLATE	IVES	8400 10" HIGH	BHMA 630 FINISH
1 SET WEATHERSTRIP	NGP	103NA	BHMA 628 FINISH
2 EA DOOR SWEEP	HAGAR	802S	BHMA 630 FINISH
1 EA WALL STOP	IVES	407	BHMA 630 FINISH

-- PROVIDE TAMPER-RESISTANT HIGH SECURITY CYLINDER EVEREST "PRIMUS XP"
-- DOOR/ FRAME/PANE TO BE 15 MINUTES FORCED-ENTRY RESISTANT RATED

HARDWARE SET NO. 4: DOORS # 087C, 087D, 089E, 089F, 090A

1 EA CONT. HINGE	HAGER	790-190	BHMA 630 FINISH
1 EA LOCKSET	SCHLAGE	L9080-N064 (STOREROOM FUNCTION) KEYED TO HSC KEYING SYSTEM 03 TUBULAR LEVER HANDLE	BHMA 626 FINISH
1 EA KICKPLATE	IVES	8400 10" HIGH	BHMA 630 FINISH
1 EA CLOSER	LCN	4040XP	BHMA 628 FINISH
1 EA WALL STOP	IVES	407	BHMA 630 FINISH
1 SET WEATHERSTRIP	NGP	103 NA	BHMA 628 FINISH
1 EA DOOR SWEEP	HAGER	802S	BHMA 630 FINISH

HARDWARE SET NO. 5: DOORS # 087A

2 EA CONT. HINGES	HAGER	780HD	BHMA 628 FINISH
1 EA LOCKSET	SCHLAGE	L9080-064 (STOREROOM FUNCTION) KEYED TO HSC KEYING SYSTEM 03 TUBULAR LEVER HANDLE	BHMA 626 FINISH
1 SET FLUSH BOLT	IVES	458 (T&B) INACTIVE LEAF	BHMA 626 FINISH
1 EA ASTRAGAL	NGP	158 NA	BHMA 628 FINISH
1 SET ASTRAGAL WEATHERSTRIPPING			
2 EA DOOR SENSOR	(WIRED TO SECURITY)		
2 EA CLOSER	LCN	4040XP	BHMA 628 FINISH
1 EA KICKPLATE	IVES	8400 10" HIGH	BHMA 630 FINISH
1 EA WALL STOP	IVES	407	BHMA 630 FINISH
1 SET WEATHERSTRIP	NGP	104 NA	BHMA 628 FINISH
2 EA DOOR SWEEP	HAGER	802S	BHMA 630 FINISH

-- PROVIDE TAMPER-RESISTANT HIGH SECURITY CYLINDER EVEREST "PRIMUS XP"
-- DOOR/ FRAME/PANE TO BE 15 MINUTES FORCED-ENTRY RESISTANT RATED
-- FOR SECURITY PURPOSES THIS DOOR WILL ONLY OPEN BY KEY (CONTROLLED BY BSL-3 MNGT & EHS)

HARDWARE SET NO. 6: DOORS #083CR

1 EA GATE LOCK	(KEYED TO HSC KEYING SYSTEM) ALL HARDWARE PROVIDED BY FNECING AND GATE MANUFACTURER	

DOOR NOTES:

1. ALL METAL DOOR(S) AND METAL FRAME(S) MANUFACTURER TO BE " **STEELCRAFT**"
2. FORCED ENTRY RESISTANT METAL DOOR(S) AND FRAME(S) MANUFACTURER TO BE **"KRIEGER"**
3. ALL DOOR(S) SHALL BE LEVEL 2 HEAVY DUTY, ANSI A250.8, PHYSICAL PERFORMANCE LEVEL A, MODEL SEAMLESS.
4. DOOR FRAME(S) MUST BE FULLY WELDED, 16 GA MINIMUM.
5. ALL DOOR GLAZING SHALL MEET CPSC 16 CFR 1201 AND SHALL BE LABELED AS SUCH.
6. ALL COLOR/ FINISH AS SELECTED BY OWNER. (EPOXY PAINTED)
7. JOINT BETWEEN DOOR FRAME AND ADJACENT CONSTRUCTION TO BE SEALED. SEAL EACH SEAM BETWEEN EACH HARDWARE AND DOOR TO WHICH IT IS APPLIED.
8. DOOR CONSTRUCTION SHALL BE SEAMLESS. TOP RECESSED AND BOTTOM EDGES IS NOT ACCEPTABLE.
9. METAL DOOR TO BE COMPLETELY FOAM FILLED.
10. DOOR ASSEMBLY SHALL BE FULLY SEALED, INCLUDING HARDWARE CUTOUTS. DOOR GLAZING MUST BE SEALED AS WELL.

HARDWARE NOTES:

1. ALL HARDWARE SHALL BE HEAVY-DUTY GRADE 1. LIGHT COMMERCIAL OR RESIDENTIAL GRADE IS NOT ACCEPTABLE.
2. ALL HARDWARE TO BE SUPPLIED BY DOOR MANUFACTURER INCLUDING WEATHER STRIPPING, DOOR BOTTOM SEALS, CONTROLLERS, KEYPADS, ELECTRICAL STRIKES, AS REQUIRED BY THE OWNER, ETC.
3. ALL ACTIVATORS SHALL BE HEAVY DUTY LEVER. NO KNOBS THIS PROJECT.
4. COORDINATE LOCK FUNCTION WITH OWNER INCLUDING KEYING AND CYLINDER REQUIREMENTS.
5. ALL CORES SHALL COME PREPPED FOR SFIC CORES.
6. ELECTRONIC LOCKS AND ACCESS CARD READERS TO BE "FAIL-SAFE" AND "FAIL SECURE"
7. PROVIDE 15-20 SECOND DELAY AT DOORS #089C,089D, AND 089H.2
8. ALL EXIT DOORS SHALL BE OPEN-ABLE FROM THE INSIDE WITHOUT THE USE O ANY KEY OR ANY SPECIAL KNOWLEDGE.
9. KICKPLATES TO BE STAINLESS STEEL.
10. PROVIDE EXIT RELEASE AT EACH INTERLOCK DOOR. SEE ELECTRICAL DRAWINGS FOR STAINLESS STEEL PRESS TO EXIT DOOR RELEASE LOCATIONS.
11. CONTRACTOR TO COORDINATE MAGLOCKS, ENTRY/EXIT DEVICES W/ ONWER'S REPRESENTATIVE FOR MANUFACTURING SELECTION.
12. ALL LOCKING CORES KEYED TO MCO STANDARDS (DOOR 087A KEYS ONLY FOR BSL3 MANAGEMENT AND EHS).

1

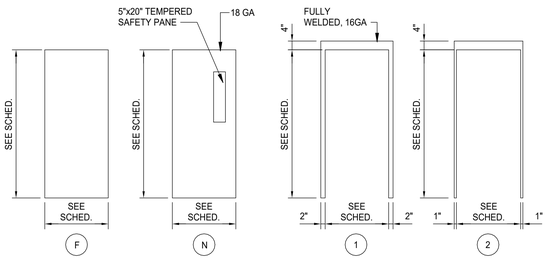
*CR = CARD READER/KEYPAD

PHASE 2 - DOOR & HARDWARE SCHEDULE

INTERLOCKING W/ DOOR #	OPENING NUMBER	LOCATION	PANEL SIZE DOOR HEIGHT	PANEL SIZE TOTAL PANEL WIDTH	PANEL SIZE PANEL WIDTH 1	PANEL SIZE PANEL WIDTH 2	PANEL MATERIAL	PANEL TYPE	FRAME MATERIAL	FRAME TYPE	DETAILS HEAD	DETAILS JAMB	HARDWARE SET	FIRE RATING MINUTES	REMARKS	OPENING NUMBER
KEYLOCK ON GAS CYLINDER CAGE	083CR		6' - 0"	2' - 6"									6			083CR
087B	087A	NON-SELECT AGENT DECON VESTIBULE	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	1	0		087A
087A	087B	NON-SELECT AGENT AUTOCLAVE VESTIBULE	7' - 0"	4' - 0"	4' - 0"		HM	N	HM	1	H-1	J-1	5	45		087B
KEYLOCK	087C	AUTOCLAVE MECH	7' - 0"	2' - 0"	2' - 0"		HM	F	HM	2	H-1	J-1	4		RELOCATED DOOR/ FRAME	087C
KEYLOCK	087D	AUTOCLAVE MECH	7' - 0"	2' - 0"	2' - 0"		HM	F	HM	2	H-1	J-1	4		RELOCATED DOOR/ FRAME	087D
088C,088E, 089A	087E.1	NON-SELECT AGENT SHARED EQUIPMENT	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		087E.1
087A	087E.2	NON-SELECT AGENT SHARED EQUIPMENT	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		087E.2
CR	087G	NON-SELECT AGENT SUITE 1	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		087G
CR	087H	NON-SELECT AGENT SUITE 2	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		087H
CR	087J	NON-SELECT AGENT SUITE 3	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		087J
088B	088A	GOWN	7' - 0"	3' - 0"	3' - 0"		HM	N	HM	1	H-1	J-1	1	45		088A
088A,088C	088B	DECON SHOWER	7' - 0"	3' - 0"	3' - 0"		HM	N	HM	1	H-1	J-1	2			088B
087E.1, 088E, 089A	088C	DEGOWN	7' - 0"	3' - 0"	3' - 0"		HM	N	HM	1	H-1	J-1	2	0		088C
087E.1, 088F.1, 089A,	088E	VESTIBULE	7' - 0"	3' - 0"	3' - 0"		HM	N	HM	1	H-1	J-1	2	0		088E
088E, 088F.2	088F.1	SHOWER	7' - 0"	2' - 10"	2' - 10"		HM	F	HM	1	H-1	J-1	2	0		088F.1
088F.1, 088G	088F.2	SHOWER	7' - 0"	2' - 10"	2' - 10"		HM	F	HM	1	H-1	J-1	2	0		088F.2
088F.2	088G	VESTIBULE	7' - 0"	3' - 0"	3' - 0"		HM	N	HM	1	H-1	J-1	2	0		088G
087E.1, 088E	089A	SELECT AGENT SHARED EQUIPMENT	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		089A
CR	089C	SELECT AGENT SUITE 4	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		089C
CR	089D	SELECT AGENT SUITE 5	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		089D
KEYLOCK	089E	AUTOCLAVE MECH	7' - 0"	2' - 0"	2' - 0"		HM	F	HM	2	H-1	J-1	4		1" FRAME/1" UNDERCUT	089E
KEYLOCK	089F	AUTOCLAVE MECH	7' - 0"	2' - 0"	2' - 0"		HM	F	HM	2	H-1	J-1	4		1" FRAME/ 1" UNDERCUT	089F
089H.1	089G	SELECT AGENT AUTOCLAVE VESTIBULE	7' - 0"	4' - 0"	4' - 0"		HM	N	HM	1	H-1	J-1	1	45		089G
KEYLOCK, 089G, 089H.2	089H.1	SELECT AGENT SUITE 6	7' - 0"	5' - 8"	2' - 10"	2' - 10"	HM	F	HM	1	H-1	J-1	3	0		089H.1
CR, 089H.1	089H.2	SELECT AGENT SUITE 6	7' - 0"	4' - 4"	3' - 0"	1' - 4"	HM	N	HM	1	H-1	J-1	3	0		089H.2
KEYLOCK	090A	STORAGE	7' - 0"	3' - 0"	3' - 0"		HM	F	HM	1	H-1	J-1	4	45		090A
	0169	(E) CORRIDOR	7' - 0"	6' - 0"	3' - 0"	3' - 0"	HM	F	HM	1					SWING AS SHOWN IN PLAN	0169

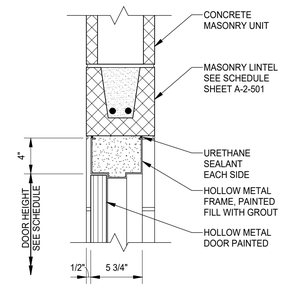
PHASE 2 - ROOM FINISH SCHEDULE

NUMBER	ROOM NAME	AREA	FLOOR	BASE	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	CEILING MATL.	REMARKS	NUMBER
087A	NON-SELECT AGENT DECON VESTIBULE	48 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	087A
087B	NON-SELECT AGENT AUTOCLAVE VESTIBULE	54 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	087B
087C	AUTOCLAVE MECH	14 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	087C
087D	AUTOCLAVE MECH	12 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	087D
087E	NON-SELECT AGENT SHARED EQUIPMENT	359 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, AND 5	087E
087F	NON-SELECT AGENT SHARED CORRIDOR	101 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	087F
087G	NON-SELECT AGENT SUITE 1	160 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, 4, AND 5	087G
087H	NON-SELECT AGENT SUITE 2	149 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, 4, AND 5	087H
087J	NON-SELECT AGENT SUITE 3	193 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, 4, AND 5	087J
088A	GOWN	74 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	088A
088B	DECON SHOWER	22 SF	EPOXY	--	PTE	PTE	--	--	PTE		088B
088C	DEGOWN	78 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	088C
088D	SHARED CORRIDOR	90 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	088D
088E	VESTIBULE	20 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	088E
088F	SHOWER	12 SF	EPOXY	--	PTE	PTE	PTE	PTE	PTE		088F
088G	VESTIBULE	43 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	088G
089A	SELECT AGENT SHARED EQUIPMENT	212 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, AND 5	089A
089B	SELECT AGENT SHARED CORRIDOR	226 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, 4, AND 5	089B
089C	SELECT AGENT SUITE 4	142 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, 4, AND 5	089C
089D	SELECT AGENT SUITE 5	152 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, 4, AND 5	089D
089E	AUTOCLAVE MECH	12 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	089E
089F	AUTOCLAVE MECH	12 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	089F
089G	SELECT AGENT AUTOCLAVE VESTIBULE	84 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	089G
089H	SELECT AGENT SUITE 6	236 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, 3, 4, AND 5	089H
090	(E) WIRE CLOSET	41 SF	EPOXY	--	--	--	--	--	--		090
090A	STORAGE	31 SF	EPOXY	EB	PTE	PTE	PTE	PTE	PTE	SEE NOTE 1, 2, AND 3	090A

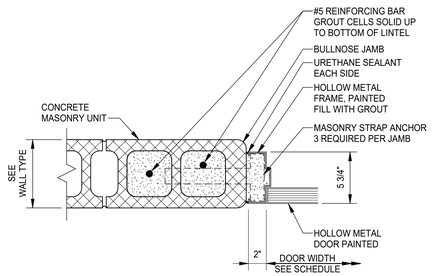


DOOR TYPES

FRAME TYPES



H-1 HOLLOW METAL DOOR HEAD, 8" CMU WALL DETAIL
1 1/2" = 1'-0"



J-1 HOLLOW METAL DOOR JAMB, 8" CMU WALL DETAIL
1 1/2" = 1'-0"

INTERIOR FINISHES:

ALL NEW INTERIOR WALL/ CEILING FINISH MATERIALS SHALL BE MINIMUM CLASS 'C' AND
FLOOR FINISH MATERIAL TO BE MINIMUM CLASS II, PER SECTION **803.1.1** AND **804.4** OF THE O.B.C.

FLOOR:

SC - SEALED POLISHED CONCRETE

WALL:

PTE - (1) COAT CMU BLOCK FILLER PRIMER W/
(2) COATS EPOXY PAINT FINISH. COLOR(S) AS SELECTED BY OWNER

BASE:

EB - EPOXY WALL BASE - 6" COVED

CEILING:

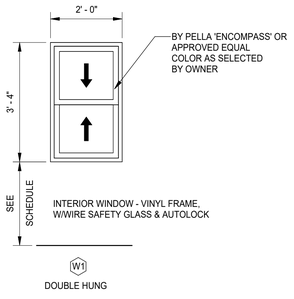
PTE - EPOXY PAINT, COLOR AS SELECTED BY OWNER

INTERIOR FINISH NOTES:

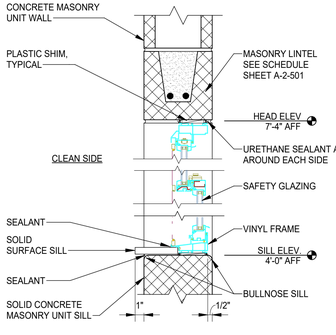
1. FLOOR/CURB - FINISH EXISTING FLOOR/ CURB W/ EPOXY
2. BASE - FINISH NEW/ EXISTING WALL BASE W/ (2) COATS OF EPOXY
3. DOOR/FRAME - (2) COATS EPOXY PAINTED - COATING SHALL BE SHOP APPLIED TO ALL SURFACES WITH FIELD APPLIED FINAL COAT.
4. PROVIDE RED LIGHT FILM PROTECTION AND BLACK OUT AT DOOR GLAZING (BY ONWER)
5. CASEWORK - METAL CASEWORK W/ EPOXY TOP. COLOR (NOT BLACK) GRAY.

WINDOW SCHEDULE

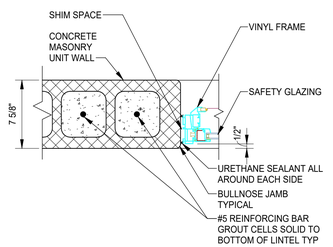
MARK	COUNT	HEIGHT	WIDTH	SILL HEIGHT	TYPE	FRAME MATERIAL	FRAME HEAD/SILL	FRAME JAMB	COMMENTS
W1	1	3' - 4"	2' - 0"	4' - 0"	DOUBLE HUNG	VINYL	H-2	J-2	



WINDOW TYPE



H-2 VINYL WINDOW HEAD/SILL, 8" CMU WALL DETAIL
1 1/2" = 1'-0"



J-2 VINYL WINDOW JAMB, 8" CMU WALL DETAIL
1 1/2" = 1'-0"

REV	DATE	DESCRIPTION	APPROVAL
1	10/22/2024	FIELD INSTRUCT #3	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO DOOR, HARDWARE, & FINISH SCHEDULE

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	TF	09/20/2023
CHECKED BY	TF	09/20/2023
DRAWN BY	ANC/DOA	09/20/2023
PROJ. MGR.	SP	09/20/2023
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. A-2-601

REV 1

10/22/2024 8:20:08 AM

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0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE

GENERAL NOTES

GENERAL NOTES FOR AUTOMATIC SPRINKLERS FOR RENOVATED ANIMAL LABS

1. THE AUTOMATIC SPRINKLERS SHALL BE DESIGNED, INSTALLED AND TESTED IN CONFORMANCE WITH THE FOLLOWING CODES AND STANDARDS:
   A. 2024 OHIO BUILDING-OBC
   B. 2024 INTERNATIONAL FIRE CODE-IFC.
   C. NATIONAL FIRE PROTECTION ASSOCIATION-NFPA
      1. NFPA 13, 2022 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
2. THE FOLLOWING IS THE SCOPE OF WORK FOR THE NEW ANIMAL LABS :
   A. INSTALL AUTOMATIC SPRINKLERS THROUGHOUT THE RENOVATED ANIMAL LABS AS SHOWN ON THE ARCHITECTURAL DRAWINGS ON AN ORDINARY HAZARD GROUP II BASIC HYDRAULICALLY CALCULATED TO PROVIDE A .2-GPM OVER THE HYDRAULICALLY MOST REMOTE 1,500 SQUARE FEET UTILIZING 155-F, QUICK RESPONSE K=5.6 CHROME PENDENT SPRINKLERS COMPLETE WITH TWO-(2) PIECE CHROME ESCUTCHEON PLATE SPACED A MAXIMUM OF 130 SQUARE FEET. THE REDUCTION AS PERMITTED BY NFPA 13 WILL BE ALLOWED TO BE UTILIZED FOR THIS PROJECT.
   B. AUTOMATIC SPRINKLERS SHALL BE SUPPLIED FROM AN ADEQUATELY SIZED SPRINKLER MAIN.
3. THE AUTOMATIC SPRINKLERS SHALL BE DESIGNED UTILIZING A 120-PSI STATIC AND 100-PSI RESIDUAL WITH 500- GPM FLOW. FIRE PROTECTION CONTRACTOR SHALL OBTAIN THE LATEST FIRE PUMP TEST FROM THE OWNER.

4. AUTOMATIC SPRINKLER CONTRACTOR SHALL OBTAIN A PERMIT AND APPROVAL FROM THE FOLLOWING AGENCIES PRIOR TO ORDERING, FABRICATION, OR INSTALLATION OF ANY AUTOMATIC SPRINKLER PIPING:
   A. OHIO DEPARTMENT OF COMMERCE
      DIVISION OF STATE FIE MARSHAL
      8895 EAST MAIN STREET
      REYNOLDSBURG, OH 43068
      ATTENTION: MR. THOMAS W. MILLER MBA
      PHONE: 614-623-350
      FAX NUMBER: 614-728-5168
      E-MAIL: THOMAS.MILLER@COM.STATE.OH.US
   B. TOLEDO FIRE PREVENTION BUREAU
      ONE GOVERNMENT CENTER SUITE 1710
      TOLEDO, OH 48604
      ATTENTION: REX BUTLER-PLAN EXAMINER
      PHONE: 419-936-2008
      FAX NUMBER: 419-245-1076
      E-MAIL:REX.BUTLER@TOLEDO.OH.GOV
   C. C THE JDI GROUP
      360 W. DUSSEL DRIVE
      MAUMEE, OH 43537
      ATTENTION: TIM FRY, AIA
      E-MAIL: TFRY@THEJDIGROUP.COM
      DIRECT NUMBER: 419-725-3527
      CELL PHONE: 419-265-1897
5. THE FIRE PROTECTION CONTRACTOR OR ANY OF HIS SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR DAMAGE TO OWNER'S EXISTING OR NEW PROPERTY AND SHALL REPAIR EQUIPMENT OR UTILITIES DAMAGED BY HIS EMPLOYEES WHILE PERFORMING WORK. REPAIRS SHALL BE PERFORMED ONLY BY CERTIFIED TRADE PERSONNEL. COSTS INVOLVED WITH THIS REPAIR SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR AS ASSESSED BY THE CONSTRUCTION MANAGER.

6. ALL EQUIPMENT AND MATERIAL BEING UTILIZED SHALL BE UNDERWRITERS LABORATORIES LISTED-(UL) AND FACTORY MUTUAL-(FM) APPROVED AND LISTED IN THE 2024 APPROVAL GUIDES.

7. MATERIALS AND WORKMANSHIP FOR ALL THE FIRE PROTECTION CONTRACTOR'S WORK SHALL HAVE A MINIMUM OF A ONE-(1) YEAR GUARANTEE FROM THE TIME THE SYSTEM IS ACCEPTED AND APPROVED BY THE OWNER.

8. FIRE PROTECTION CONTRACTOR SHALL BE CERTIFIED BY THE STATE OF OHIO AND THE CITY OF TOLEDO IS LICENSED TO PERFORM THIS WORK.

9. FIRE PROTECTION SHALL BE DESIGNED BY A PERSON WHO IS NICET LEVEL III CERTIFIED OR HIGHER.

10. ALL PIPING SHALL BE PER NFPA 13, 2022. ALL PIPING 1-1/4" AND BELOW SHALL BE SCHEDULE 40. ALL PIPING ABOVE 1-1/4" CAN BE SCH. 10 AS LONG AS THE PIPING IS ROLL GROOVED. NO PIPING LESS THAN SCH. 40 SHALL BE THREADED.

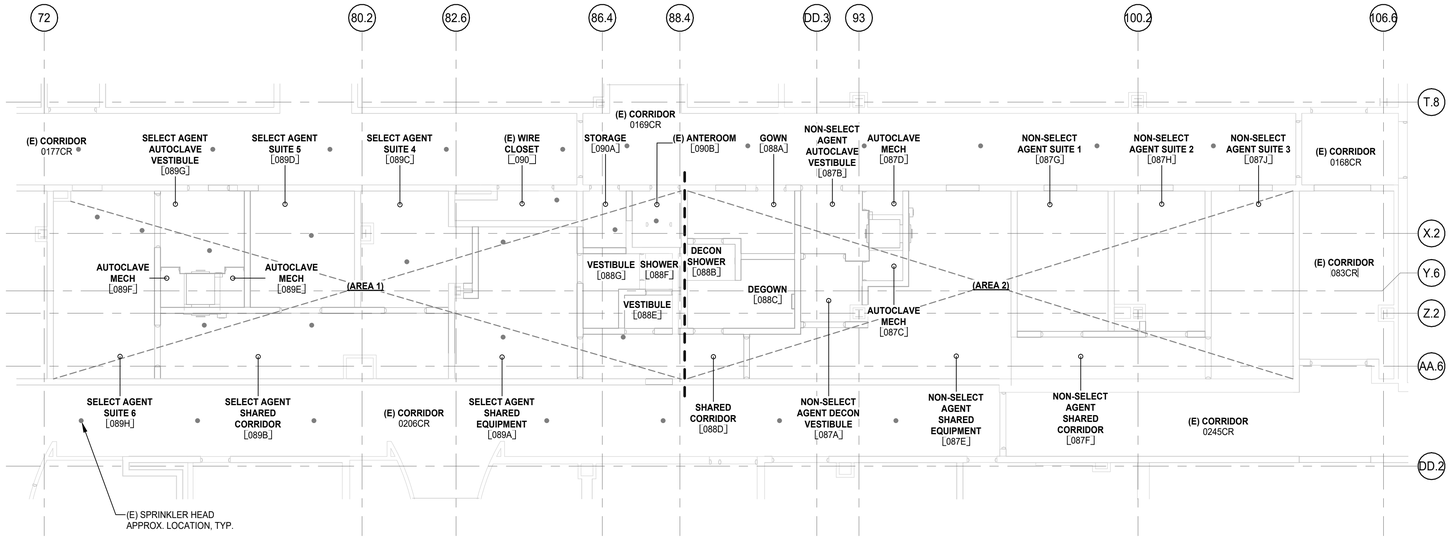
11. FIRE PROTECTION CONTRACTOR SHALL COORDINATE THE ENTIRE INSTALLATION WITH ALL OTHER DISCIPLINES.

12. FIRE PROTECTION PIPING SHALL BE FURNISHED, INSTALLED, AND TESTED PER NFPA 13, 2022. ALL WET SYSTEMS PIPING SHALL BE PRESSURE TESTED AT 200-PSI FOR TWO-(2) HOURS WITH "NO" LEAKS. LEAKAGE OR PERFORMANCE DEFICIENCY EVIDENCED BY TESTING SHALL BE REPAIRED SATISFACTORILY BY TIGHTENING OR REPLACING FITTING OR EQUIPMENT ONLY. CAULKING, WRAPPING, OR OTHER MEANS WILL NOT BE PERMITTED. ANY LEAKS ON EXISTING PIPING SHALL BE REPAIRED ON A TIME AND MATERIAL BASIS.

13. THE FLOOR PLAN ILLUSTRATE THE AREA OF PHASE 2. AREA 1 ALREADY HAS SPRINKLERS BUT MAY NEED TO BE RELOCATED. AREA 2 IS NOT CURRENTLY SPRINKLERED.

14. ALL PIPING WILL NEED TO BE ABOVE CONCRETE CEILING. ONLY THE PENDANT SPRINKLER SHALL BE IN THE ROOMS. ALL PENETRATIONS SHALL BE SEALED AND ALL UNUSED PENETRATIONS SHALL BE FILLED AND SEALED READY FOR FINISHING.

15. ANY QUESTIONS ON THE ABOVE INFORMATION SHALL BE DIRECTED TO:
    SEBENCH ENGINEERING, INC.
    ATTENTION : NICHOLAS A. MARIANO, PE, CFPS
    SENIOR ENGINEER
    STATE OF OHIO P.E. NUMBER: E-45494
    MOBILE: 419.378.1222
    FAX NUMBER-678-222-0552
    EMAIL: NMARIANO@SEBENCH.COM



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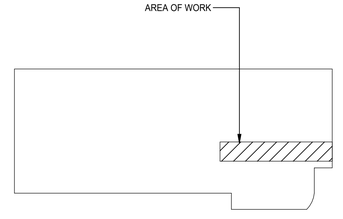
1 FP-2-101 PHASE TWO FIRE PROTECTION PLAN
1/8" = 1'-0"



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
OVERALL FIRE PROTECTION PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	NM		
CHECKED BY	DMV	05/05/2024	
DRAWN BY	DOA	04/26/2024	
PROJ. MGR.	SMP	04/16/2024	
SCALE	1/8" = 1'-0"		

JDI PROJECT NO. UOT23-001

DRAWING NO. FP-2-101 REV 0

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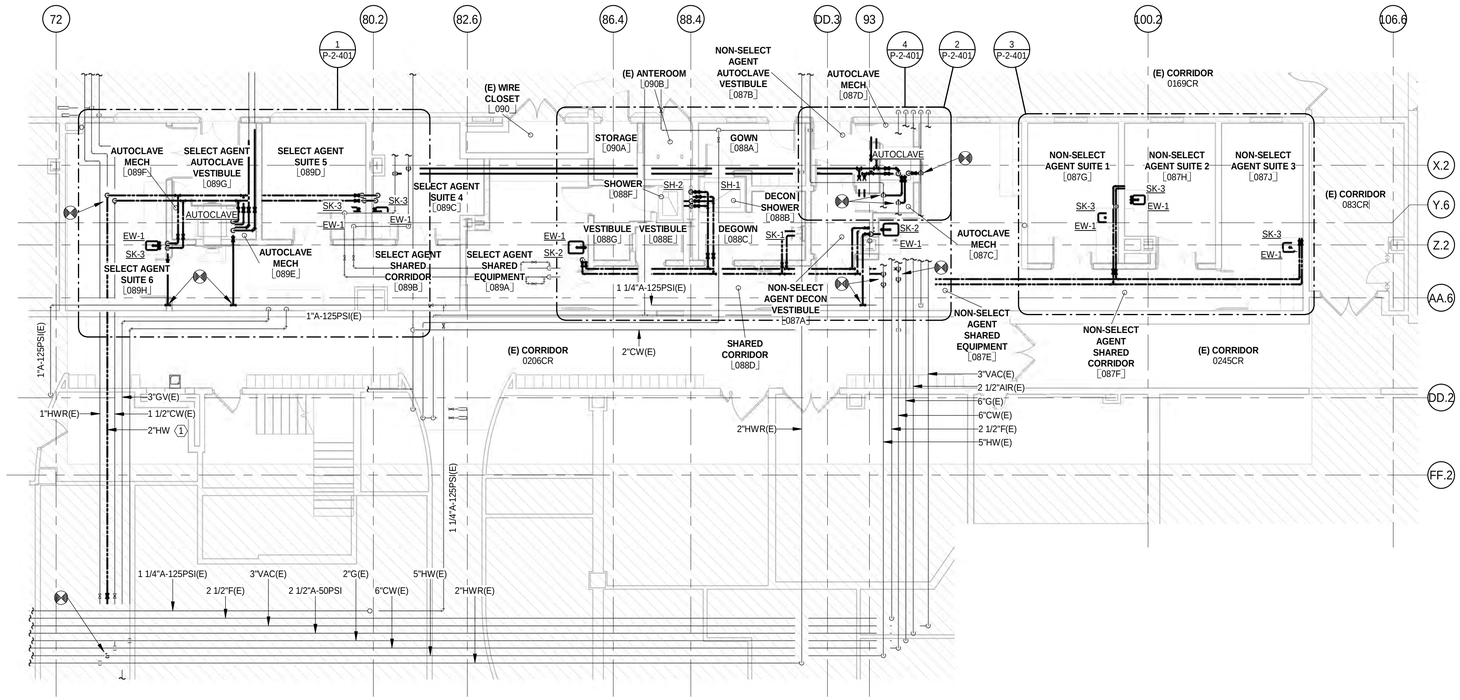
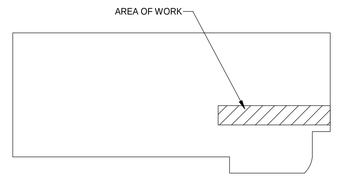
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3" — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE





KEY PLAN

N

PHASE TWO PLUMBING DOMESTIC WATER PIPING PLAN

1/8" = 1'-0"

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES AND EXISTING CONDITIONS TO VERIFY SPACES IN WHICH IT WILL BE INSTALLED. WITHOUT ADDITIONAL COST, MAKE MODIFICATIONS TO THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH EXISTING CONDITIONS AND FOR PROPER EXECUTION OF THE WORK.
4. BEFORE SUBMITTING BIDS. VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
5. REMOVE ALL ABANDONED ACCESSORIES AND DEVICES NOT OTHERWISE NOTED. PATCH WALL AND PREP FOR NEW FINISHES.
6. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
7. PIPING SYSTEMS SHALL BE PROPERLY INSULATED. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
8. ALL PIPING TO REMAIN SHALL HAVE ENDS TERMINATED IN A NEAT MANNER READY FOR CONNECTION OF NEW WORK. ALL EXPOSED ENDS OF PIPING SHALL BE CAPPED, SCREWED PIPING SHALL END ON A SCREWED JOINT. FLANGED PIPE SHALL END WITH A FLANGED JOINT. WELDED PIPING SHALL BE MECHANICALLY CUT, CLEANED OF BURRS AND A CAP TACK WELDED TO THE PIPE.
9. REMOVAL OF PLUMBING FIXTURES AND PIPING SHALL INCLUDE ALL HANGERS AND SUPPORT ASSOCIATED WITH THE PLUMBING FIXTURES AND PIPING TO BE REMOVED.
10. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES, NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIME STATED BY THE OWNER.
11. PIPING SYSTEMS SHALL BE ACCURATELY IDENTIFIED AND SERVICES SPECIFIC TO CONTAINMENT SPACES SHALL CLEARLY DESIGNATE THE SPECIFIC FUNCTION. VACUUM AND BIOWASTE PIPING SHALL INCLUDE THE UNIVERSAL BIOHAZARD SIGN AT PIPING AND AT EQUIPMENT AND PIPE TAG COLOR CODE SHALL BE IN ACCORDANCE WITH ANSI/ASME STANDARDS.
12. PENETRATIONS THROUGH THE CONTAINMENT BARRIER SHALL BE GAS-TIGHT, NONPOROUS AND VISIBLE FOR ROUTINE INSPECTION AND MAINTENANCE. PENETRATIONS SHALL BE DESIGNED AND CONSTRUCTED TO THAT ONLY CONTROLLED LEAKAGE OCCURS. THE CONTROL OF LEAKAGE THROUGH THE CONTAINMENT BARRIER IS ESPECIALLY IMPORTANT IN FUMIGATION ACTIVITIES. PENETRATING COMPONENTS SHALL BE SUFFICIENTLY RIGID IN CONSTRUCTION OR ADEQUATELY BRACED TO MAINTAIN THE LONGTERM INTEGRITY OF THE PENETRATION.
13. EACH PRESSURIZED PIPING PENETRATION FROM OUTSIDE THE BARRIER INTO CONTAINMENT SHALL BE PROVIDE WITH A SHUT-OFF VALVE LOCATED OUTSIDE THE CONTAINMENT BARRIER SERVING ONLY THE BSL-3 AREA. EACH EQUIPMENT CONNECTION SHALL INCLUDE DEDICATED ISOLATION VALVE.

DEMO KEYNOTES

1. DEMO EXISTING 1-1/2"HW PIPING BACK TO 5"HW MAIN AND REPLACE WITH 2"HW WITH ISOLATION VALVE. DISPOSE OF PIPING TO OWNERS SATISFACTION.

PLUMBING/PIPING LEGEND

COMPRESSED AIR PIPING - LAB OR MEDICAL	AIR
ACID RESISTANT WASTE	ARW
ACID RESISTANT VENT	ARV
CLEANOUT	CO
EXISITNG	E
CONDENSATE	COND
COLD WATER - BOOSTED PRESSURE	CW
HOT WATER - BOOSTED PRESSURE	HW
HOT WATER RECIRCULATING - BOOSTED PRESSURE	HWR
EYE WASH STATION	EWS
FIRE PROTECTION PIPING	F
LOW PRESSURE CONDENSATE	LPC
LOW PRESSURE STEAM	LPS
NATURAL GAS PIPING	G
GAS VENT	GV
JANITOR, SERVICE SINK	SS
FLOOR DRAIN	FD
URINAL	UR
VACUUM PIPING - LABORATORY OR MEDICAL	VAC
SINK	SK
STEAM	STM
STORM	ST
VENT PIPE	V
VENT THRU ROOF	VTR
SOIL OR WASTE	W
WATER CLOSET	WC

CW PIPING
HW PIPING
HWR PIPING
NEW PIPING
EXISTING PIPING
ISOLATION VALVE
PIPE ELEVATION CHANGE
CONNECT TO EXISTING
NEW PLUMBING FIXTURE
EXISTING PLUMBING FIXTURE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO PLUMBING DOMESTIC WATER PIPING PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	01/02/2024
CHECKED BY	DMV	05/05/2024
DRAWN BY	TTR	01/02/2024
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. P-2-101

REV 0

7/23/2024 8:51:23 AM

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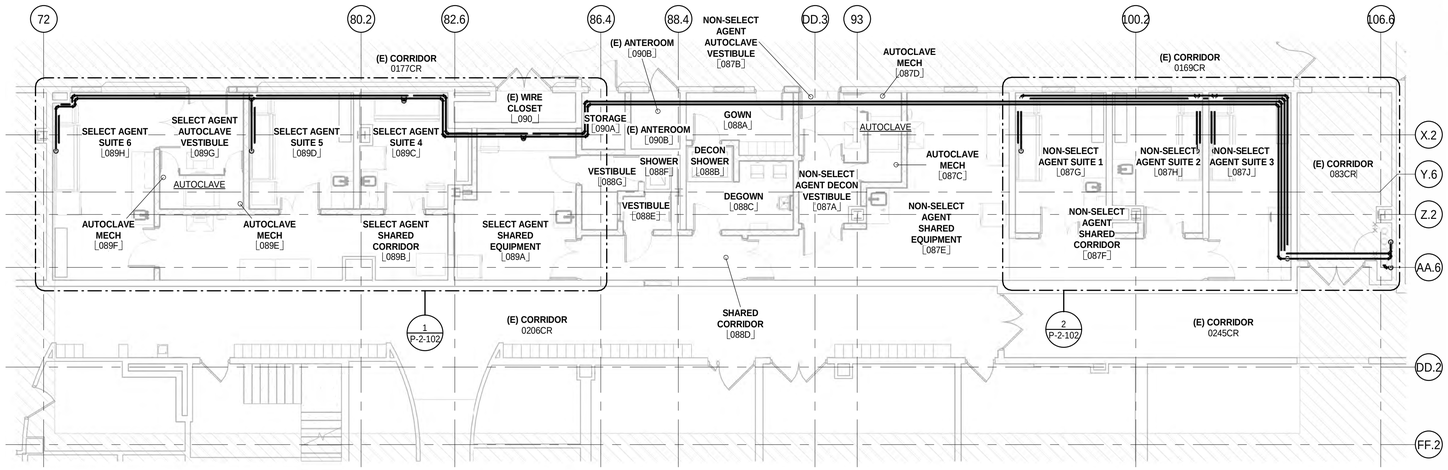
0 1/2" 1' 2' — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



N

PHASE TWO PLUMBING MEDICAL GAS PIPING PLAN

1/8" = 1'-0"

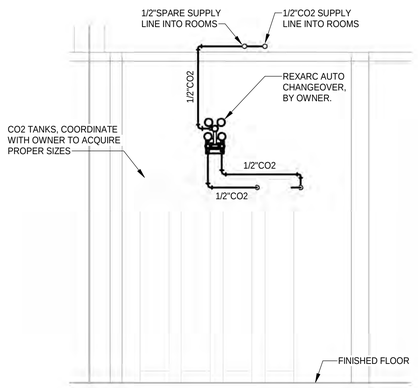
PLUMBING/PIPING LEGEND

COMPRESSED AIR PIPING - LAB OR MEDICAL	AIR
ACID RESISTANT WASTE	ARW
ACID RESISTANT VENT	ARV
CLEANOUT	CO
EXISITNG	E
CONDENSATE	COND
COLD WATER - BOOSTED PRESSURE	CW
HOT WATER - BOOSTED PRESSURE	HW
HOT WATER RECIRCULATING - BOOSTED PRESSURE	HWR
EYE WASH STATION	EWS
FIRE PROTECTION PIPING	F
LOW PRESSURE CONDENSATE	LPC
LOW PRESSURE STEAM	LPS
NATURAL GAS PIPING	G
GAS VENT	GV
JANITOR, SERVICE SINK	SS
FLOOR DRAIN	FD
URINAL	UR
VACUUM PIPING - LABORATORY OR MEDICAL	VAC
SINK	SK
STEAM	STM
STORM	ST
VENT PIPE	V
VENT THRU ROOF	VTR
SOIL OR WASTE	W
WATER CLOSET	WC

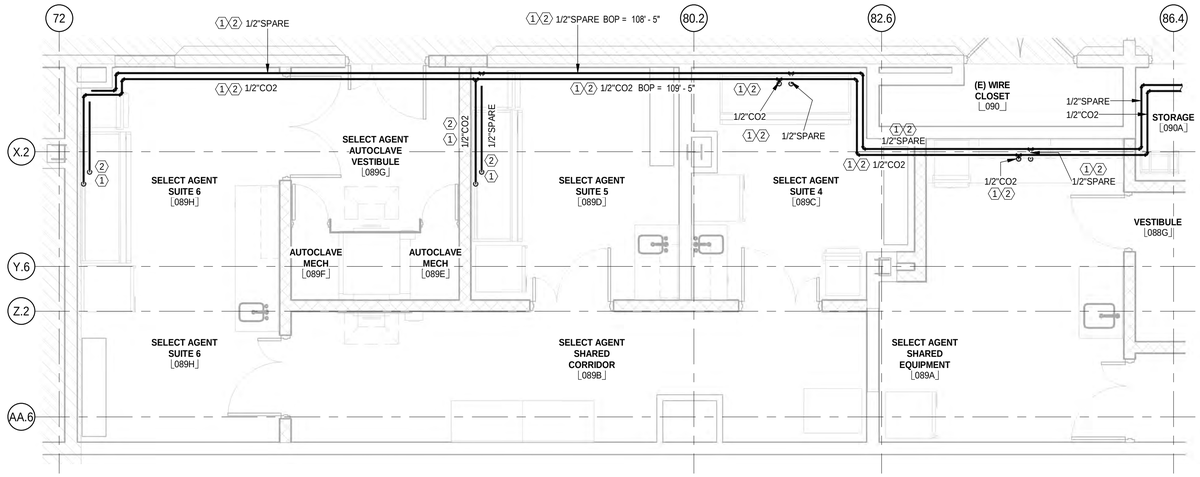
CW PIPING
HW PIPING
HWR PIPING
NEW PIPING
EXISTING PIPING
ISOLATION VALVE
PIPE ELEVATION CHANGE
CONNECT TO EXISTING
NEW PLUMBING FIXTURE
EXISTING PLUMBING FIXTURE

KEYNOTES

1. CO2 AND SPARE PIPING, COMPRESSION FITTINGS AND ALL COMPONENTS SHALL BE SCHD 40 STAINLESS STEEL, SURFACE MOUNTED. PROVIDE 1/2" VALVED DROP.
2. CO2 AND SPARE PIPING SHOWN APART FOR CLARITY, RUN PIPING TIGHT AGAINST WALL WHEN POSSIBLE.

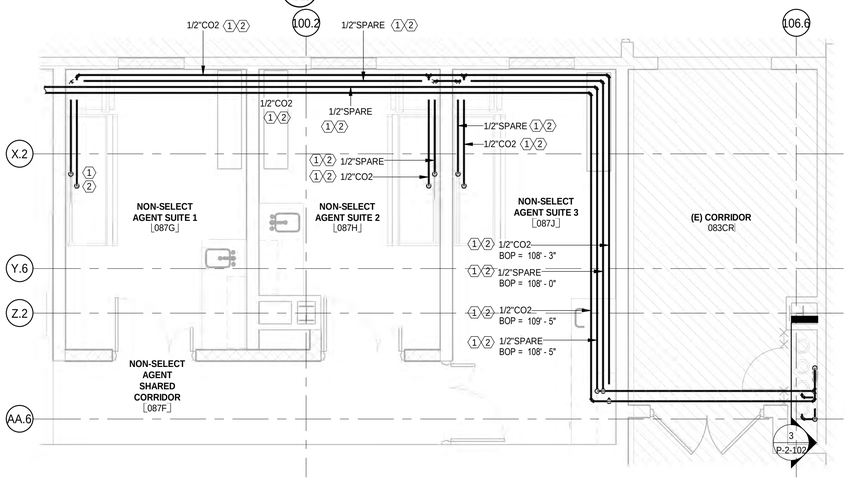


3 P-2-102 DETAIL - CO2 CYLINDER DETAIL
1/2" = 1'-0"



ENLARGED SELECT AGENT MEDICAL GAS PIPING PLAN

1 P-2-102 — 1/4" = 1'-0"



ENLARGED NON SELECT AGENT MEDICAL GAS PIPING PLAN

2 P-2-102 — 1/4" = 1'-0"

KEY PLAN

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES AND EXISTING CONDITIONS TO VERIFY SPACES IN WHICH IT WILL BE INSTALLED. WITHOUT ADDITIONAL COST, MAKE MODIFICATIONS TO THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH EXISTING CONDITIONS AND FOR PROPER EXECUTION OF THE WORK.
4. BEFORE SUBMITTING BIDS. VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
5. REMOVE ALL ABANDONED ACCESSORIES AND DEVICES NOT OTHERWISE NOTED. PATCH WALL AND PREP FOR NEW FINISHES.
6. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
7. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
8. ALL PIPING TO REMAIN SHALL HAVE ENDS TERMINATED IN A NEAT MANNER READY FOR CONNECTION OF NEW WORK. ALL EXPOSED ENDS OF PIPING SHALL BE CAPPED, SCREWED PIPING SHALL END ON A SCREWED JOINT. FLANGED PIPE SHALL END WITH A FLANGED JOINT. WELDED PIPING SHALL BE MECHANICALLY CUT, CLEANED OF BURRS AND A CAP TACK WELDED TO THE PIPE.
9. REMOVAL OF PLUMBING FIXTURES AND PIPING SHALL INCLUDE ALL HANGERS AND SUPPORT ASSOCIATED WITH THE PLUMBING FIXTURES AND PIPING TO BE REMOVED.
10. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES, NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIME STATED BY THE OWNER.
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12. PENETRATIONS THROUGH THE CONTAINMENT BARRIER SHALL BE GAS-TIGHT, NONPOROUS AND VISIBLE FOR ROUTINE INSPECTION AND MAINTENANCE. PENETRATIONS SHALL BE DESIGNED AND CONSTRUCTED TO THAT ONLY CONTROLLED LEAKAGE OCCURS. THE CONTROL OF LEAKAGE THROUGH THE CONTAINMENT BARRIER IS ESPECIALLY IMPORTANT IN FUMIGATION ACTIVITIES. PENETRATING COMPONENTS SHALL BE SUFFICIENTLY RIGID IN CONSTRUCTION OR ADEQUATELY BRACED TO MAINTAIN THE LONGTERM INTEGRITY OF THE PENETRATION.
13. EACH PRESSURIZED PIPING PENETRATION FROM OUTSIDE THE BARRIER INTO CONTAINMENT SHALL BE PROVIDE WITH A SHUT-OFF VALVE LOCATED OUTSIDE THE CONTAINMENT BARRIER SERVING ONLY THE BSL-3 AREA. EACH EQUIPMENT CONNECTION SHALL INCLUDE DEDICATED ISOLATION VALVE.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

SEAL

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Maumee, OH 43537
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PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO MEDICAL GAS PIPING PLAN

UOT PROJECT NO.	5003-23-1915		
DESIGNED BY	WGE	03/27/2024	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	TTR	03/28/2024	DRAWING NO. P-2-102
PROJ. MGR.	SMP	04/16/2024	REV 0
SCALE	As indicated		

7/29/2024 8:50:27 AM

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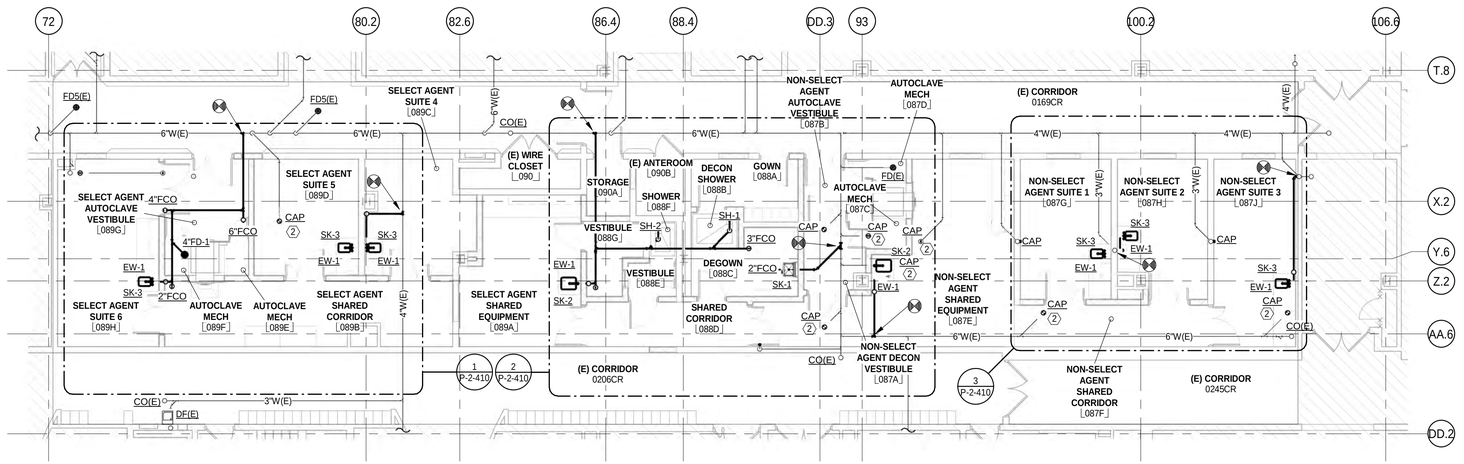

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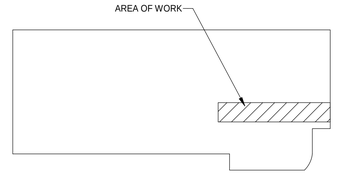
PHASE TWO PLUMBING SANITARY PLAN

1/8" = 1'-0"



KEY PLAN

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS. TESTING SHALL COMPLY WITH CHAPTER 3, SECTION 312, OF THE OHIO PLUMBING CODE, LATEST EDITION.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES AND EXISTING CONDITIONS TO VERIFY SPACES IN WHICH IT WILL BE INSTALLED. WITHOUT ADDITIONAL COST, MAKE MODIFICATIONS TO THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH EXISTING CONDITIONS AND FOR PROPER EXECUTION OF THE WORK.
4. BEFORE SUBMITTING BIDS. VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
5. REMOVE ALL ABANDONED ACCESSORIES AND DEVICES NOT OTHERWISE NOTED. PATCH WALL AND PREP FOR NEW FINISHES.
6. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
7. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
8. ALL PIPING TO REMAIN SHALL HAVE ENDS TERMINATED IN A NEAT MANNER READY FOR CONNECTION OF NEW WORK. ALL EXPOSED ENDS OF PIPING SHALL BE CAPPED, SCREWED PIPING SHALL END ON A SCREWED JOINT. FLANGED PIPE SHALL END WITH A FLANGED JOINT. WELDED PIPING SHALL BE MECHANICALLY CUT, CLEANED OF BURRS AND A CAP TACK WELDED TO THE PIPE.
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10. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES, NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIME STATED BY THE OWNER.
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14. EACH PRESSURIZED PIPING PENETRATION FROM OUTSIDE THE BARRIER INTO CONTAINMENT SHALL BE PROVIDE WITH A SHUT-OFF VALVE LOCATED OUTSIDE THE CONTAINMENT BARRIER SERVING ONLY THE BSL-3 AREA. EACH EQUIPMENT CONNECTION SHALL INCLUDE DEDICATED ISOLATION VALVE.
15. DEEP P-TRAPS MUST BE PROVIDED FOR ALL PLUMBING FIXTURE PIPING AND MUST BE RESISTANT TO COMMON DECONTAMINATION AGENTS.

KEYNOTES

1. REWORK WASTE PIPING FOR NEW SINK TO CONNECT TO EXISTING.
2. DEMO EXISTING FLOOR DRAIN FD(E) CUT AND CAP EXISTING WASTE PIPING BELOW FLOOR. FOLLOW ALL LOCAL, STATE AND FEDERAL REGULATIONS AND LAWS PERTAINING TO SAW CUTTING, GRINDING AND PATCHING WORK OF CONCRETE. ALL WORK IS TO COMPLY WITH OSHA 3902. DISPOSE OF PLUMBING FIXTURE, PIPING AND REPAIR FLOOR TO OWNERS SATISFACTION.

NOTE:
ALL NEW DRAIN PIPING THAT CONNECTS TO EXISTING ACID WASTE PIPING, SHALL BE MADE WITH CHARLOTTE PIPE AND FOUNDRY COMPANY:
"CHEMDRAIN PIPE & FITTINGS SYSTEM"
CPVC PIPE, SCHEDULE 40, TYPE IV, GRADE 1, OR EQUAL.

PLUMBING/PIPING LEGEND

COMPRESSED AIR PIPING - LAB OR MEDICAL	AIR
ACID RESISTANT WASTE	ARW
ACID RESISTANT VENT	ARV
CLEANOUT	CO
EXISITNG	E
CONDENSATE	COND
COLD WATER - BOOSTED PRESSURE	CW
HOT WATER - BOOSTED PRESSURE	HW
HOT WATER RECIRCULATING - BOOSTED PRESSURE	HWR
EYE WASH STATION	EWS
FIRE PROTECTION PIPING	F
LOW PRESSURE CONDENSATE	LPC
LOW PRESSURE STEAM	LPS
NATURAL GAS PIPING	G
GAS VENT	GV
JANITOR, SERVICE SINK	SS
FLOOR DRAIN	FD
URINAL	UR
VACUUM PIPING - LABORATORY OR MEDICAL	VAC
SINK	SK
STEAM	STM
STORM	ST
VENT PIPE	V
VENT THRU ROOF	VTR
SOIL OR WASTE	W
WATER CLOSET	WC

CW PIPING
HW PIPING
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NEW PIPING
EXISTING PIPING
ISOLATION VALVE
PIPE ELEVATION CHANGE
CONNECT TO EXISTING
NEW PLUMBING FIXTURE
EXISTING PLUMBING FIXTURE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO PLUMBING SANITARY PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	01/02/2024
CHECKED BY	DMV	05/05/2024
DRAWN BY	TTR	01/02/2024
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. P-2-110

REV 0

7/23/2024 8:53:40 AM

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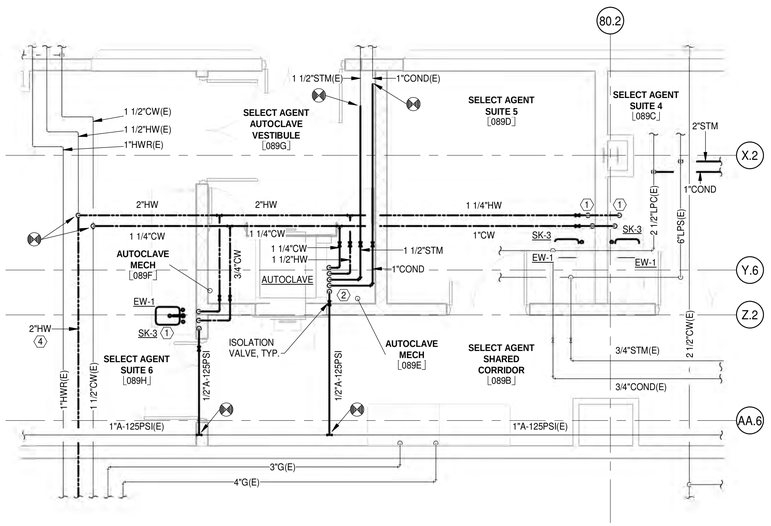

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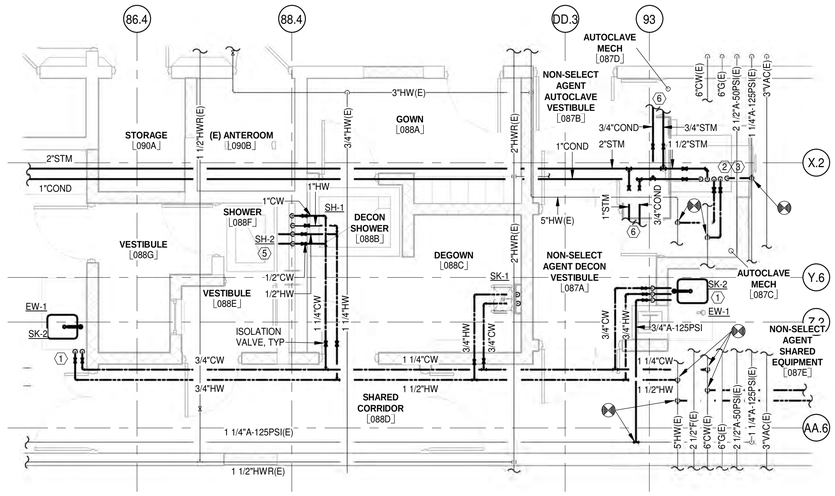
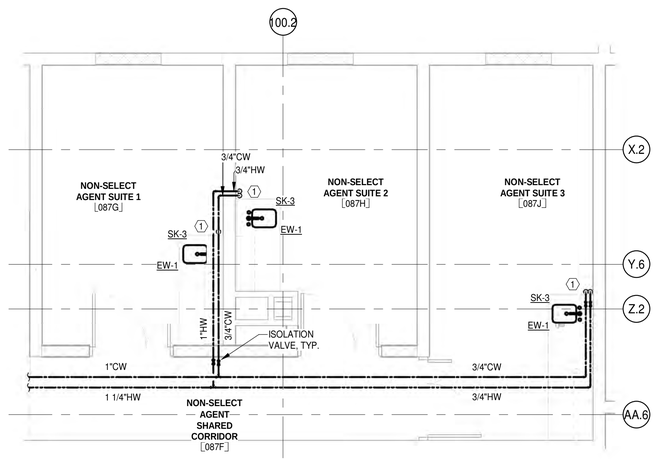
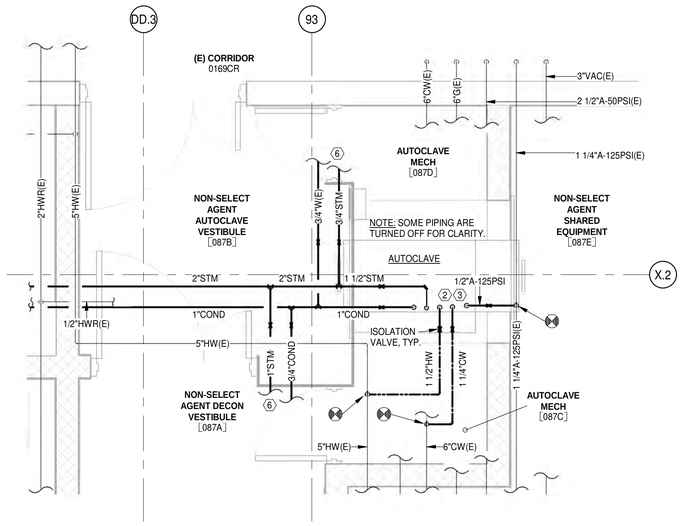
1/4" = 1'-0"



2 P-2-101 ENLARGED DOMESTIC WATER PIPING PLAN - AREA TWO
1/4" = 1'-0"



3 P-2-101 ENLARGED DOMESTIC WATER PIPING PLAN - AREA THREE
1/4" = 1'-0"



4 P-2-101 ENLARGED AUTOCLAVE WATER PIPING PLAN - AREA TWO
1/2" = 1'-0"

KEYNOTES

1. FIELD ROUTE CW & HW PIPING TO PLUMBING FIXTURE, SK AND EW.
2. PIPE DROP CW, HW, COND, STM & A-125PSIG TO AUTOCLAVE.
3. ADD PRESSURE REDUCER WITH AIR GAUGE SET TO 50-75 PSIG TO A-125 PSIG PIPING.
4. DEMO EXISTING 1-1/2"HW PIPING AND REPLACE WITH 2"HW AND TIE INTO 5"HW MAIN WITH ISOLATION VALVE. DISPOSE OF PIPING TO OWNERS SATISFACTION.
5. INCLUDE SHOWER SYSTEM WITH THERMOSTATIC MIXING VALVE SET TO 85°F, TMV-(E)
6. STEAM AND CONDENSATE PIPING CONT'D ON DWG M-2-403.

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
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4. BEFORE SUBMITTING BIDS, VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
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7. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
8. ALL PIPING TO REMAIN SHALL HAVE ENDS TERMINATED IN A NEAT MANNER READY FOR CONNECTION OF NEW WORK. ALL EXPOSED ENDS OF PIPING SHALL BE CAPPED, SCREWED PIPING SHALL END ON A SCREWED JOINT. FLANGED PIPE SHALL END WITH A FLANGED JOINT. WELDED PIPING SHALL BE MECHANICALLY CUT, CLEANED OF BURRS AND A CAP TACK WELDED TO THE PIPE.
9. REMOVAL OF PLUMBING FIXTURES AND PIPING SHALL INCLUDE ALL HANGERS AND SUPPORT ASSOCIATED WITH THE PLUMBING FIXTURES AND PIPING TO BE REMOVED.
10. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES, NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIME STATED BY THE OWNER.
11. PIPING SYSTEMS SHALL BE ACCURATELY IDENTIFIED AND SERVICES SPECIFIC TO CONTAINMENT SPACES SHALL CLEARLY DESIGNATE THE SPECIFIC FUNCTION. VACUUM AND BIOWASTE PIPING SHALL INCLUDE THE UNIVERSAL BIOHAZARD SIGN AT PIPING AND AT EQUIPMENT AND PIPE TAG COLOR CODE SHALL BE IN ACCORDANCE WITH ANSI/ASME STANDARDS.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO ENLARGED DOMESTIC WATER PIPING PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	03/07/2024	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	TTR	03/07/2024	DRAWING NO. P-2-401
PROJ. MGR.	SMP	04/16/2024	REV 0
SCALE	As indicated		

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0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1" 2" 3" — 3/4"=1'-0" SCALE
0 1" 2" 4" — 1/2"=1'-0" SCALE
0 2" 4" 6" — 3/8"=1'-0" SCALE
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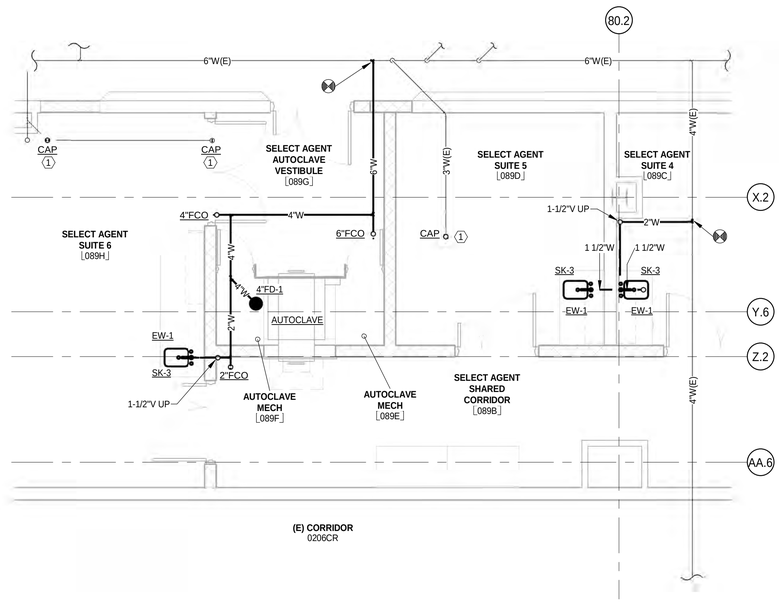
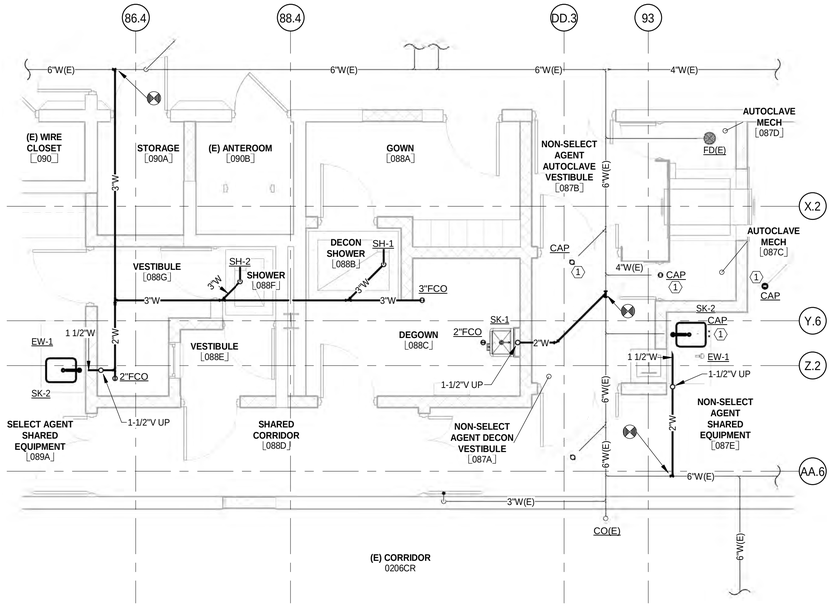


1 P-2-110 ENLARGED SANITARY PLAN - AREA ONE
1/4" = 1'-0"



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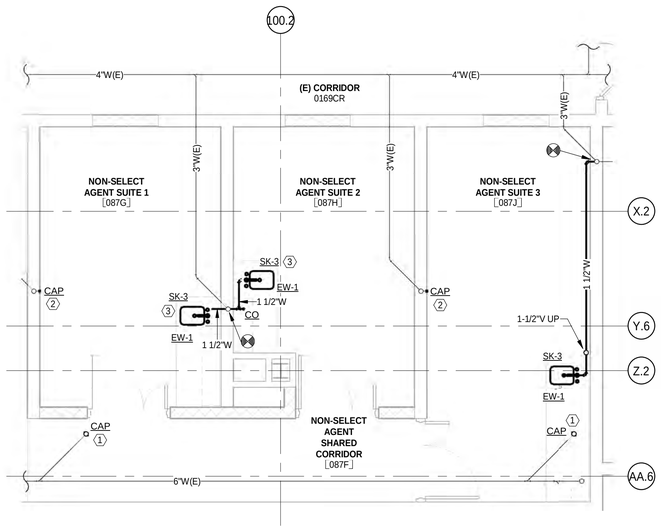

3 P-2-110 ENLARGED SANITARY PLAN - AREA THREE
1/4" = 1'-0"

KEYNOTES

1. DEMO EXISTING FLOOR DRAIN FD(E) CUT AND CAP EXISTING WASTE PIPING BELOW FLOOR. FOLLOW ALL LOCAL, STATE AND FEDERAL REGULATIONS AND LAWS PERTAINING TO SAW CUTTING, GRINDING AND PATCHING WORK OF CONCRETE. DISPOSE OF PLUMBING FIXTURE, PIPING AND REPAIR FLOOR TO OWNERS SATISFACTION.
2. DEMO EXISTING SINK SK(E), ASSOCIATED COMPONENTS AND DISCONNECT FROM WASTE AND VENT PIPING. CUT AND CAP ALL PIPING BACK TO INSIDE WALL CAVITY. ALL EXPOSED PIPING SHALL BE REMOVED. DISPOSE OF PLUMBING FIXTURE, ASSOCIATED COMPONENTS AND PIPING TO OWNERS SATISFACTION.
3. CONNECT NEW SINK SK-3, AND CONNECT TO WASTE AND VENT PIPING THAT WAS REWORKED AND CAPPED FROM DEMOLITION PHASE.

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES AND EXISTING CONDITIONS TO VERIFY SPACES IN WHICH IT WILL BE INSTALLED. WITHOUT ADDITIONAL COST, MAKE MODIFICATIONS TO THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH EXISTING CONDITIONS AND FOR PROPER EXECUTION OF THE WORK.
4. BEFORE SUBMITTING BIDS, VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
5. REMOVE ALL ABANDONED ACCESSORIES AND DEVICES NOT OTHERWISE NOTED. PATCH WALL AND PREP FOR NEW FINISHES.
6. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
7. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
8. ALL PIPING TO REMAIN SHALL HAVE ENDS TERMINATED IN A NEAT MANNER READY FOR CONNECTION OF NEW WORK. ALL EXPOSED ENDS OF PIPING SHALL BE CAPPED, SCREWED PIPING SHALL END ON A SCREWED JOINT, FLANGED PIPE SHALL END WITH A FLANGED JOINT. WELDED PIPING SHALL BE MECHANICALLY CUT, CLEANED OF BURRS AND A CAP TACK WELDED TO THE PIPE.
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11. PIPING SYSTEMS SHALL BE ACCURATELY IDENTIFIED AND SERVICES SPECIFIC TO CONTAINMENT SPACES SHALL CLEARLY DESIGNATE THE SPECIFIC FUNCTION. VACUUM AND BIOWASTE PIPING SHALL INCLUDE THE UNIVERSAL BIOHAZARD SIGN AT PIPING AND AT EQUIPMENT AND PIPE TAG COLOR CODE SHALL BE IN ACCORDANCE WITH ANSI/ASME STANDARDS.

NOTE:
ALL NEW DRAIN PIPING THAT CONNECTS TO EXISTING ACID WASTE PIPING, SHALL BE MADE WITH CHARLOTTE PIPE AND FOUNDRY COMPANY.
"CHEMDRAIN PIPE & FITTINGS SYSTEM"
CPVC PIPE, SCHEDULE 40, TYPE IV, GRADE 1, OR EQUAL.

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO ENLARGED SANITARY PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	03/07/2024	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	TTR	03/07/2024	DRAWING NO. P-2-410
PROJ. MGR.	SMP	04/16/2024	REV 0
SCALE	As indicated		

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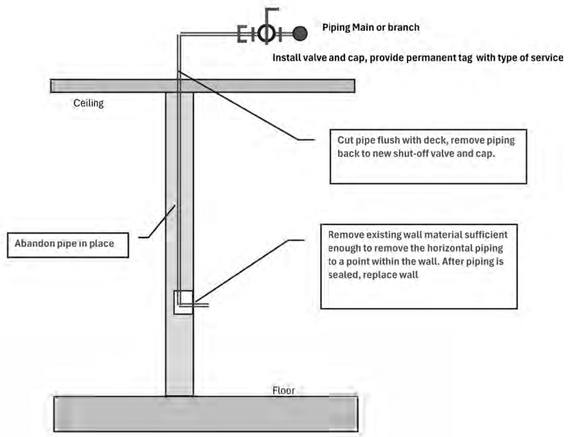
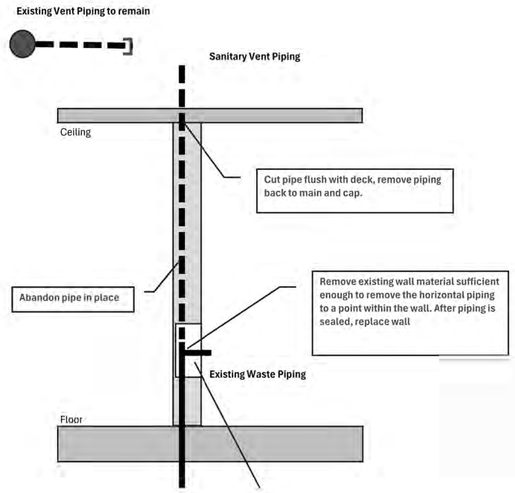


1 DETAIL - DEMO CW & HW PIPING
SCALE: NONE



2 DETAIL - DEMO WASTE & VENT PIPING
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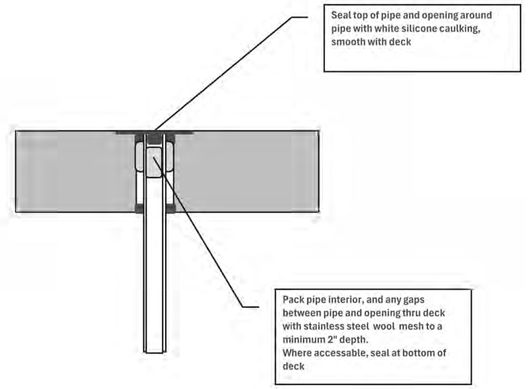
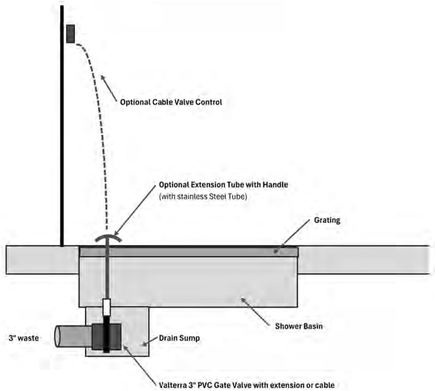
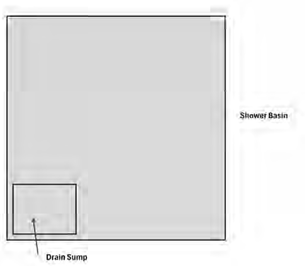
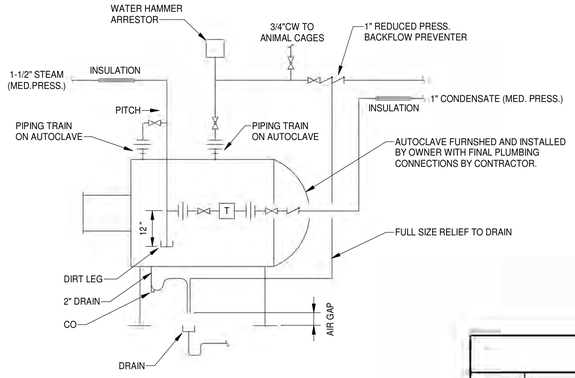


3 DETAIL - DEMO EXISTING PIPE PENETRATION THRU CONCRETE DECK TO MEZZANINE
SCALE: NONE
FOR SANITARY FLOOR DRAIN DEMO
SEE DWG AD-2-101 KEYNOTE #17.

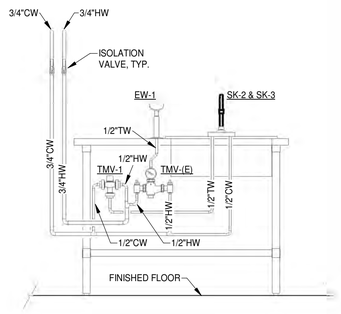


4 DETAIL - SHOWER & DECON SHOWER PIPING
SCALE: NONE





5 AUTOCLAVE PIPING DETAIL
SCALE: NONE



6 SINK & COUNTERTOP - MOUNTED EYEWASH & DRENCH HOSE
SCALE: NONE

MIXING VALVE(S)

MARK	DESCRIPTION	LOCATION	BASIS OF DESIGN		CONNECTIONS			PERFORMANCE DATA			REMARKS
			MFR	MODEL	COLD WATER INLET (DCW)	HOT WATER INLET (DCW)	TEMPERED WATER OUTLET (DHW)	FLOW (GPM)	PRESSURE DROP (PSI)	SET TEMPERATURE (°F)	
TMV-1	THERMOSTATIC MIXING VALVE	ALL LAVS/SINKS	WATTS	LFMMV	1/2"	1/2"	1/2"	0.5	< 5.0	105	1, 2, 3
TMV-(E)	THERMOSTATIC MIXING VALVE	EMERGENCY EQUIPMENT (POINT OF USE)	GUARDIAN	G6020	1/2"	1/2"	1/2"	3	< 1.0	85	4,5

REMARKS:
1. PROVIDE AT EACH LAVATORY/SINK, PLUMBING FIXTURE.
2. CONFORMS TO ASSE 1070.
3. THERMOSTATIC MIXING VALVE SET TO 105°F, TMV-1.
4. PROVIDE AT EACH SHOWER, EYE WASH PLUMBING FIXTURE.
5. THERMOSTATIC MIXING VALVE SET TO 85°F, TMV-(E).

PHASE 2 - PLUMBING FIXTURES - BASIS OF DESIGN OR APPROVED EQUAL

MARK	DESCRIPTION	MATERIAL	LOCATION	DESIGN SPECIFICATIONS	PLUMBING CONNECTIONS				ELECTRIC REQ.	REMARKS
					DOMESTIC COLD WATER (CW)	DOMESTIC HOT WATER (HW)	WASTE (W) ACID WASTE (AW)	VENT (V) ACID WASTE VENT (AWV)		
EW-1	DRENCH HOSE DECK MOUNTED	-	BSL-3	SPEAKMAN SE-927, 6' LONG HOSE 2.69 GPM @ 30PSI SELF-CLOSING VALVE TWIN AERATED SPRAY OUTLET	1/2"	-	-	-		INCLUDE: SE-921 DECK FLANGE PROVIDE SPILL RESISTANT PRESSURE VACUUM BREAKER
SK-1	HAND SINK KNEE ACTIVATED	304 STAINLESS STEEL	BSL-3	SANI-LAV 608 12.5" x 16" x 6" 16 GA	1/2"	1/2"	1-1/2"	1-1/2"		INCLUDE: CHICAGO FAUCETS 629 SERIES 629-FCABCP 3-1/2" GOOSENECK SPOUT 1.5 GPM LAMINAR
SK-2	20"W x 16"D x 10"H INTEGRATED SINK	304 STAINLESS STEEL	BSL-3	JOHN BOOS EPT6R5-3048SSK-R 30" x 48" 16GA	1/2"	1/2"	1-1/2"	1-1/2"		INCLUDE: T&S EC-3100-LF22-SB 7" GOOSENECK SPOUT SENSOR-OPERATED 2.2 GPM LAMINAR FLOW
SK-3	SINGLE COMPARTMENT SINK UNDER-COUNTER	EPOXY RESIN	BSL-3	HAMILTONLAB - 52LEPL-15C 12X16	1/2"	1/2"	1-1/2"	1-1/2"	12 V AC TRANSFORMER	INCLUDE: T&S EC-3100-LF22-SB 7" GOOSENECK SPOUT SENSOR-OPERATED 2.2 GPM LAMINAR FLOW
SH-1	EMERGENCY SHOWER WALL MOUNTED	304 STAINLESS STEEL	BSL-3	GUARDIAN G1691, 20 GPM @30PSI, 1" SS STAY OPEN VALVE, 10" SS SHOWER HEAD, 29" SS TRIANGULAR PULL ROD	1"	1"	3"	-	120V 0.48 AMP	INCLUDE: G6040 - THERMOSTATIC MIXING VALVE AP280-200 - FLASHING LIGHT & ALARM HORN PIPE AND FITTINGS SHALL BE SCH. 40 SS PROVIDE INTEGRAL VACUUM BREAKER
SH-2	PANEL SHOWER UNIT	304 STAINLESS STEEL	BSL-3	ZURN Z7500, 2.5 GPM SHOWER SYSTEM WITH TEMP-GARD PRESSUER BALANCING VALVE	1/2"	1/2"	3"	-		INCLUDE: PROVIDE INTEGRAL VACUUM BREAKER

NOTE:
1. PROVIDE BACKFLOW PROTECTION FOR ALL EYEWASH(S) AND SHOWER(S) PRIOR ENTERING CONTAINMENT
2. VACUUM BREAKER SHALL BE 316 STAINLESS TYPE
3. BASIN DIMENSIONS: MINIMUM DIMENSIONS SHALL BE 11"W x 12"L x 7"D. HAND WASH SINK 5" DEPTH MINIMUM

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO PLUMBING DETAILS & SCHEDULES

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	02/06/2024	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	TTR	02/06/2024	DRAWING NO. P-2-601
PROJ. MGR.	SMP	04/16/2024	REV 0
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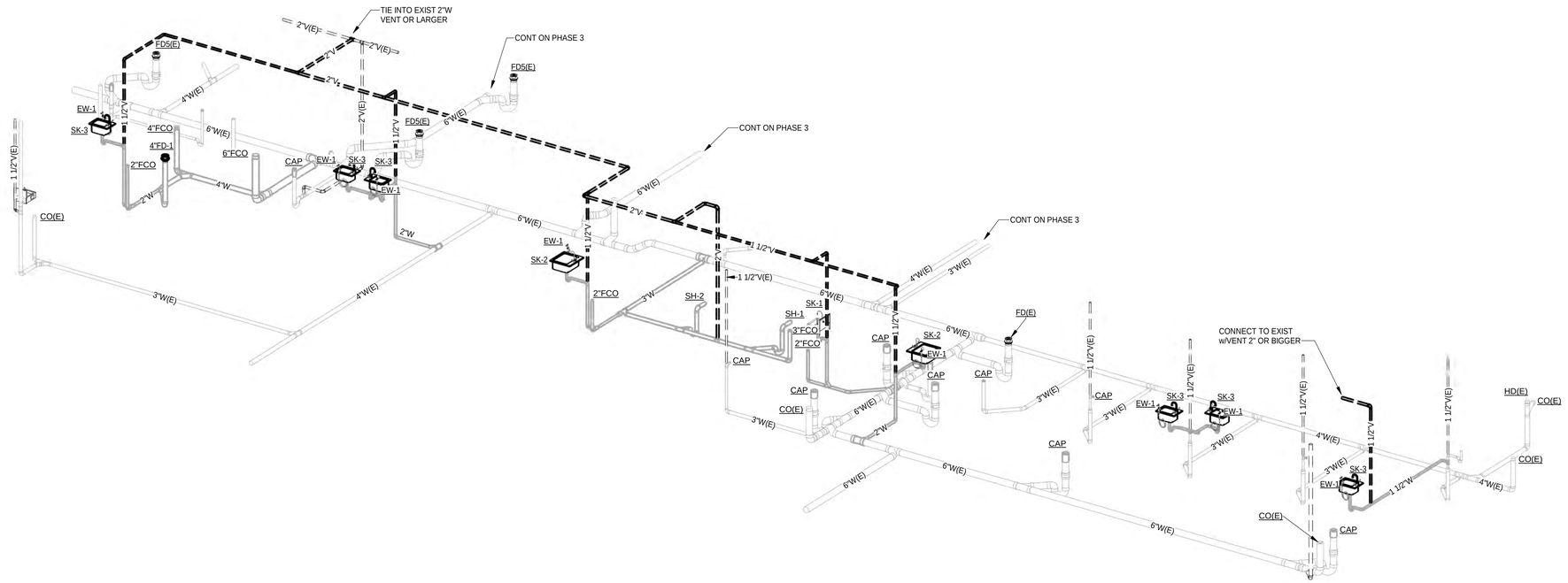

N PHASE TWO PLUMBING ISOMETRIC

NOTE:
ALL NEW DRAIN PIPING THAT CONNECTS TO EXISTING ACID WASTE PIPING, SHALL BE MADE WITH CHARLOTTE PIPE AND FOUNDRY COMPANY;
"CHEMDRAIN PIPE & FITTINGS SYSTEM"
CPVC PIPE, SCHEDULE 40, TYPE IV, GRADE 1, OR EQUAL.

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HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO PLUMBING ISOMETRIC

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	02/06/2024
CHECKED BY	DMV	05/05/2024
DRAWN BY	TTR	02/06/2024
PROJ. MGR.	SMP	04/16/2024
SCALE	12" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. P-2-701

REV 0

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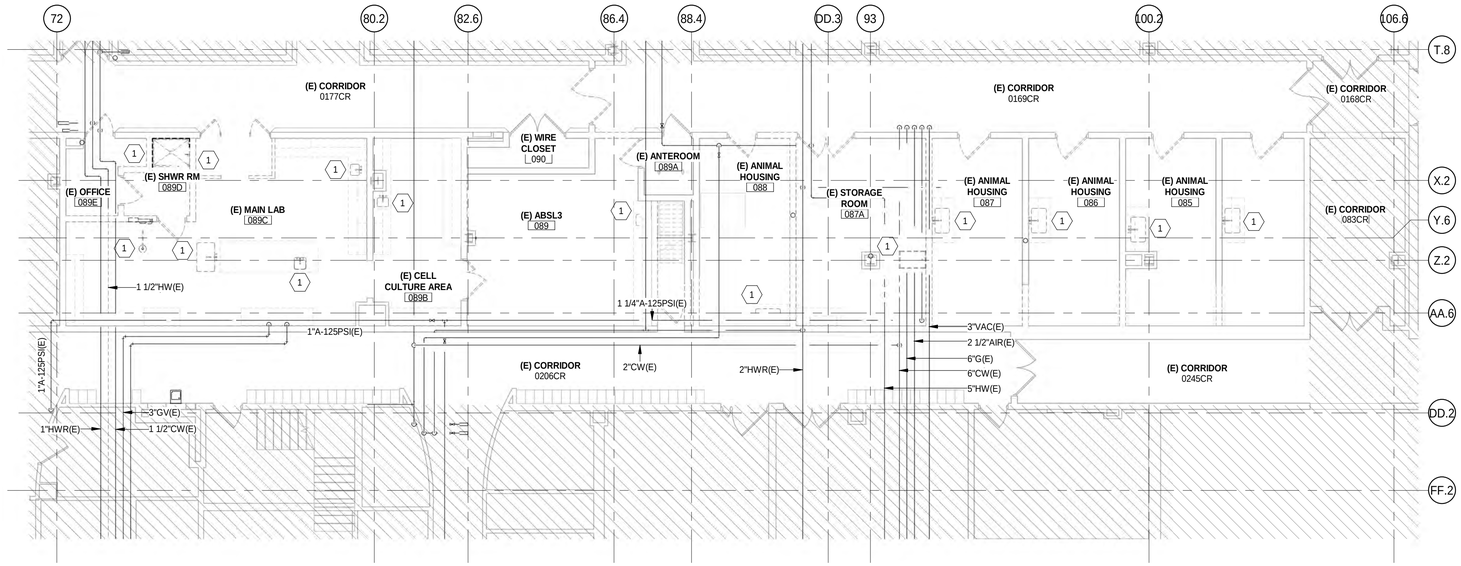
0 4' 8' 16'
1/8"=1'-0" SCALE

0 8' 16' 32'
1/16"=1'-0" SCALE

DEMO KEYNOTES

1. REMOVE EXISTING PLUMBING FIXTURE. SEE DETAIL 1 ON SHEET P-1-601 FOR CW & HW PIPING DEMO PROCEDURE.
2. REMOVE / SALVAGE DISHWASHER TO BE USED IN ROOM 073.



N

PHASE TWO DEMO PLUMBING DOMESTIC WATER PIPING PLAN

1/8" = 1'-0"

GENERAL DEMO NOTES

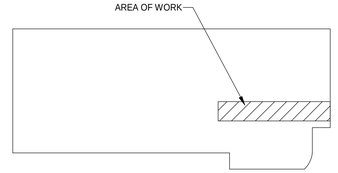
1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES AND EXISTING CONDITIONS TO VERIFY SPACES IN WHICH IT WILL BE INSTALLED. WITHOUT ADDITIONAL COST, MAKE MODIFICATIONS TO THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH EXISTING CONDITIONS AND FOR PROPER EXECUTION OF THE WORK.
4. BEFORE SUBMITTING BIDS. VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
5. THE EXTENT OF DEMOLITION INDICATED IS BASED ON DRAWINGS PROVIDED BY THE OWNER AND FIELD OBSERVATIONS. ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE INDICATED ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER AS SOON AS DISCREPANCIES ARE DISCOVERED.
6. WHERE EXISTING WALL, CEILING OR FLOOR SYSTEMS ARE TO REMAIN AND ARE DISTURBED BY DEMOLITION, THEY SHALL BE REPAIRED AS REQUIRED TO MATCH ORIGINAL INTEGRITY AND ADJACENT CONSTRUCTION.
7. REMOVE ALL ABANDONED ACCESSORIES AND DEVICES NOT OTHERWISE NOTED. PATCH DRYWALL AND PREP FOR NEW FINISHES.
8. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
9. DURING DEMOLITION, PROPERLY CAP AND PROTECT ALL PIPING THAT WILL REMAIN IN OPERATION.
10. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
11. DEMOLITION WORK SHALL BE PERFORMED BY WORKMEN EXPERIENCED IN THIS TYPE OF WORK AND SHALL BE CARRIED THROUGH TO COMPLETION WITH DUE REGARD TO THE SAFETY OF ALL BUILDING OCCUPANTS AND THE EMPLOYEES OF THE CONTRACTOR, WITH AS LITTLE DISTURBANCE AS POSSIBLE.
12. DEMOLISH ALL EQUIPMENT AS INDICATED, FIXTURES AND/OR MISCELLANEOUS ARTICLES IN THEIR ENTIRETY INCLUDING AUXILIARY EQUIPMENT, PIPING, WIRING AND CONDUIT.
13. MATERIALS RESULTING FROM THE DEMOLITION OPERATIONS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE FLOORS OR OTHER PARTS OF THE PREMISES, AND SHALL BE PROMPTLY REMOVED AND DISPOSED ON AWAY FROM THE PREMISES.
14. INCLUDE ALL DEMOLITION OF SYSTEMS AND COMPONENTS WHERE SYSTEMS SHALL BE REPLACED BY NEW WORK. REFER TO DRAWINGS AND SPECIFICATIONS FOR THE SCOPE ON NEW AND RECONNECTED WORK. THE INTENT OF THE REQUIREMENT IS TO HAVE THE CONTRACTOR DISCONNECT, DEMOLISH AND REMOVE ALL EXPOSED AND CONCEALED WORK WHERE BEING REPLACED OR CONNECTED TO THE NEW LAYOUTS.
15. ALL PIPING TO REMAIN SHALL HAVE ENDS TERMINATED IN A NEAT MANNER READY FOR CONNECTION OF NEW WORK. ALL EXPOSED ENDS OF PIPING SHALL BE CAPPED, SCREWED PIPING SHALL END ON A SCREWED JOINT. FLANGED PIPE SHALL END WITH A FLANGED JOINT. WELDED PIPING SHALL BE MECHANICALLY CUT, CLEANED OF BURRS AND A CAP TACK WELDED TO THE PIPE.
16. REMOVAL OF PLUMBING FIXTURES AND PIPING SHALL INCLUDE ALL HANGERS AND SUPPORT ASSOCIATED WITH THE PLUMBING FIXTURES AND PIPING TO BE REMOVED.
17. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES, NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIME STATED BY THE OWNER.

DEMO PLUMBING/PIPING LEGEND

COMPRESSED AIR PIPING - LAB OR MEDICAL	AIR
ACID RESISTANT WASTE	ARW
ACID RESISTANT VENT	ARV
CLEANOUT	CO
EXISITNG	E
CONDENSATE	COND
COLD WATER - BOOSTED PRESSURE	CW
HOT WATER - BOOSTED PRESSURE	HW
HOT WATER RECIRCULATING - BOOSTED PRESSURE	HWR
EYE WASH STATION	EWS
FIRE PROTECTION PIPING	F
LOW PRESSURE CONDENSATE	LPC
LOW PRESSURE STEAM	LPS
NATURAL GAS PIPING	G
GAS VENT	GV
JANITOR, SERVICE SINK	SS
FLOOR DRAIN	FD
URINAL	UR
VACUUM PIPING - LABORATORY OR MEDICAL	VAC
SINK	SK
STEAM	STM
STORM	ST
VENT PIPE	V
VENT THRU ROOF	VTR
SOIL OR WASTE	W
WATER CLOSET	WC
ISOLATION VALVE	
PIPE ELEVATION CHANGE	

CW PIPING
HW PIPING
HWR PIPING
NEW PIPING
EXISTING PIPING
DEMO PIPING
CONNECT TO EXISTING
NEW PLUMBING FIXTURE
EXISTING PLUMBING FIXTURE
DEMO PLUMBING FIXTURE

AREA OF WORK



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO DEMO PLUMBING DOMESTIC WATER PIPING PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	04/04/2024
CHECKED BY	DMV	05/05/2024
DRAWN BY	TTR	04/04/2024
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. PD-2-101

REV 0

7/23/2024 10:56:31 AM

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3"=1'-0" SCALE

0 1/2" 1' 1 1/2'
1-1/2"=1'-0" SCALE

0 1/2" 1' 2'
1"=1'-0" SCALE

0 1' 2' 3'
3/4"=1'-0" SCALE

0 1' 2' 4'
1/2"=1'-0" SCALE

0 2' 4' 6'
3/8"=1'-0" SCALE

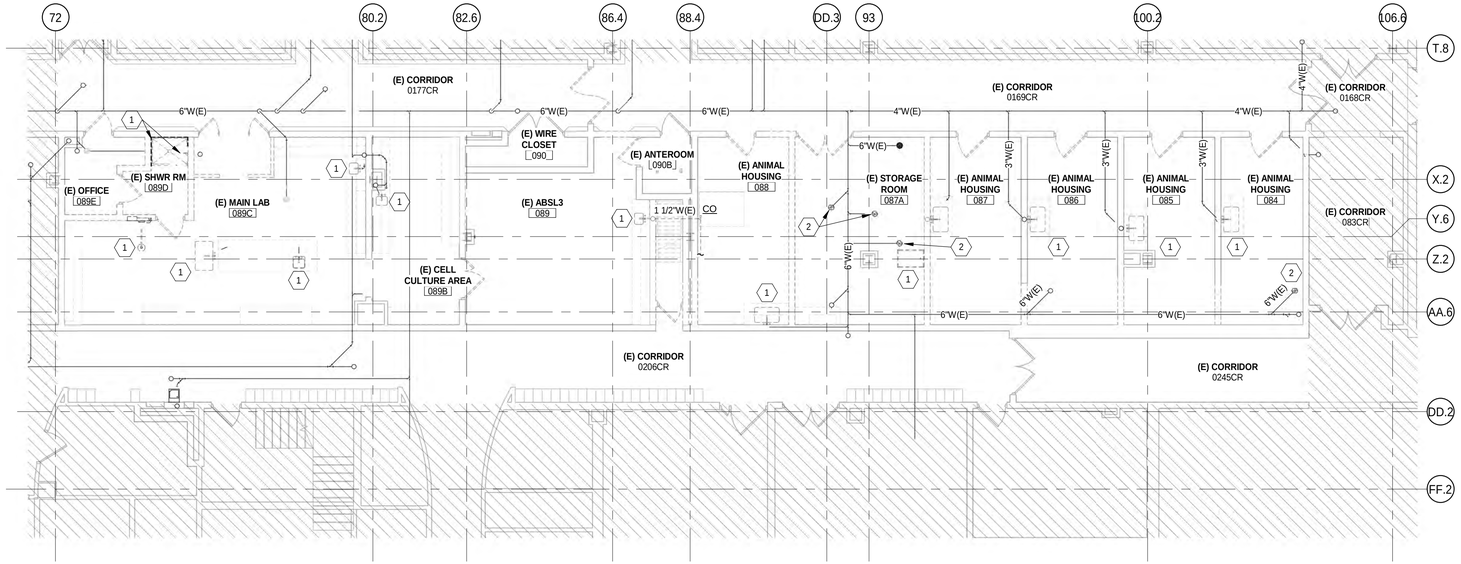
0 2' 4' 8'
1/4"=1'-0" SCALE

0 4' 8' 16'
1/8"=1'-0" SCALE

0 8' 16' 32'
1/16"=1'-0" SCALE

DEMO KEYNOTES

1. REMOVE EXISTING PLUMBING FIXTURE. SEE DETAIL 2 ON SHEET P-1-601 FOR WASTE & VENT PIPING DEMO PROCEDURE.
2. REMOVE EXISTING FLOOR DRAIN. SEE DETAIL 3 ON SHEET P-1-601 FOR DEMO PROCEDURE.



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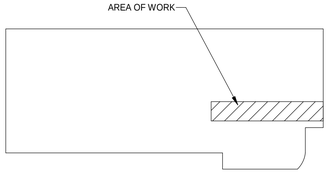
PHASE TWO DEMO PLUMBING SANITARY PLAN

1/8" = 1'-0"

AREA OF WORK



KEY PLAN

GENERAL DEMO NOTES

1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES AND EXISTING CONDITIONS TO VERIFY SPACES IN WHICH IT WILL BE INSTALLED, WITHOUT ADDITIONAL COST, MAKE MODIFICATIONS TO THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH EXISTING CONDITIONS AND FOR PROPER EXECUTION OF THE WORK.
4. BEFORE SUBMITTING BIDS. VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
5. THE EXTENT OF DEMOLITION INDICATED IS BASED ON DRAWINGS PROVIDED BY THE OWNER AND FIELD OBSERVATIONS. ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE INDICATED ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER AS SOON AS DISCREPANCIES ARE DISCOVERED.
6. WHERE EXISTING WALL, CEILING OR FLOOR SYSTEMS ARE TO REMAIN AND ARE DISTURBED BY DEMOLITION, THEY SHALL BE REPAIRED AS REQUIRED TO MATCH ORIGINAL INTEGRITY AND ADJACENT CONSTRUCTION.
7. REMOVE ALL ABANDONED ACCESSORIES AND DEVICES NOT OTHERWISE NOTED. PATCH DRYWALL AND PREP FOR NEW FINISHES.
8. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
9. DURING DEMOLITION, PROPERLY CAP AND PROTECT ALL PIPING THAT WILL REMAIN IN OPERATION.
10. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
11. DEMOLITION WORK SHALL BE PERFORMED BY WORKMEN EXPERIENCED IN THIS TYPE OF WORK AND SHALL BE CARRIED THROUGH TO COMPLETION WITH DUE REGARD TO THE SAFETY OF ALL BUILDING OCCUPANTS AND THE EMPLOYEES OF THE CONTRACTOR, WITH AS LITTLE DISTURBANCE AS POSSIBLE.
12. DEMOLISH ALL EQUIPMENT AS INDICATED, FIXTURES AND/OR MISCELLANEOUS ARTICLES IN THEIR ENTIRETY INCLUDING AUXILIARY EQUIPMENT, PIPING, WIRING AND CONDUIT.
13. MATERIALS RESULTING FROM THE DEMOLITION OPERATIONS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE FLOORS OR OTHER PARTS OF THE PREMISES, AND SHALL BE PROMPTLY REMOVED AND DISPOSED ON AWAY FROM THE PREMISES.
14. INCLUDE ALL DEMOLITION OF SYSTEMS AND COMPONENTS WHERE SYSTEMS SHALL BE REPLACED BY NEW WORK. REFER TO DRAWINGS AND SPECIFICATIONS FOR THE SCOPE ON NEW AND RECONNECTED WORK. THE INTENT OF THE REQUIREMENT IS TO HAVE THE CONTRACTOR DISCONNECT, DEMOLISH AND REMOVE ALL EXPOSED AND CONCEALED WORK WHERE BEING REPLACED OR CONNECTED TO THE NEW LAYOUTS.
15. ALL PIPING TO REMAIN SHALL HAVE ENDS TERMINATED IN A NEAT MANNER READY FOR CONNECTION OF NEW WORK. ALL EXPOSED ENDS OF PIPING SHALL BE CAPPED, SCREWED PIPING SHALL END ON A SCREWED JOINT. FLANGED PIPE SHALL END WITH A FLANGED JOINT. WELDED PIPING SHALL BE MECHANICALLY CUT, CLEANED OF BURRS AND A CAP TACK WELDED TO THE PIPE.
16. REMOVAL OF PLUMBING FIXTURES AND PIPING SHALL INCLUDE ALL HANGERS AND SUPPORT ASSOCIATED WITH THE PLUMBING FIXTURES AND PIPING TO BE REMOVED.
17. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES, NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIME STATED BY THE OWNER.

DEMO PLUMBING/PIPING LEGEND

COMPRESSED AIR PIPING - LAB OR MEDICAL	AIR
ACID RESISTANT WASTE	ARW
ACID RESISTANT VENT	ARV
CLEANOUT	CO
EXISITNG	E
CONDENSATE	COND
COLD WATER - BOOSTED PRESSURE	CW
HOT WATER - BOOSTED PRESSURE	HW
HOT WATER RECIRCULATING - BOOSTED PRESSURE	HWR
EYE WASH STATION	EWS
FIRE PROTECTION PIPING	F
LOW PRESSURE CONDENSATE	LPC
LOW PRESSURE STEAM	LPS
NATURAL GAS PIPING	G
GAS VENT	GV
JANITOR, SERVICE SINK	SS
FLOOR DRAIN	FD
URINAL	UR
VACUUM PIPING - LABORATORY OR MEDICAL	VAC
SINK	SK
STEAM	STM
STORM	ST
VENT PIPE	V
VENT THRU ROOF	VTR
SOIL OR WASTE	W
WATER CLOSET	WC
ISOLATION VALVE	
PIPE ELEVATION CHANGE	

CW PIPING
HW PIPING
HWR PIPING
NEW PIPING
EXISTING PIPING
DEMO PIPING
CONNECT TO EXISTING
NEW PLUMBING FIXTURE
EXISTING PLUMBING FIXTURE
DEMO PLUMBING FIXTURE

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO DEMO PLUMBING SANITARY PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	04/04/2024
CHECKED BY	DMV	05/05/2024
DRAWN BY	TTR	04/04/2024
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. PD-2-110

REV 0

7/23/2024 10:57:13 AM

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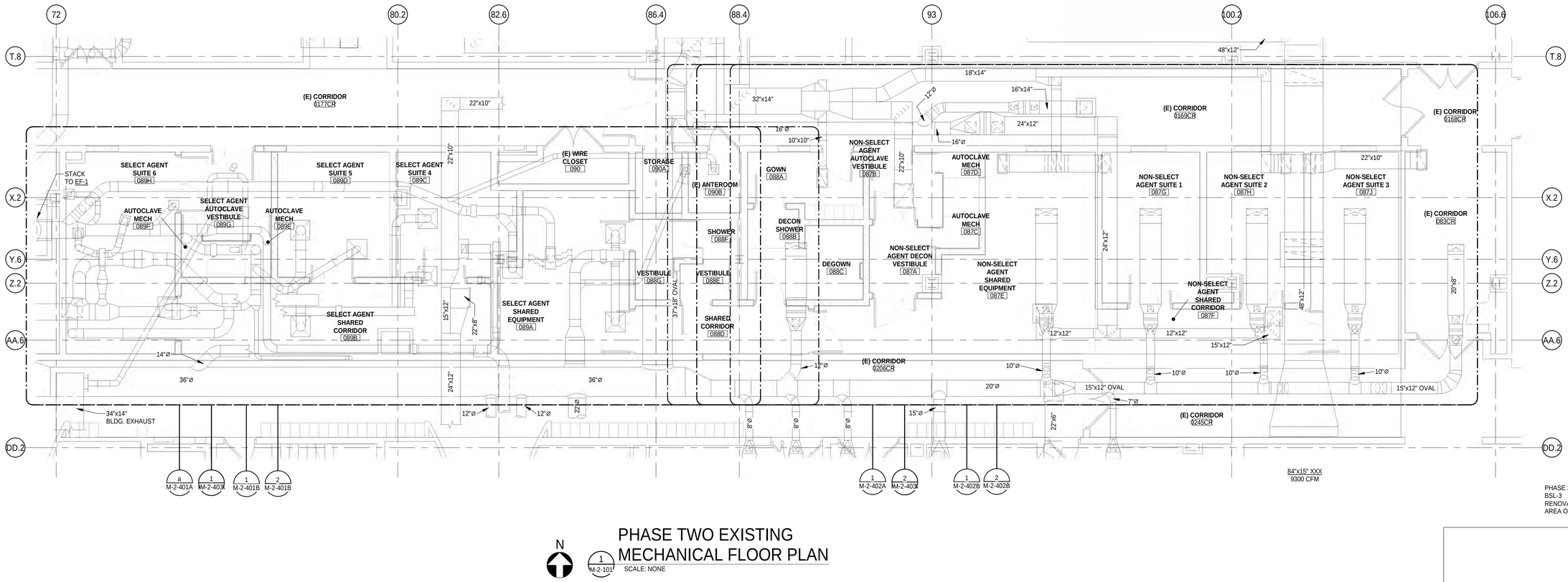
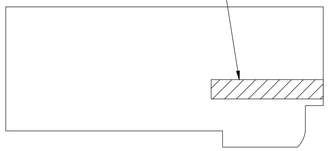


PHASE TWO EXISTING MECHANICAL FLOOR PLAN

1 / M-2-101 — SCALE: NONE



KEY PLAN

GENERAL NOTES

1. PRIOR TO THE SUBMISSION OF BID, THE CONTRACTOR SHALL EVALUATE EXISTING AND PROPOSED CONDITIONS, DIMENSIONS AND SPECIFICATIONS OF THE PROJECT.
2. PRIOR TO THE SUBMISSION OF BID, THE CONTRACTOR SHALL DETERMINE IMPACT OF THE EXISTING CONDITIONS OR EQUIPMENT UPON WORK REQUIRED.
3. CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED ANY EXISTING CONDITIONS OR EQUIPMENT THAT MAY IMPACT CONSTRUCTION OF THE PROJECT.
4. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.

NOTE:

ALL EXHAUST DUCT AND SUPPLY DUCT (DOWNSTREAM OF THE ISOLATION DAMPER) WITHIN OR SERVING THE BSL3 AREA AND THE TUNNEL WASHER EXHAUST (alternate), SHALL BE 316 STAINLESS STEEL, MINIMUM 16 GAUGE, WELDED, FABRICATED PER SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION OR SMACNA RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION. STAINLESS STEEL, CLASS 1, at -10 in. wg

ALL FLANGES SHALL BE A MINIMUM 1 ½ x 1 ½ x ¼ thick

FLANGE GASKETS SHALL BE PTFE AS SPECIFIED IN SECTION 23 3347 OF THE SPECIFICATIONS, AND INSTALLED AS DETAILED IN THE CONTRACT DRAWINGS.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO MECHANICAL FLOOR PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-101 — REV 0

7/23/2024 10:15:03 AM

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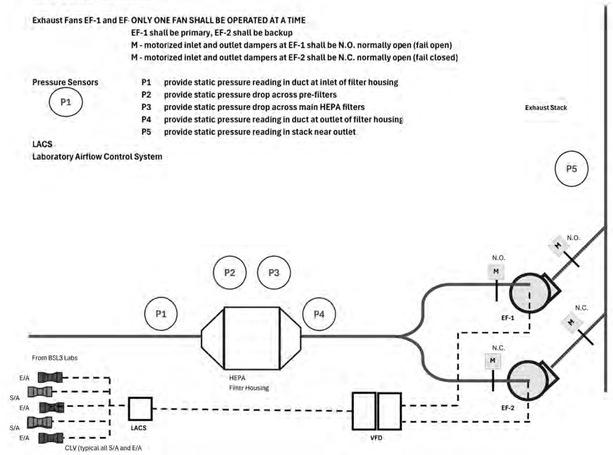
FAN OPERATION, BSL3 EXHAUST

Exhaust Fans EF-1 and EF ONLY ONE FAN SHALL BE OPERATED AT A TIME
EF-1 shall be primary, EF-2 shall be backup
M - motorized inlet and outlet dampers at EF-1 shall be N.O. normally open (fail open)
M - motorized inlet and outlet dampers at EF-2 shall be N.C. normally open (fail closed)

Pressure Sensors
P1 provide static pressure reading in duct at inlet of filter housing
P2 provide static pressure drop across pre-filters
P3 provide static pressure drop across main HEPA filters
P4 provide static pressure reading in duct at outlet of filter housing
P5 provide static pressure reading in stack near outlet

LACS
Laboratory Airflow Control System

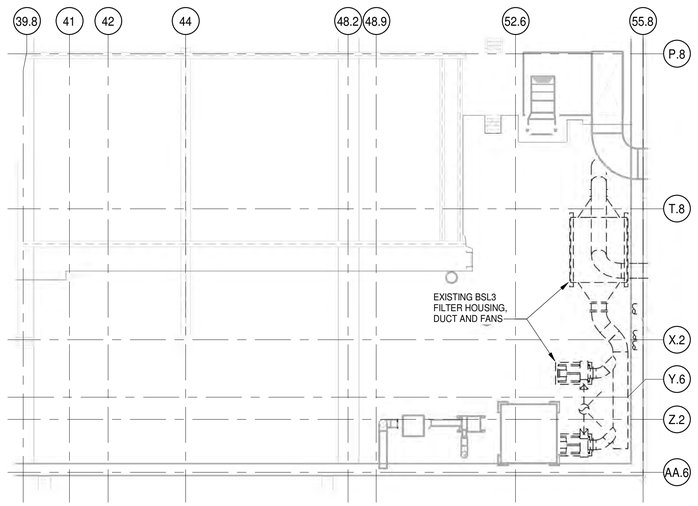


1 FAN OPERATION BSL3
SCALE: NONE

CONTROL TUBING ENCLOSURE SHALL BE "FORTRESS LINESET COVER SYSTEM", AS MANUFACTURED BY FORTRESS LINESET DUCTING, FALL RIVER, MA.

MODEL LD122, 4-1/2", WHITE, PVC, UV STABILIZED, FIRE RESISTANT, -4°F TO 140°F, WITH LONG SWEEP ELBOWS.

RECTORSEAL, 2601 SPENWICK DRIVE, HOUSTON, TX 77055,
800-231-3345
rectorseal.com



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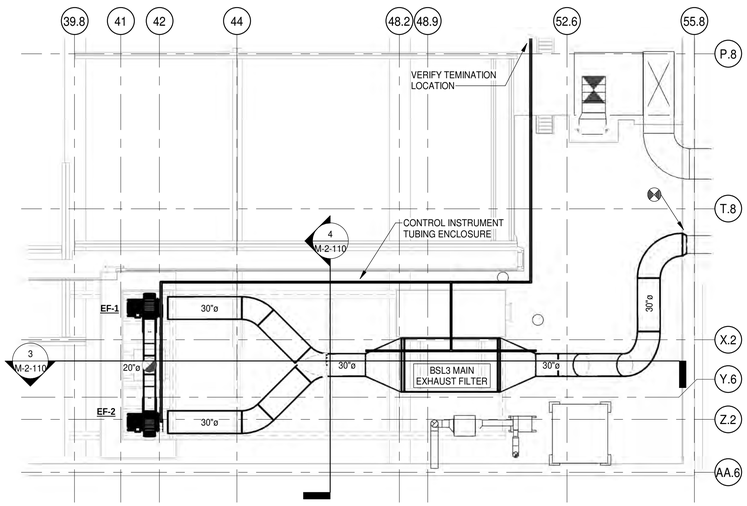
PHASE TWO ENLARGED MECHANICAL EXISTING ROOF PLAN
1/8" = 1'-0"



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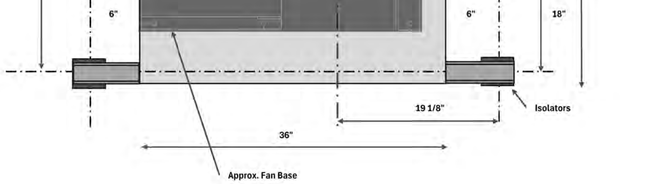
PHASE TWO ENLARGED MECHANICAL ROOF PLAN
1/8" = 1'-0"



DETAIL - PHASE 2 EXHAUST FAN CONCRETE INERTIA BASE
2 SCALE: NONE

Exhaust Fans EF-1 and EF-2

	New York Blower Co.
1 each	**Backward Inclined, SWSI, Size 20, ACF, Class 3, Arr-4, CW Rotation, BAU Discharge**
1 each	**Backward Inclined, SWSI, Size 20, ACF, Class 3, Arr-4, CCW Rotation, BAU Discharge**
	Motor (Supplied by NYB and mounted by NYB)
	Inverter-Ready TE 25 HP 3600 rpm 3-60-230/460 Premium Efficiency 286TS ABB Motors;
	Operating 8500 cfm, 12 in wg, 3500 rpm, 23.6 bhp, 0.075 lb/ft3, 0 ft 70 °F

Accessories/Modifications:

Cleanout Door: Bolted-Flush, Steel, 3:00 (standard)
Teflon Shaft Hole Closure
Flanged Inlet: Steel
Flanged Outlet: Steel
Flex Connector: Circular, Steel Flanged, PTFE belt
Flex Connector: Rectangular, Steel Flanged, PTFE belt

FILTER HOUSING

AAF/Flanders

SPECIFICATIONS

- The filter system airflow shall be 12000 CFM.
- The filter system shall be designed to withstand a pressure 10 inches water gage.
- The direction of air flow shall be right side door access.
- The pre/post filters and medium efficiency filter sections incorporate a slide-in design which does not require a locking mechanism.
- The primary filter housing shall be equipped with a fluid seal filter clamping mechanism operated by a locking handle that exerts an equal force on the top and bottom edge of each filter when engaging and disengaging the gel filled channel around the perimeter of the filter onto the knife edge. The locking mechanism shall be removable and shall be constructed of 300-series stainless steel.
- The filter housing shall be constructed from T-304 11 ga. and 14 ga. stainless steel sheet metal. All pressure retaining joints shall be continuously welded. At a minimum all welds shall be wire brushed and or buffed to remove heat discoloration and any sharp edges.
- The housing shall be equipped with a bag-out ring around each filter access port. Each ring shall have 2 continuous ribs which which secure the change-out bag security strap in place and a hemmed outer edge which prevents tearing the bag.
- Multi-wide filter housings shall be equipped with internal filter removal rods which draw the filters to the change-out position.
- A minimum of 4 feet of clearance in front of the filter system is required for filter change-out.
- A replaceable silicone gasket shall be installed around the perimeter of the filter access doors. Each door shall be secured in place using a standard door bolt with aluminum star knobs.
- Weathercaps shall be constructed from 14 ga. stainless steel metal and shall be installed to prevent the accumulation of water and debris on top of the filter system.
- Static pressure taps shall be located on the back of the filter system. Taps shall be 1/4" NPT stainless steel half couplings.
- The filter system shall be equipped with an AstroScan test section. This non-intrusive filter scanning system allows each individual filter to be effectively scan tested for leaks without removing an access door. The scan probes located downstream of the HEPA bank are actuated by means of a manual pullrod without penetrating the pressure boundary. Each scan nozzle shall be connected to a dedicated scan port located on the exterior of the housing via flexible tygon tubing. Each scan port consists of a welded in place coupling,and a 1/4" chrome plated brass quick disconnect tube coupling connection for the testing instrumentation.
- The filter system shall be equipped with filter efficiency test sections which are used to determine the average efficiency of the entire filter bank. A swing aside baffle plate shall be operated from the exterior of the test section to ensure proper mixing and uniformity of sampling agents. The injection ports shall be 1" NPT stainless steel half couplings and the upstream/downstream sampling ports shall be 1/2" NPT stainless steel half couplings.
- The filter system shall be equipped with bubble-tight dish style dampers which consist of a dish shaped disc with a knife edge that seals against a neoprene gasket located on the frame to create a gasket-to-knife edge seal.
  The damper blade shall be tested at 10" water gage to ensure bubble tightness per AG-1, 2012 mandatory appendix DA-1 and the entire damper body shall be tested as part of the total assembly.
- The damper stall be equipped with a 1/4 turn gear operated actuator with a manual handwheel.
- The filter system shall be tested in accordance with ANSI/ASME NQA-1 "Quality Assurance Program Requirements for Nuclear Facilities". Housing shall be tested for filter fit, operation of filter clamping mechanism, knife edge alignment, and leak tightness.
  Both the overall system and the filter sealing surface shall be leak tested by the "pressure decay" method in accordance with AG-1, 2012 mandatory appendix TA-III, Article TAA-III-4200 and shall have a maximum leak rate of .0005 CFM per cubic foot of housing volume for 15 minutes.

NOTE:

ALL EXHAUST DUCT AND SUPPLY DUCT (DOWNSTREAM OF THE ISOLATION DAMPER) WITHIN OR SERVING THE BSL3 AREA AND THE TUNNEL WASHER EXHAUST (alternate), SHALL BE 316 STAINLESS STEEL, MINIMUM 16 GAUGE, WELDED, FABRICATED PER SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION OR SMACNA RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION. STAINLESS STEEL, CLASS 1, at -10 in. wg

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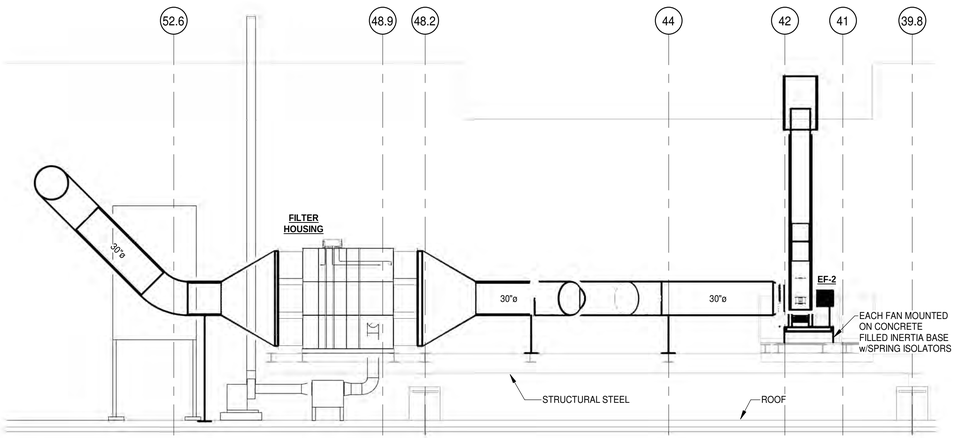
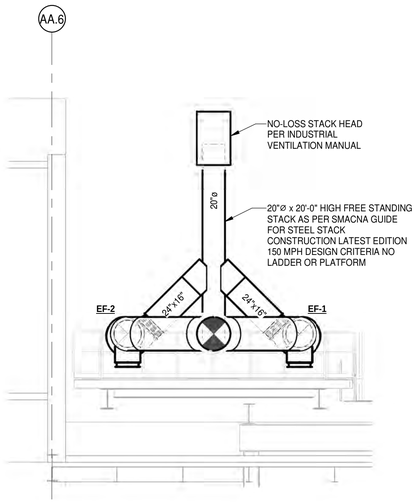
FLANGE GASKETS SHALL BE PTFE AS SPECIFIED IN SECTION 23 3347 OF THE SPECIFICATIONS, AND INSTALLED AS DETAILED IN THE CONTRACT DRAWINGS.



3 M-2-110 SECTION VIEW - FILTER HOUSING
3/16" = 1'-0"



4 M-2-110 SECTION VIEW - ROOF STACK
3/16" = 1'-0"

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HVAC/EQUIPMENT LEGEND

- EXISTING DUCTWORK
- DEMO DUCTWORK
- EXISTING EQUIPMENT
- DEMO EQUIPEMENT
- NEW DUCTWORK
- DUCT UP
- DUCT DROP
- CONNECT TO EXISTING

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PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO MECHANICAL ROOF PLAN,
ENLARGED DEMO PLAN AND ENLARGED
ROOF PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO.
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M-2-110

REV
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7/2/2024 10:17:08 AM

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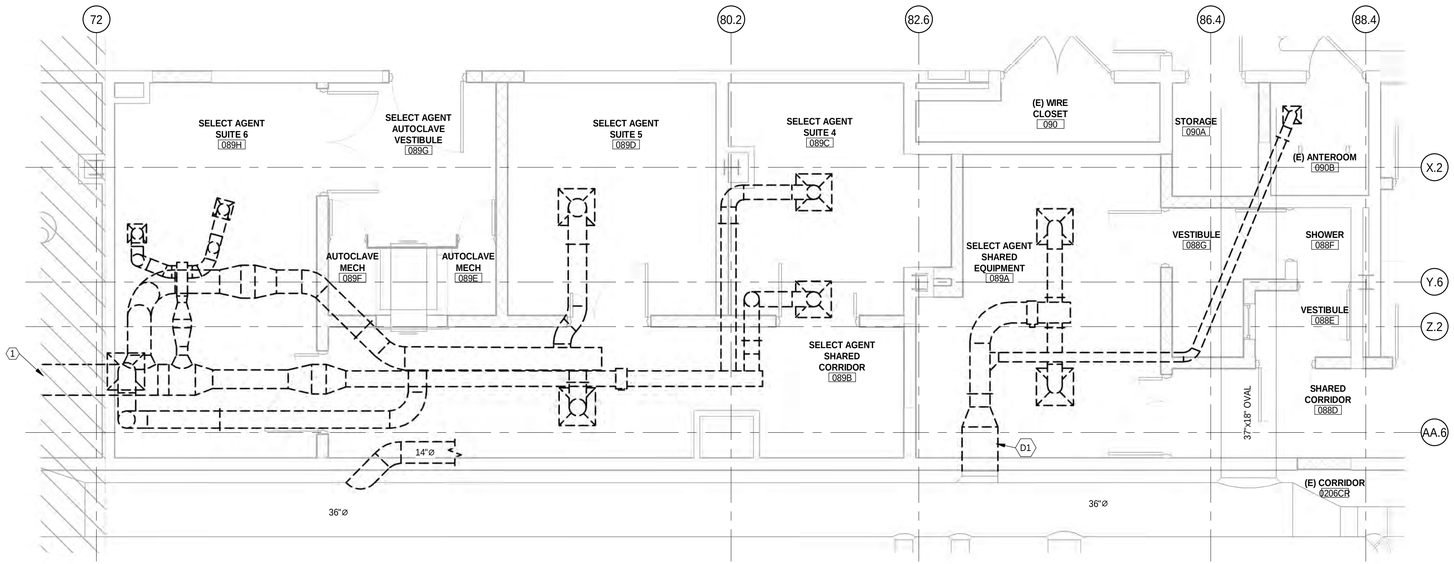
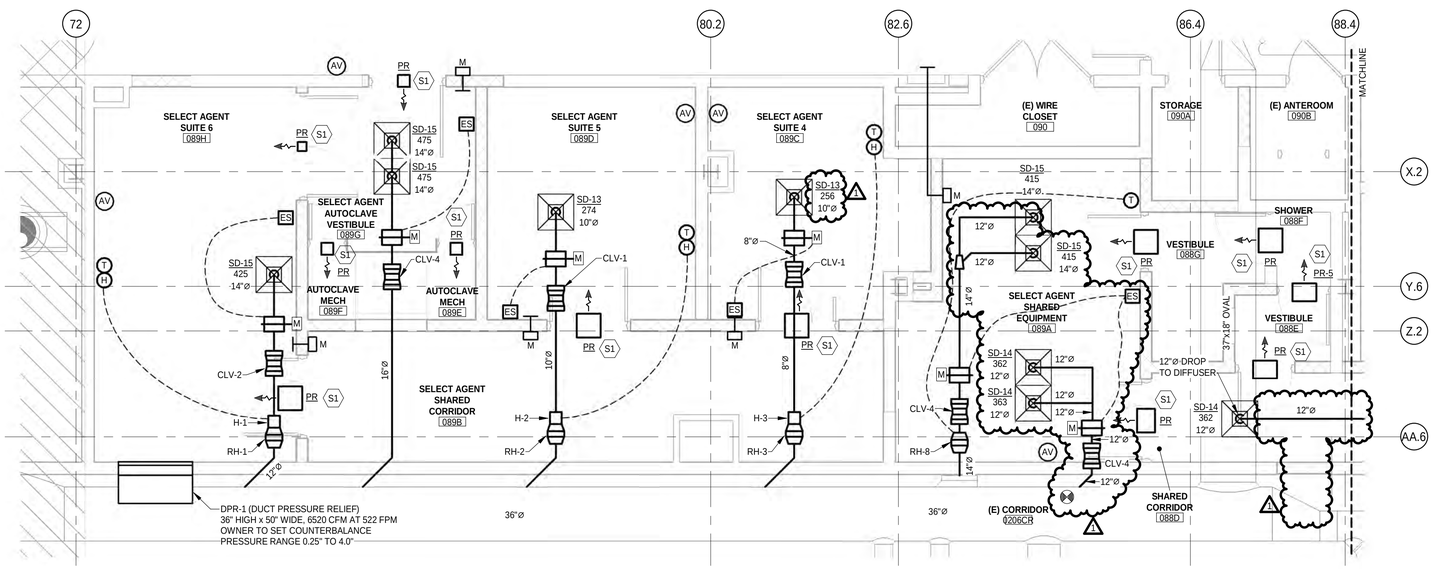


a M-2-101 — PHASE TWO MECHANICAL DEMO FLOOR PLAN - AREA 1 SUPPLY
1/4" = 1'-0"



2 M-2-101 — PHASE TWO MECHANICAL FLOOR PLAN - AREA 1 SUPPLY
1/4" = 1'-0"

HVAC LEGEND

EXISTING DUCTWORK	
DEMO DUCTWORK	
EXISTING DIFFUSER	
EXISTING EXHAUST GRILLE	
CONDENSATE	COND
STEAM	STM
NEW DUCTWORK	
DUCT DROP	
DUCT DROP	
CONNECT TO EXISTING	
DUCT REDUCER	
SUPPLY DIFFUSER	
EXHAUST GRILLE	
MANUAL DAMPER	
MOTORIZED ISOLATION DAMPER	M
CLV - CLOSED LOOP VENTURI VALVE	
PR - PRESSURE RELIEF A OR B SEE DETAIL	
MAGNEHELIC GAUGE	M
ALARM LIGHT & HORN COMBINATION	AV
FURNISHED BY CONTROL CONTRACTOR INSTALLED BY GENERAL CONTRACTOR	

DEMO KEYNOTES D#

1. DEMO EXISTING SUPPLY DUCT BRANCH AND DIFFUSERS. CAP HOLES MADE FROM REMOVING DIFFUSERS, SEE DETAIL 9 ON ARCH DWG A-501.

SUPPLY KEYNOTES S#

1. PRESSURE RELIEF DAMPER REFER TO SCHEDULE ON SHEET M-2-602.

SUPPLY NOTES

1. MOTORIZED ISOLATION DAMPERS, SUPPLY DUCT, PROVIDE WALL MTD. EMERGENCY STOP SWITCH IN EACH RESPECTIVE ROOM. PRESSURE RELIEF DAMPER REFER TO SCHEDULE ON SHEET M-2-602.

GENERAL NOTES

1. PRIOR TO THE SUBMISSION OF BID, THE CONTRACTOR SHALL EVALUATE EXISTING AND PROPOSED CONDITIONS, DIMENSIONS AND SPECIFICATIONS OF THE PROJECT.
2. PRIOR TO THE SUBMISSION OF BID, THE CONTRACTOR SHALL DETERMINE IMPACT OF THE EXISTING CONDITIONS OR EQUIPMENT UPON WORK REQUIRED.
3. CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED ANY EXISTING CONDITIONS OR EQUIPMENT THAT MAY IMPACT CONSTRUCTION OF THE PROJECT.
4. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.

3 REHEAT COIL/HUMIDIFIER DETAIL
SCALE: NONE

CLV (closed loop venturi) SCHEDULE:

MARK	DIA. IN.	MODEL	MFG.
CLV-1	6	106	CRC
CLV-2	8	108	CRC
CLV-3	10	110	CRC
CLV-4	12	112	CRC
CLV-5	14	114	CRC
CLV-6	16	116	CRC

THE "CLV" AND THE "ID" SHALL BE THE SAME DIAMETER WHEN THE "CLV" IS SMALLER THAN THE CONNECTING DUCT

WHEN THE "CLV" IS LARGER THAN THE CONNECTING DUCT, THE "ID" SHALL BE THE SAME DIAMETER AS THE DUCT

DETAIL - CLV ID INSTALL
SCALE: NONE

CLV (closed loop venturi) & ID (isolation damper) INSTALLATION DETAIL

NOTE:

ALL EXHAUST DUCT AND SUPPLY DUCT (DOWNSTREAM OF THE ISOLATION DAMPER) WITHIN OR SERVING THE BSL3 AREA AND THE TUNNEL WASHER EXHAUST (alternate), SHALL BE 316 STAINLESS STEEL, MINIMUM 16 GAUGE, WELDED, FABRICATED PER SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION OR SMACNA RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION. STAINLESS STEEL, CLASS 1, at -10 in. wg

ALL FLANGES SHALL BE A MINIMUM 1 ½ x 1 ½ x ¼ thick

FLANGE GASKETS SHALL BE PTFE AS SPECIFIED IN SECTION 23 3347 OF THE SPECIFICATIONS, AND INSTALLED AS DETAILED IN THE CONTRACT DRAWINGS.

REV	DATE	DESCRIPTION	APPROVAL
1	02/21/2025	BULLETIN 3	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO ENLARGED MECHANICAL FLOOR PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-401A

REV 1

2/14/2025 7:36:39 AM

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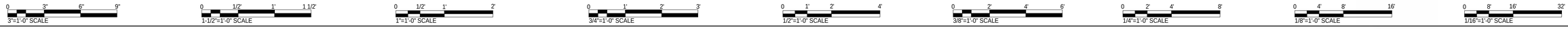
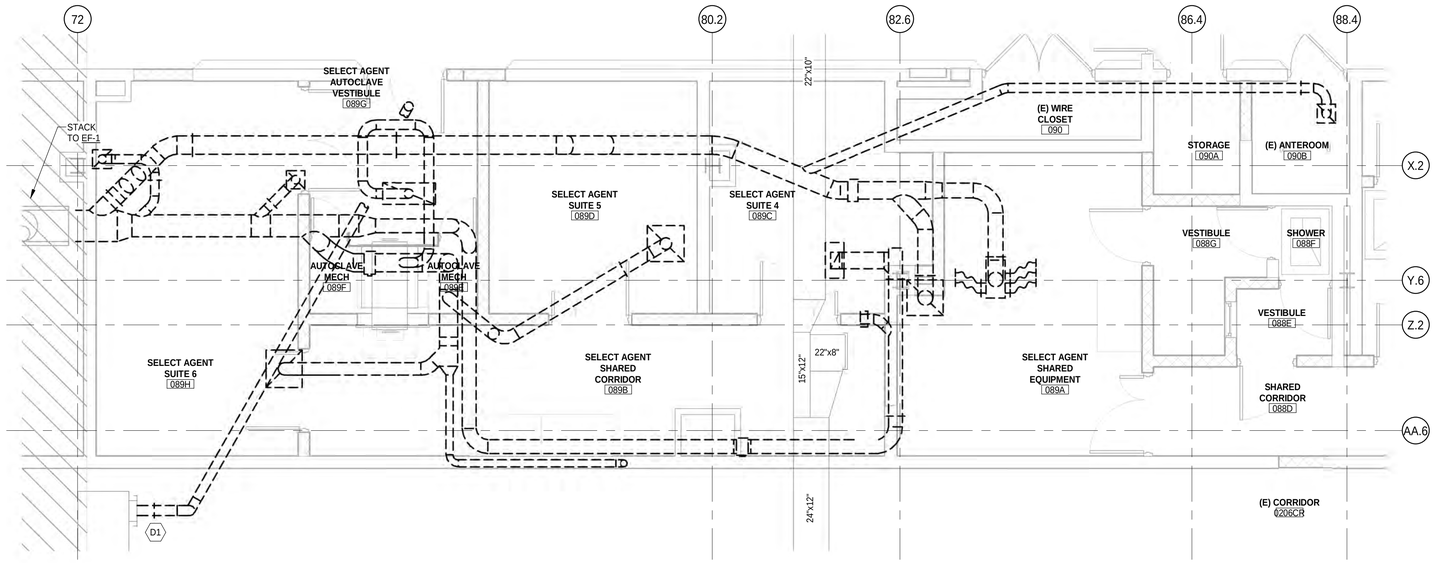




1 M-2-101 PHASE TWO MECHANICAL DEMO FLOOR PLAN - AREA 1 EXHAUST

1/4" = 1'-0"

HVAC LEGEND

EXISTING DUCTWORK	
DEMO DUCTWORK	
EXISTING DIFFUSER	
EXISTING EXHAUST GRILLE	
CONDENSATE	COND
STEAM	STM
NEW DUCTWORK	
DUCT DROP	
DUCT DROP	
CONNECT TO EXISTING	
DUCT REDUCER	
SUPPLY DIFFUSER	
EXHAUST GRILLE	
MANUAL DAMPER	
MOTORIZED ISOLATION DAMPER	M
CLV - CLOSED LOOP VENTURI VALVE	
PR - PRESSURE RELIEF A OR B SEE DETAIL	

DEMO KEYNOTES

D#

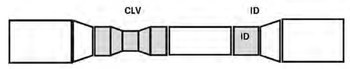
1. DEMO EXISTING DUCT AND GRILLE. CAP HOLES MADE FROM DUCT AND GRILLE REMOVAL.

GENERAL NOTES

1. PRIOR TO THE SUBMISSION OF BID, THE CONTRACTOR SHALL EVALUATE EXISTING AND PROPOSED CONDITIONS, DIMENSIONS AND SPECIFICATIONS OF THE PROJECT.
2. PRIOR TO THE SUBMISSION OF BID, THE CONTRACTOR SHALL DETERMINE IMPACT OF THE EXISTING CONDITIONS OR EQUIPMENT UPON WORK REQUIRED.
3. CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED ANY EXISTING CONDITIONS OR EQUIPMENT THAT MAY IMPACT CONSTRUCTION OF THE PROJECT.
4. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.

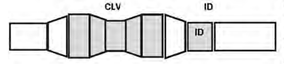
2 M-2-101 PHASE TWO MECHANICAL FLOOR PLAN - AREA 1 EXHAUST

1/4" = 1'-0"



CLV (closed loop venturi) SCHEDULE:

MARK	DIA. IN.	MODEL	MFG.
CLV-1	6	106	CRC
CLV-2	8	108	CRC
CLV-3	10	110	CRC
CLV-4	12	112	CRC
CLV-5	14	114	CRC
CLV-6	16	116	CRC



THE "CLV" AND THE "ID" SHALL BE THE SAME DIAMETER WHEN THE "CLV" IS SMALLER THAN THE CONNECTING DUCT

WHEN THE "CLV" IS LARGER THAN THE CONNECTING DUCT, THE "ID" SHALL BE THE SAME DIAMETER AS THE DUCT

DETAIL - CLV ID INSTALL

SCALE: NONE

CLV (closed loop venturi) & ID (isolation damper) INSTALLATION DETAIL

NOTE:

ALL EXHAUST DUCT AND SUPPLY DUCT (DOWNSTREAM OF THE ISOLATION DAMPER) WITHIN OR SERVING THE BSL3 AREA AND THE TUNNEL WASHER EXHAUST (alternate), SHALL BE 316 STAINLESS STEEL, MINIMUM 16 GAUGE, WELDED, FABRICATED PER SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION OR SMACNA RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION. STAINLESS STEEL, CLASS 1, at -10 in. wg

ALL FLANGES SHALL BE A MINIMUM 1 ½ x 1 ½ x ¼ thick

FLANGE GASKETS SHALL BE PTFE AS SPECIFIED IN SECTION 23 3347 OF THE SPECIFICATIONS, AND INSTALLED AS DETAILED IN THE CONTRACT DRAWINGS.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO ENLARGED MECHANICAL FLOOR PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	PS	10/10/2023	DRAWING NO. M-2-401B
PROJ. MGR.	SMP	04/16/2024	REV 0
SCALE	As indicated		

7/23/2024 1:01:19:35 AM

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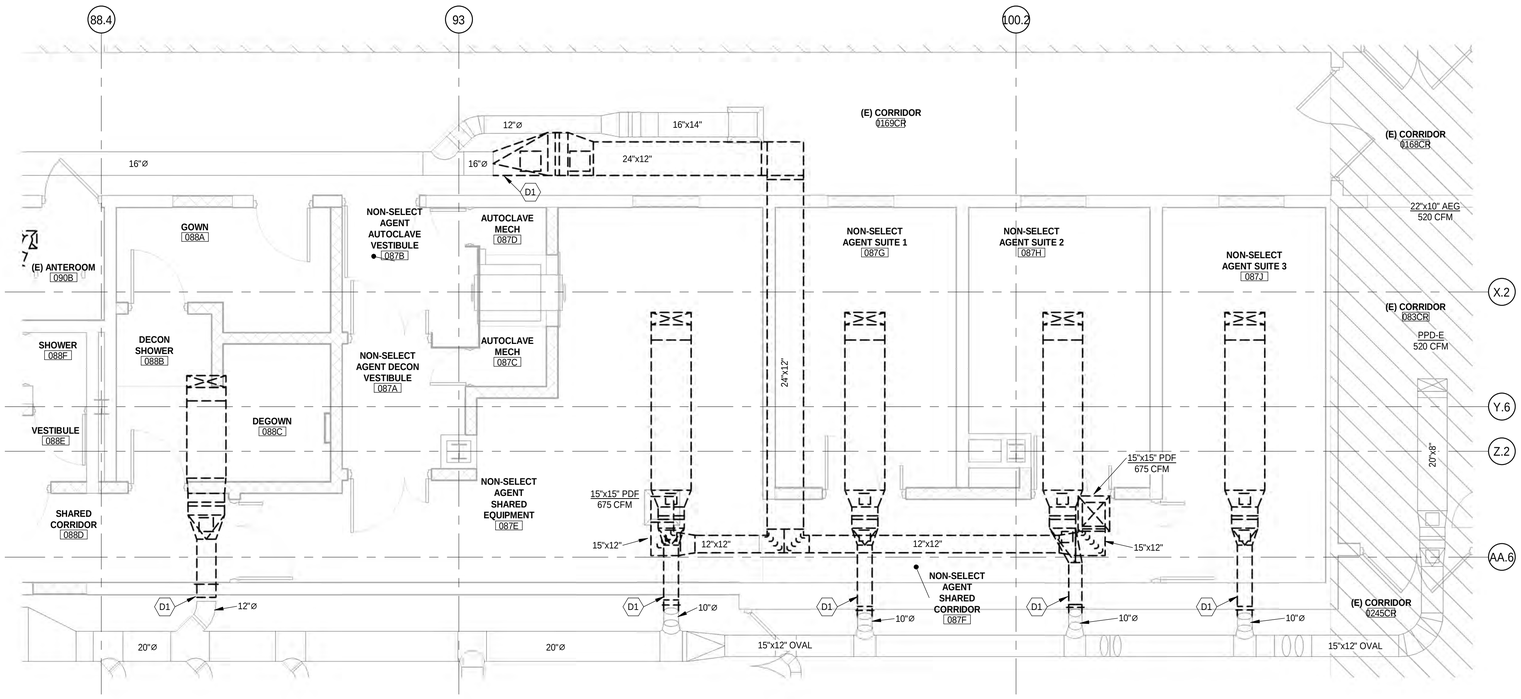
0 1/2" 1' 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1' 2" — 1"=1'-0" SCALE
0 1' 2' 3" — 3/4"=1'-0" SCALE
0 1' 2' 4" — 1/2"=1'-0" SCALE
0 2' 4' 6" — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



1 M-2-101 — PHASE TWO MECHANICAL DEMO FLOOR PLAN - AREA 2 SUPPLY
1/4" = 1'-0"

HVAC LEGEND

EXISTING DUCTWORK	
DEMO DUCTWORK	
EXISTING DIFFUSER	
EXISTING EXHAUST GRILLE	
CONDENSATE	COND
STEAM	STM
NEW DUCTWORK	
DUCT DROP	
DUCT DROP	
CONNECT TO EXISTING	
DUCT REDUCER	
SUPPLY DIFFUSER	
EXHAUST GRILLE	
MANUAL DAMPER	
MOTORIZED ISOLATION DAMPER	M
CLV - CLOSED LOOP VENTURI VALVE	
PR - PRESSURE RELIEF A OR B SEE DETAIL	

DEMO KEYNOTES (D#)

1. DEMO EXISTING SUPPLY DUCT BRANCH AND DIFFUSER. CAP HOLES MADE FROM REMOVING DIFFUSERS, SEE DETAIL 9 ON ARCH DWG A-501.

SUPPLY KEYNOTES (S#)

1. PRESSURE RELIEF DAMPER REFER TO SCHEDULE ON SHEET M-2-602.

SUPPLY NOTES

1. MOTORIZED ISOLATION DAMPERS, SUPPLY DUCT, PROVIDE WALL MTD. EMERGENCY STOP SWITCH IN EACH RESPECTIVE ROOM.

GENERAL NOTES

1. PRIOR TO THE SUBMISSION OF BID, THE CONTRACTOR SHALL EVALUATE EXISTING AND PROPOSED CONDITIONS, DIMENSIONS AND SPECIFICATIONS OF THE PROJECT.
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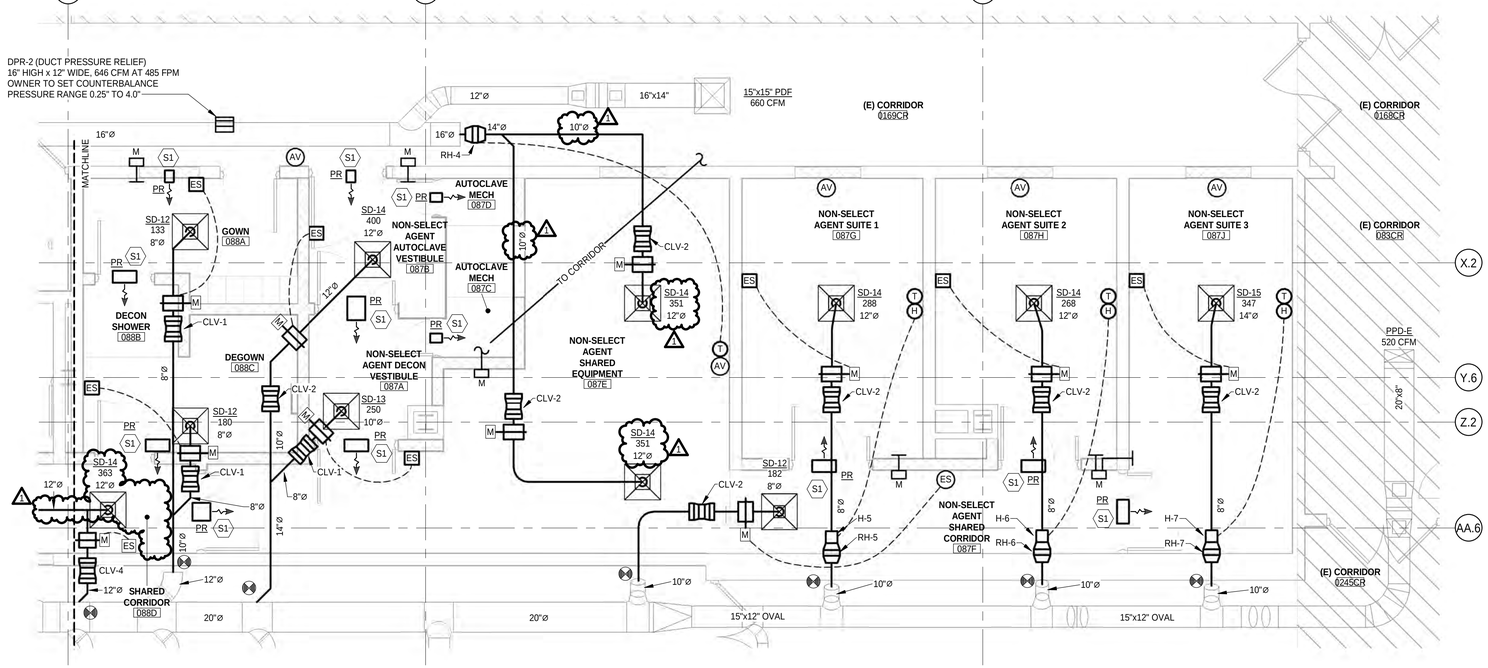
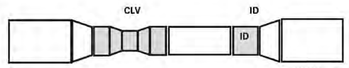
MAGNEHELIC GAUGE	M
ALARM LIGHT & HORN COMBINATION	AV
FURNISHED BY CONTROL CONTRACTOR INSTALLED BY GENERAL CONTRACTOR	



2 M-2-101 — PHASE TWO MECHANICAL FLOOR PLAN - AREA 2 SUPPLY
1/4" = 1'-0"



CLV (closed loop venturi) SCHEDULE:

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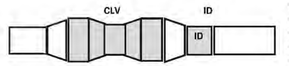
CLV-1	6	106	CRC
CLV-2	8	108	CRC
CLV-3	10	110	CRC
CLV-4	12	112	CRC
CLV-5	14	114	CRC
CLV-6	16	116	CRC

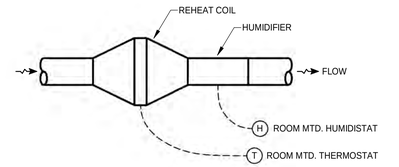


THE "CLV" AND THE "ID" SHALL BE THE SAME DIAMETER WHEN THE "CLV" IS SMALLER THAN THE CONNECTING DUCT

WHEN THE "CLV" IS LARGER THAN THE CONNECTING DUCT, THE "ID" SHALL BE THE SAME DIAMETER AS THE DUCT

CLV (closed loop venturi) & ID (isolation damper) INSTALLATION DETAIL

DETAIL - CLV ID INSTALL
SCALE: NONE



3 — REHEAT COIL/HUMIDIFIER DETAIL
SCALE: NONE

NOTE:

ALL EXHAUST DUCT AND SUPPLY DUCT (DOWNSTREAM OF THE ISOLATION DAMPER) WITHIN OR SERVING THE BSL3 AREA AND THE TUNNEL WASHER EXHAUST (alternate), SHALL BE 316 STAINLESS STEEL, MINIMUM 16 GAUGE, WELDED, FABRICATED PER SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION OR SMACNA RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION. STAINLESS STEEL, CLASS 1, at -10 in. wg

ALL FLANGES SHALL BE A MINIMUM 1 ½ x 1 ½ x ¼ thick

FLANGE GASKETS SHALL BE PTFE AS SPECIFIED IN SECTION 23 3347 OF THE SPECIFICATIONS, AND INSTALLED AS DETAILED IN THE CONTRACT DRAWINGS.

REV	DATE	DESCRIPTION	APPROVAL
1	02/21/2025	BULLETIN 3	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO ENLARGED MECHANICAL FLOOR PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	PS	10/10/2023	DRAWING NO. M-2-402A
PROJ. MGR.	SMP	04/16/2024	REV 1
SCALE	As indicated		

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0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
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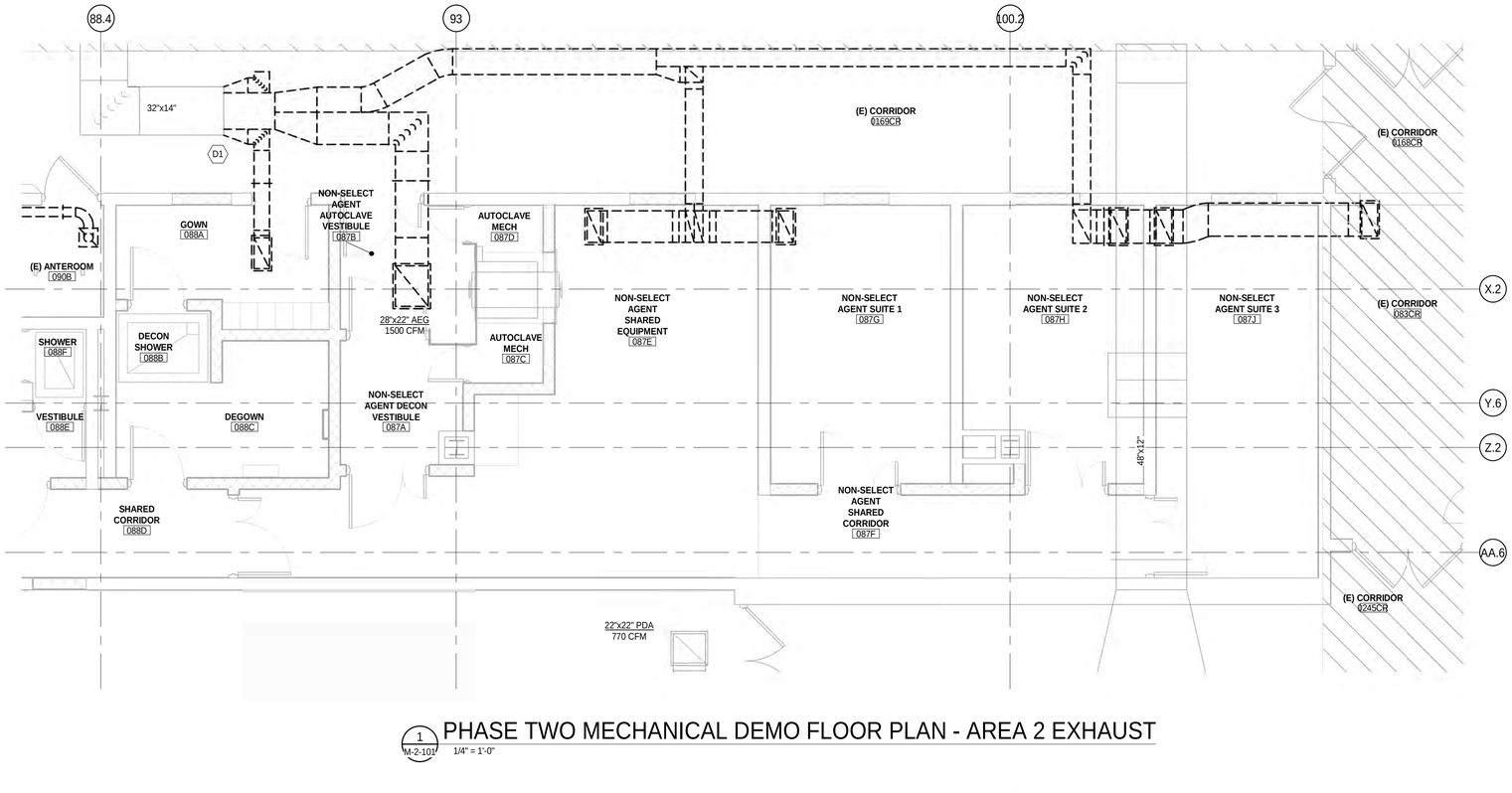
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



1 M-2-101 — PHASE TWO MECHANICAL DEMO FLOOR PLAN - AREA 2 EXHAUST
1/4" = 1'-0"

HVAC LEGEND

EXISTING DUCTWORK	
DEMO DUCTWORK	
EXISTING DIFFUSER	
EXISTING EXHAUST GRILLE	
CONDENSATE	COND
STEAM	STM
NEW DUCTWORK	
DUCT DROP	
DUCT DROP	
CONNECT TO EXISTING	
DUCT REDUCER	
SUPPLY DIFFUSER	
EXHAUST GRILLE	
MANUAL DAMPER	
MOTORIZED ISOLATION DAMPER	M
CLV - CLOSED LOOP VENTURI VALVE	
PR - PRESSURE RELIEF A OR B SEE DETAIL	

DEMO KEYNOTES (D#)

1. DEMO EXISTING DUCT AND CAP HOLE IN MAIN MADE FROM DUCT REMOVAL

GENERAL NOTES

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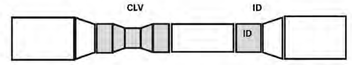
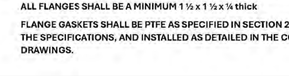


CLV (closed loop venturi) SCHEDULE:

MARK	DIA. IN.	MODEL	MFG.
CLV-1	6	106	CRC
CLV-2	8	108	CRC
CLV-3	10	110	CRC
CLV-4	12	112	CRC
CLV-5	14	114	CRC
CLV-6	16	116	CRC

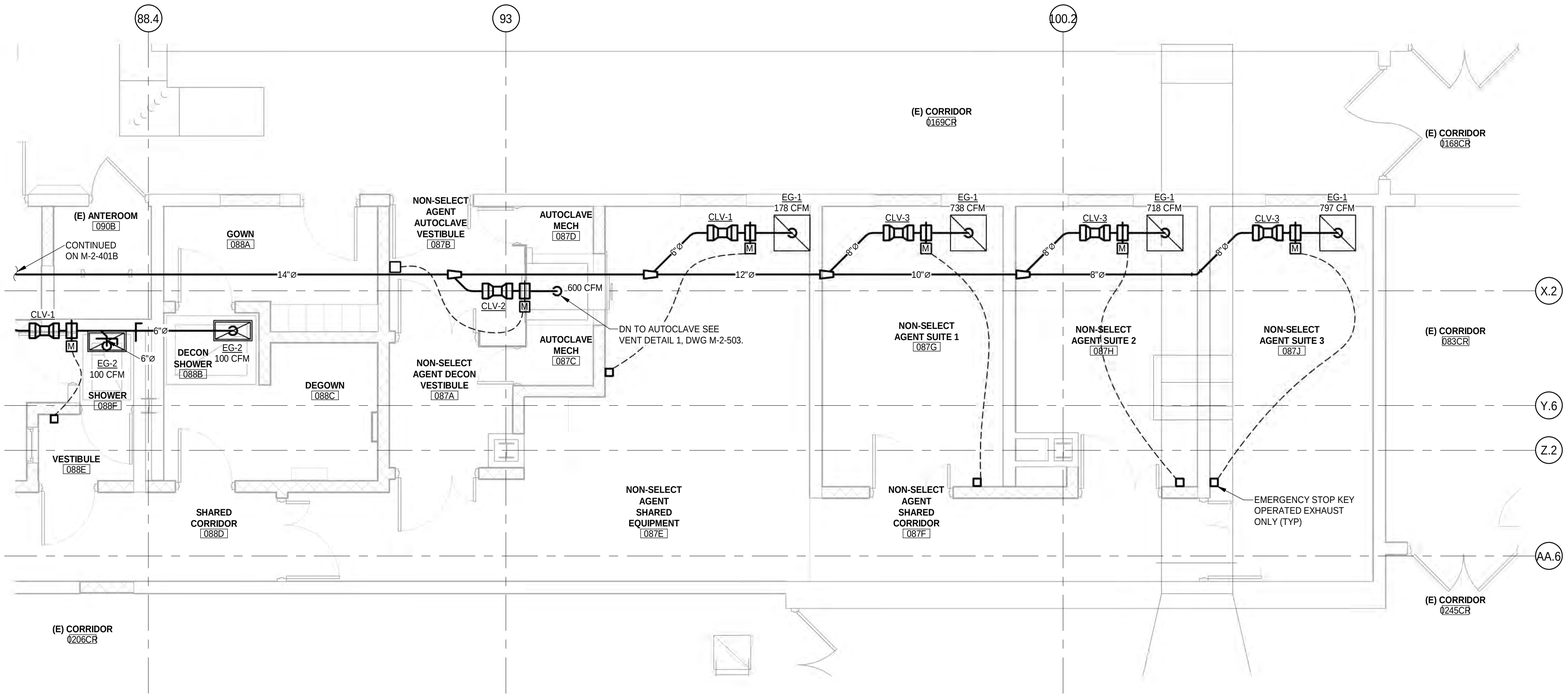


THE "CLV" AND THE "ID" SHALL BE THE SAME DIAMETER WHEN THE "CLV" IS SMALLER THAN THE CONNECTING DUCT

WHEN THE "CLV" IS LARGER THAN THE CONNECTING DUCT, THE "ID" SHALL BE THE SAME DIAMETER AS THE DUCT

CLV (closed loop venturi) & ID (isolation damper) INSTALLATION DETAIL

DETAIL - CLV ID INSTALL
SCALE: NONE



2 M-2-101 — PHASE TWO MECHANICAL FLOOR PLAN - AREA 2 EXHAUST
1/4" = 1'-0"

NOTE:

ALL EXHAUST DUCT AND SUPPLY DUCT (DOWNSTREAM OF THE ISOLATION DAMPER) WITHIN OR SERVING THE BSL3 AREA AND THE TUNNEL WASHER EXHAUST (alternate), SHALL BE 316 STAINLESS STEEL, MINIMUM 16 GAUGE, WELDED, FABRICATED PER SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION OR SMACNA RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS, SECOND EDITION. STAINLESS STEEL, CLASS 1, at -10 in. wg

ALL FLANGES SHALL BE A MINIMUM 1 ½ x 1 ½ x ¼ thick

FLANGE GASKETS SHALL BE PTFE AS SPECIFIED IN SECTION 23 3347 OF THE SPECIFICATIONS, AND INSTALLED AS DETAILED IN THE CONTRACT DRAWINGS.

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

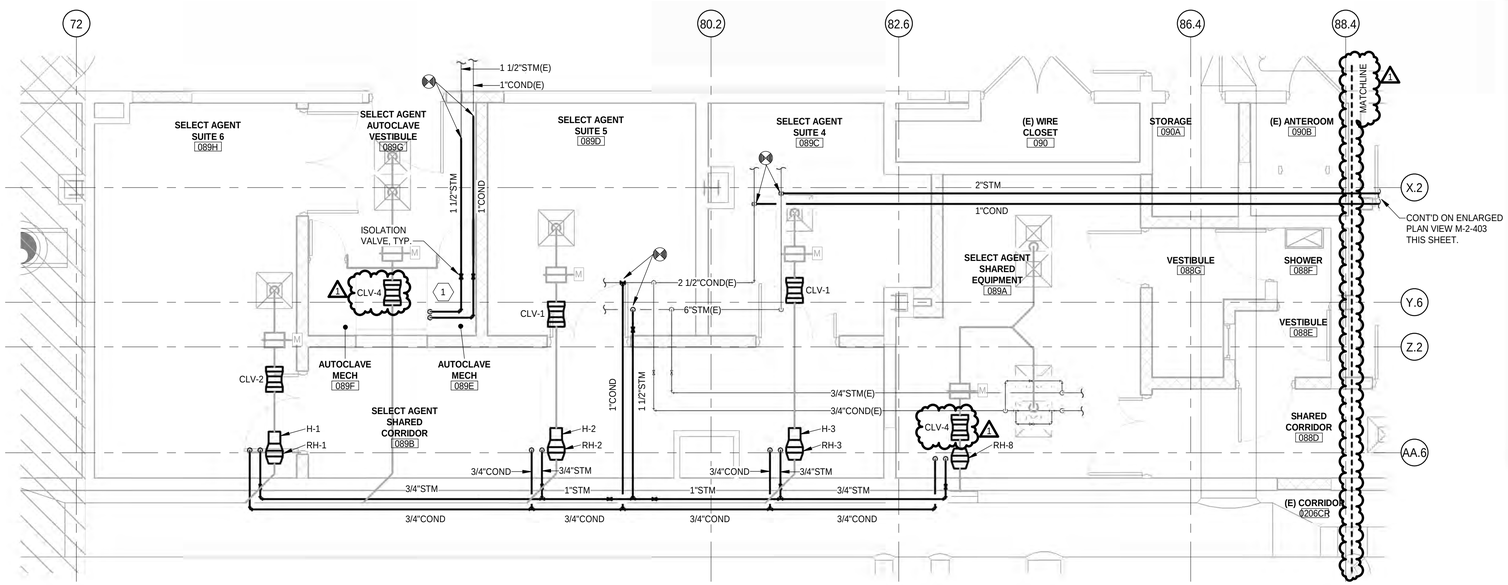
DRAWING TITLE
PHASE TWO ENLARGED MECHANICAL FLOOR ROOM

UOT PROJECT NO. 5003-23-1915

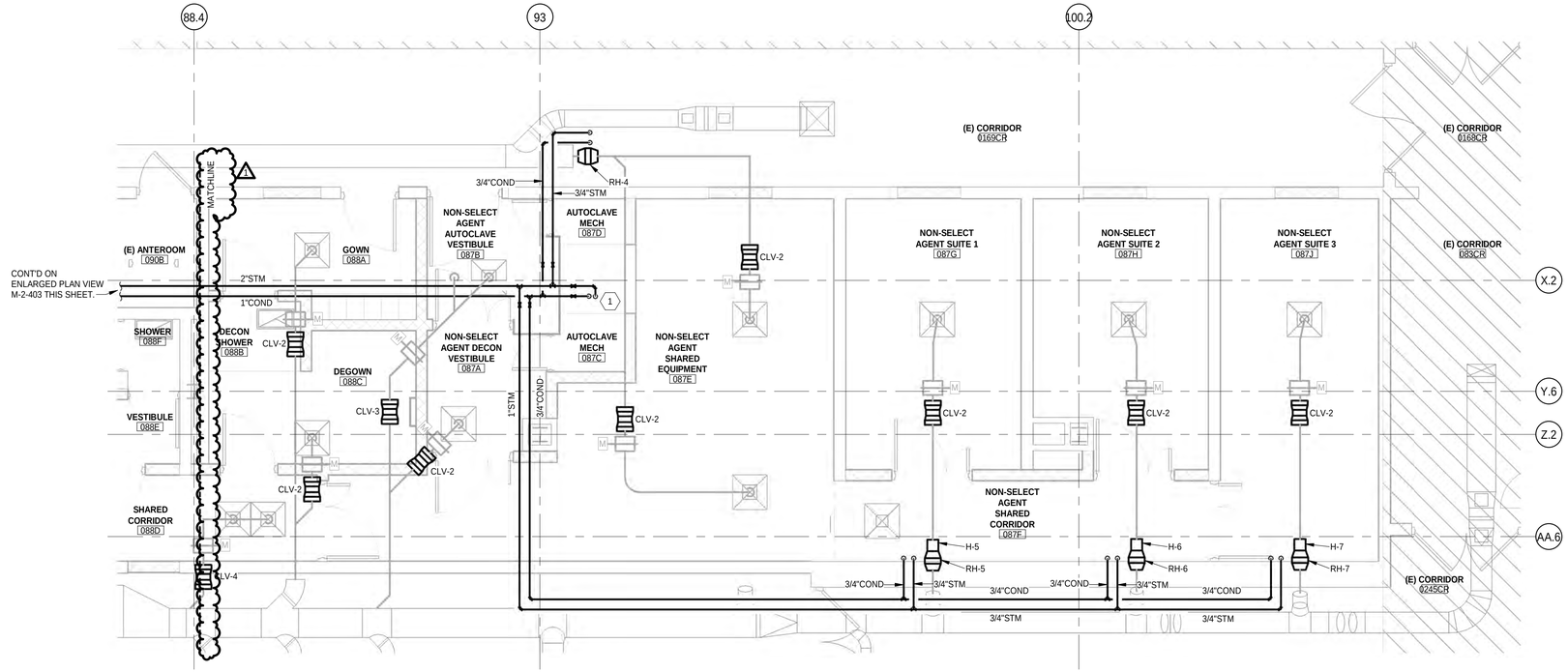
DESIGNED BY	WGE	10/10/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	PS	10/10/2023	DRAWING NO. M-2-402B
PROJ. MGR.	SMP	04/16/2024	REV 0
SCALE	As indicated		

7/28/2024 10:23:04 AM
C:\TempPath\UOT23-001 MECH_jdi730.rvt

0 3" 6" 9" 3"=1'-0" SCALE | 0 1/2" 1' 1 1/2" 1-1/2"=1'-0" SCALE | 0 1/2" 1' 2' 1"=1'-0" SCALE | 0 1' 2' 3' 3/4"=1'-0" SCALE | 0 1' 2' 4' 1/2"=1'-0" SCALE | 0 2' 4' 6' 3/8"=1'-0" SCALE | 0 2' 4' 8' 1/4"=1'-0" SCALE | 0 4' 8' 16' 1/8"=1'-0" SCALE | 0 8' 16' 32' 1/16"=1'-0" SCALE



1 PHASE TWO MECHANICAL FLOOR PLAN - AREA 1 STEAM & CONDENSATE PIPING
M-2-101 1/4" = 1'-0"



2 PHASE TWO MECHANICAL FLOOR PLAN - AREA 2 STEAM & CONDENSATE PIPING
1/4" = 1'-0"

HVAC LEGEND

EXISTING DUCTWORK	
DEMO DUCTWORK	
EXISTING DIFFUSER	
EXISTING EXHAUST GRILLE	
CONDENSATE	COND
STEAM	STM
NEW DUCTWORK	
DUCT DROP	
DUCT DROP	
CONNECT TO EXISTING	
DUCT REDUCER	
SUPPLY DIFFUSER	
EXHAUST GRILLE	
MANUAL DAMPER	
MOTORIZED ISOLATION DAMPER	M
CLV - CLOSED LOOP VENTURI VALVE	
PR - PRESSURE RELIEF A OR B SEE DETAIL	

KEYNOTES (#)

1. 1-1/2"STEAM AND 1"CONDENSATE PIPING DROP TO AUTOCLAVE.

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE TO HAVE EXAMINED THE PREMISES AND COMPARED IT WITH THE DRAWINGS AND SPECIFICATIONS AND TO HAVE SATISFIED HIMSELF/HERSELF OF THE CONDITION EXISTING THERE AS TO THE PERFORMANCE OF THE WORK REQUIRED BEFORE SUBMISSION OF HIS/HER BID.
3. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES AND EXISTING CONDITIONS TO VERIFY SPACES IN WHICH IT WILL BE INSTALLED. WITHOUT ADDITIONAL COST, MAKE MODIFICATIONS TO THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH EXISTING CONDITIONS AND FOR PROPER EXECUTION OF THE WORK.
4. BEFORE SUBMITTING BIDS, VISIT THE SITE AND REVIEW ALL EXISTING CONDITIONS. INCLUDE IN THE BID ALL WORK REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
5. WHERE EXISTING INSULATION TO REMAIN IS DAMAGED BY THE REQUIREMENTS OF THE WORK, REPLACE ANY DAMAGED INSULATION TO MATCH EXISTING.
6. THIS CONTRACTOR SHALL NOT INTERRUPT ANY OF THE SERVICES, NOR INTERFERE WITH THE SERVICES IN ANY WAY WITHOUT THE EXPRESS PERMISSION OF THE OWNER. SUCH INTERRUPTIONS AND INTERFERENCES SHALL BE MADE AS BRIEF AS POSSIBLE AND ONLY AT THE TIME STATED BY THE OWNER.
7. PIPING SYSTEMS SHALL BE ACCURATELY IDENTIFIED AND SERVICES SPECIFIC TO CONTAINMENT SPACES SHALL CLEARLY DESIGNATE THE SPECIFIC FUNCTION. VACUUM AND BIOWASTE PIPING SHALL INCLUDE THE UNIVERSAL BIOHAZARD SIGN AT PIPING AND AT EQUIPMENT AND PIPE TAG COLOR CODE SHALL BE IN ACCORDANCE WITH ANSI/ASME STANDARDS.

Re-Heat Coil Schedule (Steam)

Mark:	Serves Room:	CFM:	Duct dia. Inches:	20 deg rise btuh:	Size	15 psig steam Humidifier:	Capacity lbs/hr:
RH-1	089H	425	8	9,223	10x10	H-1	20
RH-2	089D	274	8	5,946	8x8	H-2	12
RH-3	089C	256	8	5,555	8x8	H-3	10
RH-4	087E	701	16	15,212	12x12		
RH-5	087G	288	8	6,250	8x8	H-5	12
RH-6	087H	268	8	5,816	8x8	H-6	12
RH-7	087J	347	8	7,530	10x10	H-7	15
RH-8	089A	830	10	18,011	14x14		

REV	DATE	DESCRIPTION	APPROVAL
1	02/21/2025	BULLETIN 3	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO ENLARGED MECHANICAL STEAM & CONDENSATE PIPING PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-403

REV 1

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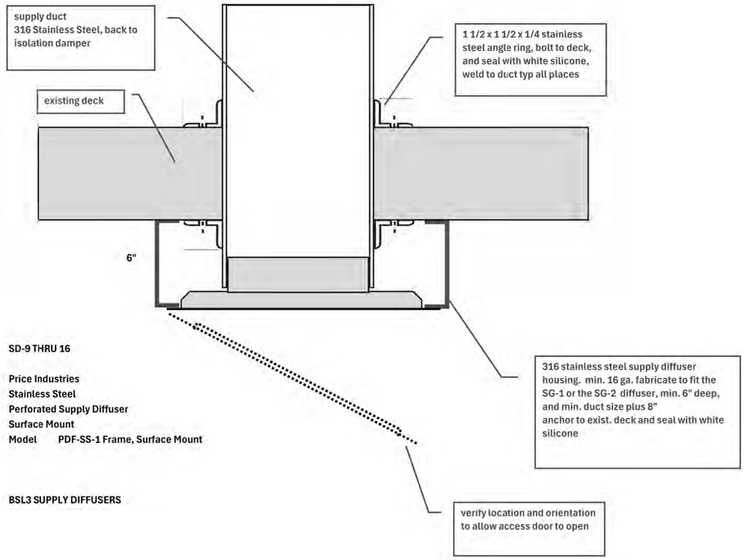
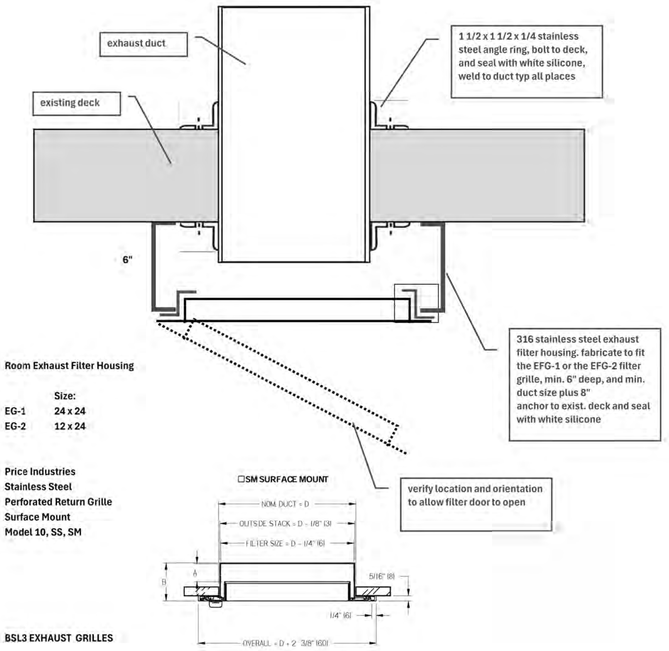
0 1/2" 1' 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2 1' 2' — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE



SD-9 THRU 16

Price Industries
Stainless Steel
Perforated Supply Diffuser
Surface Mount
Model PDF-SS-1 Frame, Surface Mount

BSL3 SUPPLY DIFFUSERS



Room Exhaust Filter Housing

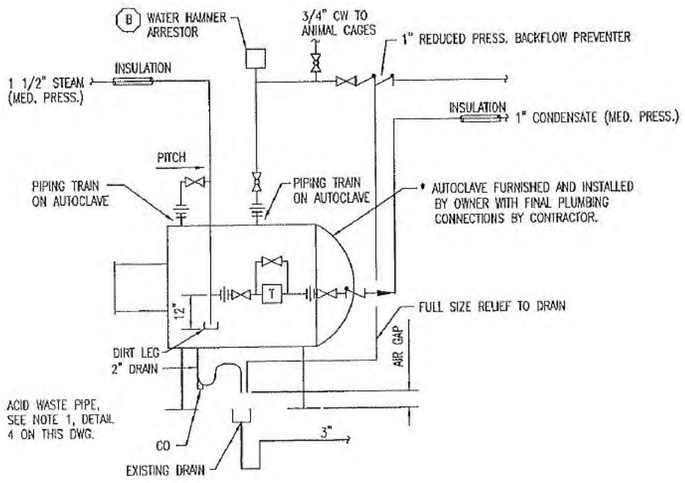
	Size:
EG-1	24 x 24
EG-2	12 x 24

Price Industries
Stainless Steel
Perforated Return Grille
Surface Mount
Model 10, SS, SM

BSL3 EXHAUST GRILLES

1 DETAIL - BSL3 SA
SCALE: NONE

2 DETAIL - BSL3 EFG
SCALE: NONE



3 DETAIL - AUTOCLAVE PIPING
SCALE: NONE

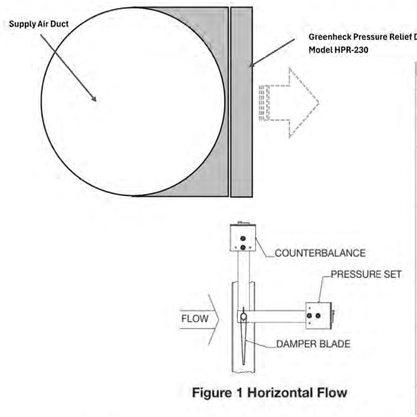


Figure 1 Horizontal Flow

		HPR-230
Back Pressure in. wg (kPa)	Maximum	6 - 13.5 (1.5 - 3.4)
Pressure Relief - in. wg (kPa)		.25 - 4 (.06 - 1)
Velocity ft/min. (m/s)	Maximum	5150 (26)
Temperature °F (°C)	Minimum	-40° (-40°)
	Maximum	250° (121°)
Frame	Galvanized	●
	304SS	O
	316SS	O
	Painted	O
Blade Profile	Galvanized 2V	-
	304SS 2V	-
	316SS 2V	-
	Galvanized Airfoil	●
	304SS Airfoil	O
	316SS Airfoil	O
Axle Bearings	Galvanized Ball	●
	External Ball	O
Blade Seals	TPE	-
	Silicone	●
	EPDM	O
	None	O
Special Features	Mounting Holes	O
	Paint	O

● = Standard, O = Optional

DPR - DUCT PRESSURE RELIEF DAMPER

4 DETAIL - DUCT PRESSURE RELIEF DAMPER
SCALE: NONE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO MECHANICAL DETAILS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	PS	10/10/2023	DRAWING NO. M-2-501
PROJ. MGR.	SMP	04/16/2024	REV 0
SCALE	NONE		

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3"=1'-0" SCALE

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1-1/2"=1'-0" SCALE

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1"=1'-0" SCALE

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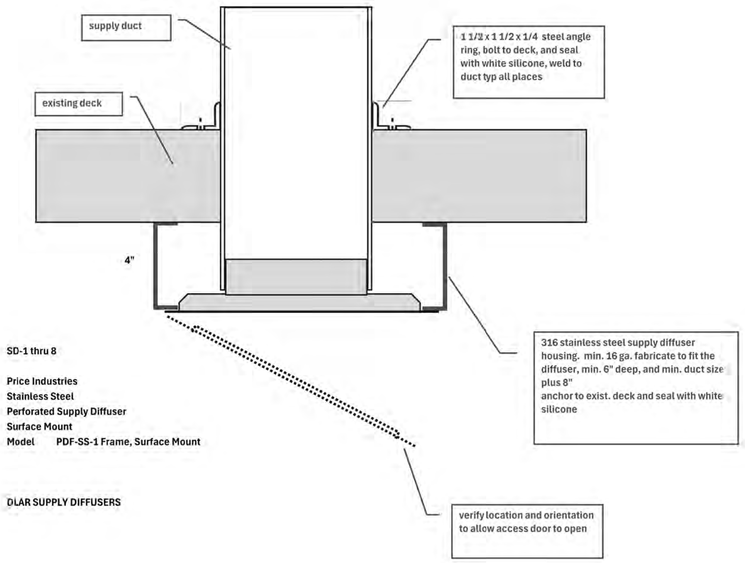
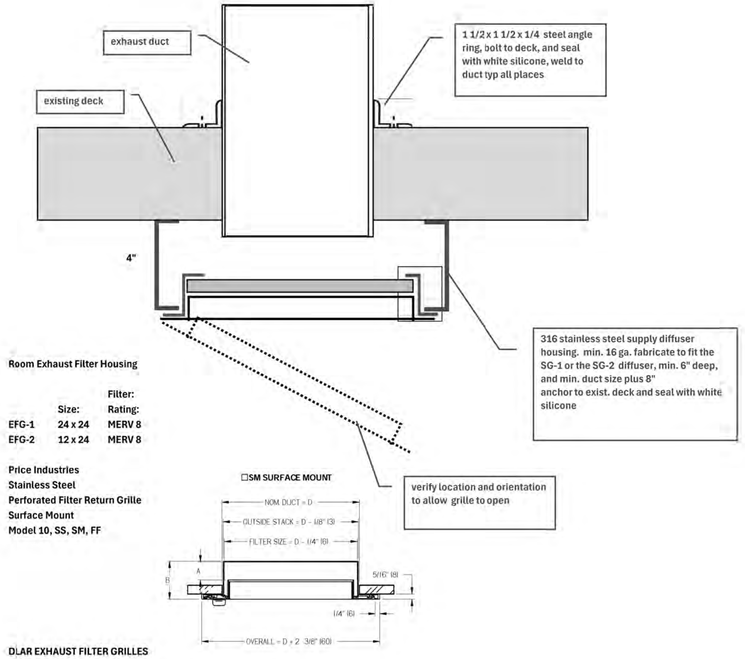


SD-1 thru 8

Price Industries
Stainless Steel
Perforated Supply Diffuser
Surface Mount
Model PDF-SS-1 Frame, Surface Mount

DLAR SUPPLY DIFFUSERS

1 DETAIL - DLAR SA
SCALE: NONE



Room Exhaust Filter Housing

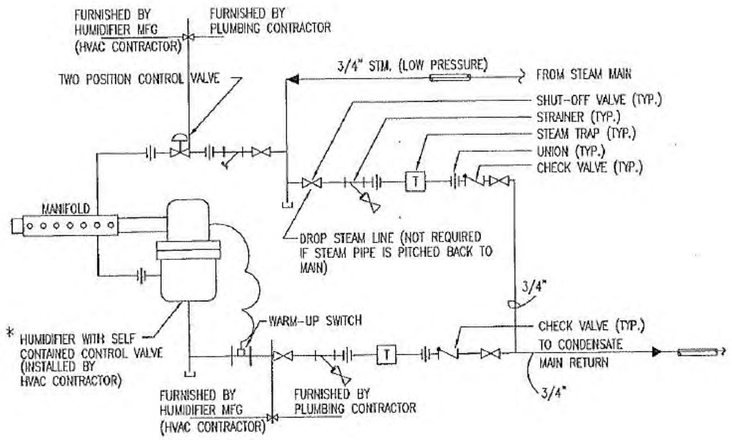
	Size:	Filter: Rating:
EFG-1	24 x 24	MERV 8
EFG-2	12 x 24	MERV 8

Price Industries
Stainless Steel
Perforated Filter Return Grille
Surface Mount
Model 10, SS, SM, FF

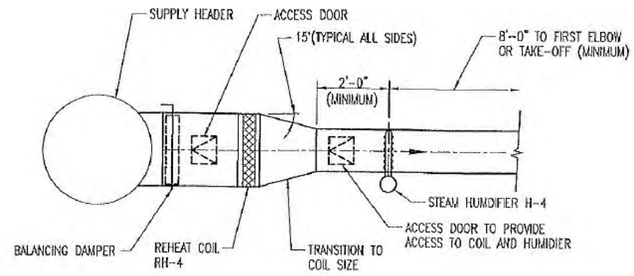
☐SM SURFACE MOUNT

DLAR EXHAUST FILTER GRILLES

2 DETAIL - DLAR EX
SCALE: NONE



3 DETAIL - HUMIDIFIER PIPING
SCALE: NONE



4 DETAIL - REHEAT COIL - HUMIDIFIER
SCALE: NONE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

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HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO MECHANICAL DETAILS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
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PROJ. MGR.	SMP	04/16/2024
SCALE	NONE	

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-502

REV 0

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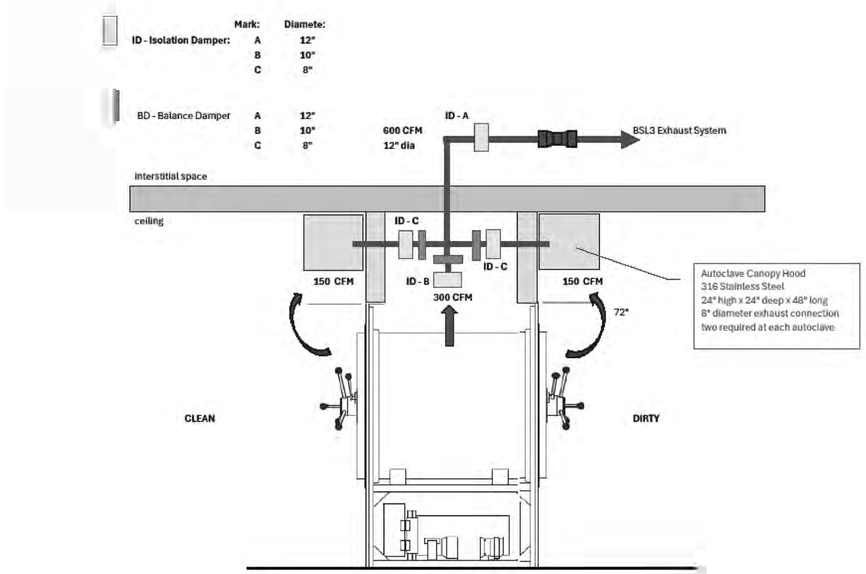
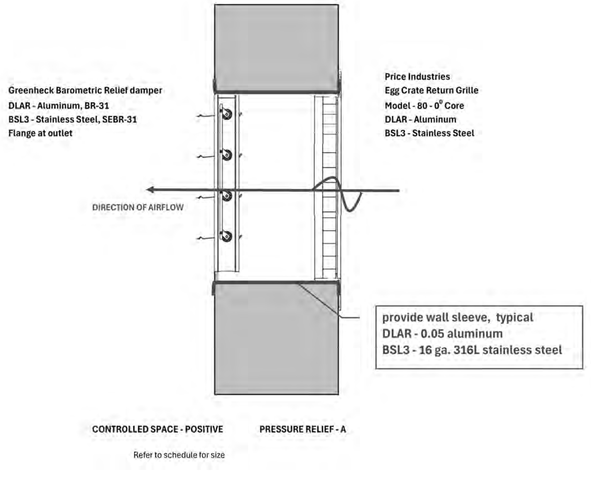


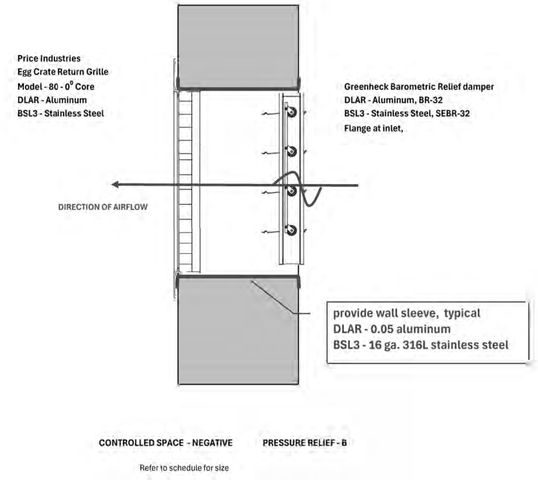
AUTOCLAVE VENTING DIAGRAM

ID (ISOLATION DAMPERS)
FURNISHED BY CONTROL CONTR.
INSTALLED BY GENERAL CONTR.

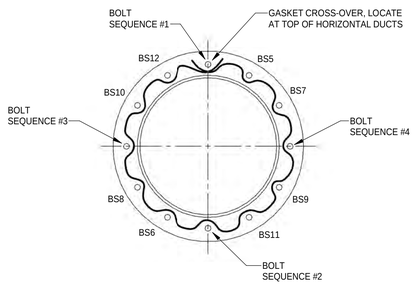
1 DETAIL - AUTOCLAVE VENTING DIAGRAM
SCALE: NONE



2 DETAIL - PRESSURE RELIEF DAMPER A
SCALE: NONE

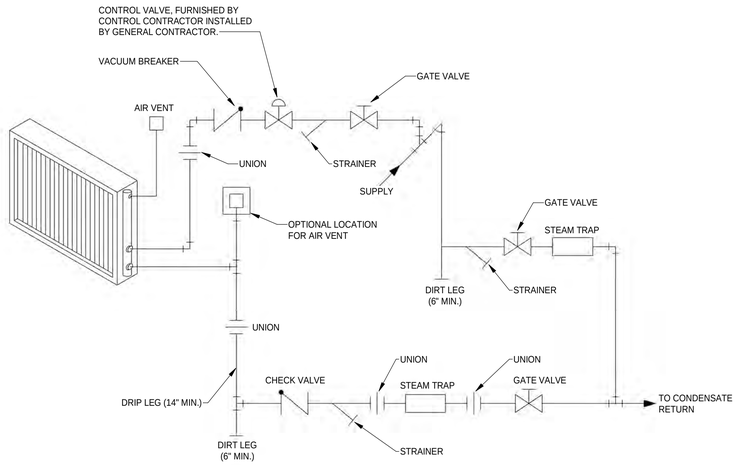


3 DETAIL - PRESSURE RELIEF DAMPER B
SCALE: NONE



NOTE:
1. PTFE GASKET PER SPECIFICATIONS.
2. ANGLE - RING PER SPECIFICATIONS, MIN 1-1/2 x 1-1/2 x 1/4 316 STAINLESS STEEL.

4 CRITICAL DUCT FLANGE CONNECTION
SCALE: NONE



NOTE:
VACUUM BREAKERS AND AIR VENTS SHOULD BE PIPED TO A DRAIN OR OTHER SUITABLE LOCATION WHERE DISCHARGED STEAM CANNOT LEAD TO PERSONAL INJURY.

5 DETAIL - REHEAT COIL PIPING
SCALE: NONE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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architects & engineers
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO MECHANICAL DETAILS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-503

REV 0

7/23/2024 10:28:43 AM

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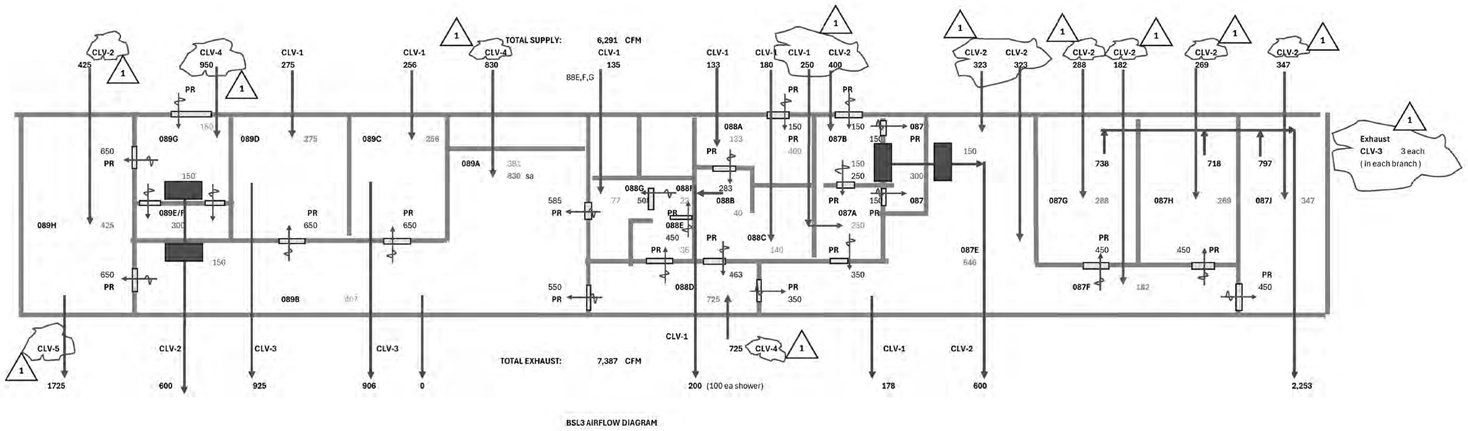

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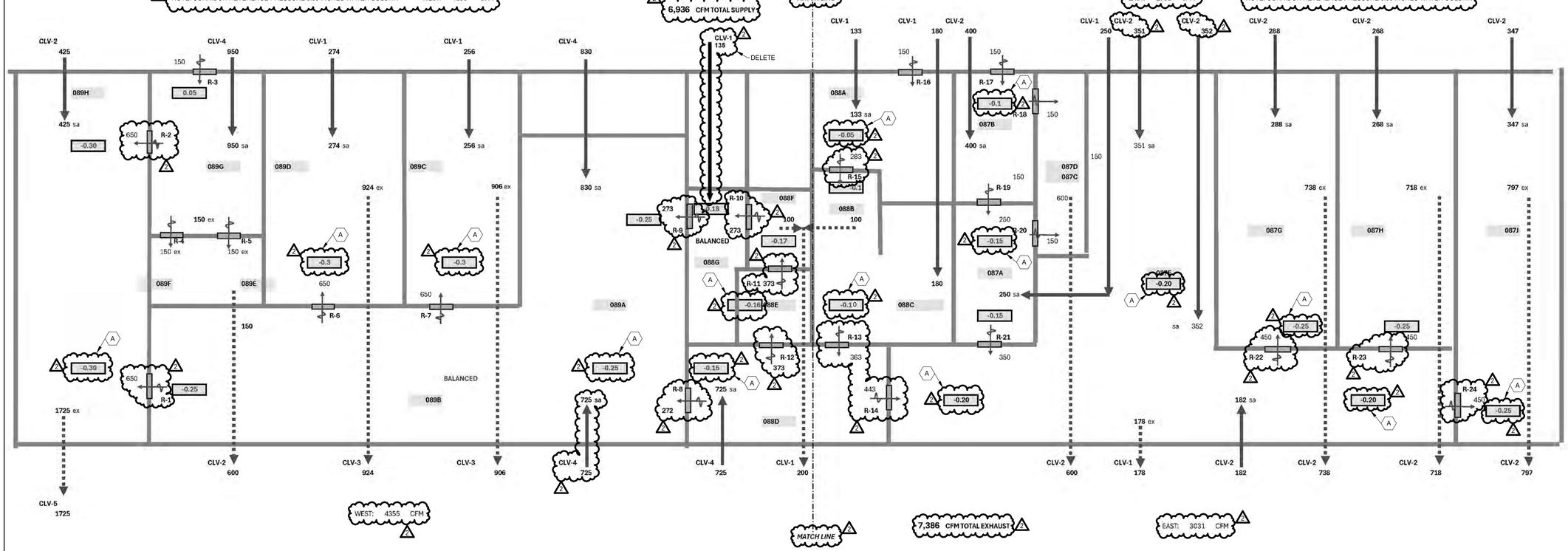
1 M-2-601 PHASE 2 AIR FLOW DIAGRAM

SCALE: NONE

BULLETIN 2



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2 M-2-601 PHASE 2 AIR FLOW DIAGRAM

SCALE: NONE

REVISED: BULLETIN 3

KEYNOTES

A SPACE DIFFERENTIAL PRESSURE FROM CORRIDOR REFERENCE, INCHES WATER COLUMN.

REV	DATE	DESCRIPTION	APPROVAL
2	02/21/2025	BULLETIN 3	JDI
1	01/09/2025	BULLETIN 2	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE

PHASE TWO AIR FLOW DIAGRAM

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	DMV	05/05/2024	
DRAWN BY	PS	10/10/2023	DRAWING NO. M-2-601 / REV 2
PROJ. MGR.	SMP	04/16/2024	
SCALE	NONE		

2/14/2025 7:58:02 AM

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0 4' 8' 16" — 1/8"=1'-0" SCALE
0 8' 16' 32" — 1/16"=1'-0" SCALE

Critical Room Control Venturi Air Valve

A. Venturi Air Valves
1. Basis of Design: Critical Room Control (CRC)
   a. Closed Loop Venturi (CLV) by Critical Room Control
      1) Valve type shall be closed loop precision feedback venturi anemometer through manifolded venturi sensing.
      2) Direct pressure measurement by means of dead ended silicon imbedded glass sensing device. Thermal based pressure measurement devices are not acceptable
      3) Flow sensing that bisects and/or obstructs the duct shall not be acceptable.
      4) The valve shall be pressure independent over a static pressure range of minimum of .005" to 5" W.C.
      5) Shall not be limited by air velocity and will produce an airflow signal throughout full open to full shutoff.
      6) Shall not be limited by minimum duct air velocities for flow signal.
      7) No inlet or outlet duct diameters shall be required for accuracy and/or pressure independence.
         a) Suppliers of airflow devices requiring minimum duct diameters will provide revised duct layouts showing the straight duct runs upstream and downstream of these devices. In addition, suppliers shall include static pressure loss calculations as part of their submittals. All costs to modify the ductwork, increase fan sizes and horsepower and all associated electrical changes shall be the responsibility of the LACS supplier.
      8) Valve shall have no axis of orientation mounting requirement for accuracy and/or pressure independence.
      9) Air valve shall be capable of a turndown of 10:1 maintaining an accuracy of ±5% of measured flow.
      10) Airflow measuring devices that require a minimum velocity for flow feedback shall provide a secondary flow measurement device for velocities below published manufactures minimum.
      11) Valves shall be capable of being mounted in any position and orientation.
      12) Based on application the air valve shall be manufactured as follows:
         a) **Supply duct only, upstream of the ID Isolation Damper**, the valve shall be constructed from 16-gauge aluminum or Galvanized body. The valve shall have 316 stainless steel single blade elliptical damper mounted on a solid stainless-steel shaft with corrosive resistant shaft bearings.
         b) **All Exhaust duct and Supply duct where installed downstream of the ID Isolation Damper**
         c) (Valves mounted in Stainless Steel Ducts, Fume Hoods, BSCs, Wash Equipment, Autoclaves, VHP Exhaust): The valve shall be constructed from 18-gauge 316 stainless steel body. The valve shall have 316 stainless steel single blade elliptical damper mounted on a solid stainless-steel shaft with corrosive resistant shaft bearings.
      13) The venturi airflow device shall be capable of shutoff with leakage <0.05% of maximum designed air valve flow at 6" W.C.
      14) The valve response signal shall be < .25 milliseconds.
      15) The venturi airflow valve shall achieve 90% of desired set point in < 1 second.
      16) Airflow valves shall be low pressure designed to operate at maximum static pressure drop of 0.3" W.C.
      17) Airflow valves shall be configured for [FAIL-SAFE] or [FAIL-IN-PLACE] operation where required. All closed loop air valves shall be capable to achieve [FAIL-SAFE] or [FAIL-IN-PLACE] operation on a loss of power.
      18) Electric modulating actuator shall be factory mounted. Valve shall have fast acting actuators, [FAIL-IN-PLACE] or [FAIL-SAFE] as required by LACS.
      19) Floating point actuators are not acceptable.
      20) All valves shall be flanged, minimum 1 ⅛ x 1 ⅛ x ¼ Stainless Steel angle.

Exhaust and Exhaust Filter Grille Schedule

	MARK	Size	Core Area sq ft	Max CFM	Material
Phase 2:	EG-1	24/24	3.61	1083	316 Stainless Steel
	EG-2	24/12	1.8	540	316 Stainless Steel
Phase 1 & 3:	EFG-1	24/24	3.61	1083	316 Stainless Steel
	EFG-2	24/12	1.8	540	316 Stainless Steel

EG: Price Industries
Stainless Steel
Perforated Return Grille
Surface Mount
Model 10SS,SM

EFG: Price Industries
Stainless Steel
Perforated Filter Return Grille
Surface Mount
Model 10SS,FF,SM

Supply Air Diffuser Schedule

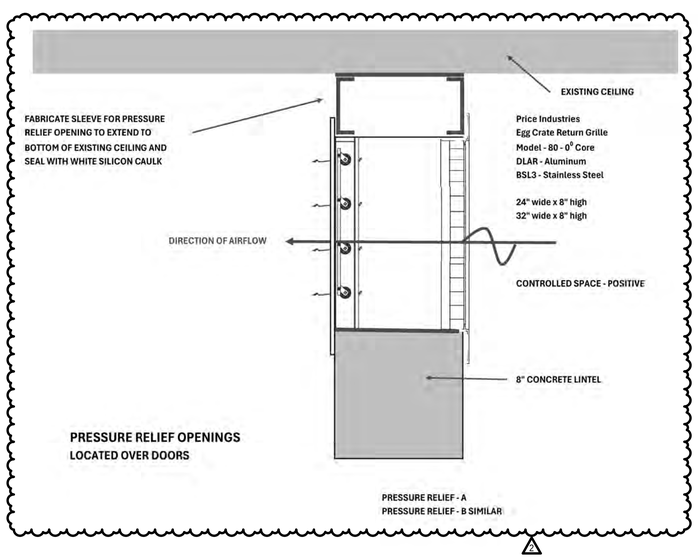
	MARK	Size	Inlet Dia	NC 20 < Max CFM	NC 30 < Max CFM	Material
Phase 1 & 3:	SD-1	16/16	6	118	157	316 Stainless Steel
	SD-2	16/16	8	140	175	
	SD-3	24/24	6	118	176	
	SD-4	24/24	8	175	244	
	SD-5	24/24	10	218	327	
	SD-6	24/24	12	314	393	
	SD-7	24/24	14	321	535	
	SD-8	24/24	15	368	550	
Phase 2:	SD-9	16/16	6	118	157	316 Stainless Steel
	SD-10	16/16	8	140	175	
	SD-11	24/24	6	118	176	
	SD-12	24/24	8	175	244	
	SD-13	24/24	10	218	327	
	SD-14	24/24	12	314	393	
	SD-15	24/24	14	321	535	
	SD-16	24/24	15	368	550	

Price Industries PDF - Perforated Face Supply Diffuser
Face Mounted Pattern Controllers
316 Stainless Steel Construction
Frame Style #1, Surface Mount
with VCR8E damper

A, inlet
B outlet

PHASE 2 PRESSURE RELIEF SCHEDULE

Tag Number	NUMBER	ROOM NAME	PR CFM	rCFM	FLOW Direction	Grille Location	Source / Destination	Size: w	h	
R-19	087A	**NON-SELECT AGENT DECON VESTIBULE**	**250**	**128**	**in**	**B**	**from 087B**	**PRS-2B**	**8**	**8**	
		NON-SELECT AGENT DECON VESTIBULE	150	98	out	A	to 087C	PRS-1B	8	6	DELETE
R-21	087A	**NON-SELECT AGENT DECON VESTIBULE**	**350**	**229**	**out**	**B**	**to 087E**	**PRS-5B**	**16**	**8**	
R-17	087B	**NON-SELECT AGENT AUTOCLAVE VESTIBULE**	**150**	**28**	**in**	**A**	**from 0169CR**	**PRS-1A**	**8**	**6**	
R-20	087C	**AUTOCLAVE MECH**	**150**	**98**	in	A	from 087A	PRS-1A	8	6	
R-18	087D	**AUTOCLAVE MECH**	**150**	**98**	**in**	**A**	**from 087B**	**PRS-1A**	**8**	**6**	
	087E	NON-SELECT AGENT SHARED EQUIPMENT	350	228	in	B	from 087A	PRS-5B	16	8	
		NON-SELECT AGENT SHARED EQUIPMENT	350	228	in	B	from 088D	PRS-5B	16	8	DELETE
	087F	*NON-SELECT AGENT SHARED CORRIDOR*	*see 087D, H, J below, PRS-5B, ±50 CFM, 3 each*								
R-22	087G	NON-SELECT AGENT SUITE 1	450	338	in	B	from 087E	PRS-7B	24	8	
R-23	087H	NON-SELECT AGENT SUITE 2	450	338	in	B	from 087E	PRS-7B	24	8	
R-24	087J	NON-SELECT AGENT SUITE 3	450	338	in	B	from 087E	PRS-7B	24	8	
R-16	088A	GOWN	150	98	in	A	from 0169CR	PRS-1A	8	6	
R-15	088B	DECON SHOWER	283	231	in	B	from 088A	PRS-5B	16	8	
R-13	088C	**DEGOWN**	363	52	out	**B**	**to 088D**	PRS-7B	24	8	
	088D	*SHARED CORRIDOR*			in		from 088C				DELETE
R-8	088D	**SHARED CORRIDOR**	272	73	**out**	**B**	**to 089A**	PRS-7B	24	8	
R-12	088D	**SHARED CORRIDOR**	373	23	**out**	**B**	**to 088E**	PRS-8B	36	8	
R-14	088D	**SHARED CORRIDOR**	443	122	**out**	**B**	**to 087E**	PRS-7B	24	8	
	088E	VESTIBULE	*see 088D above*		in						
		VESTIBULE	**450**	**398**	**out**	**B**		**PRS-4B**	**12**	**16**	DELETE
R-11	088F	**SHOWER**	373	52	**in**	**A**	**from 088E**	PRS-9A	30	8	
R-10	088F	**SHOWER**	273	52	**out**	**B**	**to 088G**	PRS-7B	24	8	
R-9	088G	**VESTIBULE**	273	61	**out**	**B**	**to 089A**	PRS-7B	24	8	
	089A	*SELECT AGENT SHARED EQUIPMENT*	*see 088D & G above*								
	089B	*SELECT AGENT SHARED CORRIDOR*	*see 088D & G above*								DELETE
R-7	089C	**SELECT AGENT SUITE 4**	**650**	**528**	**in**	**B**	**from 089B**	**PRS-6B**	**16**	**16**	
R-6	089D	**SELECT AGENT SUITE 5**	**650**	**528**	**in**	**B**	**from 089B**	**PRS-6B**	**16**	**16**	
	089E	*AUTOCLAVE MECH*	*see 089G below, PRS-1B, 150 CFM*								
	089F	*AUTOCLAVE MECH*	*see 089G below, PRS-1B, 150 CFM*								DELETE
R-3	089G	SELECT AGENT AUTOCLAVE VESTIBULE	150	28	in	A	from 0177CR	PRS-1A	8	6	
R-2	089G	SELECT AGENT AUTOCLAVE VESTIBULE	650	516	out	B	to 089H	PRS-7B	24	8	
R-5	089G	SELECT AGENT AUTOCLAVE VESTIBULE	150	98	out	A	to 089E	PRS-1A	8	6	
R-4	089G	SELECT AGENT AUTOCLAVE VESTIBULE	150	98	out	A	to 089F	PRS-1A	8	8	
R-1	089H	**SELECT AGENT SUITE 6**	**650**	**122**	**in**	**B**	**from 089B**	PRS-10B	48	8	
		SELECT AGENT SUITE 6	*see 089G above, PRS-5B, 650 CFM*					*PRS-5B*			
	90	(E) WIRE CLOSET									DELETE
	090A	STORAGE									



Isolation Dampers shall be Greenheck

Round, Model HBTR-151

HBTR Series
- Zero leakage up to 40 in. wg
- Heavy-duty round flanged frame
- Double skin round blade
- Silicone blade seal (field replaceable for easy maintenance)
- Wide variety of actuators available. Fast acting, spring return actuators are recommended for most applications
- Optional mounting holes on the flange

Square or Rectangular, Model HBT-221

HBT-221/HBT-321
- Zero leakage up to 10 in. wg (HBT-221)
- Zero leakage up to 20 in. wg (HBT-321)
- Heavy-duty flanged channel frame
- Double skin blades
- Silicone blade seal
- Wide variety of actuators available. Fast acting, spring return actuators are recommended for most applications
- Optional mounting holes on the flange

Models	Max. Velocity fpm (m/s)	Max. Pressure in. wg (kPa)	Temperature Ranges °F (°C)	Leakage
HBT-221	4000 (20.3)	10 (2.5)	-40 to 250 (-40 to 121)	Bubble-Tight
HBTR-151	3900 (19.8)	10 (2.5)	-40 to 250 (-40 to 121)	Bubble-Tight

FURNISHED BY CONTROL CONTR. INSTALLED BY GENERAL CONTR.

REV	DATE	DESCRIPTION	APPROVAL
2	02/21/2025	BULLETIN 3	JDI
1	08/29/2024	BULLETIN 1	JDI
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
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360 W. Dussel Dr.
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO MECHANICAL SCHEDULES

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE	NONE	

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-602

REV 2

2/14/2025 8:01:39 AM

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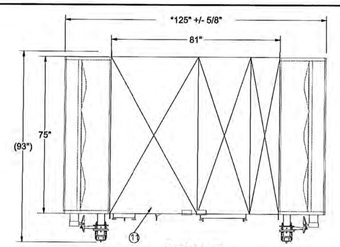
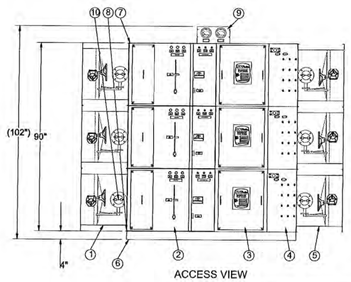
3"=1'-0" SCALE | 1-1/2"=1'-0" SCALE | 1"=1'-0" SCALE | 3/4"=1'-0" SCALE | 1/2"=1'-0" SCALE | 3/8"=1'-0" SCALE | 1/4"=1'-0" SCALE | 1/8"=1'-0" SCALE | 1/16"=1'-0" SCALE

* = DIMENSION DOES NOT INCLUDE 1/4 THK. GASKETS
( ) = REFERENCE DIMENSION



PLAN VIEW



ACCESS VIEW

SPECIFICATIONS

- The filter system airflow shall be 12000 CFM.
- The filter system shall be designed to withstand a pressure 10 inches water gage.
- The direction of air flow shall be right side door access.
- The prefilters and medium efficiency filter sections incorporate a slide-in design which does not require a locking mechanism.
- The primary filter housing shall be equipped with a fluid seal filter clamping mechanism operated by a locking handle that exerts an equal force on the top and bottom edge of each filter when engaging and disengaging the gel filled channel around the perimeter of the filter onto the knife edge. The locking mechanism shall be removable and shall be constructed of 300-series stainless steel.
- The filter housing shall be constructed from T-304 11 ga. and 14 ga. stainless steel sheet metal. All pressure retaining joints shall be continuously welded. At a minimum all welds shall be wire brushed and or buffed to remove heat discoloration and any sharp edges.
- The housing shall be equipped with a bag-out ring around each filter access port. Each ring shall have 2 continuous ribs which which secure the change-out bag securely strap in place and a hemmed outer edge which prevents tearing the bag.
- Multi-wide filter housings shall be equipped with internal filter removal rods which draw the filters to the change-out position.
- A minimum of 4 feet of clearance in front of the filter system is required for filter change-out.
- A replaceable silicone gasket shall be installed around the perimeter of the filter access doors. Each door shall be secured in place using a standard door bolt with aluminum star knobs.
- Weathercaps shall be constructed from 14 ga. stainless steel metal and shall be installed to prevent the accumulation of water and debris on top of the filter system.
- Static pressure taps shall be located on the back of the filter system. Taps shall be 1/4" NPT stainless steel half couplings.
- The filter system shall be equipped with an AstroScan test section. This non-intrusive filter scanning system allows each individual filter to be effectively scan tested for leaks without removing an access door. The scan probes located downstream of the HEPA bank are actuated by means of a manual pullrod without penetrating the pressure boundary. Each scan nozzle shall be connected to a dedicated scan port located on the exterior of the housing via flexible tygon tubing. Each scan port consists of a welded in place coupling and a 1/4" compression plated brass quick disconnect tube coupling connection for the testing instrumentation.
- The filter system shall be equipped with filter efficiency test sections which are used to determine the average efficiency of the entire filter bank. A swing aside baffle plate shall be operated from the exterior of the test section to ensure proper mixing and uniformity of sampling agents. The injection ports shall be 1" NPT stainless steel half couplings and the upstream/downstream sampling ports shall be 1/2" NPT stainless steel half couplings.
- The filter system shall be equipped with bubble-tight dish style dampers which consist of a dish shaped disc with a knife edge that seals against a neoprene gasket located on the frame to create a gasket-to-knife edge seal. The damper blade shall be tested at 10" water gage to ensure bubble tightness per AG-1, 2012 mandatory appendix DA-1 and the entire damper body shall be tested as part of the total assembly.
- The damper shall be equipped with a 1/4 turn gear operated actuator with a manual handwheel.
- The filter system shall be tested in accordance with ANSI/ASME NQA-1 "Quality Assurance Program Requirements for Nuclear Facilities". Housing shall be tested for filter fit, operation of filter clamping mechanism, knife edge alignment, and leak tightness. Both the overall system and the filter sealing surface shall be leak tested by the "pressure decay" method in accordance with AG-1, 2012 mandatory appendix TA-III, Article TAA-III-4200 and shall have a maximum leak rate of .0005 CFM per cubic foot of housing volume for 15 minutes.

SYSTEM COMPONENT SCHEDULE:	
1	DBTM-3H3W-GG-304-20 Bubble Tight Damper
2	TSI-3H3W-2GG-304-D1 Housing Section
3	BF1-3H3W-GGF-304-D1 Housing Section
4	ASCAN2-3H3W-GG-304-RH-1 Scan Section
5	DBTM-3H3W-GG-304-20 Bubble Tight Damper
6	Mounting Base
7	Lifting Lug
8	Upstream Sample Port - 3/8" Hail Coupling
9	Gage Panel, see Gage Schedule for gage details
10	3-inch Decon Port w/ SST Coupler & Plug
11	Weathercap

TEST PORTS (SHIPPED LOOSE)	
Upstream Injection	
Downstream Sample	

GAGE SCHEDULE (MOUNTED)		
PREFILTER	Differential Pressure Gage	0-2" W.G.
HEPA	Differential Pressure Gage	0-5" W.G.

CUSTOMER APPROVAL

DRAWINGS MUST BE SIGNED IN ORDER TO PROCEED WITH PRODUCTION
[ ] APPROVED [ ] APPROVED AS NOTED [ ] NOT APPROVED

SIGNATURE: William Edens DATE: 3/15/24

COMMENTS:

CUSTOMER:
PROJECT NAME: Bill Edens - Bag-In-Bag-Out Housings
CONFIGURATION NAME: Q-37361-1
QUOTE / JOB NO.:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS X/X ± 1/4
DECIMALS X.XX ± 0.25
X.XXX ±0.125
ANGLES ± .5 °

TOTAL WEIGHT: Approx. 5280 lbs

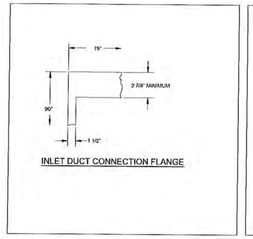
AAF | Flanders

TITLE: BF1-3H3W
Fluid Seal System

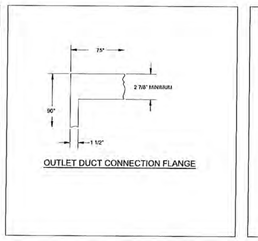
DRAWN BY	CHECKED BY	APPROVED BY	SHEET	SHEET SIZE	SCALE
Tracy Allgood			1 OF 2	11 X 17	NTS
DATE 03/04/2024	DATE	DATE			

DRAWING NUMBER C-46668

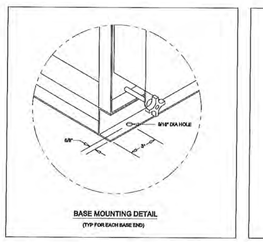
REV 7



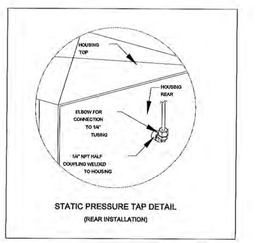
INLET DUCT CONNECTION FLANGE



OUTLET DUCT CONNECTION FLANGE



BASE MOUNTING DETAIL
(TYP FOR EACH BASE END)



STATIC PRESSURE TAP DETAIL
(NEAR INSTALLATION)

CUSTOMER APPROVAL

DRAWINGS MUST BE SIGNED IN ORDER TO PROCEED WITH PRODUCTION
[ ] APPROVED [ ] APPROVED AS NOTED [ ] NOT APPROVED

SIGNATURE: William Edens DATE: 3/15/24

COMMENTS:

CUSTOMER: Air Control Products
PROJECT NAME: Bill Edens - Bag-In-Bag-Out Housings
CONFIGURATION NAME: Q-37361-1
QUOTE / JOB NO.:

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS X/X ± 1/4
DECIMALS X.XX ± 0.25
X.XXX ±0.125
ANGLES ± .5 °

TOTAL WEIGHT: Approx. 5280 lbs

AAF | Flanders

TITLE: BF1-3H3W
Fluid Seal System

DRAWN BY	CHECKED BY	APPROVED BY	SHEET	SHEET SIZE	SCALE
Tracy Allgood			2 OF 2	11 X 17	NTS
DATE 03/04/2024	DATE	DATE:			

DRAWING NUMBER C-46668

REV 7

1 PHASE TWO FILTER HOUSING REFERENCE

SCALE: NONE

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE TWO FILTER HOUSING REFERENCE

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE	NONE	

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-603

REV 0

7/3/2024 10:01:54 AM

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0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1" 2" 3" — 3/4"=1'-0" SCALE
0 1" 2" 4" — 1/2"=1'-0" SCALE
0 2" 4" 6" — 3/8"=1'-0" SCALE
0 2" 4" 8" — 1/4"=1'-0" SCALE
0 4" 8" 16" — 1/8"=1'-0" SCALE
0 8" 16" 32" — 1/16"=1'-0" SCALE

Critical Room Control Laboratory Guide Specification

LABORATORY AIRFLOW CONTROL SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. The Laboratory Airflow Control System (LACS) will be furnished and installed to control the BSL3 laboratory environment. The exhaust flow rate shall be controlled to maintain minimum ventilation rates while also modulating for proper temperature control. The LACS will control the makeup/supply air volume to a volumetric offset to maintain room pressurization.

1.02 REFERENCES

A. Abbreviations and Acronyms
1. BMS – Building Management System
2. BAS – Building Automation System
3. LACS – Laboratory Airflow Control System
4. VAV – Variable Air Volume
5. DPT– Differential pressure transducer
6. ZPS – Zone Presence Sensor
7. IRC – Integrated Room Controller
8. IRM – Integrated Room Monitor
9. CLV – Closed Loop Venturi Valve
10. FHC – Fume Hood Controller
11. PM – Pressure Monitor
12. MV – MultiVIEW Monitor
13. MPV – Mechanical Plunger Valve
14. TAB – Test Adjust Balance

B. Reference Standards
1. BTL
2. UL
3. ANSI/ASHRAE 130
4. ANSI/ASHRAE 135

1.03 SUBMITTALS

A. Product Data:
1. Submit product data for valve electronic and electrical components and optional accessories.
2. Each air valve model product name, model ordering number, design airflow rates and pressure loss across the valve range.

B. Record Documents:
1. Submit complete point-to-point wiring diagrams for each applicable room configuration as shown on the Owner's Drawings.

1.04 WARRANTY

A. Warranty on manufactured equipment will commence upon date of shipment and extend for a period of sixty (60) months, wherein any defects in materials will be repaired by the supplier at no cost to the owner.

1.05 DESIGN CRITERIA

A. Unit manufacturer, or designated representative, will be required to verify air valve device performance and adjust or replace device(s) within warranty period when it is determined that problem exists in area served bydevice(s).
B. Actuators shall be furnished, and factory installed by LACS Manufacturer
C. Actuators shall be high-speed fail-safe or fail-in-place electronic type.
D. Actuator and its controller shall be calibrated, and field set through TAB work for scheduledairflow rates. Air valvesshall be capable of field calibration, characterization, and adjustment.
E. Provide all components not specifically indicated or specified, but necessary to make system function within intent of specification and in accordance with control sequences.
F. Size all control apparatus including all air valves to provide stable control of systems and equipment served throughout specified operating range.
G. Any devices subject to corrosion, such as in fume hood exhaust ducts, shall be provided with appropriate corrosion protection. Unless otherwise noted, air valve material and method of construction, pressure and temperature rating shall match that of the ductwork where the valve is installed.

1.06 TRAINING

A. Provide minimum of 8 hours of on-site training. Conduct training sessions during normal working hours after system start-up and acceptance. Portions of training may be performed before system is completely operational. Final training session shall be held after systems are complete.
B. Training sessions shall include, but not be limited to, the following topics:
1. Explanation of control sequences. Include which sensors are used and how output device operates.
2. Explanation of control drawings and manuals, including symbols, abbreviations, and overallorganization.
3. Walk-through of project to identify controller locations and general routing of cabling.
4. Review of operation and maintenance of hardware devices including controllers, instruments, and sensors. Include schedule for routine maintenance.

1.07 COORDINATION

A. Coordinate installation of air valves, reheat coils, sensors, controllers and wiring with other trades as required. Coordination drawings shall clearly illustrate installation methods and access provisions for all devices.

PART 2 - LABORATORY AIRFLOW CONTORL SYSTEM (LACS)

2.01 General

A. The Laboratory Airflow Control System (LACS) will control the Primary Room containment zones. The LACS will maintain volumetric offset to achieve room pressurization in relation to adjacent spaces. The LACS will also provide temperature, humidity, and environmental control while maintaining minimum ventilation rates as per design schedule.
B. LACS devices will include the Integrated Room Controller (IRC) with an Integrated Room Display (PM) located at each entrance, an Integrated Room Display (MV) located inside the lab. Each user interface shall communicate clear, unambiguous indication of the fume hood or current lab condition and mode in plain language via full color touch screen.
C. All room level control shall be hardwired inputs and outputs. Systems utilizing network communication or proprietary communication languages shall not be accepted. LACS controllers shall be configurable through local touch screen display(s) and not require additional proprietary software for setup or commissioning.
D. Each laboratory shall have a dedicated LACS to operate stand-alone from the building automation system. System shall not use or rely on information from controllers in other laboratory areas or from outside laboratory space to control functions within its laboratory.

2.02 LACS Control Strategies

A. Airflow control shall be volumetric offset to maintain secondary containment and pressurization.
1. The LACS shall continuously measure the sum of all exhaust air valves and the sum of all supply air valves and maintain a constant offset based on measured airflows.
2. Volumetric offset tracking shall ensure supply air set point is determined from measured total exhaust airflow. Systems utilizing independent set points not based on measured values shall not be acceptable.
3. The LACS shall maintain proper room pressurization regardless of any change in room/system conditions, such as the raising and lowering of any or all fume hood sashes or changes in duct static pressure. Systems achieving room pressurization control by means of direct pressure control are unacceptable.
B. Temperature control shall utilize dual loop and variable ventilation rates to maintain temperature.
1. The LACS shall use dual loop temperature control on all rooms serving critical spaces to maintain consistent room temperatures regardless of air volume changes.
2. The LACS shall continuously measure both room temperature and supply air duct temperature. The LACS shall continuously modulate reheat valve based on difference in calculated supply air duct temperature set point and the measured room temperature.
3. The LACS shall modulate the reheat valve closed on a call for cooling and then modulate the general exhaust air valve from minimum to maximum ventilation set point until the room temperature set point is met.
4. The LACS shall modulate the reheat valve open on a call for heating after modulating the general exhaust air valve to minimum ventilation set point until the room temperature set point is met.
5. The LACS shall maintain the reheat valve position last commanded to achieve proper heat load in the space.
6. The LACS shall maintain the ventilation set point last commanded to achieve proper cooling load in the space.
C. [OPTIONAL] Humidity control shall utilize dual loop to maintain humidity.
1. The LACS shall use dual loop humidity control on all rooms serving critical spaces to maintain consistent room humidity regardless of air volume changes.
2. The LACS shall continuously measure both room humidity and supply air duct humidity. The LACS shall continuously modulate humidifier based on difference in calculated supply air duct humidity set point and the measured room humidity.

2.03 Equipment

A. Controller
1. Basis of Design: Critical Room Control (CRC)
a. Integrated Room Controller (IRC) by Critical Room Control
1) Room shall consist of one controller for room level control. Each air valve shall not require a controller for the LACS to operate.
2) Controller shall utilize analog signals (scaled voltage) to control air valves. Room level networks shall not be acceptable.
3) Controller shall be BACnet native, BTL Listed, and utilize BACnet MS/TP communication protocol for integration.
4) Controller shall be application specific for volumetric offset control and not require logic-based programming.
5) Controller shall be configurable through local environmental condition display (password protection optional).
6) Controller shall serve as power source for all sensors within the LACS.
7) Controller shall support up to five modes that each have customizable parameters, alarms, set points, etc.
8) Environmental Condition Display
a) The display shall be wall mounted and capable to be mounted up to 200' from IRC.
b) Each display shall be a 7-inch resistive touch screen display capable of sensing touch with a gloved hand.
c) The IRC shall support multiple display formats for environmental condition with information in an icon or pill-based display. Refer to project plans for display types.
(1) PM – Pressure Monitor view with full color background and icon for room condition. Points of information accessible from slider bar at bottom of display.
(2) MV – MultiVIEW Monitor view with point of information displayed in pill format. Ability to swipe screen to view 28 points of information.
d) User Defined Modes:
(1) 15-character customizable name text.
(2) Background color customizable, including, but not limited to; green, blue, red, yellow, grey, etc.
(3) Monitor icon customizable, including, but not limited to; patient bed, surgeon mask, beaker, stop hand, caution triangle, mop, etc.
(4) Customizable set points per mode
(5) Modes shall be able to be changed locally from display, through the building automation system or through hardware signal.
e) Displayed Information
(1) The room pressure monitor shall have the ability to display 28 points of information.
(2) Each point shall be fully customizable from the display
(3) Each point shall include:
(a) 15-character customizable point name
(b) Engineering unit customizable: including, but not limited to, CFM, "WC, ACH, %, °, etc.
(c) Resolution selection of 0 to 0.0000
(d) Ability to hide, show or adjust set points
(e) Customizable alarm parameters
(4) Displayed information shall be configurable from (14) analog inputs and/or writable through the building automation system.
f) Alarm and Security:
(1) The monitor shall include audible and visual alarming customizable for each point of information, including, but not limited to; low pressure, high pressure, emergency condition, temperature, humidity, ACH, etc.
(2) Each point of information within the room pressure monitor shall have ability to enable or disable alarming for each user defined mode.
(3) Each point of information within the room pressure monitor shall have user defined alarm delay.
(a) During alarm delay the display shall have visual indication of point outside alarm parameters.
(4) The display and/or through the BAS, shall have the ability to mute alarms while maintaining visual alarm state.
(5) The display shall have the ability to alarm individual point or entire display screen; with the screen alarm being a pulsated visual.
(6) Each display shall utilize four levels of password-protected access. Different levels of secure access shall include: administrative, mode change, more information, and set point.
(7) Each display shall include up to three unique user passwords and each user be configurable for level of access.
9) Building Automation System (BAS) Interface:
a) The environmental condition display shall allow BAS to write points of information to be displayed.
b) The environmental condition display shall allow settings adjustments over the building network, including, but not limited to; set point, alarm parameters, modes, etc.
c) The BMS shall use either analog inputs, digital inputs, or utilize BACnet network protocol to view points or status of the room being measured. The use of BACnet protocol shall be native to the device and shall not require the use of an external gateway.
d) The display shall include the ability to change MAC address, device instance ID, and baud rate (9600, 19200, 38400, 76800, 115200) without the use of rotary dial or dip switches.

B. Venturi Air Valves
1. Basis of Design: Critical Room Control (CRC)
a. Closed Loop Venturi (CLV) by Critical Room Control
1) Valve type shall be closed loop precision feedback venturi anemometer through manifolded venturi sensing.
2) Direct pressure measurement by means of dead ended silicon imbedded glass sensing device. Thermal based pressure measurement devices are not acceptable.
3) Flow sensing that bisects and/or obstructs the duct shall not be acceptable.
4) The valve shall be pressure independent over a static pressure range of minimum of .005" to 5" W.C.
5) Shall not be limited by air velocity and will produce an airflow signal throughout full open to full shutoff.
6) Shall not be limited by minimum duct air velocities for flow signal.
7) No inlet or outlet duct diameters shall be required for accuracy and/or pressure independence.
a) Suppliers of airflow devices requiring minimum duct diameters will provide revised duct layouts showing the straight duct runs upstream and downstream of these devices. In addition, suppliers shall include static pressure loss calculations as part of their submittals. All costs to modify the ductwork, increase fan sizes and horsepower and all associated electrical changes shall be the responsibility of the LACS supplier.
8) Valve shall have no axis of orientation mounting requirement for accuracy and/or pressure independence.
9) Air valve shall be capable of a turndown of 10:1 maintaining an accuracy of ±5% of measured flow.
10) Airflow measuring devices that require a minimum velocity for flow feedback shall provide a secondary flow measurement device for velocities below published manufactures minimum.
11) Valves shall be capable of being mounted in any position and orientation.
12) Based on application the air valve shall be manufactured as follows:
a) Non-corrosive (Supply, Return and General Exhaust): The valve shall be constructed from 16-gauge aluminum or Galvanized body. The valve shall have 316 stainless steel single blade elliptical damper mounted on a solid stainless-steel shaft with corrosive resistant shaft bearings.
b) Corrosive (Valves mounted in Stainless Steel Ducts, Fume Hoods, BSCs, Wash Equipment, Autoclaves, VHP Exhaust): The valve shall be constructed from 18-gauge 304 or 316 stainless steel body. The valve shall have 316 stainless steel single blade elliptical damper mounted on a solid stainless-steel shaft with corrosive resistant shaft bearings.
(1) Additional coatings shall be specified based on environmental controls. Coatings include phenolic, Teflon, or PVC.
13) The venturi airflow device shall be capable of shutoff with leakage <0.05% of maximum designed air valve flow at 6" W.C.
14) The valve response signal shall be < 25 milliseconds.
15) The venturi airflow valve shall achieve 90% of desired set point in < 1 second.
16) Airflow valves shall be low pressure designed to operate at maximum static pressure drop of 0.3" W.C.
17) Airflow valves shall be configured for [FAIL-SAFE] or [FAIL-IN-PLACE] operation where required. All closed loop air valves shall be capable to achieve [FAIL-SAFE] or [FAIL-IN-PLACE] operation on a loss of power.
18) Electric modulating actuator shall be factory mounted. Valve shall have fast acting actuators, [FAIL-IN-PLACE] or [FAIL-SAFE] as required by LACS.
19) Floating point actuators are not acceptable.

C. Room Pressure Monitoring
1. Room Pressure Sensor
a. The room pressure sensor shall hardwire to LACS and not require additional controller and/or display within the space.
b. The room pressure sensor shall continuously monitor bi-directional room pressure between the associated referenced space.
c. The room pressure sensor shall be capable to be mounted up to 250 feet from pressure pickup plates.
d. The room pressure sensor shall utilize industrial quality differential pressure transducer technology.
e. Pressure sensing technology shall be direct pressure measurement by means of dead ended silicon imbedded glass sensing device to measure differential.
1) Implied pressure measurement systems utilizing thermal hot wire, thermal mass air velocity measurement, metallic diaphragm or non-dead ended are not acceptable.
f. Pressure sensor shall not be integral to room pressure monitor.
g. The pressure sensor shall be capable of replacement without removing room pressure monitor.
1) Room pressure monitor suppliers with pressure sensing integral to monitor shall include one (1) monitor/sensor for every five (5) monitors required for project.
h. The room pressure sensor shall be factory calibrated with NIST traceable standards.
1) The room pressure sensor shall be individually calibrated for installed and scheduled range.
2) The room pressure sensors that catalogue accuracy based on larger transducer ranges will not be accepted.
i. Sensing accuracy statement shall include the effects of non-linearity, non repeatability, hysteresis, zero offset and span setting errors.
1) Accuracy statements and claims that use the (RSS) root sum squares of non-linearity (BFSL), non-repeatability and hysteresis or exclude zero offset and span setting errors are not acceptable.
j. The room pressure sensor shall be dead ended to protect from the effects of dust, dirt and lint. Sensors with elements exposed to the airstream are not acceptable.

PART 3 - EXECUTION

3.01 General

A. Furnish and install fume hood monitors, zone presence sensors and sash sensors at each fume hood. Coordinate installation requirements with fume hood manufacturer.
B. Coordinate with ductwork configuration to allow for accurate measurement and control of airflow.
C. Furnish, install and terminate all low voltage control wiring and 24 VAC power supplies.

3.02 Air Valves and Reheat Coils:

A. LACS will be capable to provide all required ductwork transitions as required for mounting equipment.
B. Mount actuators on same side of air valve device as coil connections to ensure service access.
C. Connect air valves to ductwork with joints asdetailed.
D. Provide access doors for supply air valves with reheat coils.

3.03 Control and Power Wiring:

A. Provide control wiring from laboratory control panel to and between other laboratory control system components as required for complete and proper functioning, including but not limited to air valves, control valves, sensors, transducers, controllers, panels, and condition displays.
B. Utilize designated 20-amp circuit at emergency power electrical panel, serving laboratory. Provide required conduit, wire, junction boxes, disconnect switches and circuit breakers as specified in Division 26 as required to wire electrical panel to each laboratory control panel.
C. Wire and Cable shall be installed without splices between control devices and in accordance with NFPA 70 and NFPA 90A. Instrumentation grounding shall be installed per the device manufacturer's instructions and as necessary to prevent ground loops, noise, and surges from adversely affecting operation of the system. Ground rods installed by the Contractor shall be tested as specified in IEEE Std. 142. Cables and conductor wires shall be tagged at both ends, with the identifier shown on the shop drawings. Electrical work shall be as specified

End of Section

REV	DATE	DESCRIPTION	APPROVAL
0	07/26/2024	CONFORMED DOCUMENTS	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
LABORATORY AIRFLOW CONTROL SYSTEM

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	WGE	10/10/2023
CHECKED BY	DMV	05/05/2024
DRAWN BY	PS	10/10/2023
PROJ. MGR.	SMP	04/16/2024
SCALE		

JDI PROJECT NO. UOT23-001

DRAWING NO. M-2-604

REV 0

7/2/2024 10:02:34 AM

C:\TempPath\UOT23-001 MECH_jdi730.rvt

0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1' 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1' 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	LIGHTING FIXTURE, TYPE INDICATED ON PLAN. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION
	LIGHTING FIXTURE, WITH EMERGENCY BATTERY BALLAST TYPE INDICATED. TYPE INDICATED ON PLAN, SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION
	CEILING MOUNTED EXIT LIGHTING FIXTURE. TYPE INDICATED ON PLAN. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION. ARROWS INDICATE CHEVRONS, SHADED AREA INDICATES FACE.
	CEILING MOUNTED EXIT LIGHTING FIXTURE WITH TWO EMERGENCY FLOOD HEADS. TYPE INDICATED ON PLAN. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION. ARROWS INDICATE CHEVRONS, SHADED AREA INDICATES FACE.
$	SINGLE POLE SWITCH, 20 AMP, 120V AND 277V, MH=48" UNO.
$3	3-WAY SWITCH, 20 AMP, 120V AND 277V, MH=48" UNO
$T	ELECTROMECHANICAL LIGHT TIMER, 20 AMP, 277 VOLT, MH=48" UNO; 12 HOURS ON / 12 HOURS OFF
$M	MOTION DETECTING SWITCH, OCCUPANCY-AUTO ON, 20 AMP, 120V AND 277V, MH=48" UNO
$V	MOTION DETECTING SWITCH, VACANCY-MANUAL ON, 20 AMP, 120V AND 277V, MH=48" UNO
XX	PUSH-TO-EXIT STATION, MH=48" UNO
MO	CEILING MOUNTED SENSOR, INFRARED TECHNOLOGY, SMALL MOTION, STANDARD RANGE, 360 DEG. LENS, ISOLATED LOW VOLTAGE RELAY, SEALED ENCLOSURE SENSOR SWITCH
VS	CEILING MOUNTED SENSOR, VACANCY-MANUAL ON, INFARED TECHNOLOGY, SMALL MOTION, STANDARD RANGE, 360 DEG. LENS, ISOLATED LOW VOLTAGE RELAY, SENSOR SWITCH #nCM-PDT-9 OR EQUAL
J	JUNCTION BOX, SPECIFICALLY REQUIRED AT LOCATION INDICATED
	DUPLEX RECEPTACLE, 20 AMP, 125 VOLT POLARIZED PARALLEL-TYPE WITH GROUND, NEMA 5-20R. MH=18" UNO
	QUADRUPLEX RECEPTACLE, 20 AMP, 125 VOLT UNO. MH=18" UNO
	GROUND FAULT CIRCUIT INTERRUPTER OR GFCI PROTECTED DUPLEX RECEPTACLE WITH LED, 20 AMP, 125 VOLT UNO. MH=48" UNO
	GROUND FAULT CIRCUIT INTERRUPTER OR GFCI PROTECTED QUADRUPLEX RECEPTACLE WITH LED, 20 AMP, 125 VOLT UNO. MH=48" UNO
WP	GROUND FAULT CIRCUIT INTERRUPTER OR GFCI PROTECTED DUPLEX RECEPTACLE WITH LED, 20 AMP, 125 VOLT UNO. MOUNT IN A WEATHERPROOF ENCLOSURE WITH EXTRA-DUTY WEATHERPROOF CLEAR COVER. MH=48" UNO.
WP	GROUND FAULT CIRCUIT INTERRUPTER OR GFCI PROTECTED QUADRUPLEX RECEPTACLE WITH LED, 20 AMP, 125 VOLT UNO. MOUNT IN A WEATHERPROOF ENCLOSURE WITH EXTRA-DUTY WEATHERPROOF CLEAR COVER. MH=48" UNO.
	3-POLE, 4-WIRE, INTERLOCK OUTLET, 120V AND 277V. MH=48' UNO
	TELEPHONE OUTLET MH=18" UNO. COORDINATE WIRING WITH OWNER
	DATA OUTLET MH=18" UNO. COORDINATE WIRING WITH OWNER
	COMBINATION VOICE/DATA OUTLET. MH=18" UNO
	FLOOR MOUNTED COMBINATION VOICE/DATA OUTLET. FLUSH MOUNT TO FINISHED FLOOR UNO
XX	NON-FUSED DISCONNECT SWITCH, XX INDICATED AMP RATING, 600 VOLT, HP RATED NEMA 12 INDOOR, NEMA 3R OUTDOOR, UNO
XXAS / XXAF	FUSED DISCONNECT SWITCH, UPPER NUMBER INDICATES SWITCH RATING, LOWER NUMBER INDICATES FUSE RATING. 600 VOLT, HP RATED, NEMA 12 INDOOR, NEMA 3R OUTDOOR
	SURFACE MOUNTED ELECTRICAL PANEL, VOLTAGE, PHASE, AND NUMBER OF WIRES AS INDICATED, MOUNTING HEIGHT = 6'-0" UNLESS OTHERWISE NOTED
CP	EQUIPMENT CONTROL PANEL, WIRING TO LINE TERMINALS BY ELECTRICAL CONTRACTOR
	MOTOR, HORSEPOWER AND VOLTAGE AS SCHEDULED
CR	SECURITY PERSONNEL ACCESS CARD READER
SAP	SECURITY ACCESS PANEL
H	SECURITY ACCESS PANNING VIDEO CAMERA WITH LENS, TILT AND ZOOM. H INDICATES HEATER IN WEATHER PROOF ENCLOSURE

NOTE: ALL SYMBOLS NOT NECESSARILY USED ON THIS PROJECT.

SYMBOL SCHEDULE NOTES:

1. ALL DIMENSIONS TO SWITCHES, RECEPTACLES, AND JUNCTION BOXES ARE TO THE CENTER OF THE BOX. DIMENSIONS TO SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, ETC. ARE TO THE TOP OF THE CABINET. DIMENSIONS TO LIGHT FIXTURES (INCLUDING EMERGENCY WALL PACKS AND EXIT LIGHTS) ARE TO THE BOTTOM OF THE FIXTURE.
2. WHERE DIMENSIONS ARE NOT GIVEN, SUCH AS EXIT LIGHTING, THE HEIGHT ABOVE THE FINISHED FLOOR SHALL COORDINATE WITH LOCAL CODES AND THE OWNER'S BEST INTEREST.

GENERAL ELECTRICAL NOTES:

1. PERFORM ALL WORK IN ACCORDANCE WITH CURRENT ADOPTED EDITIONS OF NFPA 70 NATIONAL ELECTRICAL CODE (NEC), NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE, NFPA 101 LIFE SAFETY CODE, ALL APPLICABLE LOCAL AND STATE CODES AND ORDINANCES, AND ALL APPLICABLE OWNER BUILDING STANDARDS.
2. CONTRACTOR SHALL VISIT SITE TO VERIFY ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
3. CONTRACT SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, ETC., FOR A COMPLETE AND OPERABLE INSTALLATION. ALL MATERIALS SHALL BE NEW, SPECIFICATION GRADE, AND U.L. LISTED PRODUCTS, UNLESS NOTED OTHERWISE.
4. COORDINATE ALL WORK AND SCHEDULES WITH OWNER, CONSTRUCTION MANAGER, OTHER CONTRACTORS, AND APPROPRIATE UTILITY COMPANIES.
5. STORE MATERIALS WHERE DIRECTED. PROTECT STORED MATERIALS AND INSTALLED WORK FROM DAMAGE. REPAIR ALL DAMAGE.
6. REMOVE DIRT, DEBRIS AND UNUSED MATERIALS FROM SITE REGULARLY AND DISPOSE OF BY PROPER AND LEGAL METHODS.
7. REMOVE ELECTRICAL EQUIPMENT AND CIRCUITRY NO LONGER REQUIRED TO REMAIN IN SERVICE. REMOVE SERVICES BACK TO SOURCE. PROVIDE JUNCTION BOXES AND MAKE-UP RACEWAY TO EXTEND EXISTING CIRCUITRY.
8. DEMOLISHED MATERIALS SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. STORE SALVAGED ITEMS ON SITE WHERE DIRECTED.
9. SCHEDULE ALL POWER, COMMUNICATION, AND ALARM INTERRUPTIONS WITH OWNER AND OTHER CONTRACTORS 72 HOURS PRIOR TO INTERRUPTION.
10. IDENTIFY ALL ELECTRICAL EQUIPMENT WITH SECURELY FASTENED PHENOLIC OR SELF-ADHESIVE VINYL NAMEPLATES. PROVIDE TYPED DESCRIPTIVE CIRCUIT DIRECTORIES FOR ALL NEW AND EXISTING PANELS.
11. PROVIDE AN ARC FLASH HAZARD LABEL FOR ALL ELECTRICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, DISCONNECTS, AND MOTOR CONTROL CENTERS. LABELING SHALL BE IN ACCORDANCE WITH NEC 110.16 (ARC-FLASH HAZARD WARNING) AND NEC 110.21(B) (FIELD-APPLIED HAZARD MARKINGS).
12. PATCH AND FINISH DAMAGED FINISHES. PROVIDE PROPER FIRESTOPPING AT ALL WALL AND FLOOR PENETRATIONS.
13. ALL CONDUIT PENETRATIONS THROUGH WALLS IN ANIMAL RESEARCH FACILITIES SHALL BE COMPLETELY SEALED PER PENETRATIONS DETAIL, THIS SHEET.
14. PERFORM TESTS AND MAKE FINAL ADJUSTMENTS TO VERIFY PROPER PERFORMANCE OF ALL SYSTEMS AND EQUIPMENT.
15. MAINTAIN "AS BUILT" RECORDS OF ALL INSTALLED ITEMS AND PROVIDE TO OWNER AT PROJECT COMPLETION.
16. MOUNT ALL DEVICES PER FEDERAL ADA GUIDELINES. INDICATED HEIGHTS ARE NOMINAL. WORK TO MASONRY COURSES, WAINSCOTS, COUNTERS, BACKSPLASHES, ETC., FOR ROUGH-INS.
17. CONDUIT SHALL BE METALLIC. MINIMUM SIZE OR RACEWAY SHALL BE 3/4" TRADE SIZE FOR POWER SYSTEM WIRING (600 V OR LESS); 1" FOR TELECOMMUNICATIONS SYSTEM WIRING; 1/2" FLEXIBLE METAL CONDUIT (FMC) IS ACCEPTABLE FOR LIGHTING FIXTURE WHIPS CONSISTING OF ONE PHASE, ONE NEUTRAL, AND ONE GROUND WIRE.
18. GROUND ALL METAL PARTS, STRUCTURES, RACEWAYS, AND EQUIPMENT PER NEC 250. INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ALL RACEWAYS, SIZED PER NEC 250.122.
19. GROUNDING ELECTRODE CONDUCTORS AND REQUIRED SUPPLEMENTAL GROUNDING SHALL BE SIZED INSTALLED PER NEC 250.66 AND NEC 250.50.
20. PROTECT ALL BRANCH CIRCUIT WIRING AGAINST OVERCURRENT AS REQUIRED BY NEC 240.4. CONDUCTOR AMPACITY TO BE DETERMINED BY NEC 310.15 BASED ON 75°C RATINGS. UNLESS SPECIFICALLY NOTED OTHERWISE IN CONTRACT DOCUMENTS, ALL CONDUCTORS SHALL BE INSTALLED IN APPROVED, SPECIFIED RACEWAYS.
21. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE STRANDED COPPER WITH 600 VOLT INSULATION. MINIMUM WIRE SIZE FOR BRANCH CIRCUIT CONDUCTORS SHALL BE #10 AWG STRANDED COPPER.
22. ALL SINGLE POLE BRANCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRAL.
23. SPECIAL SYSTEMS SUCH AS FIRE ALARM, PAGING, ETC., SHALL BE INSTALLED AND TESTED BY PROPERLY CERTIFIED TECHNICIANS. PROVIDE OWNER DEMONSTRATION UPON COMPLETION.
24. PROVIDE WRITTEN, 1 YEAR GUARANTEE TO OWNER COVERING ALL CONTRACTED WORK. PROVIDE EVIDENCE OF FINAL INSPECTIONS BY APPROPRIATE AUTHORITIES BEFORE FINAL PAYMENTS.
25. THE TERM "PROVIDE" AS USED HEREIN REFERS TO THE DESIGNATED ORGANIZATION AS FURNISHING AND INSTALLING THE NOTED EQUIPMENT AND ALL APPLICABLE ANCILLARY DEVICES.
26. THE TERM "FURNISH" AS USED HEREIN REFERS TO THE DESIGNATED ORGANIZATION AS PURCHASING AND DELIVERING TO THE SITE THE NOTED EQUIPMENT.
27. THE TERM "INSTALLING" AS USED HEREIN REFERS TO THE DESIGNATED ORGANIZATION AS UNLOADING EQUIPMENT FURNISHED BY ANOTHER BID PACKAGE AND INSTALLING THIS EQUIPMENT.
28. ALL NEW DEVICES SHALL BE FURNISHED WITH A MINIMUM OF 75°C TERMINALS. THE CONTRACTOR SHALL SIZE THE WIRE FOR 60°C IF THE DEVICE CANNOT BE FURNISHED WITH 75°C TERMINALS.
29. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED.
30. CIRCUIT RUNS SHOWN ARE DIAGRAMMATIC. EXACT CONDUIT RUNS SHALL BE DETERMINED IN FIELD.
31. WIRE COLORS UP TO 10 GAUGE IN SIZE FOR 480Y/277 VOLT SHALL BE BROWN, ORANGE, AND YELLOW WITH A GRAY NEUTRAL. FOR LARGER-SIZED CONDUCTORS, PROVIDE APPROPRIATE COLOR TAPE (MINIMUM 6" WIDE) AROUND THE CONDUCTOR AT THE CABLE END.
32. WIRE COLORS UP TO 10 GAUGE IN SIZE FOR 120-208/240 VOLT SHALL BE BLACK, RED AND BLUE WITH A WHITE NEUTRAL. FOR LARGER-SIZED CONDUCTORS, PROVIDE APPROPRIATE COLOR TAPE (MINIMUM 6" WIDE) AROUND THE CONDUCTOR AT THE CABLE END.

NOTE: THESE NOTES ARE GENERAL IN NATURE. THE BREVITY OF THIS SPECIFICATION SHALL NOT BE CONSIDERED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY TO PERFORM ALL WORK IN A FIRST CLASS WORKMANLIKE MANNER.

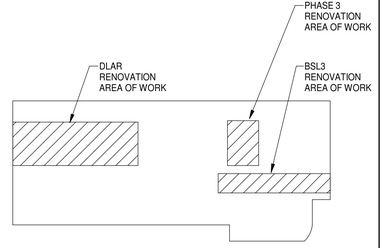
INSTALLATION REQUIREMENTS GENERAL NOTES:

1. PERFORM ALL WORK IN ACCORDANCE WITH CURRENT ADOPTED EDITION OF THE NATIONAL INSTITUTES OF HEALTH (NIC) DESIGN REQUIREMENTS MANUAL (DRM).
2. WHERE THERE IS A CONFLICT BETWEEN THE DRM AND GENERAL ELECTRICAL SPECIFICATIONS, THE DRM SHALL BE APPLICABLE.
3. WHERE IN ANY CASE DIFFERENT SECTIONS OF THE DRM SPECIFY DIFFERENT MATERIALS, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN.
4. INSTALL VERTICALLY MOUNTED RECEPTACLES SO THAT THE GROUND PRONG IS IN THE UP POSITION FOR RECEPTACLES MOUNTED UP TO 5 FEET ABOVE THE FINISHED FLOOR. HORIZONTALLY ORIENTED RECEPTACLES MOUNTED UP TO 5 FEET ABOVE FINISHED FLOOR SHALL HAVE THE NEUTRAL BLADE FACING UP AND GROUND PIN FACING LEFT.
5. ALL NEW RECEPTACLES MOUNTED GREATER THAN 5 FEET ABOVE FINISHED FLOOR SHALL BE HORIZONTALLY ORIENTED WITH THE NEUTRAL BLADE FACING UP AND GROUND PIN FACING LEFT.
6. COVER PLATES FOR RECEPTACLES, SWITCHES, AND BOXES SHALL BE STAINLESS STEEL, BRUSHED ALUMINUM. OR HOSPITAL-GRADE IMPACT-RESISTANT NYLON. COVER PLATES FOR CAST BOXES SHALL BE GASKETED AND WEATHERPROOF.
7. PROVIDE CAST BOXES WITH EXTERNAL HUB AND GASKETED DEVICE COVER PLATES; PROVIDE 1" BARRIER OF SILICONE CAULKING AROUND THE WIRE WITHIN THE DEVICE BOX HUB; AND PROVIDE A CONTINUOUS BEAD OF SILICONE CAULK AROUND THE DEVICE COVER PLATE AND ADJACENT SURFACE. WHERE DEVICE BOXES ARE SURFACE MOUNTED ON RGS CONDUIT, ALL SIDES SHALL BE SEALED TO ADJACENT SURFACES WITH A CONTINUOUS BEAD OF SILICONE CAULK.
8. WHERE CONDUITS ARE REQUIRED TO BE SURFACE MOUNTED, SURFACE-MOUNTED CONDUITS SHALL BE SECURED WITH 3/4" STANDOFFS OR SEALED ON BOTH SIDES TO ADJACENT SURFACES WITH CONTINUOUS BEADS OF SILICONE CAULKING.
9. ALL CAULKING TO BE RTV LONG LIFE SILICONE.

CONDUIT & WIRE SCHEDULE *

CIRCUIT SIZE	1 PHASE - 2 WIRE + E.G.	CIRCUIT SIZE	3 PHASE - 3 WIRE + E.G.	CIRCUIT SIZE	3 PHASE - 4 WIRE + E.G.
20/2G	3/4"C - 2#10 & 1#10 GND	20/3G	3/4"C - 3#10 & 1#10 GND	20/4G	3/4"C - 4#10 & 1#10 GND
30/2G	3/4"C - 2#10 & 1#10 GND	30/3G	3/4"C - 3#10 & 1#10 GND	30/4G	3/4"C - 4#10 & 1#10 GND
40/2G	3/4"C - 2#8 & 1#10 GND	40/3G	3/4"C - 3#8 & 1#10 GND	40/4G	3/4"C - 4#8 & 1#10 GND
50/2G	3/4"C - 2#6 & 1#10 GND	50/3G	3/4"C - 3#6 & 1#10 GND	50/4G	1"C - 4#6 & 1#10 GND
60/2G	3/4"C - 2#6 & 1#10 GND	60/3G	3/4"C - 3#6 & 1#10 GND	60/4G	1"C - 4#6 & 1#10 GND
70/2G	1"C - 2#4 & 1#8 GND	70/3G	1"C - 3#4 & 1#8 GND	70/4G	1 1/4"C - 4#4 & 1#8 GND
80/2G	1"C - 2#2 & 1#8 GND	80/3G	1 1/4"C - 3#2 & 1#8 GND	80/4G	1 1/4"C - 4#2 & 1#8 GND
100/2G	1"C - 2#2 & 1#8 GND	100/3G	1 1/4"C - 3#2 & 1#8 GND	100/4G	1 1/4"C - 4#2 & 1#8 GND
125/2G	1 1/4"C - 2#1/0 & 1#6 GND	125/3G	1 1/2"C - 3#1/0 & 1#6 GND	125/4G	2"C - 4#1/0 & 1#6 GND
150/2G	1 1/4"C - 2#1/0 & 1#6 GND	150/3G	1 1/2"C - 3#1/0 & 1#6 GND	150/4G	2"C - 4#1/0 & 1#6 GND
175/2G	1 1/4"C - 2#2/0 & 1#6 GND	175/3G	2"C - 3#2/0 & 1#6 GND	175/4G	2"C - 4#2/0 & 1#6 GND
200/2G	1 1/4"C - 2#3/0 & 1#6 GND	200/3G	2"C - 3#3/0 & 1#6 GND	200/4G	2"C - 4#3/0 & 1#6 GND
225/2G	1 1/2"C - 2#4/0 & 1#4 GND	225/3G	2"C - 3#4/0 & 1#4 GND	225/4G	2 1/2"C - 4#4/0 & 1#4 GND
250/2G	2"C - 2#250 kcmil & 1#4 GND	250/3G	2"C - 3#250 kcmil & 1#4 GND	250/4G	2 1/2"C - 4#250 kcmil & 1#4 GND
300/2G	2"C - 2#350 kcmil & 1#4 GND	300/3G	2 1/2"C - 3#350 kcmil & 1#4 GND	300/4G	3"C - 4#350 kcmil & 1#4 GND
350/2G	2"C - 2#350 kcmil & 1#2 GND	350/3G	2 1/2"C - 3#350 kcmil & 1#2 GND	350/4G	3"C - 4#350 kcmil & 1#2 GND
400/2G	2 1/2"C - 2#500 kcmil & 1#2 GND	400/3G	3"C - 3#500 kcmil & 1#2 GND	400/4G	3 1/2"C - 4#500 kcmil & 1#2 GND
450/2G	2 1/2"C - 2#600 kcmil & 1#2 GND	450/3G	3"C - 3#600 kcmil & 1#2 GND	450/4G	3 1/2"C - 4#600 kcmil & 1#2 GND
600/2G	(2) - 2"C - 2#350 kcmil & 1#1/0 GND	600/3G	(2) - 2 1/2"C - 3#350 kcmil & 1#1/0 GND	600/4G	(2) - 3"C - 4#350 kcmil & 1#1/0 GND
800/2G	(2) - 2 1/2"C - 2#500 kcmil & 1#1/0 GND	800/3G	(2) - 3"C - 3#500 kcmil & 1#1/0 GND	800/4G	(2) - 3 1/2"C - 4#500 kcmil & 1#1/0 GND
1000/2G	(3) - 2 1/2"C - 2#500 kcmil & 1#2/0 GND	1000/3G	(3) - 3"C - 3#500 kcmil & 1#2/0 GND	1000/4G	(3) - 3 1/2"C - 4#500 kcmil & 1#2/0 GND
1200/2G	(3) - 3"C - 2#600 kcmil & 1#3/0 GND	1200/3G	(3) - 3"C - 3#600 kcmil & 1#3/0 GND	1200/4G	(3) - 3 1/2"C - 4#600 kcmil & 1#3/0 GND
1600/2G	(4) - 3"C - 2#600 kcmil & 1#4/0 GND	1600/3G	(4) - 3 1/2"C - 3#600 kcmil & 1#4/0 GND	1600/4G	(4) - 3 1/2"C - 4#600 kcmil & 1#4/0 GND
2000/2G	(5) - 3"C - 2#600 kcmil & 1#250 kcmil GND	2000/3G	(5) - 3 1/2"C - 3#600 kcmil & 1#250 kcmil GND	2000/4G	(5) - 3 1/2"C - 4#600 kcmil & 1#250 kcmil GND
2500/2G	(6) - 3"C - 2#600 kcmil & 1#350 kcmil GND	2500/3G	(6) - 3 1/2"C - 3#600 kcmil & 1#350 kcmil GND	2500/4G	(6) - 4"C - 4#600 kcmil & 1#350 kcmil GND

* CABLE SIZES TO BE ADJUSTED AS NECESSARY TO ACCOUNT FOR VOLTAGE DROP.



KEY PLAN

LIGHTING FIXTURE SCHEDULE NOTES - GENERAL

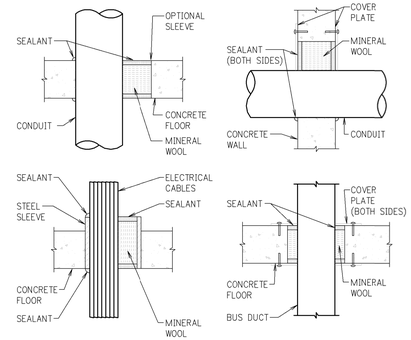
A. ALL FIXTURES SHALL ALIGN BOTH HORIZONTALLY AND VERTICALLY.
B. ALL FIXTURES LISTED ARE TO FORM A DEGREE OF QUALITY. OTHER FIXTURES MAY BE SUBMITTED FOR APPROVAL BY THE OWNER. THE OWNER SHALL BE THE SOLE DETERMINANT OF "EQUAL."
C. SPECIFICATION NUMBERS ARE MANUFACTURER'S SERIES NUMBERS ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR/EQUIPMENT SUPPLIER TO COMPLETE CATALOG NUMBERS TO MATCH THE FIXTURE DESCRIPTION, COMPLIANCE WITH SPECIFICATIONS AND INSTALLATION REQUIREMENTS.
D. E.C. SHALL VERIFY FIXTURE COLORS WITH OWNER PRIOR TO ORDERING.
E. CONTRACTOR SHALL PROVIDE ALL MOUNTING HARDWARE, BRACKETS, UNISTRUT, ETC.
F. PROVIDE FLANGES FOR DRYWALL INSTALLATION WHERE APPLICABLE, COORDINATE WITH LIGHTING AND REFLECTED CEILING PLANS

LIGHTING FIXTURE SCHEDULE NOTES - SPECIFIC

1. PROVIDE MINIMUM 90-MINUTE EMERGENCY/EGRESS BATTERY PACK. WIRE FIXTURE TO CIRCUIT SERVING LIGHTING IN AREA AHEAD OF LOCAL SWITCHING FOR CONTINUOUS NIGHT LIGHT AND/OR EMERGENCY OPERATION, ('NL' ON PLANS INDICATES FIXTURES WIRED FOR NIGHT LIGHT OPERATION).
2. MOUNTING HEIGHT OF WALL MOUNTED EXIT SIGNS SHALL BE 7'-6" UNLESS NOTED OTHERWISE. MOUNTING HEIGHT OF SUSPENDED EXIT SIGNS SHALL MATCH ADJACENT FIXTURES.
3. PROVIDE EXIT WITH ONE OR TWO FACES BASED ON LIGHTING PLAN SYMBOLS.
4. DO NOT CONNECT SELF-TEST AND SELF-DIAGNOSTIC CIRCUITRY PER NIH.

LIGHTING FIXTURE SCHEDULE

TYPE	LAMP DATA	DRIVER/BALLAST DATA	DESCRIPTION: HOUSING	DESCRIPTION: REFLECTOR ASSEMBLY	DESCRIPTION: LENS/REFRACTOR	DESCRIPTION: MOUNTING	VOLTAGE	MANUFACTURER CATALOG NO.	WATTS	NOTES
L1-1	5140 LUMEN LED-3500K	0-10V DIMMING TO 1%	20-GUAGE 304 STAINLESS STEEL	CONTINOUS ANGLE LENS REFLECTOR	IMPACT-RESISTANT DIFFUSED ACRYLIC	SURFACE	MVOLT	KENALL CSESO14-45L-35K8-DIM1-DV-5F-5H-U	49 VA	
L1-1e	5140 LUMEN LED-3500K	0-10V DIMMING TO 1%	20-GUAGE 304 STAINLESS STEEL	CONTINOUS ANGLE LENS REFLECTOR	IMPACT-RESISTANT DIFFUSED ACRYLIC	SURFACE	MVOLT	KENALL CSESO14-45L-35K8-DIM1-DV-5F-5H-U-LEL	49 VA	
L1-2	7874 LUMEN LED-3500K	0-10V DIMMING TO 1%	20-GUAGE 304 STAINLESS STEEL	CONTINOUS ANGLE LENS REFLECTOR	IMPACT-RESISTANT DIFFUSED ACRYLIC	SURFACE	MVOLT	KENALL CSESO14-67L-35K8-DIM1-DV-5F-5H-U	72 VA	
L1-2e	7874 LUMEN LED-3500K	0-10V DIMMING TO 1%	20-GUAGE 304 STAINLESS STEEL	CONTINOUS ANGLE LENS REFLECTOR	IMPACT-RESISTANT DIFFUSED ACRYLIC	SURFACE	MVOLT	KENALL CSESO14-67L-35K8-DIM1-DV-5F-5H-U-LEL	72 VA	
L2-1	5461 LUMEN LED-3500K	0-10V DIMMING TO 1%	20-GUAGE 304 STAINLESS STEEL	CONTINOUS ANGLE LENS REFLECTOR	IMPACT-RESISTANT DIFFUSED ACRYLIC	SURFACE	MVOLT	KENALL CSESO22-45LD-35K8-DIM1-DV-5F-5H-U	46 VA	
X1	LED EXIT	120 MINUTE NICKEL CADMIUM BATTERY	14-GUAGE STAINLESS STEEL BRUSHED	N/A	RED LETTERS, POLYCARBONATE	SURFACE	120/277V	KENALL MMEX-1-6-R-DT-1-EL	3 VA	1, 2, 3
X2	LED EXIT	120 NICKEL CADMIUM BATTERY	20-GUAGE 304 STAINLESS STEEL	N/A	RED LETTERS, POLYCARBONATE	RECESSED	120/277V	KENALL CMEXR-5F-R-DT-NT-EL	2 VA	1, 2, 3, 4



CONCRETE/MASONRY FLOOR & WALLS

NOTES:

A. CABLE AND CONDUIT PENETRATION DETAILS ARE BASED ON A UL LISTED 2 HOUR FIRE RATED ASSEMBLY (MINIMUM) UTILIZING SPEC SEAL FIRESTOP PRODUCTS. REFER TO MANUFACTURER'S SPECIFICATIONS AND INSTALLATION DETAILS FOR EXACT INSTALLATION METHODS.
B. PACKING AND SEALANT DEPTHS SHALL BE PER MANUFACTURER'S SPECIFICATIONS FOR UL ASSEMBLY RATING COMPLIANCE.
C. JOINT SEALANT - PROVIDE NON-HALOGENATED LATEX-BASED ELASTOMERIC SEALANT ASTM C920

2 CONDUIT/ CABLE PENETRATIONS THROUGH RATED ASSEMBLIES.
SCALE: NONE

REV	DATE	DESCRIPTION	APPROVAL
A	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE
PHASE TWO ELECTRICAL LEGENDS, SYMBOLS AND SCHEDULES

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/14/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	ZAL	04/26/2024	
DRAWN BY	ZAL	11/14/2023	DRAWING NO. E-2-001
PROJ. MGR.	SP	05/06/2024	REV A
SCALE	N.T.S.		

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0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2' 1' 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2' 1' 2' — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE

CAUTION - REFERENCE ONLY
ALWAYS VERIFY CIRCUITS AND THE PRESENCE OF VOLTAGE IN FIELD. ELECTRICAL EQUIPMENT IS FED FROM MULTIPLE SOURCES, AND THE POSSIBILITY OF MULTIPLE EMERGENCY SOURCES.

750KW/937KVA 277/480V-3PH-4W DIESEL
1200A

GENERATOR CAPACITY REVIEW:
BASED ON RECENT MONTHLY GENERATOR TESTING LOAD INFORMATION, THE EXISTING GENERATOR DEMAND LOADING IS 253.5KVA. THIS GENERATOR IS CAPABLE OF PROVIDING 937KVA OF POWER. USED CAPACITY DURING MONTHLY TESTS IS 27% OF FULL RATING OF THE GENERATOR. BASED ON THIS, CAPACITY IS AVAILABLE FOR NEW EMERGENCY LOADING, PER THIS PROJECT.

EQUIPMENT ROOM #077

ATS-B HSB BUILDING #4

EM-DP

WIREWAY

A+B SYSTEM 600A

60A ATS-LS DISC. SW.

ATS A/B SYSTEM AIR HANDLERS

ATS-LS

AIR HANDLERS

PNL. LPLS

FROM ED-B (EMERGENCY SWITCHBOARD)

FEEDER B FROM 15kV DIST. S/G B

B FEEDER

SS2 - 3000A - 277/480V-3PH-4W (ROOM 077)

BEST AB

BEST AA

277/480V-3PH 4W, 1000 kVA 12470Y/7200V

3000A

1600A 800AF 800AF 1600AF 800AF 800AF

ATS A/B SYSTEM

WOLFE HMDPA

MCC-3 MCC-2

WOLFE SWBD

ATS-EM 800A ROOM 077

EMERGENCY SWITCHBOARD

ED-B

400A 225A 200A 60A 60A 30A 60A 200A 200A 200A 100A 100A 100A 100A 60A 60A 60A 60A

DIST. PANEL EDLBA

ELBA

ATS-B-EM TRANSFER SWITCH SHEET E3.4

ELEV

????

ATS-CCE CONTROLLER SHEET E3.2

SPARE

ER-BN

SPARE

SPARE

????

LP-E (MULFORD)

LP-GEN

A/C UNIT

ATS-LS

PENTHOUSE

PENTHOUSE/ROOF - EXTERIOR

POSSIBLE EXISTING EMERGENCY FEED

TRANSF. SWITCH #2

MCC #6E

MCC-EM LABELED AS HAVING TWO SOURCES OF POWER; ONE SOURCE IS FED FROM MCC 1E IN BASEMENT MECH ROOM 080.

MCC-EM

ATS BL3 E.F.s

ROUTED THRU MCC-EM

BL3 E.F.1 DISC. SW.

BL3 E.F.2 DISC. SW.

VFD BL-3 EF-1

VFD BL-3 EF-2

BL3 E.F.1 DISC. SW.

BL3 E.F.2 DISC. SW.

25HP

25HP

PHASE 2
BSL3 RENOVATION
SEE SHT EP-2-102

TO DIST. PANEL ELIA

BUSWAY LOCATED IN MEZZANINE

EQUIPMENT MEZZANINE

200A -3P BUS PLUG SWITCH

TR-MC

400A -3P BUS PLUG SWITCH

FEEDER A FROM 15kV DIST. S/G

TR-MF

200A -3P BUS PLUG SWITCH

100A -3P BUS PLUG SWITCH

TR-MG

---A -3P BUS PLUG SWITCH

FED FROM EMERG SWBD. "ED-B"

PHASE 1
DLAR RENOVATION

MCC #3E

MCC #3

TR-BA

PNL. ERBC1 120/208

PNL. ERBC 120/208

TR-BB

DIST PANEL DRBC

SS3 - 3000A - 277/480V-3PH-4W (ROOM 010)

1600AF 1600AF 1600AF

3000A

277/480V-3PH 4W, 1000 kVA 12470Y/7200V

BEST AB

BEST AE

BEST AB

BEST AB

A FEEDER

PNL. RLBA

PNL. RLBB

PNL. RLBC

PNL. RBL

DIST. PANEL DRBB

PNL. LBB

PNL. RBE

DIST. PANEL EDLBB 480V

PNL. ELBB 480V

PNL. ERBBA 120/208 100A 3PH/4W

PNL. ERBB 120/208

PNL. RBB

PNL. RBM

LIGHTING CONTACTOR #4

PNL. RBN

PNL. DLB

DIST. PANEL DRBA

PNL. LBA

PNL. RBC

PNL. ELBA 480V

PNL. ERBA 160/208

DISCONNECT SWITCH

TR-?? LOCATED IN MEZZ.

PNL. ERBAB 120/208 100A 3PH/4W

RP-BN ATS 480V

PNL. RP-BN 120/208

PNL. RPBA 120/208

PHASE 2
BSL3 RENOVATION

MCC #1E

MCC #2E

ELECTRICAL EQUIPMENT ROOM #010

ROOM #032E

ROOM #032

ROOM #031

WIRE CLOSET #094

WIRE CLOSET #49

WIRE CLOSET #90

MECHANICAL EQUIPMENT RM #80

RM #90B

PHASE 1
DLAR RENOVATION

PLAN NOTES:

1. ELECTRICAL CONTRACTOR (EC) SHALL MEASURE EXISTING LOAD OF TRANSFORMER FEEDING 120/208V-THREE PHASE EMERGENCY PANEL ERBB FOR AVAILABLE POWER CAPACITY. TO FACILITATE THIS MEASUREMENT, EC SHALL PLACE A POWER LOGGER FOR A MINIMUM DURATION OF 30 DAYS. AFTER LOGGING MEASUREMENTS ARE COMPLETED, CONTRACTOR SHALL COLLABORATE WITH ENGINEER OF RECORD. FOR BIDDING PURPOSES, CONTRACTOR MAY ASSUME THAT TRANSFORMER WILL BE UPSIZED TO A 45KVA UNIT.
2. NEW 100A, 120/208V, 30 SPACE, 3 PHASE PANEL SHALL BE INSTALLED ON THE NORTH WALL OF WIRE CLOSET 094 (EAST OF ROOM ACCESS DOORS). SUPPLY WITH 100A MCB. FEEDERS SHALL BE (4) #2 AWG, #8 CU GND, 1-1/4" CONDUIT. LABEL PANEL AS ERBBA. TO PROVIDE SPACE FOR THIS PANEL, THE SIMPLEX TRANSMITTER DISCONNECT SHALL BE LOCATED SLIGHTLY, HOWEVER REMAIN ON SAME WALL.
3. REPLACE 480V, 3-POLE, 50A BREAKER IN EDLBB WITH 70A. AIC RATING SHALL MATCH EXISTING. PROVIDE MINIMUM (3) #4 AWG COPPER, #8 COPPER GROUND. MINIMUM CONDUIT 1-1/4" BETWEEN PANEL AND TRANSFORMER TR-MF. REUSE EXISTING INSTALLATIONS IF ADEQUATE AND AS CONDITION ALLOWS.
4. PROVIDE 100A, 480V, 3-POLE, NEMA 1 AUTOMATIC TRANSFER SWITCH TO REPLACE EXISTING MANUAL TRANSFER SWITCH RP-BN. EXTEND EXISTING CONDUITS AND WIRING TO ATS AS CONDITION ALLOWS.
5. MEASURE LOADING ON LINE SIDE OF TRANSFORMER. TO FACILITATE THIS MEASUREMENT, EC SHALL PLACE A POWER LOGGER FOR A MINIMUM DURATION OF 30 DAYS. AFTER LOGGING MEASUREMENTS ARE COMPLETED, CONTRACTOR SHALL COLLABORATE WITH ENGINEER OF RECORD. MEASUREMENT BEING COLLECTED TO VERIFY EMERGENCY PANELS ARE NOT OVERLOADED.
6. ELECTRICAL CONTRACTOR (EC) SHALL MEASURE EXISTING LOAD OF TRANSFORMER FEEDING 120/208V-THREE PHASE EMERGENCY PANEL ERBA FOR AVAILABLE POWER CAPACITY. TO FACILITATE THIS MEASUREMENT EC SHALL PLACE A POWER LOGGER FOR A MINIMUM DURATION OF 30 DAYS. AFTER LOGGING MEASUREMENTS ARE COMPLETED, CONTRACTOR SHALL COLLABORATE WITH ENGINEER OF RECORD. FOR BIDDING PURPOSES, CONTRACTOR MAY ASSUME THAT TRANSFORMER WILL BE UPSIZED TO A 45KVA UNIT.
7. NEW 100A, 120/208V, 30 SPACE, 3 PHASE PANEL SHALL BE INSTALLED ON THE WEST WALL OF ROOM 090B. SUPPLY WITH 100A MCB. FEEDERS SHALL BE (4) #2 AWG, #8 CU GND, 1-1/4" CONDUIT. LABEL PANEL AS ERBAB.
8. REPLACE 480V, 3-POLE, 40A BREAKER IN PANEL ELBA WITH 70A. AIC RATING SHALL MATCH EXISTING. PROVIDE MINIMUM (3) #4 AWG COPPER, #8 COPPER GROUND. MINIMUM CONDUIT 1-1/4". REUSE EXISTING INSTALLATIONS IF ADEQUATE AND AS CONDITION ALLOWS.
9. MEASURE LOADING ON LINE SIDE OF TRANSFORMER. TO FACILITATE THIS MEASUREMENT, EC SHALL PLACE A POWER LOGGER FOR A MINIMUM DURATION OF 30 DAYS. AFTER LOGGING MEASUREMENTS ARE COMPLETED, CONTRACTOR SHALL COLLABORATE WITH ENGINEER OF RECORD. MEASUREMENT BEING COLLECTED TO VERIFY EMERGENCY PANELS ARE NOT OVERLOADED.

REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	RED WOLF
C	04/19/2024	CONSTRUCTION DOCUMENTS	RED WOLF
B	12/19/2023	DESIGN DEVELOPMENT	RED WOLF
A	11/14/2023	SCHEMATIC DESIGN	RED WOLF

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE,
TOLEDO, OH 43614

DRAWING TITLE
PHASE 2 ONE-LINE DIAGRAM

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	RJC	12/19/23
CHECKED BY	ZAL	4/19/2024
DRAWN BY	RJC	12/19/23
PROJ. MGR.	SP	5/06/24
SCALE	N/A	

PROJECT NO. UOT23-001

DRAWING NO. E-2-004

REV D

3" 6" 9"
3"=1'-0" SCALE

1/2" 1" 1 1/2"
1-1/2"=1'-0" SCALE

1/2" 1" 2"
1"=1'-0" SCALE

1' 2' 3'
3/4"=1'-0" SCALE

1' 2' 4'
1/2"=1'-0" SCALE

2' 4' 6'
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2' 4' 8'
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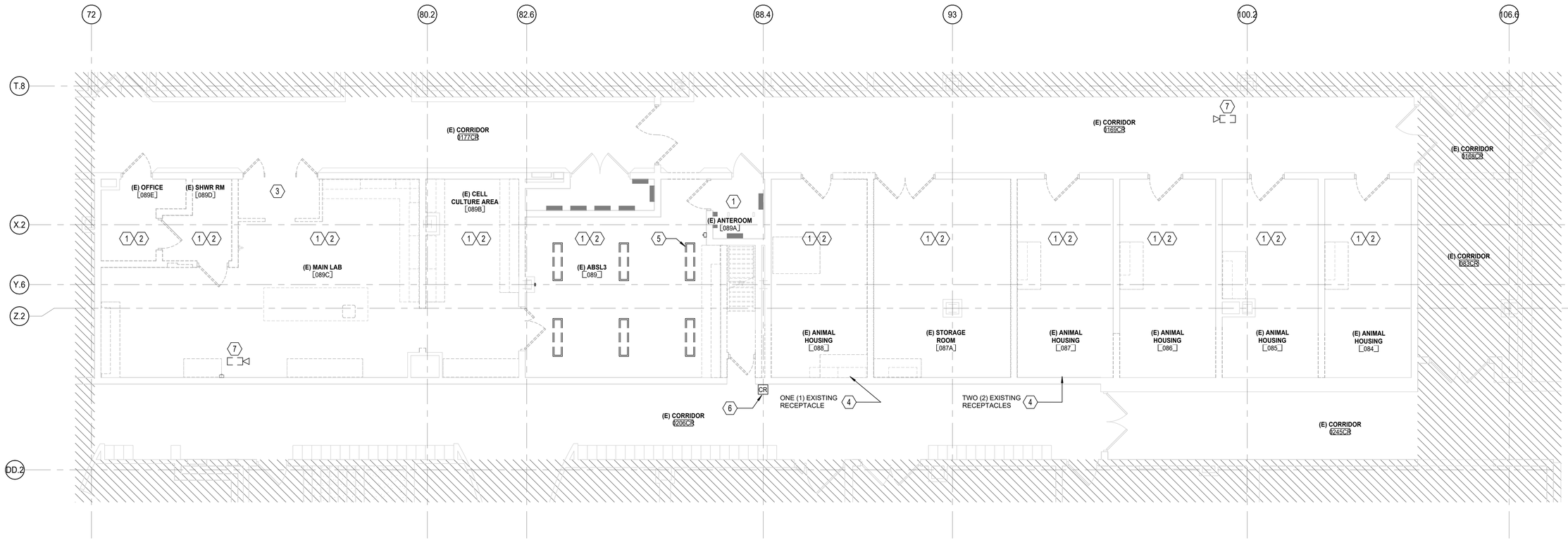
4' 8' 16'
1/8"=1'-0" SCALE

8' 16' 32'
1/16"=1'-0" SCALE



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PHASE TWO ELECTRICAL DEMOLITION PLAN

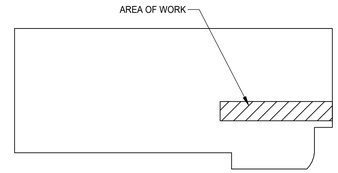
3/16" = 1'-0"

GENERAL DEMOLITION NOTES:

1. THE INTENT OF THIS DRAWING IS TO SHOW THE REMOVAL OF ALL EQUIPMENT, WIRING, RACEWAY, ETC., NO LONGER IN SERVICE AND NOT REQUIRED FOR THE ULTIMATE INSTALLATION WITHIN THE CONFINES OF THE PROPOSED WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INVESTIGATE THE SITE.
2. WHERE DEMOLITION OF EXISTING SYSTEMS OR EQUIPMENT CAUSES RELATED AND ANCILLARY DAMAGE TO OTHER ITEMS INCLUDING THE ADJACENT STRUCTURE, CEILING, OR FINISHES, THESE DAMAGED ITEMS SHALL BE FULLY REPAIRED OR REPLACED TO RETURN THE FACILITY TO THE CONDITIONS BEFORE THE DEMOLITION WORK.
3. DISCONNECT AND REMOVE ALL ASSOCIATED RACEWAY, CONDUCTORS, DEVICES, ETC., FOR EQUIPMENT/FIXTURES BEING REMOVED BACK TO SOURCE. REUSE EXISTING RACEWAY FOR NEW LIGHTS, RECEPTACLES, ETC., WHERE PRACTICAL.
4. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR ADDITIONAL EQUIPMENT AND LIGHTING TO BE REMOVED.
5. EXISTING AUXILIARY EQUIPMENT/DEVICES ON WALLS TO BE REMOVED MAY BE REQUIRED TO BE REINSTALLED IN NEW LOCATIONS. COORDINATE WITH OWNER'S REPRESENTATIVE TO IDENTIFY SPECIFIC EQUIPMENT/DEVICES TO BE REUSED.
6. DATA CABLING TO BE REMOVED. CABLING SHALL BE REROUTED TO NEW DEVICE LOCATIONS AS NECESSARY. SEE ET-2-101.
7. EXISTING WALL MOUNTED RECEPTACLES MAY BE UTILIZED IN PROPOSED LAYOUT. REFER TO GENERAL NOTE 14 ON EP-2-101.

DEMOLITION KEYNOTES:

1. DISCONNECT AND REMOVE EXISTING ELECTRICAL DEVICES FROM WALLS AFFECTED BY DEMOLITION. MAINTAIN CIRCUIT CONTINUITY TO REMAINING DEVICES.
2. DISCONNECT AND REMOVE ALL EXISTING LIGHT FIXTURES. TAG, COIL, AND PROTECT POWER CIRCUITS FOR REUSE AT NEW FIXTURES.
3. DISCONNECT, TAG, COIL, AND PROTECT AUTOCLAVE POWER CIRCUIT FOR REUSE. REMOVAL OF AUTOCLAVE BY OWNER.
4. DISCONNECT AND REMOVE/SALVAGE EXISTING SURFACE RECEPTACLE(S) ON SOUTH WALL. REWORK EXISTING SURFACE MOUNTED CONDUIT AND WIRE TO MAINTAIN CIRCUIT CONTINUITY TO REMAINING ELECTRICAL DEVICES.
5. SAVE ONE (1) LIGHT FIXTURE FOR REUSE IN STORAGE 090A. SEE EL-2-101 FOR NEW LOCATION.
6. DISCONNECT AND REMOVE EXISTING CARD READER, TO BE RETURNED TO OWNER
7. DISCONNECT AND REMOVE EXISTING CAMERA. SAVE FOR REINSTALLATION AT NEW LOCATION PER ET-2-201.



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
B	12/19/2023	DESIGN DEVELOPMENT	JDI
A	11/14/2023	SCHEMATIC DESIGN	JDI

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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE

PHASE TWO ELECTRICAL DEMO PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/06/2023
CHECKED BY	ZAL	04/26/2024
DRAWN BY	ZAL	11/06/2023
PROJ. MGR.	SP	05/06/2024
SCALE	3/16" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. ED-2-101

REV D

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0 3" 6" 9"
3"=1'-0" SCALE

0 1/2" 1" 1 1/2"
1-1/2"=1'-0" SCALE

0 1/2" 1" 2"
1"=1'-0" SCALE

0 1' 2' 3'
3/4"=1'-0" SCALE

0 1' 2' 4'
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0 2' 4' 6'
3/8"=1'-0" SCALE

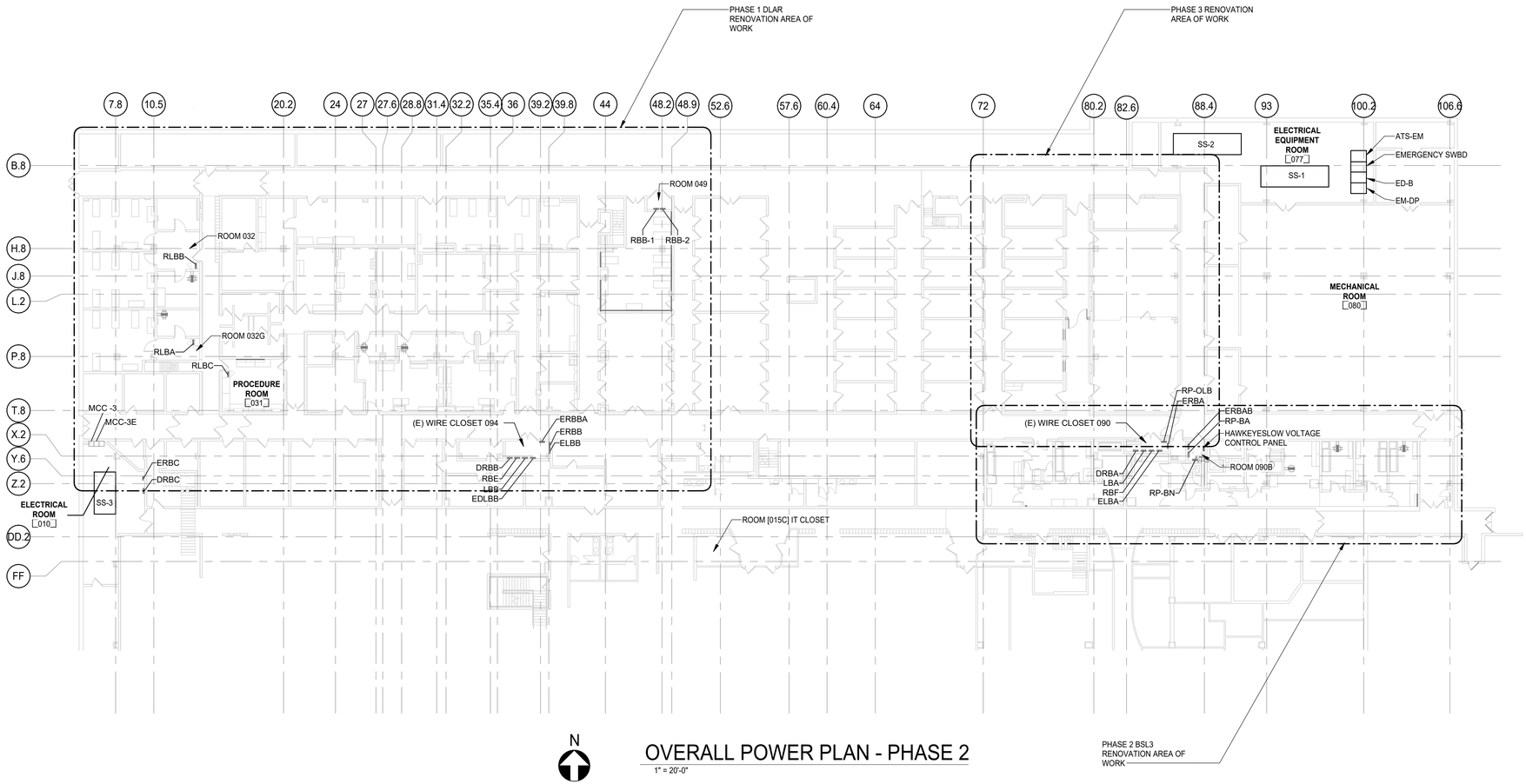
0 2' 4' 8'
1/4"=1'-0" SCALE

0 4' 8' 16'
1/8"=1'-0" SCALE

0 8' 16' 32'
1/16"=1'-0" SCALE

GENERAL NOTES:

1. SEE ONE LINE DIAGRAM ON E-004.



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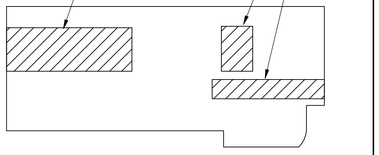
OVERALL POWER PLAN - PHASE 2

1" = 20'-0"



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
B	12/19/2023	DESIGN DEVELOPMENT	JDI
A	11/14/2023	SCHEMATIC DESIGN	JDI

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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE

PHASE TWO OVERALL ELECTRICAL PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/06/2023
CHECKED BY	ZAL	04/25/2024
DRAWN BY	ZAL	11/06/2023
PROJ. MGR.	SP	05/06/2024
SCALE	1" = 20'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. E-2-101

REV D

5/2/2024 4:17:59

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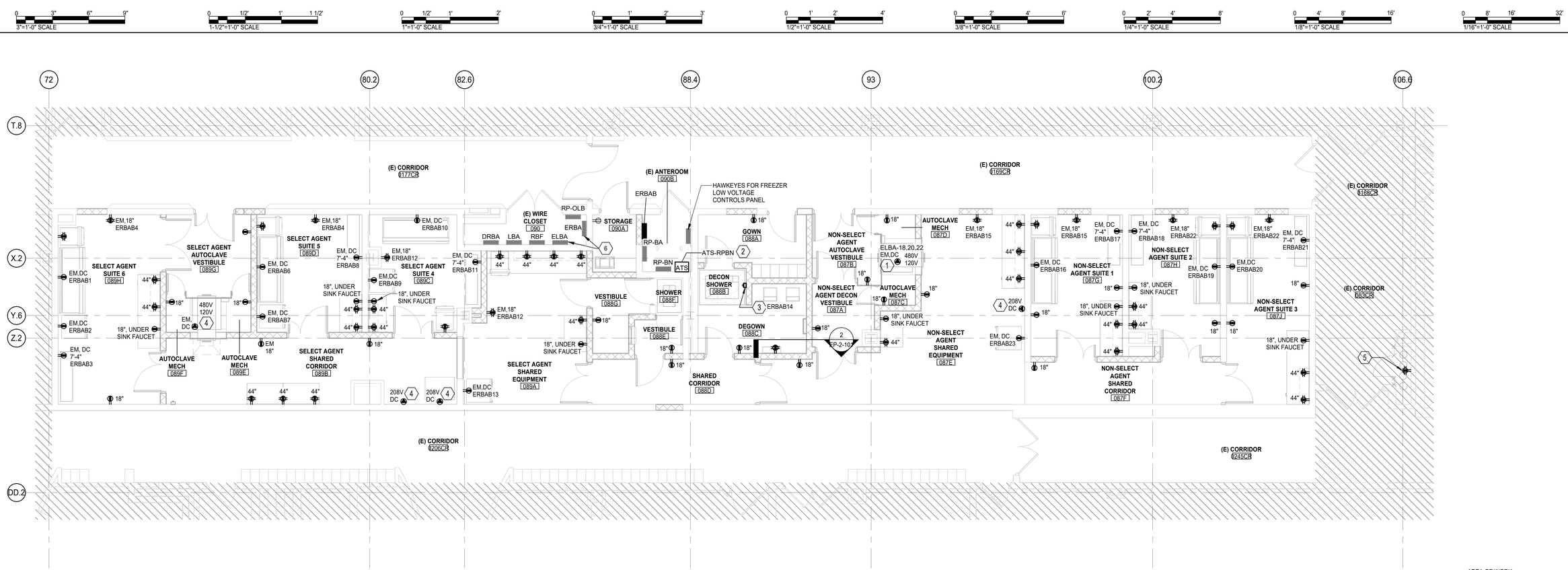

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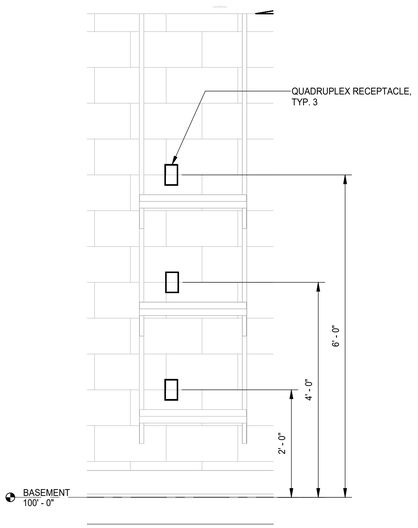
PHASE TWO POWER PLAN

3/16" = 1'-0"



2 EP-2-101 SHELF TRACK ELEVATION

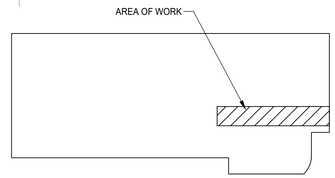
3/4" = 1'-0"

GENERAL NOTES:

1. CONDUIT SHALL BE MINIMUM 3/4" RIGID WITH THREADED FITTINGS UNLESS OTHERWISE NOTED. PROVIDE SEAL-OFF FITTING WHEN CONDUITS EXIT DEFINED BLS-3 PERIMETER.
2. GALVANIZED METAL IS NOT ACCEPTABLE.
3. E.C. SHALL PROVIDE POWER TO ALL OWNER PROVIDED EQUIPMENT. CONFIRM EQUIPMENT LOCATIONS, QUANTITIES, AND POWER REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN. SEE A-2-104 FOR EQUIPMENT PLAN.
4. ALL RECEPTACLES SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER.
5. "EM" DESIGNATION INDICATES DEVICE/FIXTURE TO BE ON EMERGENCY GENERATOR POWER PANEL. EM RECEPTACLES SHALL BE CIRCUITED AS SHOWN ON THIS SHEET.
6. EMERGENCY RECEPTACLES SHALL BE RED IN COLOR.
7. "DC" DESIGNATION INDICATED DEVICE/FIXTURE TO BE ON A DEDICATED ELECTRICAL CIRCUIT.
8. CONNECT NEW RECEPTACLES AND EQUIPMENT TO EXISTING PANEL CIRCUIT BREAKERS THAT WERE SPARED BY DEMOLITION ACTIVITIES. CONNECTIONS SHALL BE MADE IN SUCH A WAY AS TO NOT VIOLATE NEC RULES FOR PANEL CAPACITY, BRANCH CIRCUIT AND FEEDER SIZING, DIVERSITY LOADING, BREAKER RATINGS, CABLE AMPACITY, AND VOLTAGE DROP. CONTRACTOR SHALL REUSE EXISTING CONDUIT AS PRACTICAL. PROVIDE ADDITIONAL CIRCUIT BREAKERS AS REQUIRED TO MEET THE NEEDS OF ADDITIONAL DEVICES.
9. MAXIMUM OF SIX (6) DUPLEX RECEPTACLES OR THREE (3) QUADRUPLEX RECEPTACLES PER 20A, 120V CIRCUIT.
10. ALL BOXES SHALL BE DOUBLE GANG TYPE; THE BOX DEPTH SHALL BE AT LEAST THE NEXT SIZE LARGER THAN THE MINIMUM SIZE REQUIRED PER CODE.
11. PENETRATIONS THROUGH THE CONTAINMENT BARRIERS SHALL BE GAS-TIGHT, NON-POROUS, SMOOTH AND CLEANABLE; AND READILY VISIBLE FOR ROUTINE INSPECTION, CLEANING, AND MAINTENANCE. PENETRATING COMPONENTS SHALL BE SUFFICIENTLY RIGID IN CONSTRUCTION AND ADEQUATELY BRACED TO STRUCTURE TO MAINTAIN THE LONG-TERM INTEGRITY OF THE PENETRATION.
12. PROVIDE SILICON-BASED WHITE CAULK IN ALL AREAS. PROVIDE A 1 IN. BARRIER OF SILICONE CAULK AROUND THE WIRE WITHIN A DEVICE BOX HUB. PROVIDE A CONTINUOUS BEAD OF CAULK BETWEEN THE DEVICE BOX AND THE ADJACENT SURFACE. PROVIDE A CONTINUOUS BEAD OF CAULK AROUND THE DEVICE COVER PLATE AND THE ADJACENT SURFACE.
13. SEALANT TO BE TREMFLEX 834 OR EQUAL. COLOR TO BE WHITE.
14. EXISTING WALL RECEPTACLES WERE NOT TAKEN INTO CONSIDERATION FOR PROPOSED RECEPTACLE LAYOUT. UTILIZE EXISTING RECEPTACLE LOCATION IF WITHIN 12' LATERALLY FROM PROPOSED LOCATION.
15. NEW RECEPTACLES SHALL BE INSTALLED FLUSH WITH THE NEW WALLS AND SURFACE MOUNTED ON EXISTING WALLS.
16. SURFACE MOUNTED RECEPTACLES DESIGNATED TO BE MOUNTED AT THE SAME HEIGHT ALONG A WALL SHALL BE MOUNTED HORIZONTALLY. PROVIDE SURFACE MOUNTED CONDUIT BETWEEN DEVICES TO MINIMIZE PENETRATIONS THROUGH CONTAINMENT BARRIERS.
17. ALL NEW AND EXISTING RECEPTACLES SHALL BE GFCI, WITH WEATHERPROOF COVERS. IDENTIFIED EXISTING RECEPTACLES TO REMAIN, PER NEW PROPOSED LAYOUT, SHALL BE REPLACED WITH A GFCI RECEPTACLE OR GFCI PROTECTED CIRCUIT.
18. MAINTAIN ALL EXISTING RECEPTACLES IN CORRIDORS.

PLAN NOTES:

1. INSPECT AND EXTEND ORIGINAL AUTOCLAVE CIRCUIT. ROUTE POWER CONDUIT & CABLE FROM PANEL FOR EQUIPMENT UP AND THROUGH MEZZANINE. INSTALL NEW WIRING FROM EXISTING PANEL IF REQUIRED.
2. PROVIDE A 100A, 480V, 3-POLE, NEMA 1 AUTOMATIC TRANSFER SWITCH TO REPLACE EXISTING MANUAL TRANSFER SWITCH. EXTEND EXISTING CONDUITS AND WIRES TO AUTOMATIC TRANSFER SWITCH AS CONDITION ALLOWS.
3. PROVIDE A 20A, 120V DEDICATED CIRCUIT FROM EMERGENCY POWER PANEL FOR WALL MOUNTED EMERGENCY SHOWER (0.48A). LOCATE POWER CONNECTION BEHIND WALL OR BELOW UNIT. SEE DETAIL 5, DRAWING A-2-401.
4. CONFIRM POWER REQUIREMENTS PRIOR TO ROUGH-IN. REQUIRES EMERGENCY CIRCUIT, USE PANEL ERBAB IF 120/208V, USE PANEL ELBA IF 277/480V.
5. PROVIDE QUADRUPLEX RECEPTACLE FOR CO2 CYLINDERS.
6. EXISTING RUNNING LOAD OF PANEL MUST BE MEASURED PER THE INSTRUCTIONS ON ONE-LINE DRAWING E-2-004.



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
B	12/19/2023	DESIGN DEVELOPMENT	JDI
A	11/14/2023	SCHEMATIC DESIGN	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE
PHASE TWO POWER PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/06/2023
CHECKED BY	ZAL	04/26/2024
DRAWN BY	ZAL	11/06/2023
PROJ. MGR.	SP	05/06/2024
SCALE	As indicated	

JDI PROJECT NO. UOT23-001

DRAWING NO. EP-2-101

REV D

5/2/2024 13:08:58

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3"=1'-0" SCALE

0 1/2" 1" 1 1/2"
1-1/2"=1'-0" SCALE

0 1/2" 1" 2"
1"=1'-0" SCALE

0 1' 2' 3'
3/4"=1'-0" SCALE

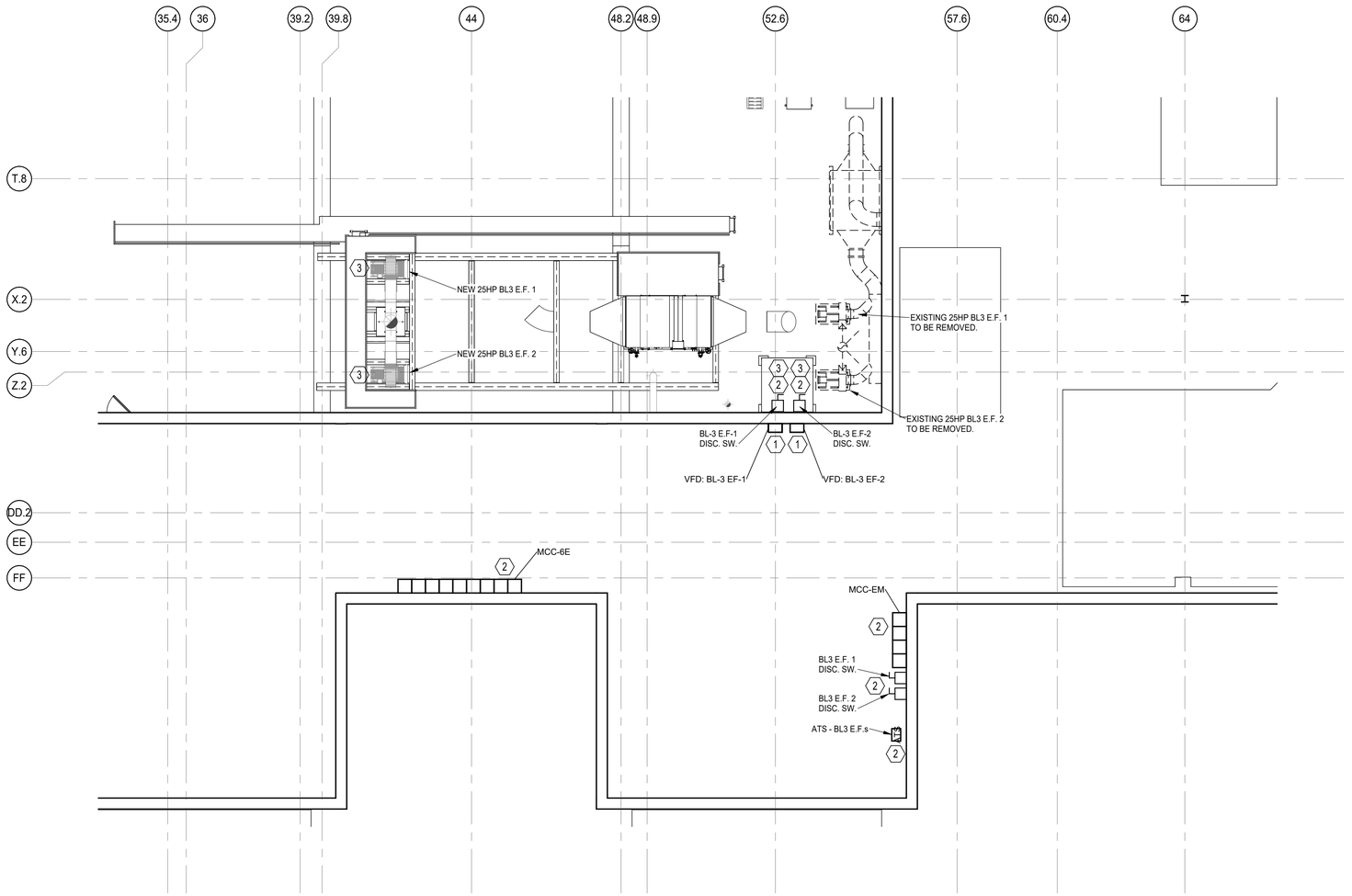
0 1' 2' 4'
1/2"=1'-0" SCALE

0 2' 4' 6'
3/8"=1'-0" SCALE

0 2' 4' 8'
1/4"=1'-0" SCALE

0 4' 8' 16'
1/8"=1'-0" SCALE

0 8' 16' 32'
1/16"=1'-0" SCALE



N

ELECTRICAL ROOF PLAN DEMO AND NEW BSL3 FANS

1/8" = 1'-0"

GENERAL NOTES:

1. ALL EQUIPMENT SHALL BE LABELED OR RE-LABELED APPROPRIATELY. THIS INCLUDES FEEDER CIRCUITS AT MCCs AND EXISTING EQUIPMENT AS NECESSARY. LABEL EQUIPMENT WITH FEEDER CIRCUIT INFORMATION.
2. EXISTING 25HP MOTORS ARE BEING REPLACED WITH NEW 25HP MOTORS, THEREFORE POWER REQUIREMENTS ARE ESSENTIALLY LIKE FOR LIKE.
3. REFER TO MECHANICAL SHEETS M-2-110 AND M-2-601 FOR MECHANICAL PLANS AND SEQUENCE OF EVENTS - FAN RUNNING PARAMETERS.
4. COORDINATE WITH MECHANICAL CONTRACTOR FOR FINAL POWER AND CONTROL INSTALLATION.

PLAN NOTES:

1. REUSE AND REPROGAM EXISTING ADJUSTABLE DRIVES BASED ON NEW FAN RUNNING PARAMETERS AND REQUIREMENTS, CONSULT WITH OWNER AND REFERENCE SHEET M-2-601. EXISTING ADJUSTABLE DRIVE MAKE AND MODEL ARE TOSHIBA H7, TYPE FORM VT130H7U4270 (27KVA, 25HP).
2. CONTRACTOR SHALL INSPECT AND REUSE EXISTING FAN DISCONNECTS, AUTOMATIC TRANSFER SWITCH, FEEDER CIRCUITS, CIRCUIT BREAKERS, FUSES, WIRING, AND CONDUIT TO FEED NEW 25HP FANS. IF EXISTING EQUIPMENT OR OTHER ELECTRICAL INSTALLATIONS ARE DEFICIENT, DISCUSS WITH OWNER AND ENGINEER FOR REPLACEMENT AS NEEDED.
3. INSTALL NEW CONDUIT AND WIRING (INCLUDING GROUND) TO NEW FAN LOCATIONS FROM EXISTING DISCONNECTS. CONDUIT SHALL BE RGS, AND WIRING SIZED PER EXISTING OVERLOAD PROTECTION DEVICE(S) AND PER THE NEC.

REV	DATE	DESCRIPTION	APPROVAL
B	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
A	04/19/2024	CONSTRUCTION DOCUMENTS	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE
PHASE TWO ELECTRICAL ROOF PLAN, DEMO AND NEW - BSL3 FANS

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	RJC	11/06/2023
CHECKED BY	ZAL	04/26/2024
DRAWN BY	RJC	11/06/2023
PROJ. MGR.	SP	05/06/2024
SCALE	1/8" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. EP-2-102

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5/2/2024 13:04:41

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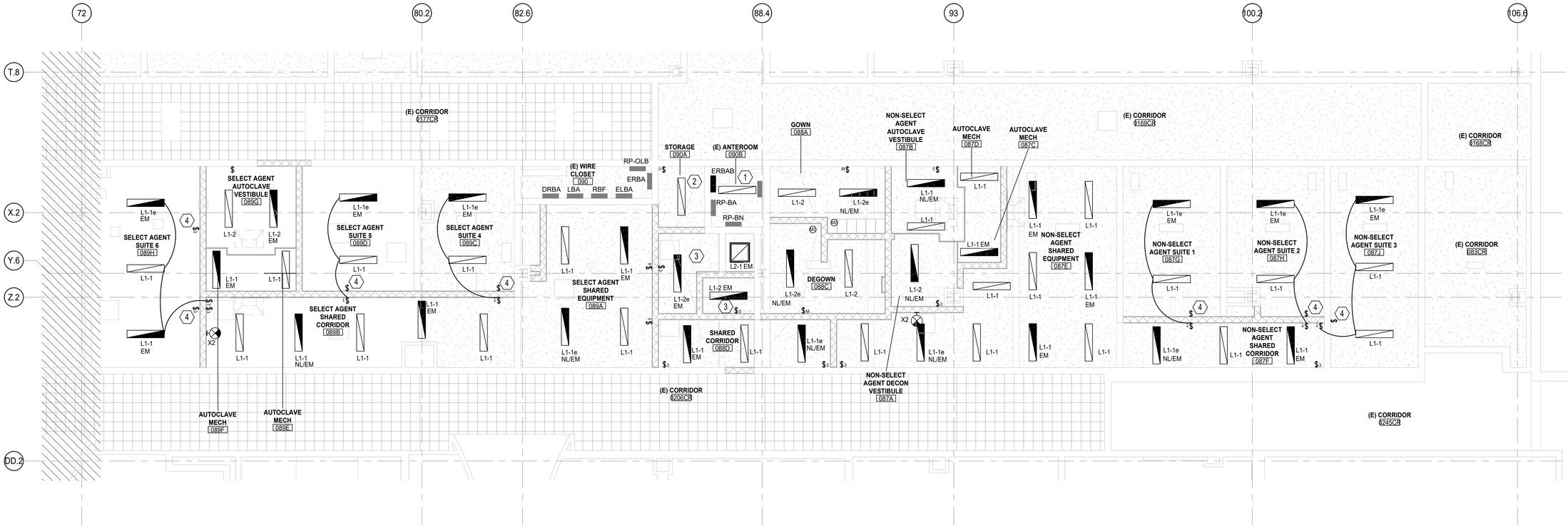
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1" 2" 3" — 3/4"=1'-0" SCALE
0 1" 2" 4" — 1/2"=1'-0" SCALE
0 2" 4" 6" — 3/8"=1'-0" SCALE
0 2" 4" 8" — 1/4"=1'-0" SCALE
0 4" 8" 16" — 1/8"=1'-0" SCALE
0 8" 16" 32" — 1/16"=1'-0" SCALE



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PHASE TWO LIGHTING PLAN

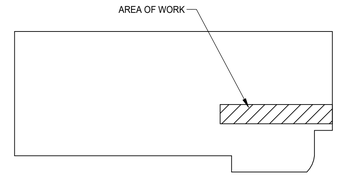
3/16" = 1'-0"

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE LIGHTING FIXTURE MOUNTING HEIGHTS AND LOCATIONS TO AVOID INTERFERENCES WITH OTHER TRADES AND OWNER FURNISHED EQUIPMENT.
2. PROVIDE DRYWALL FLANGES FOR FIXTURES IN ROOMS WITH GYPBOARD CEILINGS. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES.
3. PROVIDE LIGHTING CONTROLS IN COMMON SPACES INCLUDING ALL SENSORS, LOW VOLTAGE SWITCHES, POWER PACKS ETC., TO COMPLY WITH OHIO BUILDING CODE.
4. EXISTING EMERGENCY EXIT SIGNS SHALL REMAIN. INSPECT AND REPLACE IF NOT IN GOOD WORKING CONDITION.
5. EM - INDICATES EMERGENCY FIXTURE, FIXTURE SHALL BE CONNECTED TO EXISTING GENERATOR PANEL CIRCUIT.
6. NL/EM - INDICATES EMERGENCY/NIGHT LIGHT FIXTURE, FIXTURE SHALL BE CONNECTED TO EXISTING GENERATOR PANEL CIRCUIT AHEAD OF LOCAL SWITCHING.
7. EXTEND EXISTING LIGHTING POWER CIRCUITS SERVING THE AREA TO NEW LIGHT FIXTURES.
8. CONNECT NEW LIGHT FIXTURES TO EXISTING PANEL CIRCUIT BREAKERS THAT WERE SPARED BY DEMOLITION ACTIVITIES. CONNECTIONS SHALL BE MADE IN SUCH A WAY AS TO NOT VIOLATE NEW RULES FOR PANEL CAPACITY, BRANCH CIRCUIT AND FEEDER SIZING, DIVERSITY LOADING, BREAKER RATINGS, CABLE AMPACITY, AND VOLTAGE DROP. CONTRACTOR SHALL REUSE EXISTING CONDUIT AS PRACTICAL.
9. SEAL SURFACE MOUNTED FIXTURES WITH A CONTINUOUS BEAD OF SEALANT AROUND ITS PERIMETER TO SEAL HOUSING TO CEILING. LIGHT FIXTURES MUST HAVE A SEALED CONDUIT ENTRANCE TO HOUSING.

KEYNOTES:

1. EXISTING LIGHT FIXTURE AND LIGHTING CONTROL SHALL REMAIN. INSPECT AND PROVIDE NEW LENS AND LED BULBS IF REQUIRED.
2. REINSTALL LIGHT FIXTURE AND PROVIDE NEW SWITCH. EXTEND EXISTING ANTEROOM LIGHTING CIRCUIT FOR POWER TO NEW FIXTURE.
3. LIGHT SWITCHES INSTALLED IN CLOSE PROXIMITY TO SHOWERS SHALL BE PROVIDED WITH GASKETED AND WEATHERPROOF COVERS.
4. PROVIDE LOCAL SWITCH TO OVERRIDE TIMER CONTROL.



KEY PLAN

REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
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SEAL

PROJECT TITLE

HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE

PHASE TWO LIGHTING PLAN

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/09/2023
CHECKED BY	ZAL	04/26/2024
DRAWN BY	SA	11/09/2023
PROJ. MGR.	SP	05/06/2024
SCALE	3/16" = 1'-0"	

JDI PROJECT NO. UOT23-001

DRAWING NO. EL-2-101

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0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
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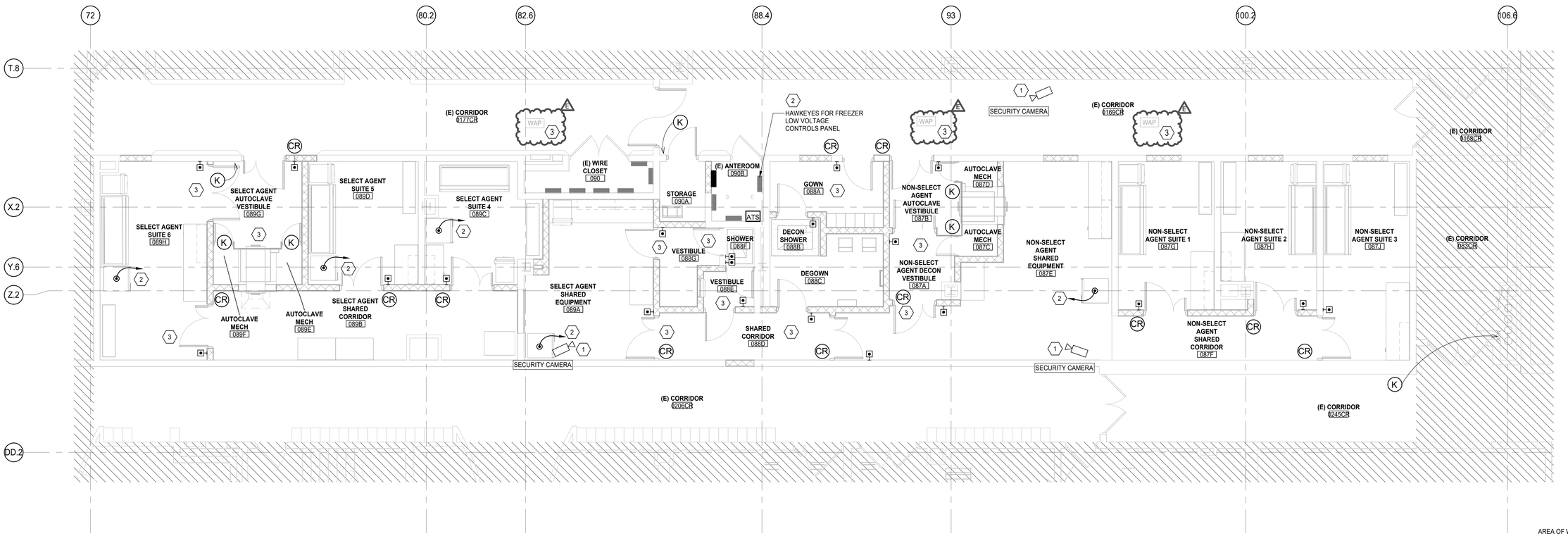

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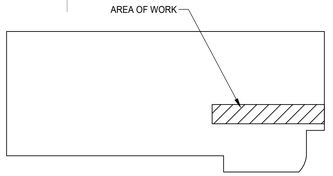
PHASE TWO SECURITY & LOW-VOLTAGE PLAN

3/16" = 1'-0"



KEY PLAN

GENERAL NOTES:

1. CONDUIT SHALL BE MINIMUM 1" RIGID WITH THREADED FITTINGS UNLESS OTHERWISE NOTED. PROVIDE SEAL-OFF FITTING WHEN CONDUITS EXIT DEFINED BLS-3 PERIMETER.
2. ALL BOXES SHALL BE DOUBLE GANG TYPE; THE BOX DEPTH SHALL BE AT LEAST THE NEXT SIZE LARGER THAN THE MINIMUM SIZE REQUIRED PER CODE.
3. PENETRATIONS THROUGH THE CONTAINMENT BARRIERS SHALL BE GAS-TIGHT, NON-POROUS, SMOOTH AND CLEANABLE; AND READILY VISIBLE FOR ROUTINE INSPECTION, CLEANING, AND MAINTENANCE. PENETRATING COMPONENTS SHALL BE SUFFICIENTLY RIGID IN CONSTRUCTION AND ADEQUATELY BRACED TO STRUCTURE TO MAINTAIN THE LONG-TERM INTEGRITY OF THE PENETRATION.
4. PROVIDE SILICON-BASED WHITE CAULK IN ALL AREAS. PROVIDE A 1 IN. BARRIER OF SILICONE CAULK AROUND THE WIRE WITHIN A DEVICE BOX HUB. PROVIDE A CONTINUOUS BEAD OF CAULK BETWEEN THE DEVICE BOX AND THE ADJACENT SURFACE. PROVIDE A CONTINUOUS BEAD OF CAULK AROUND THE DEVICE COVER PLATE AND THE ADJACENT SURFACE.
5. SEALANT TO BE TREMFLEX 834 OR EQUAL. COLOR TO BE WHITE.
6. REFER TO E-101 OVERALL ELECTRICAL PLAN FOR LOCATION OF 015C IT CLOSET.
7. CONTRACTOR TO PROVIDE RACEWAY AND PULL CORD. CAT6 CABLING BY OWNER.
8. CONTRACTOR SHALL COORDINATE AND SUBCONTRACT WITH OWNER REPRESENTATIVES ASSET PROTECTION CO OR WILLIAMS ELECTRONICS FOR DOOR CARD READERS AND DOOR SECURITY ITEMS.

PLAN NOTES:

1. REINSTALL/INSTALL CAMERA. EXTEND DATA CABLING (CAT6) BACK TO IT CLOSET, AND MAKE FINAL CONNECTIONS. SUPPLY PORT ID AND MAC ADRESS TO OWNER IT DEPARTMENT. CONTRACTOR TO SUPPLY AND MOUNT CAMERA. CAMERA SHALL BE BRAND "AXIS COMMUNICATIONS", MODEL P3818-PVE OR P5676-LE PTZ. (VERIFY WITH OWNER BEFORE ORDERING). CAMERA IN ROOM 087E IS NEW.
2. CONNECT ULTRA LOW FREEZERS TO HAWKEYES CONTROL PANEL. COORDINATE WITH OWNER FOR ALARM MONITORING CONNECTIONS.
3. INTERLOCKED DOORS - REFER TO ARCH DWG A-2-601 FOR INTERLOCKED DOOR SCHEDULE. REFER TO ARCH DWGS A-2-101 AND A-2-102 FOR DOOR NUMBERING SYSTEM.
3 EXISTING WIRELESS ACCESS POINT TO REMAIN. E

SYMBOL LEGEND:

= "PUSH TO EXIT" DOOR RELEASE (DOOR RELEASES IN SHOWERS SHALL BE WEATHER PROOF)

K = KEYLOCK

CR = CARD READER AND KEYPAD (SURFACE MOUNTED) REFER TO DWG A-2-601, SEE HARDWARE NOTE 8

REV	DATE	DESCRIPTION	APPROVAL
E	05/16/2024	ADDENDUM 1	JDI
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
B	12/19/2023	DESIGN DEVELOPMENT	JDI
A	11/14/2023	SCHEMATIC DESIGN	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE: PHASE TWO SECURITY & LOW-VOLTAGE PLAN

UOT PROJECT NO.: 5003-23-1915

DESIGNED BY	RJC	11/10/2023
CHECKED BY	ZAL	04/28/2024
DRAWN BY	RJC	11/10/2023
PROJ. MGR.	SP	05/06/2024
SCALE	3/16" = 1'-0"	

JDI PROJECT NO.: UOT23-001

DRAWING NO.: ET-2-101

REV.: E

5/14/2024 16:09:15

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0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
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0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE

PANEL DESIGNATION: DRBA

LOCATION: WIRE CLOSET 90 | MAIN BKR: 250 A | NEUTRAL: 100.00%
FED FROM: | MOUNTING TYPE: SURFACE | BUS: 400 A | PIPE RATING:
SERVICE VOLTS: 120/208 Wye-3PH-4W | SPECIAL: | A.I.C. | ENCLOSURE: NEMA 1

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	SPACE	3	--		--			0				125 A	3	PANEL RBF	2	CIRCUIT IS A 3-POLE BREAKER LABELED AS #1 IN PANEL
--	3	--	--	--			--			0			--	--	--	4	--
--	5	--	--	--				--			0		--	--	--	6	--
	7	SPACE	3	--		--			--				--	3	SPACE	8	
--	9	--	--	--			--			--			--	--	--	10	--
--	11	--	--	--				--			--		--	--	--	12	--
CIRCUIT IS ON A 3-POLE BREAKER LABELED AS #4 IN PANEL	13	BUS DUCT SOUTH	3	100 A		0			0				100 A	3	BUS DUCT NORTH	14	CIRCUIT IS ON A 3-POLE BREAKER LABELED AS #5 IN PANEL
--	15	--	--	--			0			0			--	--	--	16	--
--	17	--	--	--				0			0		--	--	--	18	--
CIRCUIT IS ON A 3-POLE BREAKER LABELED AS #6 IN PANEL	19	PANEL RBN	3	100 A		0			--				--	3	SPACE	20	
--	21	--	--	--			0			--			--	--	--	22	--
--	23	--	--	--				0			--		--	--	--	24	--

PHASE A TOTAL VA = 0 | PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 | PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 | PHASE C TOTAL AMPS= 0 A
TOTAL CONNECTED VA = 0 W | TOTAL CONNECTED AMPS = 0 A

PANEL DESIGNATION: LBA

LOCATION: WIRE CLOSET 90 | MAIN BKR: MLO | NEUTRAL: 100.00%
FED FROM: | MOUNTING TYPE: SURFACE | BUS: 100 A | PIPE RATING:
SERVICE VOLTS: 480/277 Wye-3PH-4W | SPECIAL: | A.I.C. | ENCLOSURE: NEMA 1

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	LIGHTS ROOM 153 A THRU F	1	20 A		0			0				20 A	1	LIGHTS ROOM 158 A THRU F	2	
	3	LIGHTS ROOM 165	1	20 A			0			0			20 A	1	LIGHTS ROOMS 160, 161, 162	4	
	5	LIGHTS ROOMS 246, 247, 248, 249, AQS STOPLIGHT	1	20 A				0			0		20 A	1	LIGHTS ROOMS 178, 180, 172, 244	6	CIRCUIT IN AREA OF NEW PROPOSED RMS [089D], [086A], [087]
	7	LIGHTS ROOMS 246, 243	1	20 A		0			0				20 A	1	LIGHTS ROOMS 241, 242, 240, 83-87	8	
	9	LIGHTS ROOM 246	1	20 A			0			0			20 A	1	LIGHTS ROOMS 241, 242, 240	10	
	11	LIGHTS ROOM 246	1	20 A				0			0		20 A	1	LIGHTS ROOMS 171 A THRU D	12	CIRCUIT IN AREA OF NEW PROPOSED RMS [084], [085], [086], [087A]
CIRCUIT IN AREA OF NEW PROPOSED RMS [087]	13	HEATER ROOM 173	1	20 A		0			0				20 A	1	LIGHTS ROOM 175, RM 89	14	CIRCUIT IN AREA OF NEW PROPOSED RMS [089]
CIRCUIT IN AREA OF NEW PROPOSED RMS [087]	15	HEATER ROOM 173	1	20 A			0			0			20 A	1	LIGHTS ROOMS 156, 159, 163, 169, HALL	16	CIRCUIT IN AREA OF NEW PROPOSED CORRIDORS [0245CR], [0169CR]
CIRCUIT IN AREA OF NEW PROPOSED RMS [087]	17	HEATER ROOM 173	1	20 A				0			0		20 A	1	SPARE	18	
	19	DOCK LIGHTS (BACK 4 LIGHTS)	1	20 A		0			0				20 A	1	SPARE	20	
	21	LIGHTS ROOM 168, HEB MECH ROOM LIGHTS	1	20 A			0			0			20 A	3	HEALTH ED DOCK OVERHEARD DOOR 2019	22	
	23	CONTACTOR	3	20 A				0			0		--	--	--	24	--
--	25	--	--	--		0			0				--	--	--	26	--
--	27	--	--	--			0			--			--	1	SPACE	28	
	29	SPACE	1	--				--			--		--	1	SPACE	30	
	31	SPACE	1	--		--			--				--	1	SPACE	32	
	33	SPACE	1	--			--			--			--	1	SPACE	34	
	35	SPACE	1	--				--			--		--	1	SPACE	36	

PHASE A TOTAL VA = 0 | PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 | PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 | PHASE C TOTAL AMPS= 0 A
TOTAL CONNECTED VA = 0 W | TOTAL CONNECTED AMPS = 0 A

GENERAL NOTES:

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REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
B	12/19/2023	DESIGN DEVELOPMENT	JDI
A	11/14/2023	SCHEMATIC DESIGN	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE
PANEL SCHEDULES ROOM 90

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/06/2023
CHECKED BY	ZAL	04/25/2024
DRAWN BY	ZAL	11/06/2023
PROJ. MGR.	SP	05/06/2024

SCALE

JDI PROJECT NO. UOT23-001

DRAWING NO. E-2-601

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3"=1'-0" SCALE | 1-1/2"=1'-0" SCALE | 1"=1'-0" SCALE | 3/4"=1'-0" SCALE | 1/2"=1'-0" SCALE | 3/8"=1'-0" SCALE | 1/4"=1'-0" SCALE | 1/8"=1'-0" SCALE | 1/16"=1'-0" SCALE

PANEL DESIGNATION: RBF

LOCATION: WIRE CLOSET 90 | MAIN BKR: MLO | NEUTRAL: 100.00%
FED FROM: | MOUNTING TYPE: SURFACE | BUS: 225A | PIPE RATING:
SERVICE VOLTS: 120/208 Wye-3PH-4W | SPECIAL: | A.I.C. | ENCLOSURE:

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	110V, RECEPT. ROOMS 153, 158, A TO F	1	20 A		0			0				20 A	1	110V. RECEPT. ROOMS 242 249 250	2	
	3	110V. RECEPT. ROOMS 152 158, A TO F	1	20 A			0			0			20 A	1	110V. RECEPT. ROOM 171 A TO D	4	CIRCUIT IN AREA OF NEW PROPOSED RMS [084], [085], [086], [087C]
	5	110V RECEPT. ROOM 81 CAGE WASH	1	20 A				0			0		30 A	2	208V REC IN BL3 ANIMAL ROOM	6	CIRCUIT POSSIBLY IN AREA OF NEW PROPOSED RM [088B]
CIRCUIT IN AREA OF NEW PROPOSED ROOMS [089D]	7	110V. RECEPT. ROOMS 178, 179	1	20 A		0			0				--	--	--	8	--
	9	110V. RECEPT. HALL 169	1	20 A			0			0			20 A	1	110V. RECEPT. ROOM 246 TUNNEL LIGHTS HS-DH	10	
	11	110V. RECEPT. ROOM 179	1	20 A				0			0		20 A	1	110V. RECEPT. LOCK SHOP	12	
	13	110V. RECEPT. ROOM 179	1	20 A		0			0				20 A	1	110V. RECEPT. ROOM 179, 180, 182	14	
CIRCUIT IN AREA OF RM [090], PROPOSED [089]	15	110V. RECEPT. ROOMS 185, 177A	1	20 A			0			0			20 A	1	110V. RECEPT. ROOMS 182, 183	16	
	17	110V. RECEPT. MEZZ.	1	20 A				0			0		20 A	1	110V. RECEPT. ROOMS 183, 188	18	
CIRCUIT IN AREA OF NEW PROPOSED RMS [089D]	19	PUMP #10 ROOM 178	1	20 A		0			0				20 A	1	REC IN BL3 SHOWER ROOM	20	CIRCUIT IN AREA OF NEW PROPOSED RM [089D]
	21	110V. RECEPT. HALL 177	1	20 A			0			0			20 A	1	UNIT HEATER/POWER DOOR	22	
	23	110V. RECEPT. HALL 169	1	20 A				0			0		20 A	1	UNIT HEATER #1 HALL 252 DOCK UNIT HEATER	24	
	25	110V. RECEPT. CLEANING HALL 245	1	20 A		0			0				20 A	1	UNIT HEATER #2 ROOM 249	26	
	27	110V. RECEPT. HALL 252	1	20 A			0			0			20 A	1	110V. RECEPT. MEZZ	28	
	29	DISPOSAL ROOM 179	1	20 A				0			0		20 A	1	110V. RECEPT HALL 245	30	
	31	UNIT HEATER #5 HALL 252. DOCK UNIT HEATER	1	20 A		0			0				20 A	1	110V. PEED JOHNSON CONTROL	32	
	33	220V. RECEPT. CLEANING	2	20 A			0			0			20 A	1	110V. RECEPT. ROOM 177A	34	
--	35	--	--	--				0			0		20 A	1	DISPOSAL ROOM 166	36	

PHASE A TOTAL VA = 0 | PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 | PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 | PHASE C TOTAL AMPS= 0 A
TOTAL CONNECTED VA = 0 W | TOTAL CONNECTED AMPS = 0 A

PANEL DESIGNATION: ELBA

LOCATION: WIRE CLOSET 90 | MAIN BKR: MLO | NEUTRAL: 100.00%
FED FROM: | MOUNTING TYPE: SURFACE | BUS: 100A | PIPE RATING:
SERVICE VOLTS: 480/277 Wye-3PH-4W | SPECIAL: EMERGENCY FED | A.I.C. | ENCLOSURE:

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	EXISTING UNKNOWN LOAD	1	20 A		0			0				20 A	1	LIGHTS ROOM 179	2	CIRCUIT POTENTIALLY IN AREA OF NEW PROPOSED RM [089D], [088B], [089C]
	3	SPARE	1	20 A			0			0			20 A	1	EMERGENCY LIGHTS P-3 LAB	4	
	5	LIGHTS ROOM 167 AND 167A	1	20 A				0			0		20 A	1	LIGHTS D-LAR HALLWAYS EAST/HEB DOCK AREA	6	
	7	EXISTING UNKNOWN LOAD	1	20 A		0			0				20 A	1	LIGHTS ROOM 160A	8	
	9	LIGHTS MEZZ	1	20 A			0			0			20 A	1	LIGHTS ROOM 164A	10	
	11	EXISTING UNKNOWN LOAD	1	20 A				0			0		20 A	1	LIGHTS ROOM 164A	12	
	13	EXISTING UNKNOWN LOAD	1	20 A		0			0				20 A	1	SPARE	14	
	15	EXISTING UNKNOWN LOAD	1	20 A			0			0			20 A	1	LIGHTGS ROOM 168/HEB MECHANICAL ROOM LIGHTS	16	
	17	TRANSFORMER FOR PANEL ERBA	3	40 A				0			0		60 A	3	AUTOCLAVE	18	REUSE CIRCUIT FOR RELOCATED AUTOCALVE IN PROPOSED RM [089F]
--	19	--	--	--		0			0				--	--	--	20	--
--	21	--	--	--			0			0			--	--	--	22	--
	23	SPACE	1	--				--			--		--	1	SPACE	24	
	25	SPACE	1	--		--			--				--	1	SPACE	26	
	27	SPACE	1	--			--			--			--	1	SPACE	28	

PHASE A TOTAL VA = 0 | PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 | PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 | PHASE C TOTAL AMPS= 0 A
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REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE
PANEL SCHEDULES ROOM 90

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/06/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	ZAL	04/25/2024	
DRAWN BY	ZAL	11/06/2023	DRAWING NO. E-2-602
PROJ. MGR.	SP	05/06/2024	REV D
SCALE			

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PANEL DESIGNATION: ERBA

LOCATION: WIRE CLOSET 90 | MAIN BKR: MLO | NEUTRAL: 100.00%
FED FROM: | MOUNTING TYPE: SURFACE | BUS: 100 A | PIPE RATING:
SERVICE VOLTS: 120/208 Wye-3PH-4W | SPECIAL: EMERGENCY FED | A.I.C. | ENCLOSURE: NEMA 1

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	SPACE	1	--		--			--				--	1	SPACE	2	
	3	SPACE	1	--			--			--			--	1	SPACE	4	
	5	SPACE	1	--				--			--		--	1	SPACE	6	
	7	ENG OFFICE UPS	3	100 A		0			0				60 A	3	PANEL ERBA-2	8	
--	9	--	--	--			0			0			--	--	--	10	--
--	11	--	--	--				0			0		--	--	--	12	--
	13	EXISITING UNKOWN LOAD	1	20 A		0			0				20 A	1	110V. RECEPT RM 166/AUTOCLAVE	14	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #8 IN PANEL
	15	EXISITING UNKOWN LOAD	1	20 A			0			0			20 A	1	LIGHTS TUNNEL	16	
	17	EXISITING UNKOWN LOAD	1	20 A				0			0		20 A	1	LIGHTS ROOM 89	18	CIRCUIT IN AREA OF NEW PROPOSED RMS [089]
CIRCUIT IS A DOUBLE POLE BREAKER LABELED AS #21 IN PANEL	19	EXISITING UNKNOWN LOAD	2	30 A		0			0				20 A	1	110V FEED TO SIMPLEX TRANSMITTER	20	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #14 IN PANEL
--	21	--	--	--			0			0			20 A	1	110V. RECEPT. ROOM 166	22	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #16 IN PANEL
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #11 IN PANEL	23	4BRS N. WALL CENTRAL CONTROL 080A	1	20 A				0			0		20 A	1	CLOCKS	24	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #18 IN PANEL
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #13 IN PANEL	25	FIRE ALARM & 2 BPS W. WALL CENTRAL CONTROL 080A	1	20 A		0			0				20 A	1	LIGHTS COLD ROOM 181/ LOADING DOCK CAMERA	26	
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #15 IN PANEL	27	110V. RECEPT. ROOM 167A	1	20 A			0			0			20 A	1	DISPOSAL ROOM AND DISHWASHER ROOM 166	28	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #22 IN PANEL
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #17 IN PANEL	29	110V. RECEPT. LOADING DOCK	1	20 A				0			0		20 A	1	EXISTING UNKNOWN LOAD	30	
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #19 IN PANEL	31	DATA GATHERING PANEL RM 168; BLDG 3 BASEMENT	1	20 A		0			0				20 A	1	DATA GATHERING PANEL RM 157	32	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #26 IN PANEL
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #21 IN PANEL	33	DATA GATHERING PANEL RM 168; BLDG 3 BASEMENT	1	20 A			0			0			20 A	1	DUTY CYCLE (HONEYWELL)	34	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #28 IN PANEL
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #23 IN PANEL	35	DATA GATHERING PANEL RM 168; BLDG 3 BASEMENT	1	20 A				0			0		20 A	1	DATA GATHERING PANEL ROOM 167A	36	
CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #25 IN PANEL	37	COLD ROOM COMPRESSOR ROOM 181	3	30 A		0			0				20 A	1	EXISTING UNKNOWN LOAD	38	
--	39	--	--	--			0			0			20 A	1	EXISTING UNKNOWN LOAD	40	
--	41	--	--	--				0			0		20 A	1	EXISTING UNKNOWN LOAD	42	

PHASE A TOTAL VA = 0 | PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 | PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 | PHASE C TOTAL AMPS= 0 A
TOTAL CONNECTED VA = 0 W | TOTAL CONNECTED AMPS = 0 A

PANEL DESIGNATION: RP-OLB

LOCATION: WIRE CLOSET 90 | MAIN BKR: 100 A | NEUTRAL: 100.00%
FED FROM: | MOUNTING TYPE: SURFACE | BUS: 100 A | PIPE RATING:
SERVICE VOLTS: 120/208 Wye-3PH-4W | SPECIAL: | A.I.C. | ENCLOSURE: NEMA 1

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	110V RECEP	1	20 A		0			0				20 A	1	RECEP ROOOM 88	2	
	3	110V RED RECEP; ENGINEERS & OFFICE AREA	1	20 A			0			0			20 A	1	SPARE	4	CIRCUIT IS A SINGLE POLE BREAKER LABELED AS #8 IN PANEL
	5	RECEP RMS 170, 174	1	20 A				0			0		20 A	1	RECEP ROOM 85	6	
	7	RECEP ROOM 167	1	20 A		0			--				--	1	SPACE	8	
	9	110V RECEP ROOM 167	1	20 A			0			0			20 A	1	PLUG MOLD ROOM 166	10	
	11	ROOMS 62, 64 FEEDERS	1	20 A				0			0		20 A	1	RECEP ROOM 166	12	
	13	ROOMS 66,68 FEEDERS	1	20 A		0			0				20 A	1	RECEP ROOM 166	14	
	15	ROOMS 70,72 FEEDERS	1	20 A			0			0			20 A	1	ROOMS 67,69 FEEDERS	16	
CIRCUIT IS A 2-POLE CIRCUIT BREAKER LABELED AS #22 IN PANEL	17	LOADING DOCK GFI	2	20 A				0			0		20 A	1	ROOM 71 FEEDERS	18	
--	19	--	--	--		0			0				20 A	1	ROOM 73 FEEDERS	20	
	21	UNKNOWN EXISTING CIRCUIT	2	15 A			0			--			--	1	SPACE	22	
--	23	--	--	--				0			0		30 A	2	UNKNOWN EXISTING LOAD	24	CIRCUIT IS A 2-POLE BREAKER LABELED #25 IN PANEL
	25	SPACE	1	--		--			0				--	--	--	26	--
	27	SPACE	1	--			--			--			--	1	SPACE	28	
	29	SPACE	1	--				--			--		--	1	SPACE	30	
	31	SPACE	1	--		--			--				--	1	SPACE	32	

PHASE A TOTAL VA = 0 | PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 | PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 | PHASE C TOTAL AMPS= 0 A
TOTAL CONNECTED VA = 0 W | TOTAL CONNECTED AMPS = 0 A

FOR REFERENCE ONLY
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D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
B	12/19/2023	DESIGN DEVELOPMENT	JDI
A	11/14/2023	SCHEMATIC DESIGN	JDI

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SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE
PANEL SCHEDULES ROOM 90

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/06/2023
CHECKED BY	ZAL	04/25/2024
DRAWN BY	ZAL	11/06/2023
PROJ. MGR.	SP	05/06/2024

JDI PROJECT NO. UOT23-001
DRAWING NO. E-2-603
REV D
SCALE

5/2/2024 13:04:13
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0 3" 6" 9" — 3"=1'-0" SCALE
0 1/2" 1" 1 1/2" — 1-1/2"=1'-0" SCALE
0 1/2" 1" 2" — 1"=1'-0" SCALE
0 1' 2' 3' — 3/4"=1'-0" SCALE
0 1' 2' 4' — 1/2"=1'-0" SCALE
0 2' 4' 6' — 3/8"=1'-0" SCALE
0 2' 4' 8' — 1/4"=1'-0" SCALE
0 4' 8' 16' — 1/8"=1'-0" SCALE
0 8' 16' 32' — 1/16"=1'-0" SCALE

PANEL DESIGNATION: RP-BA

LOCATION: ANTEROOM 90B — MAIN BKR: MLO — NEUTRAL: 100.00%
FED FROM: RP-BN — MOUNTING TYPE: SURFACE — BUS: 125 A — PIPE RATING:
SERVICE VOLTS: 120/208 Wye-3PH-4W — SPECIAL: — A.I.C. — ENCLOSURE: NEMA 1

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	BIO SAFETY CABINET BAKER	1	20 A		0			0				20 A	1	WIREMOLD OUTLETS, ROOM 104	2	
	3	BIO SAFETY CABINET BAKER	1	20 A			0			0			20 A	1	WIREMOLD OUTLETS, ROOM 104	4	
	5	UTILITY COLUMN OUTLETS ROOM 105	1	20 A				0			0		20 A	1	WIREMOLD OUTLETS, ROOM 104	6	
	7	VESTIBULE 106 OUTLET	1	20 A		0			0				20 A	1	WIREMOLD OUTLETS, ROOM 105	8	
	9	ROOM 105 LIGHTING & OUTLET	1	20 A			0			0			20 A	1	WIREMOLD OUTLETS, ROOM 105	10	
	11	WIREMOLD OUTLETS, ROOM 104	1	20 A				0			0		20 A	1	WIREMOLD OUTLETS, ROOM 105	12	
	13	WIREMOLD OUTLETS, ROOM 104	1	20 A		0			0				20 A	1	REC - BL3 SHOWER ROOM	14	CIRCUIT IN AREA OF NEW PROPOSED RM [089D]
	15	EXISTING LOAD UNKNOWN	1	20 A			0			0			20 A	3	EXISTING LOAD UNKNOWN	16	
	17	SPACE	1	--				--			0		--	--	--	18	--
	19	SPACE	1	--		--			0				--	--	--	20	--
	21	SPACE	1	--			--			--			--	1	SPACE	22	
	23	SPACE	1	--				--			--		--	1	SPACE	24	

PHASE A TOTAL VA = 0 — PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 — PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 — PHASE C TOTAL AMPS= 0 A
TOTAL CONNECTED VA = 0 W — TOTAL CONNECTED AMPS = 0 A

PANEL DESIGNATION: RP-BN

LOCATION: ANTEROOM 90B — MAIN BKR: 100 A — NEUTRAL: 100.00%
FED FROM: — MOUNTING TYPE: SURFACE — BUS: 250 A — PIPE RATING:
SERVICE VOLTS: 120/208 Wye-3PH-4W — SPECIAL: EMERGENCY FED — A.I.C. — ENCLOSURE: NEMA 1

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	OUTLETS-ANIMAL HOLDING	1	20 A		0			0				20 A	1	DROP OUTLETS/ ANIMAL HOLDING	2	
	3	3 OUTLETS/E. & N. COUNTER	1	20 A			0			0			20 A	1	LIGHTING ANIMAL HOLDING	4	
	5	LUMINAR FLOW HOOD	1	20 A				0			0		20 A	1	STERILIZER	6	
	7	SORVALL RF-1 RIBI CELL FRACTIONATOR	2	20 A		0			0				20 A	1	ROTO VAP CONCENTRATOR	8	
--	9	--	--	--			0			0			20 A	1	LYOPHILIZER (FREEZE DRYER)	10	
	11	BENCH TOP INCUBATOR SHAKER	1	20 A				0			0		20 A	1	COUNTER PLUG SOUTH	12	
	13	REFRIGERATOR	1	20 A		0			0				30 A	2	HIGH SPEED CENTRIFUGE	14	
	15	STATIC INCUBATOR	1	20 A			0			0			--	--	--	16	--
	17	BIO HOOD	1	20 A				0			0		20 A	1	OUTLETS ENTRY WAY	18	
	19	STATIC INCUBATOR A	1	20 A		0			0				20 A	1	INCUBATOR SHAKER	20	
	21	REVCO	2	20 A			0			0			20 A	1	GFIs ISLAND COUNTER	22	
--	23	--	--	--				0			0		20 A	1	ICE MACHINE	24	
	25	RP-BA	3	60 A		0			0				20 A	1	DOOR CONTACTS	26	
--	27	--	--	--			0			--			--	1	SPACE	28	
--	29	--	--	--				0			--		--	1	SPACE	30	

PHASE A TOTAL VA = 0 — PHASE A TOTAL AMPS = 0 A
PHASE B TOTAL VA = 0 — PHASE B TOTAL AMPS = 0 A
PHASE C TOTAL VA = 0 — PHASE C TOTAL AMPS= 0 A
TOTAL CONNECTED VA = 0 W — TOTAL CONNECTED AMPS = 0 A

FOR REFERENCE ONLY
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GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY CIRCUITS FOR REUSE IN FIELD DURING DEMOLITION OPERATIONS. CIRCUITS IDENTIFIED BY ENGINEERING ARE TO BE USED AS A REFERENCE ONLY. ALWAYS VERIFY THE ABSENCE OF VOLTAGE.
2. CONNECT NEW LOADS TO EXISTING CIRCUIT BREAKERS/CIRCUITS THAT WERE SPARED BY DEMOLITION ACTIVITIES. CONNECTIONS SHALL BE MADE IN SUCH A WAY AS TO NOT VIOLATE NEC RULES FOR PANEL CAPACITY, BRANCH CIRCUIT AND FEEDER SIZING, DIVERSITY LOADING, BREAKER RATINGS, CABLE AMPACITY, AND VOLTAGE DROP.
3. INSPECT/TEST ALL WIRE THAT WILL BE REUSED. WIRING INSTALLATIONS SHALL BE FREE FROM SHORT CIRCUITS, GROUND FAULTS, OR ANY CONNECTIONS TO GROUND OTHER THAN AS REQUIRED OR PERMITTED PER NEC.
4. ELECTRICAL CONTRACTOR SHALL UPDATE PANEL SCHEDULE DESCRIPTIONS TO BE CLEAR, EVIDENT AND SPECIFIC TO THE PURPOSE OF THE USE OF EACH CIRCUIT. CIRCUITS SHALL BE DESCRIBED WITH A DEGREE OF DETAIL AND CLARITY THAT IS UNLIKELY TO RESULT IN CONFUSION BETWEEN CIRCUITS. CIRCUITS USED FOR THE SAME PURPOSE MUST BE IDENTIFIED BY THEIR LOCATION. PANEL SCHEDULE CIRCUIT DESCRIPTIONS SHALL BE UPDATED PER NEC 408.4

REV	DATE	DESCRIPTION	APPROVAL
D	05/06/2024	ISSUED FOR BIDS/PERMITS	JDI
C	04/19/2024	CONSTRUCTION DOCUMENTS	JDI
B	12/19/2023	DESIGN DEVELOPMENT	JDI
A	11/14/2023	SCHEMATIC DESIGN	JDI

the jdi group
architects & engineers
360 W. Dussel Dr.
Maumee, OH 43537
|P| 419.725.7161 |F| 419.725.7160

SEAL

PROJECT TITLE
HEALTH EDUCATION BUILDING
HEB BIOMEDICAL RESEARCH FACILITIES RENOVATIONS
3100 TRANSVERSE DRIVE
TOLEDO OHIO, 43614

DRAWING TITLE
PANEL SCHEDULES ROOM 90B

UOT PROJECT NO. 5003-23-1915

DESIGNED BY	ZAL	11/06/2023	JDI PROJECT NO. UOT23-001
CHECKED BY	ZAL	04/25/2024	
DRAWN BY	ZAL	11/06/2023	DRAWING NO. E-2-604
PROJ. MGR.	SP	05/06/2024	REV D
SCALE			

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0 3" 6" 9"
3"=1'-0" SCALE

0 1/2" 1" 1 1/2"
1-1/2"=1'-0" SCALE

0 1/2" 1" 2"
1"=1'-0" SCALE

0 1' 2' 3'
3/4"=1'-0" SCALE

0 1' 2' 4'
1/2"=1'-0" SCALE

0 2' 4' 6'
3/8"=1'-0" SCALE

0 2' 4' 8'
1/4"=1'-0" SCALE

0 4' 8' 16'
1/8"=1'-0" SCALE

0 8' 16' 32'
1/16"=1'-0" SCALE

PANEL DESIGNATION: ERBAB

LOCATION: RM 090B | **MAIN BKR:** 100A | **NEUTRAL:** 100.00%
FED FROM: | **MOUNTING TYPE:** SURFACE | **BUS:** 100 AMPS | **PIPE RATING:**
SERVICE VOLTS: 120/208 Wye-3PH-4W | **SPECIAL:** EMERGENCY FED | **A.I.C.** | **ENCLOSURE:** NEMA 1

Schedule Circuit Notes	CKT	LOAD DESCRIPTION	POLE	BRKR.	WIRE SIZE	A (VA)	B (VA)	C(VA)	A(VA)	B (VA)	C (VA)	WIRE SIZE	BRKR.	POLE	LOAD DESCRIPTION	CKT	Schedule Circuit Notes
	1	RM 089H BIO-SAFETY CABINET	1	20 A		0			0				20 A	1	RM 089H ULTRA LOW FREEZER	2	
	3	RM 089H SINGLE MOUSE RACK	1	20 A			0			0			20 A	1	RMS 089H & 089D NORTH RECEPTACLES	4	
	5	SPARE	1	20 A				0			0		20 A	1	RM 089D BIO-SAFETY CABINET	6	
	7	RM 089D ULTRA LOW FREEZER	1	20 A		0			0				20 A	1	RM 089D SINGLE MOUSE RACK	8	
	9	RM 089C ULTRA LOW FREEZER	1	20 A			0			0			20 A	1	RM 089C BIO-SAFETY CABINET	10	
	11	RM 089C SINGLE MOUSE RACK	1	20 A				0			0		20 A	1	RMS 089A & 089C RECEPTACLES	12	
	13	RM 089A ULTRA LOW FREEZER	1	20 A		0			0				20 A	1	RM 088B EMERGENCY SHOWER	14	
	15	RMS 087E & 087G RECEPTACLES	1	20 A			0			0			20 A	1	RM 087G BIO-SAFETY CABINET	16	
	17	RM 087G SINGLE MOUSE RACK	1	20 A				0			0		20 A	1	RM 087H SINGLE MOUSE RACK	18	
	19	RM 087H BIO-SAFETY CABINET	1	20 A		0			0				20 A	1	RM 087J BIO-SAFETY CABINET	20	
	21	RM 087J SINGLE MOUSE RACK	1	20 A			0			0			20 A	1	RMS 087H & 087J RECEPTACLES	22	
	23	RM 087E ULTRA LOW FREEZER	1	20 A				0			0		20 A	1	SPARE	24	
	25	SPARE	1	20 A		0			0				20 A	1	SPARE	26	
	27	SPARE	1	20 A			0			0			20 A	1	SPARE	28	
	29	SPARE	1	20 A				0			0		20 A	1	SPARE	30	

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PANEL SCHEDULES ROOM 90B

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CHECKED BY	ZAL	04/25/2024	
DRAWN BY	ZAL	11/06/2023	DRAWING NO. E-2-605
PROJ. MGR.	SP	05/06/2024	REV. C
SCALE			

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