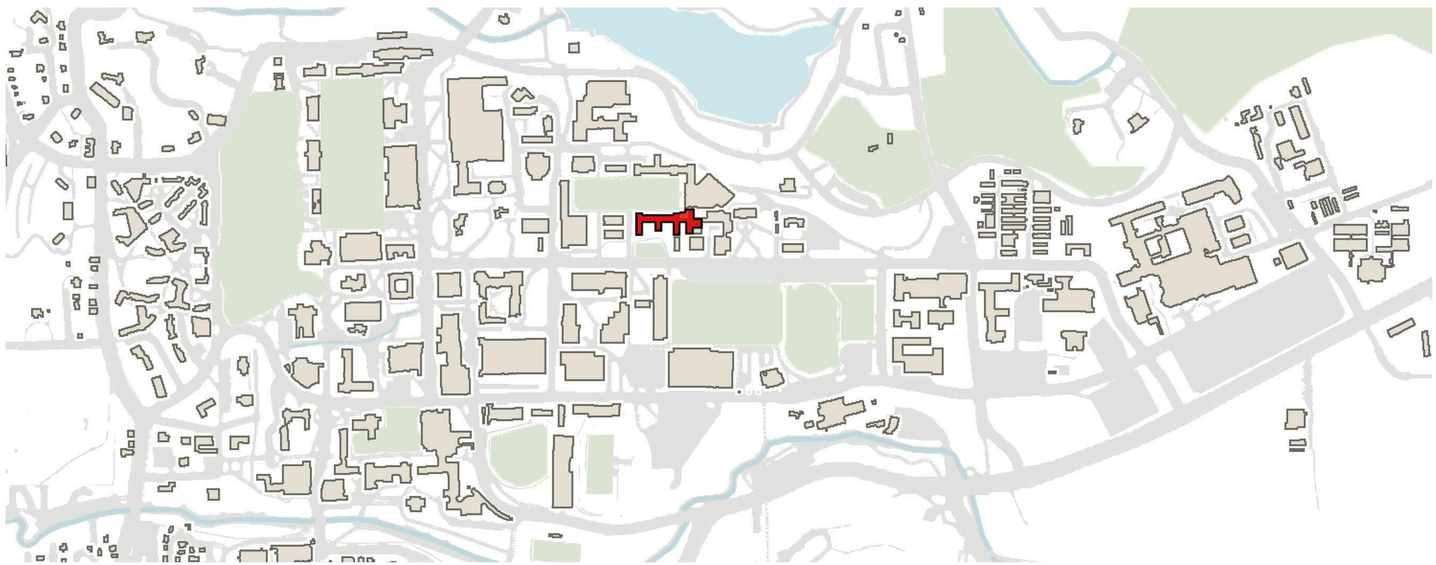

Cornell University College of Agriculture and Life Sciences

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

Ithaca, NY 14853

BID DOCUMENTS
8/31/2026

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Abbreviations

A	Air
A/C	Air Conditioning
A/V	Audio Visual
ABV	Above
AC/PC	Architectural Cast In Place Concrete
ACT	Accoustical Ceiling Tile
ADA	Americans with Disabilities Act
ADDNL	Additional
ADJ	Adjustable
AED	Automated External Defibrillator
AFF	Above Finished Floor
AGG	Aggregate
ALT	Alternate
ALUM	Aluminium
AP	Access Panel
APPROX	Approximate
ARA	Area of Rescue Assistance
ARCH	Architectural
ATS	Animal Transfer Station
AV	Audio Visual
AW	Automated Watering
AWS	Animal Watering System
AWSC	Animal Watering System Controller
BAS	Building Automated System
BC	Bottom of Curb
BCO	Brick Course
BD	Board
BDD	Back Draft Damper
BIT	Bituminous
BLDG	Building
BLK	Block
BLKG	Blocking
BLW	Below Countertop at Knee Space
BM	Beam
BO	Bottom of
BOC	Bottom of Concrete
BOD	Basis of Design
BOL	Bollard
BOT	Bottom
BOW	Bottom of Wall
BRKT	Bracket
BSC	Bio Safety Cabinet
BUR	Built Up Roofing
CAB	Cabinet
CABO	Council of American Building Officals
CAM	Camera
CB	Catch Basin
CEM	Cement
CFCI	Contractor Furnished & Contractor Installed
CG	Corner Guard
CHB	Chalkboard
CI	Cast Iron
CIP	Cast In Place
CJ	Control Joint
CL	Closet
CLG	Ceiling
CLM	Centerline of Mullion
CLR	Clear(ance)
CMU	Concrete Masonry Unit
CO	Convenience Outlet Receptacle
COL	Column
COMM	Command
COMP	Compressible
CONC	Concrete
CONST	Construction
CONT	Continuous
CR	Cold Rolled
CR	Card Reader
CS	Cupsink
CT	Ceramic Tile
CTR	Center
CUH	Cabinet Unit Heater
CW	Cold Water
DB	Drainboard (Interchangeable w/ DR)
DET	Detail
DF	Drinking Fountain
DIA	Diameter
DIF	Diffuser
DIM	Dimension
DN	Down
DP	Dirty Power
DW	Dishwasher
DWG	Drawing
EJ	Expansion Joint
EL	Elevation (Topographical)
ELEC	Electric(al)
ELEC PNL	Electrical Panel
ELEV	Elevator
EMERG	Emergency
ENCL	Enclosure
EO	Edge of
EOS	Edge of Slab
EP	Emergency Phone
EQ	Equal
EQUIP	Equipment
ES	Emergency Shower
ESV	Emergency Shower Valve
ETR	Existing to Remain
EW	Emergency Eyewash
EWC	Electric Water Cooler
EX/EXIS	Existing
EXH	Exhaust
EXP	Expansion
EXP	Exposed
EXT	Exterior
FB	Floor Box
FCO	Floor Clean Out
FD	Floor Drain
FDN	Foundation
FE	Fire Extinguisher
FEC	Fire Extinguisher Cabinet
FEH	Fire Extinguisher Hook
FF	Foil Faced
FH	Fume Hood
FHC	Fire Hose Cabinet
FHCE	Fume Hood Ceiling Enclosure
FIN	FINISH
FIXT	Fixture
FL	Floor
FLUOR	Fluorescent
FO	Fiber Optic
FOC	Face of Concrete
FOP	Face of Precast
FPT	Floor Poke Thru
FRM	Frame
FRT	Fire Retardant Treated
FS	Firestopping
FT	Feet
FTG	Footing
FTR	Fin Tube Radiation
FV	(Contractor to) Field Verify
FWP	Fiber Wrapped Panel
G	Gas
GA	Gauge
GALV	Galvinized

Abbreviations

GB	Grab Bar
GC	General Contractor
GFI	Ground Fault Interrupting
GFRG	Glass Fiber Reinforced Gypsum
GL	Glass
GRN	Granite
GSO	Gas Shut-Off
GV	Gas Valve
GWB	Gypsum Wall Board
GWP	Graphic Wall Paper
GYP	Gypsum
HC	Handicapped
HCP	Handicap
HCR	Hollow Core
HDW	Hardware
HE	Helium
HeR	Helium Return
HGT	Height
HM	Hollow Metal
HOR	Horizontal
HP	High Point
HR	Hour
HSO	HVAC Shut-Off
HTR	Heater
HVAC	Heating, Ventilation and Air Conditioing
HW	Hot Water
ID	Inside Diameter
IN	Inch or Inches
INCAND	Incandescent
INCL	Include (-ding)
INSUL	Insulation
JNT	Joint
JT	Joint
LAM	Laminated
LAV	Lavatory
LGMF	Light Gauge Metal Framing
LMF	Light Gauge Metal Framing (sim)
LP	Low Point
LTG	Lighting
MACH	Machine
MAX	Maximum
MB	Markerboarf
MDF	Medium Density Fiberboard
MECH	Mechanical
MEMB	Membrane
MET	Metal
MFR	Manufacturer
MIN	Minimum
MISC	Miscellaneous
MNT	Mount/Mounting
MO	Masonry Opening
MOS	Mossiac
MP	Metal Panel
MR	Moisture Resistant
MTD	Mounted
MTL	Metal
MW	Modular Wall (enclosing autoclaves, etc.)
N	Nitrogen
NA	Not Applicable
NER	National Evalution Report
NIC	Not In Contract
NO	Number
NTS	Not To Scale
O.H.	Opposite Hand
O.H.DR	Overhead Door
OBL	Oblique
OC	On Center
OD	Outside Diameter
OF	Owner Furnished
OFCI	Owner Furnished & Contractor Installed
OFO	Owner Furnished & Owner Installed
OFOI	Owner Furnished & Owner Installed
OHSG	Overhead Service Grid
OPNG	Opening
OPP	Opposite
OPPH	Opposite Hand
OVP	Overhead Video Projector
OVPS	Overhead Video Projector Support
(1)PH	Single Phase
(3) PH	Three Phase
P	Patch
PB	Pegboard
PC	Precast Concrete
PCWR	Process Chilled Water Return
PCWS	Process Chilled Water Supply
PE	Point Exhaust
PGL	Plate Glas
PL	Plate
PLAM	Plastic Laminate
PLAS	Plaster
PLWD	Plywood
PNL	Panel
PP	Pumping Port
PRS	Pressure Reducing Station
PS	Projector Screen
PT	Point
PT	Pressure Treated
PTD	Paint(ed)
PTN	Partiton
PVC	Poly Vinyl Chloride
QT	Quarry Tile
QTY	Quantity
R	Riser (or) Radius
R/F	Ref. or Freezer (by owner)
RA	Return Air
RCP	Reflect Ceiling Plan
RECV	Receiving
REF	Refrigerator
REG	Register
REINF	Reinforcing/Reinforced
REQ'D	Required
REV	Revision
RM	Room
RMS	Rooms
RO	Rough Opening
RODI	Reverse Osmosis Deionized Water
RWL	Rain Water Leader
S	Sink
SC	Solid Core
SCA	Spray on Cementitious Acoustical
SD	Shading Device (SD-1: Type 1)
SECT	Section
SFRM	Spray Fire Resistant Material
SG	Special Glass
SHT	Sheet
SIM	Similar
SMRF	Seamless Mechanical Room Floor

Abbreviations

SPEC	Specifications
SQ	Square
SS	Stainless Steel
ST-1	Granite
ST-2	Limestone
STD	Standard
STL	Steel
STN	Stainless
STOR	Storage
STR	Structural
SUSP	Suspended
SV	Special Vacuum
T	Tread
TB	Tackboard
TC	Top of Curb
TD	Trench Drain
TEL	Telephone
TEMP	Tempered (or) Temporary
TERR	Terrazzo
TG	Tempered Glass
THK	Thick
TMV	Thermostatic Mixing Valve
TO	Top of
TOC	Top of Concrete
TOF	Top of Footing
TOP	Top of Parapet
TOR	Top of Rail
TOS	Top of Steel
TOT	Top of Tunnel
TOW	Top of Wall
TRANS	Transformer
TYP	Typical
U.O.N.	Unless Otherwise Noted
U.N.O.	Unless Noted Otherwise
UC	Under Counter
UL	Underwriters Laboratory
V	Vacuum
VCT	Vinyl Composition Tile
VERT	Vertical
VIF	Verify In Field
VIN	Vinyl
W/	With
W/O	Without
WD	Wood
WF	Steel Beam (Wide Flange)
WG	Wall Guard
WMS	Wire Mesh Screen
WP	Working Point
WPR	Waterproofing
WRB	Weather Resistant Barrier
WS(#)	Window Shade (and type) -
WWF	Welded Wire Fabric

GRAPHIC SYMBOLS

0	Building Column Centerline
1 A101 Ref	Plan or Vertical Detail Example: Detail 1 on Drawing A101
A A4.1	Building Section Example: Detail A on Drawing A4.1
2 A5.2	Wall Section Example: Detail 2 on Drawing A5.2
2 A9.4	Top number indicates plan, elevation, section or detail shown directly below that plan, elevation, section or detail. Bottom number indicates the sheet number where that plan, elev., sect. or detail is drawn Example: Detail 2 on sheet A9.4
101	Room name and number shown on floor plans
11	Indicates window type
11	Indicates louver type keyed on elevations
101	Indicates door number shown on floor plans (reference to door schedule)
33A	Indicates Partition Type
33A	Indicates Frame Type
2 4 A8.2 3 1	Interior elevation, shown on floor plans
46'-0"	Spot elevation
1	Drawing Revision. Revision date shown in title block
C.J.	Indicates Control Joint
E.J.	Indicates Expansion Joint
S	Indicates Sealant to be applied
R	Indicates Backer Rod to be installed
FD	Floor Drain
FS	Floor Sink
MW	Mixed Water
FEH	Fire Extinguisher Hook
FEC	Fire Extinguisher Cabinet
	EXISTING WALL TO REMAIN
	EXISTING WALL TO BE DEMOLISHED (AD-SERIES)
	NEW CONSTRUCTION
	NEW PARTITION WITH SOUND INSULATION - ALSO DESIGNATED WITH "S" IN PARTITION TYPE - SEE A9.12
	1-HR RATED FIRE BARRIER
	2-HR RATED FIRE BARRIER (WITH OR WITHOUT DIAGONAL HATCH DESIGNATING CMU)
	OUTSIDE MAIN WORK AREA

GRAPHIC SYMBOLS

S	Exhaust Snorkel - ceiling mts. U.N.O. see Specification
F	Service Recessed in Floor
2	Duplex Outlet, 110 V
4	Double Duplex Outlet, 110 V
208 1PH	208 Volt Outlet, Shingle Phase
D	Double Data Port and Cable TV Port and Voice Outlet
SP	Special Power
	Continuous Plugmold
AP	2'X2' Access Panel
	Video Camera
	Lab Gas Shut -off Valve
WP	Wall Phone

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
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Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
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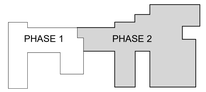
Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS - PHASE 2

PRE-BID 2026
Scale: 1 : 1

G0.3

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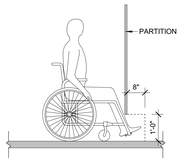


FIGURE 604.9.5(A)
TOE CLEARANCE - ELEVATION

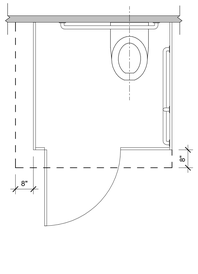


FIGURE 604.9.5(B)
TOE CLEARANCE - PLAN

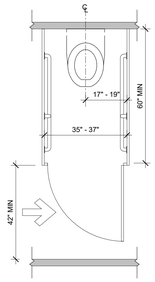


FIGURE 604.10.1
AMBULATORY COMPARTMENT

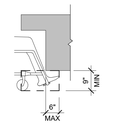


FIGURE 306.2 (A)
TOE CLEARANCE - ELEVATION

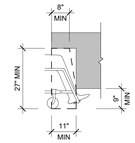


FIGURE 306.3 (A)
KNEE CLEARANCE - ELEVATION

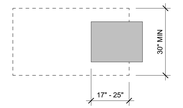


FIGURE 306.2 (B)
TOE CLEARANCE - PLAN

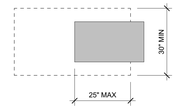


FIGURE 306.3 (B)
KNEE CLEARANCE - PLAN

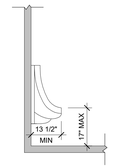
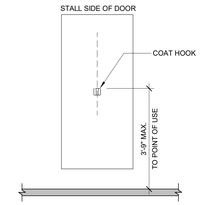


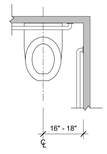
FIGURE 605.2(A)
HEIGHT AND DEPTH OF
URINAL WALL HUNG TYPE



Accessible
Coat Hook
Mounting
Height

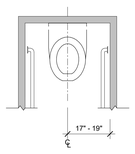
THE REQUIRED CLEARANCE AROUND THE WATER CLOSET SHALL BE PERMITTED TO OVERLAP THE WATER CLOSET, ASSOCIATED GRAB BARS, PAPER DISPENSERS, SANITARY NAPKIN RECEPTACLES, COAT HOOKS, SHELVES, ACCESSIBLE ROUTES, CLEAR FLOOR SPACE AT OTHER FIXTURES AND THE TURNING SPACE. NO OTHER FIXTURES OR OBSTRUCTIONS SHALL BE WITHIN THE REQUIRED WATER CLOSET CLEARANCE.

TOILET PAPER DISPENSERS THAT ACCOMMODATE A MAXIMUM OF 2 TOILET PAPER ROLLS OF NOT MORE THAN 5-INCH (125 MM) DIAMETER EACH SHALL BE PERMITTED TO BE LOCATED 7 INCHES (180 MM) MINIMUM AND 9 INCHES (230 MM) MAXIMUM IN FRONT OF THE WATER CLOSET MEASURED TO THE CENTERLINE OF THE DISPENSER. THE OUTLET OF THE DISPENSER SHALL BE 15 INCHES (380 MM) MINIMUM AND 48 INCHES (1220 MM) MAXIMUM ABOVE THE FLOOR.



(A) ACCESSIBLE
WATER CLOSETS

FIGURE 604.2
WATER CLOSET LOCATION



(B) AMBULATORY ACCESSIBLE
WATER CLOSETS

FIGURE 604.2
WATER CLOSET LOCATION

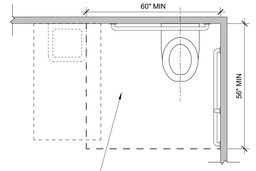


FIGURE 604.3
SIZE OF CLEARANCE FOR WATER CLOSET

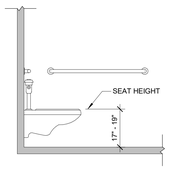


FIGURE 604.4
WATER CLOSET SEAT HEIGHT

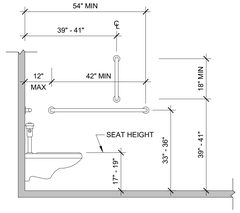


FIGURE 604.5.1
SIDE-WALL GRAB BAR
FOR WATER CLOSET

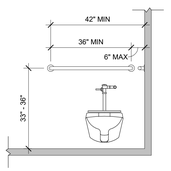


FIGURE 604.5.2
REAR-WALL GRAB BAR
FOR WATER CLOSET

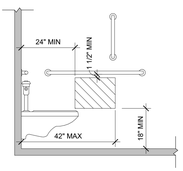


FIGURE 604.7.1(A)
DISPENSER OUTLET LOCATION -
PROTRUDING DISPENSER BELOW GRAB BAR

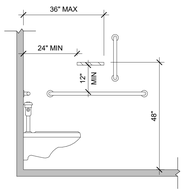


FIGURE 604.7.1(B)
DISPENSER OUTLET LOCATION -
PROTRUDING DISPENSER ABOVE GRAB BAR

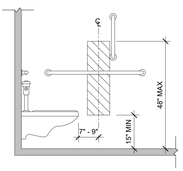


FIGURE 604.7.1(B)
DISPENSER OUTLET LOCATION - IN FRONT
OF WATER CLOSET (EXCEPTION)

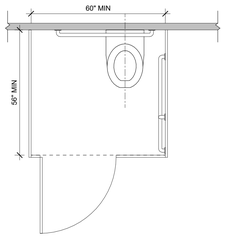


FIGURE 604.9.2(A)
WHEELCHAIR TOILET COMPARTMENTS
WALL HUNG CLOSET

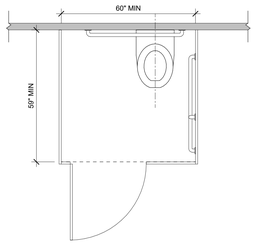


FIGURE 604.9.2(B)
WHEELCHAIR TOILET COMPARTMENTS
FLOOR MOUNTED WATER CLOSET

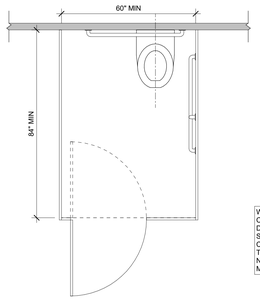


FIGURE 604.9.2.3
WHEELCHAIR TOILET COMPARTMENTS
ALTERNATE WHEELCHAIR TOILET
COMPARTMENT

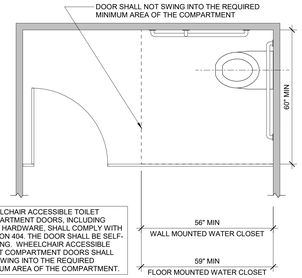


FIGURE 604.9.2.3
WHEELCHAIR TOILET COMPARTMENTS
ALTERNATE WHEELCHAIR TOILET
COMPARTMENT

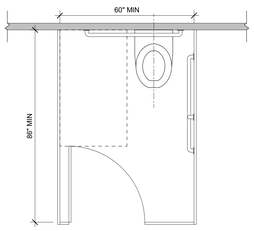


FIGURE 604.9.3(B)
WHEELCHAIR TOILET COMPARTMENT
DOORS EXCEPTION 3 - ALTERNATE
WHEELCHAIR COMPARTMENT

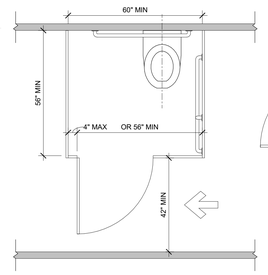


FIGURE 604.9.3.1(A)
WHEELCHAIR TOILET COMPARTMENT DOOR
OPENING LOCATION - DOOR SWINGING IN
ON FRONT WALL OF PARTITION

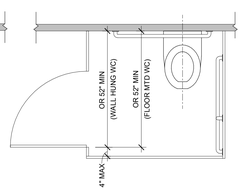
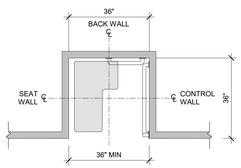


FIGURE 604.9.3.1(B)
WHEELCHAIR TOILET COMPARTMENT DOOR
OPENING LOCATION - DOOR SWINGING IN
ON SIDE WALL OR PARTITION



NOTE: INSIDE FINISHED DIMENSIONS MEASURED
AT THE CENTER POINTS OF OPPOSING SIDES

FIGURE 608.2.1.1
TRANSFER-TYPE SHOWER
COMPARTMENT SIZE

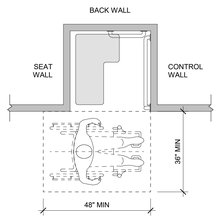
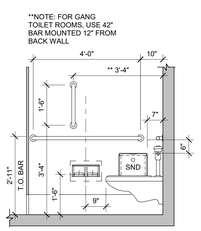
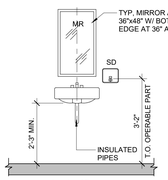


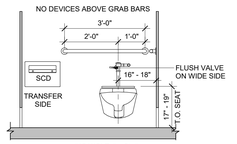
FIGURE 608.2.1.2(C)
TRANSFER-TYPE SHOWER
COMPARTMENT CLEARANCES
EXISTING BUILDINGS



(HC WC) Toilet Stall
Side Wall

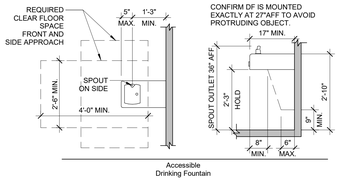


Lavatory Mirror
and Soap
Dispenser

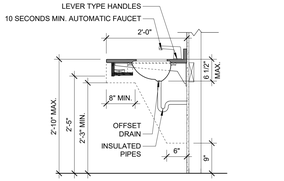


(HC WC) Toilet Stall
Rear Wall

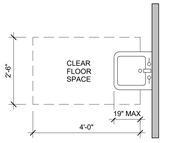
3 TOILET STALL MOUNTING LOCATIONS



Accessible
Drinking Fountain



Section at
Accessible
Sink Counter



Clear Floor Space at
Lavatory

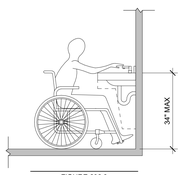
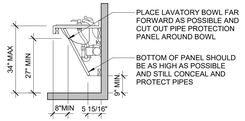


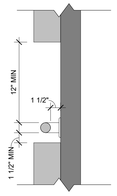
FIGURE 606.3
HEIGHT OF LAVATORIES
AND SINKS



Sink Section

2 SINK CLEARANCES

1/2" = 1'-0"



609.3 SPACING
THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1-1/2 INCHES.

THE SPACE BETWEEN THE GRAB BAR AND PROJECTING OBJECTS BELOW AND AT THE ENDS OF THE GRAB BAR SHALL BE 1-1/2" MINIMUM.

THE SPACE BETWEEN THE GRAB BAR AND PROJECTING OBJECTS ABOVE THE GRAB BAR SHALL BE 12 INCHES MIN.

FIGURE 609.3
SPACING OF GRAB BARS

2 ACCESSIBILITY - GRAB BAR DETAIL

1 1/2" = 1'-0"

1 PLUMBING ELEMENTS AND FACILITIES

1/2" = 1'-0"

RENOVATE PLANT SCIENCE
BUILDING - PHASE 2

SUCF Project No. 161026-00

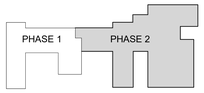
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

PROJECT ACCESSIBILITY
GUIDELINES

REGISTERED ARCHITECT VINCENT PORTOGHESE 022901 STATE OF NEW YORK

PRE-BID 2026
Scale: As indicated

G1.0

10/8/2026 6:26:12 PM

Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell PSB_Arch_R23.rvt

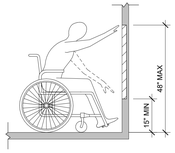


FIGURE 308.2.1
UNOBSTRUCTED FORWARD REACH

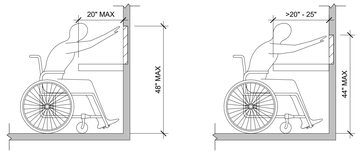


FIGURE 308.2.2
OBSTRUCTED HIGH FORWARD REACH

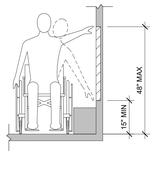


FIGURE 308.3.1
UNOBSTRUCTED SIDE REACH

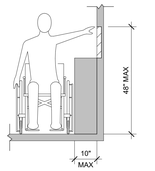


FIGURE 308.3.2(A)
OBSTRUCTED HIGH SIDE REACH

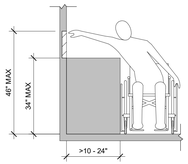


FIGURE 308.3.2(B)
OBSTRUCTED HIGH SIDE REACH

10 REACH REQUIREMENTS
1/2" = 1'-0"

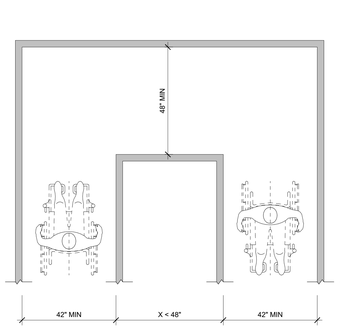


Figure 403.5.2.2(A)
Clear Width at 180-Degree Turn Existing Buildings

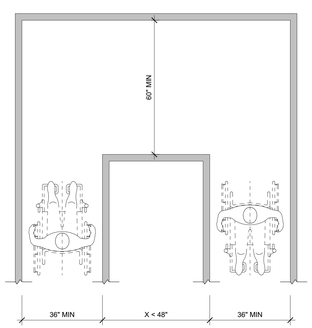


Figure 403.5.2.2(B)
Clear Width at 180-Degree Turn Existing Buildings

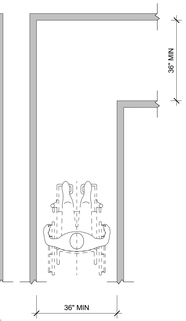


FIGURE 403.5.3.2
CLEAR WIDTH AT 90-DEGREE TURN EXISTING BUILDINGS

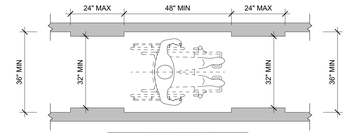


FIGURE 403.5.1(C)
CLEAR WIDTH OF AN ACCESSIBLE ROUTE - EXISTING BUILDINGS - INTERIOR

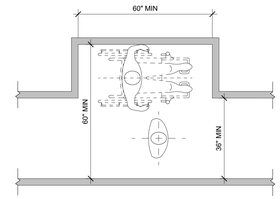


FIGURE 403.5.4.2(A)
PASSING SPACE - EXISTING BUILDINGS - 60 X 60 OPTION

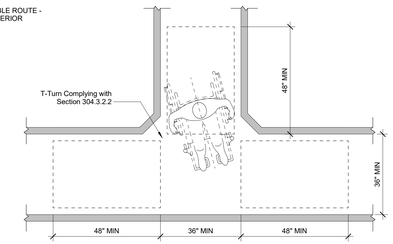


FIGURE 403.5.4.2(B)
PASSING SPACE - EXISTING BUILDINGS - T-TURN OPTION

9 ACCESSIBLE ROUTES
1/2" = 1'-0"

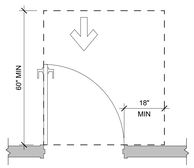


FIGURE 404.2.3.2(A)
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS FRONT APPROACH - PULL SIDE

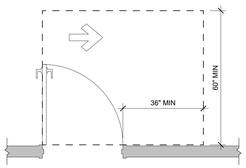


FIGURE 404.2.3.2(D)
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS HINGE APPROACH - PULL SIDE

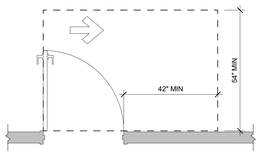


FIGURE 404.2.3.2(E)
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS HINGE APPROACH - PULL SIDE

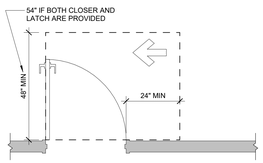


FIGURE 404.2.3.2(G)
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS LATCH APPROACH - PULL SIDE

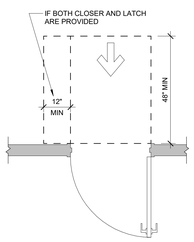


FIGURE 404.2.3.2(C)
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS FRONT APPROACH - PUSH SIDE EXISTING BUILDINGS

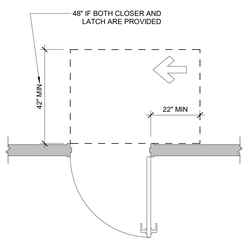


FIGURE 404.2.3.2(F)
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS HINGE APPROACH - PUSH SIDE

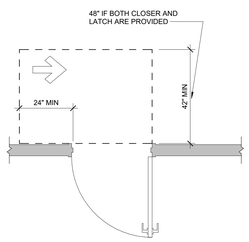


FIGURE 404.2.3.2(H)
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS LATCH APPROACH - PUSH SIDE

6 MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS AND GATES, SLIDING AND FOLDING DOORS, AND OPEN DOORWAYS
1/2" = 1'-0"

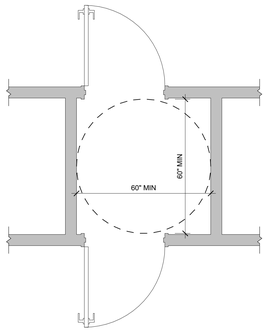


FIGURE 404.2.5(D)
TWO DOORS OR GATES IN A SERIES - EXISTING BUILDINGS

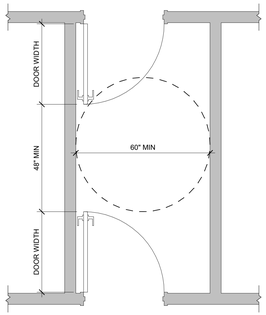


FIGURE 404.2.5(E)
TWO DOORS OR GATES IN A SERIES - EXISTING BUILDINGS

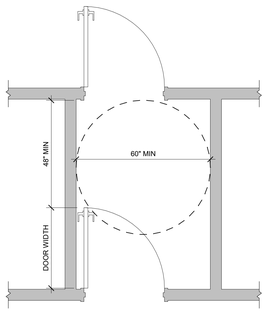


FIGURE 404.2.5(F)
TWO DOORS OR GATES IN A SERIES - EXISTING BUILDINGS

8 DOORS IN SERIES
1/2" = 1'-0"

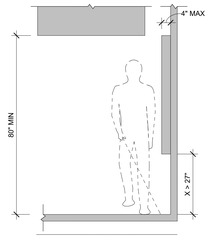


FIGURE 307.2
LIMITS OF PROTRUDING OBJECTS

7 LIMITS OF PROTRUDING OBJECTS
1/2" = 1'-0"

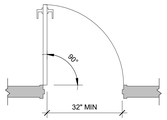


FIGURE 404.2.2(A)
CLEAR WIDTH OF DOORWAYS - HINGED DOOR

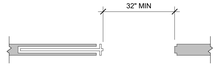


FIGURE 404.2.2(B)
CLEAR WIDTH OF DOORWAYS - SLIDING DOOR

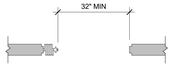


FIGURE 404.2.2(C)
CLEAR WIDTH OF DOORWAYS - FOLDING DOOR

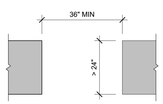


FIGURE 404.2.2(D)
CLEAR WIDTH OF DOORWAYS - DOORWAYS WITHIN DOORS

3 CLEAR WIDTH OF DOORWAYS
1/2" = 1'-0"

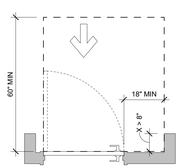


FIGURE 404.2.3.5(D)
RECESSED DOORS AND GATES - EXISTING BUILDINGS PULL SIDE

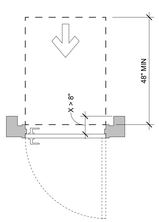


FIGURE 404.2.3.5(E)
RECESSED DOORS AND GATES - EXISTING BUILDINGS PUSH SIDE

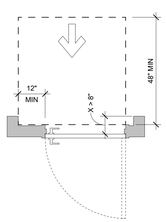


FIGURE 404.2.3.5(F)
RECESSED DOORS AND GATES - EXISTING BUILDINGS PUSH SIDE DOOR PROVIDED WITH BLOTH CLOSER AND LATCH

2 MANEUVERING CLEARANCE AT RECESSED DOORWAYS
1/2" = 1'-0"

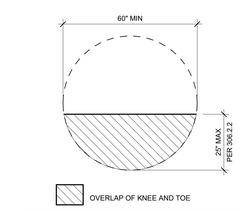


FIGURE 304.3.1.2
CIRCULAR TURNING SPACE - EXISTING BUILDINGS SIZE AND OVERLAP

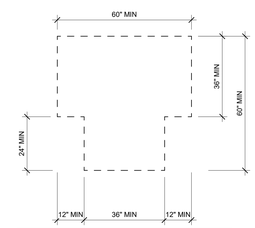


FIGURE 304.3.2.2
T-SHAPED TURNING SPACE EXISTING BUILDINGS

1 WHEELCHAIR TURNING SPACE
1/2" = 1'-0"

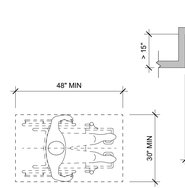


FIGURE 305.3.2
SIZE OF CLEAR FLOOR SPACE - EXISTING BUILDINGS

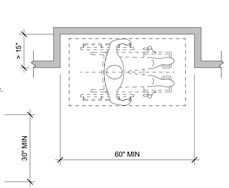


FIGURE 305.7.1
MANEUVERING CLEARANCE IN AN ALCOVE PARALLEL APPROACH

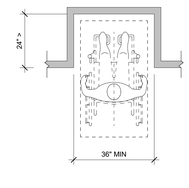


FIGURE 305.7.2
MANEUVERING CLEARANCE IN AN ALCOVE FORWARD APPROACH

5 CLEAR FLOOR SPACE AND MANEUVERING CLEARANCE
1/2" = 1'-0"

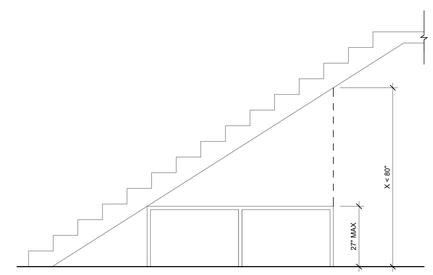


FIGURE 307.4
REDUCED VERTICAL CLEARANCE

4 REDUCED VERTICAL CLEARANCE
1/2" = 1'-0"

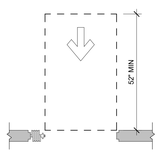


FIGURE 404.2.3.3(B)
MANEUVERING CLEARANCES AT SLIDING AND FOLDING DOORS FRONT APPROACH EXISTING BUILDINGS

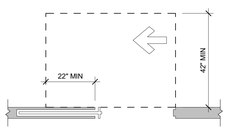


FIGURE 404.2.3.3(C)
MANEUVERING CLEARANCES AT SLIDING AND FOLDING DOORS POCKET OR HINGE APPROACH

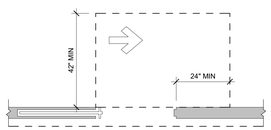


FIGURE 404.2.3.3(D)
MANEUVERING CLEARANCES AT SLIDING AND FOLDING DOORS STOP OR LATCH APPROACH

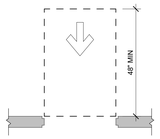


FIGURE 404.2.3.4(B)
MANEUVERING CLEARANCES FOR DOORWAYS WITHOUT DOORS OR GATES FRONT APPROACH - EXISTING BUILDINGS

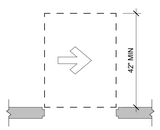


FIGURE 404.2.3.4(C)
MANEUVERING CLEARANCES FOR DOORWAYS WITHOUT DOORS OR GATES SIDE APPROACH

6 MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS AND GATES, SLIDING AND FOLDING DOORS, AND OPEN DOORWAYS
1/2" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

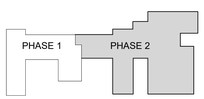
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	MB
Checked By	AT
Filename	
Date	August 31, 2026

Revisions

PROJECT ACCESSIBILITY GUIDELINES CONT.

REGISTERED ARCHITECT JAMES VINCENT BIGGS 022901-1 STATE OF NEW YORK

PRE-BID 2026
Scale: 1/2" = 1'-0"

G1.1

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RENOVATE PLANT SCIENCE
BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
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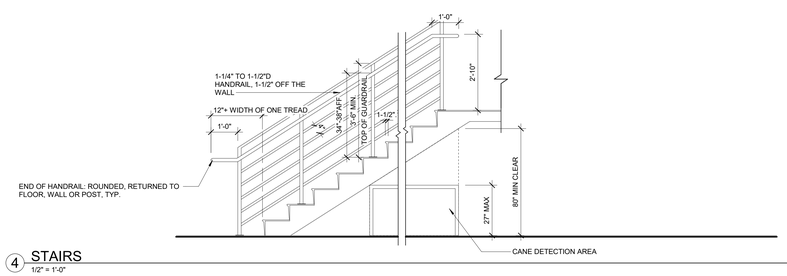
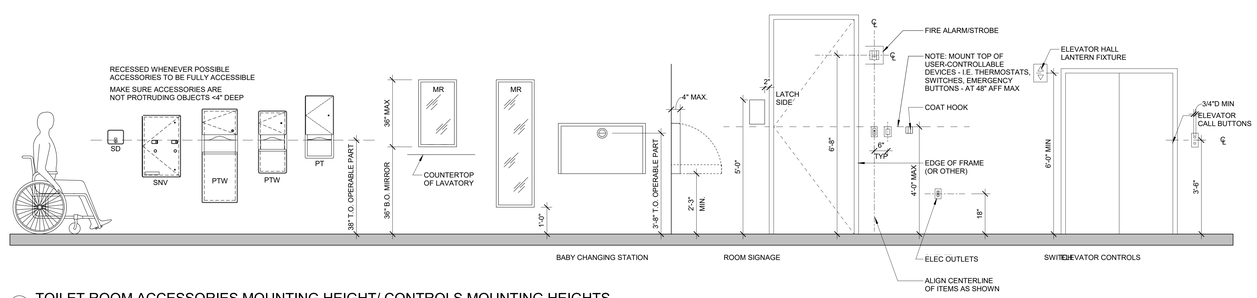
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

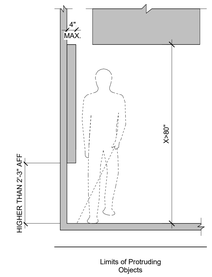
Notes:



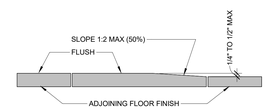
4 STAIRS
1/2" = 1'-0"



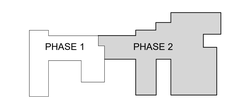
5 TOILET ROOM ACCESSORIES MOUNTING HEIGHT/ CONTROLS MOUNTING HEIGHTS
1/2" = 1'-0"



7 LIMITS OF PROTRUDING OBJECTS
1/2" = 1'-0"



8 THRESHOLD DETAIL
6" = 1'-0"



Keyplan

Job Number	31909.00
Drawing By	EC
Checked By	AT
Filename	
Date	August 31, 2026

Revisions

PROJECT ACCESSIBILITY GUIDELINES - PHASE 2

PRE-BID 2026
Scale: 1/2" = 1'-0"

REGISTERED ARCHITECT VINCENT ROSSI 022901-1 STATE OF NEW YORK

G1.2

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PLUMBING CODE FIXTURE CALCULATION - OCCUPANCY FOLLOWING PHASE 2 CONSTRUCTION						
FLOOR LEVEL	WATER CLOSETS		URINALS	LAVATORIES		DRINKING FOUNTAINS
	MALE	FEMALE	MALE	MALE	FEMALE	
GROUND	1.77 (2)	3.53 (4)	1.77 (2)	2.58 (3)	2.58 (3)	2.53 (3)
FIRST	2.16 (3)	5.29 (6)	1.92 (2)	3.24 (4)	3.24 (4)	3.20 (4)
SECOND	1.88 (2)	5.20 (6)	1.97 (2)	2.97 (3)	2.97 (3)	2.58 (3)
THIRD	1.69 (2)	2.78 (3)	1.69 (2)	2.48 (3)	2.48 (3)	2.38 (3)
FOURTH	1.05 (2)	2.09 (3)	1.13 (2)	1.68 (2)	1.68 (2)	1.09 (2)
TOTAL BY FLOOR	11	22	10	15	15	15

PLUMBING FIXTURE DISTRIBUTION FOLLOWING PHASE 2 CONSTRUCTION - WITH VARIANCES SHOWN										
FLOOR LEVEL	WATER CLOSETS			URINALS	LAVATORIES			SHOWERS	DRINKING FOUNTAINS	SERVICE SINK
	MALE	FEMALE	UNISEX	MALE	MALE	FEMALE	UNISEX			
GROUND	1 (1 ADA) (-1)	3 (1 ADA) (-1)	2 (1 ADA)	2 (1 ADA)	2 (-1)	2 (-1)	2	1	4 (+1)	1
FIRST	2 (1 ADA) (-1)	4 (1 ADA) (-2)	2 (1 ADA)	2 (1 ADA)	3 (-1)	3 (-1)	2	0	4	1
SECOND	2 (1 ADA)	4 (1 ADA) (-2)	2 (1 ADA)	2 (1 ADA)	3	3	2	0	4 (+1)	1
THIRD	2 (1 ADA)	4 (1 ADA)	2 (1 ADA)	2 (1 ADA)	3	3	2	0	4 (+1)	1
FOURTH	1 (1 ADA) (-1)	2 (1 ADA) (-1)	1 (1 ADA)	1 (1 ADA)	2	2	1	0	2	1
TOTAL FIXTURE COUNT	8 (-3)	17 (-5)	9	9	13 (-2)	13 (-2)	9	1	18 (+3)	5

GENERAL NOTE: (-#) DESIGNATES A SHORTAGE AND (+#) DESIGNATES A SURPLUS. (# ADA) INDICATES ACCESSIBLE WC. (#M) AND (#W) INDICATES WHETHER SHOWER IS IN MEN'S OR WOMEN'S ROOM. AN EXISTING GENDER-NEUTRAL NON-ACCESSIBLE TOILET ROOM IN THE LOADING DOCK AREA IS NOT INCLUDED IN THIS COUNT.

OCCUPANT LOAD FACTOR - END OF PHASE 2				T	G	1	2	3	4
USE	FUNCTION OF SPACE	PROGRAM	FLOOR AREA PER OCCUPANT (SF/OCC)						
A-3	CONCENTRATED ASSEMBLY (CHAIRS ONLY, NOT FIXED)	-EVENT SPACE	7 NET			192			
	ASSEMBLY WITH FIXED SEATS	- LECTURE HALL	ACTUAL SEATS				284		
B	EDUCATIONAL: VOCATIONAL	- WET TEACHING LABS	50 NET OR PER 2025 BCNYS 1004.5.1		32	60	26		
	EDUCATIONAL: CLASSROOM	- GENERAL ASSIGNMENT CLASSROOM - DRY TEACHING LABS	20 NET			62		46	
	BUSINESS	- OFFICES - SUPPORT & PREP ROOMS - GRADUATE WRITE-UP GROUP - MEETING ROOMS - CIRCULATION	150 GROSS		166	145	146	176	86
	BUSINESS: CONCENTRATED	- LARGE MEETING ROOM	50 GROSS		15			14	18
	ACCESSORY	- MECHANICAL SPACE - STORAGE ROOM	300 GROSS	12	28	15	6	2	4
TOTAL				12	241	474	486	238	109

BUILDING INFORMATION

Introduction

This project consists of an alteration and renovation of an existing five-story academic, office, and laboratory building consisting of offices, classrooms, conference rooms, an assembly space, and laboratories for use by Cornell University.

Applicable Codes

All renovations and additions will comply with all Codes required by New York State:

2025 Existing Building Code of New York State (2025 EBCNYS)
2025 Building Code of New York State (2025 BCNYS)
2025 Mechanical Code of New York State (2025 MCNYS)
2025 Fire Code of New York State (2025 FCNYS)
2025 Plumbing Code of New York State (2025 PCNYS)
2025 Fuel Gas Code of New York State (2025 FGCNYS)
2023 Electrical Code of New York State & 2023 National Electrical Code (NFPA 70)
2025 Energy Conservation Construction Code of New York State (2025 ECCCNYS)
2025 NYS Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings (2025 NYS ASHRAE 90.1), based on ASHRAE 90.1-2022
ANSI A-17.1, Safety Code for Elevators and Escalators
Building Code of New York State Chapter 11, ANSI A117.1-2017/ADA 2010 for accessibility
2025 Property Maintenance Code of New York State (PMCNYS)

Building Summary

Use Groups

This building is classified as a Use Group A-3 and B Occupancy

Occupancy	Floor Level	Use Group
Offices	GD, 01, 02, 03, 04	B-Business
Classrooms	01, 02, 03	B-Business
Conference Rooms	GD, 01, 02, 03, 04	B-Business
Assembly Space	01, 02/03	A-3 Assembly
Teaching Laboratory	GD, 01, 02	B-Business
Research Laboratory	GD, 01, 02, 03	B-Business

1. All floors will be a renovation of a structure older than 50 years and therefore eligible to be nominated for historic significance.
2. Note that this is an Alteration Level 3 project per the Existing Building Code.

Building Height, Area, Construction Type

The renovated building will maintain existing building height of 60' – 6" .
The building construction is TYPE IB

Planned Maximum Area Per Floor (Existing) = 40,348 sf
Planned Maximum Building Area (Existing) = 164,516 sf

Fire Rating of New Construction

NEW BUILDING ELEMENT	FIRE RATING
Structural Frame Enclosure	2HR
Floor Slab	2HR
Roof	1HR
Exterior non-bearing walls	1HR
Interior non-bearing walls	0
Vertical Shafts, rated construction	2HR
Vertical circulation shaft, rated construction	2HR

Interior decorative materials and trim: NFPA 701-2023.

Structure
For Special Inspections and Structural Testing, see specification section 01 45 33 and S-series drawings. For seismic and wind information, see S-series drawings.

Energy Modeling
Compliance per ASHRAE 90.1-2022 in conformance with 2025 Energy Conservation Construction Code of NYS, using TMY3 weather file for Binghamton, NY.

Fire Protection
The work areas are to be equipped throughout with an approved automatic sprinkler system per Section 903.3.1.1. Upon completion of this project, the building is to be fully sprinklered.

Plumbing
Upon completion of this project the toilet counts will meet the code requried counts as shown in the tables on sheet G2.0.

Lab Suites
New work is to comply with all requirements for Control Areas, for Laboratory Suites, Section 428: Higher Education Laboratories, and for 2025 Fire Code of NYS, Chapter 38: Higher Education Laboratories including Tables 3804.1.1 and 3806.2.1. The building will use these spaces as lab suites at the completion of coonstruction.

Per Table 428.3, a 1-hour vertical fire separation between Lab Suites and other space types is allowed at floor levels 4-6 above grade (Floors 3 and 4 at the Plant Science Building). Per NYS FC 2025 Table 3806.2.1 (regarding existing sprinklered laboratories) note c, vertical fire barriers separating control areas from other spaces on the same floor are permitted to be 1-hour-fire-resistance rated.

2025 NYS BC 428.3 / NYS FC TABLE 3804.1.1 DESIGN AND NUMBER OF LABORATORY SUITES PER FLR					
FLOOR LEVEL			PERCENTAGE OF MAX. ALLOWABLE QUANTITY PER LAB SUITE[a]	# LAB SUITES PER FLOOR	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HRS[b]
STORY ABOVE GRADE PLANE	5	FOURTH FLR	75	4	1
	4	THIRD FLR	75	4	1
	3	SECOND FLR	100	4	1
	2	FIRST FLR	100	6	1
	1	GROUND FLR	100	6	1

a. Percentages shall be of the maximum allowable quantity per control area shown in NYSBC Tables 307.1(1) and 307.1(2) / NYSFC Table 5003.1.1(1) and Table 5003.1.1(2), with all increases allowed in the footnotes to those tables.
b. Fire barriers shall include walls, floors and ceilings necessary to provide separation from other portions of the building.
c. Vertical fire barriers separating laboratory suites from other spaces on the same floor shall be permitted to be 1-hour fire-resistance rated.

NYS FC 2025 - TABLE 3806.2.1 DESIGN AND NUMBER OF CONTROL AREAS IN EXIST SPRINKL'D LABS					
FLOOR LEVEL			PERCENTAGE OF MAX. ALLOWABLE QUANTITY PER LAB SUITE[a]	# CONTROL AREAS PER FLOOR	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HRS[b, d]
STORY ABOVE GRADE PLANE	5	FOURTH FLR	50	2	2[c]
	4	THIRD FLR	50	2	2[c]
	3	SECOND FLR	75	3	1
	2	FIRST FLR	100	4	1
	1	GROUND FLR	100	4	1

a. Percentages shall be of the maximum allowable quantity per control area shown in Table 5003.1.1(1) and Table 5003.1.1(2), with all increases allowed in the footnotes to those tables.
b. Fire barriers shall include walls, floors and ceilings necessary to provide separation from other portions of the building.
c. Vertical fire barriers separating control areas from other spaces on the same floor are permitted to be 1-hour fire-resistance rated.
d. See Section 414.2.4 of the Building Code of New York State for additional requirements.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
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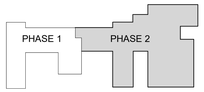
Notes:



Keyplan

Job Number 31909.00
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

BUILDING CODE SUMMARY

REGISTERED ARCHITECT JOHN VINCENT ROBINSON 022901 STATE OF NEW YORK

PRE-BID 2026
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LEGEND

- A-3 ASSEMBLY
- B VOCATIONAL
- B CLASSROOM
- B BUSINESS
- B BUSINESS - CONCENTRATED USE
- B ACCESSORY (MECHANICAL / STORAGE)
- N.I.C.
- UNOCCUPIED

- F.E.C. FIRE EXTINGUISHER
- ETR FEC EXISTING-TO-REMAIN FIRE EXTINGUISHER
- EYEWASH STATION - SEE A10 SERIES
- A.E.D. AUTOMATED EXTERNAL DEFIBRILLATOR
- EP INTERIOR EMERGENCY PHONE - SEE A8 SERIES
- 1-HOUR RATED FIRE BARRIER
- 2-HOUR RATED FIRE BARRIER
- EGRESS PATH
- ACCESSIBLE ROUTE
- NON-ACCESSIBLE ROUTE

EXIT CAPACITY GROUND FLOOR (BCNYS 2025) - Phase 2

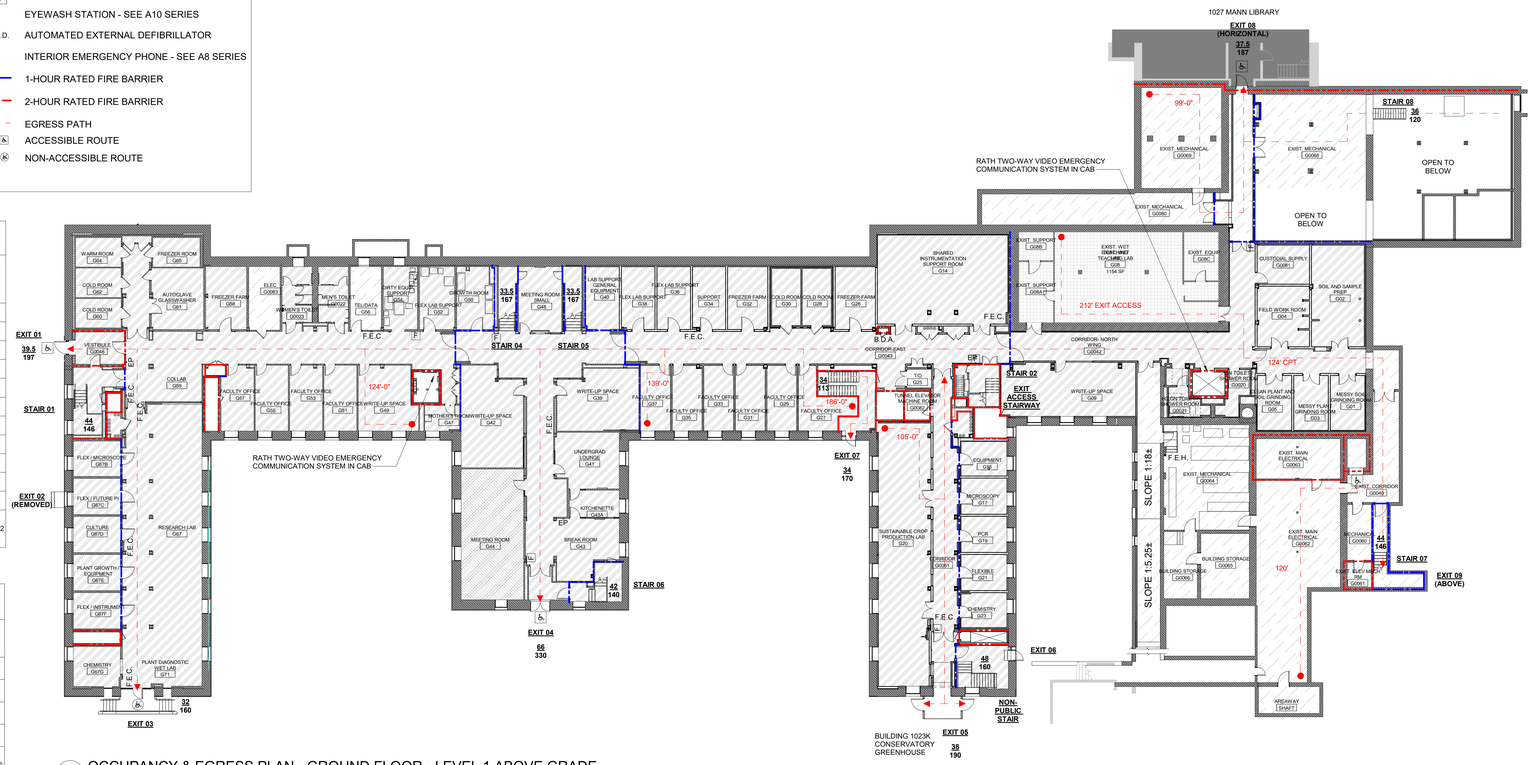
EXIT	STAIR WIDTH	STAIR EXIT ALLOWANCE (IN/PERSON)	STAIR CAPACITY (PERSONS)	CLEAR DOOR WIDTH	DOOR EXIT ALLOWANCE (IN/PERSON)	DOOR CAPACITY (PERSONS)	EXIT CAPACITY (PERSONS)
STAIR 1	44"	0.3	146	57.5"	0.2	287	146
STAIR 4	57"	0.3	190	33.5"	0.2	167	167
STAIR 5	57"	0.3	190	34.5"	0.2	172	172
STAIR 6	42"	0.3	140	37.5"	0.2	187	140
STAIR 7	44"	0.3	146	37.5"	0.2	187	146
EXIT 1				39.5"	0.2	197	197
EXIT 3				33.5"	0.2	160	160
EXIT 4				66"	0.2	330	330
EXIT 5				38"	0.2	190	190
EXIT 6				33.5"	0.2	167	167
EXIT 7				33.5"	0.2	167	167
TOTAL							1,982

OCCUPANT LOAD GROUND FLOOR

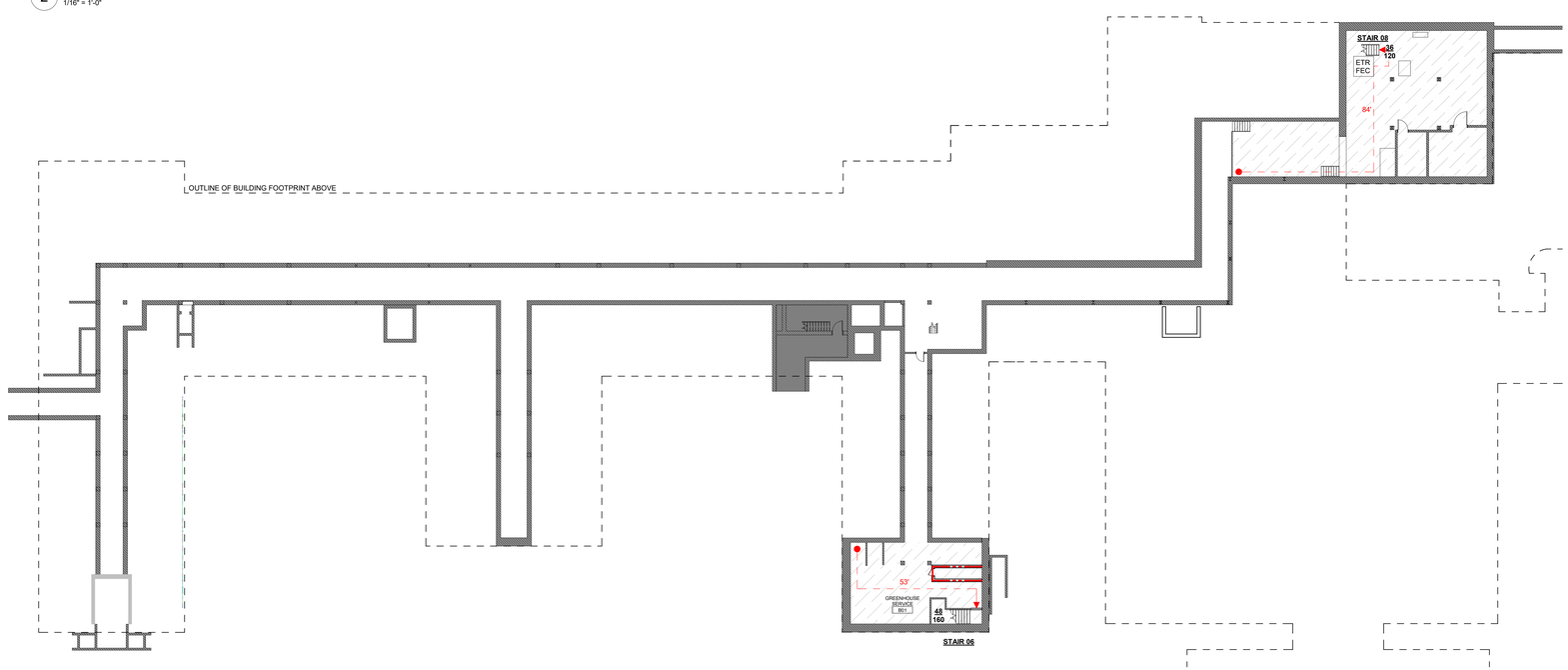
USE	FUNCTION OF SPACE	FLOOR AREA (SF)	FLOOR AREA PER OCCUPANT (SF/OCC)	OCCUPANT LOAD
B	BUSINESS	24,767	150 GROSS	166
	CONCENTRATED BUSINESS	739	50 GROSS	15
	ACCESSORY	8,191	300 GROSS	28
	VOCATIONAL	1,578	50 NET	32
GROUND FLOOR TOTAL				35,275 SF // 241 OCCUPANTS

OCCUPANT LOAD TUNNEL

USE	FUNCTION OF SPACE	FLOOR AREA	FLOOR AREA PER OCCUPANT (SF/OCC)	OCCUPANT LOAD
B	ACCESSORY	3,345	300 GROSS	12
UNOCCUPIED	STEAM TUNNEL	5,722	0	0
TUNNEL TOTAL				9,067 SF // 12 OCCUPANTS



2 OCCUPANCY & EGRESS PLAN - GROUND FLOOR - LEVEL 1 ABOVE GRADE
1/16" = 1'-0"



1 OCCUPANCY & EGRESS PLAN - UTILITY TUNNEL - LEVEL 1 BELOW GRADE
1/16" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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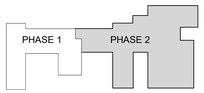
Notes:



Keyplan

Job Number 31909.00
Drawing By Author
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Revisions

OCCUPANCY & EGRESS PLAN - TUNNEL & GROUND LEVEL

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LEGEND

- A-3 ASSEMBLY
- B VOCATIONAL
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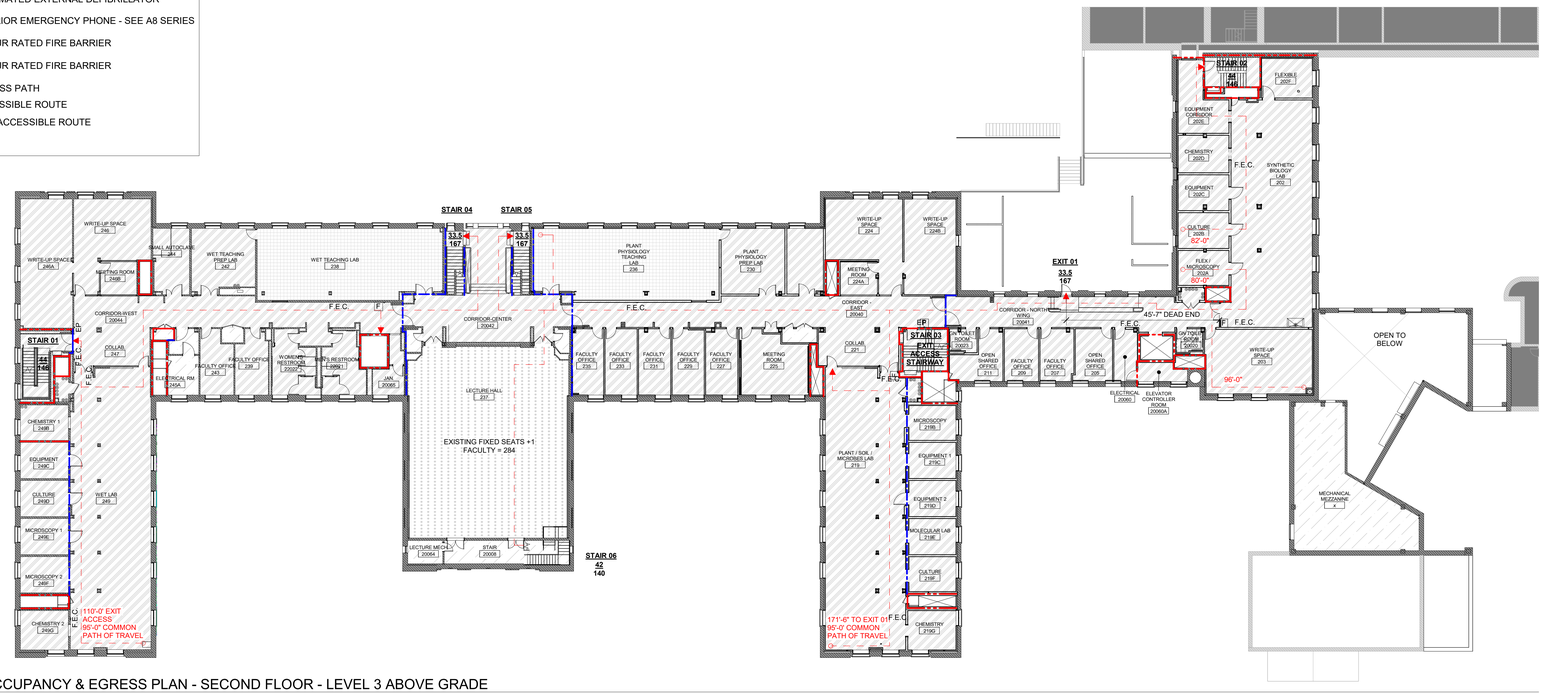
- 1-HOUR RATED FIRE BARRIER
- 2-HOUR RATED FIRE BARRIER
- EGRESS PATH
- ACCESSIBLE ROUTE
- NON-ACCESSIBLE ROUTE

EXIT CAPACITY SECOND FLOOR (BCNYS 2025) - Phase 2							
EXIT	STAIR WIDTH	STAIR EXIT ALLOWANCE (IN/PERSON)	STAIR CAPACITY (PERSONS)	CLEAR DOOR WIDTH	DOOR EXIT ALLOWANCE (IN/PERSON)	DOOR CAPACITY (PERSONS)	EXIT CAPACITY (PERSONS)
STAIR 1	44"	0.3	146	57.5"	0.2	287	146
STAIR 2	44"	0.3	146	33.5"	0.2	167	146
STAIR 4	32"	0.3	106				106
STAIR 5	32"	0.3	106				106
STAIR 6	42"	0.3	140				140
EXIT 1				33.5"	0.2	167	167
TOTAL	811						

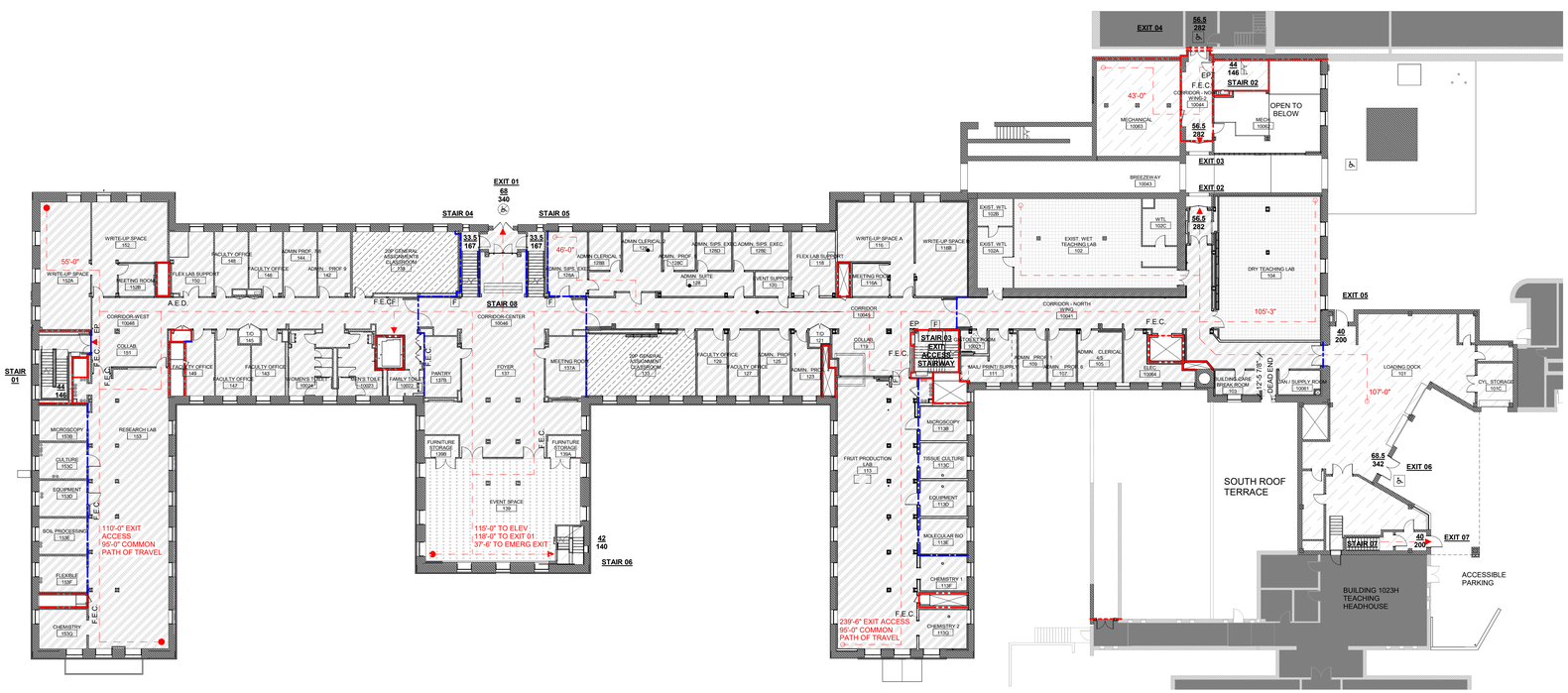
OCCUPANT LOAD SECOND FLOOR				
USE	FUNCTION OF SPACE	FLOOR AREA (SF)	FLOOR AREA PER OCCUPANT (SF/OCC)	OCCUPANT LOAD
A-3	ASSEMBLY WITH FIXED SEATS	N A (2,672)	FIXED SEAT COUNT + INSTRUCTOR	284
B	VOCATIONAL	2,305	50 NET	26 ACTUAL + 24 CALCULATED = 50
	BUSINESS	21,863	150 GROSS	146
	ACCESSORY	1,790	300 GROSS	6
SECOND FLOOR TOTAL		28,630 SF // 486 OCCUPANTS		



2 OCCUPANCY & EGRESS PLAN - SECOND FLOOR - LEVEL 3 ABOVE GRADE
1/16" = 1'-0"

EXIT CAPACITY FIRST FLOOR (BCNYS 2025) - Phase 2							
EXIT	STAIR WIDTH	STAIR EXIT ALLOWANCE (IN/PERSON)	STAIR CAPACITY (PERSONS)	CLEAR DOOR WIDTH	DOOR EXIT ALLOWANCE (IN/PERSON)	DOOR CAPACITY (PERSONS)	EXIT CAPACITY (PERSONS)
STAIR 1	44"	0.3	146	57.5"	0.2	287	146
STAIR 2	44"	0.3	146	33.5"	0.2	167	146
STAIR 4	57"	0.3	190	63"	0.2	315	190
STAIR 5	57"	0.3	190	63"	0.2	315	190
STAIR 6	42"	0.3	140	32"	0.2	160	140
STAIR 7	44"	0.3	146	37.5"	0.2	187	146
STAIR 8	136"	0.3	453	63"	0.2	315	315
EXIT 1				68"	0.2	340	340
EXIT 2				56"	0.2	280	280
EXIT 3				56"	0.2	280	280
EXIT 4				56.5"	0.2	26	262
EXIT 5				40	0.2	200	200
EXIT 6				68.5"	0.2	342	342
EXIT 7				40"	0.2	200	146
TOTAL	3,123						

OCCUPANT LOAD FIRST FLOOR				
USE	FUNCTION OF SPACE	FLOOR AREA (SF)	FLOOR AREA PER OCCUPANT (SF/OCC)	OCCUPANT LOAD
A-3	CONCENTRATED ASSEMBLY	1,341	7 NET	192
BUSINESS	CLASSROOM	1,206	20 NET	62
	BUSINESS	21,833	150 GROSS	145
	VOCATIONAL	2,944	50 NET	60
	ACCESSORY	4,227	300 GROSS	15
FIRST FLOOR TOTAL		31,528 SF // 474 OCCUPANTS		



1 OCCUPANCY & EGRESS PLAN - FIRST FLOOR - LEVEL 2 ABOVE GRADE
1/16" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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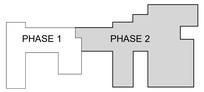
Notes:



Keyplan

Job Number	31909.00
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Date	August 31, 2026

Revisions

OCCUPANCY & EGRESS PLAN - FIRST & SECOND FLOOR

REGISTERED ARCHITECT VINCENT J. ELLENZWEIG 022901-1 STATE OF NEW YORK

PRE-BID 2026
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LEGEND

- A-3 ASSEMBLY
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- B CLASSROOM
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- B BUSINESS - CONCENTRATED USE
- B ACCESSORY (MECHANICAL / STORAGE)
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- UNOCCUPIED

- F.E.C. FIRE EXTINGUISHER
- ETR FEC EXISTING-TO-REMAIN FIRE EXTINGUISHER
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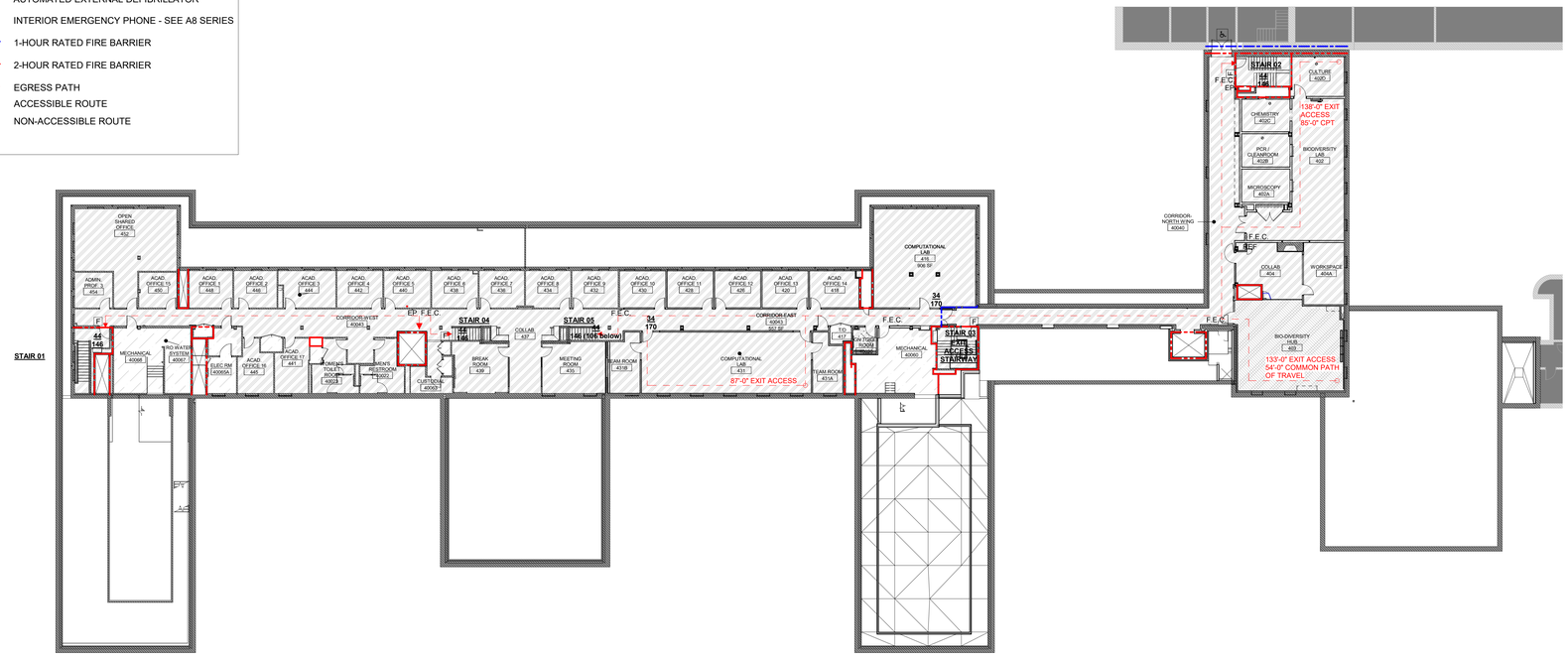
- A.E.D. AUTOMATED EXTERNAL DEFIBRILLATOR
- EP INTERIOR EMERGENCY PHONE - SEE A8 SERIES
- 1-HOUR RATED FIRE BARRIER
- 2-HOUR RATED FIRE BARRIER
- EGRESS PATH
- ACCESSIBLE ROUTE
- NON-ACCESSIBLE ROUTE

EXIT CAPACITY FOURTH FLOOR (BCNYS 2025) - Phase 2							
EXIT	STAIR WIDTH	STAIR EXIT ALLOWANCE (IN/PERSON)	STAIR CAPACITY (PERSONS)	CLEAR DOOR WIDTH	DOOR EXIT ALLOWANCE (IN/PERSON)	DOOR CAPACITY (PERSONS)	EXIT CAPACITY (PERSONS)
STAIR 1	44"	0.3	146	33.5"	0.2	167	146
STAIR 2	44"	0.3	146	33.5"	0.2	167	146
STAIR 4	44"	0.3	146				146
STAIR 5	44"	0.3	146				146
TOTAL							584

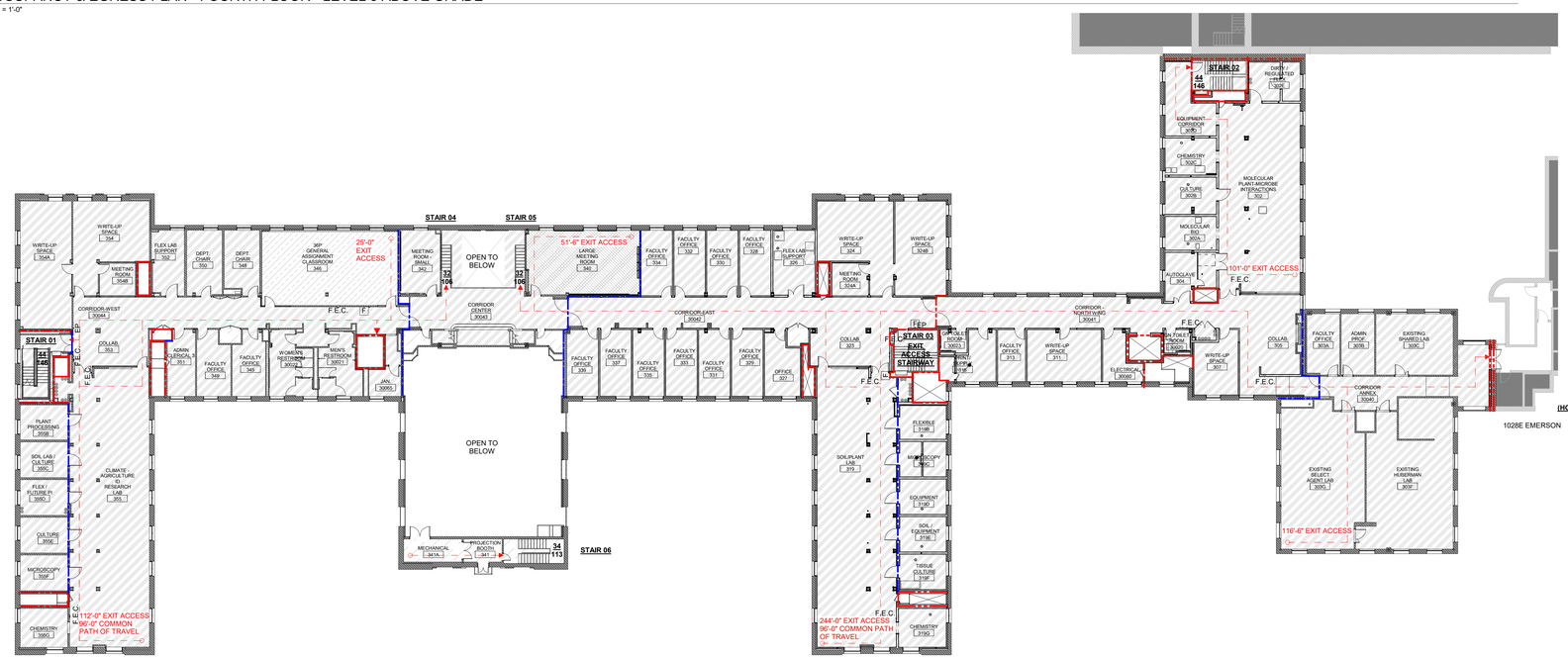
OCCUPANT LOAD FOURTH FLOOR				
USE	FUNCTION OF SPACE	FLOOR AREA (SF)	FLOOR AREA PER OCCUPANT (SF/OCC)	OCCUPANT LOAD
B	BUSINESS	12,838	150 GROSS	86
	CONCENTRATED BUSINESS	854	50 GROSS	18
	ACCESSORY	1,187	300 GROSS	4
FOURTH FLOOR TOTAL	14,879 SF // 109 OCCUPANTS			



2 OCCUPANCY & EGRESS PLAN - FOURTH FLOOR - LEVEL 5 ABOVE GRADE
1/16" = 1'-0"

EXIT CAPACITY THIRD FLOOR (BCNYS 2025) - Phase 2							
EXIT	STAIR WIDTH	STAIR EXIT ALLOWANCE (IN/PERSON)	STAIR CAPACITY (PERSONS)	CLEAR DOOR WIDTH	DOOR EXIT ALLOWANCE (IN/PERSON)	DOOR CAPACITY (PERSONS)	EXIT CAPACITY (PERSONS)
STAIR 1	44"	0.3	146	57.5"	0.2	287	146
STAIR 2	44"	0.3	146	33.5"	0.2	167	146
STAIR 4	32"	0.3	104				104
STAIR 5	32"	0.3	104				104
STAIR 6	34"	0.3	113				
EXIT 1				68"	0.2	340	340
TOTAL							840

OCCUPANT LOAD THIRD FLOOR				
USE	FUNCTION OF SPACE	FLOOR AREA (SF)	FLOOR AREA PER OCCUPANT (SF/OCC)	OCCUPANT LOAD
BUSINESS	CLASSROOM	908	20 NET	46
	BUSINESS	26,389	150 GROSS	176
	CONCENTRATED BUSINESS	680	50 GROSS	14
	ACCESSORY	563	300 GROSS	2
THIRD FLOOR TOTAL	28,540 SF // 238 OCCUPANTS			



1 BUILDING CODE DIAGRAM - THIRD FLOOR - PHASE 2 - LEVEL 4 ABOVE GRADE
1/16" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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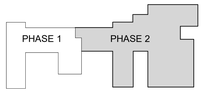
Notes:



Keyplan

Job Number	31909.00
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Date	August 31, 2026

Revisions

OCCUPANCY & EGRESS PLAN - THIRD & FOURTH FLOOR

REGISTERED ARCHITECT VINCENT A. ELLENZWEIG 022901-1 STATE OF NEW YORK

PRE-BID 2026
Scale: As indicated

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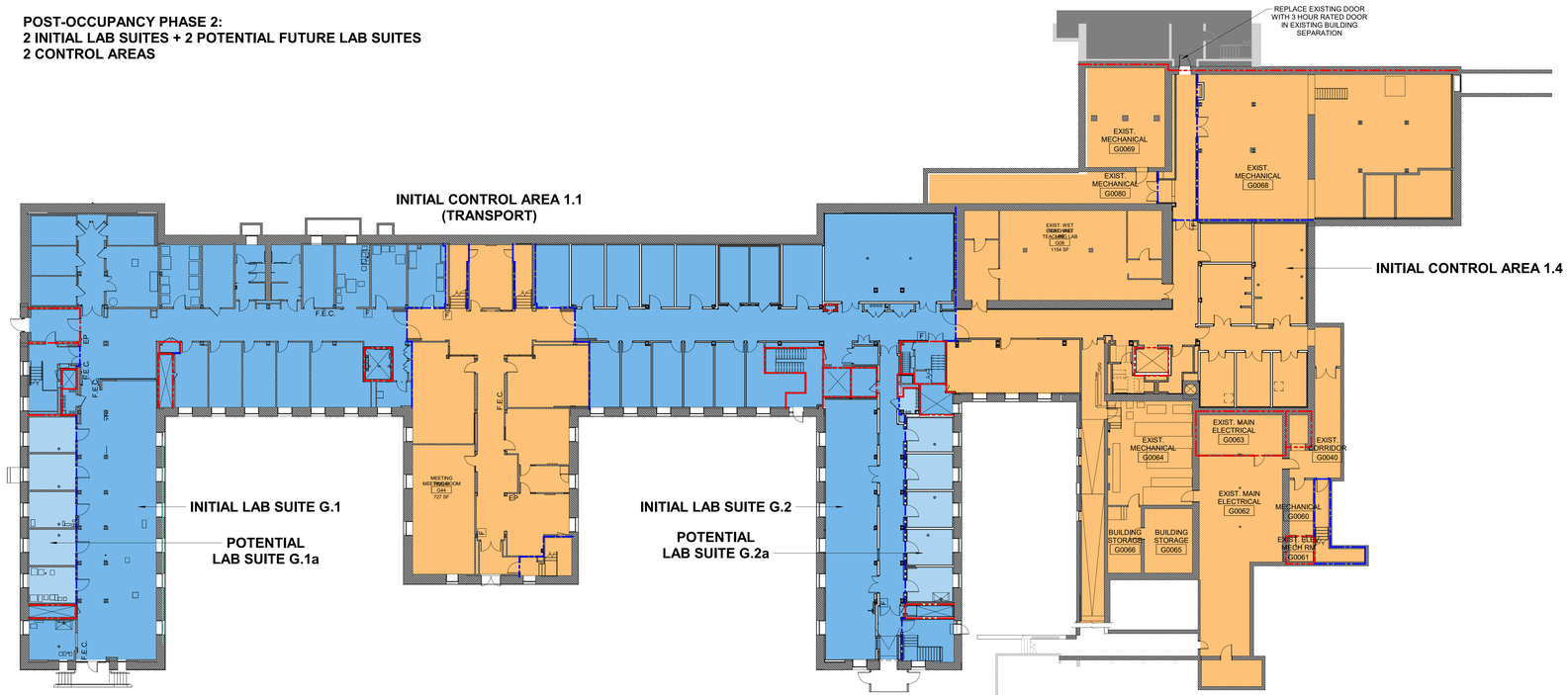
6 LAB SUITES ALLOWED
4 CONTROL AREAS ALLOWED
6 COMBINED TOTAL ALLOWED

POST-OCCUPANCY PHASE 2:
2 INITIAL LAB SUITES + 2 POTENTIAL FUTURE LAB SUITES
2 CONTROL AREAS

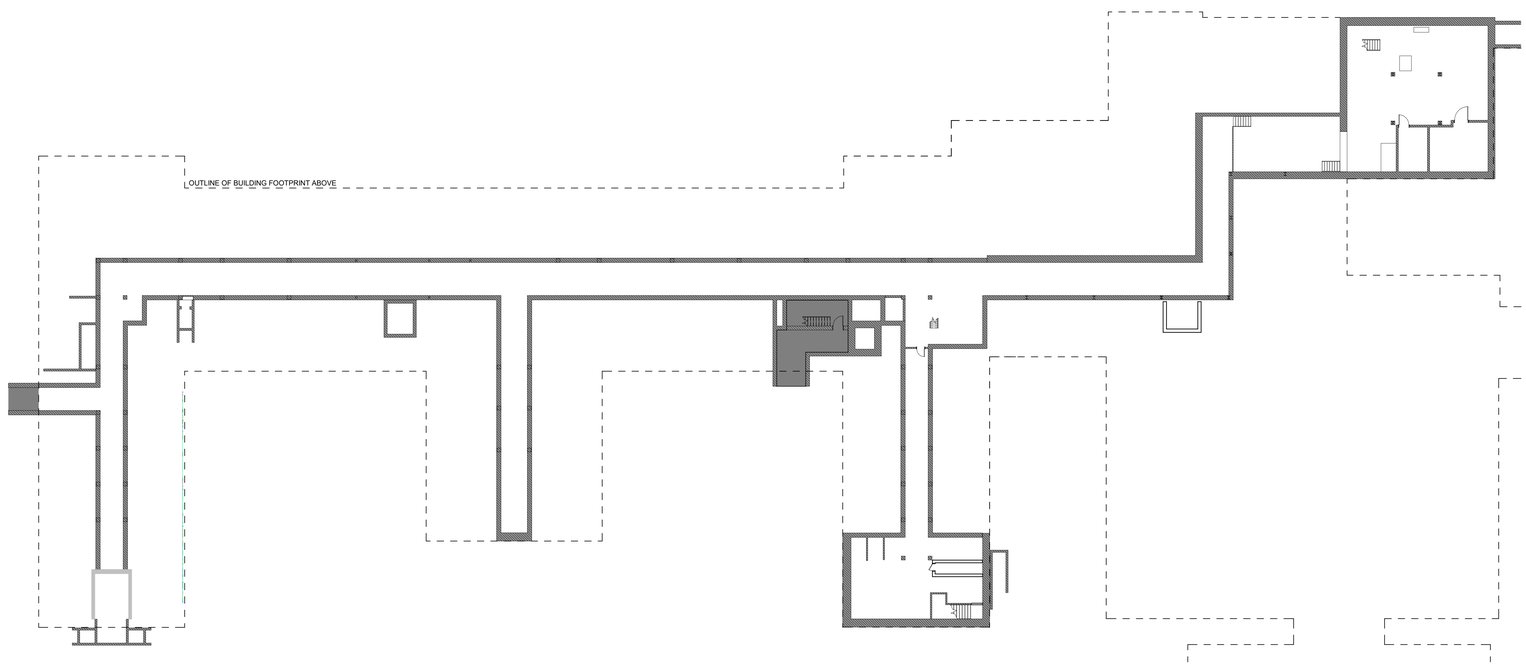
LIFE SAFETY LEGEND

CONTROL AREA	1-HOUR RATED FIRE BARRIER
CONTROL AREA (ALT COLOR TO SHOW DIVISION OF SPACE)	2-HOUR RATED FIRE BARRIER
LAB SUITE	3-HOUR RATED FIRE BARRIER
LAB SUITE (ALT COLOR TO SHOW DIVISION OF SPACE)	
CONNECTING BUILDING, EXISTING NIC	

LIFE SAFETY LEGEND
3/64" = 1'-0"



1 LIFE SAFETY PLAN - GROUND FLOOR - LEVEL 1 ABOVE GRADE
1/16" = 1'-0"



2 LIFE SAFETY PLAN - UTILITY TUNNEL - LEVEL 1 BELOW GRADE
1/16" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
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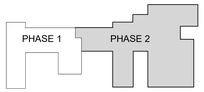
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

LIFE SAFETY PLAN - TUNNEL & GROUND LEVEL

REGISTERED ARCHITECT JAMES VINCENT ALBERTI 022901-1 STATE OF NEW YORK

PRE-BID 2026
Scale: As indicated

G4.0

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

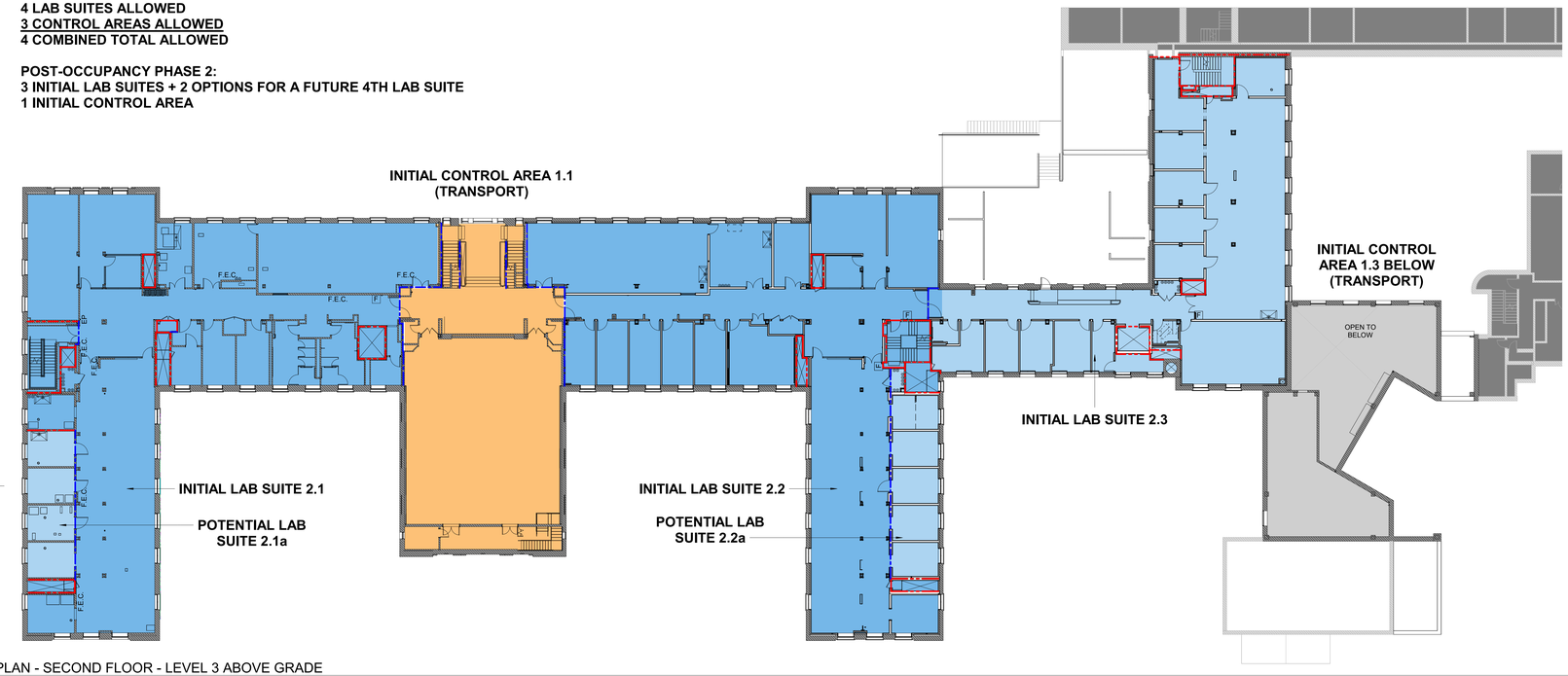
4 LAB SUITES ALLOWED
3 CONTROL AREAS ALLOWED
4 COMBINED TOTAL ALLOWED

POST-OCCUPANCY PHASE 2:
3 INITIAL LAB SUITES + 2 OPTIONS FOR A FUTURE 4TH LAB SUITE
1 INITIAL CONTROL AREA

LIFE SAFETY LEGEND

- CONTROL AREA
- CONTROL AREA (ALT COLOR TO SHOW DIVISION OF SPACE)
- LAB SUITE
- LAB SUITE (ALT COLOR TO SHOW DIVISION OF SPACE)
- CONNECTING BUILDING, EXISTING NIC
- 1-HOUR RATED FIRE BARRIER
- 2-HOUR RATED FIRE BARRIER
- 3-HOUR RATED FIRE BARRIER

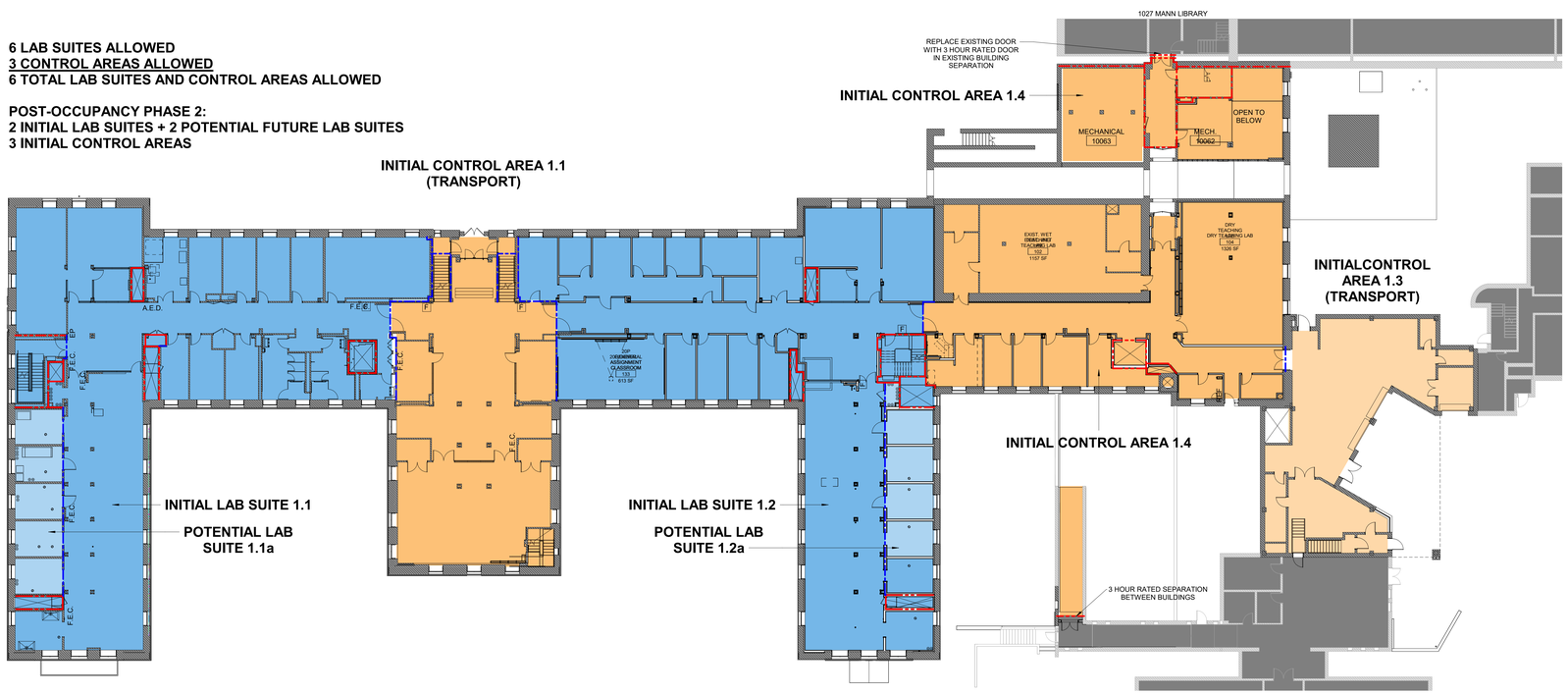
LIFE SAFETY LEGEND
3/64" = 1'-0"



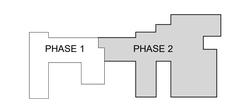
2 LIFE SAFETY PLAN - SECOND FLOOR - LEVEL 3 ABOVE GRADE
1/16" = 1'-0"

6 LAB SUITES ALLOWED
3 CONTROL AREAS ALLOWED
6 TOTAL LAB SUITES AND CONTROL AREAS ALLOWED

POST-OCCUPANCY PHASE 2:
2 INITIAL LAB SUITES + 2 POTENTIAL FUTURE LAB SUITES
3 INITIAL CONTROL AREAS



1 LIFE SAFETY PLAN - FIRST FLOOR - LEVEL 2 ABOVE GRADE
1/16" = 1'-0"



Keyplan

Job Number	31909.00
Drawing By	Author
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Filename	
Date	August 31, 2026

Revisions

LIFE SAFETY PLAN - FIRST & SECOND FLOOR

PRE-BID 2026
Scale: As indicated

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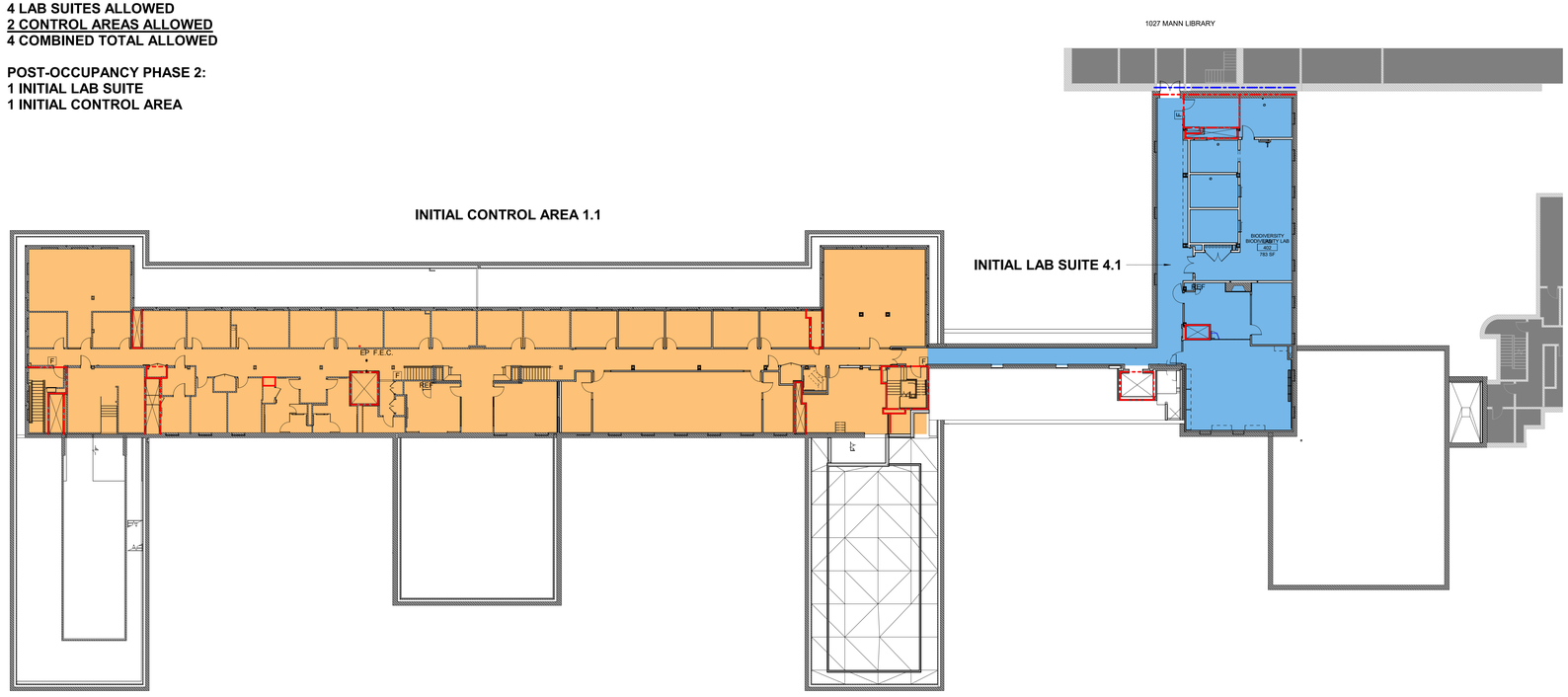
LIFE SAFETY LEGEND

CONTROL AREA	1-HOUR RATED FIRE BARRIER
CONTROL AREA (ALT COLOR TO SHOW DIVISION OF SPACE)	2-HOUR RATED FIRE BARRIER
LAB SUITE	3-HOUR RATED FIRE BARRIER
LAB SUITE (ALT COLOR TO SHOW DIVISION OF SPACE)	
CONNECTING BUILDING, EXISTING NIC	

LIFE SAFETY LEGEND
3/64" = 1'-0"

4 LAB SUITES ALLOWED
2 CONTROL AREAS ALLOWED
4 COMBINED TOTAL ALLOWED

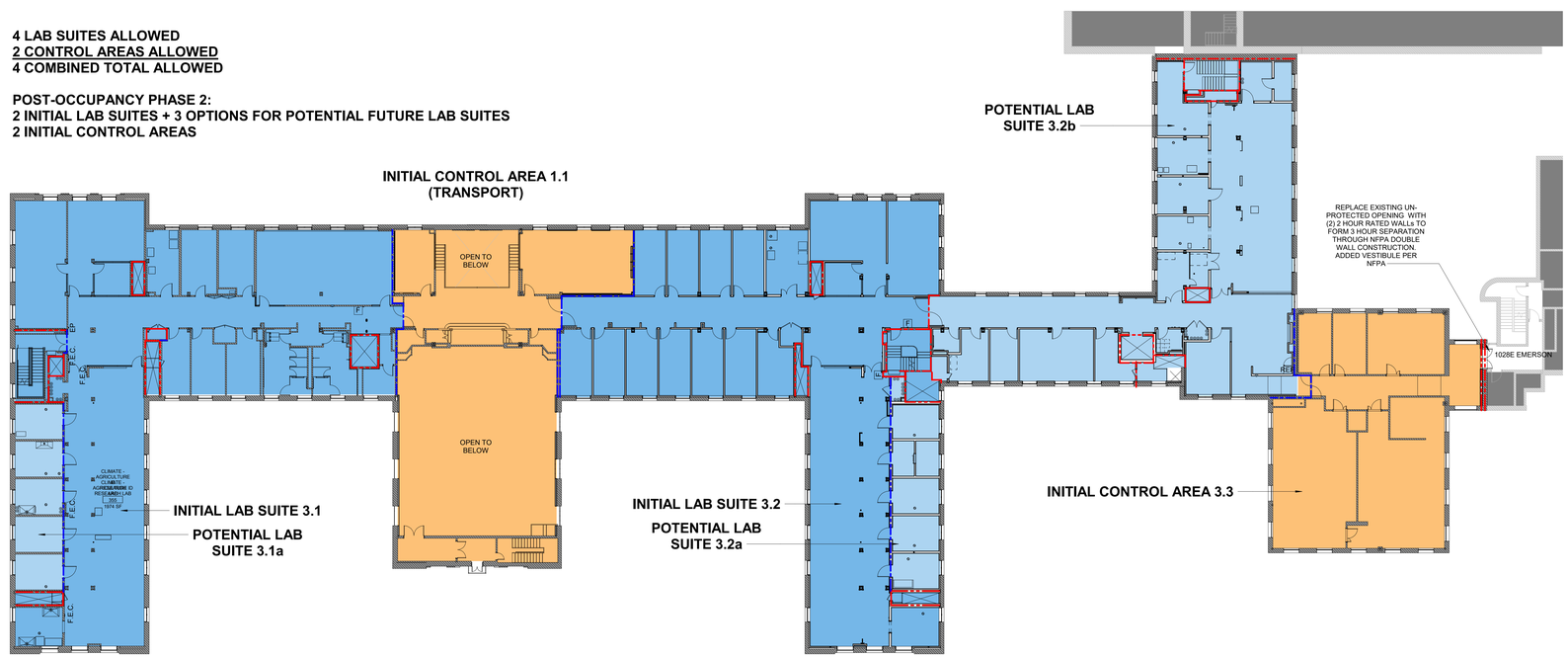
POST-OCCUPANCY PHASE 2:
1 INITIAL LAB SUITE
1 INITIAL CONTROL AREA



2 LIFE SAFETY PLAN - FOURTH FLOOR - LEVEL 5 ABOVE GRADE
1/16" = 1'-0"

4 LAB SUITES ALLOWED
2 CONTROL AREAS ALLOWED
4 COMBINED TOTAL ALLOWED

POST-OCCUPANCY PHASE 2:
2 INITIAL LAB SUITES + 3 OPTIONS FOR POTENTIAL FUTURE LAB SUITES
2 INITIAL CONTROL AREAS



3 LIFE SAFETY PLAN - THIRD FLOOR - LEVEL 4 ABOVE GRADE
1/16" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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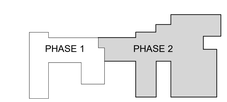

Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

LIFE SAFETY PLAN - THIRD & FOURTH FLOOR

PRE-BID 2026
Scale: As indicated

REGISTERED ARCHITECT JOHN VINCENT ROSSI 022901-1 STATE OF NEW YORK

G4.2

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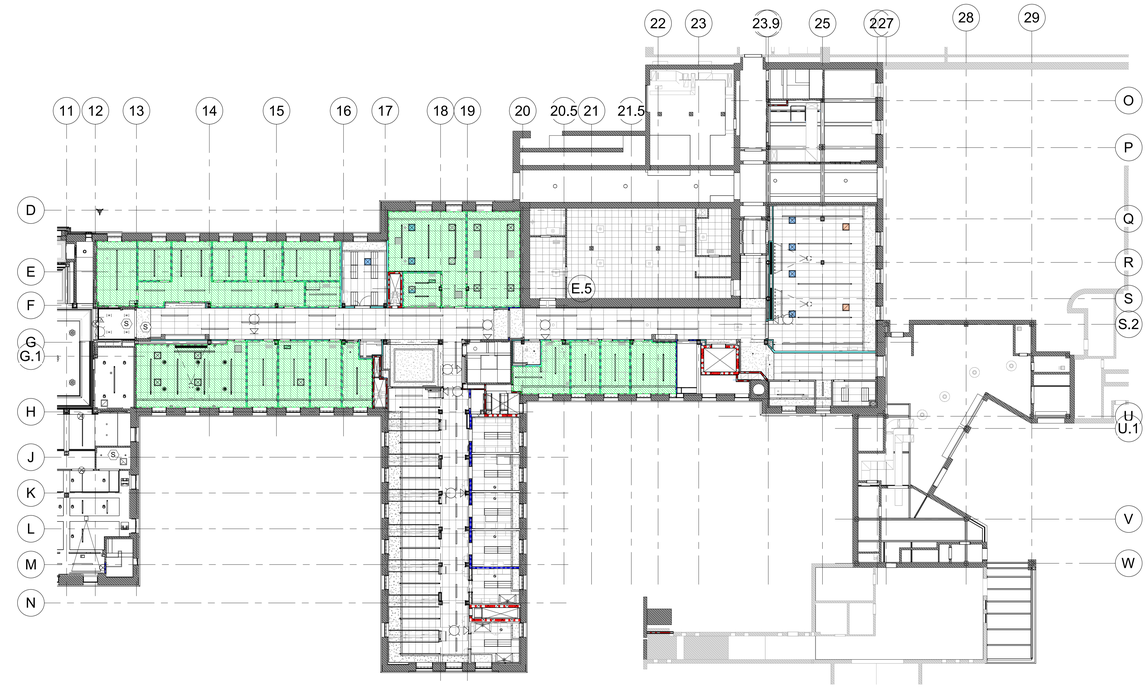
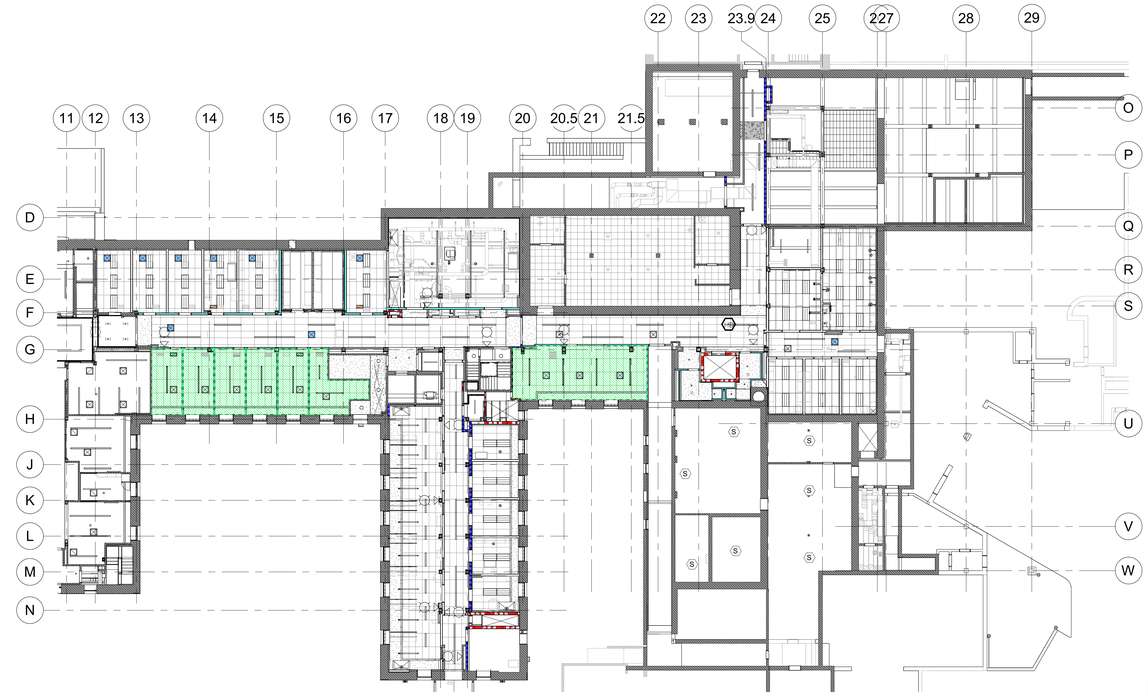
AREAS OF PLENUM RETURN



2 FIRST FLOOR PLENUM RETURN DIAGRAM - PHASE 2
1/16" = 1'-0"



1 GROUND FLOOR PLENUM RETURN DIAGRAM - PHASE 2
1/16" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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SUNY State University Construction Fund

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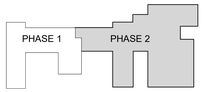
Notes:



Keyplan

Job Number 31909.00
Drawing By Author
Checked By Checker
Filename
Date November 21, 2025

Revisions

NOT FOR CONSTRUCTION

PLENUM RETURN DIAGRAMS - GROUND AND FIRST FLOORS

REGISTERED ARCHITECT JOHN VINCENT ROSSI 022901-1 STATE OF NEW YORK

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Scale: 1/16" = 1'-0"

G5.0

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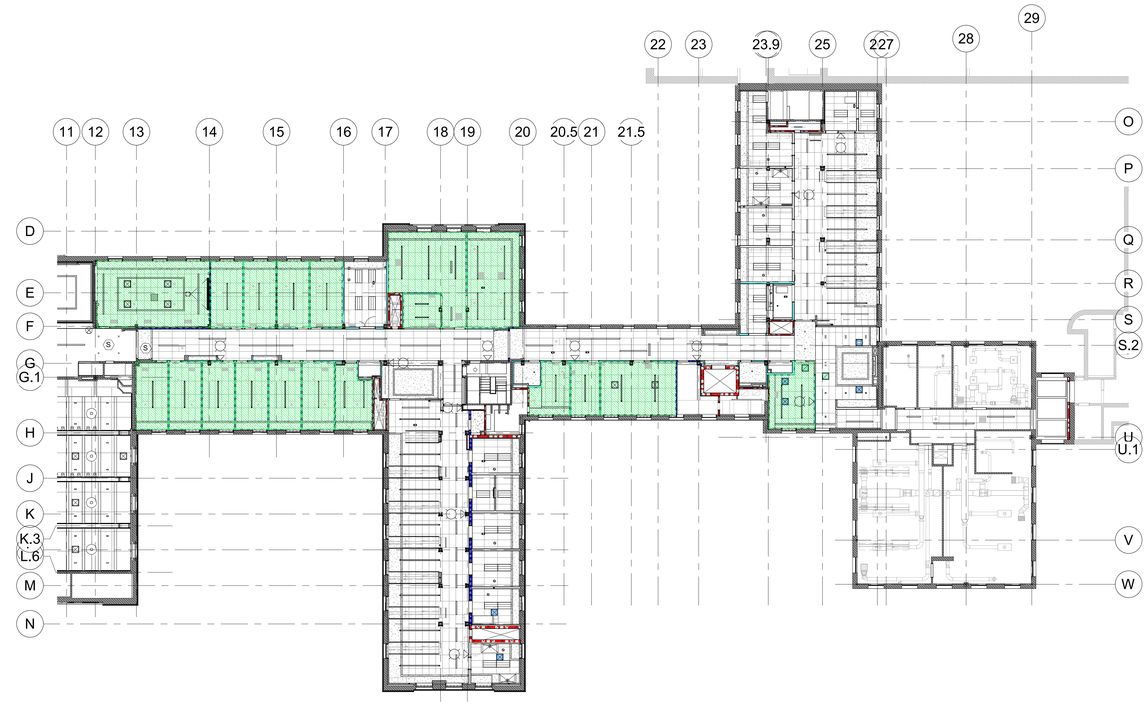
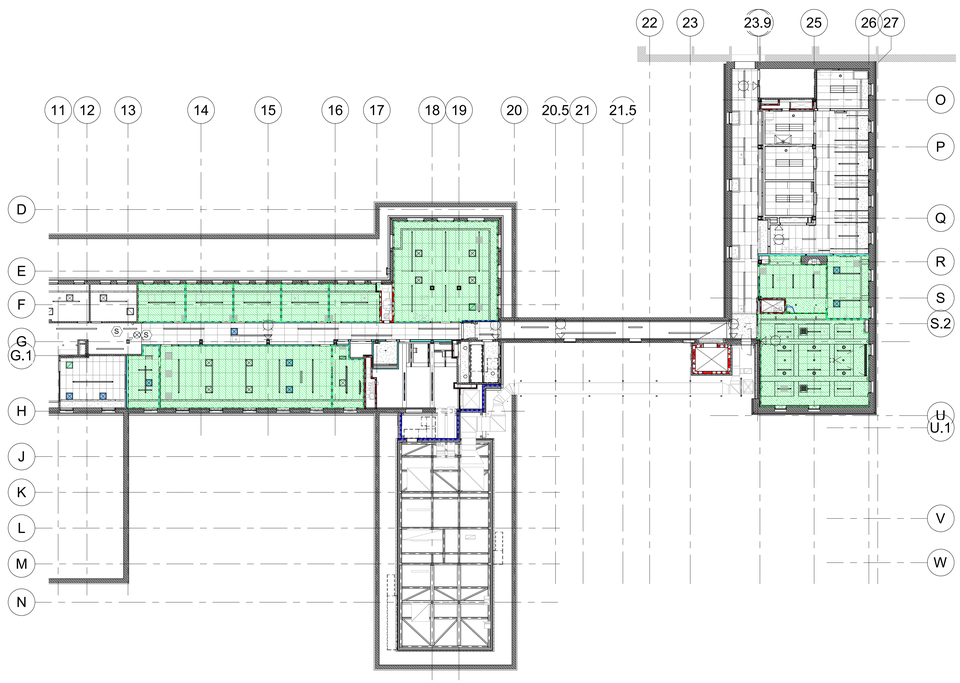
AREAS OF PLENUM RETURN



2 THIRD FLOOR PLENUM RETURN DIAGRAM - PHASE 2
1/16" = 1'-0"



3 FOURTH FLOOR PLENUM RETURN DIAGRAM - PHASE 2
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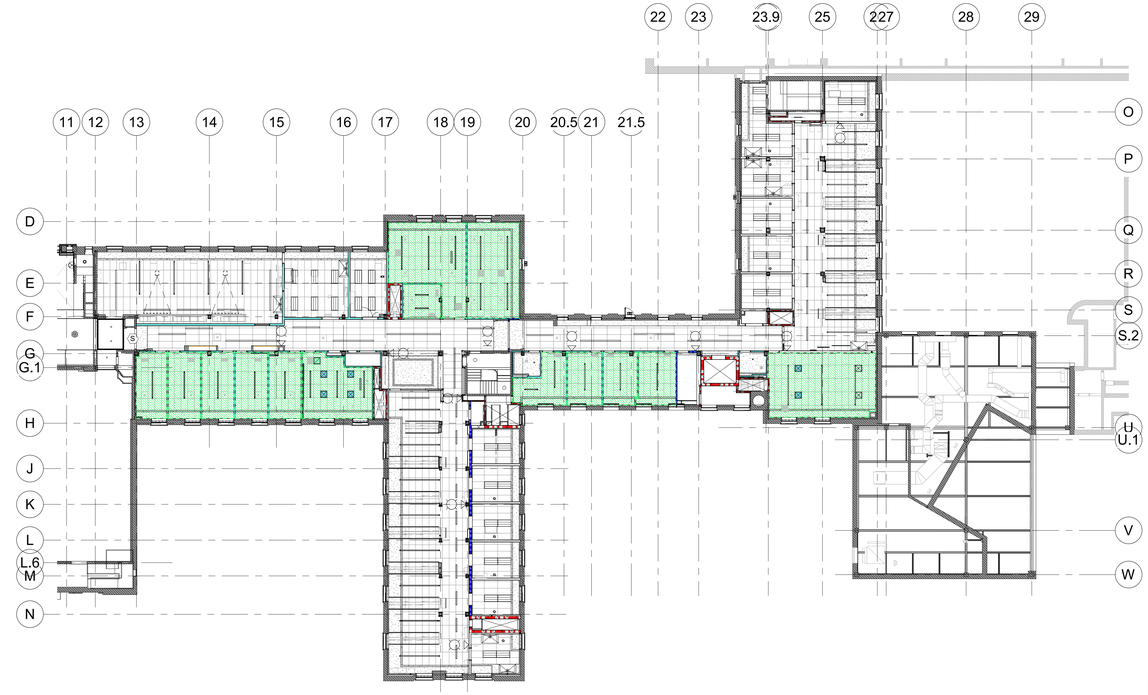

1 SECOND FLOOR PLENUM RETURN DIAGRAM - PHASE 2
1/16" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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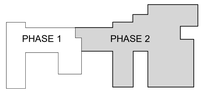

Keyplan

Job Number	31909.00
Drawing By	Author
Checked By	Checker
Filename	
Date	November 21, 2025

Revisions

NOT FOR CONSTRUCTION

PLENUM RETURN DIAGRAMS - SECOND, THIRD, AND FOURTH FLOORS

REGISTERED ARCHITECT ANDREW VINCENT ZWEIG 022901-1 STATE OF NEW YORK

PRE-BID W/ COST REDUC.
Scale: 1/16" = 1'-0"

G5.1

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A/E	ARCHITECT / ENGINEER
AD	AREA DRAIN/ACCESS DOOR
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AG	AIR GAP
AP	ACCESS PANEL
AS	AUTOMATIC SPRINKLER
ASD	ADJUSTABLE SPEED DRIVES
ASD	AUTOMATIC SPRINKLER DRAIN
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASR	AUTOMATIC SPRINKLER RISER
AV	ACID VENT
AW	ACID WASTE
BFP	REDUCED PRESSURE BACKFLOW PREVENTER
BHP	BREAK HORSEPOWER
BSP	BLACK STEEL PIPE
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CELSIUS
CA	COMPRESSED AIR
CGA	COMPRESSED GAS ASSOCIATION
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
CV	CONTROL VALVE
DCW	DOMESTIC COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY
DI	DEIONIZED WATER
DN	DOWN
DOE	DEPARTMENT OF ENERGY
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWR	DRINKING WATER RETURN
DWS	DRINKING WATER SUPPLY
DWV	DRAIN WASTE VENT
EL	ELEVATION
EMCS	ENERGY MONOSERRAT AND CENTRAL SYSTEM
EPA	ENVIROMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
ESC	ESCUTCHEON
ESH	EMERGENCY SHOWER
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
EWS	EYE WASH STATION
EWS/SH	EYE WASH/DRENCH SHOWER
EX	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FCW	FILTERED COLD WATER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT (HOSE CONNECTION
FM	FLOW METER
FOP	FUEL OIL PUMP
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FS	FLOOR SINK
FS	FLOW SWITCH
FU	FIXTURE UNITS
GAL	GALLON
GCO	GRADE CLEANOUTS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GRS	GAS REGULATOR STATION
GT	GREASE TRAP
GVTR	GAS VENT THROUGH ROOF
GWH	GAS FIRED WATER HEATER
H&CW	HOT AND COLD WATER
HB	HOSE BIBB
HD	HUB DRAIN
HEX	HEAT EXCHANGER
HP	HORSEPOWER
HS	HAND SINK
HST	HOT WATER STORAGE TANK (DOMESTIC)
HWB	HOT WATER BOILER
HWCP	HOT WATER CIRCULATING PUMP
HWP	HOT WATER PUMP
HYD	HYDRANT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
ICW	INDUSTRIAL COLD WATER
IHW	INDUSTRIAL HOT WATER
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
IRW	IRRIGATION WATER
IW	INDIRECT WASTE
IWH	INSTANTANEOUS WATER HEATER
IWR	INDUSTRIAL WATER RETURN
IWS	INDUSTRIAL WATER SUPPLY
KW	KILOWATT
KWH	KILOWATT-HOUR
L/S	LITER PER SECOND
LA	LABORATORY AIR
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LCW	LABORATORY COLD WATER
LHW	LABORATORY HOT WATER

LNG	LIQUID NATURAL GAS
LOX	LIQUID OXYGEN
LV	LABORATORY VACUUM
LW	LAB WASTE
M	METER
MA	MEDICAL AIR
MAV	MANUAL AIR VENT
MBH	1000 BTUH
MED	MEDICAL
MER	MECHANICAL EQUIPMENT ROOM
MH	MANHOLE
MOU	MEMORANDUM OF UNDERSTADING
MSB	MOP SERVICE BASIN
MV	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM.A	NOMINAL
NPW	NON POTABLE WATER
NTS	NOT TO SCALE
O2	OXYGEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OR	OPERATING ROOM
OVFL	OVERFLOW
PA	PASCAL
PD	PRESSURE DROP OR DIFFERENCE
PDI	PLUMBING AND DRAINAGE INSTITUTE
PG	PRESSURE GAGE
PP	PLUMBING PUMP
PPM	PARTS PER MILLION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ATMOSPHERE
PSIG	POUNDS PER SQUARE INCH GAGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PW	POTABLE WATER
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RL	ROOF LEADER
RP	RECIRCULATION PUMP
RO	REVERSE OIMOSIS WATER
RWL	RAIN WATER LEADER
SAN	SANITARY SEWER
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SCFM	STANDARD CUBIC FOOT/MINUTE
SCW	SOFTENED COLD WATER
SDMH	STORM DRAIN MANHOLE
SMH	SANITARY MANHOLE
SP	SUMP PUMP
SPR	SPRINKLER LINE
SQFT/SF	SQUARE FEET
SS	STAINLESS STEEL
ST	STORAGE TANK
SW	STORM WATER
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TSTAT	THERMOSTAT
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
TYP	TYPICAL
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VCO	VACUUM CLEANER OUTLET
VP	VACUUM PUMP
VS	VENT STACK
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WG	WATER GAGE
WH	WALL HYDRANT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTER
WL	WATER LINE
WM	WATER METER
WPD	WATER PRESSURE DROP
WS	WASTE STACK
WSFU	WATER SUPPLY FIXTURE UNITS
YCO	YARD CLEANOUT
YH	YARD HYDRANT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
ICW	INDUSTRIAL COLD WATER
IHW	INDUSTRIAL HOT WATER
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
IRW	IRRIGATION WATER
IW	INDIRECT WASTE
IWH	INSTANTANEOUS WATER HEATER
IWR	INDUSTRIAL WATER RETURN
IWS	INDUSTRIAL WATER SUPPLY
KW	KILOWATT
KWH	KILOWATT-HOUR
L/S	LITER PER SECOND
LA	LABORATORY AIR
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LCW	LABORATORY COLD WATER
LHW	LABORATORY HOT WATER

DRAWING SYMBOLS

- 2 / PL105 — DETAIL NUMBER
- DRAWING NUMBER WHERE DRAWN
- A / PL105 — SECTION LETTER
- DRAWING NUMBER WHERE SHOWN
- BUILDING NO. WHERE EQUIPMENT IS LOCATED.
- EQUIPMENT ABBREVIATION (PUMP)
- 26-P3 — PUMP NO.3 IN BUILDING NO.26
- TYPICAL UNIT NO.
- EXISTING TO REMAIN

GENERAL PLUMBING SYMBOLS

- DIRECTION OF PIPE PITCH (DOWN)
- DIRECTION OF FLOW
- ANCHOR
- REDUCER OR INCREASER
- ECCENTRIC REDUCER
- TOP CONNECTION, 45° OR 90°
- BOTTOM CONNECTION, 45° OR 90°
- SIDE CONNECTION
- CAPPED OUTLET
- RISE OR DROP IN PIPE
- UNION
- PIPE UP
- PIPE DOWN
- POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
- LIMIT OF DEMOLITION
- INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES
- FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES
- STRAINER
- STRAINER WITH BLOWDOWN VALVE, BRASS HOSE CONNECTION CAP, AND CHAIN
- THERMOMETER
- PRESSURE GAGE
- FE — FLOW ELEMENT
- CO — CLEAN OUT
- HOSE BIB
- STEAM TRAP

PIPING MATERIAL AND INSULATION SCHEDULE

SYSTEM	PIPE MATERIAL	PIPE SIZE RANGE	INSULATION THICKNESS	INSULATION TYPE	NOTES
ARGON GAS	COPPER, TYPE L				
COMPRESSED AIR	COPPER, TYPE L				
DOMESTIC COLD WATER	COPPER, TYPE L	NPS 1 AND SMALLER	1/2"	MINERAL FIBER	
DOMESTIC COLD WATER	COPPER, TYPE L	NPS 1-1/2" AND LARGER	1"	MINERAL FIBER	
DOMESTIC HOT & RECIRCULATED WATER	COPPER, TYPE L	NPS 1-1/4" AND SMALLER	1"	MINERAL FIBER	
DOMESTIC HOT & RECIRCULATED WATER	COPPER, TYPE L	NPS 1-1/2" AND LARGER	1 1/2"	MINERAL FIBER	
NATURAL GAS	BLACK STEEL				
NITROGEN GAS	COPPER, TYPE L				
RO/DI (CPVC)	SCHEDULE 80 CPVC	ALL SIZES	1"	MINERAL FIBER	2, 3
RO/DI (POLYPROPYLENE)	FIRE RETARDANT POLYPROPYLENE	ALL SIZES	1"		2
SANITARY, ABOVE GRADE	POLYPROPYLENE	ALL SIZES	1"	MINERAL FIBER	
SANITARY, BELOW GRADE	CAST IRON				
STORMWATER	CAST IRON	ALL SIZES	1"	MINERAL FIBER	
TEPID WATER (EMERGENCY FIXTURES)	COPPER, TYPE L	NPS 1-1/4" AND SMALLER	1"	MINERAL FIBER	
TEPID WATER (EMERGENCY FIXTURES)	COPPER, TYPE L	NPS 1-1/2" AND LARGER	1 1/2"	MINERAL FIBER	

NOTES:
1. REFER TO DIVISION 22 SPECIFICATIONS FOR ADDITIONAL PLUMBING PIPING AND INSULATION REQUIREMENTS.
2. INSULATION SHALL ONLY BE REQUIRED WHEN PIPING PASSES THROUGH AN ABOVE CEILING SPACE BEING USED AS A RETURN AIR PLENUM. COORDINATE WITH MECHANICAL FOR RETURN AIR PLENUM LOCATIONS.
3. CPVC SHALL BE USED ONLY AS NECESSARY WHEN CONNECTING TO EXISTING CPVC PIPING SYSTEMS. ALL NEW RO PIPING SHALL BE POLYPROPYLENE.

2025 ENERGY CONSERVATION CONSTRUCTION CODE OF NYS (2025 ECCNYS)
THE MAXIMUM ALLOWABLE PIPING LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE IN ACCORDANCE WITH THE FOLLOWING. WHERE THE PIPING CONTAINS MORE THAN ONE SIZE OF PIPE, THE LARGEST SIZE OF PIPE WITHIN THE PIPING SHALL BE USED FOR DETERMINING THE MAXIMUM ALLOWABLE LENGTH OF THE PIPING IN TABLE C404.5.1.

TABLE C404.5.1

NOMINAL PIPE SIZE	VOLUME (LIQUID OUNCES PER FOOT LENGTH)	MAXIMUM PIPING LENGTH	
		PUBLIC LAVATORY FAUCETS	OTHER FIXTURES AND APPLIANCES
1/2"	1.5	2	43
3/4"	3	0.5	21
1"	5	0.5	13
1-1/4"	8	0.5	8
1-1/2"	11	0.5	6
2" OR LARGER	18	0.5	4

NOTE: ONLY BATHROOMS WITH MULTIPLE LAVATORIES ARE CONSIDERED "PUBLIC LAVATORY FAUCETS."

PLUMBING PIPING SYMBOLS

- EXISTING PIPE TO REMAIN
- EXISTING PIPE TO BE DEMOLISHED
- DOMESTIC COLD WATER, COLD WATER
- DOMESTIC HOT WATER, HOT WATER
- DOMESTIC HOW WATER RETURN, HOT WATER RETURN
- COMPRESSED AIR
- RODI WATER
- VENT (SANITARY)
- SAN — SANITARY
- TW — TW — TW — TEPID WATER
- CW — DOMESTIC COLD WATER CONNECTION REQUIRED
- HW — DOMESTIC HOT WATER CONNECTION REQUIRED
- EW — EYEWASH CONNECTION REQUIRED
- DH — DRENCH HOSE CONNECTION REQUIRED
- A — COMPRESSED AIR CONNECTION REQUIRED
- V — VACUUM CONNECTION REQUIRED
- RO — RO/DI WATER CONNECTION REQUIRED
- EG — SPECIALTY GAS CONNECTION REQUIRED

PLUMBING VALVE SYMBOLS

- ISOLATION VALVE: NPS 2" AND SMALLER BALL VALVE, NPS 2-1/2" AND ABOVE BUTTERFLY
- DRAIN VALVE
- GLOBE VALVE
- GATE VALVE WITH 3/4 " HOSE ADAPTER
- CHECK VALVE
- ANGLE GLOBE VALVE
- BUTTERFLY VALVE
- BALL VALVE
- MODULATING CONTROL VALVE
- TWO-WAY DIGITAL CONTROL VALVE
- BYPASS VALVE
- THREE-WAY DIGITAL CONTROL VALVE
- THREE-WAY MODULATING CONTROL VALVE
- THREE-WAY TWO POSITION CONTROL VALVE
- PRESSURE REGULATING VALVE
- PRESSURE REDUCING VALVE
- AUTOMATIC FLOW CONTROL VALVE
- PRESSURE RELIEF VALVE
- SAFETY RELIEF VALVE
- PRESSURE SUSTAINING VALVE
- MANUAL AIR VENT
- TO PRESSURE GAUGE MANIFOLD
- TEST PLUG (PRESSURE/TEMPERATURE)
- TEMPERATURE WELL
- AUTOMATIC AIR VENT
- BALANCING VALVE
- BACKFLOW PREVENTER
- PRESSURE GAUGE WITH ISOLATION VALVE
- A — WATER HAMMER ARRESTOR
- CIRCUIT SETTER BALANCING VALVE

GENERAL PLUMBING NOTES:

1. THE GENERAL NOTES ON THIS SHEET APPLY TO ALL PLUMBING DRAWINGS.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL ASPECTS OF THE DESIGN, TO INCLUDE THE WORK OF SUB-TRADES.
3. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, ALTHOUGH NO ATTEMPT WAS MADE TO SHOW EVERY OFFSET, FITTING, BEAM, PIPE SUPPORT, CLEARANCE, ETC. IT IS THE CONTRACTOR 'S RESPONSIBILITY TO SURVEY ALL WORK AREAS AND SUBMIT FINAL, DETAILED COORDINATED SHOP DRAWINGS FOR REVIEW BY THE DESIGNER OF RECORD TO ENSURE THAT THE DESIGN INTENT WILL BE MET AND THAT ALL TRADES ARE PROPERLY COORDINATED. CHANGES REQUIRED TO FIT EQUIPMENT, AND PIPING SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
4. THE WORK INCLUDES ALL ITEMS OF THE SPECIFICATIONS THAT ARE WRITTEN SEPARATELY IN A SPECIFICATIONS BOOK.
5. ALL WORK SHALL BE DONE WITH COMPLETE COMPLIANCE WITH THE PUBLISHED EDITIONS OF THE APPLICABLE CODES AND STANDARDS WHETHER STATUTORY OR NOT. ALL WORK SHALL BE INSTALLED TO COMPLY WITH THE NEW YORK STATE BUILDING, PLUMBING, AND FIRE CODES, UNDERWRITER'S LABORATORY, INC., AMERICAN NATIONAL STANDARD INSTITUTE, INC., AND CODES AND STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). IF ANY PART OF THE INSTALLATION DOES NOT MEET CODE, NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING THE INSTALLATION. IF ANY PART OF THE PROJECT CANNOT BE INSTALLED TO CONFORM WITH THE PLANS AND/OR SPECIFICATIONS, NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING THE INSTALLATION.
6. UNLESS STATED OTHERWISE, ALL EXISTING MATERIAL AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PROJECT OWNER.
7. THE CONTRACTOR SHALL DEVELOP AND PRESENT A CONSTRUCTION PLAN AND WORK SCHEDULE WITH ALL PHASING, STAGING, AND SEQUENCING OF WORK FOR APPROVAL PRIOR TO THE COMMENCEMENT AND BEGINNING IMPLEMENTATION OF HIS WORK. THE CONTRACTOR SHALL DETERMINE PRIOR TO SUBMITTING HIS WORK SCHEDULE, THE SPECIFIC TIME AVAILABILITY OF ALL AREAS AND SPACES AND DETERMINE WHAT WORK MUST BE DONE DURING "OFF HOURS".
8. WITH THE EXCEPTION OF SIGNIFICANT NOISE GENERATING ACTIVITIES SUCH AS CORE DRILLING, ETC., WORK OUTSIDE OF THE OCCUPIED SPACES, SUCH AS ON THE ROOF, ETC., MAY BE PERFORMED DURING NORMAL WORKING HOURS.
9. UNLESS SPECIFICALLY NOTED AS EXISTING, ALL ITEMS, EQUIPMENT, AND WORK SHOWN IS NEW AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
10. DURING THE EXECUTION OF THIS CONTRACT, THE SITE AND BUILDINGS WILL BE OCCUPIED AND IN USE. WORK DONE UNDER THIS CONTRACT SHALL BE PERFORMED WITHOUT INCONVENIENCE TO THE OWNER INSOFAR AS POSSIBLE. ALL WORK SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND IS SUBJECT TO THEIR CONTINUOUS APPROVAL.
11. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR ALL CHARACTERISTICS OF THE EQUIPMENT THAT HE INTENDS TO INSTALL AND MUST FOLLOW MANUFACTURER RECOMMENDATIONS FOR PROPER INSTALLATION. IF THERE ARE ANY DIFFERENCES IN THE EQUIPMENT SHOWN ON THE DESIGN DRAWINGS AND THE EQUIPMENT TO BE INSTALLED, THE CONTRACTOR SHALL MAKE ALL CHANGES AND ADJUSTMENTS TO ACCOMMODATE THE PROPOSED EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. THIS APPLIES TO ALL SUPPORT SERVICES AND FACILITIES NECESSARY TO PROPERLY INSTALL THE EQUIPMENT TO FUNCTION ADEQUATELY AS PART OF THE SYSTEMS FOR WHICH THEY WERE DESIGNED AND SELECTED. THESE CHARACTERISTICS INCLUDE SUCH THINGS AS VEIGHT, CLEARANCE, DIMENSIONS, ELECTRICAL, MECHANICAL, PLUMBING, AND UTILITY SERVICES, ETC. ACCOMODATING SERVICES INCLUDE SUCH THINGS AS DIMENSIONS, LOCATIONS, AND SIZES OF SUPPORTING MEMBERS, PIPE, CONNECTION SIZES, ELECTRICAL SERVICE SIZE AND PROTECTION, ELECTRICAL CONNECTION LOCATION, UTILITY AND PLUMBING CONNECTION SIZES AND LOCATIONS, ETC. ALL CHANGES SHALL BE SUBJECT TO THE APPROVAL OF THE PROJECT A/E AND THE OWNER'S REPRESENTATIVE.
12. BEFORE ANY DEMOLITION OR CONSTRUCTION WORK IS BEGUN, THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE SHALL SURVEY THE EXISTING BUILDING AREA TO BE MODIFIED AND/OR REPLACED TO ACCURATELY DOCUMENT EXISTING CONDITIONS. THIS SURVEY WILL BE USED BY THE OWNER'S REPRESENTATIVE AT JOB COMPLETION TO DETERMINE WHICH BUILDING/SITE COMPONENTS MUST BE REPLACED WITH NEW.
13. UNLESS STATED OTHERWISE, REQUEST APPROVAL FROM THE OWNER'S REPRESENTATIVE SEVEN DAYS IN ADVANCE FOR THE SHUTDOWN OF ANY EXISTING SYSTEM.
14. UNLESS STATED OTHERWISE, FINAL ADVANCE NOTICE OF 48 HOURS SHALL BE GIVEN TO THE OWNER'S REPRESENTATIVE PRIOR TO THE PROPOSED SHUTDOWN OF ANY SYSTEM.
15. THE CLOSING AND OPENING OF VALVES SHALL BE WITNESSED BY THE OWNER'S REPRESENTATIVE; NOTIFY LOCAL AUTHORITIES AS REQUIRED.
16. THE CONTRACTOR SHALL NOT PENETRATE OR CUT ANY STRUCTURAL MEMBERS NOT SPECIFICALLY SHOWN ON THE DRAWINGS (E.G., JOISTS, BEAMS, ETC.). IF STRUCTURAL MEMBERS CONFLICT WITH ROUTING, CONTACT THE OWNER'S REPRESENTATIVE FOR DIRECTION BEFORE PROCEEDING. EXERCISE CAUTION IN CUTTING CONCRETE FLOORS AND WALLS TO AVOID EXISTING UTILITIES WHICH MAY BE LOCATED IN AND UNDER CONCRETE SURFACES. THE CONTRACTOR SHALL PROVIDE NEW OPENINGS IN WALLS, FLOOR, AND ROOF. AND PATCH EXISTING OPENINGS IN CONJUNCTION WITH THE DEMOLITION ANDINSTALLATION OF THE NEW BUILDING COMPONENTS, INCLUDING MECHANICAL, PLUMBING, ELECTRICAL, AND GENERAL CONTRACTORS' ITEMS, ALL NECESSARY FRAMING, COUNTER-FLASHING, ETC. SHALL BE INCLUDED.
18. FOR ALL FLOOR, WALL, AND ROOF PENETRATION, VERIFY THE LOCATION OF THE EXISTING STRUCTURAL MEMBERS PRIOR TO DRILLING AND CUTTING, RELOCATE OPENINGS AS REQUIRED AND OFFSET DUCTS, PIPES, CONDUIT, ETC.
19. FOR EACH PHASE AND BEFORE INTERRUPTING EACH EXISTING UTILITY, DETERMINE, IN ADVANCE, IF ANY DOWNSTREAM SERVICE BEYOND THE CONSTRUCTION AREA OF THE PHASE, WILL BE INTERRUPTED AND PROVIDE A TEMPORARY SERVICE BYPASSING THE CONSTRUCTION AREA. PREPARE A DETAILED SHOP DRAWING SHOWING ALL OF THE EXISTING UTILITIES IN THEIR RELOCATED LOCATION AND ALL NEW PLUMBING SYSTEMS.
20. EXISTING DUCTWORK, DOMESTIC COLD WATER PIPING. DOMESTIC HOT WATER PIPING. CHILLED AND HEATING HOT WATER PIPING, WASTE, VENT, FIRE SPRINKLER LINES, FIRE ALARM EQUIPMENT, ELECTRICAL CONDUIT, TELEPHONE CONDUIT, COMMUNICATION CONDUIT, PNEUMATIC TUBING, ETC., MAY HAVE TO BE RELOCATED TO FACILITATE THE INSTALLATION OF THE NEW WORK. THERE WILL BE NO EXTRA COMPENSATION TO THE CONTRACTOR FOR THIS WORK.
21. THE CONTRACTOR SHALL PAY FOR ALL DAMAGE, INCLUDING WATER DAMAGE, TO PROPERTY AND EQUIPMENT CAUSED BY HIS WORK THROUGHOUT THE CONSTRUCTION AND WARRANTY PERIOD.
22. ANY DEVICE THAT REQUIRES ACCESS FOR ADJUSTMENT OR ROUTINE MAINTENENANCE, SUCH AS BUT NOT LIMITED TO VALVES, CONTROL DEVICES, ETC. SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION.
23. ALL UL LISTED EQUIPMENT SHALL BE INSTALLED AS PER LISTING OR LABELING.
24. PATCH AND PAINT TO MATCH EXISTING, ALL SURFACES DAMAGED BY THE DEMOLITION AND ALL OPENINGS NOT TO BE REUSED.
25. REPAIR DAMAGE TO CEILING, WALLS, ETC. TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
26. WHEN A DETAIL OR NOTE IS IDENTIFIED AS TYPICAL, THE CONTRACTOR IS TO APPLY THE DETAIL OR NOTE TO EVERY SIMILAR CONDITION, WHETHER OR NOT THE REFERENCED DETAIL OR NOTE IS REPEATED OR REFERENCED.
27. WHERE NO CONSTRUCTION DETAIL IS INDICATED, SUCH WORK SHALL BE SIMILAR TO COMPARABLE WORK DETAILED OR NOTED ELSEWHERE OR TO MATCH EXISTING CONDITIONS, SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
28. ALL HOLES, VOIDS, AND DAMAGED OR UNEVEN SURFACES WHICH ARE CAUSED BY THE CONTRACTOR'S WORK AND WHICH REMAIN EXPOSED IN THE WALL, FLOOR, CEILING, OR OTHER SURFACES SHALL BE PATCHED, REPAIRED, AND BROUGHT FLUSH WITH THE ADJACENT CONSTRUCTION. SUCH SURFACES, NOT CONCEALED BY THE NEW CONSTRUCTION, SHALL MATCH IN EVERY RESPECT THE EXISTING NON-DAMAGED CONSTRUCTION. REMOVE EXISTING UTILITIES BACK BEHIND EXISTING SURFACES AND CAP SO AS NOT TO INTERFERE WITH NEW PATCHES. WHEREVER NEW WALL, FLOOR, OR CEILING FINISHES ARE INDICATED, THE CONTRACTOR SHALL BRING EXISTING PLUMBING, AND OTHER BUILDING COMPONENTS FLUSH WITH THE NEW FINISHED SURFACES IF APPROPRIATE.
30. THE DEMOLITION SHALL INCLUDE ALL ASSOCIATED ANCHORAGES, HANGERS, SUPPORTS, BRACES, FASTENERS, MASTIC, MORTAR, LATH, AND RELATED ITEMS. THE EXISTING SUBSTRATE, INCLUDING CONCRETE, MASONRY, METAL FRAMING AND FURRING SHALL BE REPAIRED WHERE DAMAGE BY THE CONTRACTOR'S WORK.
31. PROVIDE ALL VALVES, INSTRUMENTS, FITTINGS, ETC. AS SHOWN ON THE PIPING DIAGRAMS, SCHEMATICS, ETC. IT IS NOT POSSIBLE TO SHOW ALL VALVES, INSTRUMENTS, ETC. ON THE PLANS, HOWEVER, SELECTED VALVES HAVE BEEN SHOWN FOR REFERENCE. ALL VALVES SHALL BE ACCESSIBLE FROM THE FLOOR OR FROM FIXED PLATFORMS.
32. ALL EQUIPMENT AND MATERIALS SUBJECT TO THE WEATHER THAT ARE NOT FACTORY PAINTED SHALL BE FIELD PAINTED AND WEATHER PROOFED WITH PRIMER, AND TWO COATS OF EXTERIOR PAINT. MATCH THE COLOR OF THE EXISTING BUILDING EXTERIOR. THE COLOR AND QUANTITY OF THE PAINT IS SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE. SUBMITTAL REQUIRED.
33. INSTALL SLEEVES FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS. COMPLY WITH REQUIREMENTS FOR SLEEVES SPECIFIED IN SECTION 220517 "SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING."
34. INSTALL SLEEVE SEALS FOR PIPING PENETRATIONS OF CONCRETE WALLS AND SLABS. COMPLY WITH REQUIREMENTS FOR SLEEVE SEALS SPECIFIED IN SECTION 220517 "SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING."
35. FOR FIRE-RESISTANCE-RATED PENETRATIONS, HORIZONTAL ASSEMBLY PENETRATIONS, AND SMOKE BARRIER PENETRATIONS, MAINTAIN INDICATED FIRE OR SMOKE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. SEAL PIPE PENETRATIONS WITH FIRE- AND SMOKE-STOP MATERIALS. COMPLY WITH REQUIREMENTS FOR FIRESTOPPING AND FILL MATERIALS SPECIFIED IN SECTION 078413 "PENETRATION FIRESTOPPING."

GENERAL ASBESTOS AWARENESS NOTES

1. ALL TRADES SHALL BE AWARE OF ASBESTOS-CONTAINING MATERIALS (ACM) THAT EXIST WITHIN THE PROJECT LIMITS SO THEY ARE NOT UNINTENTIONALLY DISTURBED. ALL WORK THAT DISTURBS ACM IS CONSIDERED ASBESTOS ABATEMENT, WHICH IS COVERED UNDER SECTION 028213 ASBESTOS ABATEMENT. REFER TO THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED ACM.

GENERAL LEAD AWARENESS NOTES

1. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.
2. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD- BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

OZONE DEPLETING SUBSTANCES AWARENESS NOTE

1. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

LABORATORY SANITARY/ACID WASTE PLUMBING CONTAMINATION AWARENESS NOTE

1. ALL WORK ASSOCIATED WITH SANITARY AND ACID WASTE PLUMBING SYSTEM COMPONENTS THAT ARE DOWNSTREAM OF LABORATORY SINKS AND FUME HOODS IS CONSIDERED HAZARDOUS WASTE REMEDIATION WORK, WHICH IS COVERED UNDER SECTIONS 028100 HAZARDOUS WASTE AND CONTAMINATED MATERIALS AND 028613 ACID WASTE PLUMBING SYSTEM REMEDIATION. REFER TO THE HM SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575

Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506

Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590

Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062

Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334

DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339

Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377

Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688

Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650

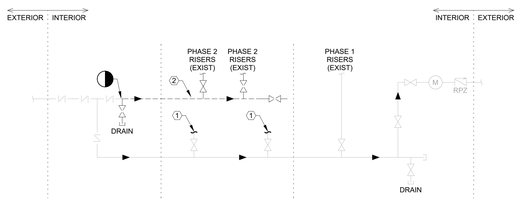
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967

Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800

Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122

Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting



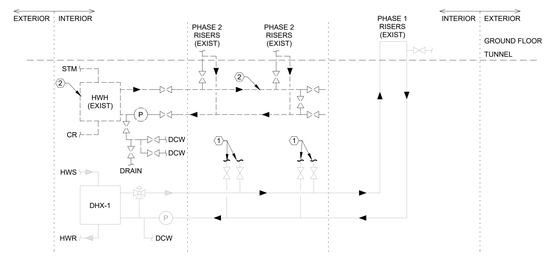
GENERAL PHASING NOTES

1. THE FOLLOWING PHASING STEPS ARE PROVIDED TO ENSURE APPROPRIATE BIDDING AND PLANNING BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING AND EXECUTING THE FINAL PHASING PLAN.

KEYED PHASING NOTES #

1. INSTALL ALL NEW DOMESTIC COLD WATER PIPING UP TO AND INCLUDING NEW FIXTURES WITHIN PHASE 2, FLUSH, DISINFECT, AND COMMISSION PHASE 2. OPEN NEW PHASE 2 RISER ISOLATION VALVES. AT THE COMPLETION OF PHASE OF 2, THE NEW (PHASE 1 INSTALLED) WATER MAIN FEEDS THE ENTIRE PLANT SCIENCE BUILDING.
2. REMOVE EXISTING DCW MAIN PIPING WITHIN THE TUNNEL BACK TO SERVICE ENTRANCE WITHIN THE MECHANICAL SPACE.

1 DOMESTIC COLD WATER PHASING DIAGRAM
NTS



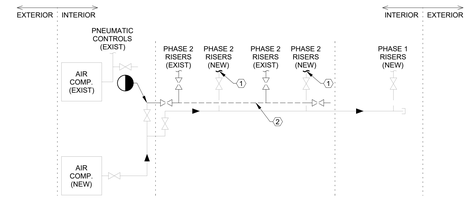
GENERAL PHASING NOTES

1. THE FOLLOWING PHASING STEPS ARE PROVIDED TO ENSURE APPROPRIATE BIDDING AND PLANNING BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING AND EXECUTING THE FINAL PHASING PLAN.

KEYED PHASING NOTES #

1. ALL PHASE 2 DHW, DHWR AND TEPID WATER PIPING SHALL BE INSTALLED UP TO AND INCLUDING FIXTURE CONNECTIONS ON EACH FLOOR. INSTALL ALL DOMESTIC HOT WATER EQUIPMENT. AT THE END OF PHASE 2, ALL NEW DOMESTIC HOT WATER SUPPLY/RETURN, AND TEPID WATER PIPING IS INSTALLED, FLUSHED, AND DISINFECTED. THE ENTIRE BUILDING DOMESTIC HOT WATER SHOULD BE FED FROM NEW EQUIPMENT.
2. REMOVE EXISTING DHW AND DHWR PIPING WITHIN THE TUNNEL BACK TO AND INCLUDING THE EXISTING DOMESTIC WATER HEATER.

2 DOMESTIC HOT WATER PHASING DIAGRAM
NTS



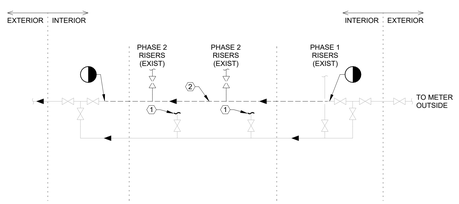
GENERAL PHASING NOTES

1. THE FOLLOWING PHASING STEPS ARE PROVIDED TO ENSURE APPROPRIATE BIDDING AND PLANNING BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING AND EXECUTING THE FINAL PHASING PLAN.

KEYED PHASING NOTES #

1. INSTALL ALL NEW COMPRESSED AIR PIPING UP TO AND INCLUDING NEW FIXTURES WITHIN PHASE 2, FLUSH, DISINFECT, AND COMMISSION PHASE 2. OPEN NEW PHASE 2 RISER ISOLATION VALVES. AT THE COMPLETION OF PHASE OF 2, THE NEW (PHASE 1 INSTALLED) AIR COMPRESSOR FEEDS THE ENTIRE PLANT SCIENCE BUILDING.
2. REMOVE EXISTING COMPRESSED AIR MAIN PIPING WITHIN THE TUNNEL BACK TOCOMPRESSOR WITHIN THE MECHANICAL SPACE.

3 COMPRESSED AIR PHASING DIAGRAM
NTS



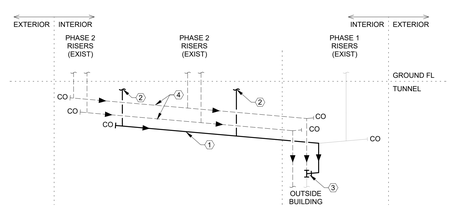
GENERAL PHASING NOTES

1. THE FOLLOWING PHASING STEPS ARE PROVIDED TO ENSURE APPROPRIATE BIDDING AND PLANNING BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING AND EXECUTING THE FINAL PHASING PLAN.

KEYED PHASING NOTES #

1. INSTALL ALL NATURAL GAS PIPING UP TO AND INCLUDING NEW FIXTURES WITHIN PHASE 2. OPEN NEW RISER ISOLATION VALVES.
2. REMOVE EXISTING NATURAL GAS MAIN PIPING WITHIN THE TUNNEL.

4 NATURAL GAS PHASING DIAGRAM
NTS



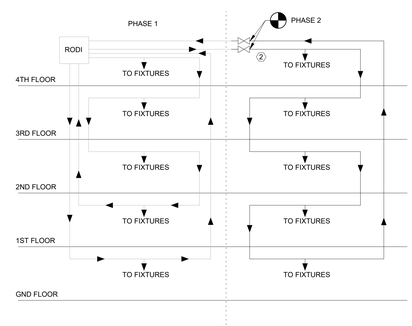
GENERAL PHASING NOTES

1. THE EXISTING SANITARY SYSTEM IS COMPRISED OF ORDINARY AND ACID WASTE (PVC) SLOPED MAINS IN THE UTILITY TUNNEL, WHICH DRAIN TOWARDS THE MIDDLE OF THE BUILDING AND EXIT IN THE CENTER TOWARDS TOWER ROAD.
2. EXISTING SANITARY MAINS AND RISERS ARE IN PAIRS, CONSISTING OF REGULAR AND ACID WASTE. ALL NEW SANITARY WILL BE COMBINED INTO A SINGLE SANITARY MAIN, CONSIDERED AS ACID WASTE, AND TREATED OUTSIDE THE BUILDING. ACID WASTE TREATMENT IS NOT PART OF THIS PROJECT NOR IS TREATED WITHIN THE BUILDING. DEMOLISH AND REMOVE ALL ABANDONED ACID WASTE EQUIPMENT IN TUNNEL.
3. THE FOLLOWING PHASING STEPS ARE PROVIDED TO ENSURE APPROPRIATE BIDDING AND PLANNING BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING AND EXECUTING THE FINAL PHASING PLAN.

KEYED PHASING NOTES #

1. INSTALL NEW SANITARY MAIN WITHIN THE UTILITY TUNNEL AS DEPICTED ON DRAWINGS.
2. INSTALL ALL NEW SANITARY PIPING UP TO AND INCLUDING NEW FIXTURES WITHIN PHASE 2.
3. CONNECT THE NEW SANITARY MAIN TO THE TEE CONNECTION.
4. DEMO EXISTING SANITARY PIPING.

5 SANITARY PHASING DIAGRAM
NTS



GENERAL PHASING NOTES

2. THE EXISTING RODI FIXTURES IN THE CONSERVATORY, PURPLE GREENHOUSE AND 3RD FLOOR SELECT AGENT LABS SHALL REMAIN OPERATIONAL DURING PHASE 2 CONSTRUCTION.
3. DURING THE ENABLING PHASE, THE SELECT AGENT LAB RO FIXTURES SHALL BE SERVED BY THE BRADFIELD RO SYSTEM WITH A NEW PIPE ROUTING FROM A NEW CONNECTION IN THE EMERSON BUILDING. ALSO DURING THE ENABLING PHASE, A NEW RO FEED SHALL BE PROVIDED FROM THE RO SYSTEM IN THE BASEMENT TO THE PURPLE GREENHOUSE. REFER TO ENABLING DRAWINGS FOR ADDITIONAL INFORMATION.
4. THE FOLLOWING PHASING STEPS ARE PROVIDED TO ENSURE APPROPRIATE BIDDING AND PLANNING BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING AND EXECUTING THE FINAL PHASING PLAN.

KEYED PHASING NOTES #

1. ALL EXISTING PIPING WITHIN THE PHASE 2 AREA SHALL BE REMOVED.
2. PROVIDE CONNECTION TO THE 4TH FL RODI SYSTEM. THE NEW RODI PIPING SHALL BE PROVIDED IN A "SNAKE" ROUTE FROM THE 4TH FLOOR DOWN TO THE GROUND FLOOR AND BACK UP TO CONNECT TO THE EXISTING CONNECTION LOCATION. REFER TO RISER DIAGRAM FOR ADDITIONAL INFORMATION.

6 RODI PHASING DIAGRAM
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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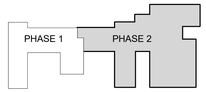

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Job Number	161026-00 / 31909
Drawing By	SRB
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Date	August 31, 2026

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PLUMBING PHASING DRAWINGS

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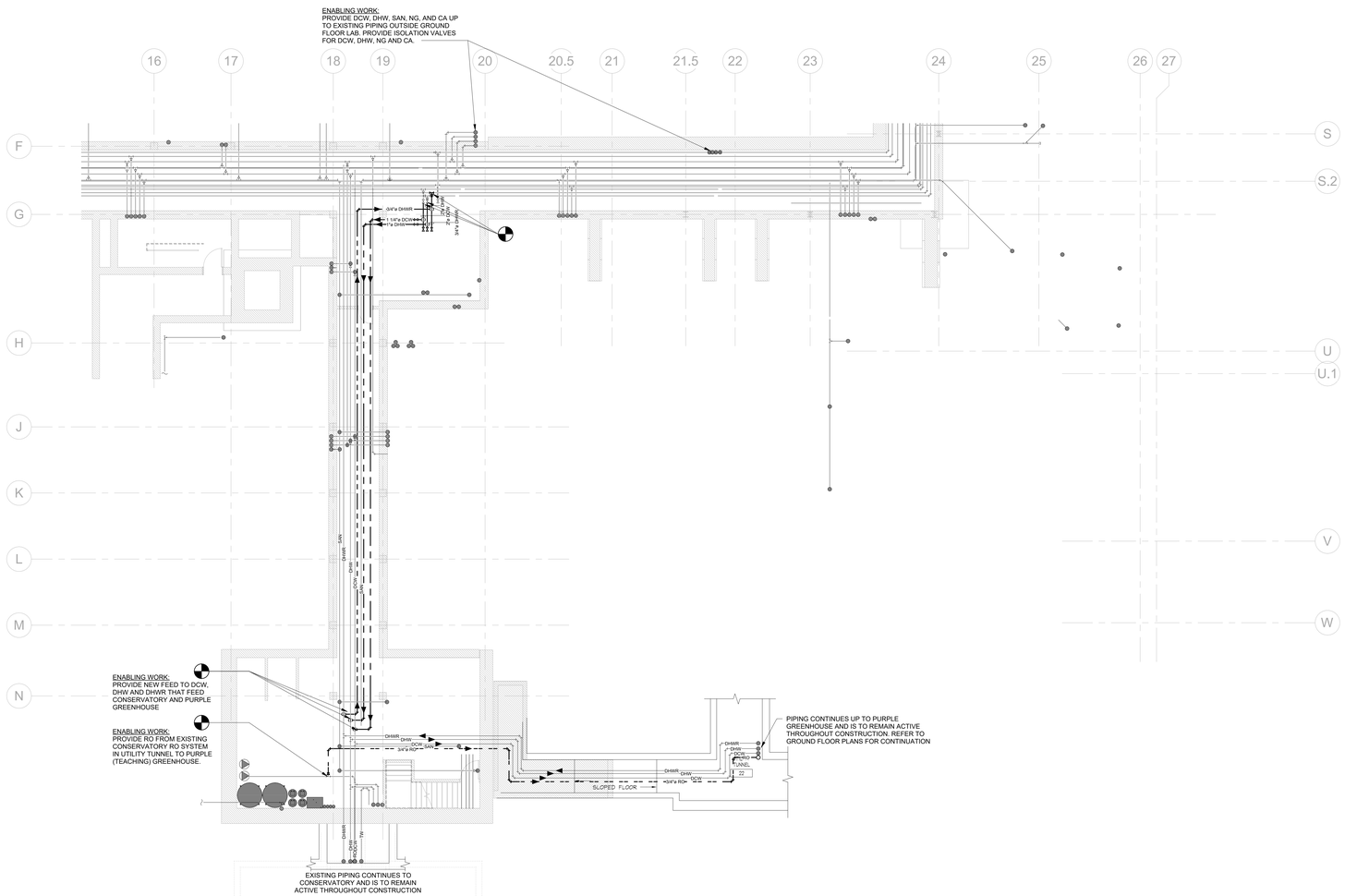

1 PLUMBING UTILITY TUNNEL LEVEL ENABLING PLAN - (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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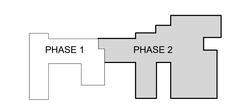

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PLUMBING UTILITY TUNNEL LEVEL ENABLING PLAN - PHASE 2

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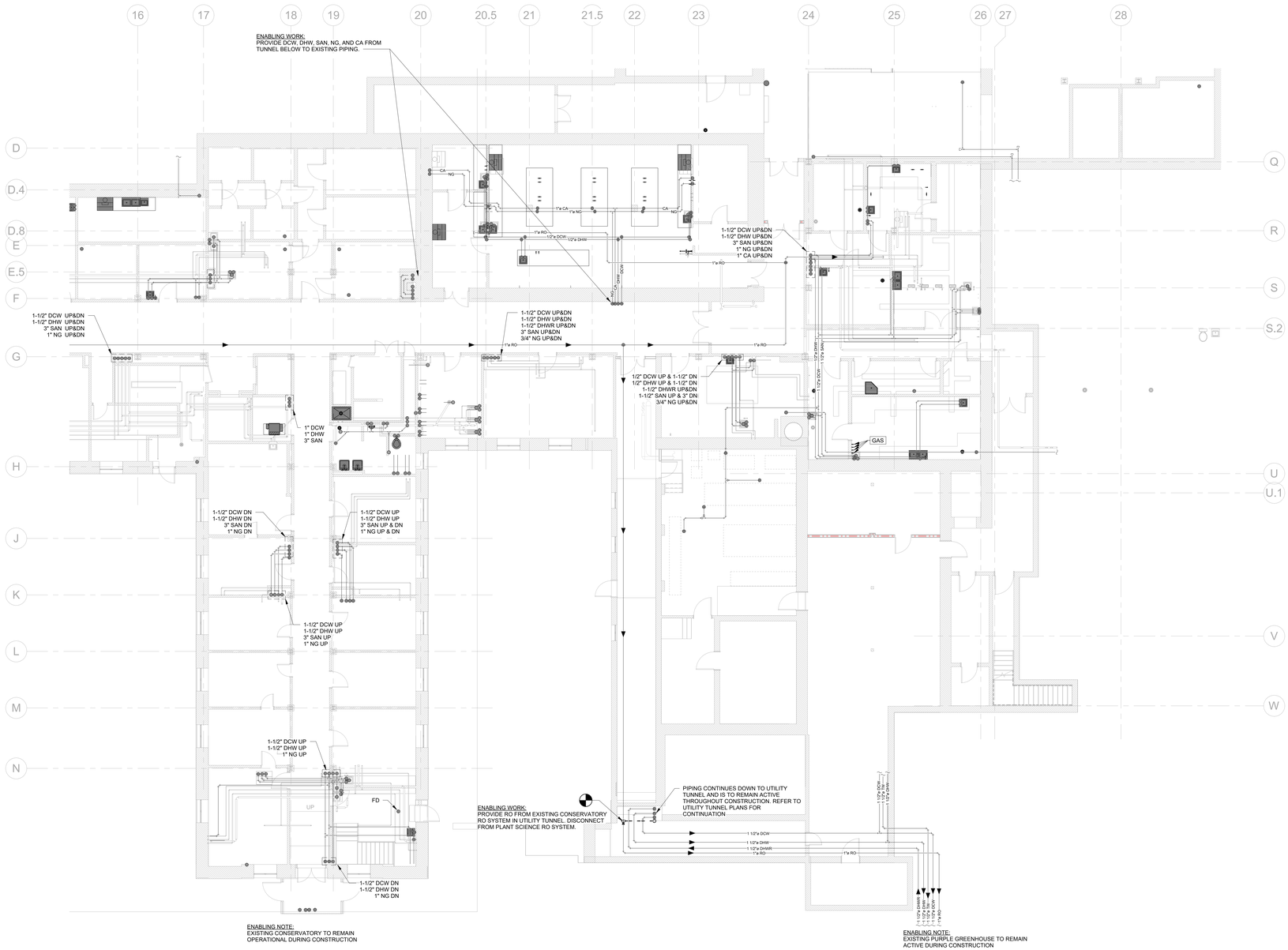

1 PLUMBING GROUND FLOOR ENABLING PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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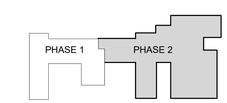

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PLUMBING GROUND FLOOR ENABLING PLAN - PHASE 2

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1 PLUMBING THIRD FLOOR ENABLING PLAN (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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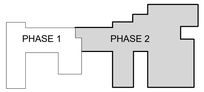

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PLUMBING THIRD FLOOR ENABLING PLAN - PHASE 2

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GENERAL DEMOLITION NOTES:

1. ALL EXISTING PIPING, FIXTURES AND EQUIPMENT THAT ARE NOT TO BE REUSED SHALL BE REMOVED.
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3. REMOVAL OF EXISTING FIXTURES AND EQUIPMENT WILL REQUIRE ISOLATION OF THE PIPING OR MAINS VIA SHUT-OFF VALVES. INSTALL NEW ISOLATION VALVES WHERE REQUIRED FOR COMPLETION OF WORK. REFER TO PHASING SHEETS FOR ADDITIONAL INFORMATION.
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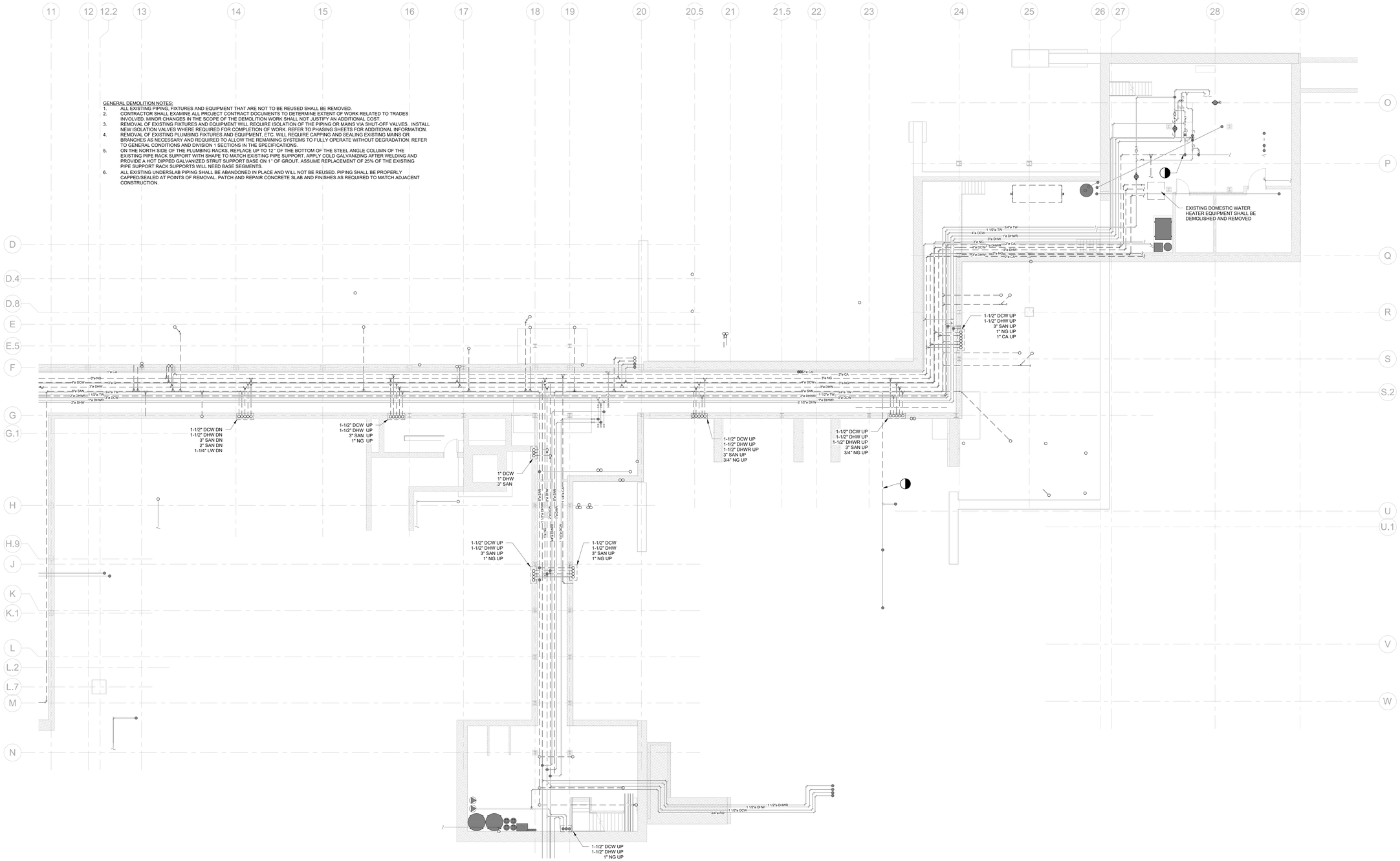
5. ON THE NORTH SIDE OF THE PLUMBING RACKS, REPLACE UP TO 12 " OF THE BOTTOM OF THE STEEL ANGLE COLUMN OF THE EXISTING PIPE RACK SUPPORT WITH SHAPE TO MATCH EXISTING PIPE SUPPORT. APPLY COLD GALVANIZING AFTER WELDING AND PROVIDE A HOT DIPPED GALVANIZED STRUT SUPPORT BASE ON 1 " OF GROUT. ASSUME REPLACEMENT OF 25% OF THE EXISTING PIPE SUPPORT RACK SUPPORTS WILL NEED BASE SEGMENTS.
6. ALL EXISTING UNDERSLAB PIPING SHALL BE ABANDONED IN PLACE AND WILL NOT BE REUSED. PIPING SHALL BE PROPERLY CAPPED/SEALED AT POINTS OF REMOVAL. PATCH AND REPAIR CONCRETE SLAB AND FINISHES AS REQUIRED TO MATCH ADJACENT CONSTRUCTION.



1 PLUMBING UTILITY TUNNEL LEVEL DEMOLITION PLAN - (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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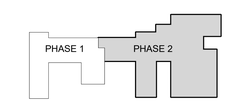

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

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PLUMBING UTILITY TUNNEL LEVEL REMOVAL PLAN - PHASE 2

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GENERAL DEMOLITION NOTES:

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1 PLUMBING GROUND FLOOR DEMOLITION PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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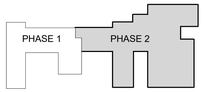

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
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Date	August 31, 2026

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PLUMBING GROUND FLOOR REMOVAL PLAN - PHASE 2

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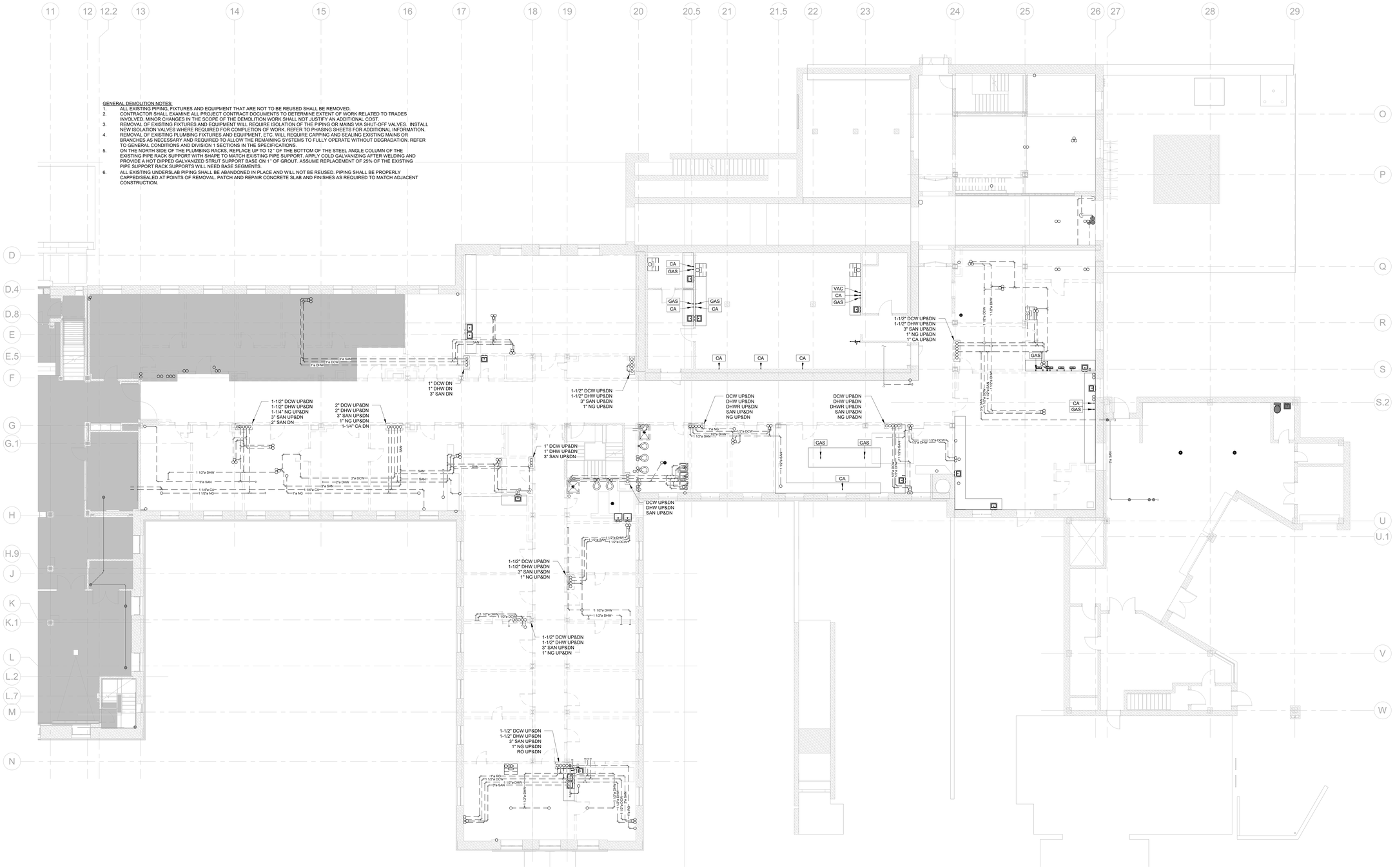

1 PLUMBING FIRST FLOOR DEMOLITION PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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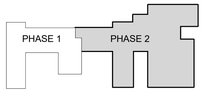
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING FIRST FLOOR REMOVAL PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELISTA · 095338 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

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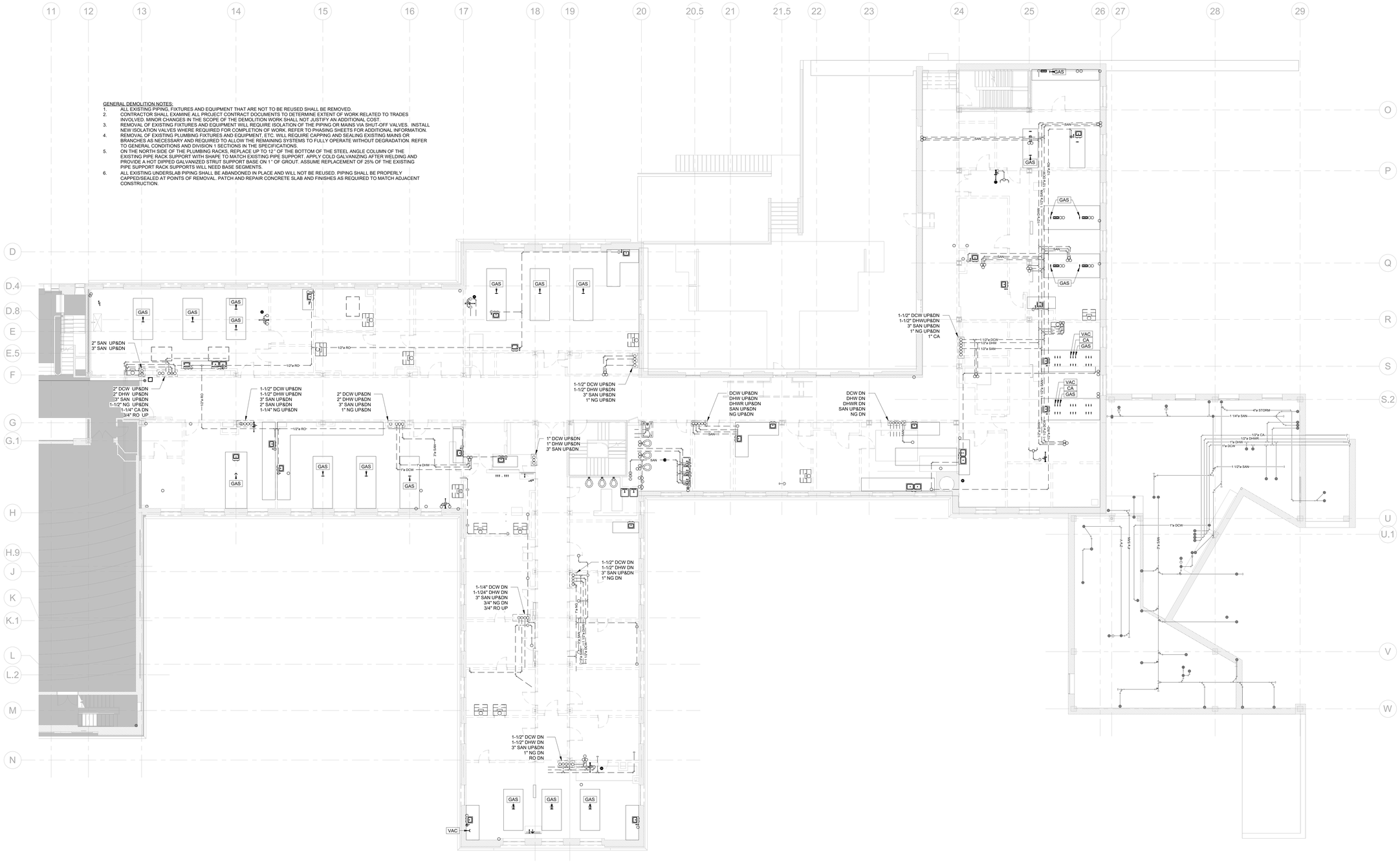

1 PLUMBING SECOND FLOOR DEMOLITION PLAN - PART B (PHASE 1)
1/8" = 1'-0"

10/8/2026 8:40:26 AM

Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_FSB_PLUMB_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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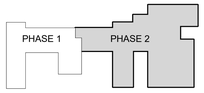

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING SECOND FLOOR REMOVAL PLAN - PHASE 2

BID DOCUMENTS
Scale: As indicated

STATE OF NEW YORK · JOHN W. EVANCUSKY · 095338 · LICENSED PROFESSIONAL ENGINEER

PD1.2

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GENERAL DEMOLITION NOTES:

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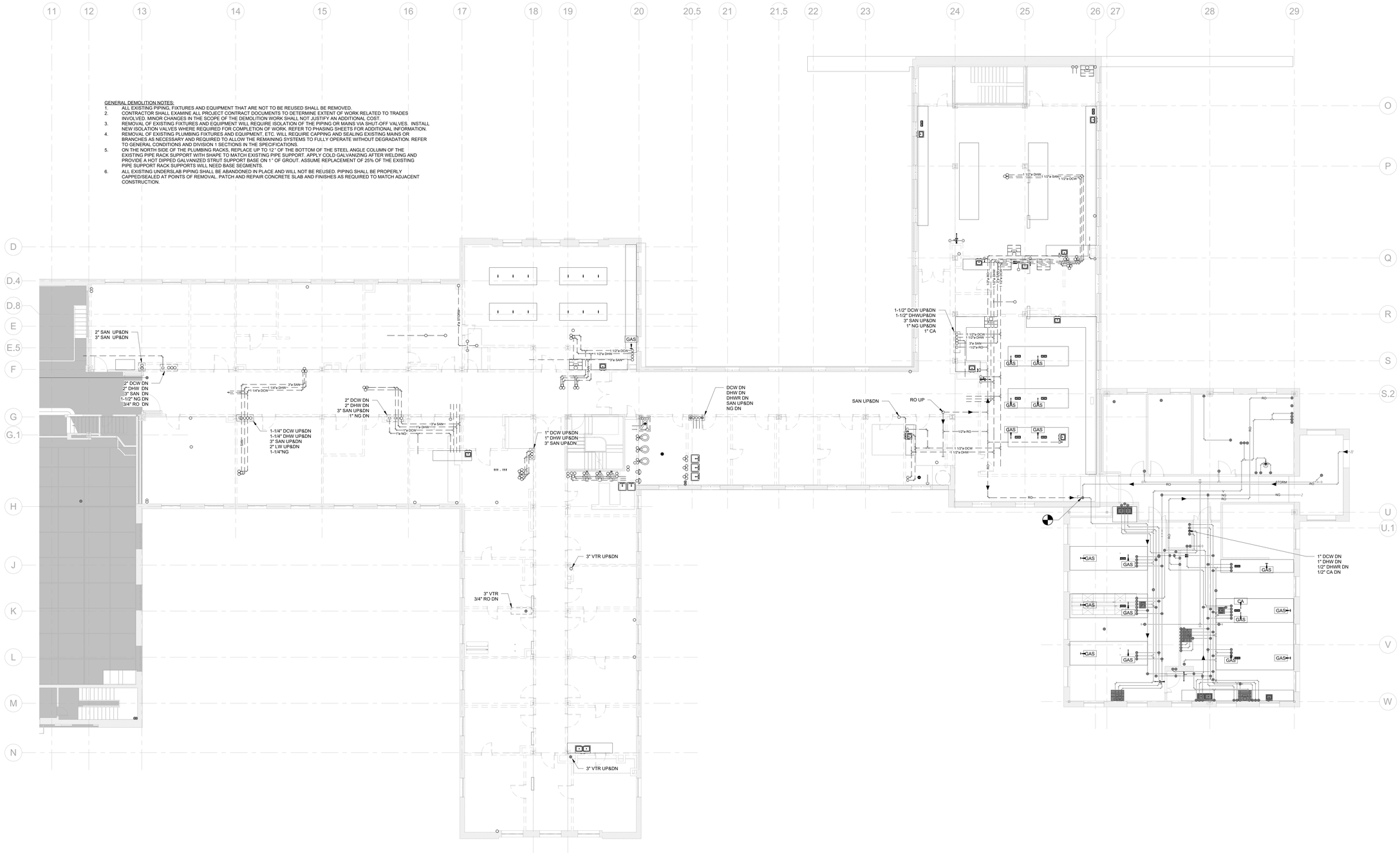

PLUMBING THIRD FLOOR DEMOLITION PLAN - PART B (PHASE 1)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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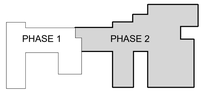

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING THIRD FLOOR REMOVAL PLAN - PHASE 2

STATE OF NEW YORK · JOHN R. EVANGELISTA · 095338 · LICENSED PROFESSIONAL ENGINEER

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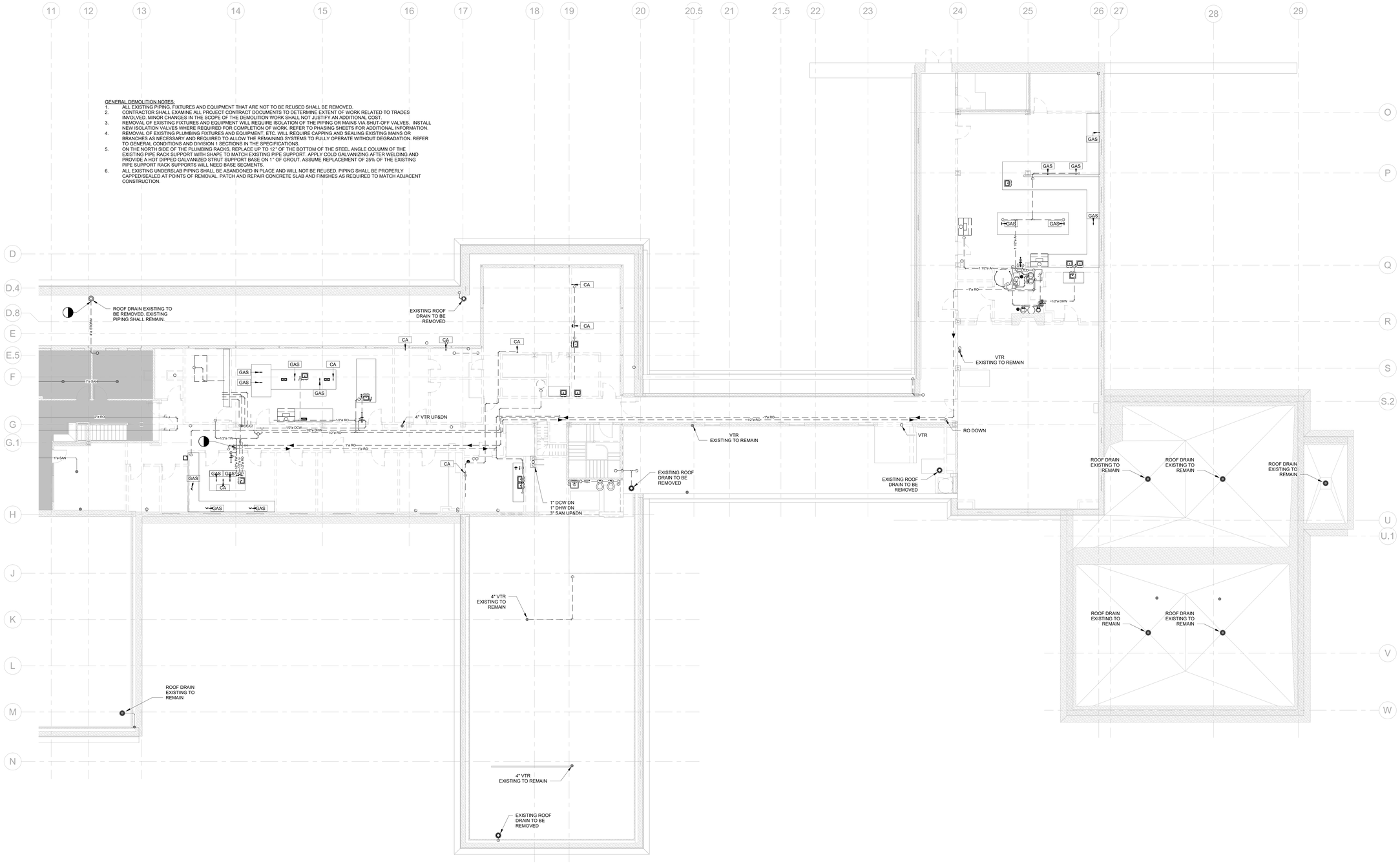

1 PLUMBING FOURTH FLOOR DEMOLITION PLAN - PART B (PHASE 1)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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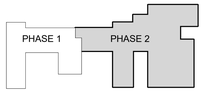

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING FOURTH FLOOR REMOVAL PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELIST · 095338 · LICENSED PROFESSIONAL ENGINEER

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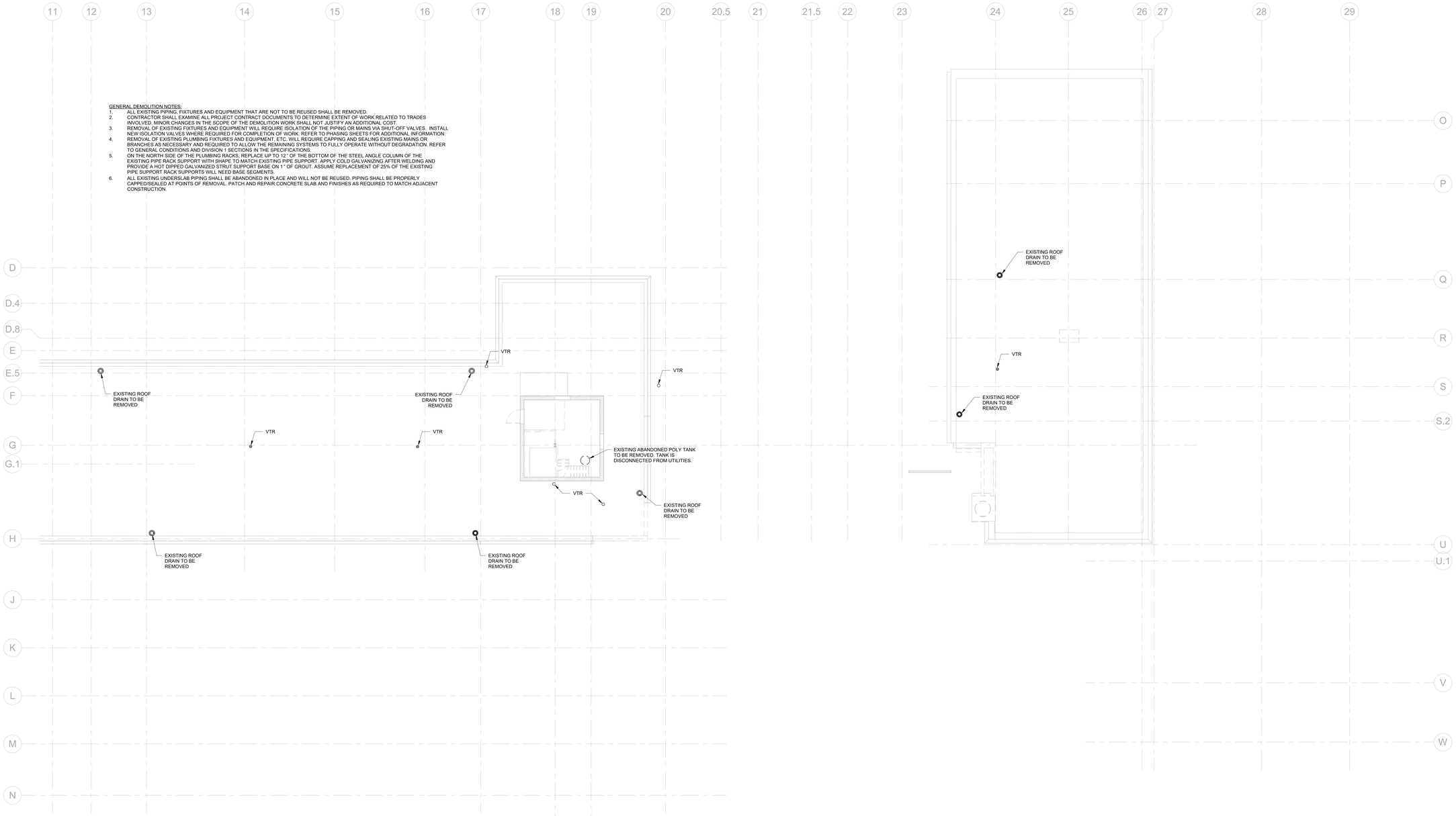

1 PLUMBING ROOF LEVEL PLAN - PART A (PHASE 2) Copy 1
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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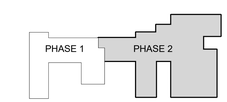

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING ROOF LEVEL REMOVAL PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELISTA · 095338 · LICENSED PROFESSIONAL ENGINEER

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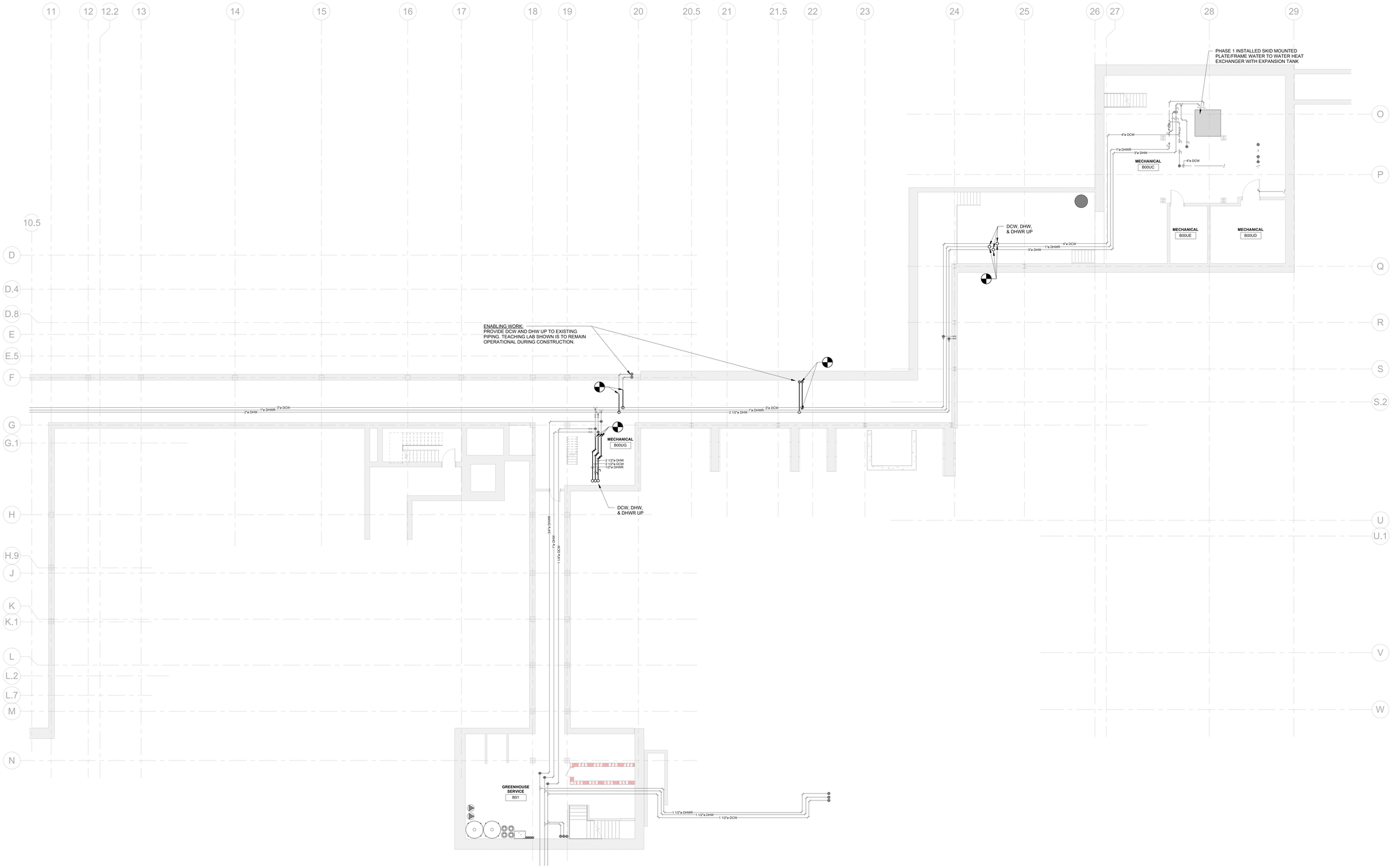

PLUMBING UTILITY TUNNEL LEVEL PLAN
1 - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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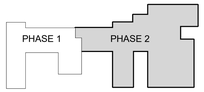

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING UTILITY TUNNEL LEVEL DOMESTIC WATER PLAN - PHASE 2

STATE OF NEW YORK · JOSEPH EVANGELISTA · 090338 · LICENSED PROFESSIONAL ENGINEER

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Scale: 1/8" = 1'-0"

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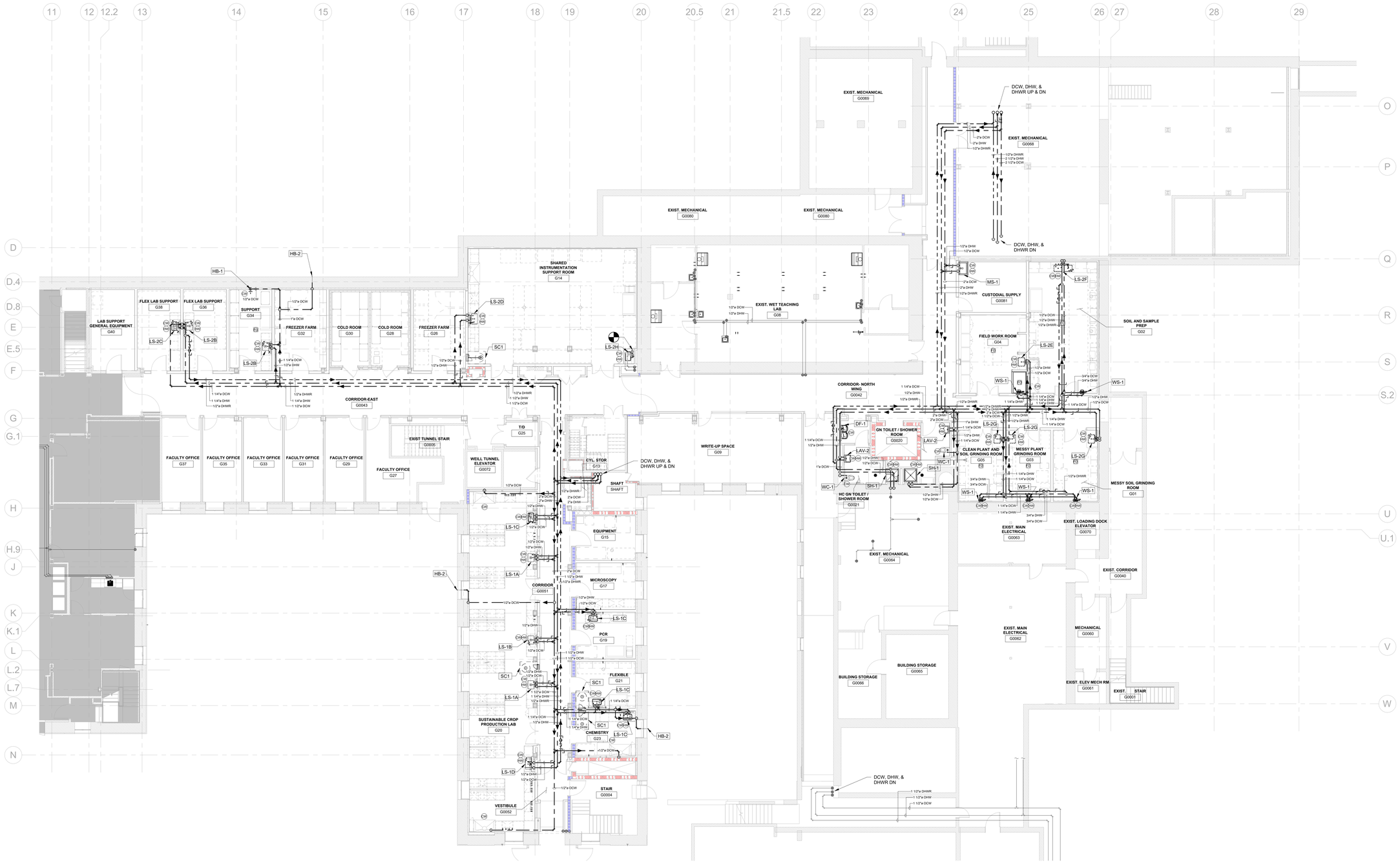

1 PLUMBING GROUND FLOOR PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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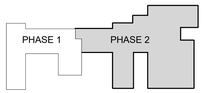
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING GROUND FLOOR DOMESTIC WATER PLAN - PHASE 2

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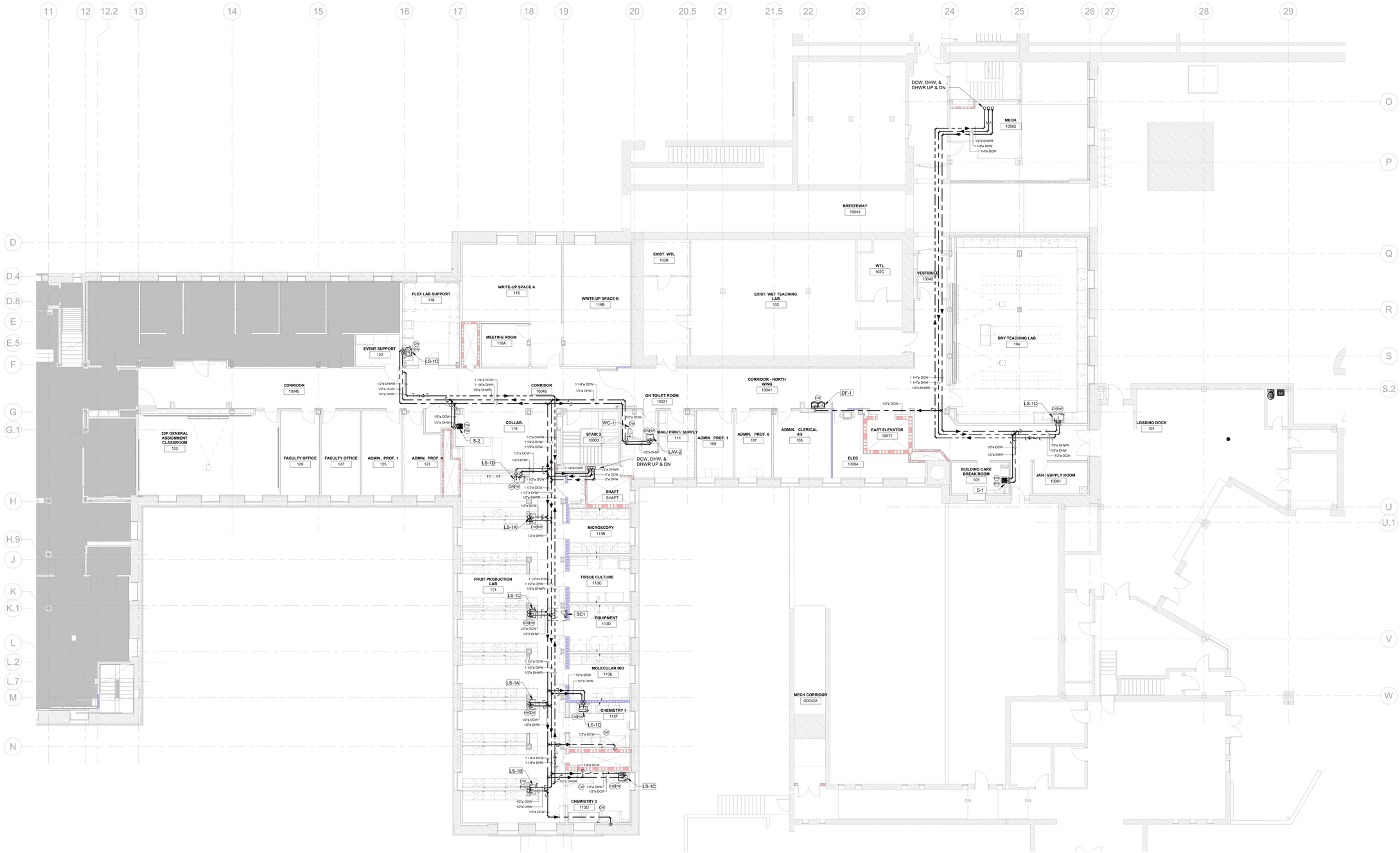

1 PLUMBING FIRST FLOOR PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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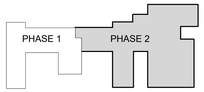

Keyplan

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Filename
Date August 31, 2026

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PLUMBING FIRST FLOOR DOMESTIC WATER PLAN - PHASE 2

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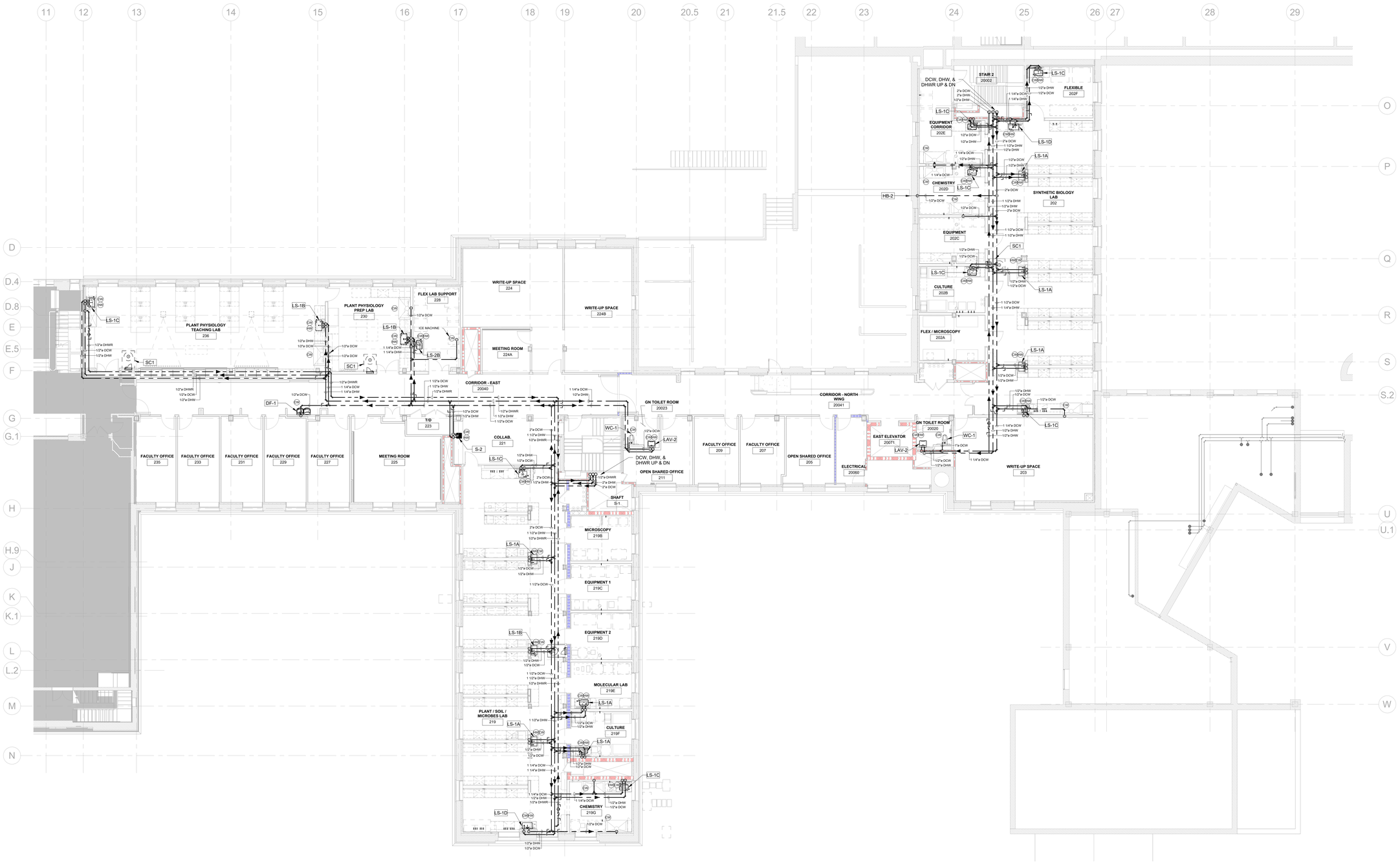

1 PLUMBING SECOND FLOOR PLAN - PART A (PHASE 2)
1/8" = 1'-0"

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SUCF Project No. 161026-00

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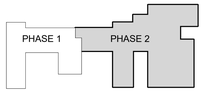

Keyplan

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Drawing By SRB
Checked By JWE
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Date August 31, 2026

Revisions

PLUMBING SECOND FLOOR DOMESTIC WATER PLAN - PHASE 2

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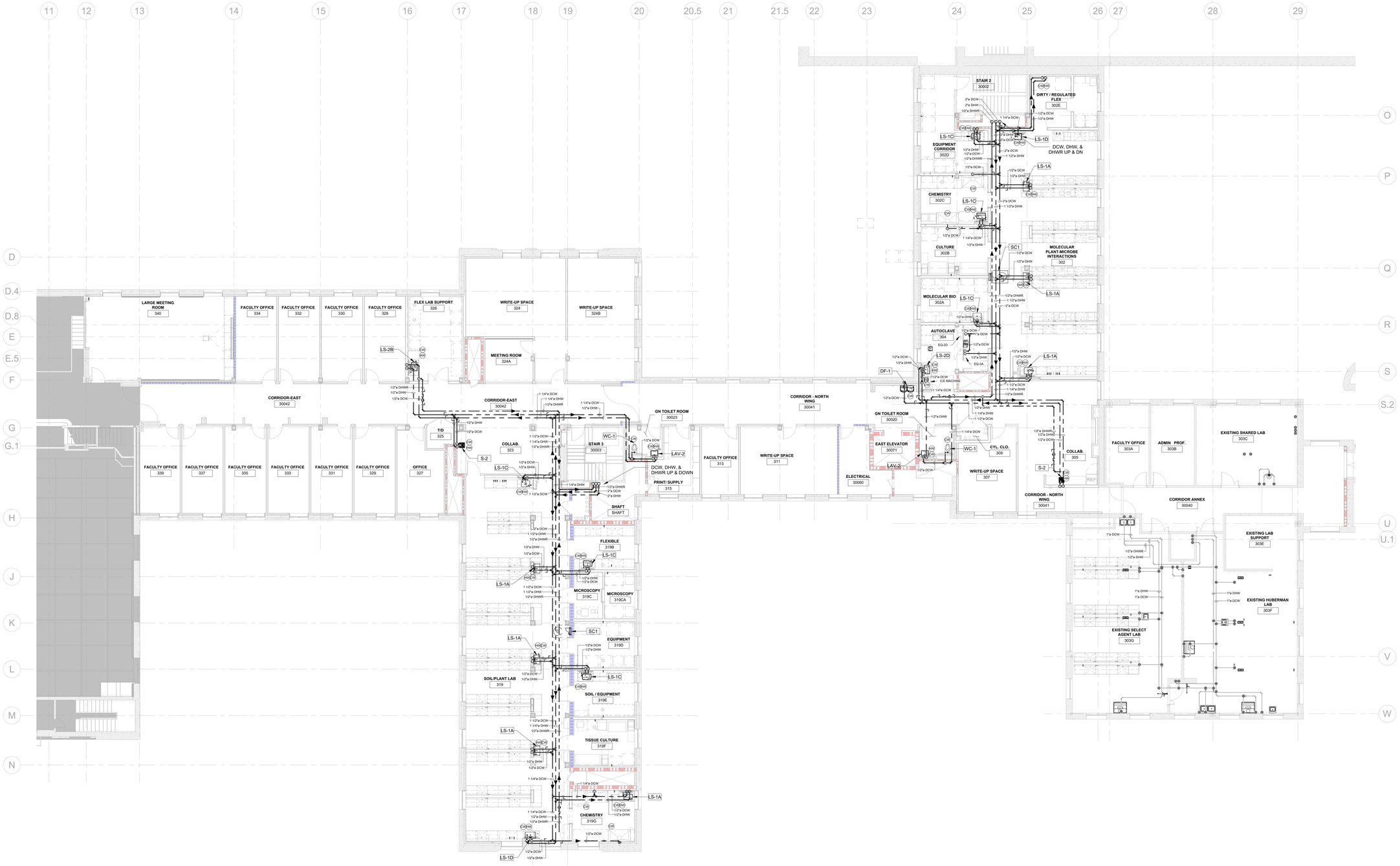

1 PLUMBING THIRD FLOOR PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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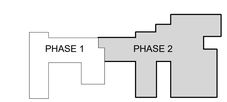

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Filename
Date August 31, 2026

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PLUMBING THIRD FLOOR DOMESTIC WATER PLAN - PHASE 2

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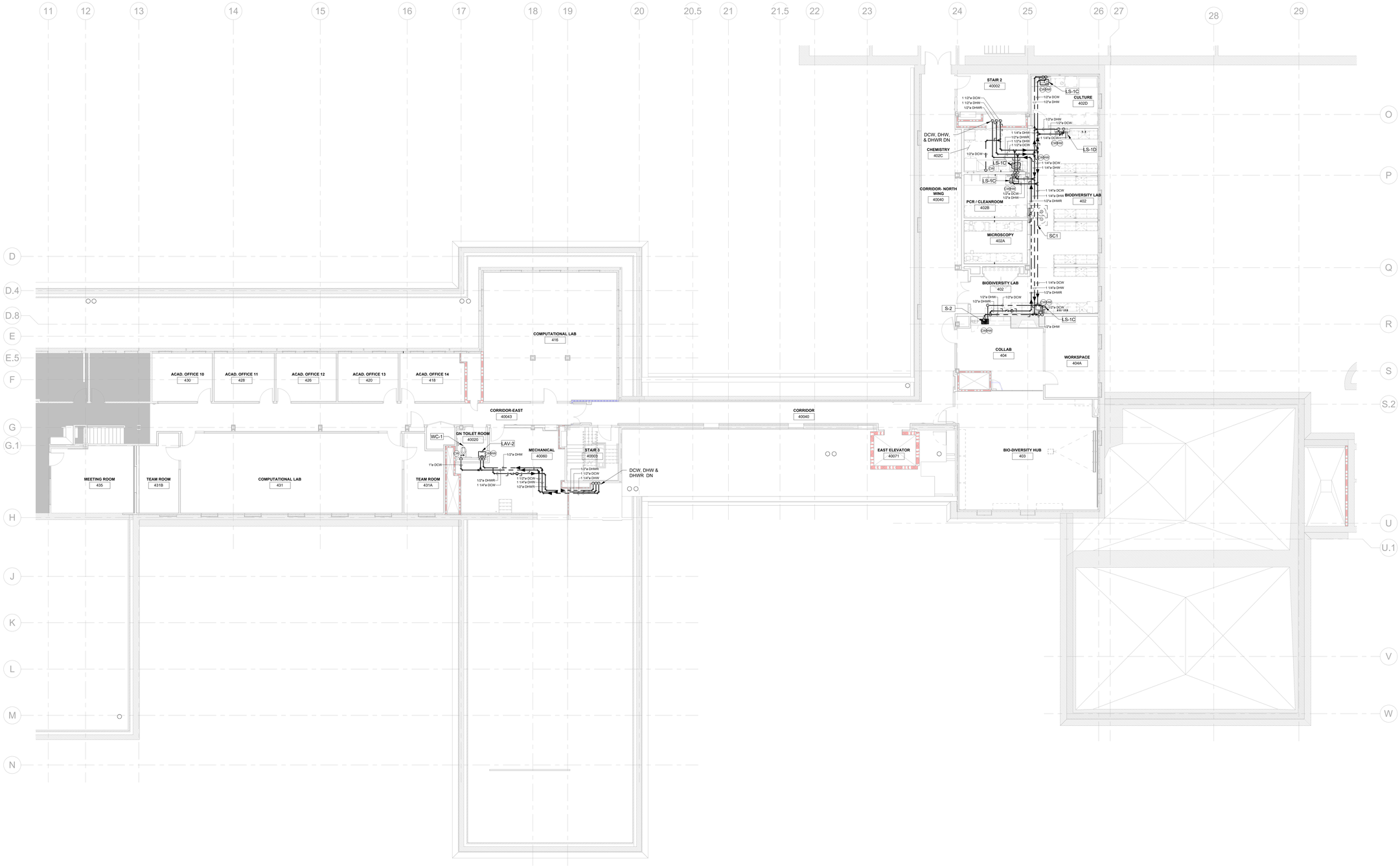

1 PLUMBING FOURTH FLOOR PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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SUNY State University Construction Fund

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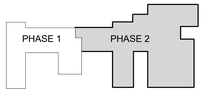
Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING FOURTH FLOOR DOMESTIC WATER PLAN - PHASE 2

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GENERAL PLUMBING DRAINAGE NOTES:

1. REFER TO SHEET P000 FOR SCHEDULE OF PIPING AND INSULATION REQUIREMENTS.
2. MECHANICAL TRAP SEALS SHALL BE INSTALLED ON EACH FLOOR DRAIN AND FLOOR SINK. ALL SANITARY PIPING BEING REUSED SHALL BE CLEANED AND PRESSURE FLUSHED.
3. ALL SINKS WITH RODI POLISHERS REQUIRE A DEDICATED OPEN-PIPE DRAIN/TRAP. REFER TO DETAIL 10/A-10.03 FOR ADDITIONAL INFORMATION.
4. VENT PIPING ABOVE ROOF SHALL BE FLASHED A MINIMUM OF 18" FROM TOP OF MEMBRANE (CONTRACTOR TO EXTEND AS REQUIRED).
5. SLOPE OF SANITARY SEWER PIPE:
   A. 2.5" OR LESS = 1/4" PER FOOT
   B. 3" TO 6" = 1/8" PER FOOT
   C. 8" OR LARGER = 1/16" PER FOOT
6. ALL DRAIN CLEANOUTS SHALL BE THE SAME SIZE AS THE PIPING SERVED BY THE CLEANOUT, EXCEPT THAT CLEANOUTS FOR PIPING LARGER THAN 4 IN NEED NOT BE LARGER THAN 4 IN. IN ADDITION TO THOSE SHOWN ON PLANS AND SCHEMATICS, CLEANOUTS SHALL BE PROVIDED AT ALL OF THE FOLLOWING LOCATIONS:
   A. HORIZONTAL SANITARY PIPES WITH A MAXIMUM INTERVAL OF 100 FT.
   B. AT ALL CHANGES OF DIRECTION ON HORIZONTAL DRAIN PIPING GREATER THAN 45 DEGREES
      a. WHERE MORE THAN ONE CHANGE OF DIRECTION GREATER THAN 45 DEGREES OCCURS WITHIN 40 FT OF PIPING, THE CLEANOUT INSTALLED AT THE FIRST CHANGE OF DIRECTION SHALL SERVE AS THE CLEANOUT FOR ALL CHANGES OF DIRECTION WITHIN THAT 40 FT.
   C. AT CONNECTION TO BUILDING SEWER EXITING BUILDING
7. FAN COIL CONDENSATE DRAINS SHALL BE RUN BY GRAVITY THROUGH DEDICATED INSULATED COPPER LINES WITH AN INDIRECT CONNECTION TO SANITARY DRAIN WITH A PITCH OF 1/8-INCH PER FOOT.

10. REFER TO STRUCTURAL DRAWINGS FOR CORING OF TUNNEL WALLS AT PIPE PENETRATION LOCATIONS.
11. FOR TUNNEL WALL PENETRATIONS, REFER TO DETAIL 2/P2.UA.

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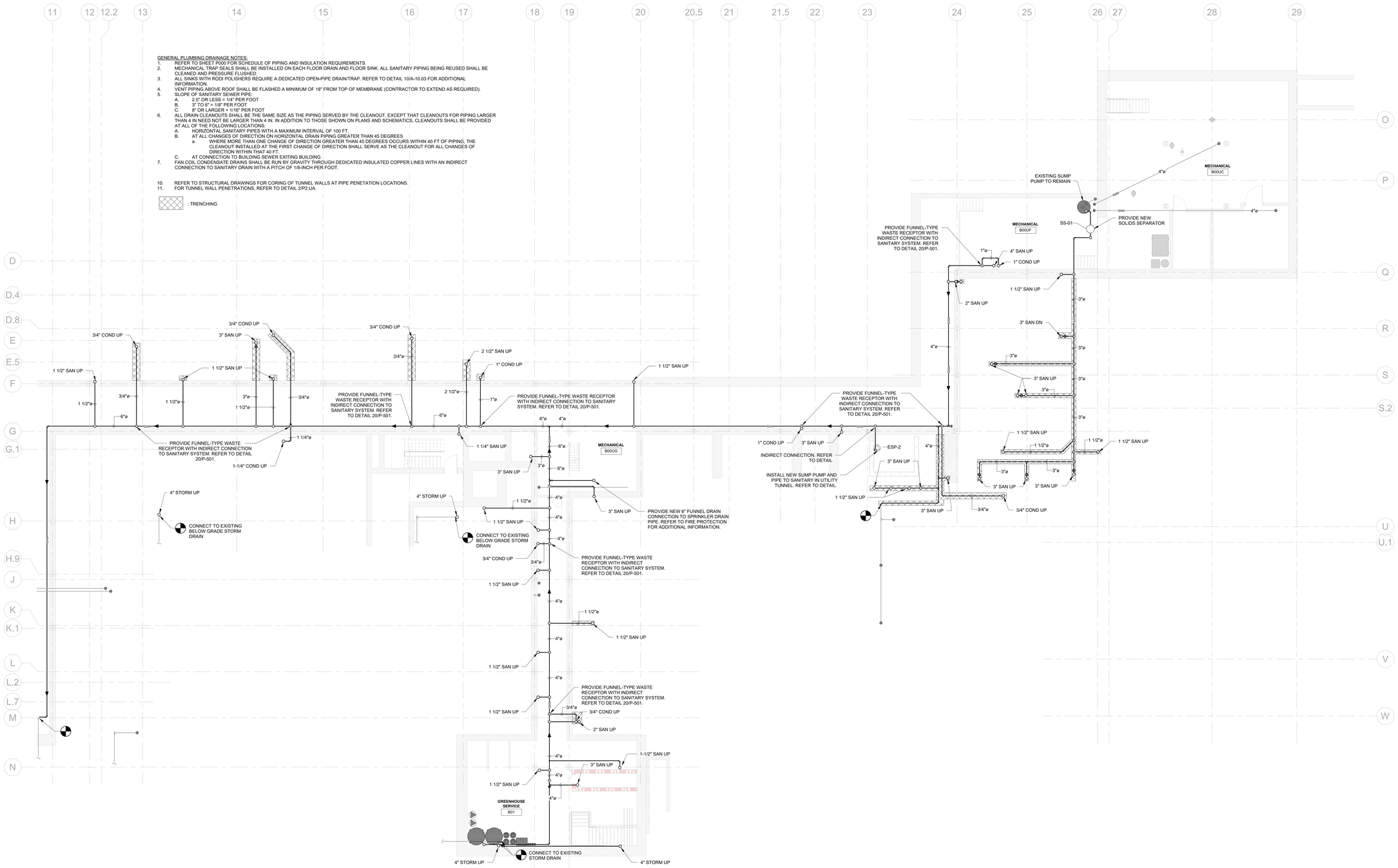

0 - PLUMBING UTILITY TUNNEL LEVEL - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

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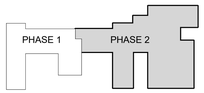
Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
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Date	August 31, 2026

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PLUMBING UTILITY TUNNEL LEVEL DRAINAGE PLAN - PHASE 2

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GENERAL PLUMBING DRAINAGE NOTES:

1. REFER TO SHEET P000 FOR SCHEDULE OF PIPING AND INSULATION REQUIREMENTS.
2. MECHANICAL TRAP SEALS SHALL BE INSTALLED ON EACH FLOOR DRAIN AND FLOOR SINK. ALL SANITARY PIPING BEING REUSED SHALL BE CLEANED AND PRESSURE FLUSHED.
3. ALL SINKS WITH RODI POLISHERS REQUIRE A DEDICATED OPEN-PIPE DRAIN/TRAP. REFER TO DETAIL 10/A-10.03 FOR ADDITIONAL INFORMATION.
4. VENT PIPING ABOVE ROOF SHALL BE FLASHED A MINIMUM OF 18" FROM TOP OF MEMBRANE (CONTRACTOR TO EXTEND AS REQUIRED).
5. SLOPE OF SANITARY SEWER PIPE:
   A. 2.5" OR LESS = 1/4" PER FOOT
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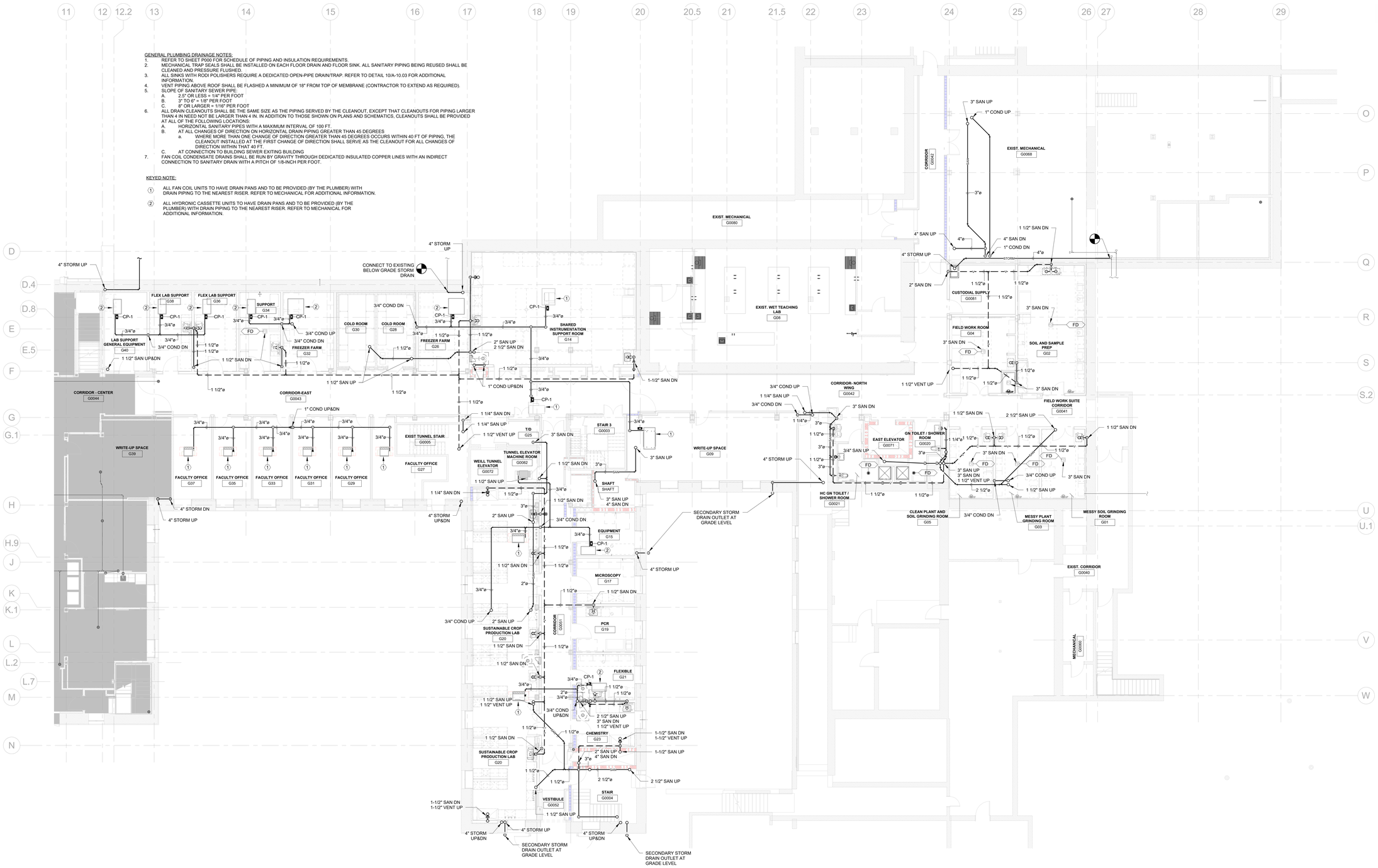
6. ALL DRAIN CLEANOUTS SHALL BE THE SAME SIZE AS THE PIPING SERVED BY THE CLEANOUT, EXCEPT THAT CLEANOUTS FOR PIPING LARGER THAN 4 IN NEED NOT BE LARGER THAN 4 IN. IN ADDITION TO THOSE SHOWN ON PLANS AND SCHEMATICS, CLEANOUTS SHALL BE PROVIDED AT ALL OF THE FOLLOWING LOCATIONS:
   A. HORIZONTAL SANITARY PIPES WITH A MAXIMUM INTERVAL OF 100 FT.
   B. AT ALL CHANGES OF DIRECTION ON HORIZONTAL DRAIN PIPING GREATER THAN 45 DEGREES
      a. WHERE MORE THAN ONE CHANGE OF DIRECTION GREATER THAN 45 DEGREES OCCURS WITHIN 40 FT OF PIPING, THE CLEANOUT INSTALLED AT THE FIRST CHANGE OF DIRECTION SHALL SERVE AS THE CLEANOUT FOR ALL CHANGES OF DIRECTION WITHIN THAT 40 FT.
   C. AT CONNECTION TO BUILDING SEWER EXITING BUILDING
7. FAN COIL CONDENSATE DRAINS SHALL BE RUN BY GRAVITY THROUGH DEDICATED INSULATED COPPER LINES WITH AN INDIRECT CONNECTION TO SANITARY DRAIN WITH A PITCH OF 1/8-INCH PER FOOT.

KEYED NOTE:

1. ALL FAN COIL UNITS TO HAVE DRAIN PANS AND TO BE PROVIDED (BY THE PLUMBER) WITH DRAIN PIPING TO THE NEAREST RISER. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.
2. ALL HYDRONIC CASSETTE UNITS TO HAVE DRAIN PANS AND TO BE PROVIDED (BY THE PLUMBER) WITH DRAIN PIPING TO THE NEAREST RISER. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.



1 PLUMBING GROUND FLOOR DRAINAGE PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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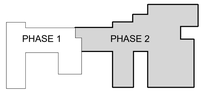

Keyplan

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PLUMBING GROUND FLOOR DRAINAGE PLAN - PHASE 2

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GENERAL PLUMBING DRAINAGE NOTES:

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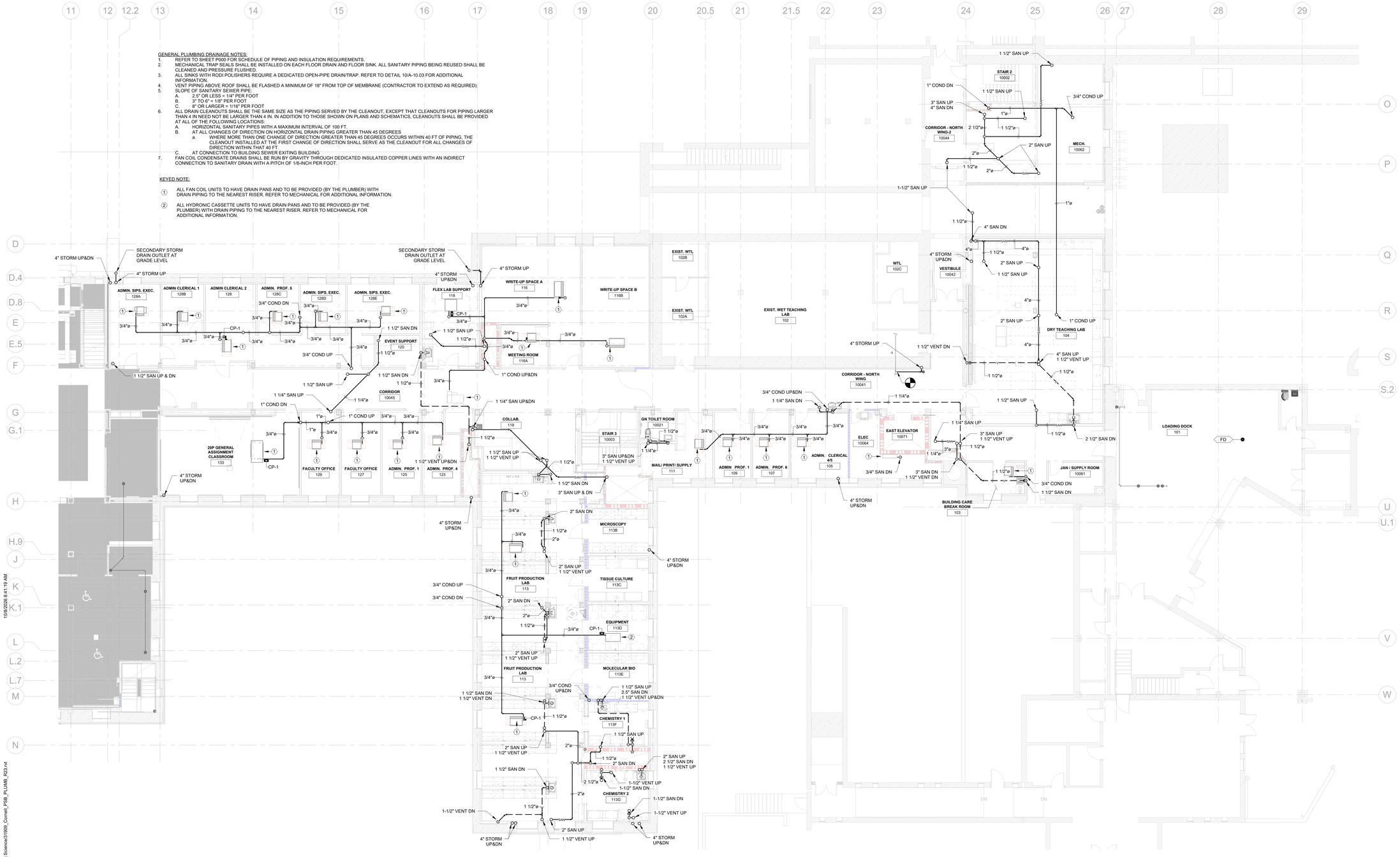

1 PLUMBING FIRST FLOOR DRAINAGE PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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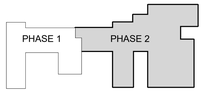
Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING FIRST FLOOR DRAINAGE PLAN - PHASE 2

STATE OF NEW YORK · JOHN E. EVANGELISTI · 095338 · LICENSED PROFESSIONAL ENGINEER

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GENERAL PLUMBING DRAINAGE NOTES:

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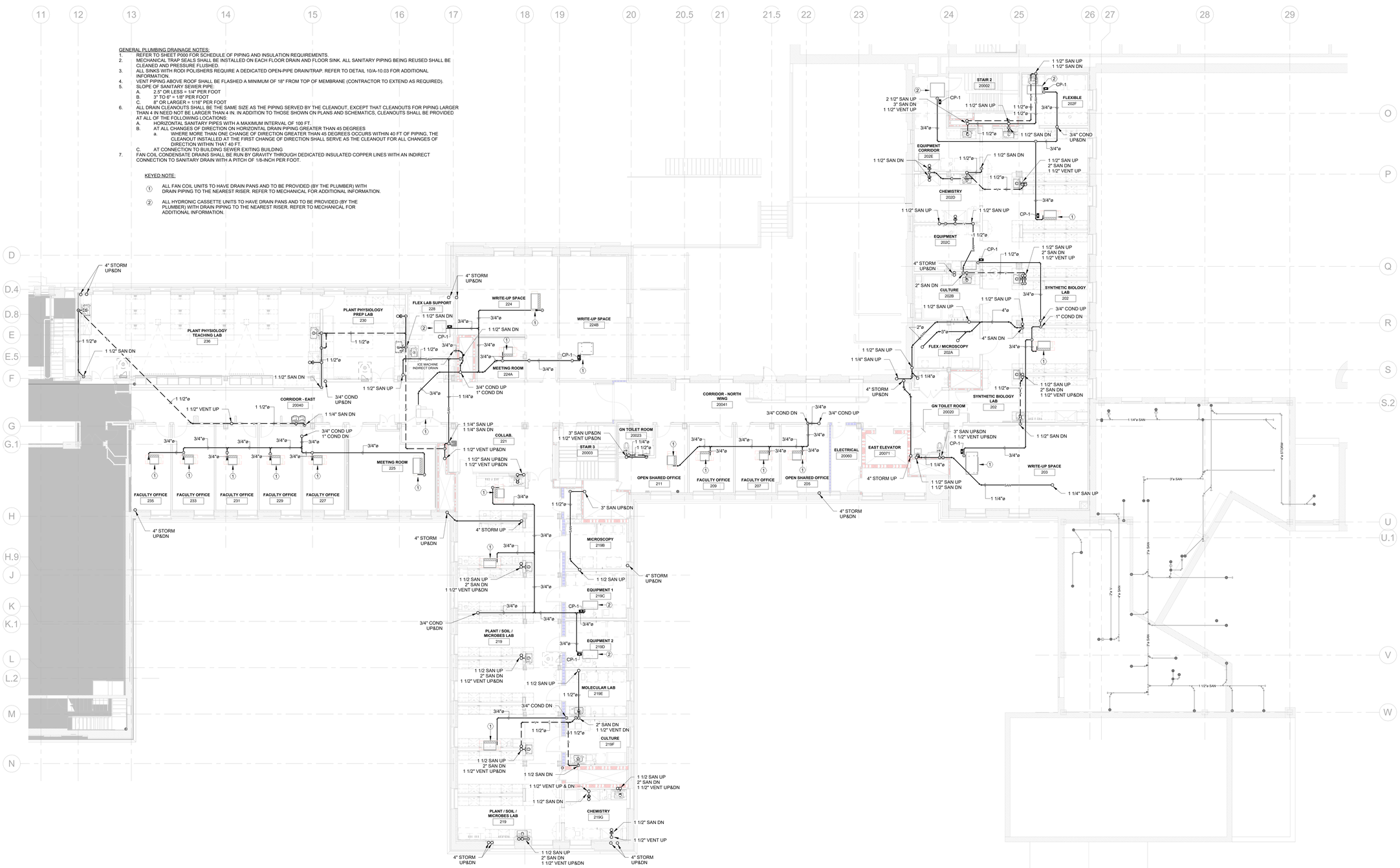

1 PLUMBING SECOND FLOOR DRAINAGE PLAN - PART A (PHASE 2)
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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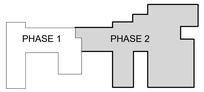

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING SECOND FLOOR DRAINAGE PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELIST · 095338 · LICENSED PROFESSIONAL ENGINEER

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Scale: As indicated

P2.2

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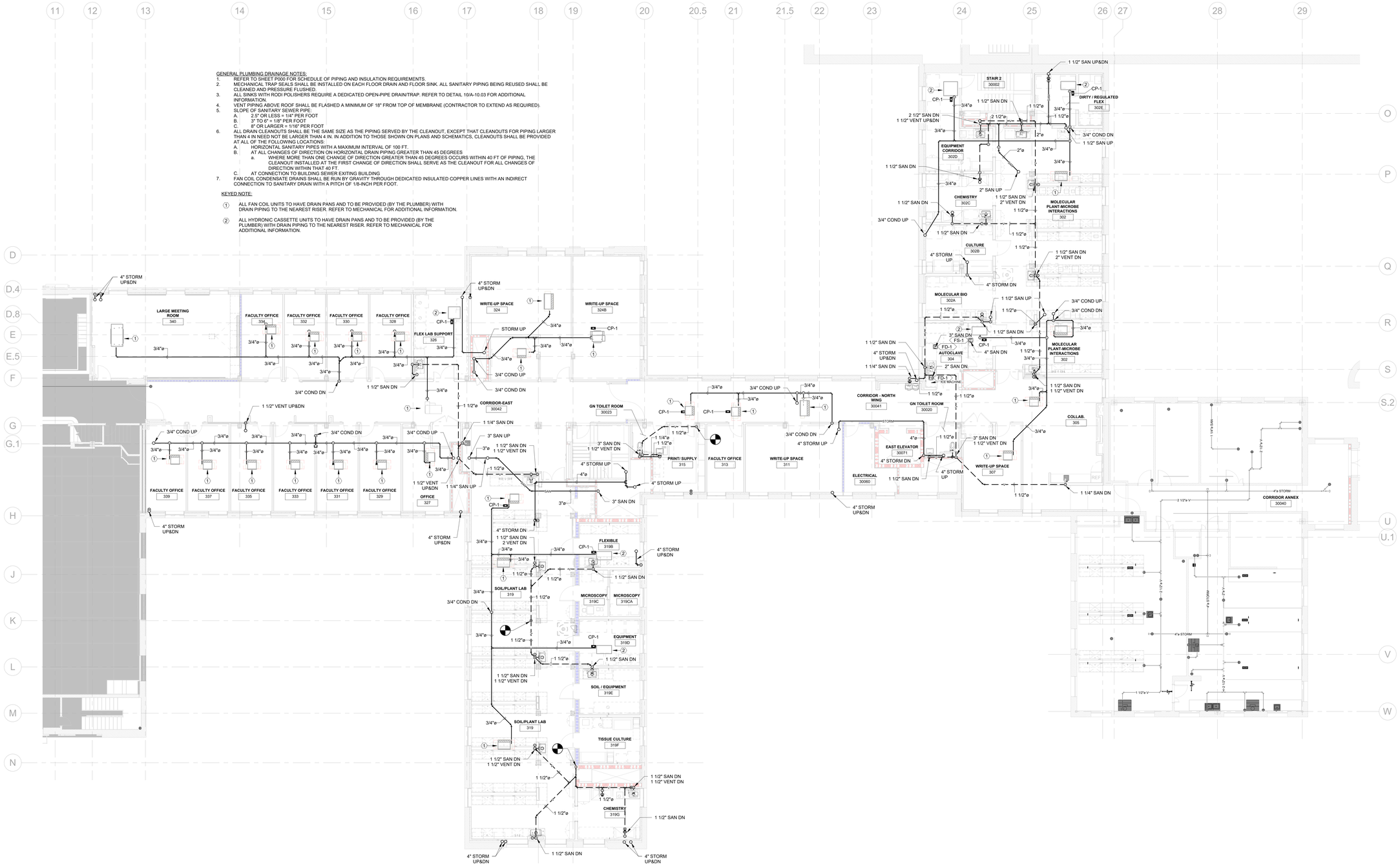

1 PLUMBING THIRD FLOOR DRAINAGE PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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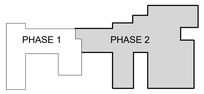

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING THIRD FLOOR DRAINAGE PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELISTA · 095338 · LICENSED PROFESSIONAL ENGINEER

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Scale: As indicated

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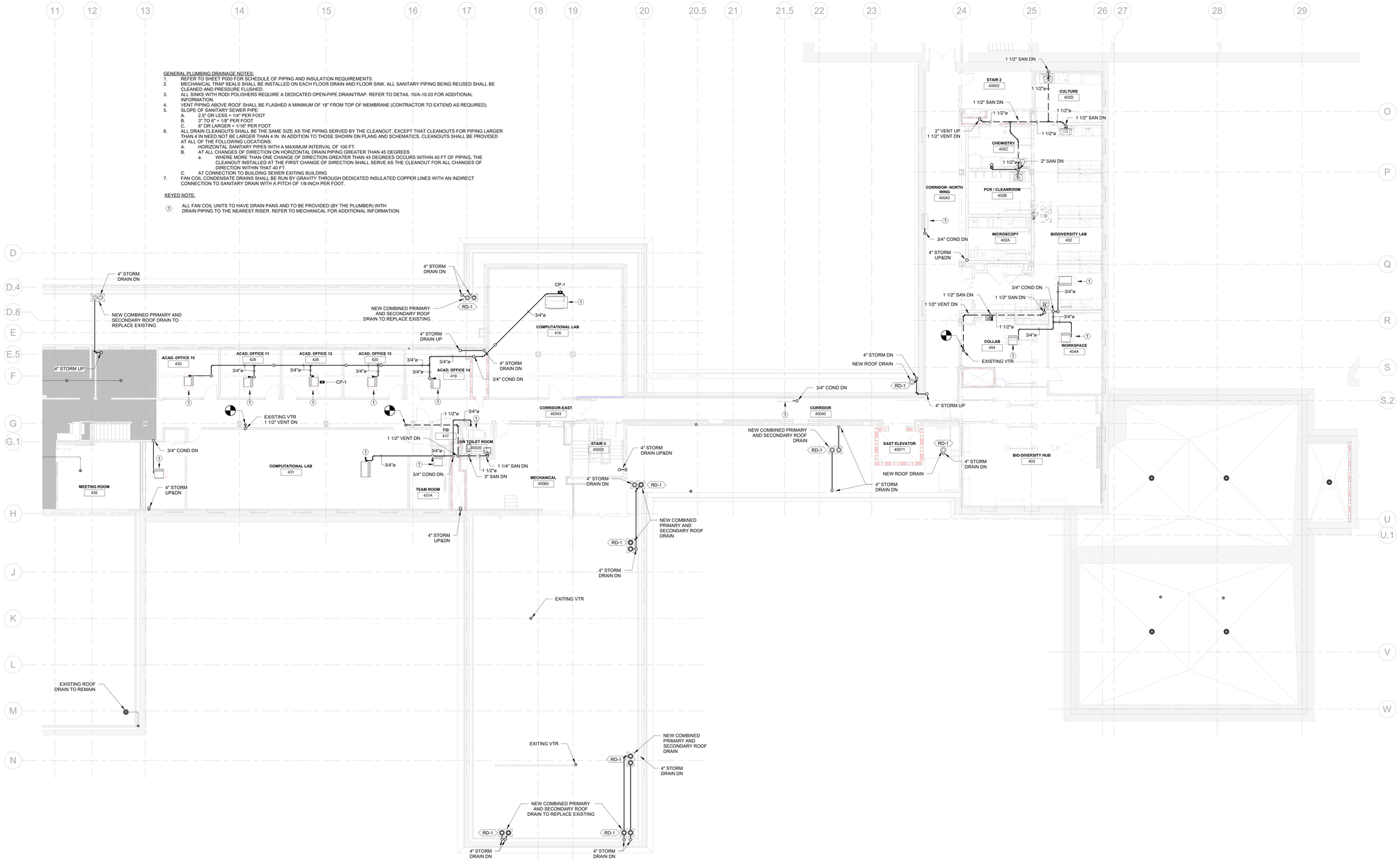

1 PLUMBING FOURTH FLOOR DRAINAGE PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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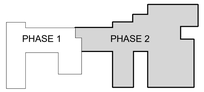

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING FOURTH FLOOR DRAINAGE PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELIST · 095338 · LICENSED PROFESSIONAL ENGINEER

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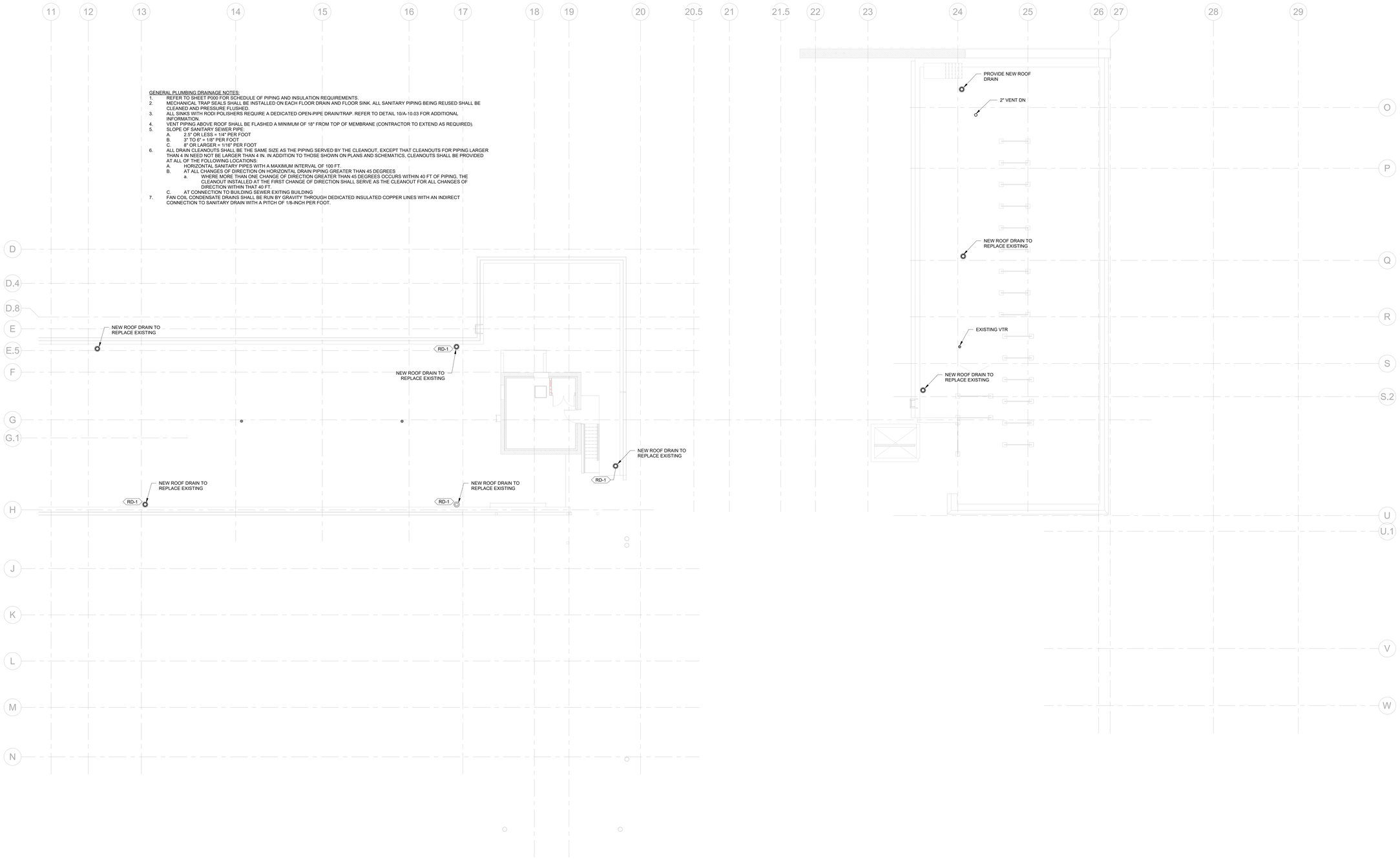

1 PLUMBING ROOF LEVEL DRAINAGE PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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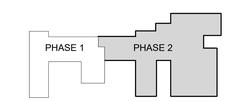

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
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Filename
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Revisions

PLUMBING ROOF LEVEL DRAINAGE PLAN - PHASE 2

BID DOCUMENTS
Scale: As indicated

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GENERAL SPECIALTY WATER NOTES:

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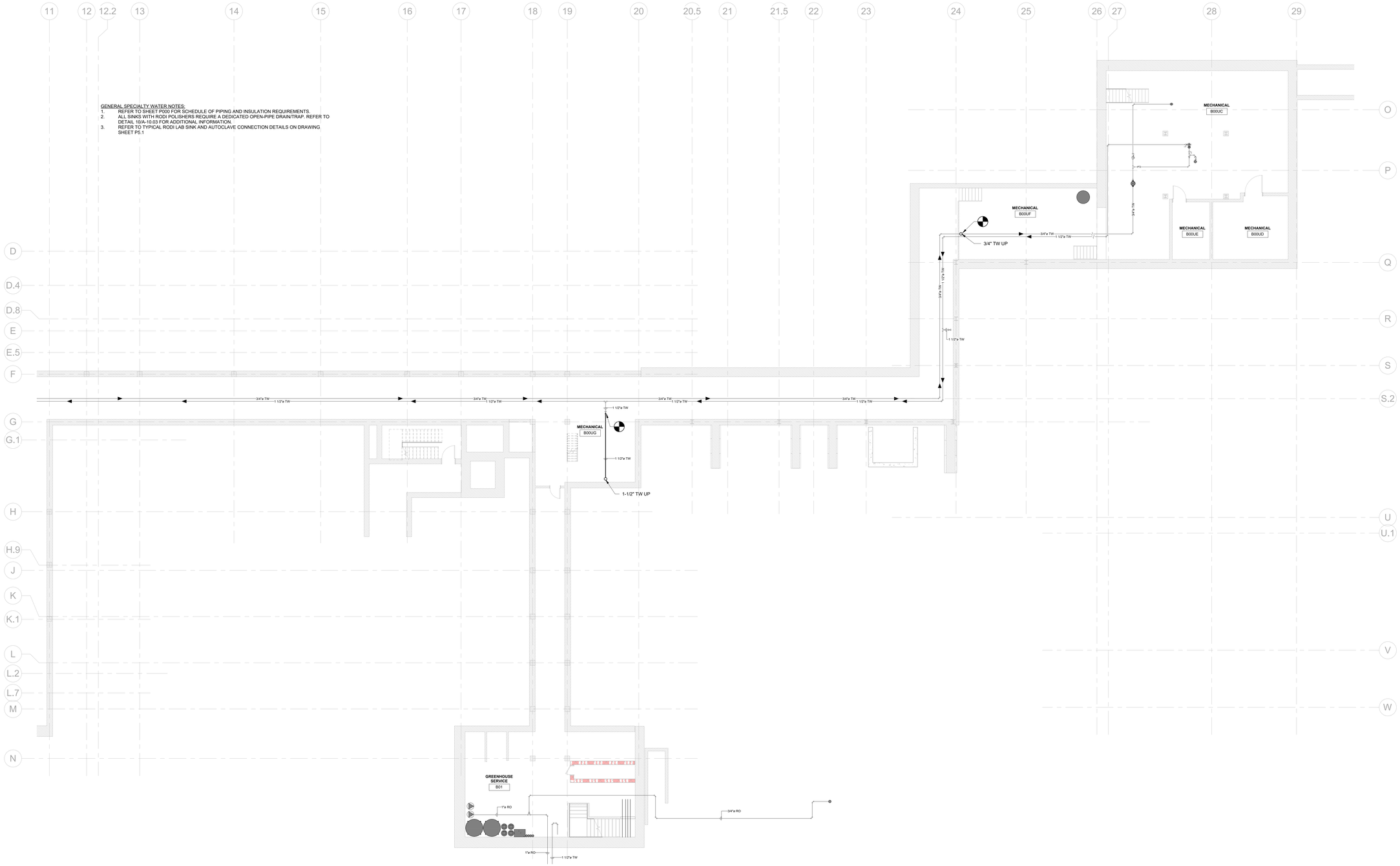
2. ALL SINKS WITH RODI POLISHERS REQUIRE A DEDICATED OPEN-PIPE DRAIN/TRAP. REFER TO DETAIL 10/A-10.03 FOR ADDITIONAL INFORMATION.
3. REFER TO TYPICAL RODI LAB SINK AND AUTOCLAVE CONNECTION DETAILS ON DRAWING SHEET P5.1



1 PLUMBING UTILITY TUNNEL LEVEL SPECIALTY WATER PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
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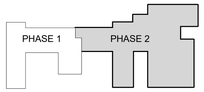
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING UTILITY TUNNEL LEVEL SPECIALTY WATER PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELIST · 095338 · LICENSED PROFESSIONAL ENGINEER

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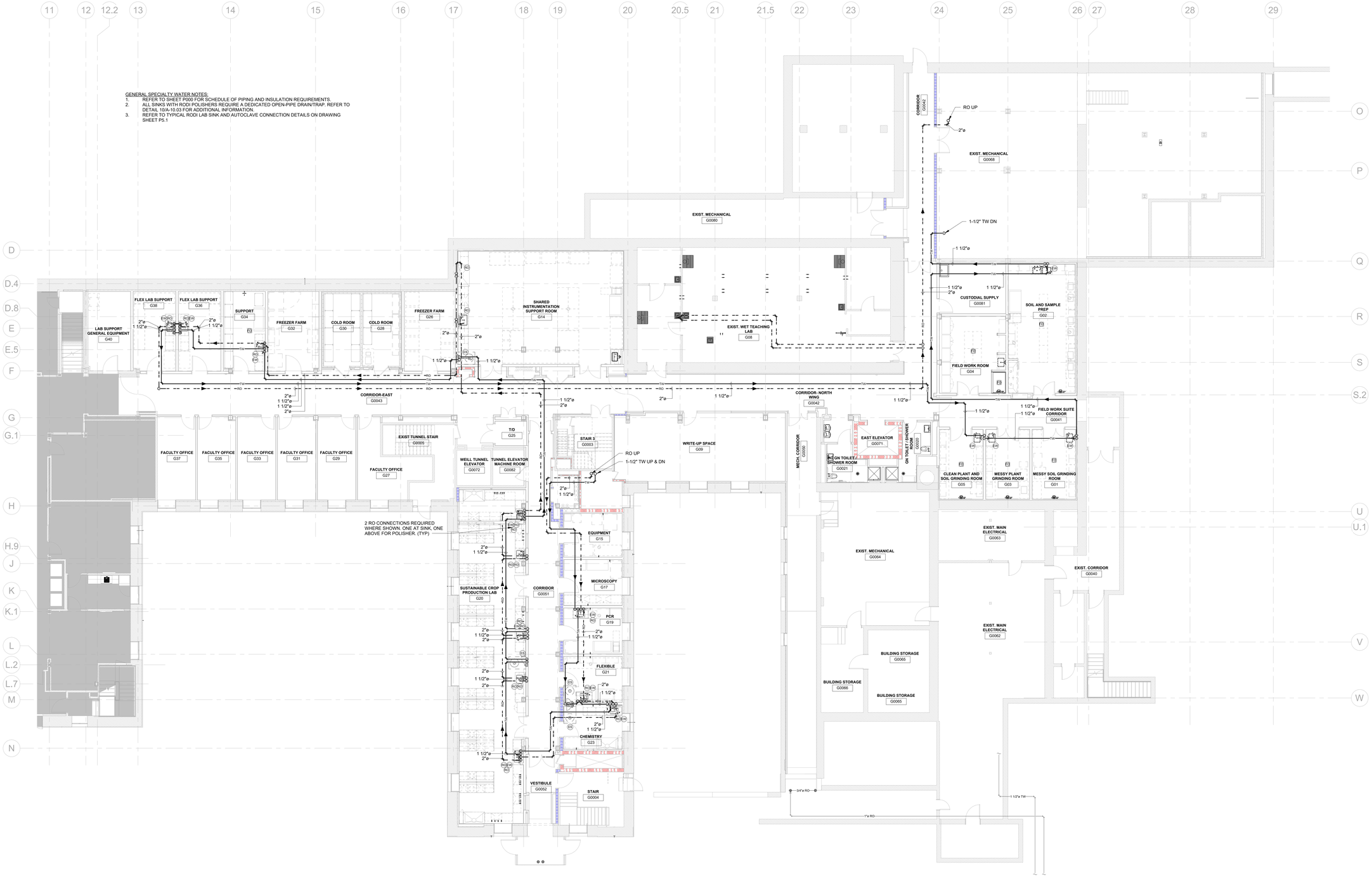

1 PLUMBING GROUND FLOOR SPECIALTY WATER PLAN - PART A (PHASE 2)
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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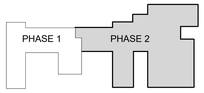

Keyplan

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Date August 31, 2026

Revisions

PLUMBING GROUND FLOOR SPECIALTY WATER PLAN - PHASE 2

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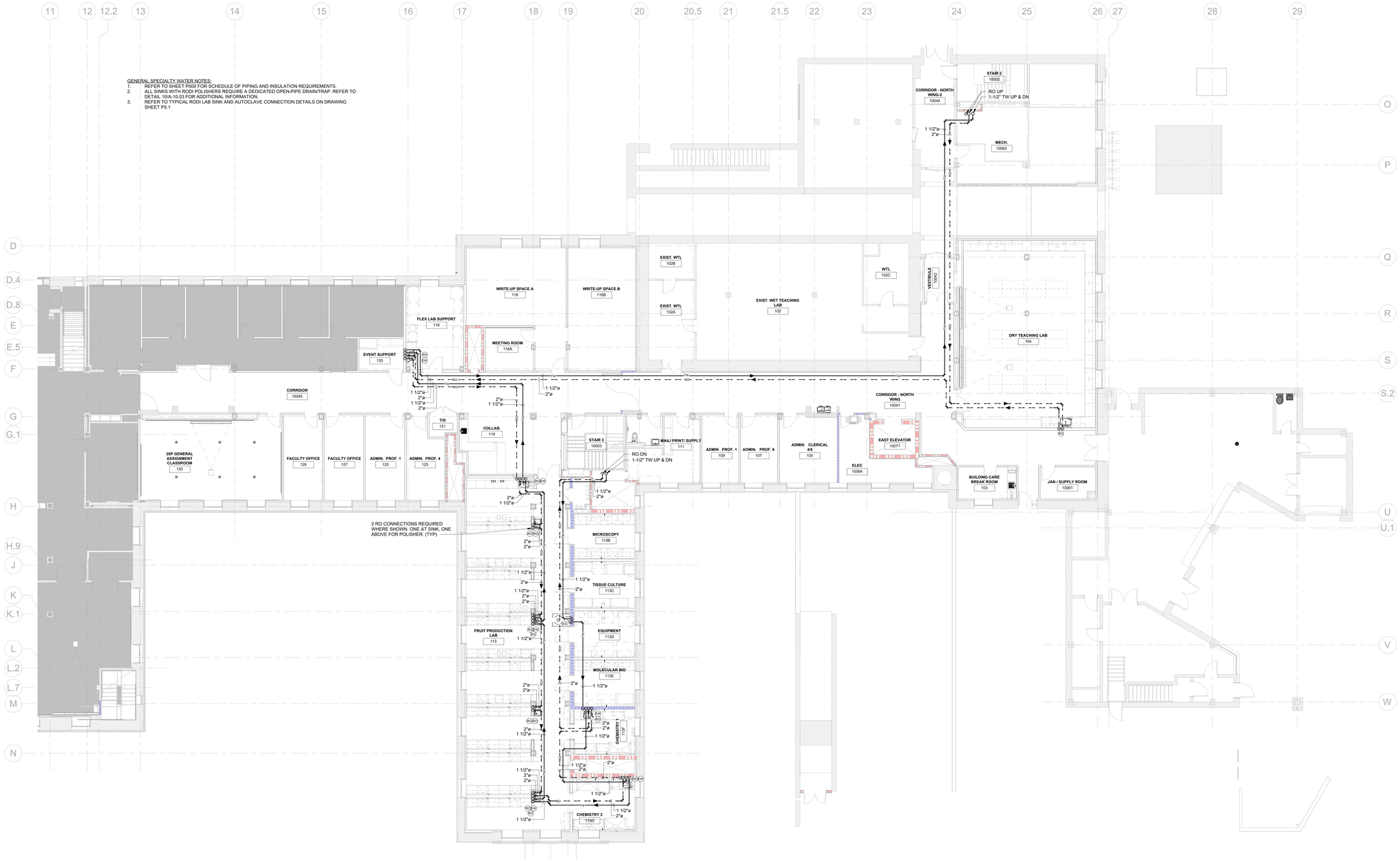

1 PLUMBING FIRST FLOOR SPECIALTY WATER PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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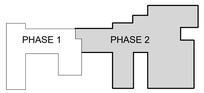

Keyplan

Job Number 161026-00 / 31909
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Filename
Date August 31, 2026

Revisions

PLUMBING FIRST FLOOR SPECIALTY WATER PLAN - PHASE 2

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GENERAL SPECIALTY WATER NOTES:
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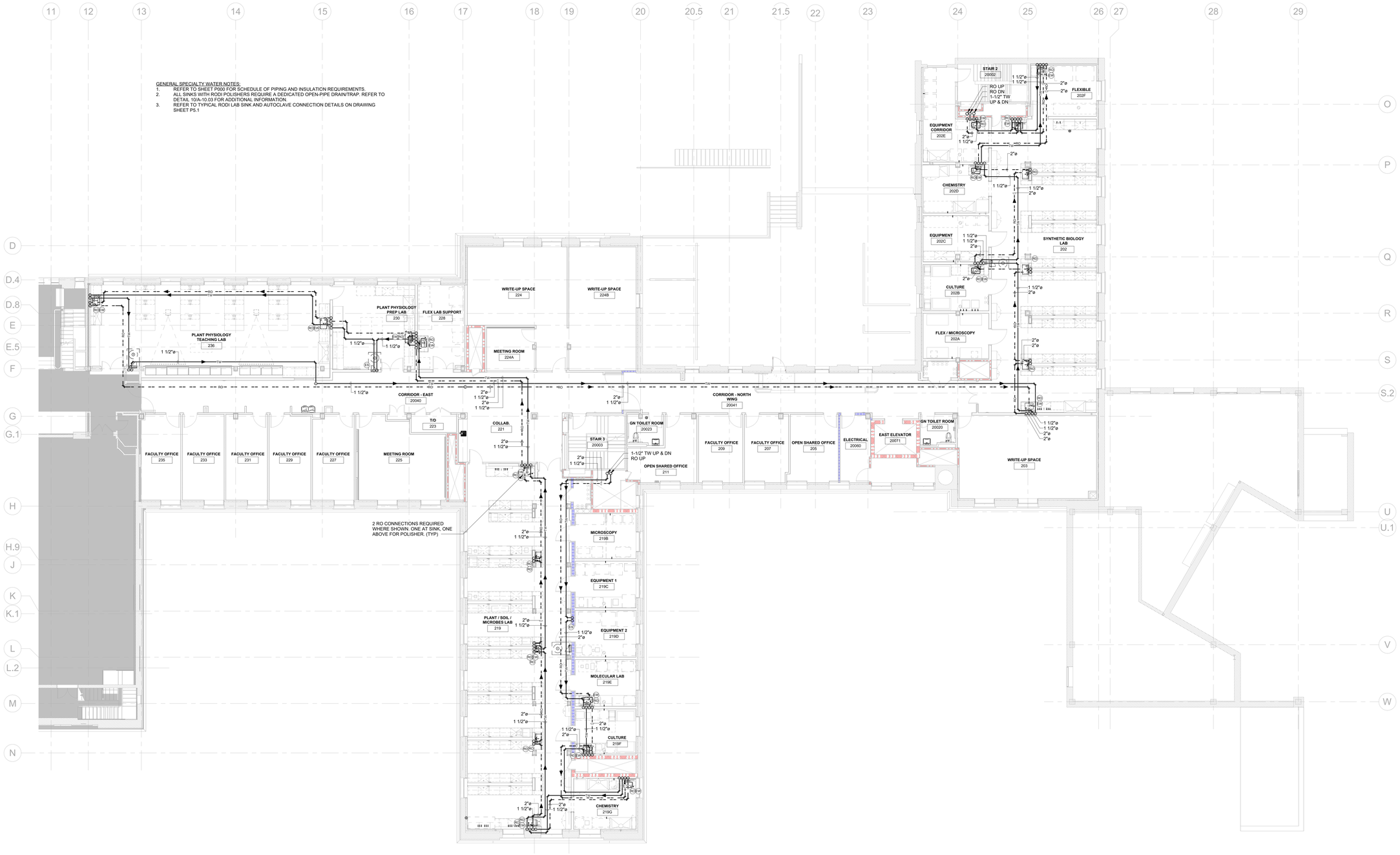

1 PLUMBING SECOND FLOOR SPECIALTY WATER PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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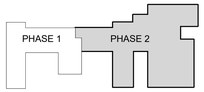
Notes:



Keyplan

Job Number 161026-00 / 31909
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Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING SECOND FLOOR SPECIALTY WATER PLAN - PHASE 2

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GENERAL SPECIALTY WATER NOTES:
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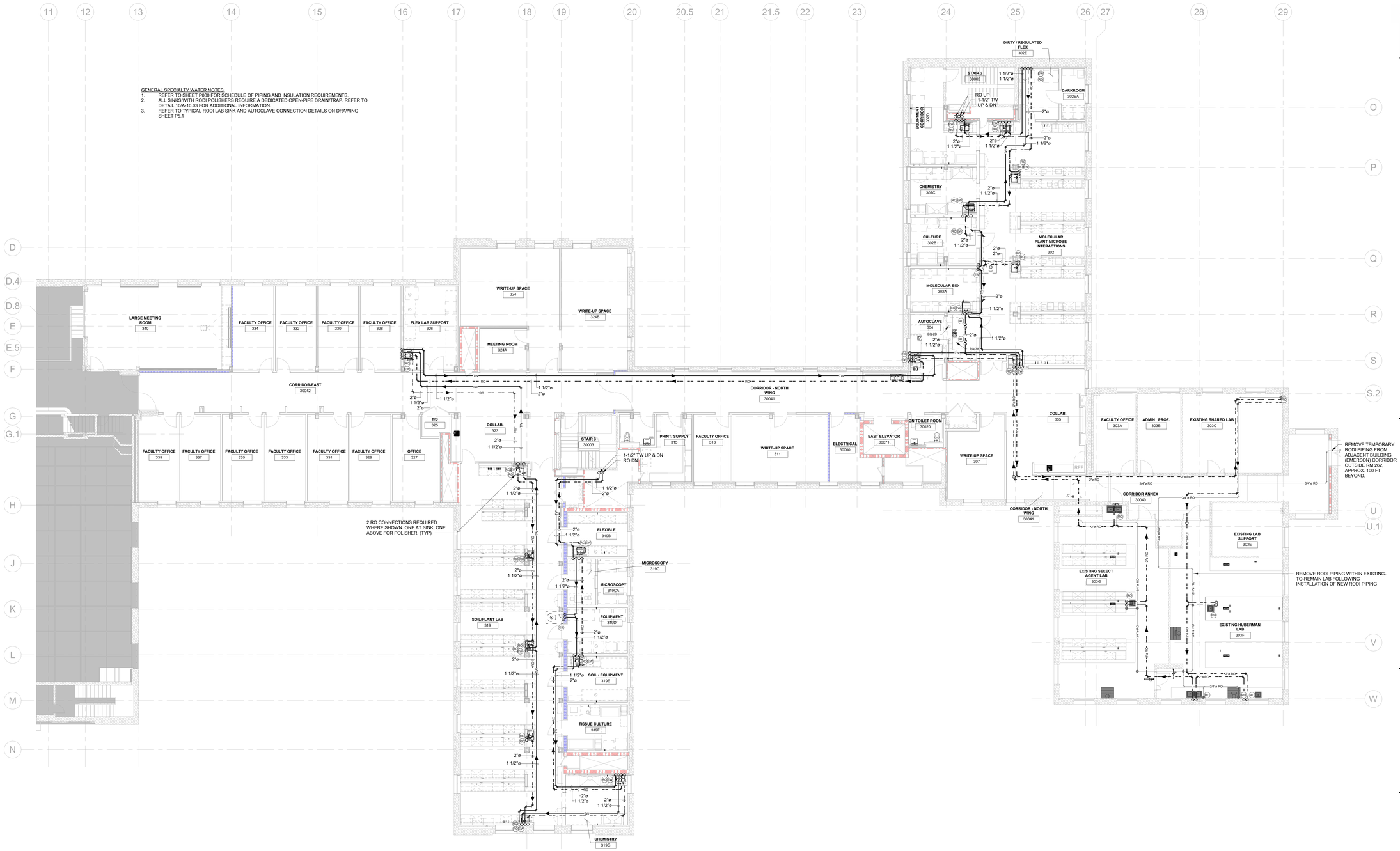

1 PLUMBING THIRD FLOOR SPECIALTY WATER PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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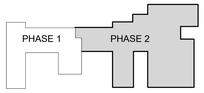
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
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Filename
Date August 31, 2026

Revisions

PLUMBING THIRD FLOOR SPECIALTY WATER PLAN - PHASE 2

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GENERAL SPECIALTY WATER NOTES:

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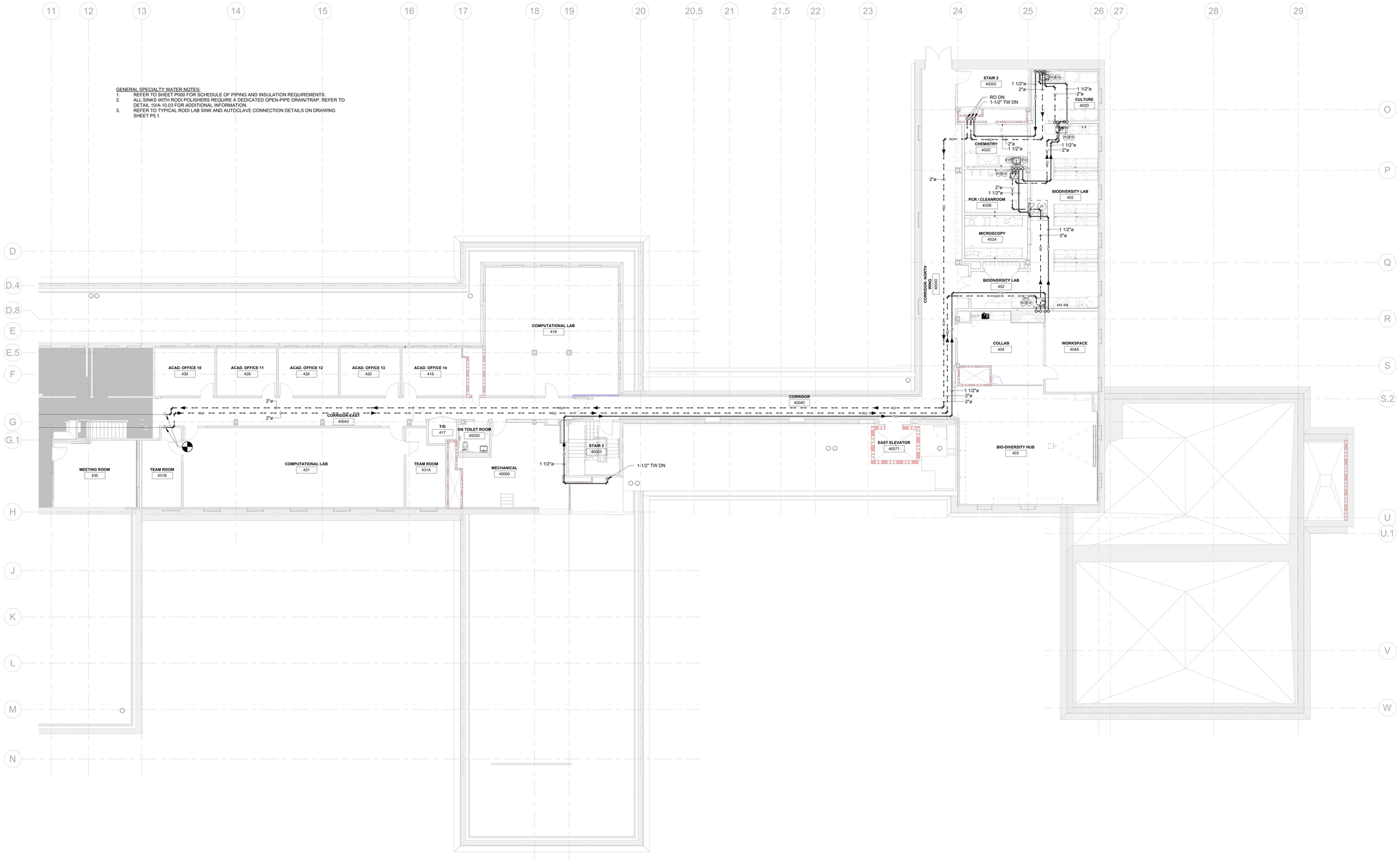

1 PLUMBING FOURTH FLOOR SPECIALTY WATER PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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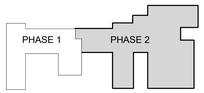

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
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Filename
Date August 31, 2026

Revisions

PLUMBING FOURTH FLOOR SPECIALTY WATER PLAN - PHASE 2

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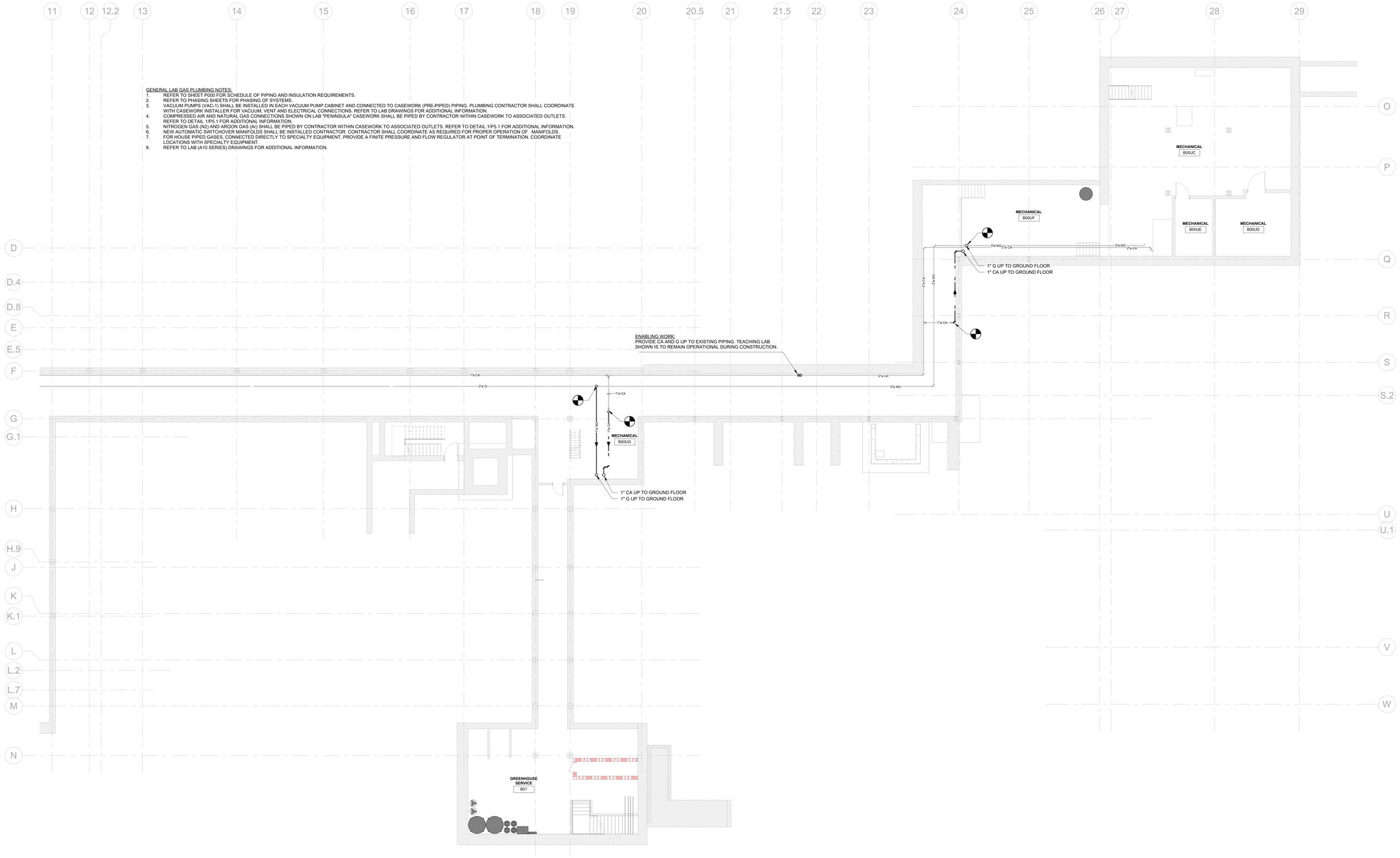
GENERAL LAB GAS PLUMBING NOTES:

1. REFER TO SHEET P000 FOR SCHEDULE OF PIPING AND INSULATION REQUIREMENTS.
2. REFER TO PHASING SHEETS FOR PHASING OF SYSTEMS.
3. VACUUM PUMPS (VAC-1) SHALL BE INSTALLED IN EACH VACUUM PUMP CABINET AND CONNECTED TO CASEWORK (PRE-PIPED) PIPING. PLUMBING CONTRACTOR SHALL COORDINATE WITH CASEWORK INSTALLER FOR VACUUM, VENT AND ELECTRICAL CONNECTIONS. REFER TO LAB DRAWINGS FOR ADDITIONAL INFORMATION.
4. COMPRESSED AIR AND NATURAL GAS CONNECTIONS SHOWN ON LAB "PENINSULA" CASEWORK SHALL BE PIPED BY CONTRACTOR WITHIN CASEWORK TO ASSOCIATED OUTLETS. REFER TO DETAIL 1/P5.1 FOR ADDITIONAL INFORMATION.
5. NITROGEN GAS (N2) AND ARGON GAS (Ar) SHALL BE PIPED BY CONTRACTOR WITHIN CASEWORK TO ASSOCIATED OUTLETS. REFER TO DETAIL 1/P5.1 FOR ADDITIONAL INFORMATION.
6. NEW AUTOMATIC SWITCHOVER MANIFOLDS SHALL BE INSTALLED CONTRACTOR. CONTRACTOR SHALL COORDINATE AS REQUIRED FOR PROPER OPERATION OF MANIFOLDS.
7. FOR HOUSE PIPED GASES, CONNECTED DIRECTLY TO SPECIALTY EQUIPMENT, PROVIDE A FINITE PRESSURE AND FLOW REGULATOR AT POINT OF TERMINATION. COORDINATE LOCATIONS WITH SPECIALTY EQUIPMENT.
8. REFER TO LAB (A10 SERIES) DRAWINGS FOR ADDITIONAL INFORMATION.



1 PLUMBING UTILITY TUNNEL FLOOR GAS PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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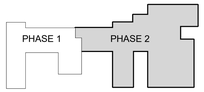

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
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Date August 31, 2026

Revisions

PLUMBING UTILITY TUNNEL LEVEL GAS PLAN - PHASE 2

STATE OF NEW YORK · JOHN R. EVANGELISTA · 095338 · LICENSED PROFESSIONAL ENGINEER

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8. REFER TO LAB (A10 SERIES) DRAWINGS FOR ADDITIONAL INFORMATION.

1 PLUMBING GROUND FLOOR GAS PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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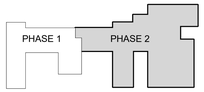
Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING GROUND FLOOR GAS PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANDOVITZ · LICENSED PROFESSIONAL ENGINEER · 095338

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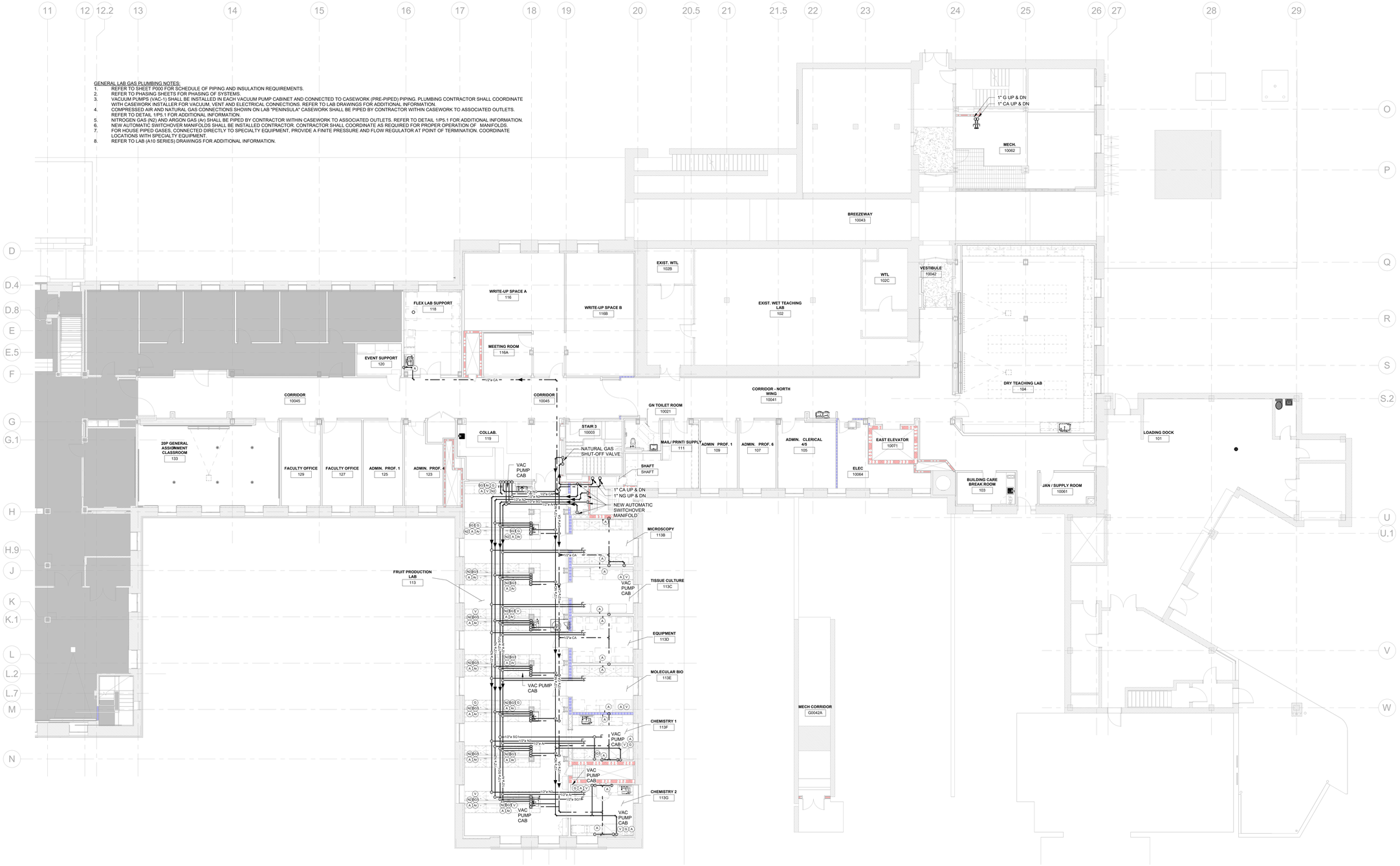

1 PLUMBING FIRST FLOOR GAS PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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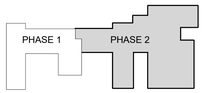

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING FIRST FLOOR GAS PLAN - PHASE 2

STATE OF NEW YORK · JOSEPH EVANGELISTI · 095338 · LICENSED PROFESSIONAL ENGINEER

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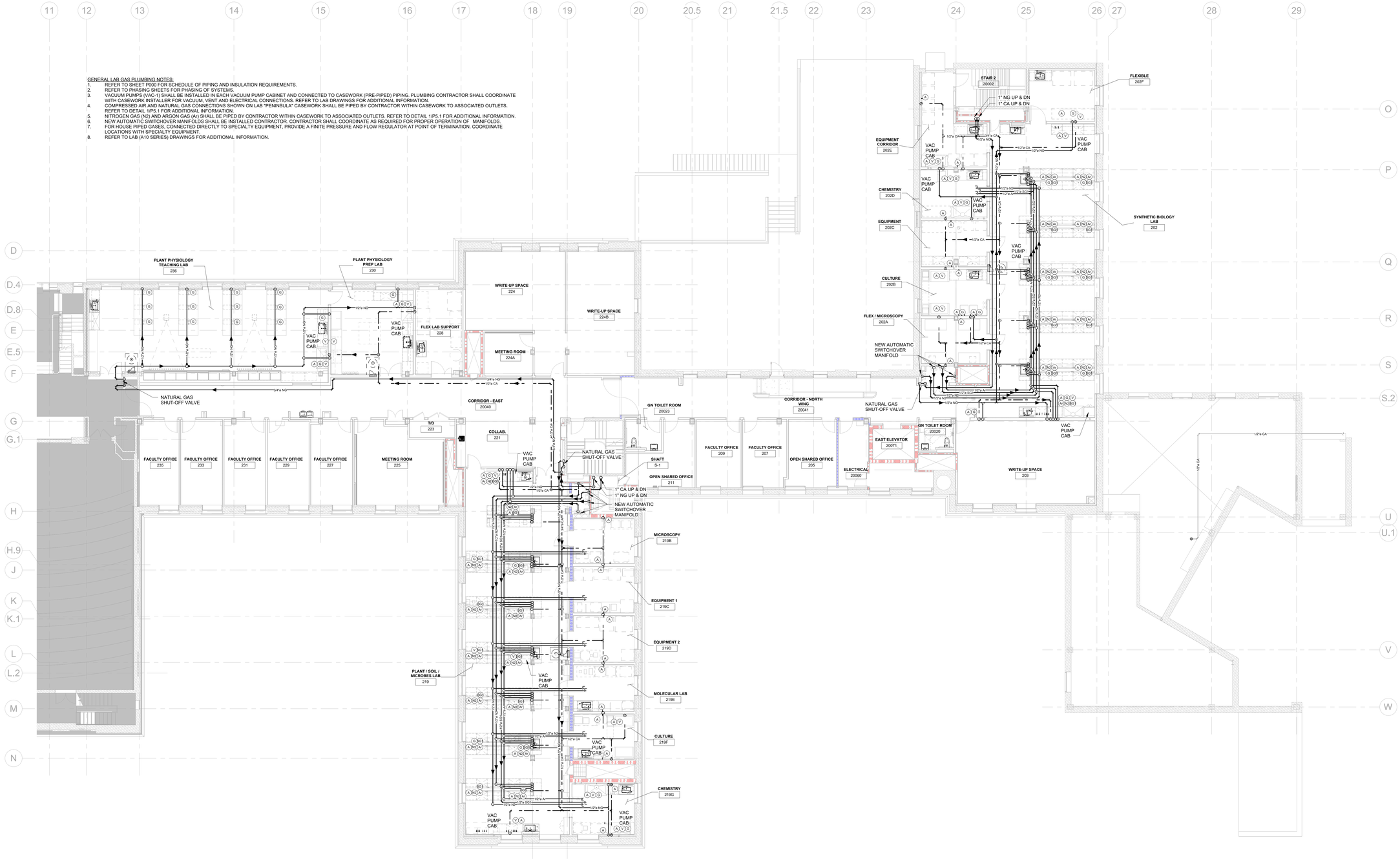

1 PLUMBING SECOND FLOOR GAS PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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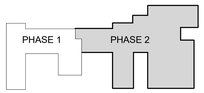

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Revisions

PLUMBING SECOND FLOOR GAS PLAN - PHASE 2

STATE OF NEW YORK · JOSEPH EVANGELISTI · 095338 · LICENSED PROFESSIONAL ENGINEER

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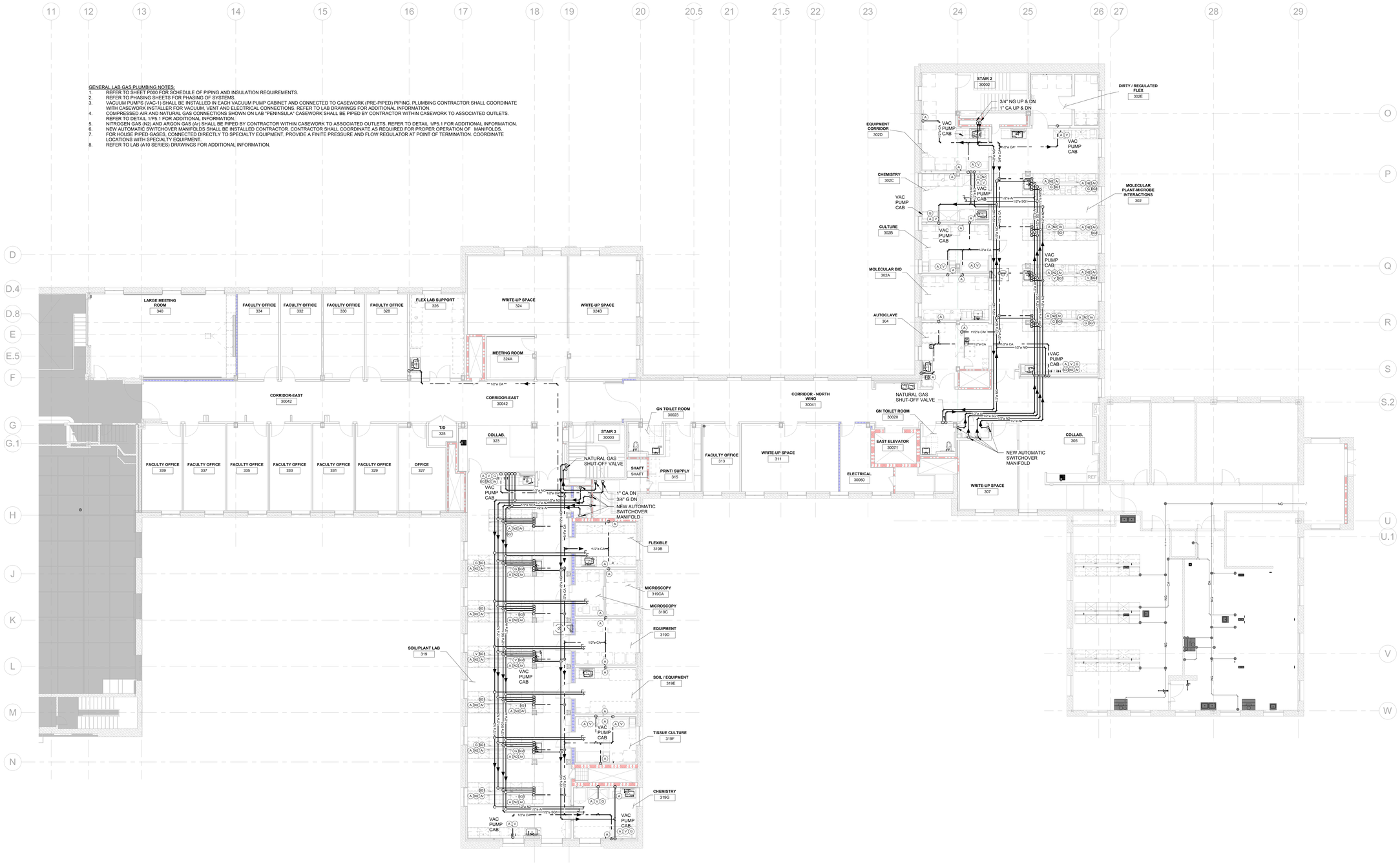

1 PLUMBING THIRD FLOOR GAS PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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SUNY State University Construction Fund

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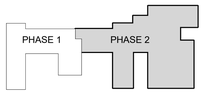

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
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Date	August 31, 2026

Revisions

PLUMBING THIRD FLOOR GAS PLAN - PHASE 2

STATE OF NEW YORK · JOHN W. EVANGELISTA · 095338 · LICENSED PROFESSIONAL ENGINEER

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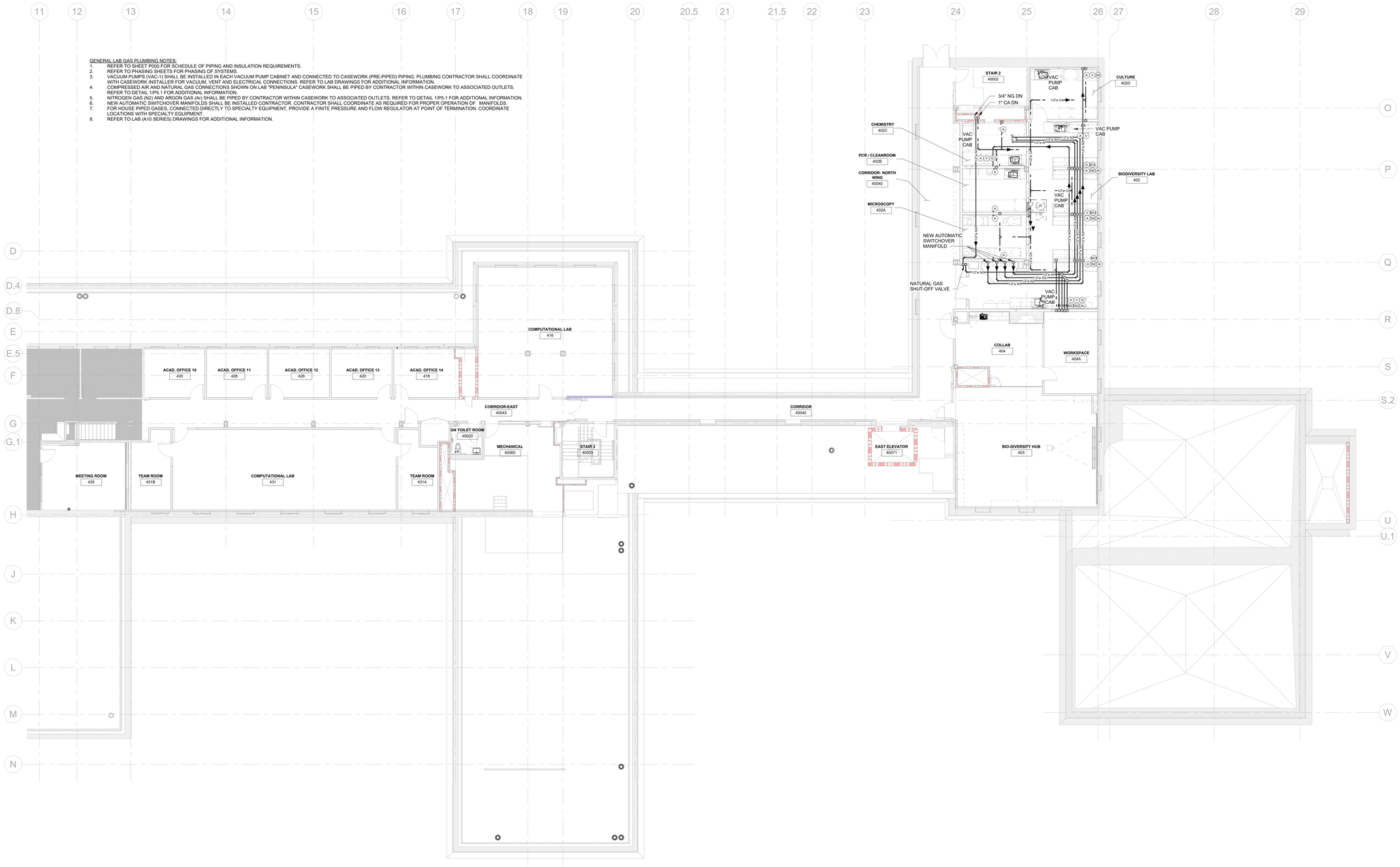

PLUMBING FOURTH FLOOR GAS PLAN - PART A (PHASE 2)
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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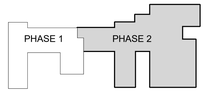

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PLUMBING FOURTH FLOOR GAS PLAN - PHASE 2

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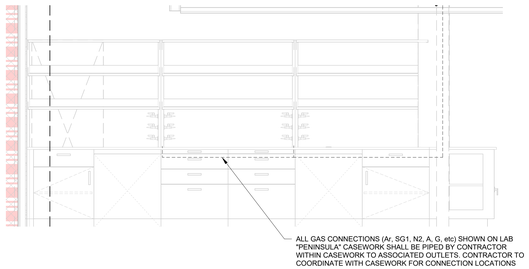
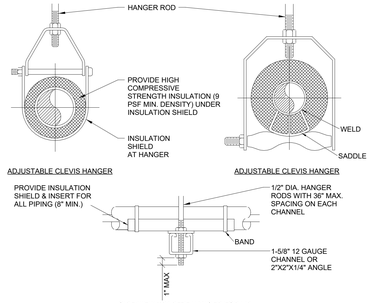


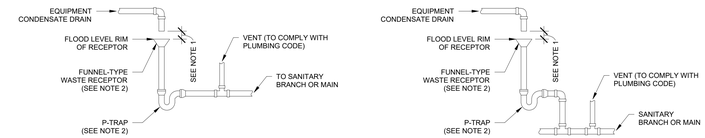
1 TYPICAL CASEWORK PIPING
1/2" = 1'-0"



SIDE VIEW TRAPEZE HANGER FOR UP TO 1000 LB. UNIFORM LOAD

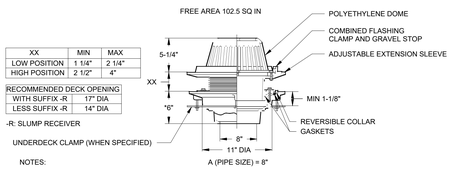
MAXIMUM PIPE/TUBING SUPPORT SPACING																			
NOM. SIZE	IN	THRU ¾	1	1 ¼	1 ½	2	2 ½	3	4	5	6	8	10	12	14	16	18	20	24
PIPE	FT	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING	FT	5	6	7	8	8	9	10	12	13	14	16	-	-	-	-	-	-	-
													-	-	-	-	-	-	-
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE. ALL PIPE HANGERS SHALL HAVE HOTDIP GALVANIZED FINISH.																			

2 PIPE HANGERS
NTS



NOTES:
1. PROVIDE VERTICAL AIR GAP BETWEEN CONDENSATE DRAIN OUTLET AND FLOOD LEVEL RIM OF RECEPTOR EQUAL TO 2 TIMES THE EFFECTIVE OPENING OF THE CONDENSATE DRAIN.
2. FUNNEL-TYPE WASTE RECEPTOR SHALL BE TRAPPED AND VENTED, CONNECTED TO SANITARY DRAINAGE SYSTEM, AND ACCESSIBLE. WASTE RECEPTORS SHALL NOT BE INSTALLED IN CONCEALED SPACES.
3. CONDENSATE DRAIN PIPING SHALL SLOPE AT LEAST 1/8" PER FOOT TOWARD THE DISCHARGE LOCATION, AND BE SIZED NO SMALLER THAN THE EQUIPMENT DRAIN CONNECTION SIZE.
4. PROVIDE CLEANOUTS AS REQUIRED BY CODE.

20 INDIRECT DRAIN CONNECTION (CONDENSATE DRAIN)
NTS



XX	MIN	MAX
LOW POSITION	1 1/4"	2 1/4"
HIGH POSITION	2 1/2"	4"

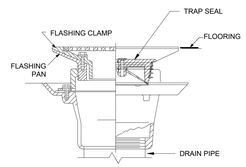
RECOMMENDED DECK OPENING	
WITH SUFFIX -R	17" DIA
LESS SUFFIX -R	14" DIA

-R: SLUMP RECEIVER

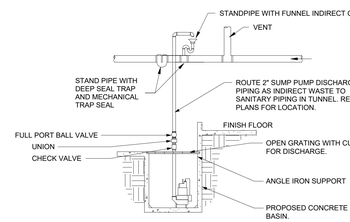
NOTES:

1.FUNCTION: USED IN FLAT ROOFS OF ANY CONSTRUCTION. THE ADJUSTABLE EXTENSION SLEEVE PERMITS ADJUSTMENT FROM A MINIMUM OF 1 1/4" TO A MAXIMUM OF 4", EASILY ACCOMMODATING UP TO 2 3/4" OF VARYING INSULATION THICKNESSES. THE POSITIVE THREADING ALLOWS SMOOTH PERIMETER MOVEMENT AND CIRCUMFERENTIAL SUPPORT OF THE TOP AT ANY ADJUSTED ELEVATION. LARGE LOW PROFILE DOME PROVIDES SUFFICIENT FREE AREA FOR QUICK DRAINAGE OF RAINWATER AND PROTECTION AGAINST DEBRIS.
2. FURNISHED WITH DUCO CAST IRON BODY WITH ADJUSTABLE EXTENSION SLEEVE, REVERSIBLE COLLAR, COMBINED FLASHING CLAMP AND GRAVEL STOP WITH POLYETHYLENE DOME.

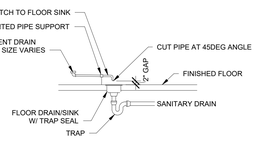
4 ROOF DRAIN WITH ADJUSTABLE EXTENSION
NTS



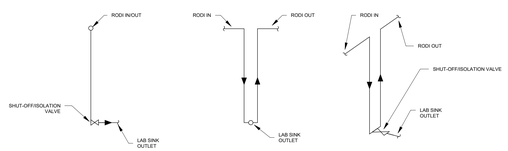
5 ADJUSTABLE FLOOR DRAIN WITH MECHANICAL TRAP SEAL
NTS



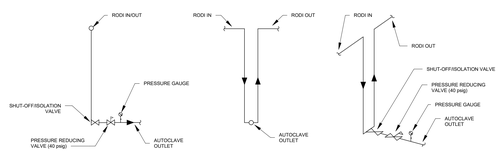
6 SUMP PUMP DETAIL - ELEVATOR
NTS



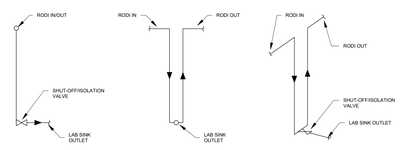
3 INDIRECT DRAIN CONNECTION (FLOOR DRAIN/SINK)
NTS



7 TYPICAL ADA RODI LAB SINK CONNECTION
NTS



8 TYPICAL RODI AUTOCLAVE AND GLASS WASH CONNECTION
NTS



9 TYPICAL RODI LAB SINK CONNECTION
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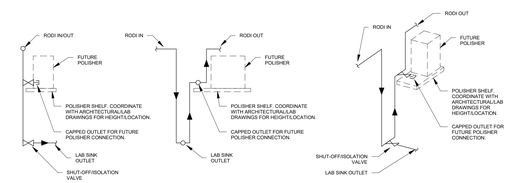
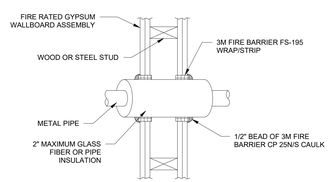
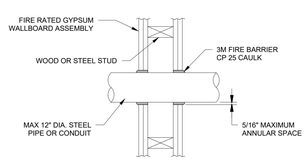


10 TYPICAL RODI LAB SINK W/ POLISHER CONNECTION
NTS



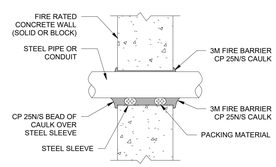
UL SYSTEM #147B

11 PENETRATION FIRESTOP FOR INSULATED METAL PIPE GYPSUM WALLBOARD ASSEMBLY
NTS



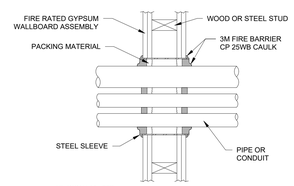
UL SYSTEM #147A

12 PENETRATION FIRESTOP FOR METAL PIPE GYPSUM WALLBOARD ASSEMBLY
NTS



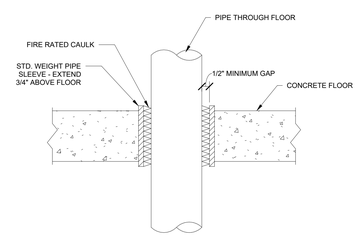
UL SYSTEM #49

13 PENETRATION FIRESTOP FOR METAL PIPE THROUGH CONCRETE WALL
NTS

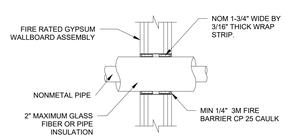


UL SYSTEM #322

14 PENETRATION FIRESTOP FOR MULTIPLE PIPES THROUGH A SLEEVED GYPSUM WALLBOARD ASSEMBLY
NTS

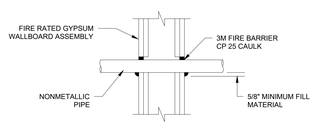


15 PIPE SLEEVE THROUGH FLOOR DETAIL
NTS



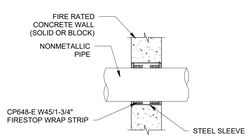
SYSTEM # W-L-2043

16 PENETRATION FIRESTOP FOR INSULATED COMBUSTIBLE PIPE GYPSUM WALLBOARD ASSEMBLY
NTS



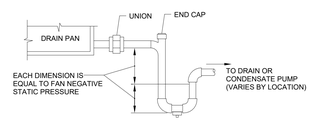
SYSTEM W-L-2603

18 PENETRATION FIRESTOP FOR COMBUSTIBLE PIPE GYPSUM WALLBOARD ASSEMBLY
NTS



SYSTEM # W-J-2336

17 PENETRATION FIRESTOP FOR COMBUSTIBLE PIPE THROUGH CONCRETE WALL
NTS



19 CONDENSATE DRAIN CONNECTION
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

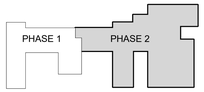
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING DETAILS

STATE OF NEW YORK · JOHN W. EVANSCHEK · 095338 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

P5.1

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PLUMBING EQUIPMENT COORDINATION SCHEDULE

GENERAL				DOCUMENT COORDINATION					ELECTRICAL COORDINATION		MECHANICAL / FIRE PROTECTION COORDINATION		
EQUIP TAG	LOCATION	DESCRIPTION	BASIS OF DESIGN MAKE/MODEL	PLUMBING DETAIL SHEET	SCHEDULE SHEET	PLUMBING DRAWING REFERENCE	SPECIFICATION SECTION	DATA SHEET (YES/NO)	REQUIRED (YES/NO)	ELECTRIC REQ (VOLT/PHASE/HZ)	MECHANICAL OR FIRE PROTECTION SYSTEM INTERFACE/CONNECTION	BAS CONNECTION (YES/NO)	NOTES
ESP-2	ELEVATOR SUMP	ELEVATOR SUMP PUMP	ZOELLER M95	P5.1	P6.1	P1.UA	221429 - SUMP PUMPS	YES	YES	120/1/60	NA	NO	
WC-	VARIOUS-SEE DRAWINGS	WATER CLOSETS	AMERICAN STANDARD 2856.111	-	P6.1	VARIOUS-SEE DRAWINGS	224213.13 - COMMERCIAL WATER CLOSETS	YES	YES	LOW VOLT	NA	NO	
LAV-	VARIOUS-SEE DRAWINGS	LAVATORIES	KOHLER	-	P6.1	VARIOUS-SEE DRAWINGS	224216.13 - COMMERCIAL LAVATORIES	YES	NO	NA	NA	NO	
-	VARIOUS-SEE DRAWINGS	LAVATORY FAUCET	AMERICAN STANDARD 775B.103	-	P6.1	VARIOUS-SEE DRAWINGS	224216.13 - COMMERCIAL LAVATORIES	YES	YES	LOW VOLT	NA	NO	
S-	VARIOUS-SEE DRAWINGS	SINKS	ELKAY	-	P6.1	VARIOUS-SEE DRAWINGS	224216.16 - COMMERCIAL SINKS	YES	NO	NA	NA	NO	
-	VARIOUS-SEE DRAWINGS	SINK FAUCETS	GROHE 3134900E	-	-	VARIOUS-SEE DRAWINGS	224216.16 - COMMERCIAL SINKS	YES	NO	NA	NA	NO	
LS-	VARIOUS-SEE DRAWINGS	LAB SINKS	LAB ACCESSORY SCHEDULE	A10 SERIES	P6.1	VARIOUS-SEE DRAWINGS	224216.16 - COMMERCIAL SINKS	YES	NO	NA	NA	NO	
-	VARIOUS-SEE DRAWINGS	LAB SINK FAUCET	LAB ACCESSORY SCHEDULE	A10 SERIES	-	VARIOUS-SEE DRAWINGS	224216.16 - COMMERCIAL SINKS	YES	NO	NA	NA	NO	
MS-	VARIOUS-SEE DRAWINGS	JANITOR SINKS	MUSTEE 65M	-	P6.1	VARIOUS-SEE DRAWINGS	224216.16 - COMMERCIAL SINKS	YES	NO	NA	NA	NO	
-	VARIOUS-SEE DRAWINGS	JANITOR SINK FAUCET	MUSTEE 63.600A	-	-	VARIOUS-SEE DRAWINGS	224216.16 - COMMERCIAL SINKS	YES	NO	NA	NA	NO	
DF-	VARIOUS-SEE DRAWINGS	DRINKING FOUNTAINS	ELKAY LZS8WSLP	-	P6.1	VARIOUS-SEE DRAWINGS	224713 - DRINKING FOUNTAINS	YES	YES	120/1/60 - RCPT	NA	NO	
SC1	VARIOUS-SEE DRAWINGS	EMERGENCY SHOWER	LAB ACCESSORY SCHEDULE	-	P6.1	VARIOUS-SEE DRAWINGS	224500 - EMERGENCY PLUMBING FIXTURES	YES	NO	NA	NA	NO	
SH-1	VARIOUS-SEE DRAWINGS	SHOWER	MOEN 8342	-	P6.1	VARIOUS-SEE DRAWINGS	224223 - COMMERCIAL SHOWERS	YES	NO	NA	NA	NO	
FD	VARIOUS-SEE DRAWINGS	FLOOR DRAINS	SMITH D2050	P5.1	P6.1	VARIOUS-SEE DRAWINGS	221319.13 - SANITARY DRAINS	YES	NO	NA	NA	NO	
FS	VARIOUS-SEE DRAWINGS	FLOOR SINKS	SMITH 320-Y04	-	P6.1	VARIOUS-SEE DRAWINGS	221319.13 - SANITARY DRAINS	YES	NO	NA	NA	NO	
RD-1	ROOF	ROOF DRAINS	SMITH 1015-08	P5.1	-	P2.4 AND P2.5	221423 - STORM DRAINAGE PIPING SPECIALTIES	YES	NO	NA	NA	NO	

ELEVATOR SUMP PUMP SCHEDULE - PHASE 2

TAG	LOCATION	TYPE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	FLOW	HEAD	V/PH/HZ
ESP-2	ELEVATOR SUMP PIT	ELEVATOR SUMP PUMP	ZOELLER	M95	50 GPM	10 ftH2O	120/1/60

SOLIDS SEPARATOR SCHEDULE

TAG	MANUFACTURER	MODEL	CONSTRUCTION	FLOW RATE	MAX CAPACITY	DIAMETER	TANK HEIGHT	INLET/OUTLET SIZE
SS-01	TRAPZILLA	TSS-27-SSA	POLYETHYLENE	35 GPM	27.0 gal	1' - 7"	2' - 11"	3"

PLUMBING FIXTURE SCHEDULE - PHASE 2

TAG	MAKE/MODEL	DESCRIPTION
DF-1	ELKAY LZSTL8WSLP	DRINKING FOUNTAIN, BOTTLE FILLING STATION, BI-LEVEL ADA WALL MOUNT COOLER, PUSH BAR CONTROL
FD-1	SMITH D2050	FLOOR DRAIN
FS-1	SMITH 320-Y04	FLOOR SINK
HB-1	ZURN Z13441XL	COMMERCIAL HOSE BIB
HB-2	JAY R SMITH 5609QT	1/4 TURN NON-FREEZE WALL HYDRANT W/ INTEGRAL VACUUM BREAKER
LAV-2	KOHLER K-2084	LAVATORY, WALL MOUNTED VITREOUS CHINA, APPROX. 20 BY 18 WITH SINGLE HOLE PUNCHING. AUTOMATIC OPERATED SENSOR FAUCET. FAUCET BOD: AMERICAN STANDARD NEXTGEN SELECTRONIC
LS-1A	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-1B	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-1C	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-1D	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-2B	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-2C	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-2D	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-2E	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-2F	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-2G	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
LS-2H	SEE 123555A - LAB ACCESSORY SCHEDULE	SEE 123555A - LAB ACCESSORY SCHEDULE
MS-1	PROFLO PFMB3624S	MOP SINK, FIBERGLASS, SINGLE BOWL, APPROXIMATELY 24 INCHES BY 36 INCHES BY 10 INCHES DEEP.
S-1	ELKAY ELUHAD121255PD	SINK, CRS, SINGLE COMPARTMENT, COUNTER TOP MOUNTED, APPROX. 14.5 INCHES BY 14.5 INCHES WITH SINGLE COMPARTMENT INSIDE DIMENSIONS APPROX. 12 INCHES BY 12 INCHES BY 5 1/2 INCHES DEEP. SHALL BE MINIMUM OF 18 GAUGE CRS. FAUCET BOD: GROHE 32665 CONCETTO SINGLE HANDLE PULLDOWN DUAL SPRAY 1.75 GPM WITH OPTIONAL QUICK COUPLING TO REDUCE FLOW TO 1.0 GPM
S-2	ELKAY ELUHAD1212555PD	SINK, CRS, SINGLE COMPARTMENT, UNDER-COUNTER MOUNTED, APPROX. 15 INCHES BY 15 INCHES WITH SINGLE COMPARTMENT INSIDE DIMENSIONS APPROX. 14 INCHES BY 14 INCHES BY 5 1/2 INCHES DEEP. SHALL BE MINIMUM OF 18 GAUGE CRS. FAUCET BOD: GROHE 32665 CONCETTO SINGLE HANDLE PULLDOWN DUAL SPRAY 1.75 GPM WITH OPTIONAL QUICK COUPLING TO REDUCE FLOW TO 1.0 GPM
SC1	SEE 123555A - LAB ACCESSORY SCHEDULE	RECESSED SAFETY CENTER, ES W/ EXPOSED SHOWER HEAD. INTEGRATED FIRE EXTINGUISHER CABINET AND AUDIO/VISUAL ALARM.
SH-1	MOEN 8342	SHOWER BATH FIXTURE (DETACHABLE, WALL MOUNTED, CONCEALED SUPPLIES, TYPE T/P COMBINATION VALVE)
WC-1	AMERICAN STANDARD 3351.101	WATER CLOSET, WALL MOUNTED, TOP SPUD, VITEROUS CHINA, ELONGATED BOWL, HARDWIRE SENSOR OPERATED FLUSH VALVE 1.1 GPF, BACK OUTLET
WS-1	T&S BRASS MV-0771-12CW	WASHDOWN STATION

FAN COIL CONDENSATE PUMP

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	FLOW (GPH @ 5FT HEAD)	V/PH/HZ	COMMENTS
CP-1	SEE M-SERIES	BECKETT	CL201ULP	110 GPH	120/1/60	PLENUM RATED

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575

Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506

Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590

Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062

Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334

DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339

Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377

Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688

Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650

D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967

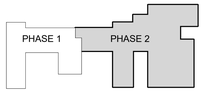
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800

Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122

Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING SCHEDULES

STATE OF NEW YORK · JOSEPH EVANGELISTI · 095338 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: 12" = 1'-0"

P6.1

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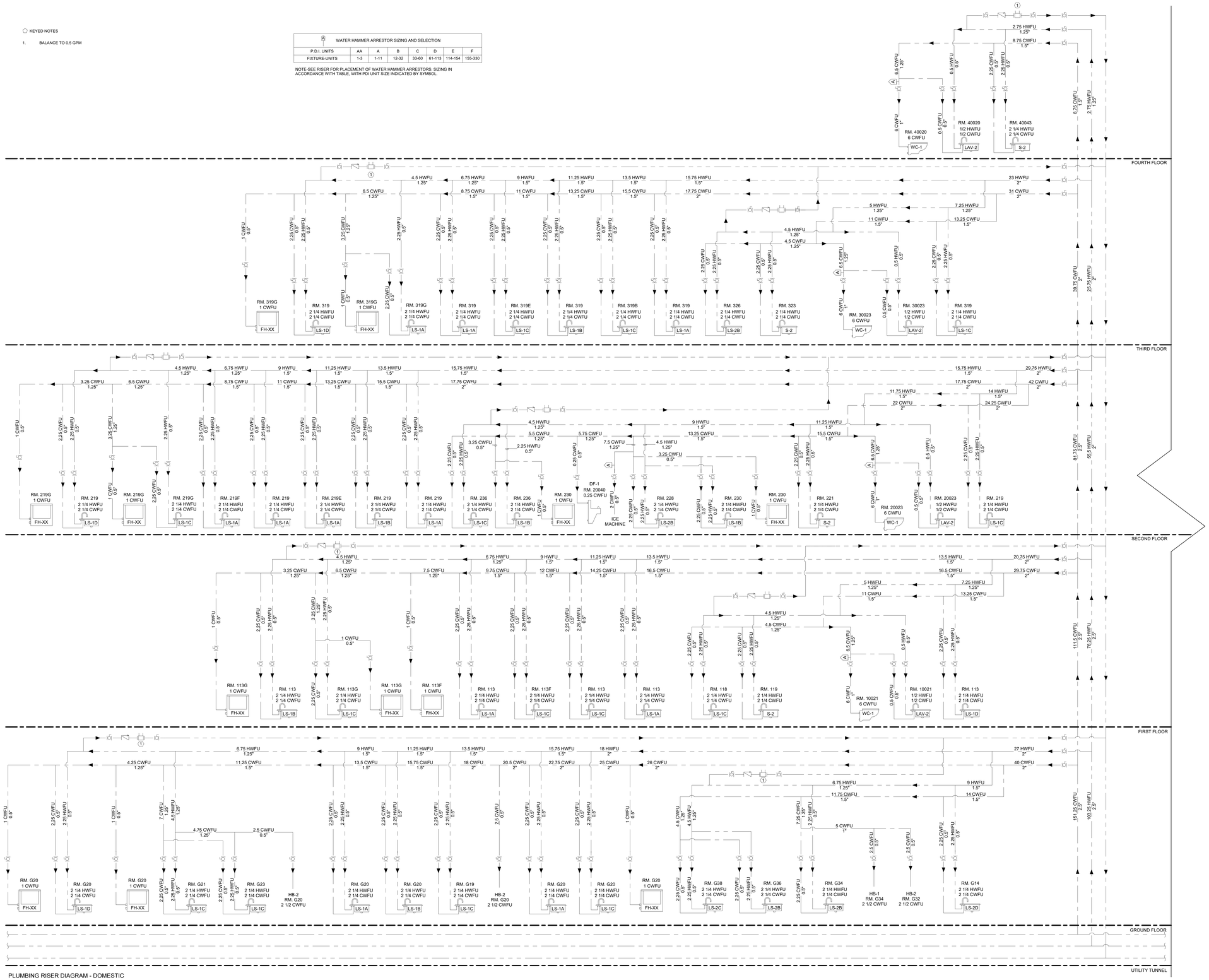
KEYED NOTES

1. BALANCE TO 0.5 GPM

A WATER HAMMER ARRESTOR SIZING AND SELECTION							
P.D.I. UNITS	AA	A	B	C	D	E	F
FIXTURE-UNITS	1-3	1-11	12-32	33-60	61-113	114-154	155-330

NOTE-SEE RISER FOR PLACEMENT OF WATER HAMMER ARRESTORS. SIZING IN ACCORDANCE WITH TABLE, WITH PDI UNIT SIZE INDICATED BY SYMBOL.



PLUMBING RISER DIAGRAM - DOMESTIC
1 - PART 1 (PHASE 2)
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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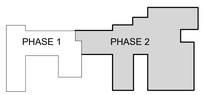

Keyplan

Job Number	161026-00 / 31909
Drawing By	SRB
Checked By	JWE
Filename	
Date	August 31, 2026

Revisions

PLUMBING DOMESTIC WATER SCHEMATIC RISER DIAGRAM - PART 1 (PHASE 2)

STATE OF NEW YORK · JOHN EVANGELIST ELLENZWEIG · 095338 · LICENSED PROFESSIONAL ENGINEER

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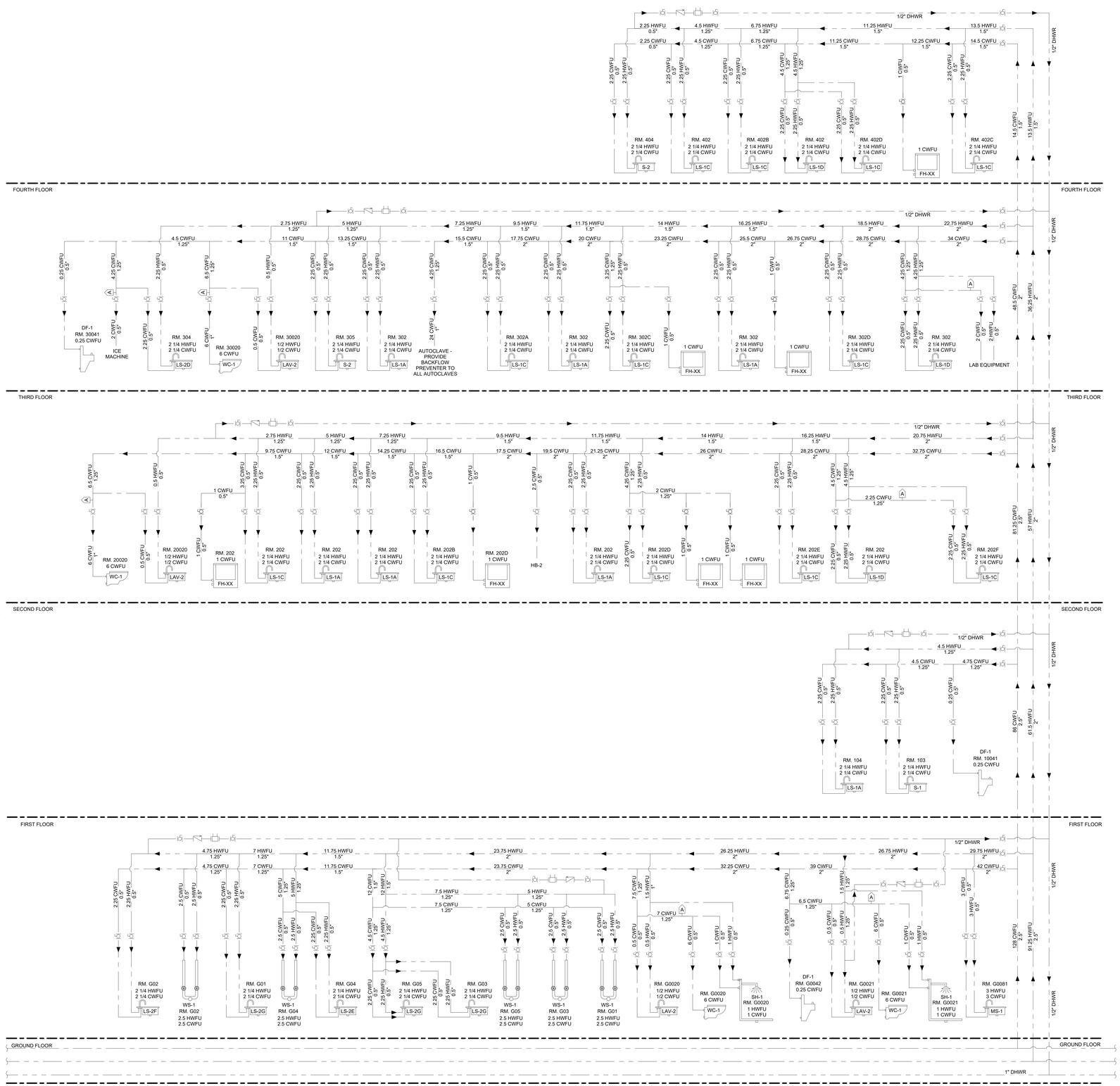

PLUMBING RISER DIAGRAM - DOMESTIC - PART 2 (PHASE 2)
1 NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

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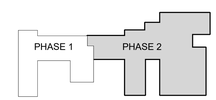

Keyplan

Job Number 161026-00 / 31909
Drawing By SRB
Checked By JWE
Filename
Date August 31, 2026

Revisions

PLUMBING DOMESTIC WATER SCHEMATIC RISER DIAGRAM - PART 2 (PHASE 2)

STATE OF NEW YORK · JOHN W. EVANSLEY · LICENSED PROFESSIONAL ENGINEER · 095338

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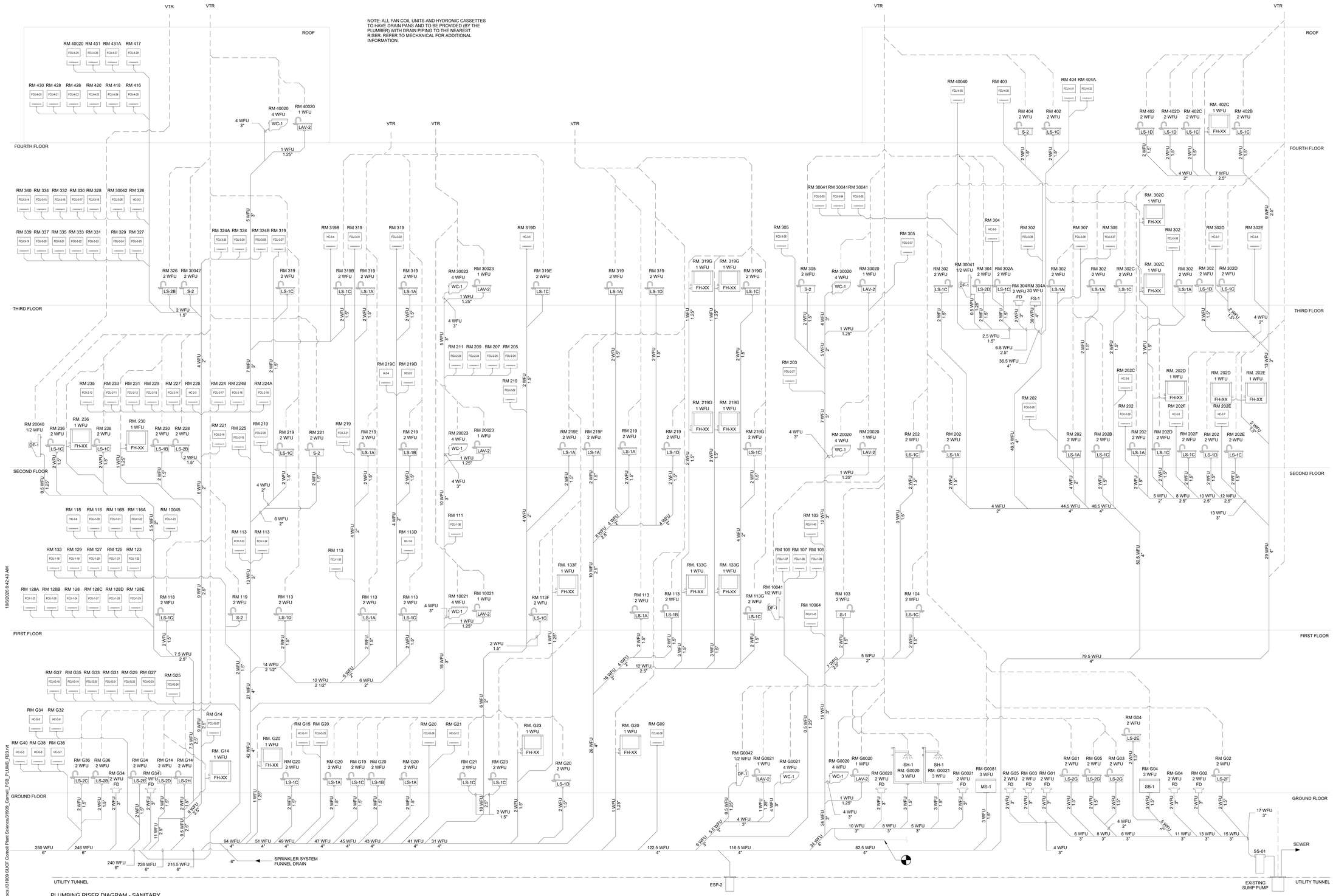
NOTE: ALL FAN COIL UNITS AND HYDRONIC CASSETTES TO HAVE DRAIN PANS AND TO BE PROVIDED (BY THE PLUMBER) WITH DRAIN PIPING TO THE NEAREST RISER. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.



PLUMBING RISER DIAGRAM - SANITARY WASTE/VENT (PHASE 2)
1 NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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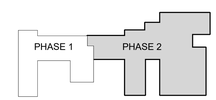

Keyplan

Job Number	161026-00 / 31909
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Date	August 31, 2026

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PLUMBING WASTE AND VENT SCHEMATIC RISER DIAGRAM (PHASE 2)

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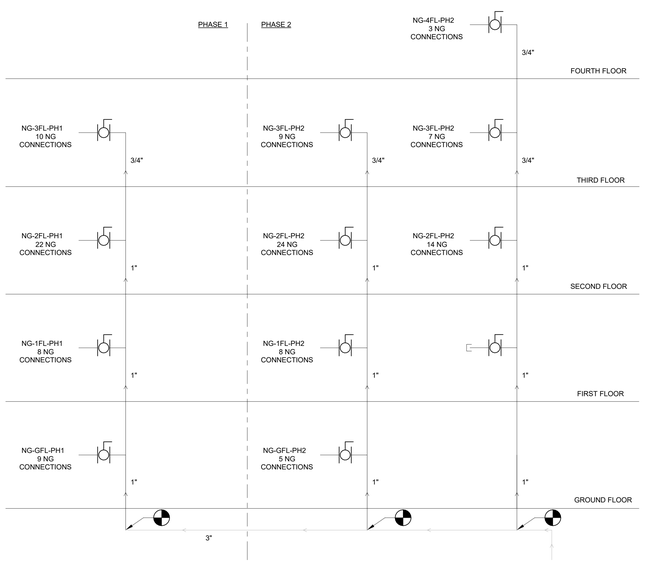
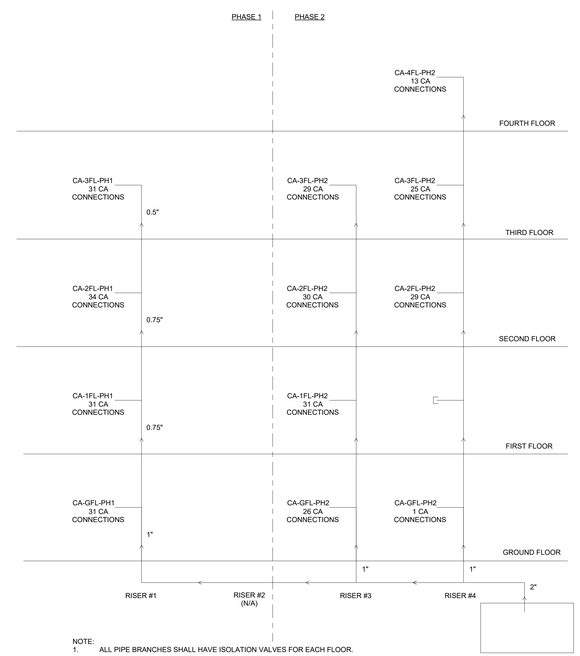
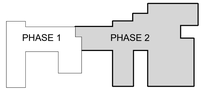


1 NATURAL GAS RISER DIAGRAM
NTS



NOTE:
1. ALL PIPE BRANCHES SHALL HAVE ISOLATION VALVES FOR EACH FLOOR.

2 COMPRESSED AIR RISER DIAGRAM
NTS



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PLUMBING NG AND CA SCHEMATIC RISER DIAGRAM (PHASE 2)

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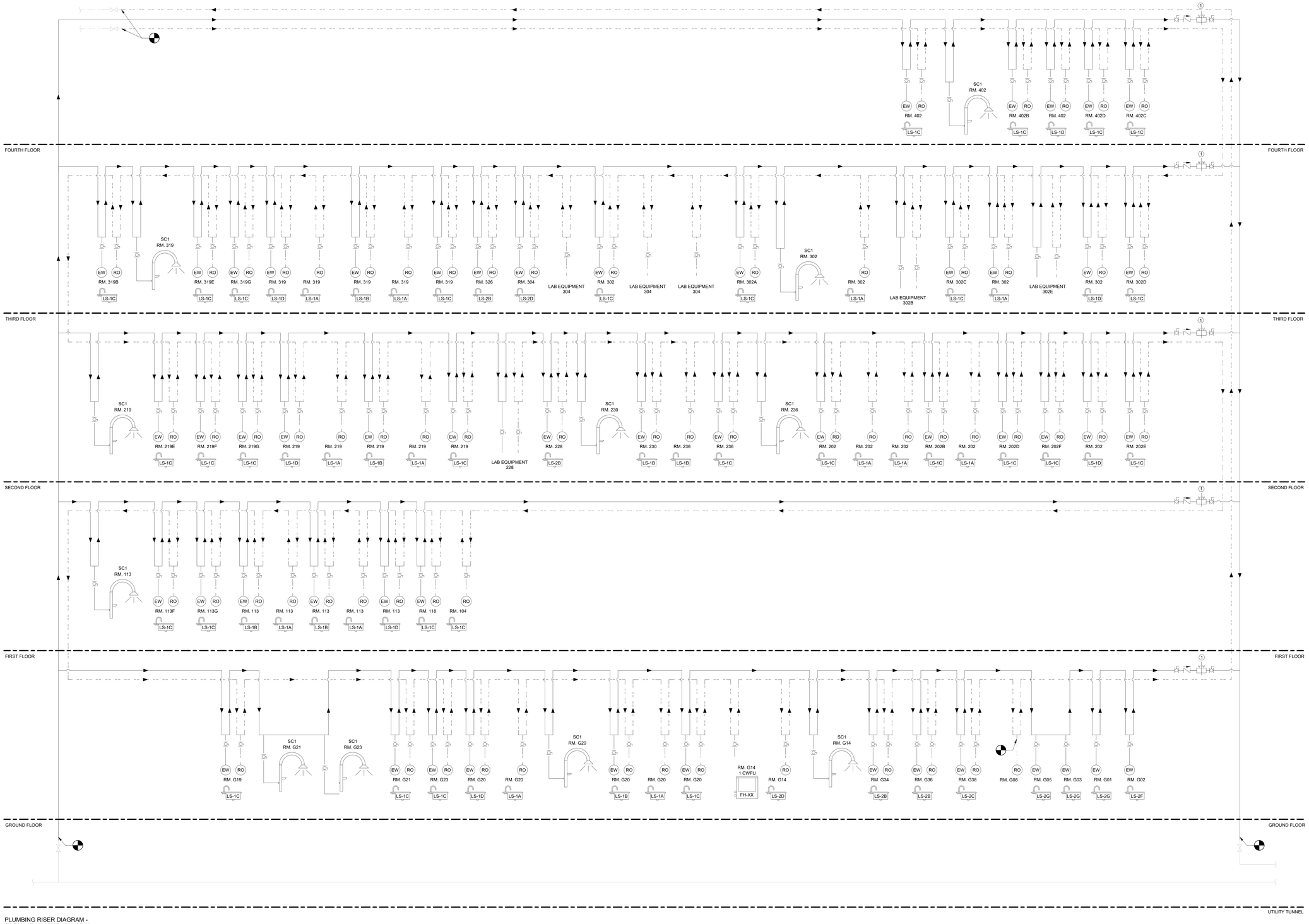
KEYED NOTES

1. BALANCE TO 1 GPM



1 PLUMBING RISER DIAGRAM - SPECIALTY WATER (PHASE 2)
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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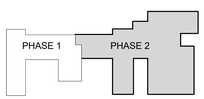

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PLUMBING SPECIALTY WATER SCHEMATIC RISER DIAGRAM (PHASE 2)

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ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
CB	CATCH BASIN
CFH	CUBIC FEET PER HOUR
CIP	CAST IRON PIPE
CW	COLD WATER
DIP	DUCTILE IRON PIPE
DFU	DRAINAGE FIXTURE UNITS
DN	DOWN
DWG	DRAWING
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
HW	HOT WATER
HWP	HOT WATER PUMP
HWR	HOT WATER RETURN
INV	INVERT
LS	LAB SINK
CS	CUP SINK
LDR	LEADER
MH	MANHOLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
PC	PLUMBING CONTRACTOR
PIV	POST INDICATOR VALVE
SAN	SANITARY
ST	STORM
SK	SINK
TB	THRUST BLOCK
V	VENT
G	GAS
A	COMPRESSED AIR
DW	DEIONIZED WATER
CO	CLEANOUT
WC	WATER CLOSET
UR	URINAL
LAV	LAVATORY
MR	MOP RECEPTOR
EWC	ELECTRIC WATER COOLER
VTR	VENT THRU ROOF
HB	HOSE BIBB
D	DRY HEAD

NOTE:
ALL ABBREVIATIONS AND SYMBOLS MAY NOT APPEAR ON THE DRAWINGS FOR THIS PROJECT.

SYMBOLS

F	FIRE STANDPIPE LINE
SP	SPRINKLER LINE
CA	COMPRESSED AIR LINE
	OS&Y VALVE WITH TAMPER SWITCH
	UPRIGHT SPRINKLER HEAD
	CONCEALED SPRINKLER HEAD
	PENDENT SPRINKLER HEAD
	HIGH TEMPERATURE (175°F) SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	EXISTING SPRINKLER HEAD
	FIRE HOSE CABINET WITH HOSE
	CONNECT TO EXISTING
	DISCONNECT
	FLOW SWITCH
	CHECK VALVE
FDVC	FIRE DEPARTMENT VALVE CABINET
	PRESSURE GAUGE
	PIPE CAP
	STRAINER
	UNION
	FLANGE
	SIGHT GLASS
	FLEXIBLE CONNECTION
	PIPE UP
	PIPE DOWN
	PRESSURE GAUGE COCK
	PIPE CONTINUATION
	GATE VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	FIRE DEPARTMENT CONNECTION (2-WAY)

SPRINKLER GENERAL NOTES:

1. ALL AUTOMATIC SPRINKLER HEADS, PIPE FITTINGS, PIPE HANGERS, AUTOMATIC CONTROL VALVES AND MANUAL CONTROL VALVES SHALL BEAR FACTORY MUTUAL APPROVAL AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. ALL EXPOSED PIPE, FITTINGS, HANGERS AND SUPPLEMENTARY STEEL SHALL BE PAINTED.
3. PROVIDE FLUSHING CONNECTIONS WHERE REQUIRED BY SPECIFIC REQUIREMENTS OF THE CORNELL UNIVERSITY DESIGN AND CONSTRUCTION STANDARDS.
4. COORDINATE HEAD LOCATIONS AND PIPING RUNS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
5. PROVIDE COVER PLATES ON ALL SPRINKLER HEADS IN FINISHED AREAS, AND UPRIGHT HEADS IN NON-FINISHED AREAS.
6. ALL PIPING CROSSING THE EXPANSION JOINTS SHALL BE PROVIDED WITH "DRESSER COUPLING" OR SIMILAR.
7. AFTER AWARD OF CONTRACT AND PRIOR TO FABRICATION AND INSTALLATION OF THE SPRINKLER SYSTEM, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL DETAILED SHOP DRAWINGS, SHOWING DIMENSIONS, ELEVATIONS, SIZES AND LOCATION OF ALL PIPING AND HYDRAULIC CALCULATIONES.
8. THIS CONTRACTOR SHALL SET ALL SLEEVES, HANGERS AND ANCHORS REQUIRED FOR THE AUTOMATIC SPRINKLER SYSTEM AND SHALL BE RESPONSIBLE FOR THEIR PROPER AND PERMANENT LOCATION.
9. SPRINKLER PIPING SHALL BE INSTALLED ABOVE LIGHTS AND SHALL BE AS HIGH AS POSSIBLE. ABOVE HUNG CEILING AND SOFFIT UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH ALL TRADES.
11. CONTRACTOR SHALL FURNISH A CERTIFICATE OF FINAL INSPECTION TO THE OWNER FROM THE INSPECTOR DEPARTMENT HAVING JURISDICTION.
12. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY FACILITIES, WATER OR COMPRESSED AIR, GAUGES AND OTHER MEASURING DEVICES, PUMP AND LABOR, AS REQUIRED FOR THE TEST.
13. ALL REQUIRED FEES, PERMITS AND INSPECTIONS SHALL BE OBTAINED AND PAID FOR BY THIS CONTRACTOR.
14. ALL HANGERS, BRACKETS AND STRAPS SHALL BE STRONGLY SECURED TO THE BUILDING CONSTRUCTION AND PROVIDED BY THIS CONTRACTOR.
15. FIRE PROTECTION WATER PIPING SHALL HAVE A 175 PSI PRESSURE RATING.
16. SPRINKLERS AND FITTINGS SHALL BE UL LISTED AND FACTORY MUTUAL APPROVED.
17. ALL PIPING SHALL BE LABELED IN COLOR CODE IN ACCORDANCE WITH ANSI REQUIREMENTS. VALVE TAGS SHALL BE FURNISHED AND ATTACHED BY BRASS LINE CHAIN TO EACH VALVE. NUMBER AND LOCATIONS SHALL BE ACCURATELY MARKED ON THE OWNER'S SET OF RECORD DRAWINGS.
18. IF FIRE PROTECTION SYSTEM DOES NOT PASS THE TEST, THE CONTRACTOR SHALL BE REQUIRED TO MAKE THE NECESSARY REPAIR, AT HIS OWN EXPENSE, AND THE WORK SHALL BE RESUBMITTED FOR INSPECTION AND TESTING.
19. ALL FIRE PROTECTION SYSTEM SHALL BE LEFT UNCONCEALED UNTIL IT HAS BEEN INSPECTED, TESTED AND APPROVED BY FIRE MARSHALL AND AUTHORITY HAVING JURISDICTION.
20. THE WORK INDICATED ON THESE DRAWINGS ARE DRAWN DIAGRAMMATIC AND ARE INTENDED TO INDICATE GENERAL ARRANGEMENT OF EQUIPMENT. THE CONTRACTOR MAY MAKE CHANGES WHEN APPROVED IN WRITING BY THE ARCHITECT/ENGINEER WITH NO ADDITIONAL COST.
21. SPRINKLER PIPING SHALL NOT BE INSTALLED TOUCHING OR TOO CLOSE TO CEILING SUPPORT MEMBERS; CORROSION MAY RESULT.
22. THE SPRINKLER SYSTEM SHALL BE CONSTRUCTED AS DETAILED ON CONTRACT DOCUMENTS. NO REDUCTION IN THE PIPE SIZES SHOWN SHALL BE ALLOWED.
23. CHANGES TO THE SPRINKLER SYSTEM REQUIRED BY FIELD CONDITIONS DURING CONSTRUCTION SHALL BE MADE BY A NYS LICENSED PROFESSIONAL ENGINEER AND APPROVED BY SUCF.
24. PROPOSED REVISIONS TO THE SPRINKLER SYSTEM RECOMMENDED BY THE CONTRACTOR SHALL BE IN SUFFICIENT DETAIL TO ALLOW THE ENGINEER TO ISSUE A CHANGE ORDER REVISING THE CONTRACT DRAWINGS.
25. SEAL ALL PENETRATIONS. FIRESTOP ALL PENETRATIONS THROUGH FIRE RATED SEPARATIONS.
26. SPRINKLER LAYOUT SHALL CONSIDER ALL CASEWORK, EQUIPMENT AND OTHER POTENTIAL OBSTRUCTIONS..

NEW YORK STATE SPRINKLER NOTES

REFERENCES:
- LATEST BUILDING CODE OF NEW YORK STATE (BC-NYS 2025). CHAPTER 9.
- LATEST UNIFORM FIRE PREVENTION CODE OF NEW YORK STATE.
- NFPA-13 "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, 2022 EDITION.

1. AUTOMATIC SPRINKLER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH BC-NYS 903.3 AND NFPA 13.
2. EXEMPT LOCATIONS IN ACCORDANCE WITH BC-NYS 903.2 (EXCEPTIONS) AND 903.3.1.1.1.
3. SPRINKLER SYSTEM MONITORING AND ALARMS SHALL COMPLY WITH BC-NYS 903.4.
4. ALARM, SUPERVISORY AND TROUBLE SIGNALS IN ACCORDANCE WITH BC-NYS 903.4.1.
5. ALARMS SHALL CONFORM WITH BC-NYS 903.4.2 AND 903.4.3..
6. SPRINKLER SYSTEMS SHALL BE TESTED AND MAINTAINED IN ACCORDANCE WITH THE FIRE CODE OF NEW YORK STATE.
7. CLASSIFICATION OF OCCUPANCIES IN ACCORDANCE WITH NFPA 13 CHAPTER 4.
8. SPRINKLER TEMPERATURE RATINGS SHALL COMPLY WITH NFPA 13 SECTION 9.4.2.
9. POSITION, LOCATION, SPACING, AND USE OF SPRINKLERS SHALL COMPLY WITH NFPA 13 CHAPTER 9 SECTION 9.5
10. HANGER AND SUPPORTS SHALL BE IN ACCORDANCE WITH NFPA 13 CHAPTER 17.

OCCUPANT SAFETY NOTES:

1. CONSTRUCTION WORK WILL BE CONFINED TO THE ITEMS AS INDICATED IN THE DRAWING, AND WILL NOT CREATE DUST, DIRT OR OTHER SUCH INCONVENIENCE TO THE OTHER TENANTS WITHIN THE BUILDING.
2. CONSTRUCTION OPERATION WILL NOT BLOCK HALLWAYS OR MEANS OF EGRESS FOR THE TENANTS OF THE BUILDING.
3. CONSTRUCTION OPERATION WILL NOT INVOLVE INTERRUPTION OF HEATING, WATER, OR OTHER ELECTRICAL SERVICES TO OTHER TENANTS OF THE BUILDING.
4. THE WORK AREA SHALL NOT BE OCCUPIED DURING CONSTRUCTION. APPROVAL OF THESE DRAWINGS IS LIMITED TO THE SCOPE OF WORK SPECIFICALLY INDICATED HEREIN. ITEMS, CONDITIONS, OR WORK SHOWN OUTSIDE THE APPROVED SCOPE SHALL NOT BE CONSTRUED AS APPROVED. ALL WORK SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE NYS CONSTRUCTION CODES AND ALL OTHER APPLICABLE LAWS, RULES, AND REGULATIONS.
5. NO STRUCTURAL WORK SHALL BE DONE THAT MAY ENDANGER THE OCCUPANTS.
6. CONSTRUCTION OPERATION SHALL COMPLY WITH APPLICABLE PROVISIONS OF LAW RELATING TO LEAD AND ASBESTOS.

SPRINKLER SHOP DRAWING NOTE:

THE CONTRACTOR SHALL SUBMIT COORDINATED SHOP DRAWINGS OF THE SPRINKLER SYSTEM FOR REVIEW. THIS SHALL BE DONE BEFORE THE INSTALLATION OF ANY PIPING OR EQUIPMENT. THE SHOP DRAWING SHALL INCLUDE PIPE ROUTING, SIZES, ELEVATIONS, SLEEVES LOCATIONS AND SIZES. THE DRAWINGS SHALL CONTAIN ALL THE INFORMATION NECESSARY FOR THE PROPER INSTALLATION OF THE JOB. THE SHOP DRAWINGS SHALL BE COORDINATED WITH OTHER TRADES AND OR EXISTING PIPING OR EQUIPMENT THAT MIGHT AFFECT THE INSTALLATION. THE DRAWING SHALL BE SUBMITTED AT A MINIMUM 3/8" SCALE OR AT SCALE THAT IS EASILY LEGIBLE. THE DESIGN DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ARE NOT INTENDED TO BE USED AS A SHOP DRAWING THEREFORE A COPY OF THE DESIGN DRAWING IS NOT ACCEPTABLE AS A SHOP DRAWING.

PHASING NOTES

FIRE PROTECTION DESIGN INTENT

DURING PHASE 2 WORK, OCCUPIED AREAS INCLUDING THE SEGMENTS OF THE BUILDING WEST OF THE WORK AREA; THE LOADING DOCK; AND THE LABS AND OFFICES LOCATED DIRECTLY ABOVE THE LOADING DOCK, SHALL STAY FULLY OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD. REFER TO THE PROJECT MANUAL FOR GUIDANCE REGARDING PLANNED SHUTDOWNS.

LIFE SAFETY MUST BE MAINTAINED WITHIN THE BUILDING THROUGHOUT ALL PHASES OF WORK.

PHASING NOTES:

CLOSE SHUT-OFF VALVES ON EXISTING 6" SPRINKLER MAIN LINE TO STOP WATER FLOW WITHIN THE SYSTEM, AND SHALL BE DRAINED OF ALL WATER. FIRE WATCH SHALL BEGIN AT THIS POINT FOR THE ENTIRE BUILDING WHILE THE SYSTEM IS NOT CHARGED WITH WATER.

DISCONNECT SPRINKLER PIPES AND RISERS SERVING THE PHASE 2 WORK AREA AND PREPARE THEM FOR DEMO.

DEMOLISH AND REMOVE IN THEIR ENTIRETY FROM THE JOB SITE ALL SPRINKLER PIPES, STANDPIPE RISERS, AND SPRINKLER HEADS FOUND ON THE GROUND FLOOR TO FOURTH FLOOR THAT HAD SERVED THE PHASE 2 WORK AREA , EXCLUDING THE EXISTING FDC PIPING. SEE DEMO PLANS.

INSTALL ALL NEW SPRINKLER PIPES, STANDPIPE RISERS, AND SPRINKLER HEADS THROUGHOUT THE WORK AREA SHALL BE INSTALLED ON ALL FLOORS, FROM THE UTILITY TUNNEL UP TO THE FOURTH-FLOOR LEVEL AND THE PENTHOUSES LOCATED AT THE ROOF LEVEL, THROUGHOUT THE WORK AREA.

ADDITIONAL GENERAL NOTES:

SCHEDULE ALL SERVICE INTERRUPTIONS A MINIMUM OF (2) WEEKS IN ADVANCE WITH THE CORNELL PM.

CONTRACTOR SHALL FIELD VERIFY ALL SERVICE IMPACTED BY A SCHEDULED SHUTDOWN/IMPAIRMENT.

CONTRACTOR SHALL COMPLY WITH ALL STATE, CODE, AND CORNELL EH&S REQUIREMENTS FOR THE FIRE WATCH.

CONTRACTOR RESPONSIBLE TO VERIFY ALL BUILDING SERVICES ARE FULLY RESTORED BEFORE LEAVING.

CONTRACTOR SHALL COORDINATE ALL DRAINAGE WITHIN THE UTILITY TUNNEL WITH PLUMBING CONTRACTOR. ENSURE METHOD OF DRAINAGE TO SUMP PIT IN SPRINKLER ROOM IS MAINTAINED THROUGHOUT PHASE 1 UNTIL NO LONGER REQUIRED.

ALL ABANDONED SPRINKLER/FIRE PROTECTION PIPING LOCATED IN MECHANICAL ROOM / TUNNEL AREA (B00UC) TO BE REMOVED FROM SITE. SEE DEMO PLANS.

EXISTING SPRINKLERS ARE NOT TO BE TAKEN OFFLINE UNTIL TEMPORARY HEAT DETECTORS ARE INSTALLED AND TESTED IN THE CONSTRUCTION AREA.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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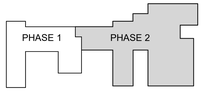

Keyplan

Job Number	31909
Drawing By	Author
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Filename	
Date	August 31, 2026

Revisions

FIRE PROTECTION SYMBOLS, ABBREVIATIONS AND NOTES - PHASE2

BID DOCUMENTS
Scale: 12" = 1'-0"

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SPRINKLER/CLASSIFICATION SUMMARY

LOCATION	ALL AREAS WITH SUSPENDED CEILINGS INCLUDING VESTIBULES (UNLESS OTHERWISE NOTED)	ALL AREAS WITH NO CEILING (UNLESS OTHERWISE NOTED)	ELECTRICAL ROOM/TEL ROOM	COLD/FREEZER ROOMS / GROWTH ROOMS
OCCUPANCIES	LIGHT/ ORDINARY HAZARD(NOTE)	LIGHT/ORDINARY HAZARD	LIGHT HAZARD	ORDINARY HAZARD
MAX. COVERAGE	225/130 SQ.FT.	225/130 SQ.FT.	225 SQ.FT.	130 SQ.FT.
SPRINKLER STYLE	RECESSED PENDENT	UPRIGHT	HORIZONTAL SIDEWALL	DRY PENDENT
RESPONSE	QUICK/STANDARD	QUICK	QUICK	STANDARD
K-FACTOR	5.6	5.6	5.6	5.6
TEMPERATURE	155°	155°	155°	ORDINARY
MANUFACTURER	RELIABLE	RELIABLE	RELIABLE	VICTAULIC
MODEL	F1FR56	F1FR56	F1FR56	VICFLEX STYLE AB6 ASSEMBLY
NOTES	1. ORDINARY HAZARD AREA HAVING 130 SQ.FT. MAX COVERAGE , STANDARD RESPONSE	SPRINKLERS IN AREA WITH LOW CLEARANCE SHALL BE PROTECTED WITH LISTED GUARDS. PROVIDE INTERMEDIATE TEMPERATURE SPRINKLER HEADS IN TUNNEL.	SPRINKLERS IN AREA WITH LOW CLEARANCE SHALL BE PROTECTED WITH LISTED GUARDS	

STANDPIPE TYPE

TYPE	CLASS I
HOSE CONNECTION	2-1/2"
TYPE	MANUAL
MOST REMOTE RISER	STAIR - G0003 (500 GPM)
TOTAL (GPM)	500 GPM

FIRE PROTECTION MATERIAL SCHEDULE

ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE LOCAL AUTHORITIES.	PIPE						
SYSTEM	DUCTILE IRON	CAST IRON W/TR PIPE	STEEL SHED 10	STEEL SHED 30	BLACK STEEL SHED 40	GALVANIZED	COPPER TUBE - ASTM B 88, DRAWN TEMPER WITH COPPER FITTINGS AND BRAZED JOINTS
ALL AREAS					O		

DESIGN CRITERIA:

LIGHT HAZARD DESIGN CRITERIA		
1	LOCATION	ALL AREAS EXCEPT LABS
2	MINIMUM FLOW DENSITY	0.10 GPM/SQ.FT.
3	MAXIMUM AREA PER SPRINKLER	225 SQ.FT.
4	SPRINKLER SIZE/ K FACTOR	1/2" /5.5
5	FIRE AREA	1500 SQ.FT.

ORDINARY HAZARD DESIGN CRITERIA		
1	LOCATION	ALL WET, DRY AND RESEARCH AND FLEXIBLE LAB AREAS
2	MINIMUM FLOW DENSITY	0.20 GPM/SQ.FT.
3	MAXIMUM AREA PER SPRINKLER	130 SQ.FT.
4	SPRINKLER SIZE/ K FACTOR	1/2" /5.6
5	FIRE AREA	1500 SQ.FT.

FLUSHING BALL VALVE SCHEDULE

PIPE SIZE	BALL VALVE SIZE
1" THRU 2-1/2"	LINE-SIZE FULL-PORT BALL VALVE
3"	One (1) 2-1/2"
4"	TWO (2) 2-1/2"
6"	THREE (3) 2-1/2"
8"	FOUR (4) 2-1/2"

NOTE:

1. FLUSHING FULL-PORT BALL VALVES SHALL BE PROVIDED ON UNDERGROUND MAINS (INSIDE THE BUILDING) AND ABOVE-GROUND MAINS, CROSS-MAINS, BRANCH LINES AND RUN OUTS OF NEW SPRINKLER SYSTEMS (WET AND DRY), TO FACILITATE ANY FUTURE PERIODIC INTERNAL INSPECTIONS, OBSTRUCTION INVESTIGATIONS AND AS-NEEDED FLUSHING WORK.

D 1 F0.2 FIRE PROTECTION SCHEDULES - PHASE 2
SCALE: NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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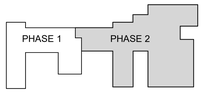

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FIRE PROTECTION SCHEDULES - PHASE2

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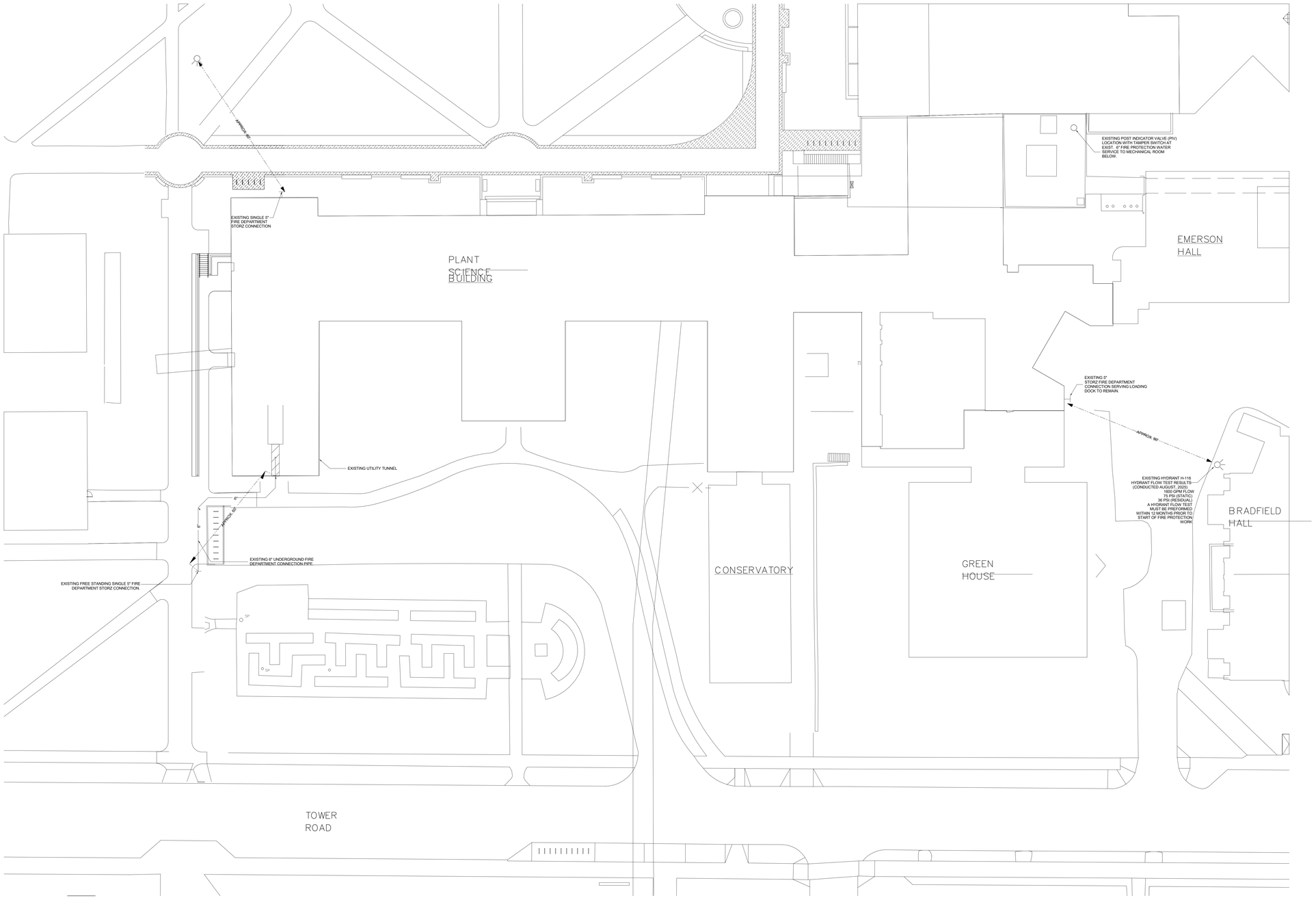

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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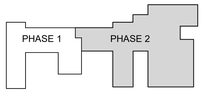

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FIRE PROTECTION SITE PLAN - PHASE 2

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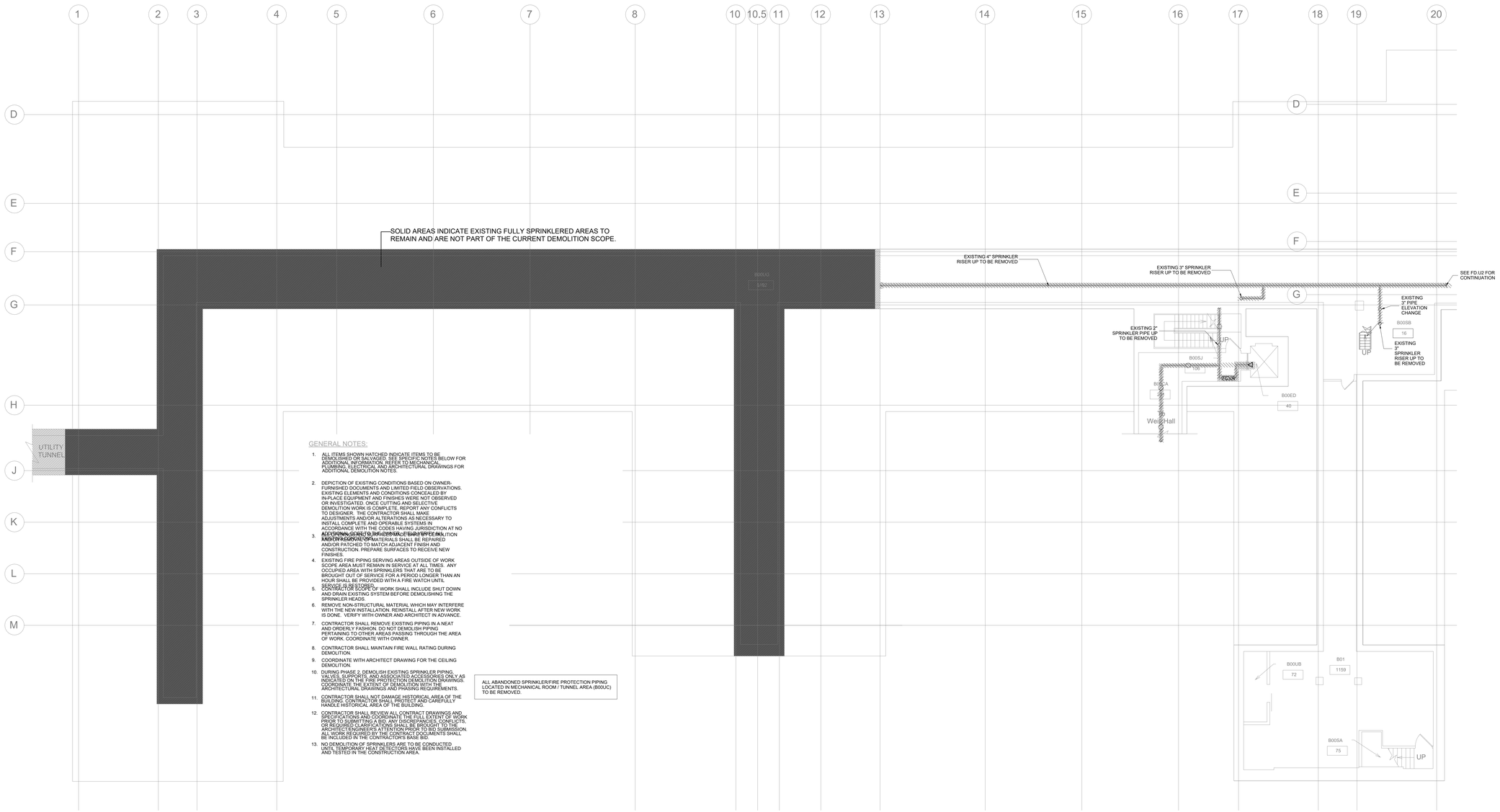

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3. ALL DAMAGED OR DISTURBED SURFACES RESULTING FROM DEMOLITION AND REMOVAL OPERATIONS SHALL BE REPAIRED AND/OR PATCHED TO MATCH ADJACENT FINISH AND CONSTRUCTION. PREPARE SURFACES TO RECEIVE NEW FINISHES.
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D 1 / FD.U1A FIRE PROTECTION UTILITY TUNNEL FLOOR DEMOLITION PLAN PART A

SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 1

SUCF Project No. 161026-04

236 Tower Road
Ithaca, NY 14853

SUNY State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

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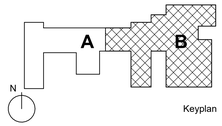

Keyplan

Job Number	31909
Drawing By	JG/DB
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Date	01/04/2023

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FIRE PROTECTION UTILITY TUNNEL FLOOR DEMOLITION PLAN PART A

BID DOCUMENTS

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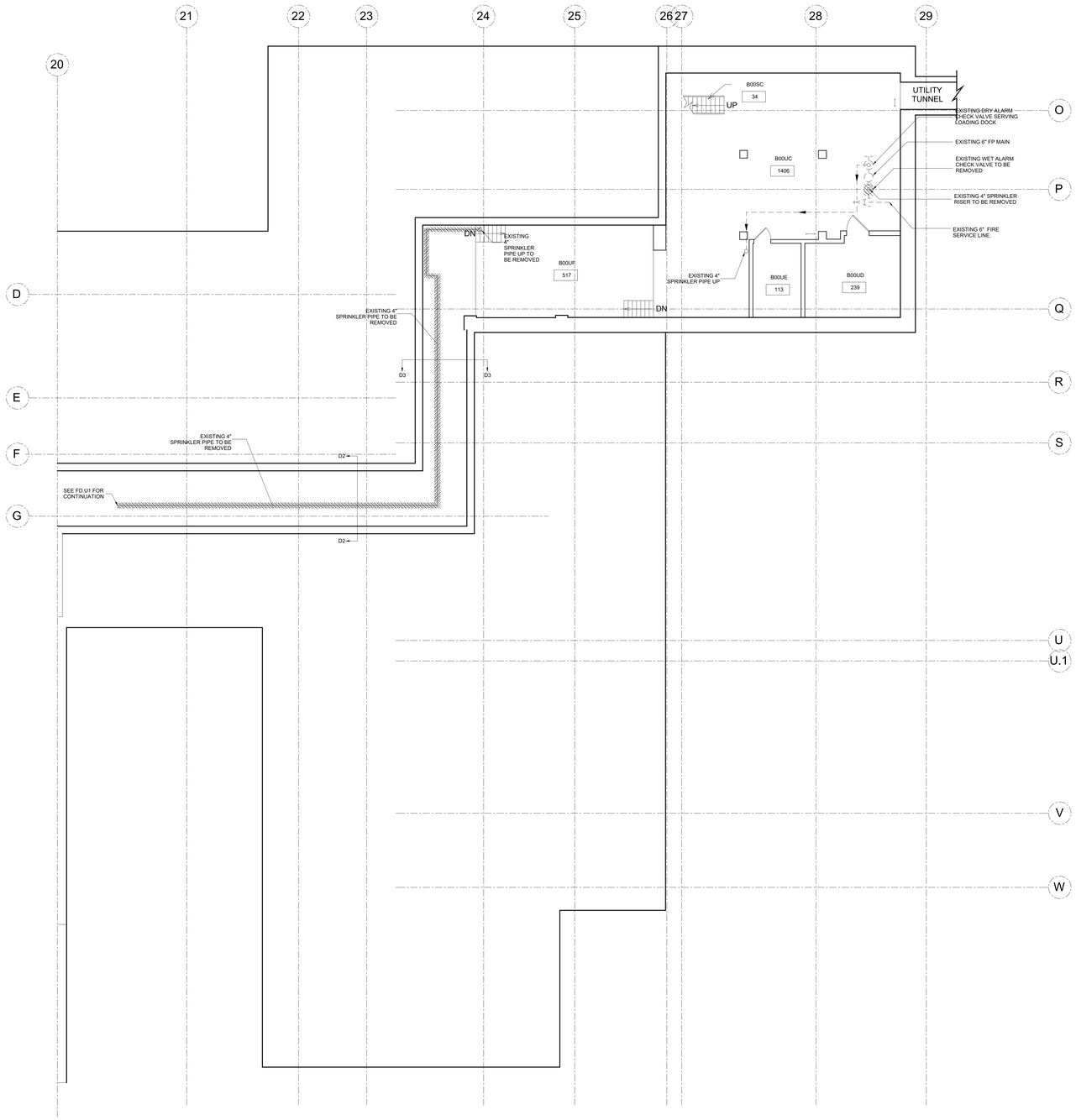

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D 1 FD.U1B FIRE PROTECTION UTILITY TUNNEL FLOOR DEMOLITION PLAN PART B
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1
SUCF Project No. 161026-04

236 Tower Road
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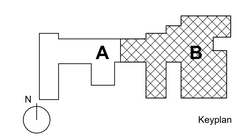

Keyplan

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FIRE PROTECTION UTILITY TUNNEL FLOOR DEMOLITION PLAN PART B

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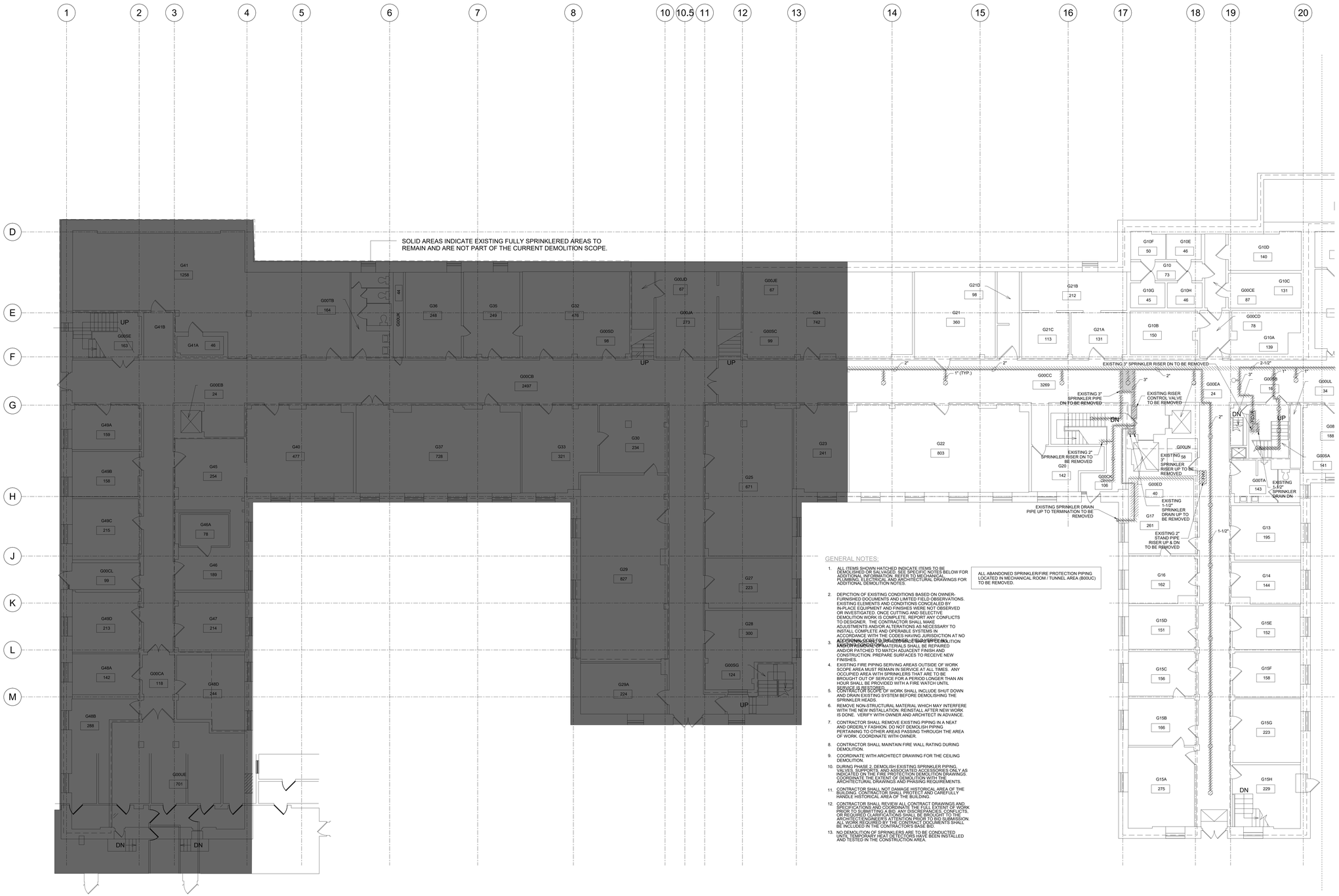

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D 1 FD1.0A FIRE PROTECTION GROUND FLOOR DEMOLITION PLAN - PART A - PHASE 1 Copy 1
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1
SUCF Project No. 161026-04

236 Tower Road
Ithaca, NY 14853

SUNY State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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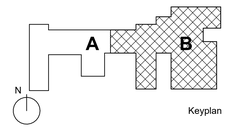
Notes:



Keyplan

Job Number	31909
Drawing By	JG/DB
Checked By	RW
Filename	
Date	01/04/2023

Revisions

FIRE PROTECTION
GROUND FLOOR
DEMOLITION PLAN PART A

BID DOCUMENTS

Scale: 1/8" = 1'-0"

FD1.0A

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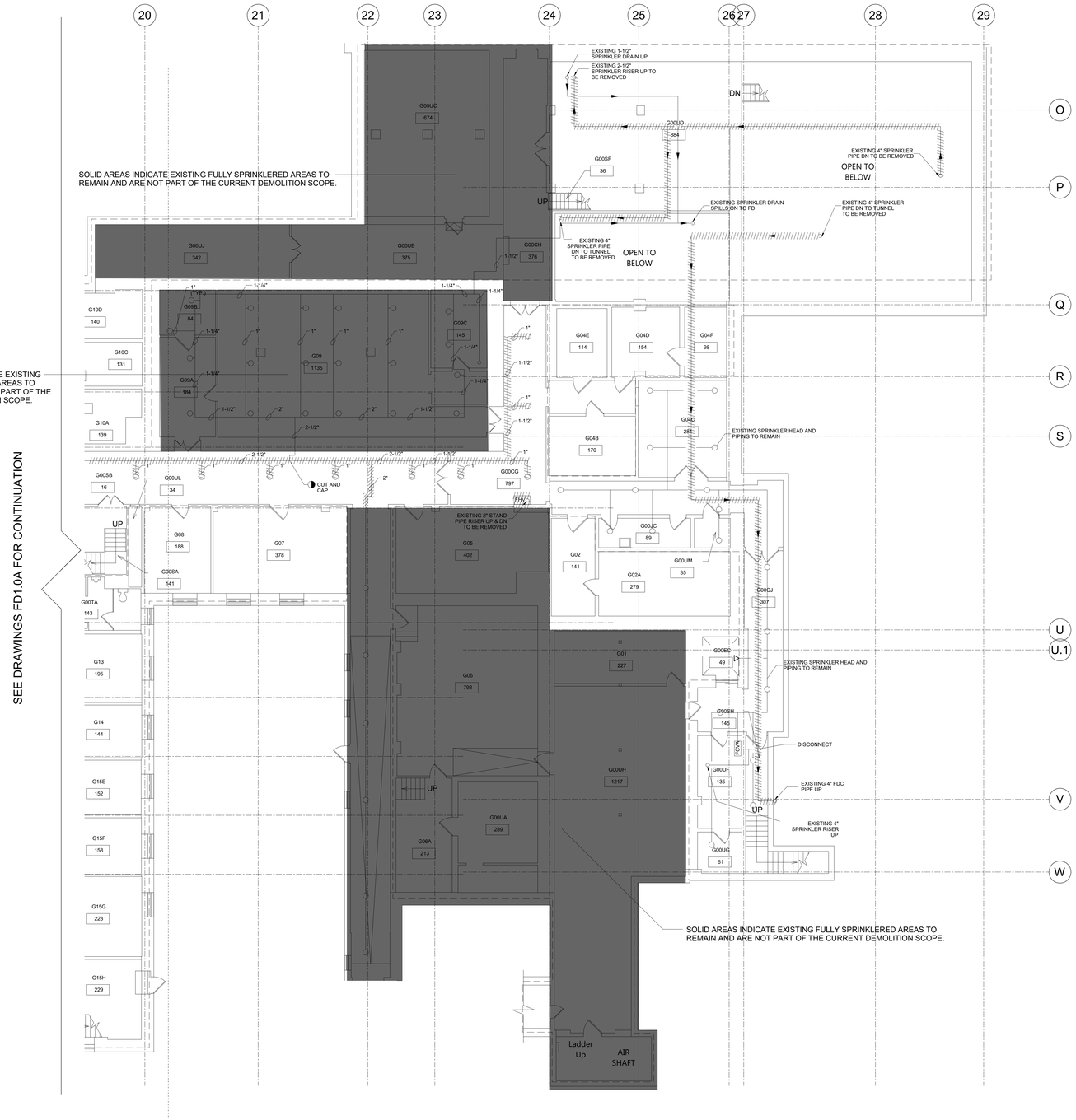

D 1 FD1.0B FIRE PROTECTION GROUND FLOOR DEMOLITION PLAN - PART B
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL ITEMS SHOWN HATCHED INDICATE ITEMS TO BE DEMOLISHED OR SALVAGED. SEE SPECIFIC NOTES BELOW FOR ADDITIONAL INFORMATION. REFER TO MECHANICAL, PLUMBING, ELECTRICAL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTES.
2. DEPICTION OF EXISTING CONDITIONS BASED ON OWNER-FURNISHED DOCUMENTS AND LIMITED FIELD OBSERVATIONS. EXISTING ELEMENTS AND CONDITIONS CONCEALED BY IN-PLACE EQUIPMENT AND FINISHES WERE NOT OBSERVED OR INVESTIGATED. ONCE CUTTING AND SELECTIVE DEMOLITION WORK IS COMPLETE, REPORT ANY CONFLICTS TO DESIGNER. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AND/OR ALTERATIONS AS NECESSARY TO INSTALL COMPLETE AND OPERABLE SYSTEMS IN ACCORDANCE WITH THE CODES HAVING JURISDICTION AT NO ADDITIONAL COST TO OWNER. REPAIR SURFACES DAMAGED DURING DEMOLITION
3. ALL EXISTING SURFACES AND MATERIALS SHALL BE REPAIRED AND/OR PATCHED TO MATCH ADJACENT FINISH AND CONSTRUCTION. PREPARE SURFACES TO RECEIVE NEW FINISHES.
4. EXISTING FIRE PIPING SERVING AREAS OUTSIDE OF WORK SCOPE AREA MUST REMAIN IN SERVICE AT ALL TIMES. ANY OCCUPIED AREA WITH SPRINKLERS THAT ARE TO BE BROUGHT OUT OF SERVICE FOR A PERIOD LONGER THAN AN HOUR SHALL BE PROVIDED WITH A FIRE WATCH UNTIL SERVICE IS RESTORED.
5. CONTRACTOR SCOPE OF WORK SHALL INCLUDE SHUT DOWN AND DRAIN EXISTING SYSTEM BEFORE DEMOLISHING THE SPRINKLER HEADS.
6. REMOVE NON-STRUCTURAL MATERIAL WHICH MAY INTERFERE WITH THE NEW INSTALLATION. REINSTALL AFTER NEW WORK IS DONE. VERIFY WITH OWNER AND ARCHITECT IN ADVANCE.
7. CONTRACTOR SHALL REMOVE EXISTING PIPING IN A NEAT AND ORDERLY FASHION. DO NOT DEMOLISH PIPING PERTAINING TO OTHER AREAS PASSING THROUGH THE AREA OF WORK. COORDINATE WITH OWNER.
8. CONTRACTOR SHALL MAINTAIN FIRE WALL RATING DURING DEMOLITION.
9. COORDINATE WITH ARCHITECT DRAWING FOR THE CEILING DEMOLITION.
10. DURING PHASE 2, DEMOLISH EXISTING SPRINKLER PIPING, VALVES, SUPPORTS, AND ASSOCIATED ACCESSORIES ONLY AS INDICATED ON THE FIRE PROTECTION DEMOLITION DRAWINGS. COORDINATE THE EXTENT OF DEMOLITION WITH THE ARCHITECTURAL DRAWINGS AND PHASING REQUIREMENTS.
11. CONTRACTOR SHALL NOT DAMAGE HISTORICAL AREA OF THE BUILDING. CONTRACTOR SHALL PROTECT AND CAREFULLY HANDLE HISTORICAL AREA OF THE BUILDING.
12. CONTRACTOR SHALL REVIEW ALL CONTRACT DRAWINGS AND SPECIFICATIONS AND COORDINATE THE FULL EXTENT OF WORK PRIOR TO SUBMITTING A BID. ANY DISCREPANCIES, CONFLICTS, OR REQUIRED CLARIFICATIONS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION PRIOR TO BID SUBMISSION. ALL WORK REQUIRED BY THE CONTRACT DOCUMENTS SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.
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RENOVATE PLANT SCIENCE BUILDING - PHASE 1
SUCF Project No. 161026-04
236 Tower Road
Ithaca, NY 14853

SUNY State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

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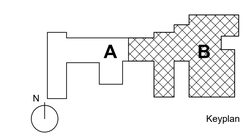
Notes:



Keyplan

Job Number 31909
Drawing By JG/DB
Checked By RW
Filename
Date 01/04/2023

Revisions

FIRE PROTECTION GROUND FLOOR DEMOLITION PLAN PART B

BID DOCUMENTS

Scale: 1/8" = 1'-0"

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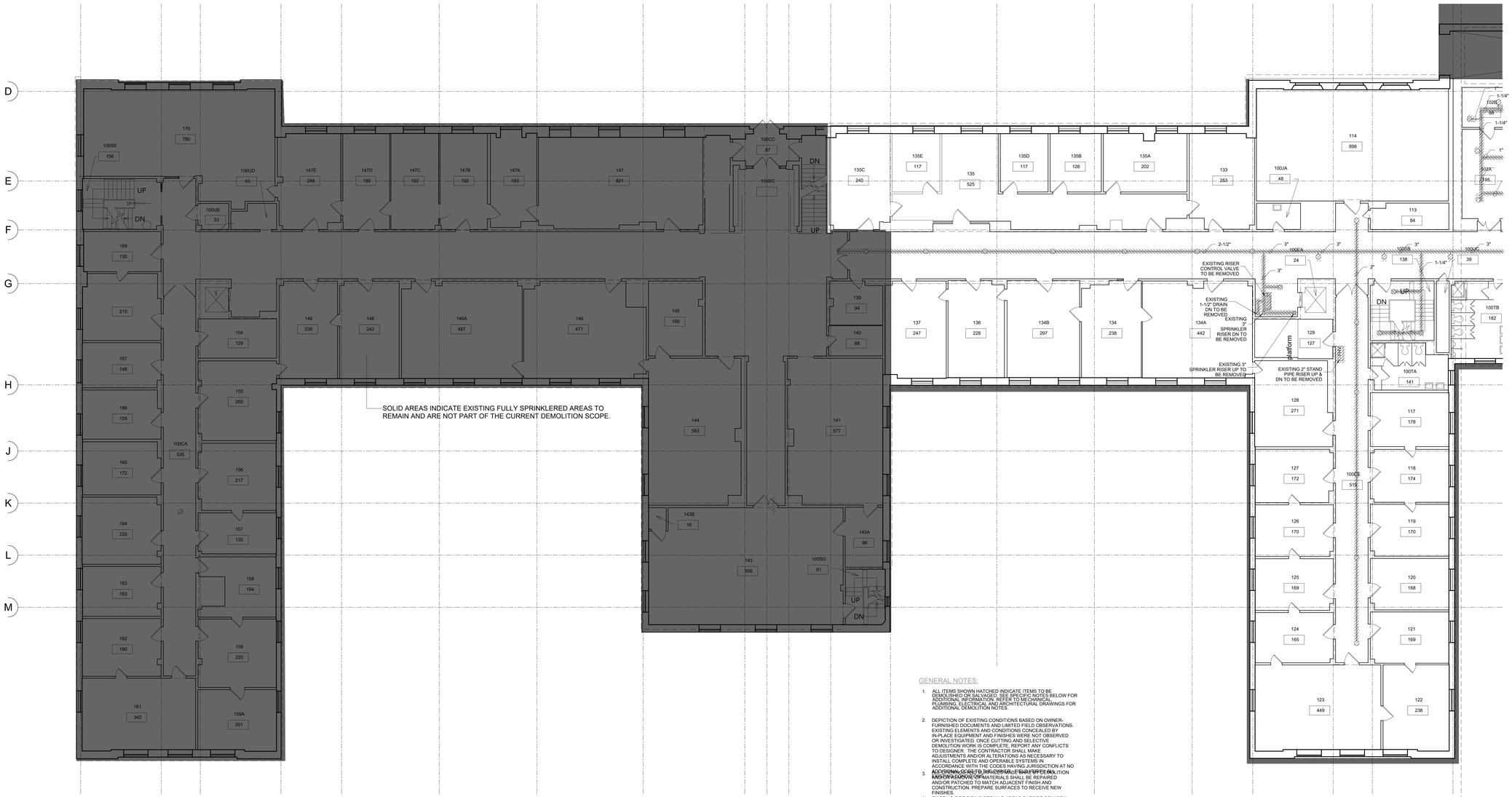

GENERAL NOTES:

1. ALL ITEMS SHOWN HATCHED INDICATE ITEMS TO BE DEMOLISHED OR SALVAGED. SEE SPECIFIC NOTES BELOW FOR ADDITIONAL DEMOLITION NOTES. ALSO REFER TO MECHANICAL, PLUMBING, ELECTRICAL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTES.
2. DEPICTION OF EXISTING CONDITIONS BASED ON OWNER-FURNISHED DOCUMENTS AND LIMITED FIELD OBSERVATIONS. EXISTING ELEMENTS AND CONDITIONS CONCEALED BY IN-PLACE EQUIPMENT AND FINISHES WERE NOT OBSERVED OR INVESTIGATED. ONCE CUTTING AND SELECTIVE DEMOLITION WORK IS COMPLETE, REPORT ANY CONFLICTS TO DESIGNER. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AND/OR ALTERATIONS AS NECESSARY TO INSTALL COMPLETE AND OPERABLE SYSTEMS IN ACCORDANCE WITH THE CODES HAVING JURISDICTION AT NO ADDITIONAL COST TO OWNER.
3. ALL ITEMS NOT SPECIFICALLY LABELED FOR DEMOLITION AND/OR REMOVAL OF MATERIALS SHALL BE REPAIRED AND/OR PATCHED TO MATCH ADJACENT FINISH AND CONSTRUCTION. PREPARE SURFACES TO RECEIVE NEW FINISHES.
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D 1 FD1.1A FIRE PROTECTION FIRST FLOOR DEMOLITION PLAN PART A
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1
SUCF Project No. 161026-04

236 Tower Road
Ithaca, NY 14853

SUNY State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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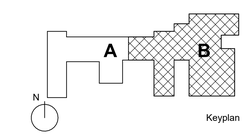
Notes:



Keyplan

Job Number 31909
Drawing By JG/DB
Checked By RW
Filename
Date 01/04/2023

Revisions

FIRE PROTECTION FIRST FLOOR DEMOLITION PLAN PART A

BID DOCUMENTS

Scale: 1/8" = 1'-0"

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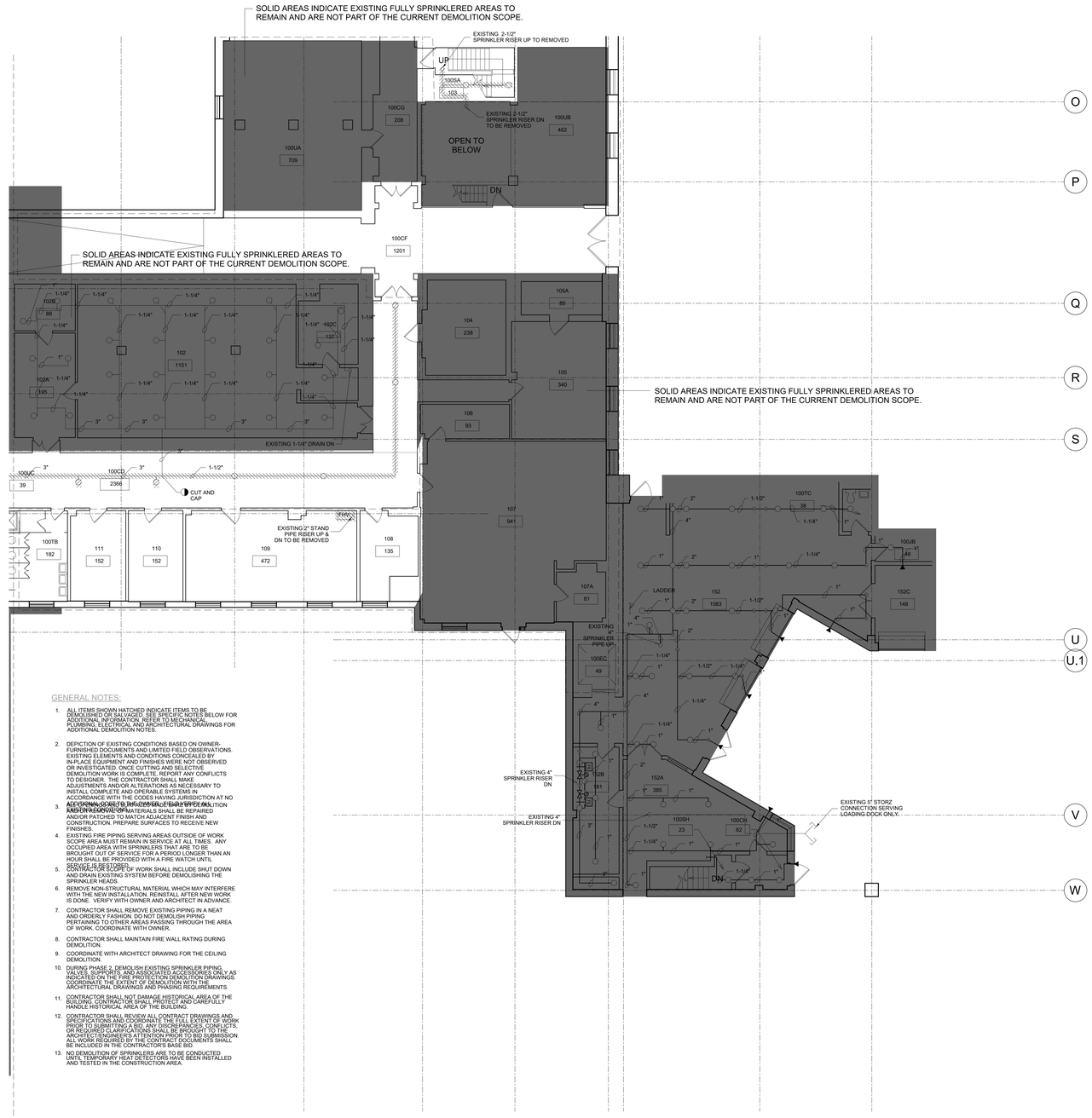

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FIRE PROTECTION FIRST FLOOR DEMOLITION PLAN PART B

SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1

SUCF Project No. 161026-04

236 Tower Road
Ithaca, NY 14853

State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

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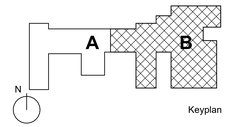

Keyplan

Job Number 31909
Drawing By JG/DB
Checked By RW
Filename
Date 01/04/2023

Revisions

FIRE PROTECTION FIRST FLOOR DEMOLITION PLAN PART B

BID DOCUMENTS

Scale: 1/8" = 1'-0"

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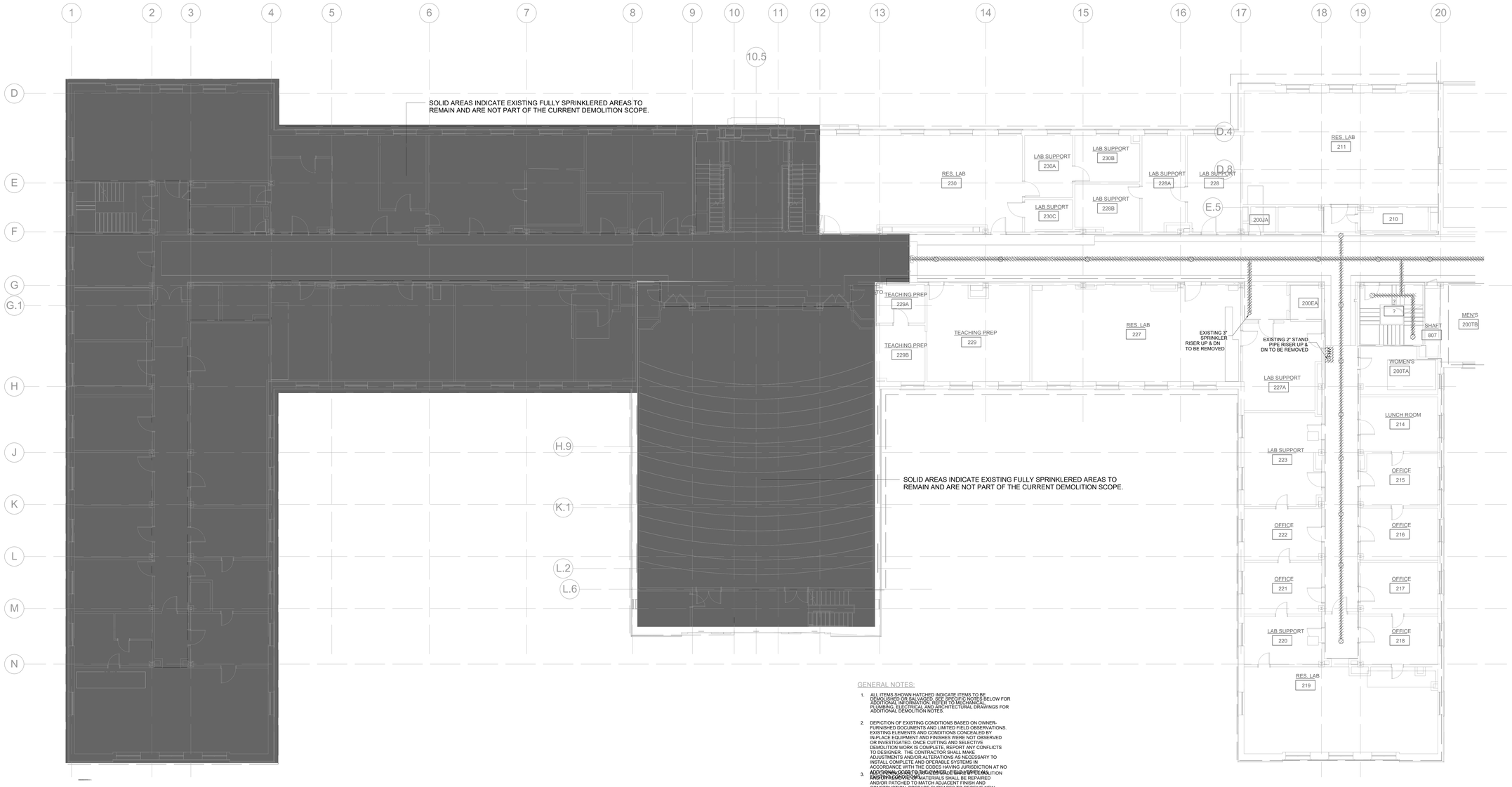

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SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 1
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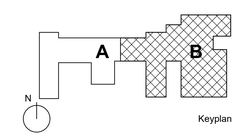

Keyplan

Job Number	31909
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Revisions

FIRE PROTECTION SECOND FLOOR DEMOLITION PLAN PART A

BID DOCUMENTS

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FD1.2A

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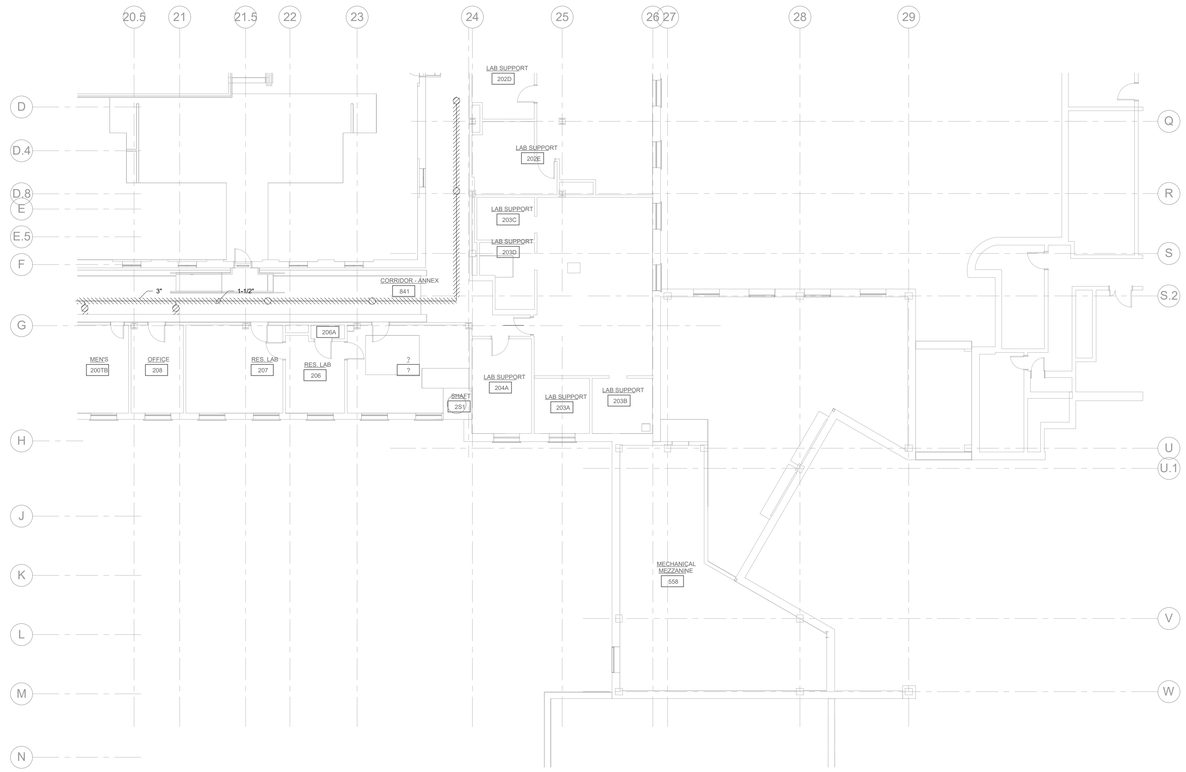

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01_SECOND FLOOR-PART B

SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1

SUCF Project No. 161026-04

236 Tower Road
Ithaca, NY 14853

State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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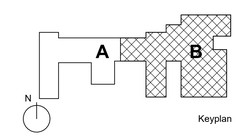
Notes:



Keyplan

Job Number	31909
Drawing By	JG/DB
Checked By	RW
Filename	
Date	01/04/2023

Revisions

FIRE PROTECTION
SECOND FLOOR
DEMOLITION PART B

BID DOCUMENTS

Scale: 1/8" = 1'-0"

FD1.2B

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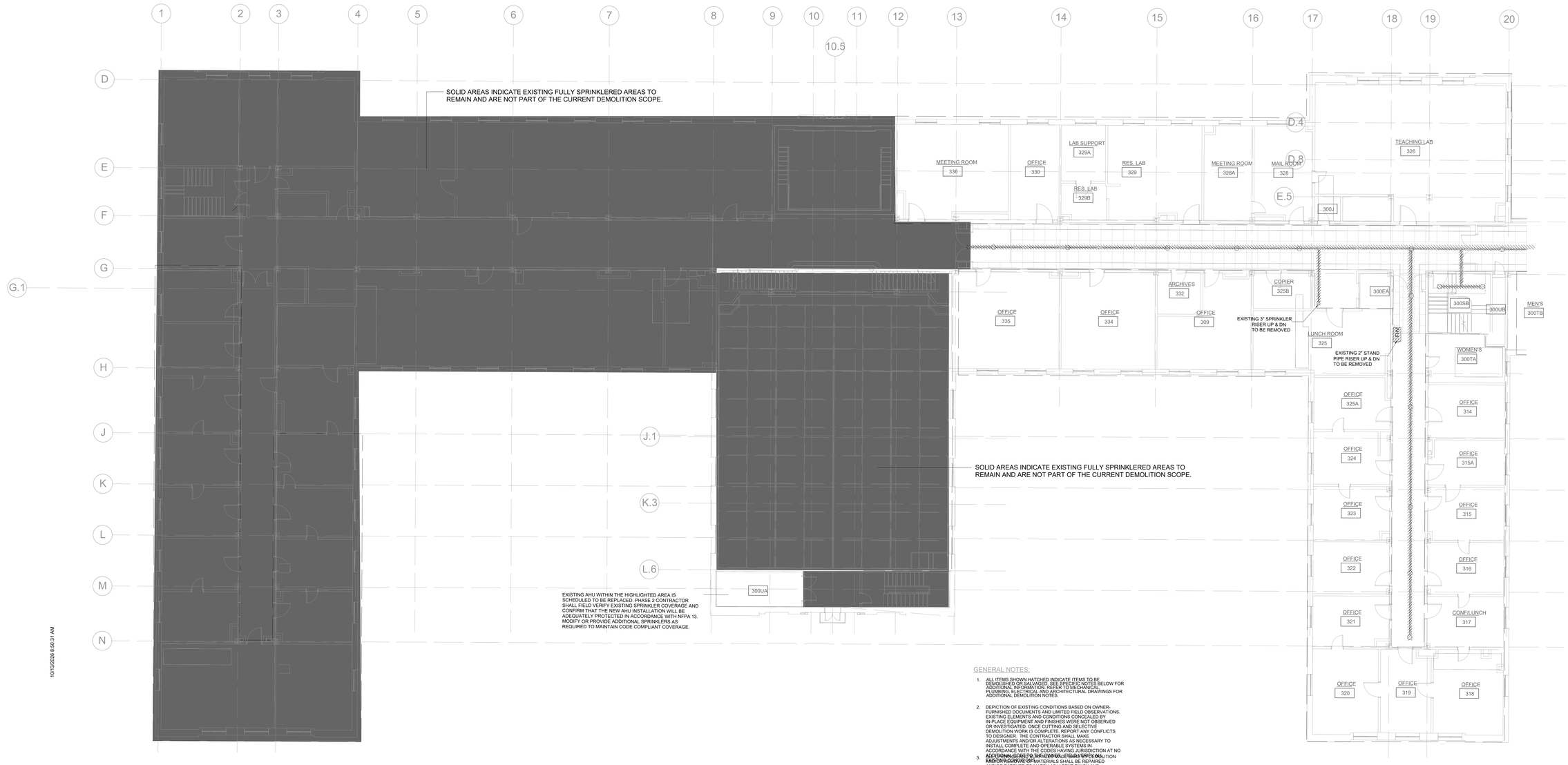

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3. ALL PIPING, CONDUIT, DUCTWORK, EQUIPMENT, ETC. EXISTING PRIOR TO DEMOLITION MUST BE REMOVED OR MATERIALS SHALL BE REPAIRED AND/OR PATCHED TO MATCH ADJACENT FINISH AND CONSTRUCTION. PREPARE SURFACES TO RECEIVE NEW FINISHES.
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D 1 / FD1.3A FIRE PROTECTION THIRD FLOOR DEMOLITION PLAN Copy 1
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1
SUCF Project No. 161026-04
236 Tower Road
Ithaca, NY 14853

SUNY State University Construction Fund
Cornell CALS College of Agriculture and Life Sciences

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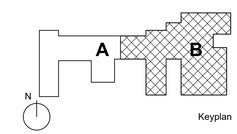

Keyplan

Job Number	31909
Drawing By	JG/DB
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Date	01/04/2023

Revisions

FIRE PROTECTION THIRD FLOOR DEMOLITION PLAN PART A

BID DOCUMENTS

Scale: 1/8" = 1'-0"

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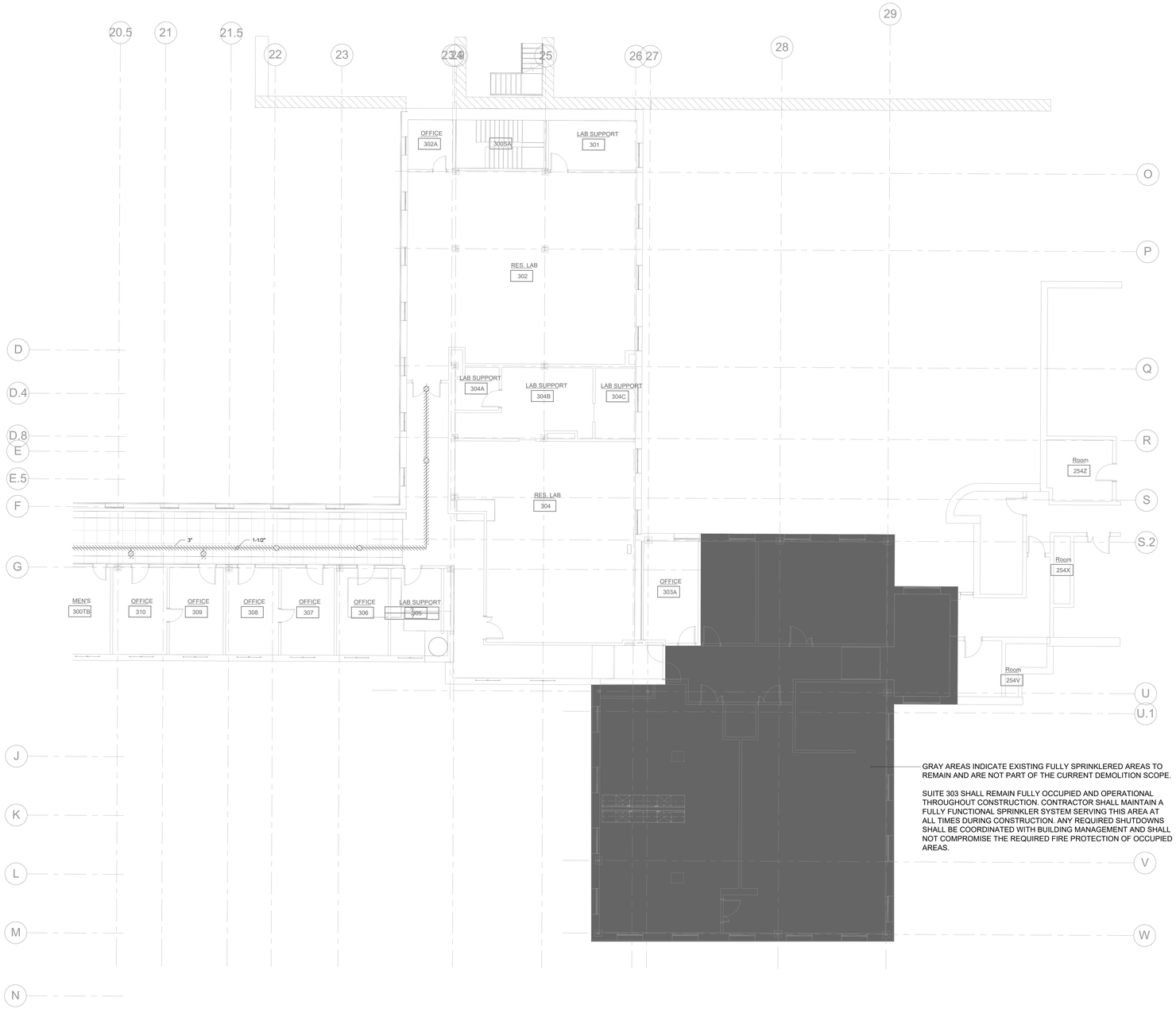

GRAY AREAS INDICATE EXISTING FULLY SPRINKLERED AREAS TO REMAIN AND ARE NOT PART OF THE CURRENT DEMOLITION SCOPE.

SUITE 303 SHALL REMAIN FULLY OCCUPIED AND OPERATIONAL THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL MAINTAIN A FULLY FUNCTIONAL SPRINKLER SYSTEM SERVING THIS AREA AT ALL TIMES DURING CONSTRUCTION. ANY REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH BUILDING MANAGEMENT AND SHALL NOT COMPROMISE THE REQUIRED FIRE PROTECTION OF OCCUPIED AREAS.

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FD1.3B

01_THIRD FLOOR-PART B

SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 1

SUCF Project No. 161026-04

236 Tower Road
Ithaca, NY 14853

SUNY State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

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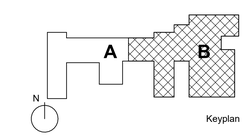

Keyplan

Job Number	31909
Drawing By	JG/DB
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Filename	
Date	01/04/2023

Revisions

FIRE PROTECTION THIRD FLOOR DEMOLITION PART B

BID DOCUMENTS

Scale: 1/8" = 1'-0"

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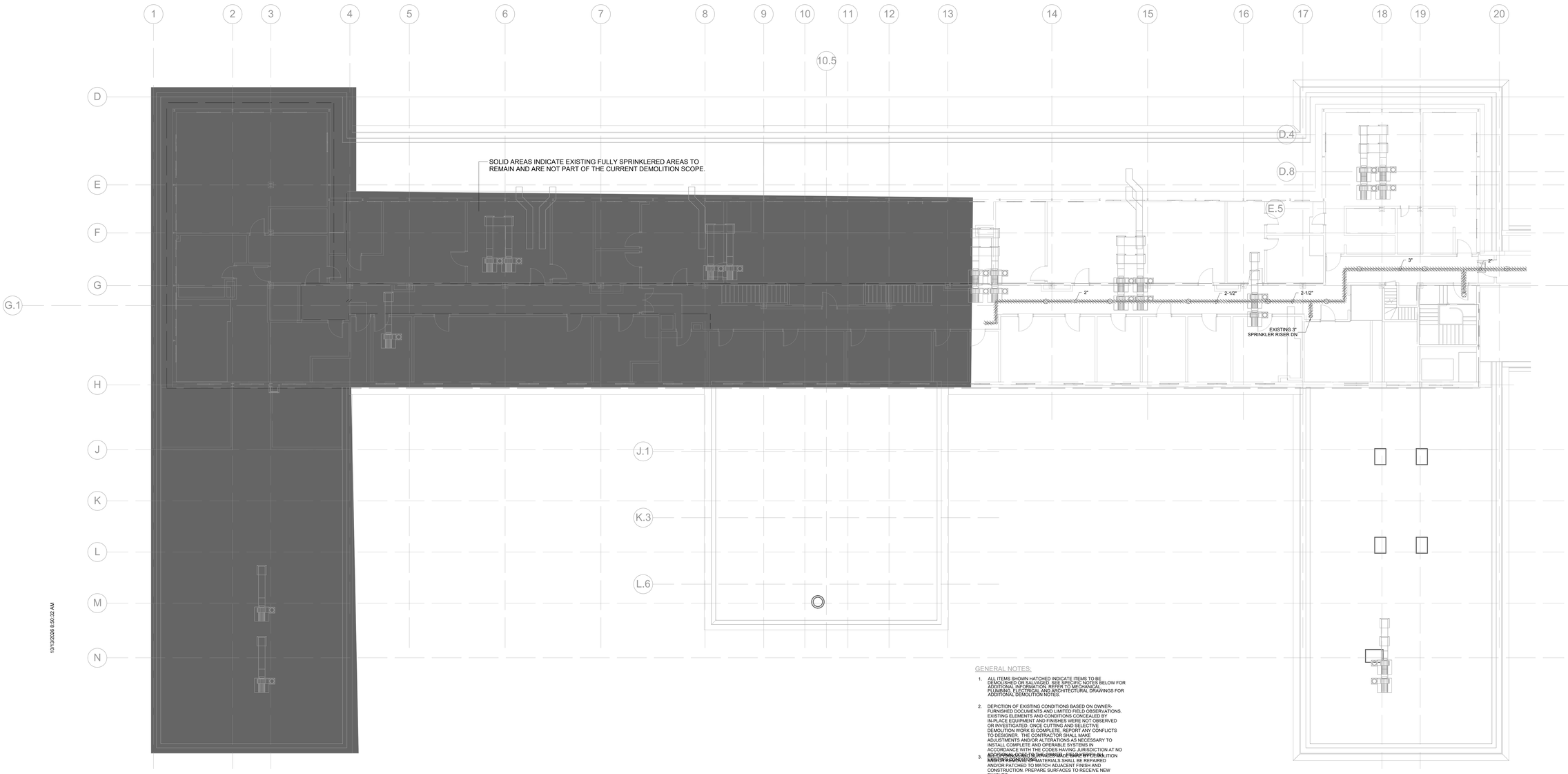

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SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1

SUCF Project No. 161026-04

236 Tower Road
Ithaca, NY 14853

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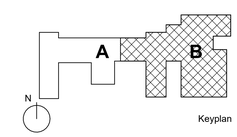

Keyplan

Job Number	31909
Drawing By	JG/DB
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Revisions

FIRE PROTECTION
FOURTH FLOOR
DEMOLITION PLAN PART A

BID DOCUMENTS

Scale: 1/8" = 1'-0"

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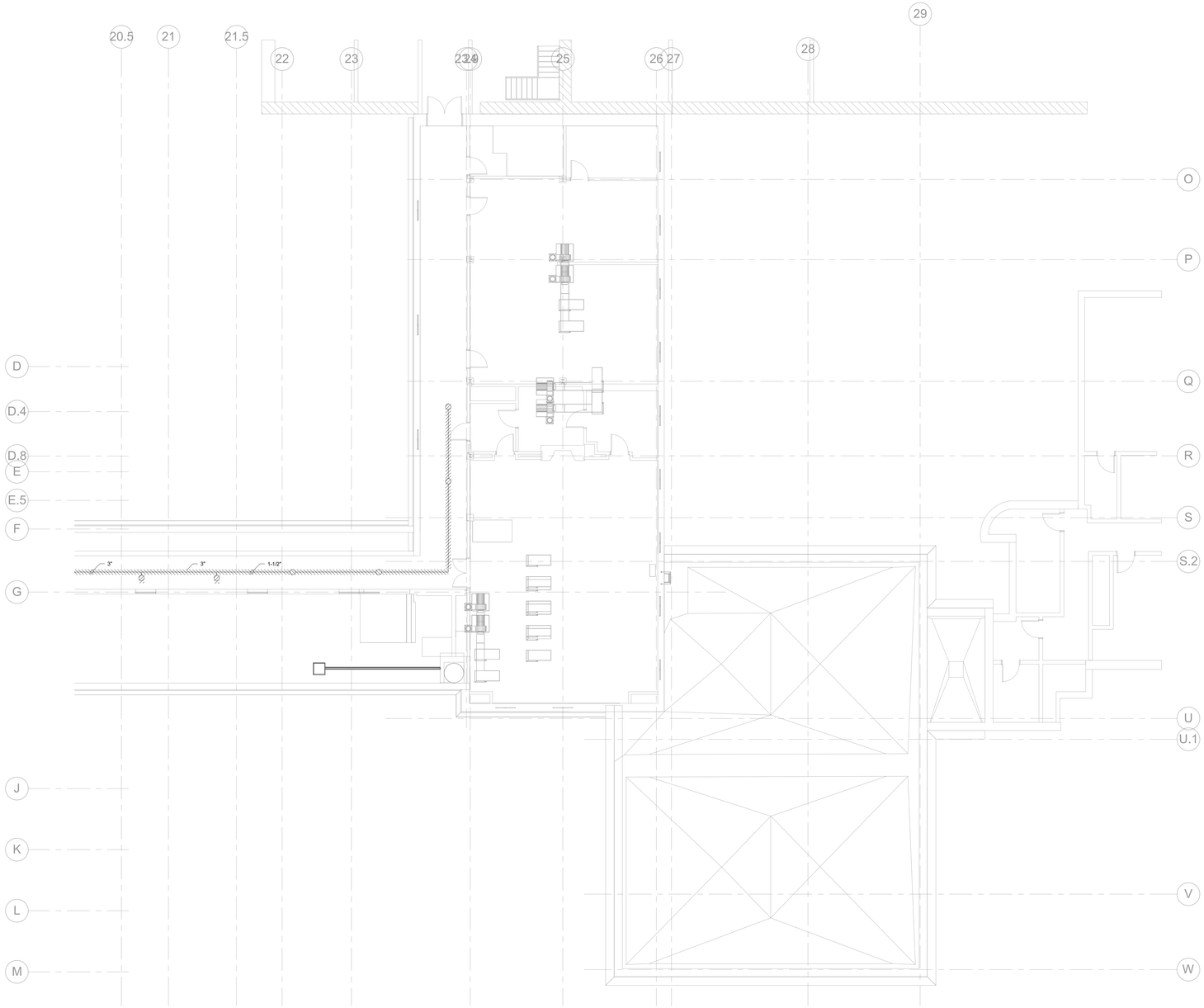

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9. COORDINATE WITH ARCHITECT DRAWING FOR THE CEILING DEMOLITION.
10. DURING PHASE 2, DEMOLISH EXISTING SPRINKLER PIPING, VALVES, SUPPORTS, AND ASSOCIATED ACCESSORIES ONLY AS INDICATED ON THE FIRE PROTECTION DEMOLITION DRAWINGS. COORDINATE THE EXTENT OF DEMOLITION WITH THE ARCHITECTURAL DRAWINGS AND PHASING REQUIREMENTS.
11. CONTRACTOR SHALL NOT DAMAGE HISTORICAL AREA OF THE BUILDING. CONTRACTOR SHALL PROTECT AND CAREFULLY HANDLE HISTORICAL AREA OF THE BUILDING.
12. CONTRACTOR SHALL REVIEW ALL CONTRACT DRAWINGS AND SPECIFICATIONS AND COORDINATE THE FULL EXTENT OF WORK PRIOR TO SUBMITTING A BID. ANY DISCREPANCIES, CONFLICTS, OR REQUIRED CLARIFICATIONS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION PRIOR TO BID SUBMISSION. ALL WORK REQUIRED BY THE CONTRACT DOCUMENTS SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.
13. NO DEMOLITION OF SPRINKLERS ARE TO BE CONDUCTED UNTIL TEMPORARY HEAT DETECTORS HAVE BEEN INSTALLED AND TESTED IN THE CONSTRUCTION AREA.

D 1
FD1.4B
01_FOURTH FLOOR-PART B
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 1
SUCF Project No. 161026-04

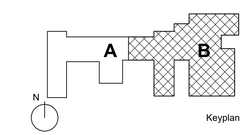
236 Tower Road
Ithaca, NY 14853

SUNY State University Construction Fund

Cornell CALS College of Agriculture and Life Sciences

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
A&J Consulting Engineering Mechanical, Fire Protection, Electrical Engineers	164 Brighton Road Clifton, NJ 07012 T 973 777-9696
Watson Engineering Plumbing	1112 State Route 434 Owego, NY 13827 T 607 223-4334
Bell & Spina Building Envelope	215 Wyoming Street Syracuse, NY 13204 T 315 488-0377
EDR Landscape Architect & Civil Engineers	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Atelier Ten Sustainability, Lighting Design	45 East 20th St, 4th Flr New York, NY 10003 T 212 254-4500
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
RWDI Wind Wake Dispersion	600 Southgate Drive Guelph, ON N1G 4P6 Canada T 519 823-1311x2429
TTI Environmental Asbestos, Haz Mat	1253 North Church Street Moorestown, NJ 08057 T 856 840-8800
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909
Drawing By	JG/DB
Checked By	RW
Filename	
Date	01/04/2023

Revisions

FIRE PROTECTION
FOURTH FLOOR
DEMOLITION PART B

BID DOCUMENTS

Scale: 1/8" = 1'-0"

FD1.4B

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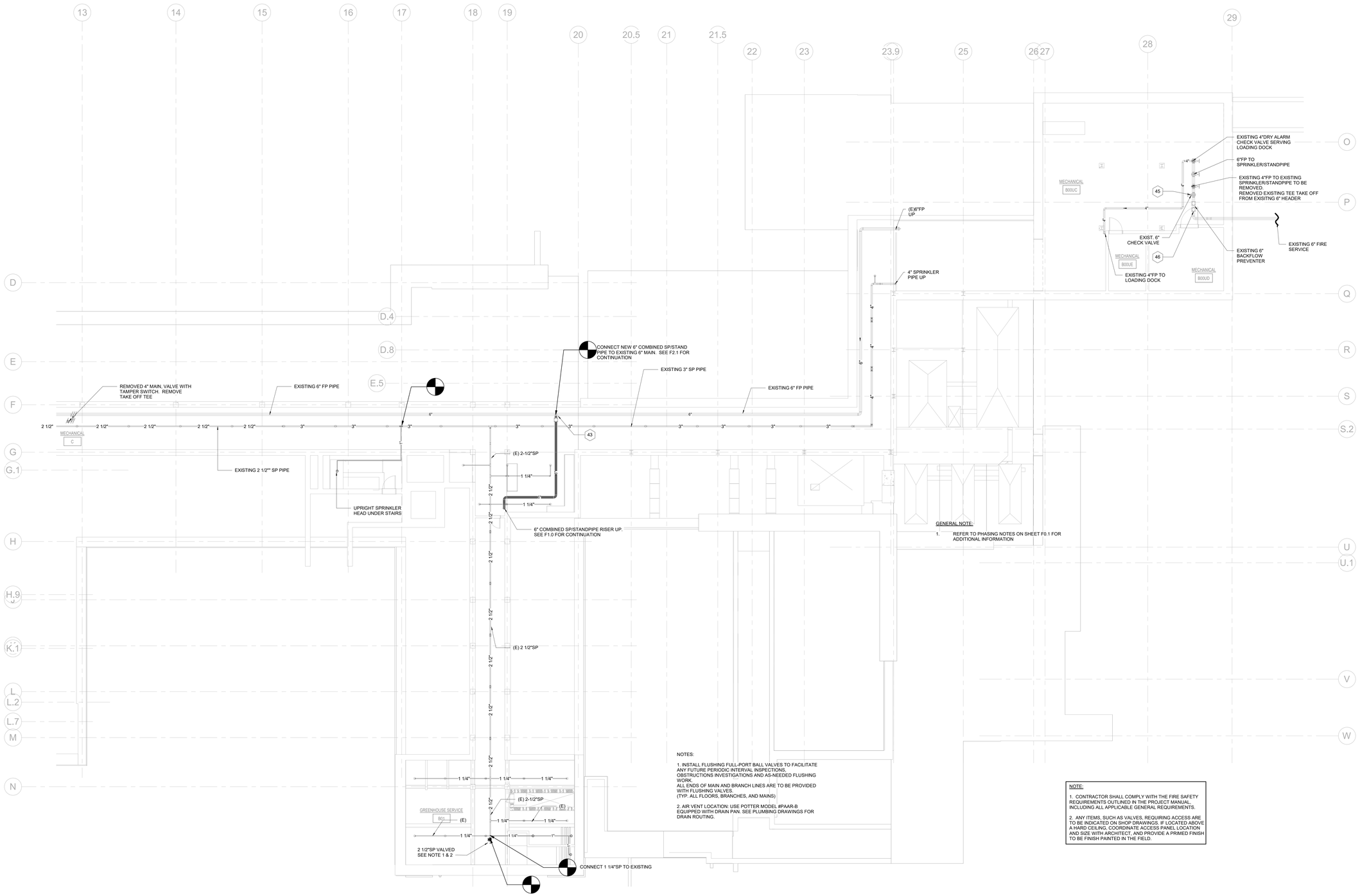

GENERAL NOTE:

1. REFER TO PHASING NOTES ON SHEET F0.1 FOR ADDITIONAL INFORMATION

NOTES:

1. INSTALL FLUSHING FULL-PORT BALL VALVES TO FACILITATE ANY FUTURE PERIODIC INTERVAL INSPECTIONS, OBSTRUCTIONS INVESTIGATIONS AND AS-NEEDED FLUSHING WORK.
ALL ENDS OF MAIN AND BRANCH LINES ARE TO BE PROVIDED WITH FLUSHING VALVES.
(TYP. ALL FLOORS, BRANCHES, AND MAINS)

2. AIR VENT LOCATION: USE POTTER MODEL #PAAR-B EQUIPPED WITH DRAIN PAN. SEE PLUMBING DRAWINGS FOR DRAIN ROUTING.

NOTE:

1. CONTRACTOR SHALL COMPLY WITH THE FIRE SAFETY REQUIREMENTS OUTLINED IN THE PROJECT MANUAL, INCLUDING ALL APPLICABLE GENERAL REQUIREMENTS.

2. ANY ITEMS, SUCH AS VALVES, REQUIRING ACCESS ARE TO BE INDICATED ON SHOP DRAWINGS. IF LOCATED ABOVE A HARD CEILING, COORDINATE ACCESS PANEL LOCATION AND SIZE WITH ARCHITECT, AND PROVIDE A PRIMED FINISH TO BE FINISH PAINTED IN THE FIELD.

D | 1
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TUNNEL
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

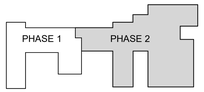
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909
Drawing By	Author
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Filename	
Date	August 31, 2026

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FIRE PROTECTION UTILITY TUNNEL PLAN - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

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F1.U

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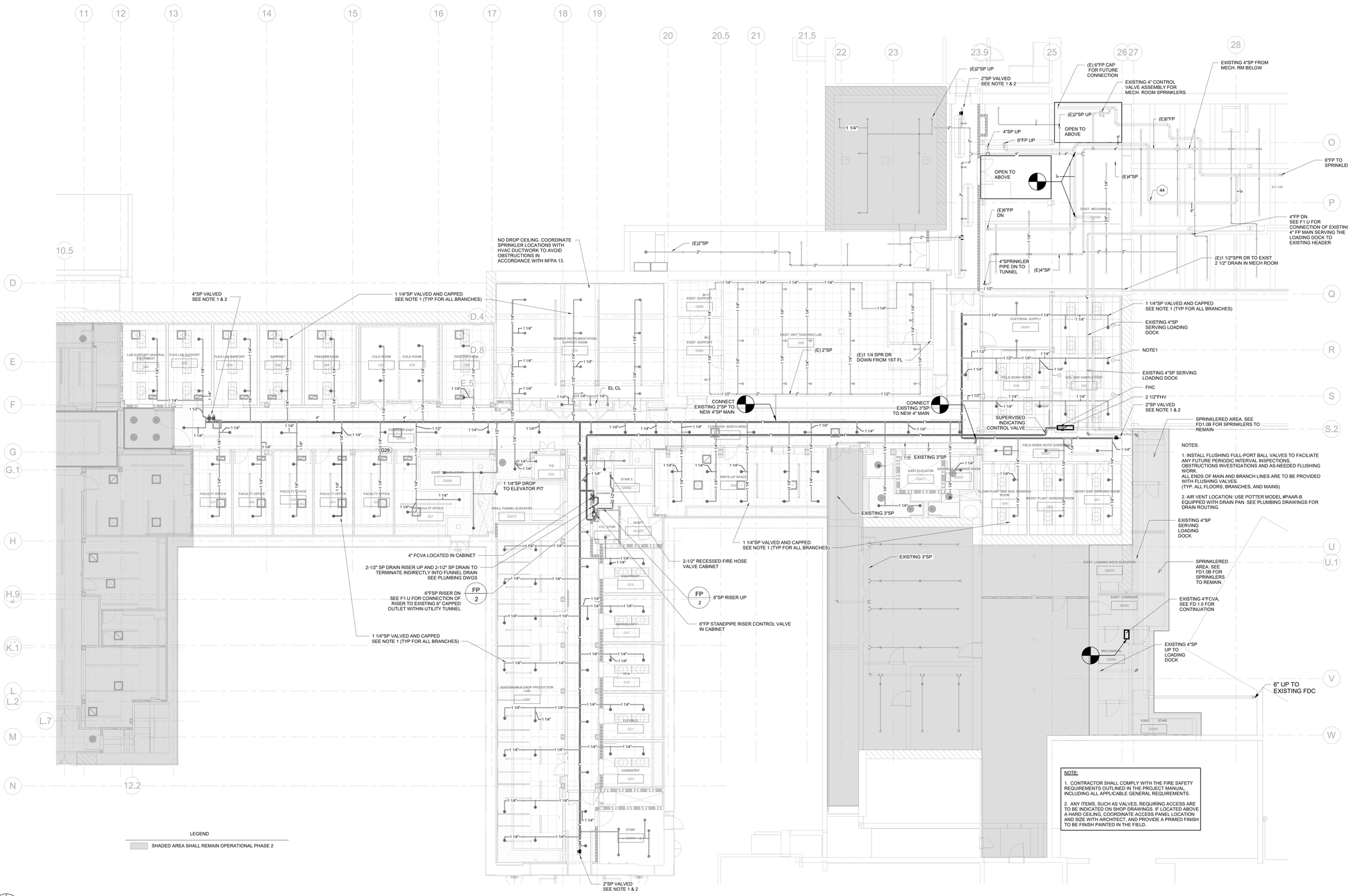

NOTE:

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D 2 F1.0 GROUND FLOOR
SCALE: 1/8" = 1'-0"

NOTES:

1. INSTALL FLUSHING FULL-PORT BALL VALVES TO FACILIATE ANY FUTURE PERIODIC INTERVAL INSPECTIONS, OBSTRUCTIONS INVESTIGATIONS AND AS-NEEDED FLUSHING WORK.
ALL ENDS OF MAIN AND BRANCH LINES ARE TO BE PROVIDED WITH FLUSHING VALVES.
(TYP: ALL FLOORS, BRANCHES, AND MAINS)

2. AIR VENT LOCATION: USE POTTER MODEL #PAAR-B EQUIPPED WITH DRAIN PAN. SEE PLUMBING DRAWINGS FOR DRAIN ROUTING.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
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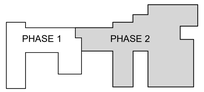
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909
Drawing By	Author
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Date	August 31, 2026

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FIRE PROTECTION GROUND FLOOR PLAN - PHASE 2

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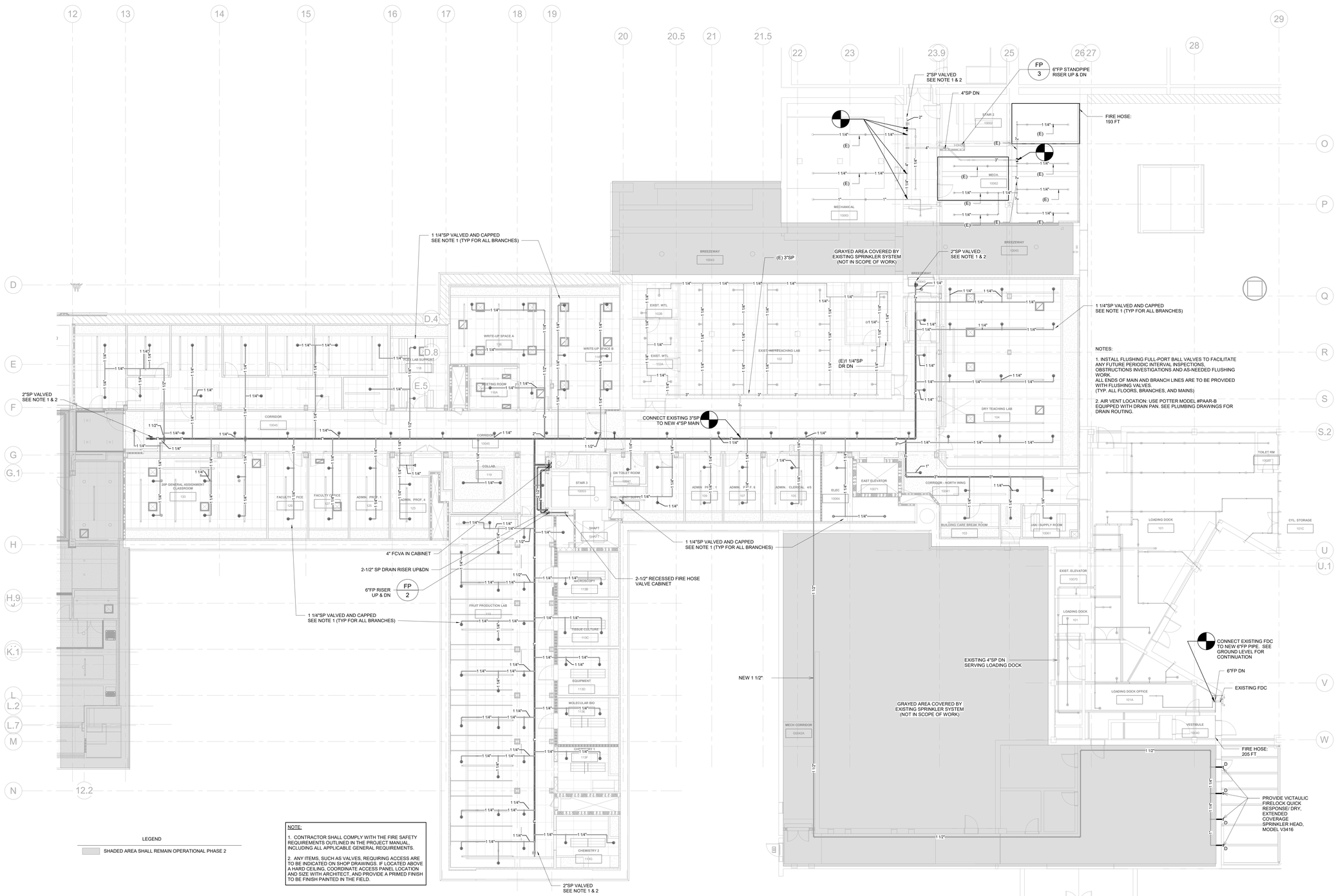

NOTES:

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(TYP. ALL FLOORS, BRANCHES, AND MAINS)

2. AIR VENT LOCATION: USE POTTER MODEL #PAAR-B EQUIPPED WITH DRAIN PAN. SEE PLUMBING DRAWINGS FOR DRAIN ROUTING.

LEGEND

SHADED AREA SHALL REMAIN OPERATIONAL PHASE 2

NOTE:

1. CONTRACTOR SHALL COMPLY WITH THE FIRE SAFETY REQUIREMENTS OUTLINED IN THE PROJECT MANUAL, INCLUDING ALL APPLICABLE GENERAL REQUIREMENTS.

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D 2 / F1.1 FIRST FLOOR
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

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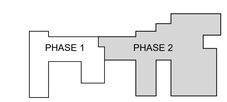

Keyplan

Job Number	31909
Drawing By	Author
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Filename	
Date	August 31, 2026

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FIRE PROTECTION FIRST FLOOR PLAN - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

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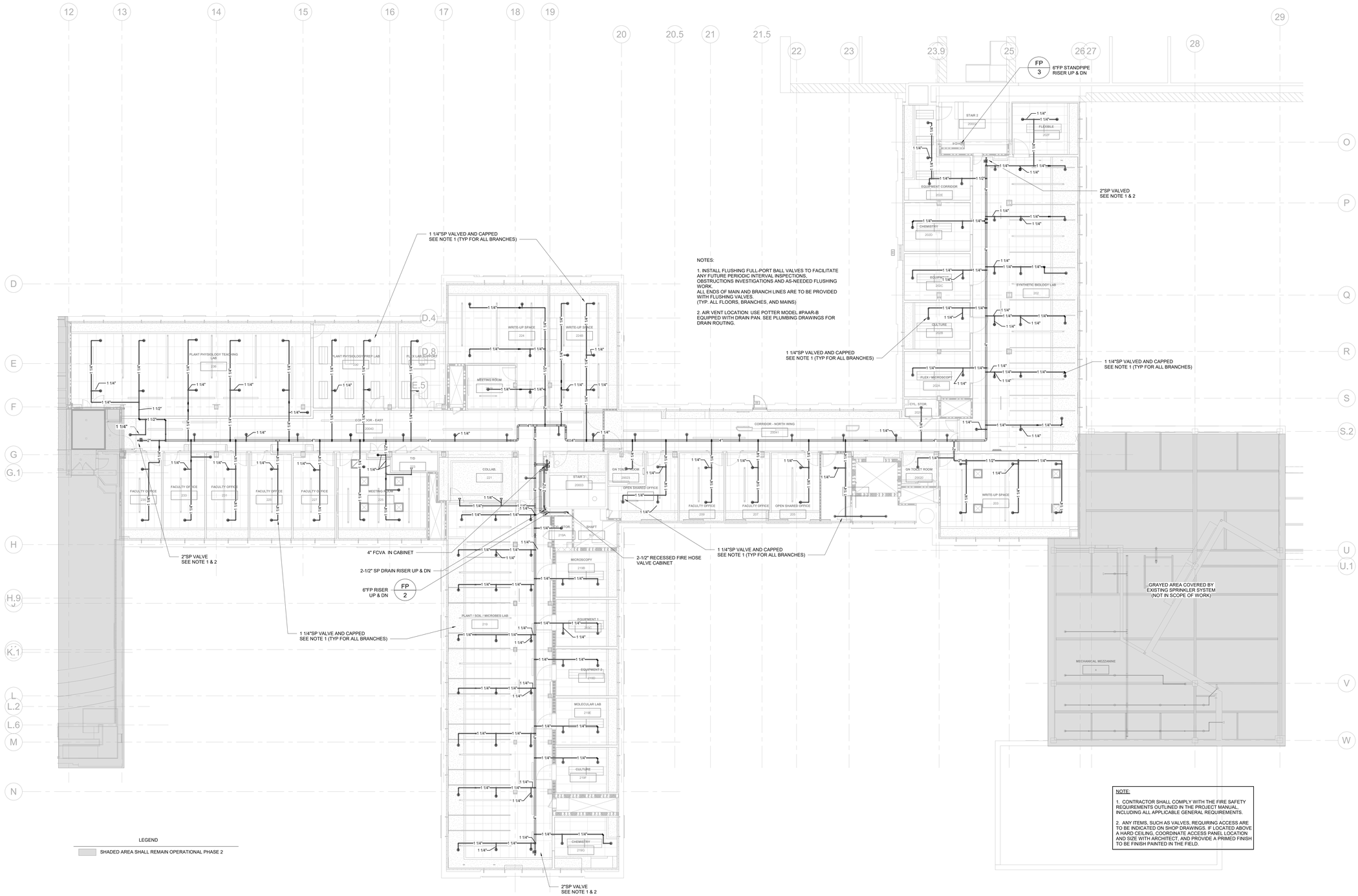

NOTES:

1. INSTALL FLUSHING FULL-PORT BALL VALVES TO FACILITATE ANY FUTURE PERIODIC INTERVAL INSPECTIONS, OBSTRUCTIONS INVESTIGATIONS AND AS-NEEDED FLUSHING WORK.
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(TYP. ALL FLOORS, BRANCHES, AND MAINS)

2. AIR VENT LOCATION: USE POTTER MODEL #PAAR-B EQUIPPED WITH DRAIN PAN. SEE PLUMBING DRAWINGS FOR DRAIN ROUTING.

NOTE:

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LEGEND

SHADED AREA SHALL REMAIN OPERATIONAL PHASE 2

D 1 / F1.2 SECOND FLOOR
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
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DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
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Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

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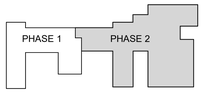

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Job Number	31909
Drawing By	Author
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Filename	
Date	August 31, 2026

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FIRE PROTECTION SECOND FLOOR PLAN - PHASE 2

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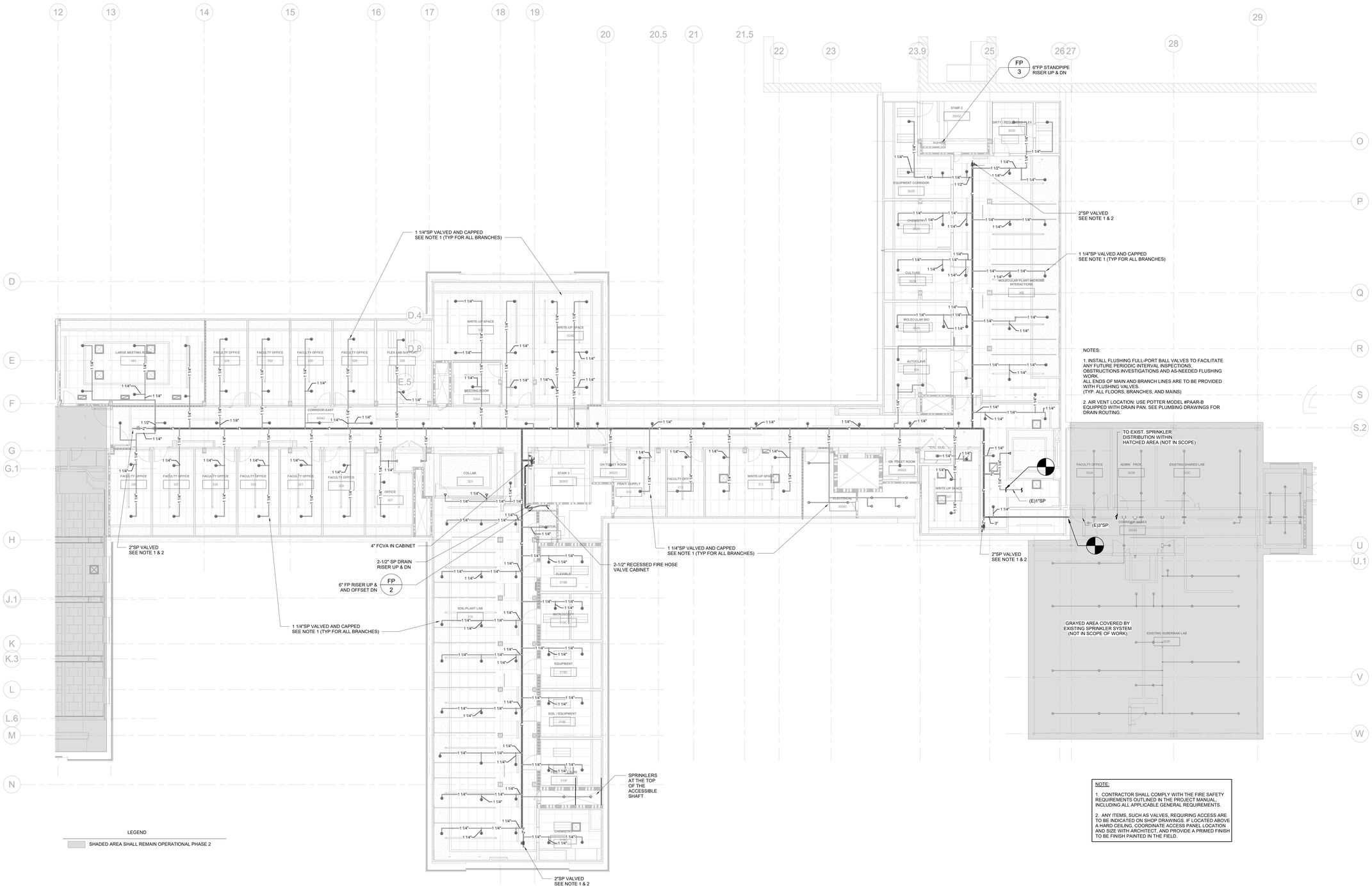

LEGEND

SHADED AREA SHALL REMAIN OPERATIONAL PHASE 2

NOTES:

1. INSTALL FLUSHING FULL-PORT BALL VALVES TO FACILITATE ANY FUTURE PERIODIC INTERVAL INSPECTIONS, OBSTRUCTIONS INVESTIGATIONS AND AS-NEEDED FLUSHING WORK.
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(TYP. ALL FLOORS, BRANCHES, AND MAINS)

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D 1 / F1.3 THIRD FLOOR
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
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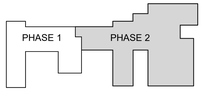
Notes:



Keyplan

Job Number	31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

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FIRE PROTECTION THIRD FLOOR PLAN - PHASE 2

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F1.3

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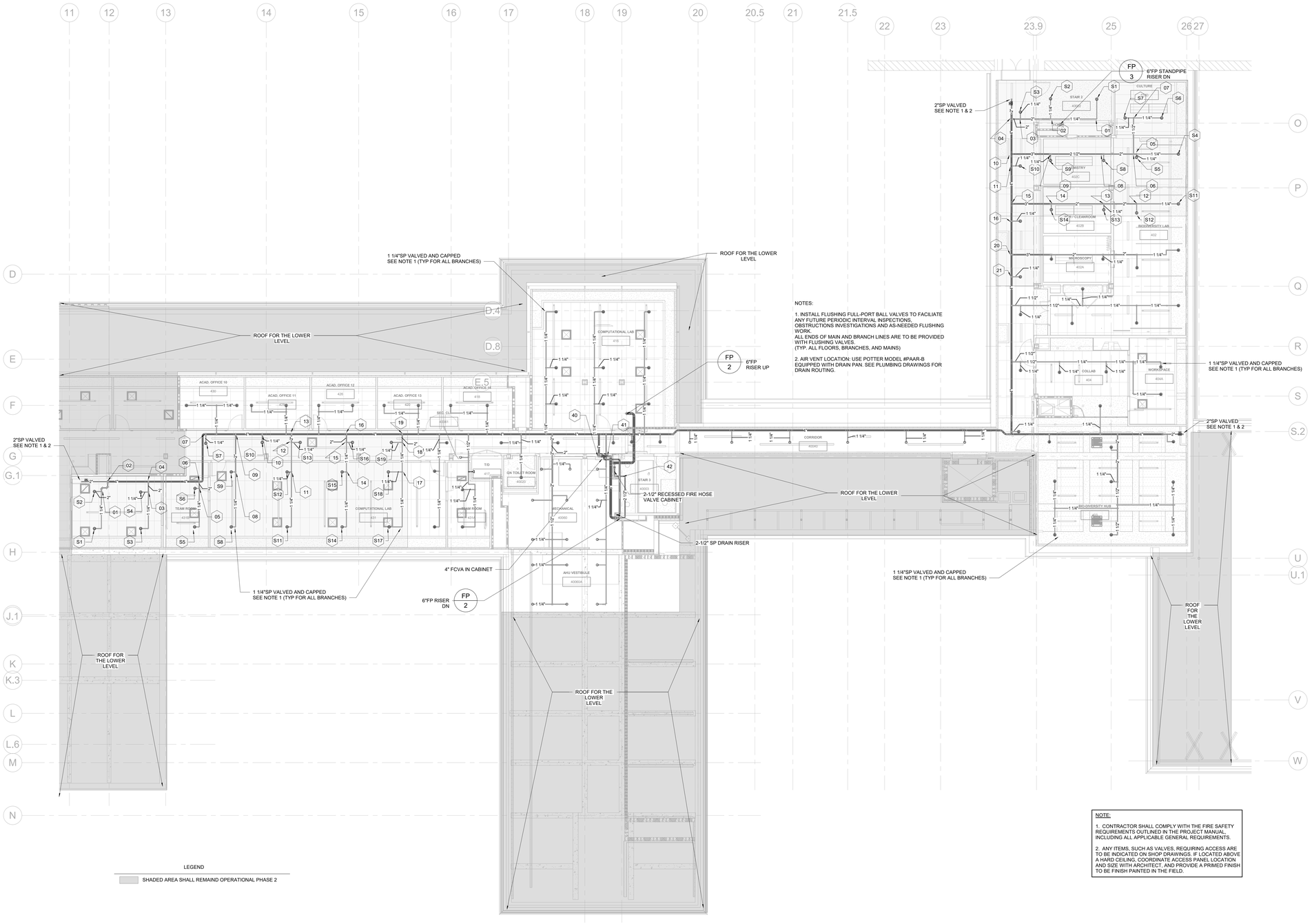

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2. AIR VENT LOCATION: USE POTTER MODEL #PAAR-8 EQUIPPED WITH DRAIN PAN. SEE PLUMBING DRAWINGS FOR DRAIN ROUTING.

NOTE:

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LEGEND

SHADED AREA SHALL REMAIND OPERATIONAL PHASE 2

D 1
F1.4
FOURTH FLOOR
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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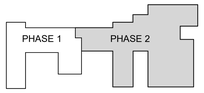
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

FIRE PROTECTION FOURTH FLOOR PLAN - PHASE 2

STATE OF NEW YORK · RONALD DIAZ · 095359 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: 1/8" = 1'-0"

F1.4

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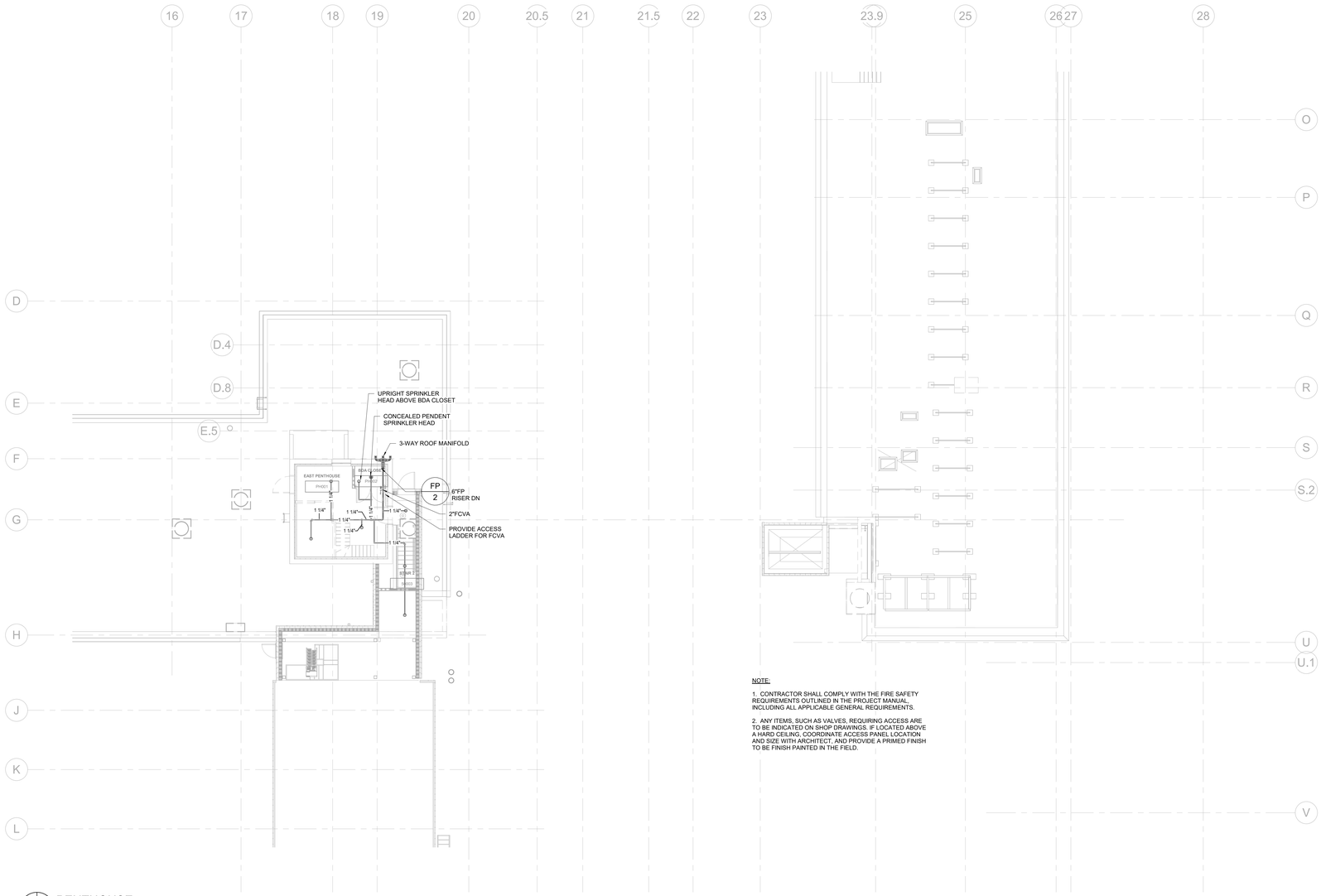

NOTE:

1. CONTRACTOR SHALL COMPLY WITH THE FIRE SAFETY REQUIREMENTS OUTLINED IN THE PROJECT MANUAL, INCLUDING ALL APPLICABLE GENERAL REQUIREMENTS.

2. ANY ITEMS, SUCH AS VALVES, REQUIRING ACCESS ARE TO BE INDICATED ON SHOP DRAWINGS. IF LOCATED ABOVE A HARD CEILING, COORDINATE ACCESS PANEL LOCATION AND SIZE WITH ARCHITECT, AND PROVIDE A PRIMED FINISH TO BE FINISH PAINTED IN THE FIELD.

D 1
F1.5 PENTHOUSE
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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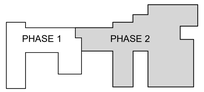

Keyplan

Job Number	31909
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Revisions

FIRE PROTECTION ROOF AND PENTHOUSE PLAN - PHASE 2

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F1.5

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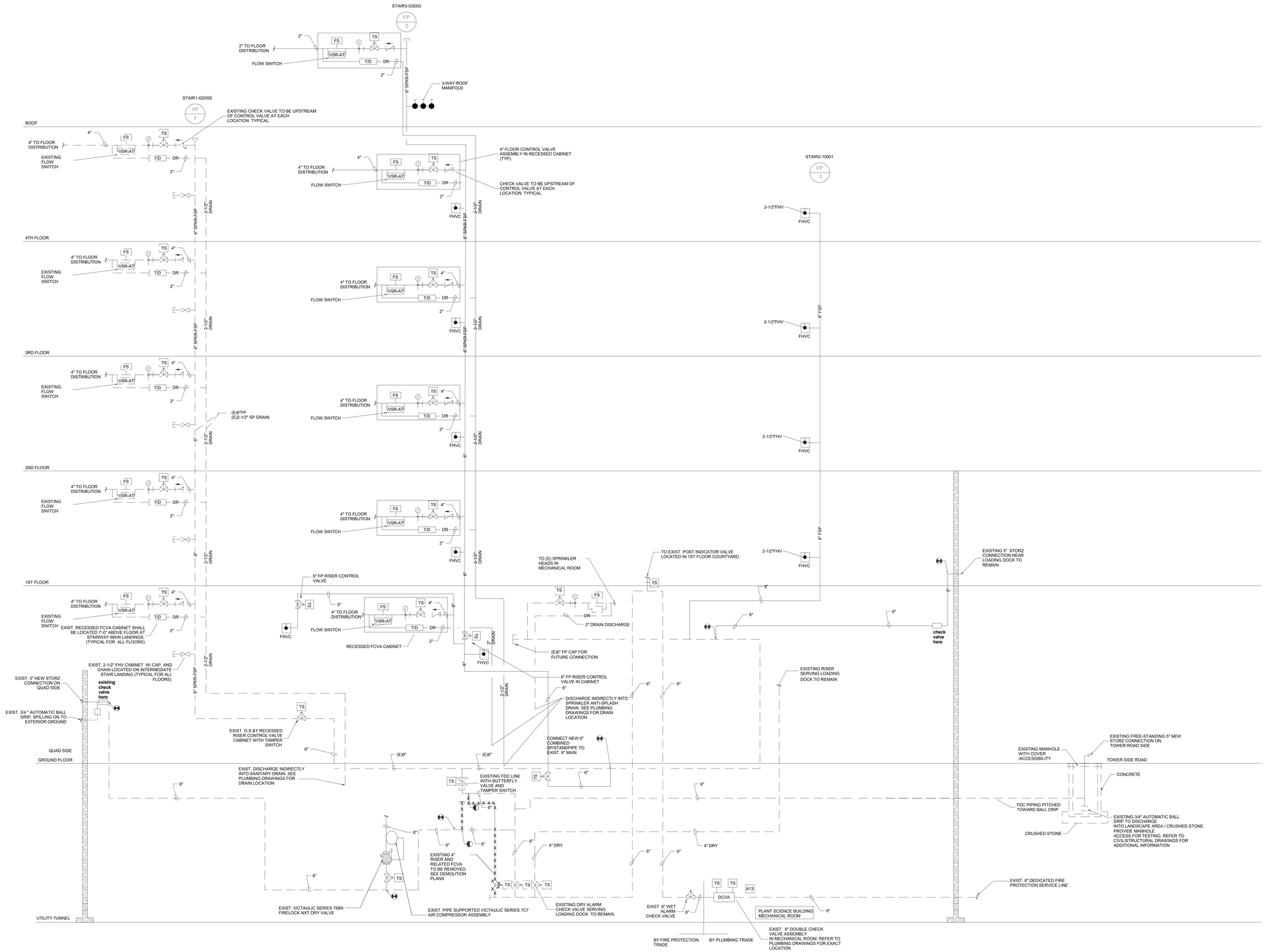

D 1 F2.1 SPRINKLER AND STADPIPE RISER DRIAGRAMS
SCALE: 12" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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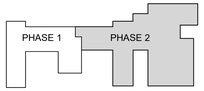

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SPRINKLER AND STANDPIPE RISER DIAGRAMS

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F2.1

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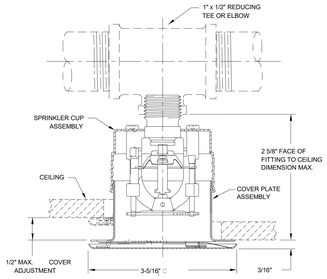

1 F3.1 TYPICAL CONCEALED SPRINKLER DETAIL

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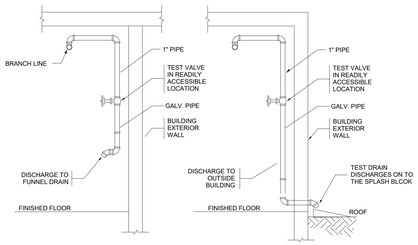

2 F3.1 TYPICAL INSPECTOR TEST CONNECTIONS (WET)

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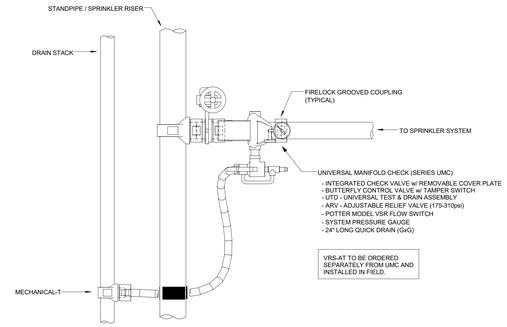

4 F3.1 FLOOR CONTROL VALVE ASSEMBLY

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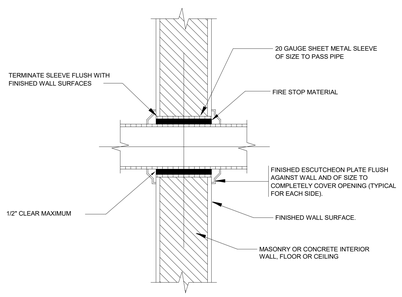
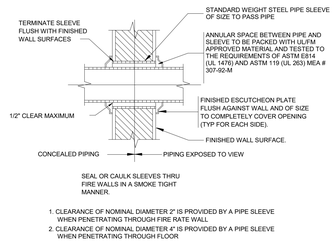


5 F3.1 PIPE PENETRATING THROUGH INTERIOR WALL, FL. OR CEILING

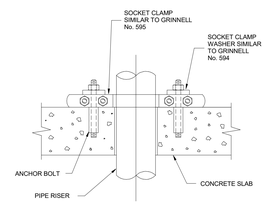
N.T.S.



1. CLEARANCE OF NOMINAL DIAMETER 2" IS PROVIDED BY A PIPE SLEEVE WHEN PENETRATING THROUGH FIRE RATE WALL
2. CLEARANCE OF NOMINAL DIAMETER 4" IS PROVIDED BY A PIPE SLEEVE WHEN PENETRATING THROUGH FLOOR

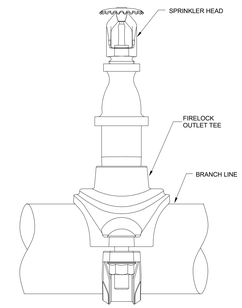
6 F3.1 PIPE PENETRATING THROUGH FIRE RATED WALL OR FLOOR

N.T.S.



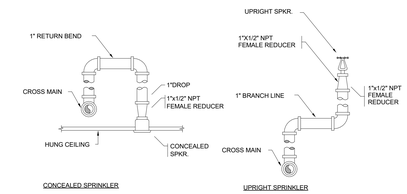
7 F3.1 TYPICAL RISER SUPPORT

N.T.S.



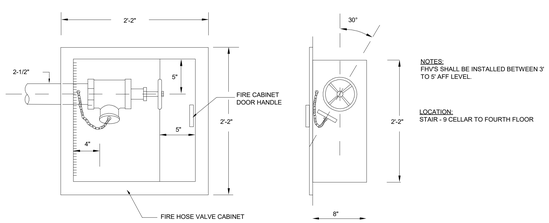
8 F3.1 TYPICAL UPRIGHT SPRINKLER DETAIL

N.T.S.



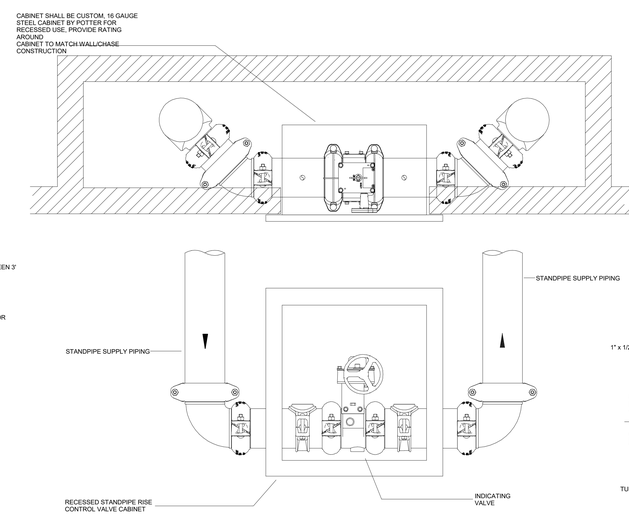
9 F3.1 SPRINKLER INSTALLATION DETAILS

N.T.S.



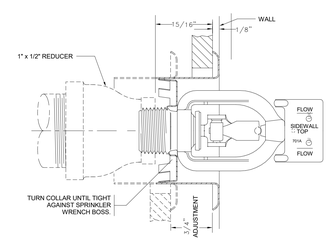
11 F3.1 FIRE HOSE VALVE CABINET DETAIL

N.T.S.



12 F3.1 TYPICAL RISER CONTROL VALVE CABINET INSTALLATION.

N.T.S.



13 F3.1 TYPICAL SIDEWALL SPRINKLER

N.T.S.

D 1 F3.1 SPRINKLER AND STANDPIPE DETAILS

SCALE: 12" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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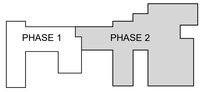
Notes:



Keyplan

Job Number	31909
Drawing By	Author
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Filename	
Date	August 31, 2026

Revisions

SPRINKLER AND STANDPIPE DETAILS

BID DOCUMENTS
Scale: 12" = 1'-0"

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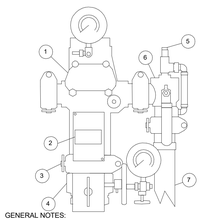


1 1/4 – 6-INCH/DN32 – DN150 SIZES
(4-INCH/DN100 ASSEMBLY SHOWN ABOVE)

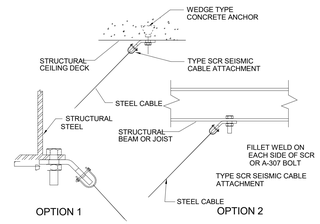
Item	Description for 1 1/4 – 6-inch/DN32 – DN150 Sizes
1	UMC Body with Removable Cover Plate*
2	Flow Switch
3	Rigid Coupling
4	Control Valve with Internal Supervisory Switch (Optional)†
5	Adjustable Pressure Relief Valve (ARV)***
6	Universal Test and Drain Assembly (UTD)‡
7	Stainless Steel Braided Flexible Drain Hose Assembly (Grooved x Grooved Connections)

GENERAL NOTES:

• PROVIDE A LISTED AND APPROVED FIRE PROTECTION RISER MANIFOLD ASSEMBLY WITH FLOW DETECTION AND CHECK VALVE.
• PROVIDE A LISTED AND APPROVED CONTROL VALVE FOR THE FIRE PROTECTION RISER, SIZED IN ACCORDANCE WITH THE SYSTEM REQUIREMENTS.
• ALL COMPONENTS SHALL BE LISTED AND APPROVED FOR FIRE PROTECTION SERVICE AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND APPLICABLE CODES AND STANDARDS.
• PROVIDE A LISTED AND APPROVED ADJUSTABLE PRESSURE RELIEF VALVE, SIZED AND SET AS REQUIRED FOR THE SYSTEM DESIGN PRESSURE AND HYDROSTATIC TEST CONDITIONS.
• PROVIDE A LISTED AND APPROVED TEST AND DRAIN ASSEMBLY FOR SYSTEM TESTING, DRAINING, AND INSPECTION.
• PROVIDE FLEXIBLE DRAIN HOSE ASSEMBLY AND ASSOCIATED CONNECTIONS AS REQUIRED.
• ALL VALVES, FITTINGS, COUPLINGS, AND ACCESSORIES SHALL BE COMPATIBLE WITH THE FIRE PROTECTION PIPING SYSTEM AND SUITABLE FOR THE INTENDED SERVICE.
• REFER TO CONTRACT DOCUMENTS, SPECIFICATIONS, AND APPROVED SHOP DRAWINGS FOR ADDITIONAL REQUIREMENTS.

1 / F3.2 TYPICAL UNIVERSAL MANIFOLD ASSEMBLY

N.T.S.



2 / F3.2 TYPICAL CABLE FOR UNISTRUT

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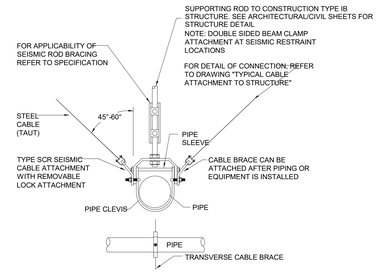
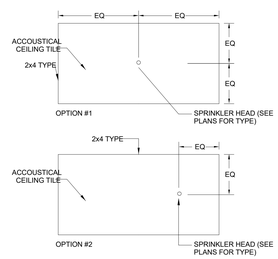


PLAN VIEW OF BRACE

NOTE: 1. SEE SPECIFICATION FOR CABLE BRACING DISTANCE REQUIREMENTS.
2. SLACK CABLE 1/2" IN CENTER IF ISOLATED.

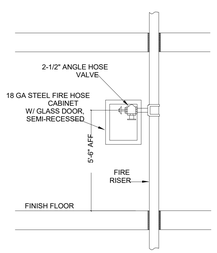
3 / F3.2 TYPICAL TRANSVERSE CABLE BRACE FOR CLEVIS HUNG PIPING

N.T.S.



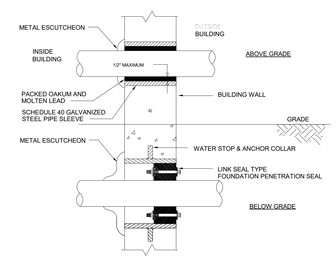
5 / F3.2 SPRINKLER HEAD LOCATION

N.T.S.



4 / F3.2 FIRE HOSE VALVE (CLASS 1) IN CABINET DETAIL

N.T.S.



6 / F3.2 PIPE PENETRATING THROUGH EXTERIOR WALL

N.T.S.

RENOVATE PLANT SCIENCE
BUILDING - PHASE 2
SUCF Project No. 161026-00

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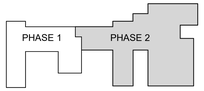

Keyplan

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Revisions

SPRINKLER DETAILS

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F3.2

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HVAC SYMBOL LIST

SYMBOL	DESCRIPTION
	EXISTING WORK TO BE REMOVED
	POINT OF CONNECTION
	POINT OF DISCONNECTION
X	DRAWING KEYNOTE
X	DEMOLITION KEYNOTE
MBH	THOUSAND BTU/HOUR
NTS	NOT TO SCALE
(E)	EXISTING
(L)	ACOUSTIC THERMAL LINING - 1-1/2" THICK
(2L)	ACOUSTIC THERMAL LINING - 2" THICK
(DBL)	DOUBLE WALL LINED DUCT
FPM	FEET PER MINUTE
CFM	CUBIC FEET PER MINUTE
AFF	ABOVE FINISHED FLOOR
AD	ACCESS DOOR
W/W	WALL TO WALL
N.O.	NORMALLY OPEN
N.C.	NORMALLY CLOSED
O.E.D	OPEN ENDED DUCT
A/B FO	DUCT SECTION - FLAT OVAL (FO)
12"	ROUND DUCT - IN INCHES
	DUCT SECTION - SUPPLY
	DUCT SECTION - RETURN
A B	WIDTH A x DEPTH B
	TRANSITION SQUARE TO ROUND
R	RISE IN DUCT - IN DIRECTION OF AIRFLOW
D	DROP IN DUCT - IN DIRECTION OF AIRFLOW
DN 24x12 UP	SUPPLY DUCT TURNING UP OR DOWN
DN 24x12 UP	RETURN DUCT TURNING UP OR DOWN
24x12 6" BOOT TAP 14x8	SUPPLY/RETURN RECTANGULAR MAIN RECTANGULAR BRANCH
24x12 6" BOOT TAP 14"	SUPPLY/RETURN RECTANGULAR MAIN ROUND BRANCH
18" CONICAL TEE 14"	SUPPLY/RETURN ROUND MAIN ROUND BRANCH
18" LATERAL 14"	SUPPLY/RETURN ROUND MAIN ROUND BRANCH
	MITERED ELBOW WITH TURNING VANES
	SUPPLY DIFFUSER, REGISTER OR GRILLE
	RETURN REGISTER
	EXHAUST GRILLE
	FIN TUBE RADIATION
	VALANCE
	RADIANT CEILING PANEL
A B C	REGISTER, GRILLE OR DIFFUSER TAG A = TYPE B = NECK SIZE C = CFM
FT-A B C D	FIN TUBE RADIATION TAG FT-A = TYPE B = FIN TUBE LENGTH C = ENCLOSURE LENGTH D = GPM
A B C	RADIANT CEILING PANEL TAG A = TYPE B = LENGTH C = GPM
A B C D	VALANCE TAG A = TYPE B = COIL SIZE C = COOLING GPM D = HEATING GPM
VAV-X-XX	AIR TERMINAL UNIT AND TAG (OPTION 1)
VAV-X-XX	AIR TERMINAL UNIT WITH FACTORY ATTENUATOR (OPTION 1)
	LAB AIR VALVE

SYMBOL	DESCRIPTION
A	COMPRESSED AIR
V	VENT
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
D	DRAIN
PCHWS	PROCESSED CHILLED WATER SUPPLY
PCHWR	PROCESSED CHILLED WATER RETURN
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL TANK VENT
G	GAS
GHWS	GLYCOL HOT WATER SUPPLY
GHWR	GLYCOL HOT WATER RETURN
RHWS	REHEAT HOT WATER SUPPLY
RHWR	REHEAT HOT WATER RETURN
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
LPS	LOW PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
PC	PUMPED CONDENSATE
HG	HOT GAS
VAC	VACUUM
CW	DOMESTIC COLD WATER
TD	TRIPLE DUTY VALVE
	GLOBE VALVE
	BALL VALVE
	GATE VALVE
	CONTROL VALVE
	THREE WAY CONTROL VALVE
	CHECK VALVE
	BALANCING VALVE
	BUTTERFLY VALVE
	RELIEF VALVE
PRV	PRESSURE REDUCING VALVE
	PRESSURE/TEMPERATURE TEST PLUG
	SINGLE LINE PIPE CONTINUED
	DOUBLE LINE PIPE OR ROUND DUCT CONTINUED
	DOUBLE LINE RECTANGULAR DUCT CONTINUED
	AIR FLOW
	PIPE ANCHOR
	PIPE GUIDE
	EXPANSION COMPENSATOR WITH GUIDES
	PRE-FAB EXPANSION LOOP
	STRAINER
	PRESSURE GAUGE
	THERMOMETER
	UNION
V	DIRECTION OF FLOW
	REDUCER
	CAP OR PLUG
	ELBOW DOWN
	ELBOW UP
	BOTTOM TAP
AAD	AUTOMATIC AIR DAMPER
FD	FIRE DAMPER
SD	SMOKE DAMPER
BDD	BACK DRAFT DAMPER
FC	FLEX CONNECTOR - DUCTWORK
M	MOTORIZED DAMPER
BG	BLAST GATE
	VOLUME DAMPER
SD	SUCTION DIFFUSER
	FLEXIBLE CONNECTOR - PIPING
	DRAIN VALVE WITH HOSE CONNECTION, CAP AND CHAIN
H	HUMIDISTAT
S	TEMPERATURE SENSOR
N	NITROGEN DIOXIDE SENSOR
C	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
G	GAS SENSOR
T	PNEUMATIC THERMOSTAT
T E	LINE VOLTAGE THERMOSTAT
T G S G	THERMOSTAT/SENSOR WITH GUARD
DSD	DUCT SMOKE DETECTOR
	DUCTWORK W/ DUCT WRAP

CONTROLS SCHEMATIC SYMBOL LIST

SYMBOL	DESCRIPTION
BI	BINARY INPUT (GENERAL)
BO	BINARY OUTPUT (GENERAL)
AI	ANALOG INPUT (GENERAL)
AO	ANALOG OUTPUT (GENERAL)
	BINARY POINT
	ANALOG POINT
BV	BINARY VALUE
BI	BINARY INPUT
BO	BINARY OUTPUT
AV	ANALOG VALUE
AI	ANALOG INPUT
AO	ANALOG OUTPUT
	THERMOWELL
A	ALARM
E	ELECTRIC ACTUATOR
FZ	FREEZE-STAT
H	HUMIDIFIER
	HUMIDIFIER DISPERSION GRID
R	RELAY
S	STATUS
M	FLOW METER
M	MOTOR
BTU	BTU ENERGY METER
	AIR FLOW MEASURING STATION
	AVERAGING SENSOR
H	HUMIDITY SENSOR (DUCT MOUNTED)
T	TEMPERATURE SENSOR (DUCT OR PIPE MOUNTED)
CO	CARBON DIOXIDE SENSOR (DUCT MOUNTED)
CO	CARBON MONOXIDE SENSOR (DUCT MOUNTED)
DP S	SPACE SENSOR WITH SETPOINT ADJUSTMENT
OV S	SPACE SENSOR WITH OCCUPANCY OVERRIDE
S	SPACE SENSOR WITH VISUAL DISPLAY
S	SPACE SENSOR WITH FAN ON/OFF SWITCH
DP T	ROOM TEMPERATURE SENSOR WITH SETPOINT ADJUSTMENT
OV T	ROOM TEMPERATURE SENSOR WITH OCCUPANCY OVERRIDE
T	ROOM TEMPERATURE SENSOR WITH VISUAL DISPLAY
T	ROOM TEMPERATURE SENSOR WITH FAN ON/OFF SWITCH
OS	OCCUPANCY SENSOR
M	MOISTURE SENSOR
	PROBE SENSOR
FS	FLOW SENSOR
F	FLOW SWITCH
ES	END SWITCH
S M	MANUAL SWITCH
P	PRESSURE SWITCH
ΔP	DIFFERENTIAL STATIC PRESSURE SWITCH
ΔP	DIFFERENTIAL STATIC PRESSURE TRANSMITTER
E P	ELECTRIC/PNEUMATIC SWITCH OR RELAY
P E	PNEUMATIC/ELECTRIC SWITCH OR RELAY
F	FLOW TRANSMITTER
P	PRESSURE TRANSMITTER
DP	DEWPOINT SENSOR (DUCT MOUNTED)
SP	STATIC PRESSURE SENSOR (DUCT MOUNTED)
C	CONDENSATE SENSOR
SIGNAL IN AIR IN SIGNAL OUT	ELECTRIC TO PNEUMATIC TRANSDUCER
SIGNAL IN SIGNAL OUT	ELECTRIC TO PNEUMATIC SWITCH

SYMBOL	DESCRIPTION
	SINGLE POINT SENSOR
CT	CURRENT TRANSDUCER
I P	ELECTRIC/PNEUMATIC TRANSDUCER
P E	ELECTRONIC/ELECTRIC TRANSDUCER
	ELECTRICAL INTERFACE
S S	START/STOP
O C	OPEN/CLOSE
E D	ENABLE/DISABLE
	HARD WIRE INTERFACE
	PNEUMATIC CONTROL VALVE (3-WAY)
	PNEUMATIC CONTROL VALVE (2-WAY)
E	ELECTRIC/ELECTRONIC CONTROL VALVE (3-WAY)
E	ELECTRIC/ELECTRONIC CONTROL VALVE (2-WAY)
S	SOLENOID VALVE
	THERMOSTATIC EXPANSION VALVE
	AUTOMATIC AIR DAMPER (PARALLEL BLADE)
	AUTOMATIC AIR DAMPER (OPPOSED BLADE)
	BUTTERFLY CONTROL DAMPER
	PNEUMATIC ACTUATOR
A	MAIN TEMPERATURE CONTROL AIR SOURCE
EA	EXHAUST AIR
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
F.L.	FAIL LAST
F.O.	FAIL OPEN
SF	SUPPLY FAN
SC	SMOKE CONTROL FAN
RF	RETURN AIR FAN
EF	EXHAUST AIR FAN
	FILTER BANK
	BASE MOUNTED PUMP
	IN LINE PUMP
ASD	ADJUSTABLE SPEED DRIVE
VFD	VARIABLE FREQUENCY DRIVE
C C	COOLING COIL
H C	HEATING COIL
HR C	HEAT RECOVERY COIL
G B	GAS BURNER
R134a	REFRIGERANT R134a SENSOR (WALL MOUNTED)
HI	HIGH LEVEL SWITCH
LOW	LOW LEVEL SWITCH
	VENTURI AIRFLOW CONTROL VALVE
	TRANSFORMER
MS	MOTOR STARTER
RD	ROTATION DETECTOR
SD	SMOKE DETECTOR
CS	CURRENT SENSOR
MOD	MODULATING
SC	SPEED COMMAND
AOM	ADDRESSABLE OUTPUT MODULE (FIRE ALARM INTERFACE)
COM	NETWORK COMMUNICATION INTERFACE POINT
T	LIQUID IMMERSION TEMPERATURE SENSOR
RH	RELATIVE HUMIDITY SENSOR
FZ	LOW LIMIT TEMPERATURE SWITCH

GENERAL NOTES:

A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF ALL DEMOLITION DEBRIS AND MATERIALS OFF SITE IN A PROPER LEGAL MANNER.

B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL SHUTDOWNS OF AIR HANDLING, CHILLED WATER, HOT WATER, STEAM, ETC. SYSTEMS WITH CORNELL UNIVERSITY FACILITY PERSONNEL FOR TIE-IN CONNECTIONS. THE CONTRACTOR SHALL ASSIST THE UNIVERSITY PERSONNEL IN SHUTTING DOWN, DRAINING, VENTING, ETC. OF SYSTEM TO FACILITATE THE INTENDED WORK.

C. DAMAGE TO EXISTING SYSTEMS (EQUIPMENT, PIPING, DUCTWORK, CONTROLS AND ACCESSORIES) SHOWN TO REMAIN AS A RESULT OF THE CONTRACTORS WORK IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND/OR REPLACE WITH SIMILAR OR LIKE MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

D. THE DEMOLITION DRAWINGS SHOWN IN GENERAL MAJOR EQUIPMENT, PIPING AND DUCTWORK REMOVALS. THE INTENT IS NOT TO IDENTIFY ALL MISCELLANEOUS PIPING, PIPING ACCESSORIES, DUCTWORK, DUCTWORK ACCESSORIES, SUPPORTS, CONTROLS, CONTROL ACCESSORIES, CONTROLWIRING, CONDUIT, AND CONTROL PNEUMATIC TUBING AND ACCESSORIES TO BE DISCONNECTED AND REMOVED BUT IS THE REQUIREMENTS UNDER THIS CONTRACT. NO EQUIPMENT, PIPING OR DUCTWORK SHALL BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

E. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATIONS AND PRIOR CONSTRUCTION DOCUMENTS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BID. NO ALLOWANCE WILL BE MADE FOR ADDITIONAL COSTS DUE TO CONTRACTORS FAILURE TO VERIFY EXISTING CONDITIONS AND DIMENSIONS.

F. THE OWNER OCCUPIED AREAS INCLUDE SENSITIVE EQUIPMENT AND RESEARCH WHICH MUST NOT BE INTERRUPTED OR OTHERWISE DISTRUPTED WITHOUT PRIOR NOTICE AND APPROPRIATE PLANNING.

G. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

H. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND ALL DIMENSIONS BEFORE FABRICATION.

I. ALL MATERIAL AND EQUIPMENT SHALL BE NEW.

J. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTION AND LOCAL, STATE, AND NATIONAL CODES.

K. CONTRACTOR SHALL PROVIDE ALL PENETRATIONS THROUGH WALLS, FLOORS AND ROOFS NECESSARY FOR INSTALLATION OF MECHANICAL SYSTEMS. DO NOT DRILL, CORE OR CUT ANY PORTION OF COLUMNS, BEAMS, JOISTS OR BRIDGING RIBS.

L. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL AIR VENTS OR DRAINS FOR THE INSTALLATION OF THE PIPING SYSTEMS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AIR VENTS AT ALL SYSTEM HIGH POINTS AND AT AREAS WITHIN THE PIPING SYSTEMS THAT COULD ACCUMULATE OR TRAP AIR PREVENTING PROPER OPERATION OF THE SYSTEMS. DRAINS SHALL BE PROVIDED AT ALL LOW POINTS WITHIN THE PIPING SYSTEMS TO FACILITATE DRAINING OF THE SYSTEM COMPLETELY.

M. THE DUCTWORK SIZES AND TYPES (ROUND, FLAT OVAL AND RECTANGULAR) WERE SELECTED FOR WITHIN THE BUILDING. IN ADDITION, THE DUCTWORK SIZES AND TYPES WERE CHOSEN TO ALLOW SPACE ABOVE THE CEILINGS FOR FUTURE DUCTWORK, PIPING AND/OR CONDUIT. IT IS NOT ACCEPTABLE FOR THE CONTRACTOR TO CHANGE THE SIZE OR TYPE OF DUCTWORK FOR BIDDING OR INSTALLATION UNLESS SPECIFICALLY APPROVED BY THE ENGINEER.

N. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE LOCATIONS OF ALL ROOM TEMPERATURE SENSORS WITH THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL SCHEDULE A WALK THROUGH WITH THE ARCHITECT/ENGINEER TO LOCATE SENSOR LOCATIONS PRIOR TO INSTALLATION. THE TEMPERATURE SENSORS SHALL BE INSTALLED IN ALIGNMENT WITH ELECTRICAL, FIRE, AND OTHER DEVICES WHEN LOCATED ON COMMON WALLS. THE MOUNTING HEIGHT FOR ALL TEMPERATURE SENSORS SHALL BE 3'-10" TO CENTERLINE OF DEVICE.

O. ALL PENETRATIONS THROUGH WALLS, FLOORS AND ROOFS SHALL BE PROVIDED FOR INSTALLATION OF MECHANICAL SYSTEMS INCLUDING, BUT NOT LIMITED TO, EQUIPMENT, DUCTWORK, PIPING, ETC. ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE FIRE/SMOKE STOPPED. ALL PENETRATIONS THROUGH NON RATED WALLS SHALL BE SEALED WITH A NON-HARDENING SEALANT ON BOTH SIDES OF WALL PENETRATION TO REDUCE NOISE TRANSMISSION.

P. THE CONTRACTOR SHALL PROVIDE MINIMUM 16x16 ACCESS DOORS WITHIN GYPSUM CEILINGS, GYPSUM WALLS AND MASONRY WALLS AT FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS TO ALLOW FULL ACCESS TO DUCTWORK MOUNTED ACCESS DOORS FOR SERVICING THE DAMPERS. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR CEILING AND WALL CONSTRUCTION TYPES AND RATING REQUIREMENTS FOR SELECTION OF ACCESS DOOR TYPES. REFER TO SPECIFICATIONS FOR ACCESS DOOR REQUIREMENTS. AT SMOKE DAMPER AND COMBINATION FIRE/SMOKE DAMPER INSTALLATIONS, THE CONTRACTOR SHALL PROVIDE A MINIMUM 16x16 ACCESS DOOR AT THE DUCT MOUNTED SMOKE DETECTORS.

Q. REFER TO ARCHITECTURAL PLANS FOR PHASING AND AREAS WITH AFTER HOURS WORK REQUIREMENTS.

R. PROVIDE A VOLUME DAMPER AT EACH DIFFUSER AND GRILLE FOR PROPER BALANCING REGARDLESS IF SHOWN ON DRAWINGS. ALL VOLUME DAMPERS SHALL BE INSTALLED AT THE MAIN BRANCH TAKEOFF WITH A MINIMUM OF 6'-0" FROM DIFFUSER OR GRILLE CONNECTION. IF FLEXIBLE DUCTWORK IS UTILIZED FOR FINAL CONNECTION AT GRILLES, THE CROSS SECTIONAL AREA OF THE FLEXIBLE DUCTWORK SHALL NOT BE LESS THAN THE CROSS SECTIONAL AREA OF THE GRILLE NECK. REFER TO DRAWING DETAILS FOR FURTHER REQUIREMENTS.

S. PROVIDE A MINIMUM OF THREE DUCTWORK DIAMETERS OF STRAIGHT DUCT UPSTREAM OF ALL AIR TERMINAL UNITS FOR PROPER FLOW MEASURING AT FLOW SENSOR. A MINIMUM OF 1'-6" SHALL BE PROVIDED IN FRONT OF CONTROL ACCESS ENCLOSURES AT ALL TERMINAL UNITS. NO PIPING OR CONDUIT SHALL BE DIRECTLY INSTALLED BELOW AIR TERMINAL UNIT ACCESS ENCLOSURES THAT WILL PROHIBIT ACCESS UP TO THE CONTROL ENCLOSURE. COORDINATE THESE REQUIREMENTS WITH ALL OTHER TRADES ON THE PROJECT. IF PROPER SERVICE ACCESS IS NOT MAINTAINED BECAUSE OF POOR COORDINATION, THE CONTRACTOR SHALL RELOCATE OBSTRUCTIONS AT NO ADDITIONAL COST.

T. REFER TO G-SERIES DRAWINGS FOR FIRESTOP THROUGH PENETRATION REQUIREMENTS.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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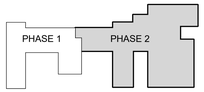
Notes:



Keyplan

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Checked By NMT
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Date August 31, 2026

Revisions

MECHANICAL GENERAL NOTES AND SYMBOLS LIST - PHASE 2

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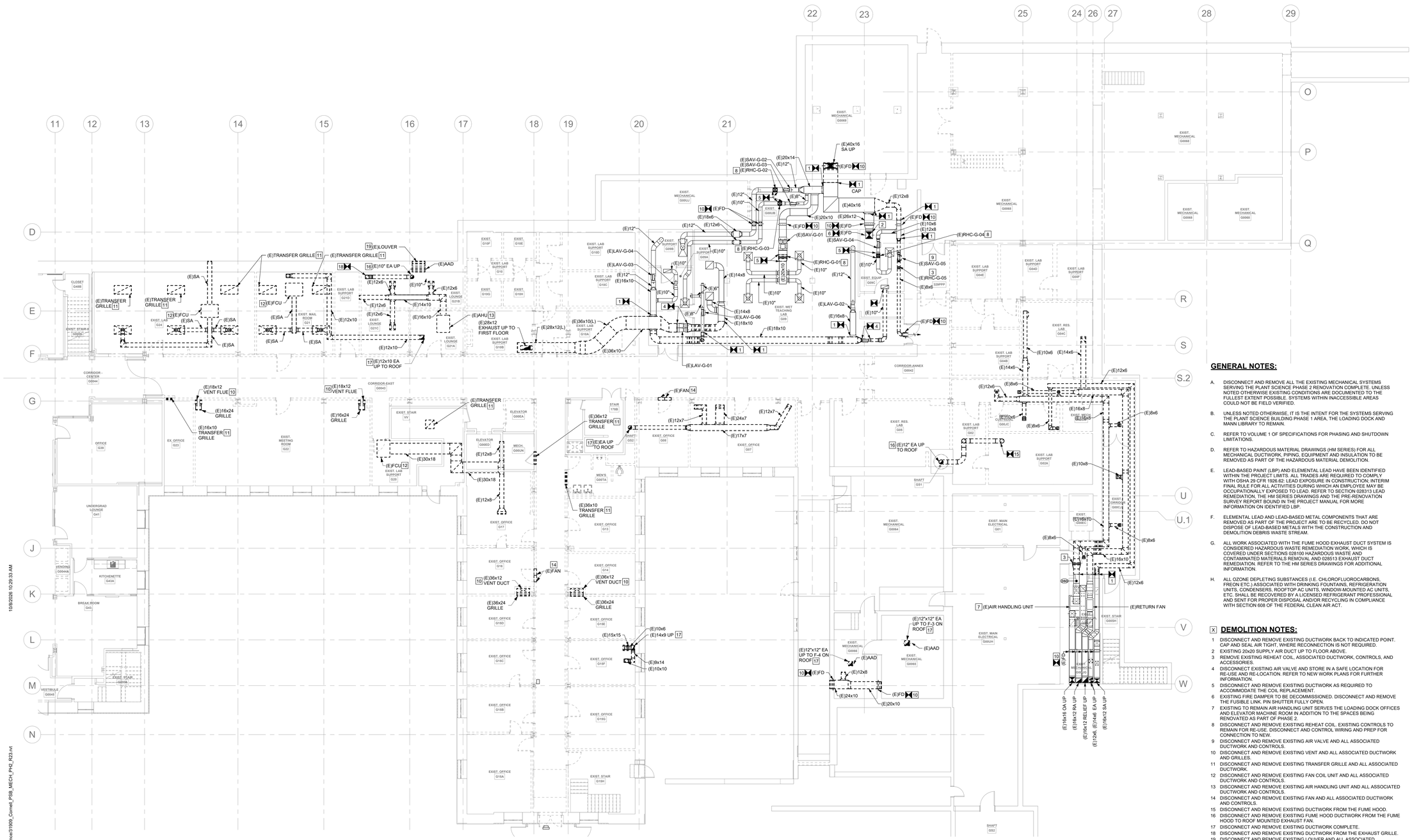

1 MECHANICAL GROUND FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL THE EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE. UNLESS NOTED OTHERWISE EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE. SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL WORK ASSOCIATED WITH THE FUME HOOD EXHAUST DUCT SYSTEM IS CONSIDERED HAZARDOUS WASTE REMEDIATION WORK, WHICH IS COVERED UNDER SECTIONS 028100 HAZARDOUS WASTE AND CONTAMINATED MATERIALS REMOVAL AND 028513 EXHAUST DUCT REMEDIATION. REFER TO THE HM SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

H. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE EXISTING DUCTWORK BACK TO INDICATED POINT. CAP AND SEAL AIR TIGHT, WHERE RECONNECTION IS NOT REQUIRED.
2 EXISTING 20x20 SUPPLY AIR DUCT UP TO FLOOR ABOVE.
3 REMOVE EXISTING REHEAT COIL, ASSOCIATED DUCTWORK, CONTROLS, AND ACCESSORIES.
4 DISCONNECT EXISTING AIR VALVE AND STORE IN A SAFE LOCATION FOR RE-USE AND RE-LOCATION. REFER TO NEW WORK PLANS FOR FURTHER INFORMATION.
5 DISCONNECT AND REMOVE EXISTING DUCTWORK AS REQUIRED TO ACCOMMODATE THE COIL REPLACEMENT.
6 EXISTING FIRE DAMPER TO BE DECOMMISSIONED. DISCONNECT AND REMOVE THE FUSIBLE LINK. PIN SHUTTER FULLY OPEN.
7 EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE LOADING DOCK OFFICES AND ELEVATOR MACHINE ROOM IN ADDITION TO THE SPACES BEING REMOVATED AS PART OF PHASE 2.
8 DISCONNECT AND REMOVE EXISTING REHEAT COIL. EXISTING CONTROLS TO REMAIN FOR RE-USE. DISCONNECT AND CONTROL WIRING AND PREP FOR CONNECTION TO NEW.
9 DISCONNECT AND REMOVE EXISTING AIR VALVE AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
10 DISCONNECT AND REMOVE EXISTING VENT AND ALL ASSOCIATED DUCTWORK AND GRILLES.
11 DISCONNECT AND REMOVE EXISTING TRANSFER GRILLE AND ALL ASSOCIATED DUCTWORK.
12 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
13 DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
14 DISCONNECT AND REMOVE EXISTING FAN AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
15 DISCONNECT AND REMOVE EXISTING DUCTWORK FROM THE FUME HOOD.
16 DISCONNECT AND REMOVE EXISTING FUME HOOD DUCTWORK FROM THE FUME HOOD TO ROOF MOUNTED EXHAUST FAN.
17 DISCONNECT AND REMOVE EXISTING DUCTWORK COMPLETE.
18 DISCONNECT AND REMOVE EXISTING DUCTWORK FROM THE EXHAUST GRILLE.
19 DISCONNECT AND REMOVE EXISTING LOUVER AND ALL ASSOCIATED DUCTWORK AND CONTROLS.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
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Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
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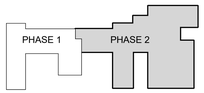
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

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Drawing By	ZMH
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Filename	
Date	August 31, 2026

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MECHANICAL GROUND FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

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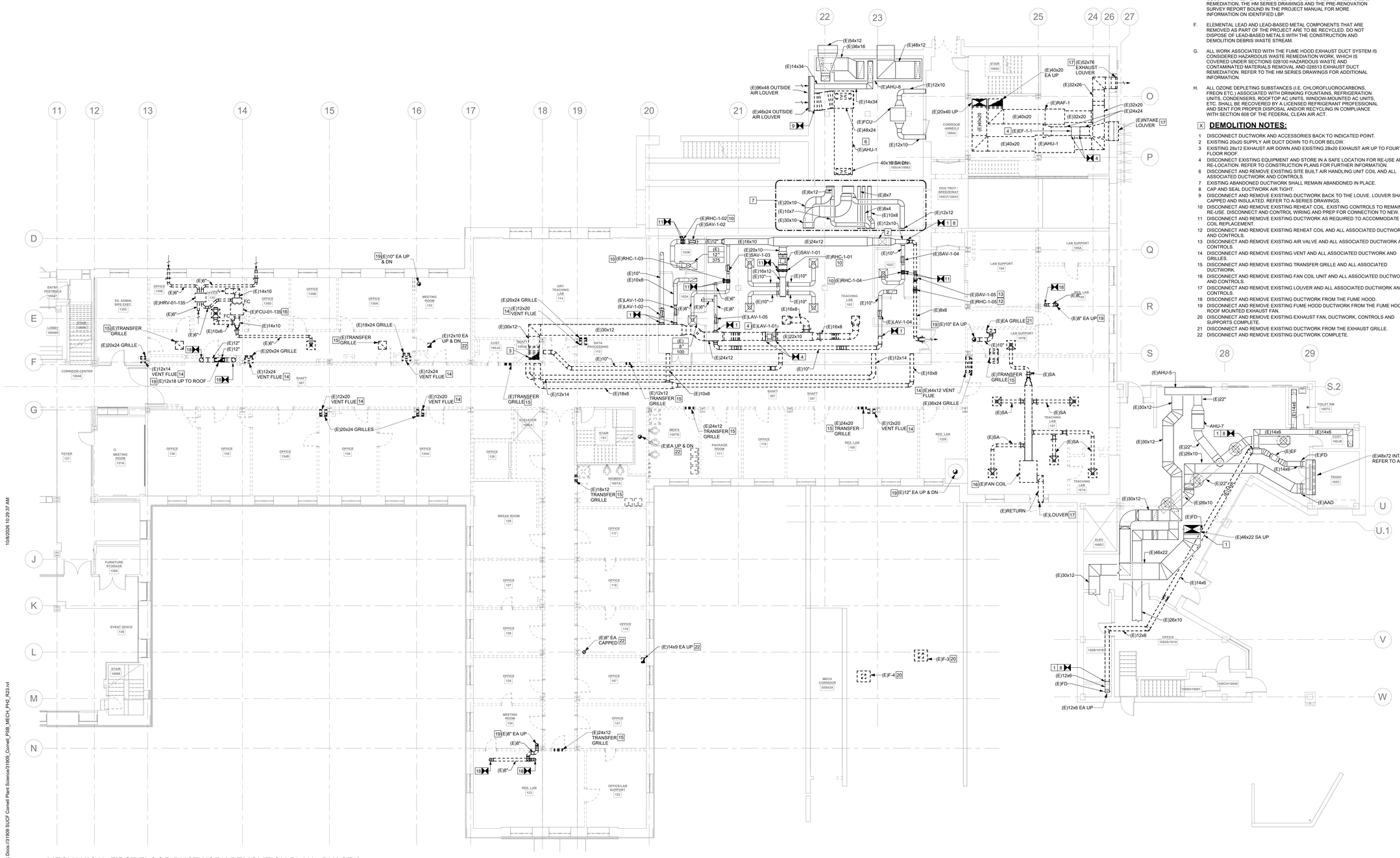

1 MECHANICAL FIRST FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL THE EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE. UNLESS NOTED OTHERWISE EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE. SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION. THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL WORK ASSOCIATED WITH THE FUME HOOD EXHAUST DUCT SYSTEM IS CONSIDERED HAZARDOUS WASTE REMEDIATION WORK, WHICH IS COVERED UNDER SECTIONS 028100 HAZARDOUS WASTE AND CONTAMINATED MATERIALS REMOVAL AND 028513 EXHAUST DUCT REMEDIATION. REFER TO THE HM SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

H. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

X DEMOLITION NOTES:

1 DISCONNECT DUCTWORK AND ACCESSORIES BACK TO INDICATED POINT.
2 EXISTING 20x20 SUPPLY AIR DUCT DOWN TO FLOOR BELOW.
3 EXISTING 28x12 EXHAUST AIR DOWN AND EXISTING 28x20 EXHAUST AIR UP TO FOURTH FLOOR ROOF.
4 DISCONNECT EXISTING EQUIPMENT AND STORE IN A SAFE LOCATION FOR RE-USE AND RE-LOCATION. REFER TO CONSTRUCTION PLANS FOR FURTHER INFORMATION.
6 DISCONNECT AND REMOVE EXISTING SITE BUILT AIR HANDLING UNIT COIL AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
7 EXISTING ABANDONED DUCTWORK SHALL REMAIN ABANDONED IN PLACE.
8 CAP AND SEAL DUCTWORK AIR TIGHT.
9 DISCONNECT AND REMOVE EXISTING DUCTWORK BACK TO THE LOUVE. LOUVER SHALL BE CAPPED AND INSULATED. REFER TO A-SERIES DRAWINGS.
10 DISCONNECT AND REMOVE EXISTING REHEAT COIL. EXISTING CONTROLS TO REMAIN FOR RE-USE. DISCONNECT AND CONTROL WIRING AND PREP FOR CONNECTION TO NEW.
11 DISCONNECT AND REMOVE EXISTING DUCTWORK AS REQUIRED TO ACCOMMODATE THE COIL REPLACEMENT.
12 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
13 DISCONNECT AND REMOVE EXISTING AIR VALVE AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
14 DISCONNECT AND REMOVE EXISTING VENT AND ALL ASSOCIATED DUCTWORK AND GRILLES.
15 DISCONNECT AND REMOVE EXISTING TRANSFER GRILLE AND ALL ASSOCIATED DUCTWORK.
16 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
17 DISCONNECT AND REMOVE EXISTING LOUVER AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
18 DISCONNECT AND REMOVE EXISTING DUCTWORK FROM THE FUME HOOD.
19 DISCONNECT AND REMOVE EXISTING FUME HOOD DUCTWORK FROM THE FUME HOOD TO ROOF MOUNTED EXHAUST FAN.
20 DISCONNECT AND REMOVE EXISTING EXHAUST FAN, DUCTWORK, CONTROLS AND SUPPORTS COMPLETE.
21 DISCONNECT AND REMOVE EXISTING DUCTWORK FROM THE EXHAUST GRILLE.
22 DISCONNECT AND REMOVE EXISTING DUCTWORK COMPLETE.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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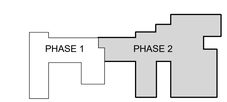
Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL FIRST FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

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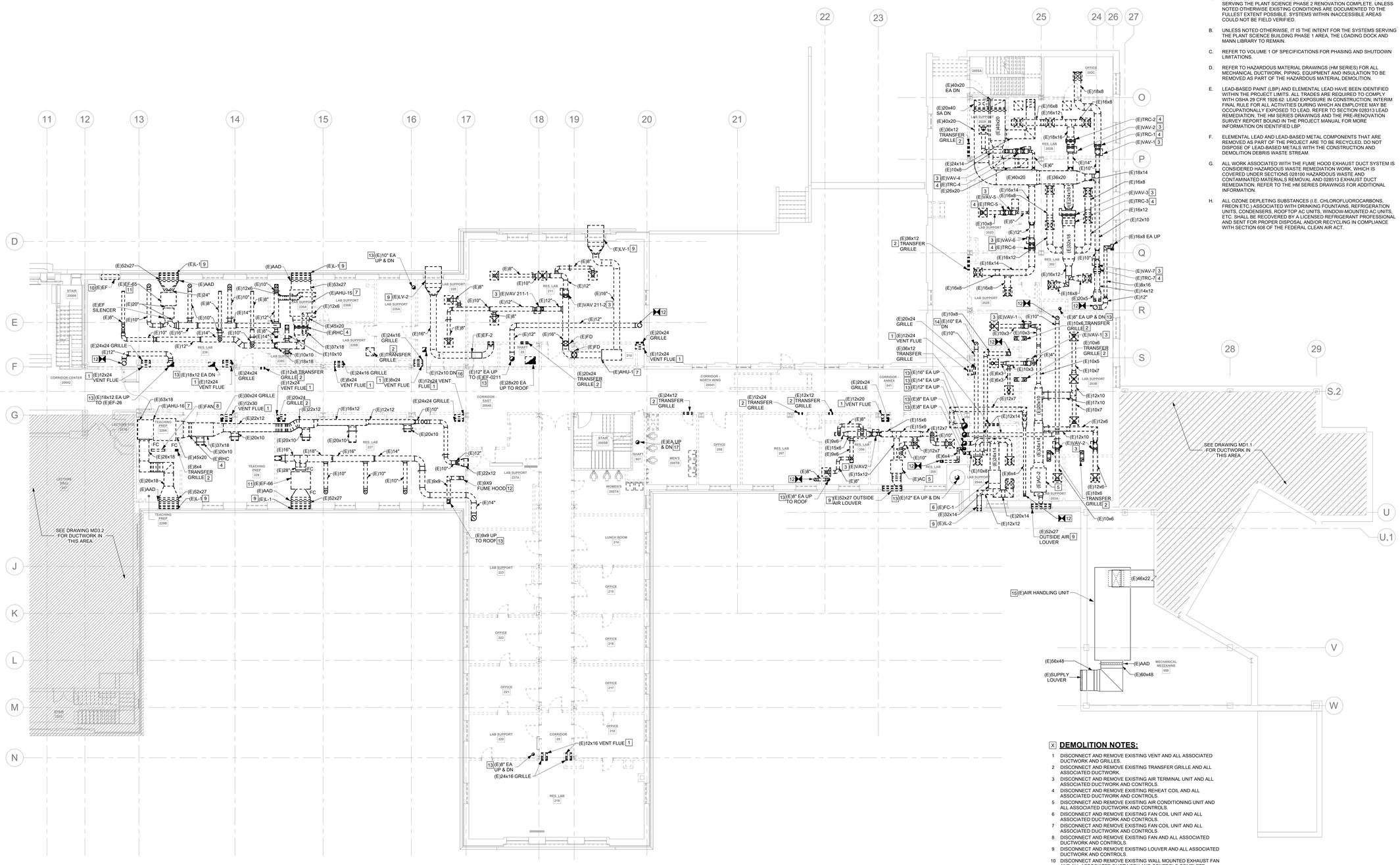

1 MECHANICAL SECOND FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL THE EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE. UNLESS NOTED OTHERWISE EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE. SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL WORK ASSOCIATED WITH THE FUME HOOD EXHAUST DUCT SYSTEM IS CONSIDERED HAZARDOUS WASTE REMEDIATION WORK, WHICH IS COVERED UNDER SECTIONS 028100 HAZARDOUS WASTE AND CONTAMINATED MATERIALS REMOVAL AND 028513 EXHAUST DUCT REMEDIATION. REFER TO THE HM SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

H. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE EXISTING VENT AND ALL ASSOCIATED DUCTWORK AND GRILLES.
2 DISCONNECT AND REMOVE EXISTING TRANSFER GRILLE AND ALL ASSOCIATED DUCTWORK.
3 DISCONNECT AND REMOVE EXISTING AIR TERMINAL UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
4 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
5 DISCONNECT AND REMOVE EXISTING AIR CONDITIONING UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
6 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
7 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
8 DISCONNECT AND REMOVE EXISTING FAN AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
9 DISCONNECT AND REMOVE EXISTING LOUVER AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
10 DISCONNECT AND REMOVE EXISTING WALL MOUNTED EXHAUST FAN AND ALL ASSOCIATED DUCTWORK AND CONTROLS COMPLETE.
11 DISCONNECT AND REMOVE EXISTING EXHAUST FAN AND ALL ASSOCIATED DUCTWORK AND CONTROLS COMPLETE.
12 DISCONNECT AND REMOVE EXISTING DUCTWORK FROM THE FUME HOOD.
13 DISCONNECT AND REMOVE EXISTING FUME HOOD DUCTWORK FROM THE FUME HOOD TO ROOF MOUNTED EXHAUST FAN.
14 DISCONNECT AND REMOVE EXISTING FUME HOOD DUCTWORK DOWN TO THE FLOOR BELOW.
15 EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES IN ADDITION TO THE SPACES BEING RENOVATED AS PART OF PHASE 2.
16 DISCONNECT AND REMOVE EXISTING DUCTWORK TO THE FLOOR BELOW.
17 DISCONNECT AND REMOVE EXISTING DUCTWORK COMPLETE.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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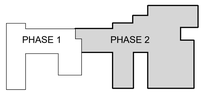

Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL SECOND FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

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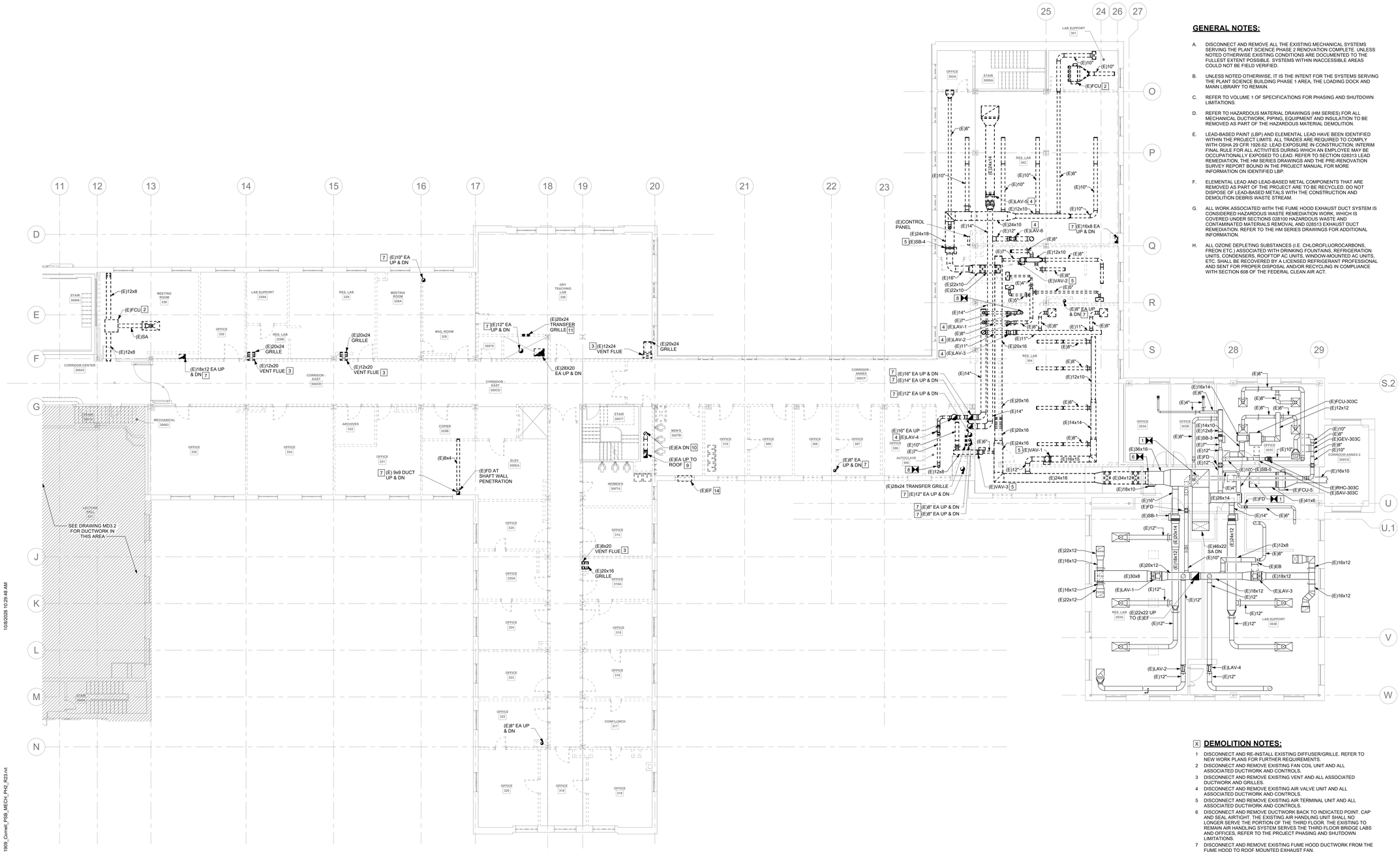

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL THE EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE. UNLESS NOTED OTHERWISE EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE. SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 025313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL WORK ASSOCIATED WITH THE FUME HOOD EXHAUST DUCT SYSTEM IS CONSIDERED HAZARDOUS WASTE REMEDIATION WORK, WHICH IS COVERED UNDER SECTIONS 028100 HAZARDOUS WASTE AND CONTAMINATED MATERIALS REMOVAL AND 028513 EXHAUST DUCT REMEDIATION. REFER TO THE HM SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

H. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

X DEMOLITION NOTES:

1 DISCONNECT AND RE-INSTALL EXISTING DIFFUSER/GRILLE. REFER TO NEW WORK PLANS FOR FURTHER REQUIREMENTS.
2 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
3 DISCONNECT AND REMOVE EXISTING VENT AND ALL ASSOCIATED DUCTWORK AND GRILLES.
4 DISCONNECT AND REMOVE EXISTING AIR VALVE UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
5 DISCONNECT AND REMOVE EXISTING AIR TERMINAL UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
6 DISCONNECT AND REMOVE DUCTWORK BACK TO INDICATED POINT. CAP AND SEAL AIRTIGHT. THE EXISTING AIR HANDLING UNIT SHALL NO LONGER SERVE THE PORTION OF THE THIRD FLOOR. THE EXISTING TO REMAIN AIR HANDLING SYSTEM SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS.
7 DISCONNECT AND REMOVE EXISTING FUME HOOD DUCTWORK FROM THE FUME HOOD TO ROOF MOUNTED EXHAUST FAN.
8 DISCONNECT AND REMOVE EXISTING DUCTWORK FROM THE FUME HOOD.
9 DISCONNECT AND REMOVE EXISTING DUCTWORK TO THE FLOOR ABOVE.
10 DISCONNECT AND REMOVE EXISTING DUCTWORK TO THE FLOOR BELOW.
11 DISCONNECT AND REMOVE EXISTING TRANSFER GRILLE AND ALL ASSOCIATED DUCTWORK.
14 DISCONNECT AND REMOVE WALL MOUNTED EXHAUST FAN AND ALL ASSOCIATED DUCTWORK AND CONTROLS COMPLETE.

1 MECHANICAL THIRD FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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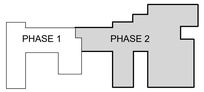

Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL THIRD FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

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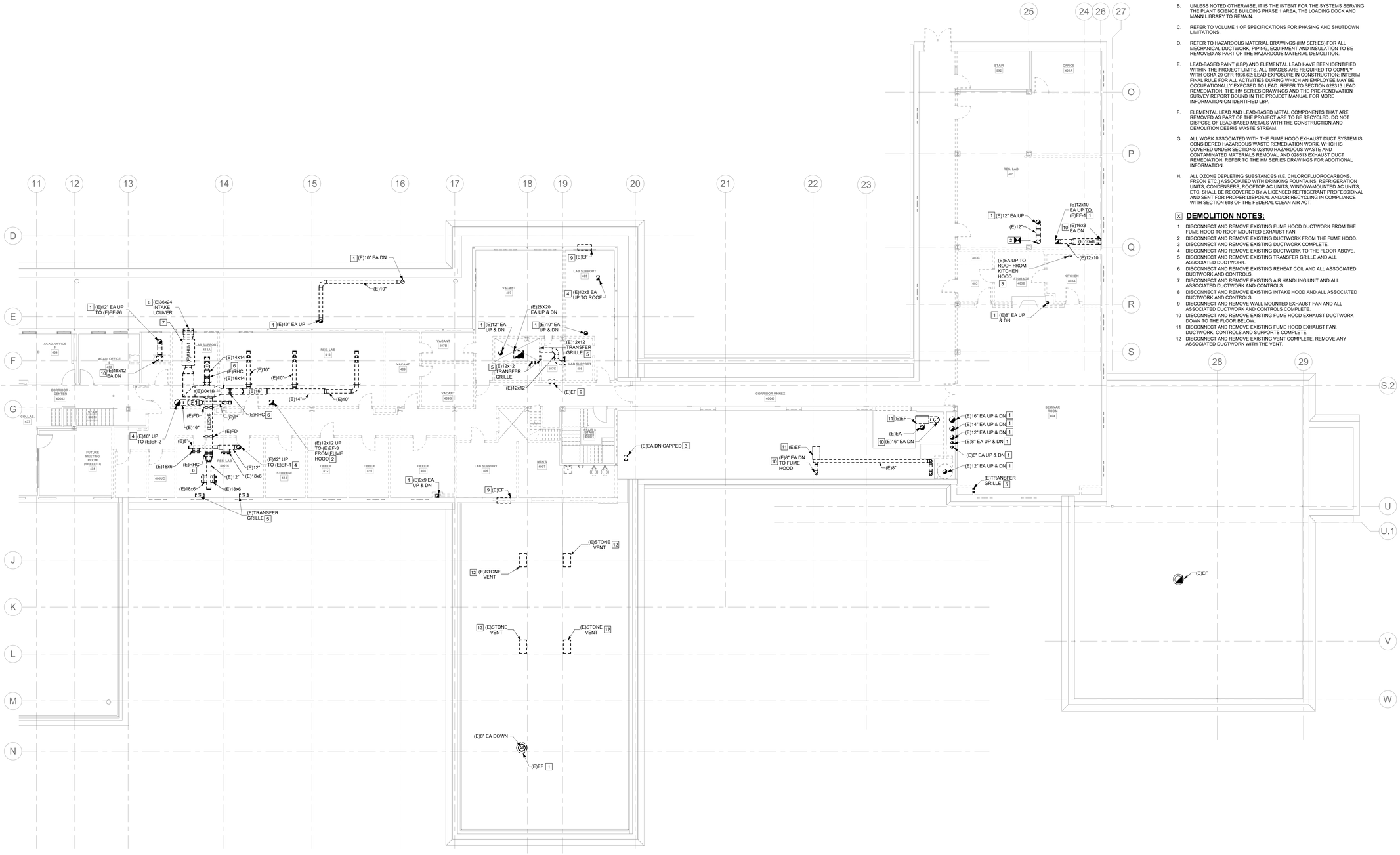

1 MECHANICAL FOURTH FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL THE EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE. UNLESS NOTED OTHERWISE EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE. SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL WORK ASSOCIATED WITH THE FUME HOOD EXHAUST DUCT SYSTEM IS CONSIDERED HAZARDOUS WASTE REMEDIATION WORK, WHICH IS COVERED UNDER SECTIONS 028100 HAZARDOUS WASTE AND CONTAMINATED MATERIALS REMOVAL AND 028513 EXHAUST DUCT REMEDIATION. REFER TO THE HM SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

H. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

X DEMOLITION NOTES:

1. DISCONNECT AND REMOVE EXISTING FUME HOOD DUCTWORK FROM THE FUME HOOD TO ROOF MOUNTED EXHAUST FAN.
2. DISCONNECT AND REMOVE EXISTING DUCTWORK FROM THE FUME HOOD.
3. DISCONNECT AND REMOVE EXISTING DUCTWORK COMPLETE.
4. DISCONNECT AND REMOVE EXISTING DUCTWORK TO THE FLOOR ABOVE.
5. DISCONNECT AND REMOVE EXISTING TRANSFER GRILLE AND ALL ASSOCIATED DUCTWORK.
6. DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
7. DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
8. DISCONNECT AND REMOVE EXISTING INTAKE HOOD AND ALL ASSOCIATED DUCTWORK AND CONTROLS.
9. DISCONNECT AND REMOVE WALL MOUNTED EXHAUST FAN AND ALL ASSOCIATED DUCTWORK AND CONTROLS COMPLETE.
10. DISCONNECT AND REMOVE EXISTING FUME HOOD EXHAUST DUCTWORK DOWN TO THE FLOOR BELOW.
11. DISCONNECT AND REMOVE EXISTING FUME HOOD EXHAUST FAN, DUCTWORK, CONTROLS AND SUPPORTS COMPLETE.
12. DISCONNECT AND REMOVE EXISTING VENT COMPLETE. REMOVE ANY ASSOCIATED DUCTWORK WITH THE VENT.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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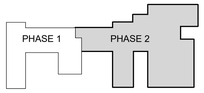
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL FOURTH FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · NICHOLAS DANIEL LAMPE · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 0018443

BID DOCUMENTS
Scale: 1/8" = 1'-0"

MD1.4

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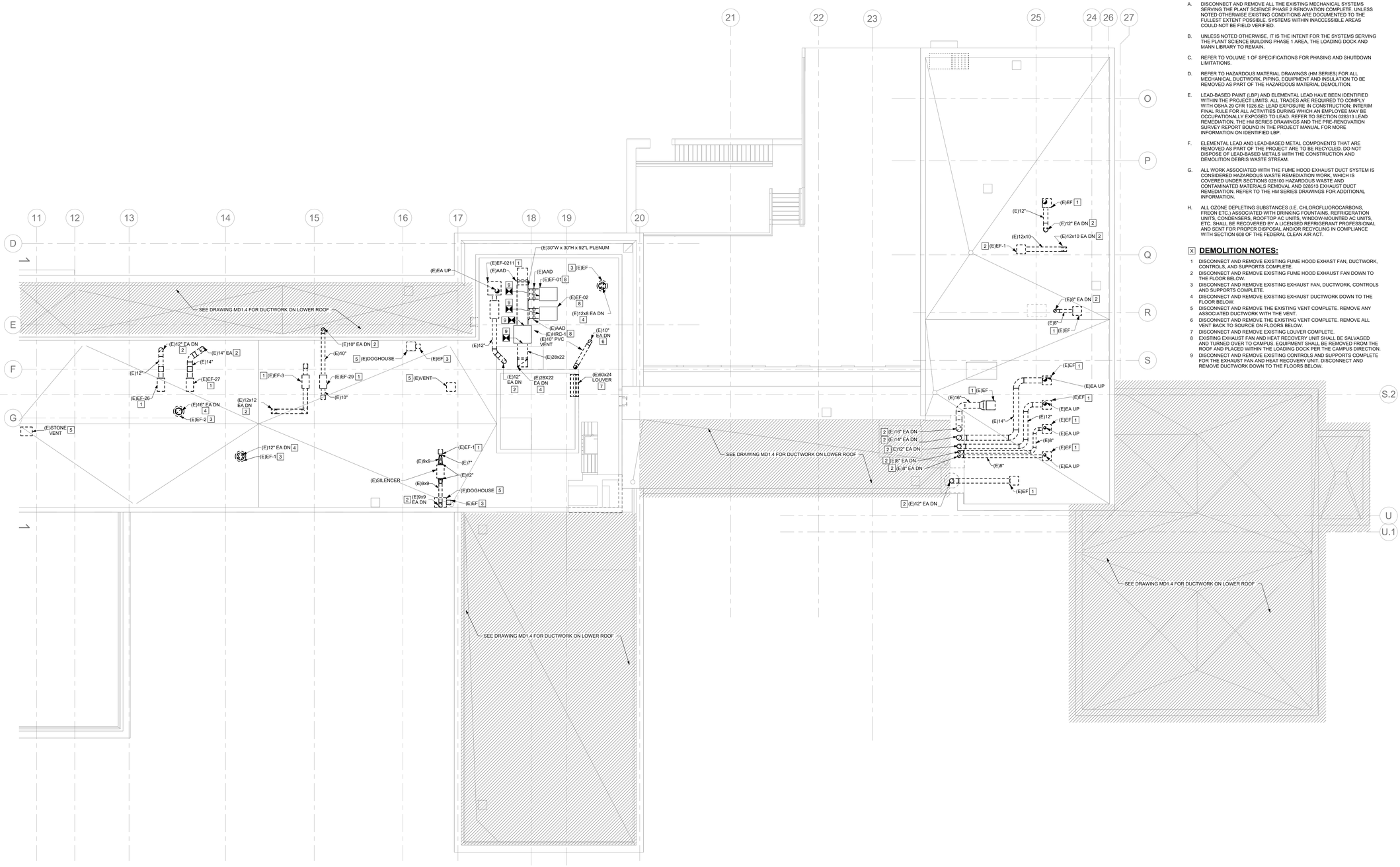

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL THE EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE. UNLESS NOTED OTHERWISE EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE. SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL WORK ASSOCIATED WITH THE FUME HOOD EXHAUST DUCT SYSTEM IS CONSIDERED HAZARDOUS WASTE REMEDIATION WORK, WHICH IS COVERED UNDER SECTIONS 028100 HAZARDOUS WASTE AND CONTAMINATED MATERIALS REMOVAL AND 028513 EXHAUST DUCT REMEDIATION. REFER TO THE HM SERIES DRAWINGS FOR ADDITIONAL INFORMATION.

H. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE EXISTING FUME HOOD EXHAST FAN, DUCTWORK, CONTROLS, AND SUPPORTS COMPLETE.
2 DISCONNECT AND REMOVE EXISTING FUME HOOD EXHAUST FAN DOWN TO THE FLOOR BELOW.
3 DISCONNECT AND REMOVE EXISTING EXHAUST FAN, DUCTWORK, CONTROLS AND SUPPORTS COMPLETE.
4 DISCONNECT AND REMOVE EXISTING EXHAUST DUCTWORK DOWN TO THE FLOOR BELOW.
5 DISCONNECT AND REMOVE THE EXISTING VENT COMPLETE. REMOVE ANY ASSOCIATED DUCTWORK WITH THE VENT.
6 DISCONNECT AND REMOVE THE EXISTING VENT COMPLETE. REMOVE ALL VENT BACK TO SOURCE ON FLOORS BELOW.
7 DISCONNECT AND REMOVE EXISTING LOUVER COMPLETE.
8 EXISTING EXHAUST FAN AND HEAT RECOVERY UNIT SHALL BE SALVAGED AND TURNED OVER TO CAMPUS. EQUIPMENT SHALL BE REMOVED FROM THE ROOF AND PLACED WITHIN THE LOADING DOCK PER THE CAMPUS DIRECTION.
9 DISCONNECT AND REMOVE EXISTING CONTROLS AND SUPPORTS COMPLETE FOR THE EXHAUST FAN AND HEAT RECOVERY UNIT. DISCONNECT AND REMOVE DUCTWORK DOWN TO THE FLOORS BELOW.

1 MECHANICAL ROOF DUCTWORK DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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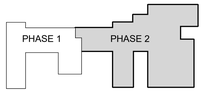

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL ROOF DUCTWORK DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL MILLER · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
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MD1.5

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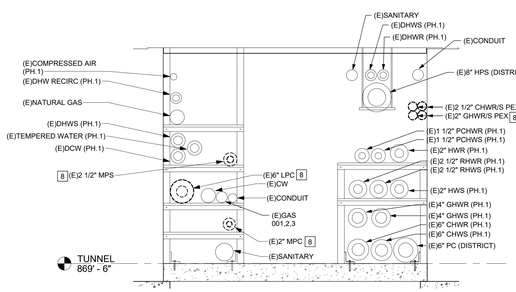

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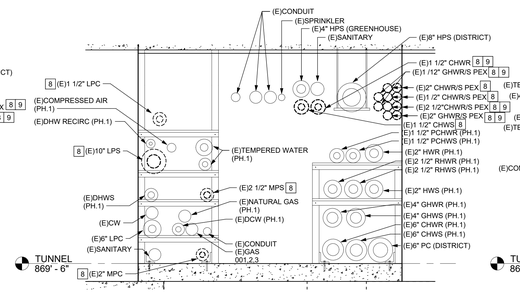
NOT TO SCALE



3 EXISTING N/S TUNNEL SECTION 2
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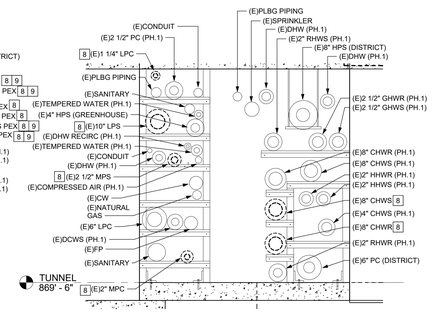

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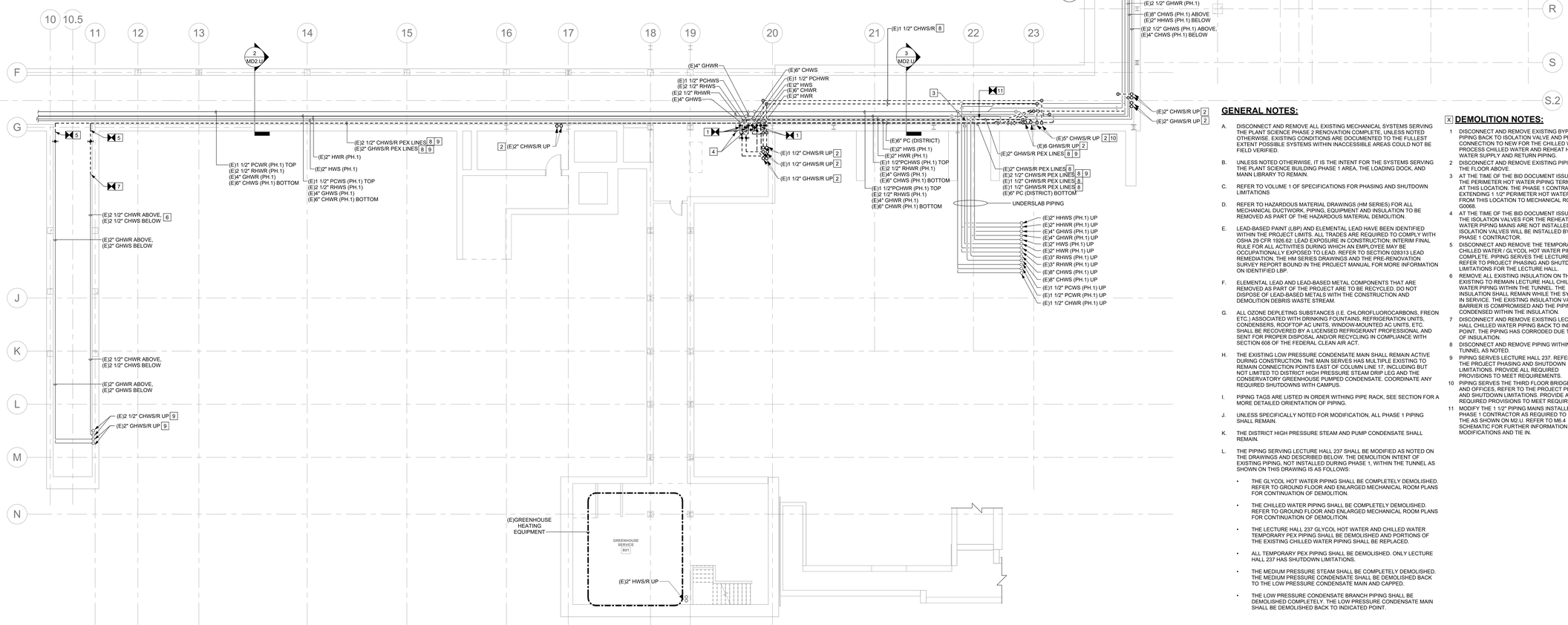
NOT TO SCALE



1 MECHANICAL TUNNEL PIPING DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE. UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 02831/3 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. THE EXISTING LOW PRESSURE CONDENSATE MAIN SHALL REMAIN ACTIVE DURING CONSTRUCTION. THE MAIN SERVES HAS MULTIPLE EXISTING TO REMAIN CONNECTION POINTS EAST OF COLUMN LINE 17, INCLUDING BUT NOT LIMITED TO DISTRICT HIGH PRESSURE STEAM DRIP LEG AND THE CONSERVATORY GREENHOUSE PUMPED CONDENSATE. COORDINATE ANY REQUIRED SHUTDOWNS WITH CAMPUS.

I. PIPING TAGS ARE LISTED IN ORDER WITHING PIPE RACK, SEE SECTION FOR A MORE DETAILED ORIENTATION OF PIPING.

J. UNLESS SPECIFICALLY NOTED FOR MODIFICATION, ALL PHASE 1 PIPING SHALL REMAIN.

K. THE DISTRICT HIGH PRESSURE STEAM AND PUMP CONDENSATE SHALL REMAIN.

L. THE PIPING SERVING LECTURE HALL 237 SHALL BE MODIFIED AS NOTED ON THE DRAWINGS AND DESCRIBED BELOW. THE DEMOLITION INTENT OF EXISTING PIPING, NOT INSTALLED DURING PHASE 1, WITHIN THE TUNNEL AS SHOWN ON THIS DRAWING IS AS FOLLOWS:

- THE GLYCOL HOT WATER PIPING SHALL BE COMPLETELY DEMOLISHED. REFER TO GROUND FLOOR AND ENLARGED MECHANICAL ROOM PLANS FOR CONTINUATION OF DEMOLITION.
- THE CHILLED WATER PIPING SHALL BE COMPLETELY DEMOLISHED. REFER TO GROUND FLOOR AND ENLARGED MECHANICAL ROOM PLANS FOR CONTINUATION OF DEMOLITION.
- THE LECTURE HALL 237 GLYCOL HOT WATER AND CHILLED WATER TEMPORARY PEX PIPING SHALL BE DEMOLISHED AND PORTIONS OF THE EXISTING CHILLED WATER PIPING SHALL BE REPLACED.
- ALL TEMPORARY PEX PIPING SHALL BE DEMOLISHED. ONLY LECTURE HALL 237 HAS SHUTDOWN LIMITATIONS.
- THE MEDIUM PRESSURE STEAM SHALL BE COMPLETELY DEMOLISHED. THE MEDIUM PRESSURE CONDENSATE SHALL BE DEMOLISHED BACK TO THE LOW PRESSURE CONDENSATE MAIN AND CAPPED.
- THE LOW PRESSURE CONDENSATE BRANCH PIPING SHALL BE DEMOLISHED COMPLETELY. THE LOW PRESSURE CONDENSATE MAIN SHALL BE DEMOLISHED BACK TO INDICATED POINT.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE EXISTING BYPASS PIPING BACK TO ISOLATION VALVE AND PREP FOR CONNECTION TO NEW FOR THE CHILLED WATER, PROCESS CHILLED WATER AND REHEAT HOT WATER SUPPLY AND RETURN PIPING.

2 DISCONNECT AND REMOVE EXISTING PIPING TO THE FLOOR ABOVE.

3 AT THE TIME OF THE BID DOCUMENT ISSUANCE, THE PERIMETER HOT WATER PIPING TERMINATES AT THIS LOCATION. THE PHASE 1 CONTRACTOR IS EXTENDING 1 1/2" PERIMETER HOT WATER PIPING FROM THIS LOCATION TO MECHANICAL ROOM G0068.

4 AT THE TIME OF THE BID DOCUMENT ISSUANCE, THE ISOLATION VALVES FOR THE REHEAT HOT WATER PIPING MAINS ARE NOT INSTALLED. THE ISOLATION VALVES WILL BE INSTALLED BY THE PHASE 1 CONTRACTOR.

5 DISCONNECT AND REMOVE THE TEMPORARY CHILLED WATER / GLYCOL HOT WATER PIPING COMPLETE. PIPING SERVES THE LECTURE HALL. REFER TO PROJECT PHASING AND SHUTDOWN LIMITATIONS FOR THE LECTURE HALL.

6 REMOVE ALL EXISTING INSULATION ON THE EXISTING TO REMAIN LECTURE HALL CHILLED WATER PIPING WITHIN THE TUNNEL. THE INSULATION SHALL REMAIN WHILE THE SYSTEM IS IN SERVICE. THE EXISTING INSULATION VAPOR BARRIER IS COMPROMISED AND THE PIPING HAS CONDENSED WITHIN THE INSULATION.

7 DISCONNECT AND REMOVE EXISTING LECTURE HALL CHILLED WATER PIPING BACK TO INDICATED POINT. THE PIPING HAS CORRODED DUE TO LACK OF INSULATION.

8 DISCONNECT AND REMOVE PIPING WITHIN THE TUNNEL AS NOTED.

9 PIPING SERVES LECTURE HALL 237. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS. PROVIDE ALL REQUIRED PROVISIONS TO MEET REQUIREMENTS.

10 PIPING SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS. PROVIDE ALL REQUIRED PROVISIONS TO MEET REQUIREMENTS.

11 MODIFY THE 1 1/2" PIPING MAINS INSTALLED BY PHASE 1 CONTRACTOR AS REQUIRED TO MAKE THE AS SHOWN ON M2.U. REFER TO M6.4 SCHEMATIC FOR FURTHER INFORMATION ON THE MODIFICATIONS AND TIE IN.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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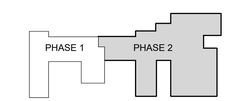

Keyplan

Job Number	31909.00
Drawing By	ZMH
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Date	August 31, 2026

Revisions

MECHANICAL TUNNEL PIPING DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · NICHOLAS TRUMBET DANIEL GALLAGHER · 094525 · LICENSED PROFESSIONAL ENGINEER
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Scale: As indicated

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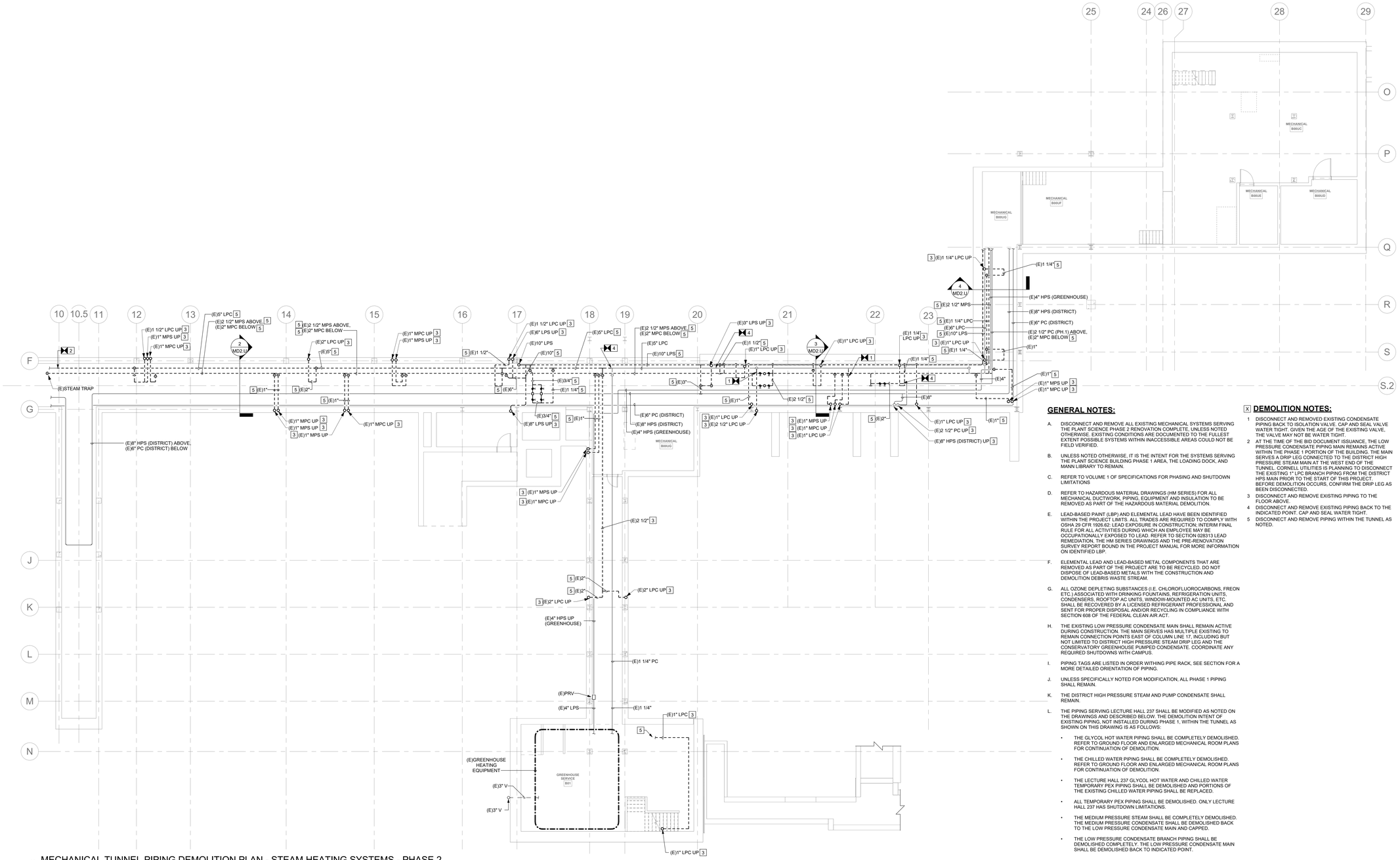

1 MECHANICAL TUNNEL PIPING DEMOLITION PLAN - STEAM HEATING SYSTEMS - PHASE 2

1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE, UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION.

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION. THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. THE EXISTING LOW PRESSURE CONDENSATE MAIN SHALL REMAIN ACTIVE DURING CONSTRUCTION. THE MAIN SERVES HAS MULTIPLE EXISTING TO REMAIN CONNECTION POINTS EAST OF COLUMN LINE 17, INCLUDING BUT NOT LIMITED TO DISTRICT HIGH PRESSURE STEAM DRIP LEG AND THE CONSERVATORY GREENHOUSE PUMPED CONDENSATE. COORDINATE ANY REQUIRED SHUTDOWNS WITH CAMPUS.

I. PIPING TAGS ARE LISTED IN ORDER WITHING PIPE RACK, SEE SECTION FOR A MORE DETAILED ORIENTATION OF PIPING.

J. UNLESS SPECIFICALLY NOTED FOR MODIFICATION, ALL PHASE 1 PIPING SHALL REMAIN.

K. THE DISTRICT HIGH PRESSURE STEAM AND PUMP CONDENSATE SHALL REMAIN.

L. THE PIPING SERVING LECTURE HALL 237 SHALL BE MODIFIED AS NOTED ON THE DRAWINGS AND DESCRIBED BELOW. THE DEMOLITION INTENT OF EXISTING PIPING, NOT INSTALLED DURING PHASE 1, WITHIN THE TUNNEL AS SHOWN ON THIS DRAWING IS AS FOLLOWS:

- THE GLYCOL HOT WATER PIPING SHALL BE COMPLETELY DEMOLISHED. REFER TO GROUND FLOOR AND ENLARGED MECHANICAL ROOM PLANS FOR CONTINUATION OF DEMOLITION.
- THE CHILLED WATER PIPING SHALL BE COMPLETELY DEMOLISHED. REFER TO GROUND FLOOR AND ENLARGED MECHANICAL ROOM PLANS FOR CONTINUATION OF DEMOLITION.
- THE LECTURE HALL 237 GLYCOL HOT WATER AND CHILLED WATER TEMPORARY PEX PIPING SHALL BE DEMOLISHED AND PORTIONS OF THE EXISTING CHILLED WATER PIPING SHALL BE REPLACED.
- ALL TEMPORARY PEX PIPING SHALL BE DEMOLISHED. ONLY LECTURE HALL 237 HAS SHUTDOWN LIMITATIONS.
- THE MEDIUM PRESSURE STEAM SHALL BE COMPLETELY DEMOLISHED. THE MEDIUM PRESSURE CONDENSATE SHALL BE DEMOLISHED BACK TO THE LOW PRESSURE CONDENSATE MAIN AND CAPPED.
- THE LOW PRESSURE CONDENSATE BRANCH PIPING SHALL BE DEMOLISHED COMPLETELY. THE LOW PRESSURE CONDENSATE MAIN SHALL BE DEMOLISHED BACK TO INDICATED POINT.

X DEMOLITION NOTES:

1. DISCONNECT AND REMOVED EXISTING CONDENSATE PIPING BACK TO ISOLATION VALVE. CAP AND SEAL VALVE WATER TIGHT. GIVEN THE AGE OF THE EXISTING VALVE, THE VALVE MAY NOT BE WATER TIGHT.
2. AT THE TIME OF THE BID DOCUMENT ISSUANCE, THE LOW PRESSURE CONDENSATE PIPING MAIN REMAINS ACTIVE WITHIN THE PHASE 1 PORTION OF THE BUILDING. THE MAIN SERVES A DRIP LEG CONNECTED TO THE DISTRICT HIGH PRESSURE STEAM MAIN AT THE WEST END OF THE TUNNEL. CORNELL UTILITIES IS PLANNING TO DISCONNECT THE EXISTING 1" LPC BRANCH PIPING FROM THE DISTRICT HPS MAIN PRIOR TO THE START OF THIS PROJECT. BEFORE DEMOLITION OCCURS, CONFIRM THE DRIP LEG AS BEEN DISCONNECTED.
3. DISCONNECT AND REMOVE EXISTING PIPING TO THE FLOOR ABOVE.
4. DISCONNECT AND REMOVE EXISTING PIPING BACK TO THE INDICATED POINT. CAP AND SEAL WATER TIGHT.
5. DISCONNECT AND REMOVE PIPING WITHIN THE TUNNEL AS NOTED.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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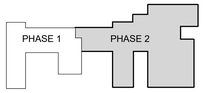

Keyplan

Job Number	31909.00
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Revisions

MECHANICAL TUNNEL PIPING DEMOLITION PLAN - STEAM HEATING SYSTEMS - PHASE 2

STATE OF NEW YORK · LUKE T. DANIEL GRAVELLE · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 0018443

BID DOCUMENTS
Scale: 1/8" = 1'-0"

MD2.UA

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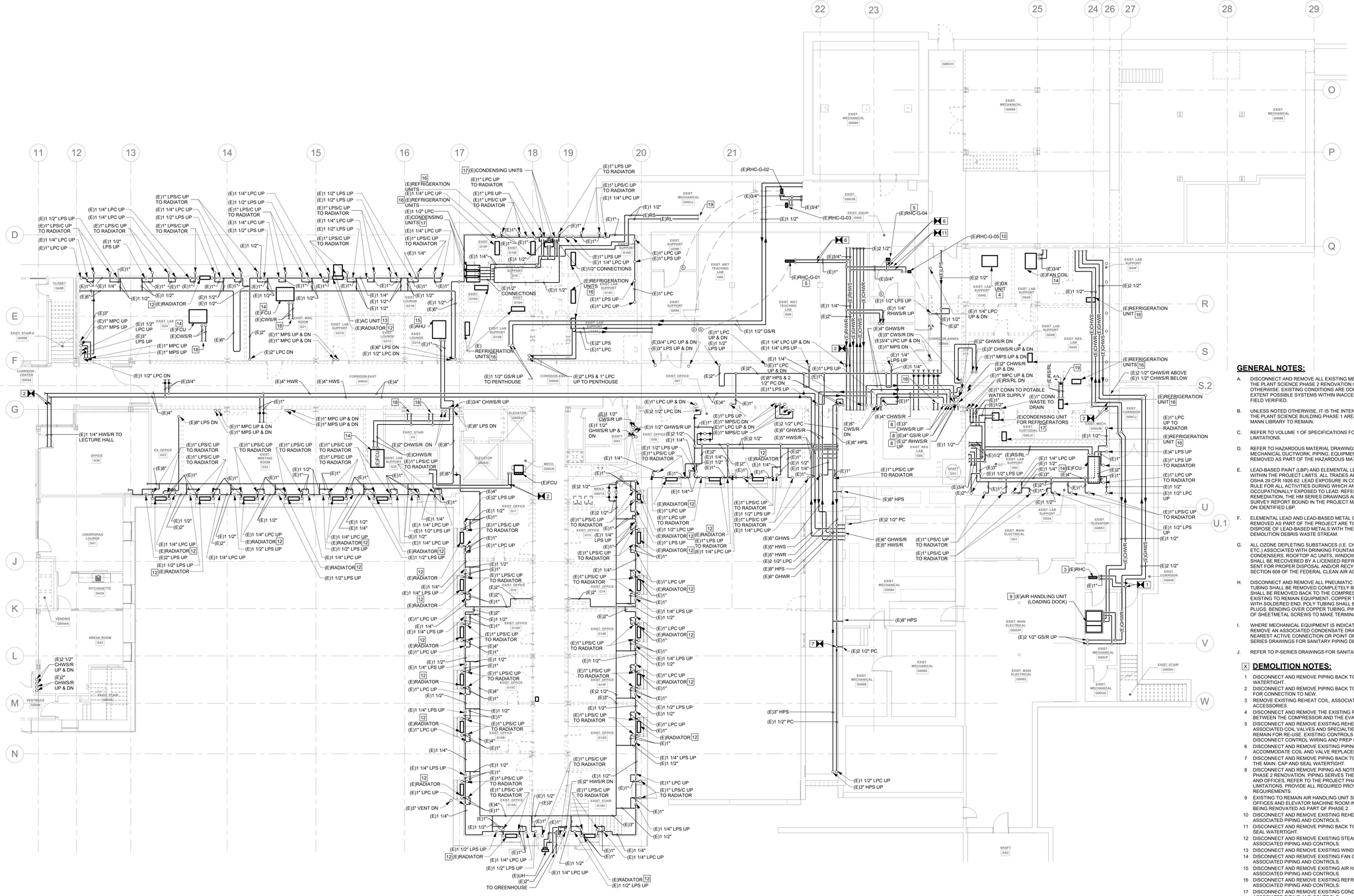

1 MECHANICAL GROUND FLOOR PIPING DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE, UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028513 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC., SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. DISCONNECT AND REMOVE ALL PNEUMATIC TUBING BACK TO SOURCE. TUBING SHALL BE REMOVED COMPLETELY BACK TO THE MAIN. THE MAIN SHALL BE REMOVED BACK TO THE COMPRESSOR, UNLESS IT FEEDS EXISTING TO REMAIN EQUIPMENT. COPPER TUBING SHALL BE TERMINATED WITH SOLDERED END. POLY TUBING SHALL BE TERMINATED USING BRASS PLUGS. BENDING OVER COPPER TUBING, PINCHING/BRAZING, AND THE USE OF SHEETMETAL SCREWS TO MAKE TERMINATIONS ARE NOT ACCEPTABLE.

I. WHERE MECHANICAL EQUIPMENT IS INDICATED TO BE DEMOLISHED, REMOVE AN ASSOCIATED CONDENSATE DRAIN PIPING BACK TO THE NEAREST ACTIVE CONNECTION OR POINT OF TERMINATION. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

J. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE PIPING BACK TO MAIN. CAP AND SEAL WATERTIGHT.
2 DISCONNECT AND REMOVE PIPING BACK TO INDICATED POINT. PREP FOR CONNECTION TO NEW.
3 REMOVE EXISTING REHEAT COIL, ASSOCIATED PIPING, CONTROLS, AND ACCESSORIES.
4 DISCONNECT AND REMOVE THE EXISTING REFRIGERANT PIPING BETWEEN THE COMPRESSOR AND THE EVAPORATOR.
5 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED COIL VALVES AND SPECIALTIES. ISOLATION VALVES CAN REMAIN FOR RE-USE. EXISTING CONTROLS TO REMAIN FOR RE-USE. DISCONNECT CONTROL WIRING AND PREP FOR CONNECTION TO NEW.
6 DISCONNECT AND REMOVE EXISTING PIPING AS REQUIRED TO ACCOMMODATE COIL AND VALVE REPLACEMENT.
7 DISCONNECT AND REMOVE PIPING BACK TO THE ISOLATION VALVE AT THE MAIN. CAP AND SEAL WATERTIGHT.
8 DISCONNECT AND REMOVE PIPING AS NOTED TO ACCOMMODATE THE PHASE 2 RENOVATION. PIPING SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS. PROVIDE ALL REQUIRED PROVISIONS TO MEET REQUIREMENTS.
9 EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE LOADING DOCK OFFICES AND ELEVATOR MACHINE ROOM IN ADDITION OT THE SPACES BEING RENOVATED AS PART OF PHASE 2.
10 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED PIPING AND CONTROLS.
11 DISCONNECT AND REMOVE PIPING BACK TO INDICATED POINT. CAP AND SEAL WATERTIGHT.
12 DISCONNECT AND REMOVE EXISTING STEAM RADIATOR AND ALL ASSOCIATED PIPING AND CONTROLS.
13 DISCONNECT AND REMOVE EXISTING WINDOW AC UNIT COMPLETE.
14 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
15 DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
16 DISCONNECT AND REMOVE EXISTING REFRIGERATION UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
17 DISCONNECT AND REMOVE EXISTING CONDENSING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
18 DISCONNECT AND REMOVE EXISTING CHILLED WATER PIPING COMPLETE.
19 DISCONNECT AND REMOVE EXISTING REFRIGERANT PIPING COMPLETE.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
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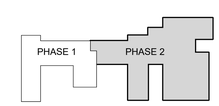
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL GROUND FLOOR PIPING DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL HALLER · 094525 · LICENSED PROFESSIONAL ENGINEER
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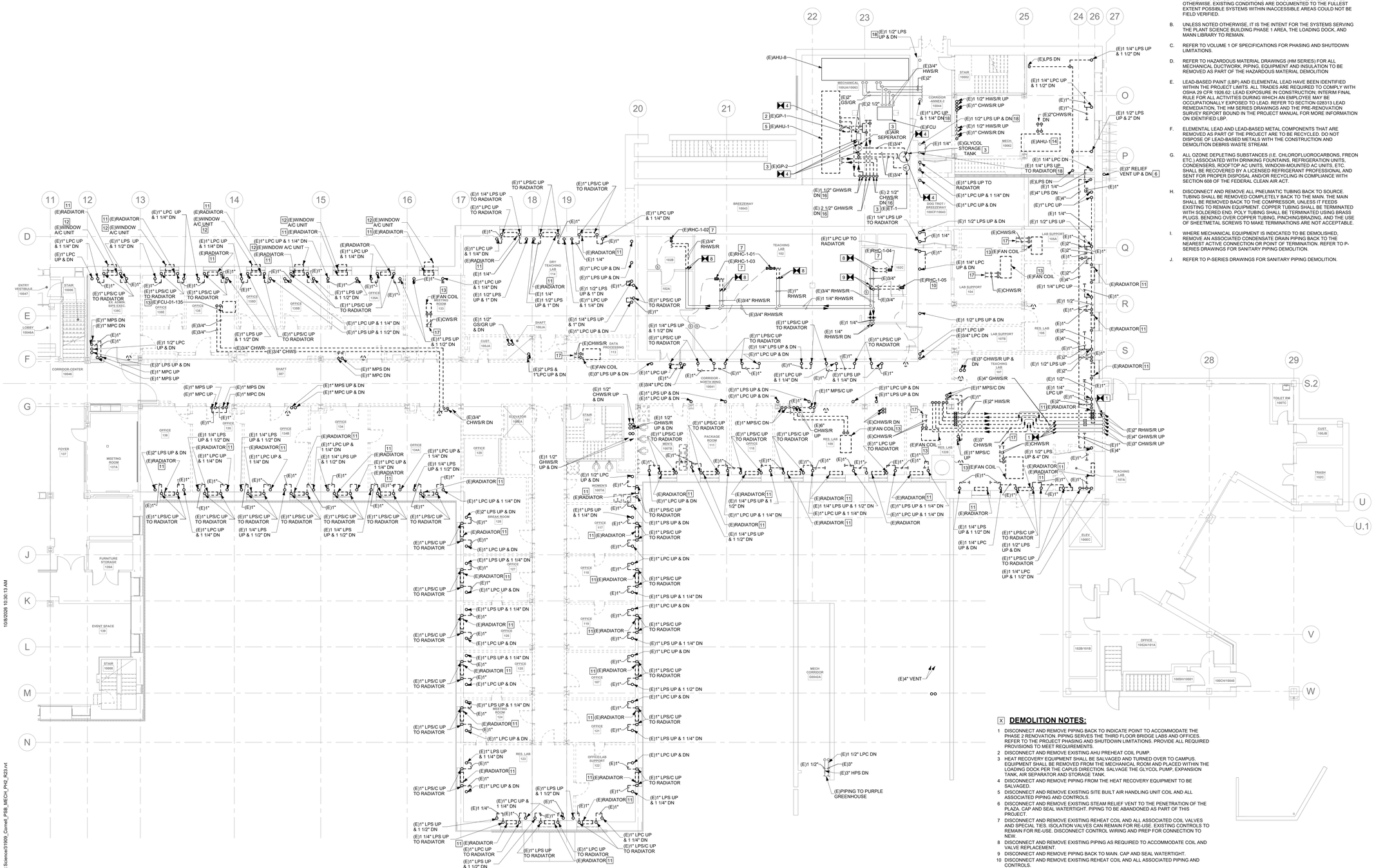

1 MECHANICAL FIRST FLOOR PIPING DEMOLITION PLAN - PHASE 2
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B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

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X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE PIPING BACK TO INDICATE POINT TO ACCOMMODATE THE PHASE 2 RENOVATION. PIPING SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS. PROVIDE ALL REQUIRED PROVISIONS TO MEET REQUIREMENTS.
2 DISCONNECT AND REMOVE EXISTING AHU PREHEAT COIL PUMP.
3 HEAT RECOVERY EQUIPMENT SHALL BE SALVAGED AND TURNED OVER TO CAMPUS. EQUIPMENT SHALL BE REMOVED FROM THE MECHANICAL ROOM AND PLACED WITHIN THE LOADING DOCK PER THE CAPUS DIRECTION. SALVAGE THE GLYCOL PUMP, EXPANSION TANK, AIR SEPARATOR AND STORAGE TANK.
4 DISCONNECT AND REMOVE PIPING FROM THE HEAT RECOVERY EQUIPMENT TO BE SALVAGED.
5 DISCONNECT AND REMOVE EXISTING SITE BUILT AIR HANDLING UNIT COIL AND ALL ASSOCIATED PIPING AND CONTROLS.
6 DISCONNECT AND REMOVE EXISTING STEAM RELIEF VENT TO THE PENETRATION OF THE PLAZA. CAP AND SEAL WATERTIGHT. PIPING TO BE ABANDONED AS PART OF THIS PROJECT.
7 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED COIL VALVES AND SPECIAL TIES. ISOLATION VALVES CAN REMAIN FOR RE-USE. EXISTING CONTROLS TO REMAIN FOR RE-USE. DISCONNECT CONTROL WIRING AND PREP FOR CONNECTION TO NEW.
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14 DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
16 DISCONNECT AND REMOVE PIPING TO THE FLOOR BELOW.
17 DISCONNECT AND REMOVE EXISTING CHILLED WATER PIPING COMPLETE.
18 EXISTING STEAM AND CONDENSATE PIPING WITHIN CORRIDOR TO MANN LIBRARY IS CONCEALED WITHIN THE WALL AND ABOVE THE INACCESSIBLE CEILING. PIPING SHALL BE ABANDONED IN PLACE.

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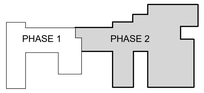

Keyplan

Job Number	31909.00
Drawing By	ZMH
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Date	August 31, 2026

Revisions

MECHANICAL FIRST FLOOR PIPING DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · NICHOLAS MICHAEL TOMASETT · DANIEL ZIMMERMAN · 094525 · LICENSED PROFESSIONAL ENGINEER

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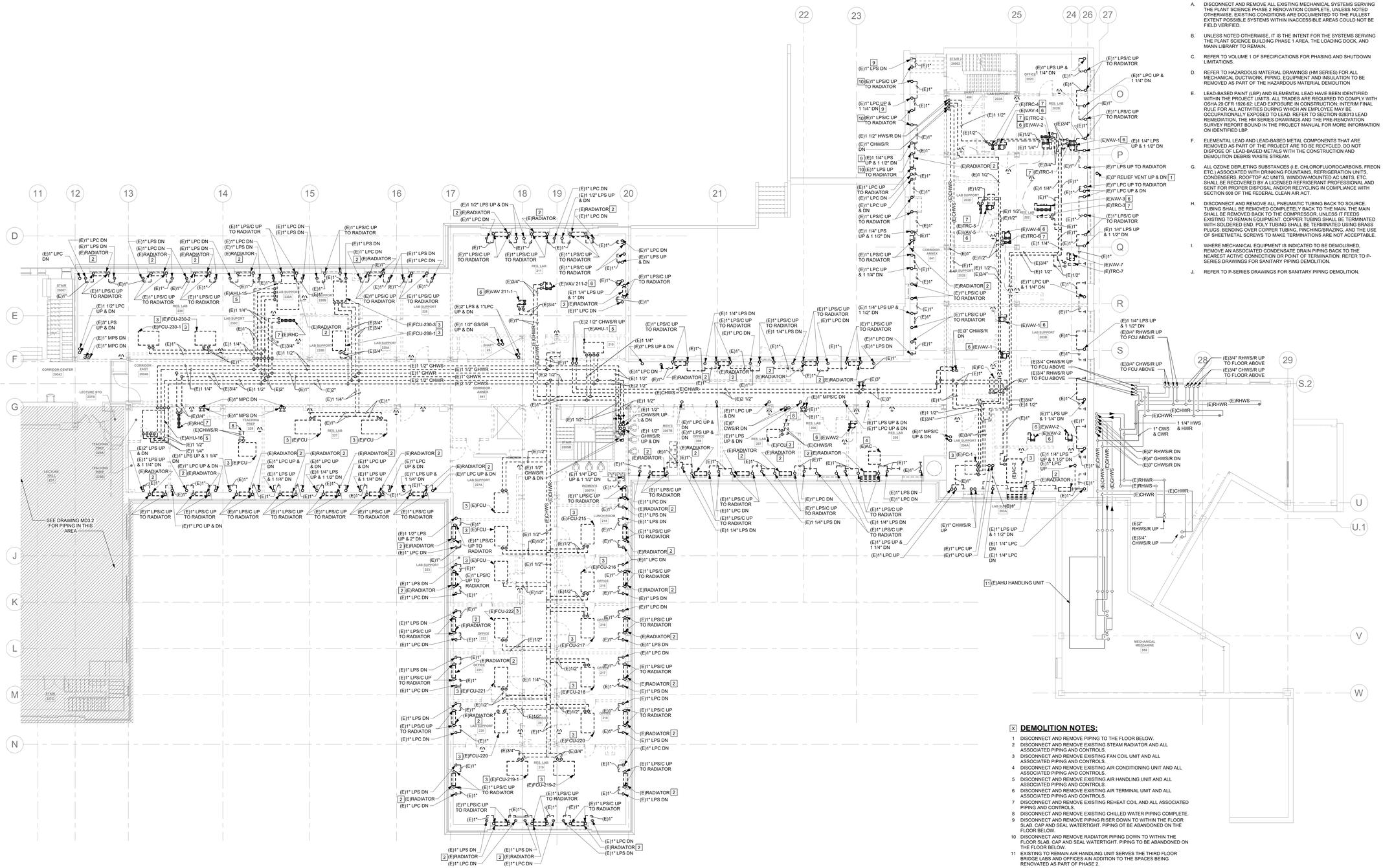

GENERAL NOTES:

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B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 02813 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. DISCONNECT AND REMOVE ALL PNEUMATIC TUBING BACK TO SOURCE. TUBING SHALL BE REMOVED COMPLETELY BACK TO THE MAIN. THE MAIN SHALL BE REMOVED BACK TO THE COMPRESSOR, UNLESS IT FEEDS EXISTING TO REMAIN EQUIPMENT. COPPER TUBING SHALL BE TERMINATED WITH SOLDERED END. POLY TUBING SHALL BE TERMINATED USING BRASS PLUGS. BENDING OVER COPPER TUBING, PINCHING/BRAZING, AND THE USE OF SHEETMETAL SCREWS TO MAKE TERMINATIONS ARE NOT ACCEPTABLE.

I. WHERE MECHANICAL EQUIPMENT IS INDICATED TO BE DEMOLISHED, REMOVE AN ASSOCIATED CONDENSATE DRAIN PIPING BACK TO THE NEAREST ACTIVE CONNECTION OR POINT OF TERMINATION. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

J. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

X DEMOLITION NOTES:

1. DISCONNECT AND REMOVE PIPING TO THE FLOOR BELOW.
2. DISCONNECT AND REMOVE EXISTING STEAM RADIATOR AND ALL ASSOCIATED PIPING AND CONTROLS.
3. DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
4. DISCONNECT AND REMOVE EXISTING AIR CONDITIONING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
5. DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
6. DISCONNECT AND REMOVE EXISTING AIR TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
7. DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED PIPING AND CONTROLS.
8. DISCONNECT AND REMOVE EXISTING CHILLED WATER PIPING COMPLETE.
9. DISCONNECT AND REMOVE PIPING RISER DOWN TO WITHIN THE FLOOR SLAB. CAP AND SEAL WATERTIGHT. PIPING OT BE ABANDONED ON THE FLOOR BELOW.
10. DISCONNECT AND REMOVE RADIATOR PIPING DOWN TO WITHIN THE FLOOR SLAB. CAP AND SEAL WATERTIGHT. PIPING TO BE ABANDONED ON THE FLOOR BELOW.
11. EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES AIN ADDITION TO THE SPACES BEING RENOVATED AS PART OF PHASE 2.

1 MECHANICAL SECOND FLOOR PIPING DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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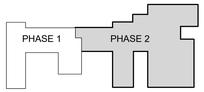

Keyplan

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STATE OF NEW YORK · NICHOLAS MICHAEL TOMPKINS · 094525 · LICENSED PROFESSIONAL ENGINEER

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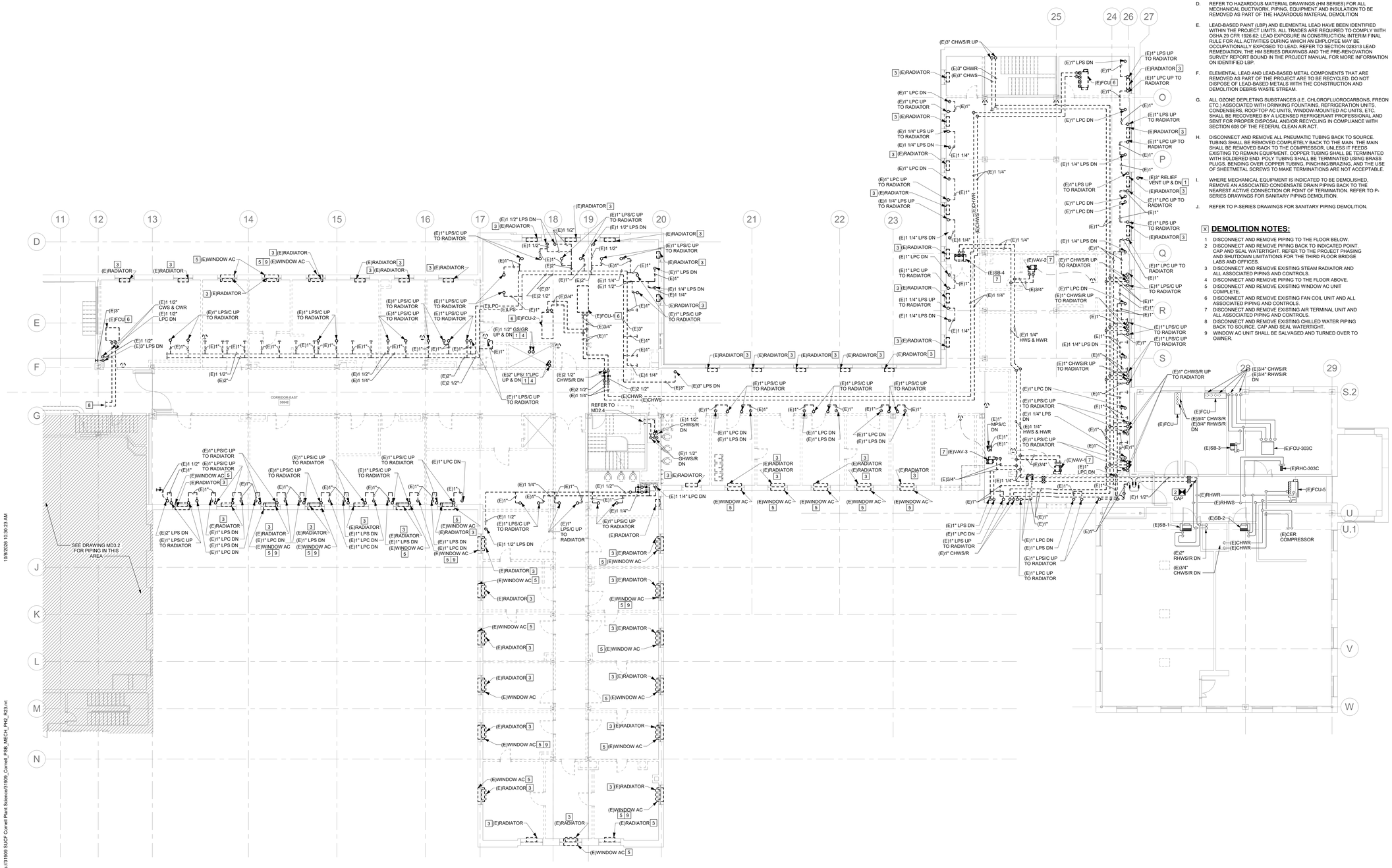

1 MECHANICAL THIRD FLOOR PIPING DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

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E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62- LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. DISCONNECT AND REMOVE ALL PNEUMATIC TUBING BACK TO SOURCE. TUBING SHALL BE REMOVED COMPLETELY BACK TO THE MAIN. THE MAIN SHALL BE REMOVED BACK TO THE COMPRESSOR, UNLESS IT FEEDS EXISTING TO REMAIN EQUIPMENT. COPPER TUBING SHALL BE TERMINATED WITH SOLDERED END. POLY TUBING SHALL BE TERMINATED USING BRASS PLUGS. BENDING OVER COPPER TUBING, PINCHING/BRAZING, AND THE USE OF SHEETMETAL SCREWS TO MAKE TERMINATIONS ARE NOT ACCEPTABLE.

I. WHERE MECHANICAL EQUIPMENT IS INDICATED TO BE DEMOLISHED, REMOVE AN ASSOCIATED CONDENSATE DRAIN PIPING BACK TO THE NEAREST ACTIVE CONNECTION OR POINT OF TERMINATION. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

J. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE PIPING TO THE FLOOR BELOW.
2 DISCONNECT AND REMOVE PIPING BACK TO INDICATED POINT. CAP AND SEAL WATERTIGHT. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS FOR THE THIRD FLOOR BRIDGE LABS AND OFFICES.
3 DISCONNECT AND REMOVE EXISTING STEAM RADIATOR AND ALL ASSOCIATED PIPING AND CONTROLS.
4 DISCONNECT AND REMOVE PIPING TO THE FLOOR ABOVE.
5 DISCONNECT AND REMOVE EXISTING WINDOW AC UNIT COMPLETE.
6 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
7 DISCONNECT AND REMOVE EXISTING AIR TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
8 DISCONNECT AND REMOVE EXISTING CHILLED WATER PIPING BACK TO SOURCE. CAP AND SEAL WATERTIGHT.
9 WINDOW AC UNIT SHALL BE SALVAGED AND TURNED OVER TO OWNER.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd., Rochester, NY 14606, T 585 288-5590
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DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
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D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967
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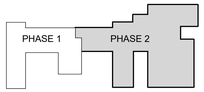
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
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Date	August 31, 2026

Revisions

MECHANICAL THIRD FLOOR PIPING DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · NICHOLAS T. DANIEL · 094525 · LICENSED PROFESSIONAL ENGINEER
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MD2.3

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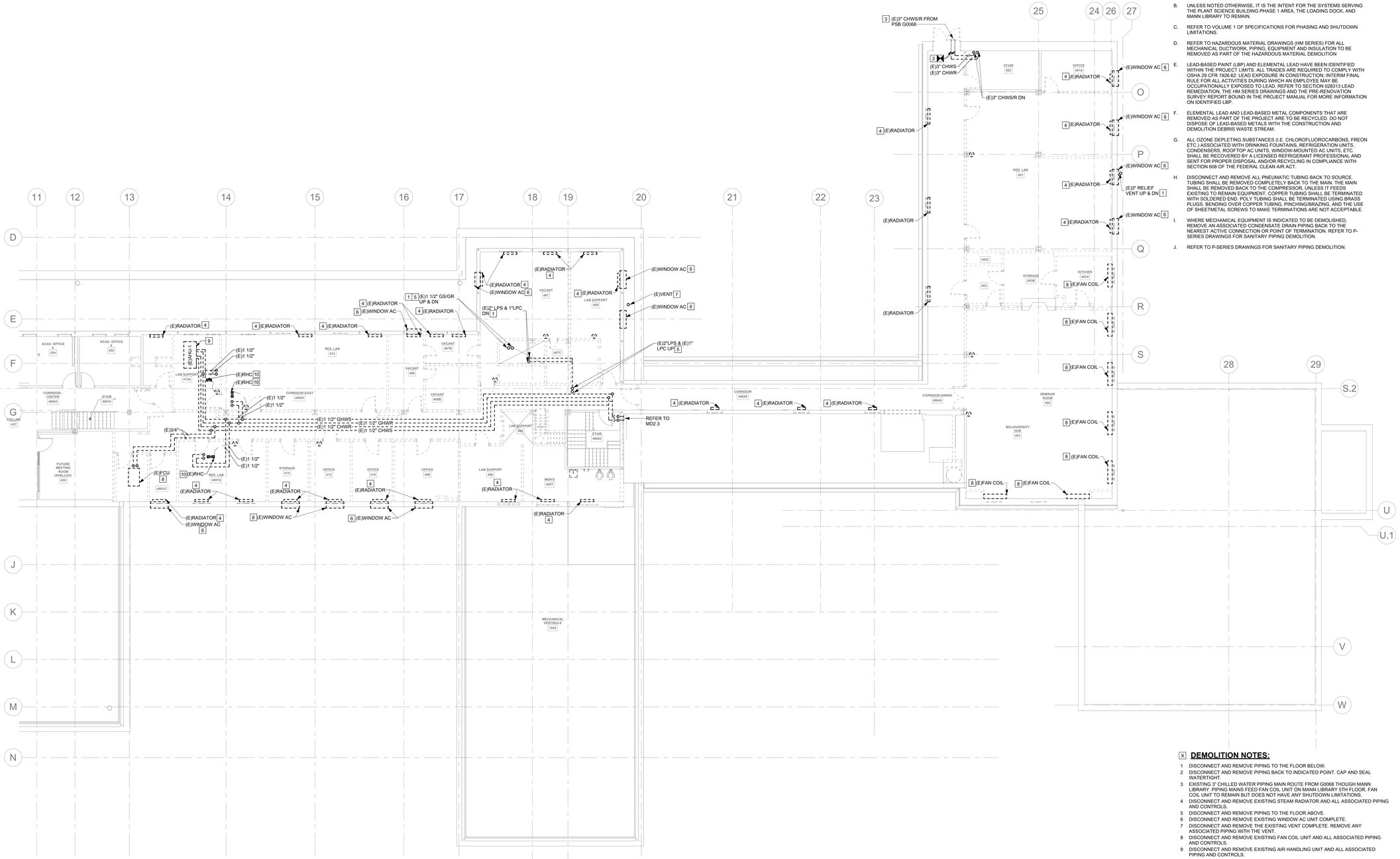

1 MECHANICAL FOURTH FLOOR PIPING DEMOLITION PLAN - PHASE 2

1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE, UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION. INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. DISCONNECT AND REMOVE ALL PNEUMATIC TUBING BACK TO SOURCE. TUBING SHALL BE REMOVED COMPLETELY BACK TO THE MAIN. THE MAIN SHALL BE REMOVED BACK TO THE COMPRESSOR, UNLESS IT FEEDS EXISTING TO REMAIN EQUIPMENT. COPPER TUBING SHALL BE TERMINATED WITH SOLDERED END. POLY TUBING SHALL BE TERMINATED USING BRASS PLUGS. BENDING OVER COPPER TUBING, PINCHING/BRAZING, AND THE USE OF SHEETMETAL SCREWS TO MAKE TERMINATIONS ARE NOT ACCEPTABLE.

I. WHERE MECHANICAL EQUIPMENT IS INDICATED TO BE DEMOLISHED, REMOVE AN ASSOCIATED CONDENSATE DRAIN PIPING BACK TO THE NEAREST ACTIVE CONNECTION OR POINT OF TERMINATION. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

J. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE PIPING TO THE FLOOR BELOW.
2 DISCONNECT AND REMOVE PIPING BACK TO INDICATED POINT. CAP AND SEAL WATERTIGHT.
3 EXISTING 3" CHILLED WATER PIPING MAIN ROUTE FROM G0068 THOUGH MANN LIBRARY. PIPING MAINS FEED FAN COIL UNIT ON MANN LIBRARY 5TH FLOOR. FAN COIL UNIT TO REMAIN BUT DOES NOT HAVE ANY SHUTDOWN LIMITATIONS.
4 DISCONNECT AND REMOVE EXISTING STEAM RADIATOR AND ALL ASSOCIATED PIPING AND CONTROLS.
5 DISCONNECT AND REMOVE PIPING TO THE FLOOR ABOVE.
6 DISCONNECT AND REMOVE EXISTING WINDOW AC UNIT COMPLETE.
7 DISCONNECT AND REMOVE THE EXISTING VENT COMPLETE. REMOVE ANY ASSOCIATED PIPING WITH THE VENT.
8 DISCONNECT AND REMOVE EXISTING FAN COIL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
9 DISCONNECT AND REMOVE EXISTING AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS.
10 DISCONNECT AND REMOVE EXISTING REHEAT COIL AND ALL ASSOCIATED PIPING AND CONTROLS.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
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Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
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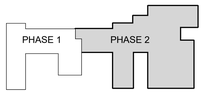
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
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Date	August 31, 2026

Revisions

MECHANICAL FOURTH FLOOR PIPING DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL TOWLER · 094525 · LICENSED PROFESSIONAL ENGINEER

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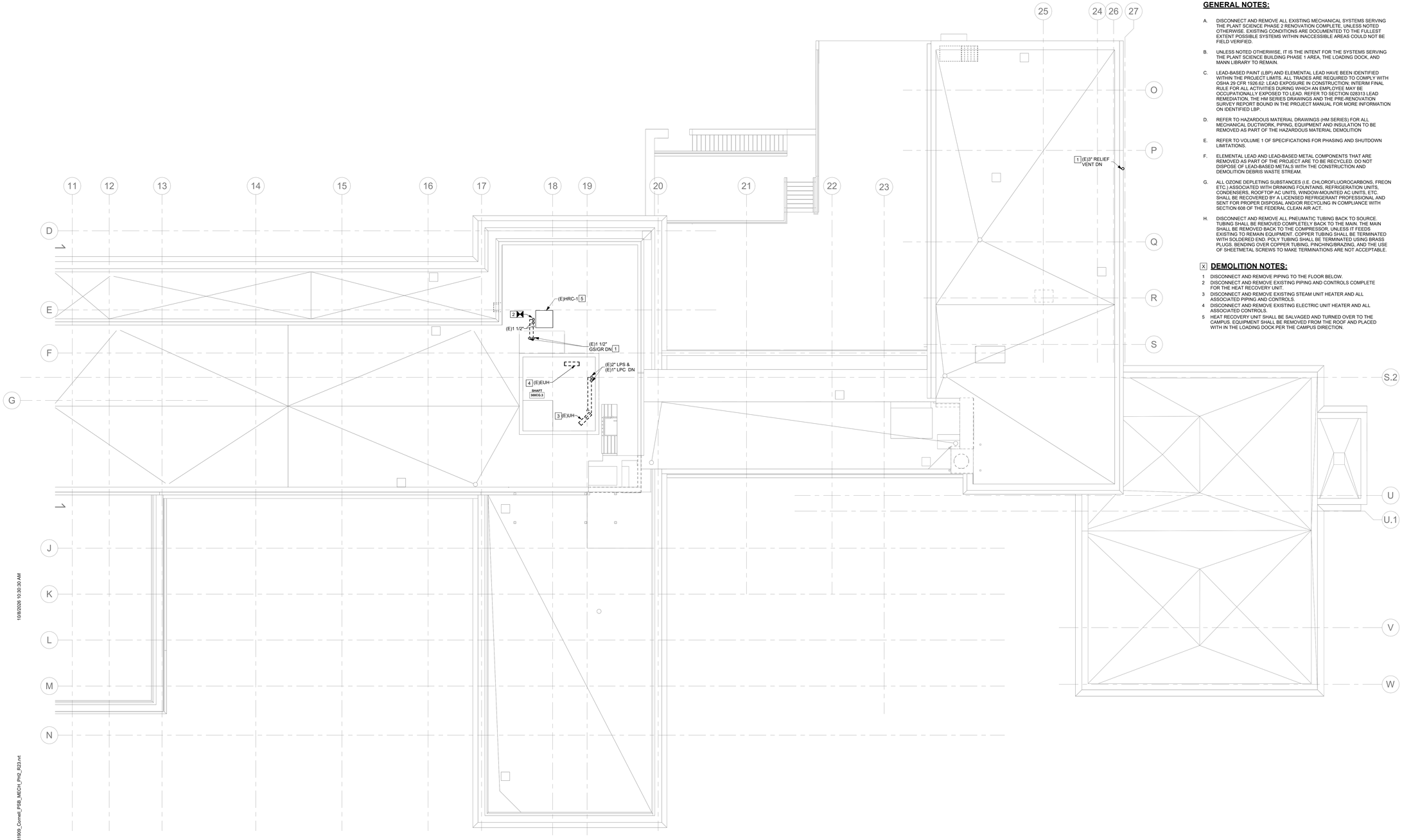

1 MECHANICAL ROOF PIPING DEMOLITION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE, UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION: INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION. THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. DISCONNECT AND REMOVE ALL PNEUMATIC TUBING BACK TO SOURCE. TUBING SHALL BE REMOVED COMPLETELY BACK TO THE MAIN. THE MAIN SHALL BE REMOVED BACK TO THE COMPRESSOR, UNLESS IT FEEDS EXISTING TO REMAIN EQUIPMENT. COPPER TUBING SHALL BE TERMINATED WITH SOLDERED END. POLY TUBING SHALL BE TERMINATED USING BRASS PLUGS. BENDING OVER COPPER TUBING, PINCHING/BRAZING, AND THE USE OF SHEETMETAL SCREWS TO MAKE TERMINATIONS ARE NOT ACCEPTABLE.

X DEMOLITION NOTES:

1. DISCONNECT AND REMOVE PIPING TO THE FLOOR BELOW.
2. DISCONNECT AND REMOVE EXISTING PIPING AND CONTROLS COMPLETE FOR THE HEAT RECOVERY UNIT.
3. DISCONNECT AND REMOVE EXISTING STEAM UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.
4. DISCONNECT AND REMOVE EXISTING ELECTRIC UNIT HEATER AND ALL ASSOCIATED CONTROLS.
5. HEAT RECOVERY UNIT SHALL BE SALVAGED AND TURNED OVER TO THE CAMPUS. EQUIPMENT SHALL BE REMOVED FROM THE ROOF AND PLACED WITH IN THE LOADING DOCK PER THE CAMPUS DIRECTION.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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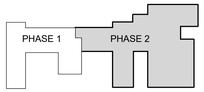

Keyplan

Job Number	31909.00
Drawing By	ZMH
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Date	August 31, 2026

Revisions

MECHANICAL ROOF PIPING DEMOLITION PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL MILLER · LICENSED PROFESSIONAL ENGINEER · 094525

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GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE, UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62- LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

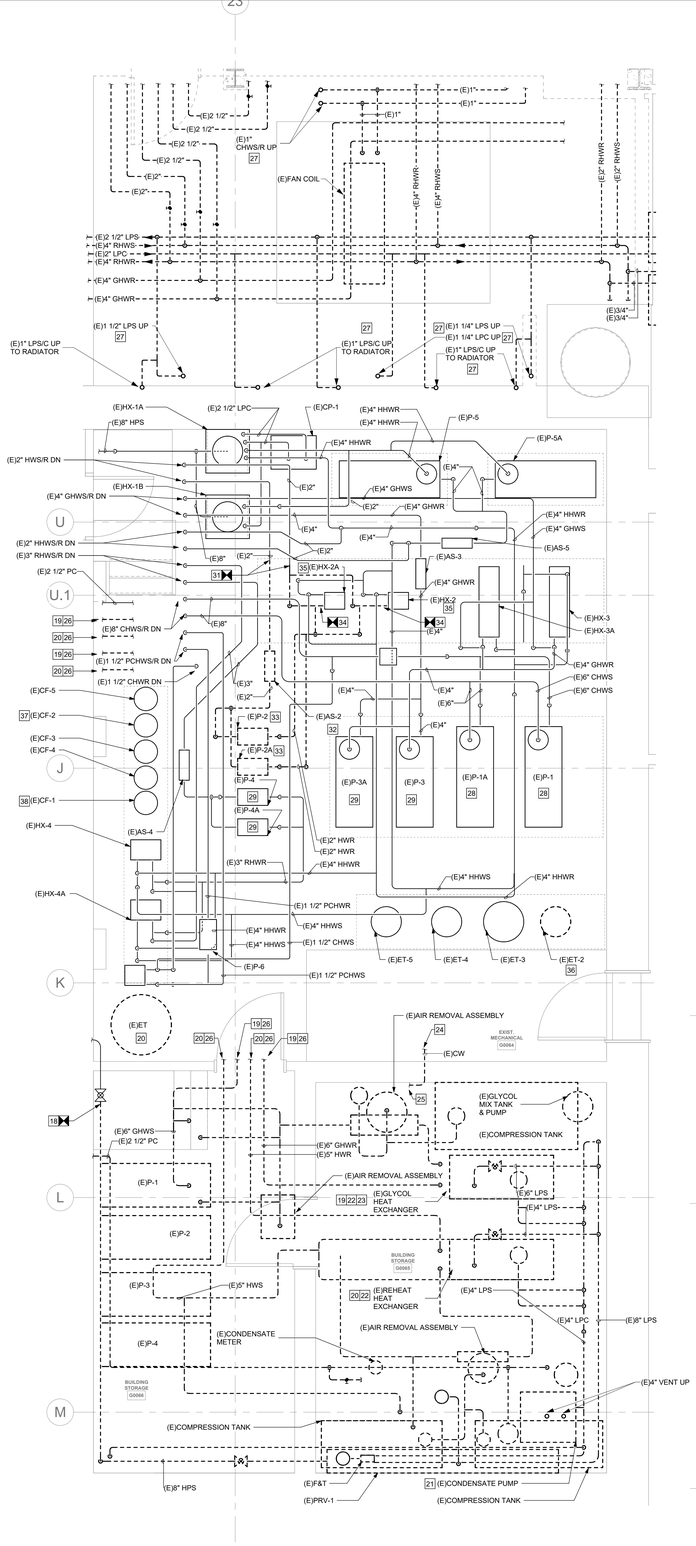
H. WHERE MECHANICAL EQUIPMENT IS INDICATED TO BE DEMOLISHED, REMOVE ANY ASSOCIATED CONDENSATE DRAIN PIPING BACK TO THE NEAREST ACTIVE CONNECTION OR POINT OF TERMINATION. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

X DEMOLITION NOTES:

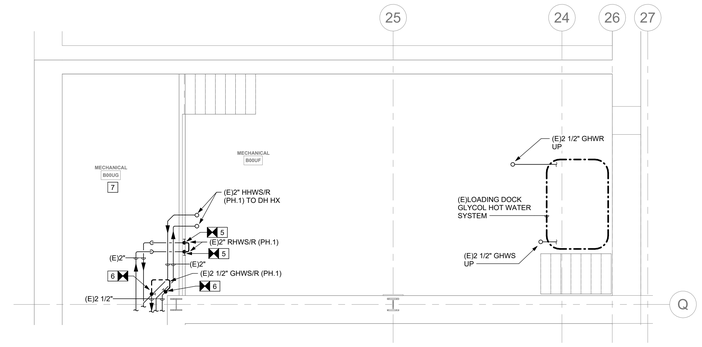
1 DISCONNECT AND REMOVE PIPING BACK TO ISOLATION VALVE. PROVIDE BLANK OFF FLANGE AND RE-INSULATE PIPING.
2 DISCONNECT AND REMOVE ABANDONED CHILLED WATER PUMP AND ALL ASSOCIATED CONTROLS, SUPPORTS AND CONCRETE PAD.
3 DISCONNECT AND REMOVE PIPING TO THE LEVEL ABOVE
4 AT THE TIME OF THE BID DOCUMENT ISSUANCE, BYPASS PIPING CONNECTS THE 4" CHWS/R TAPS INSTALLED IN PHASE 1 FOR USE IN PHASE 2. THE PHASE 1 CONTRACTOR IS REMOVING THE BYPASS PIPING AND EXTENDING THE 4" CHILLED WATER PIPING TO MECHANICAL ROOM G0068.
5 AT THE TIME OF THE BID DOCUMENT ISSUANCE, BYPASS PIPING CONNECTS THE 2" RHWS/R TAPS INSTALLED IN PHASE 1 FOR USE IN PHASE 2. THE PHASE 1 CONTRACTOR IS REMOVING THE BYPASS PIPING AND EXTENDING THE 2" REHEAT HOT WATER PIPING TO MECHANICAL ROOM G0068.
6 AT THE TIME OF THE BID DOCUMENT ISSUANCE, BYPASS PIPING CONNECTS THE 2 1/2" GHWS/R TAPS INSTALLED IN PHASE 1 FOR USE IN PHASE 2. THE PHASE 1 CONTRACTOR IS REMOVING THE BYPASS PIPING AND EXTENDING THE 2 1/2" GLYCOL HOT WATER PIPING TO MECHANICAL ROOM G0068.
7 AT THE TIME OF THE BID DOCUMENT ISSUANCE, THE PERIMETER HOT WATER PIPING IS NOT INSTALLED IN THIS AREA. THE PHASE 1 CONTRACTOR IS EXTENDING 1 1/2" PERIMETER HOT WATER PIPING TO MECHANICAL ROOM G0068.
8 AT THE TIME OF THE BID DOCUMENT ISSUANCE, THE 4" CHWS/R, 2" RHWS/R, 1 1/2" HWS, AND 2 1/2" GHWS/R TAPS FOR PHASE 2 TERMINATE IN THE TUNNEL. THE PHASE 1 CONTRACTOR IS EXTENDING THE PIPING TO THE NORTH SIDE OF MECHANICAL ROOM G0068.
9 THE FAN COIL UNIT ON MANN 5TH FLOOR DOES NOT HAVE ANY SHUTDOWN LIMITATIONS.
10 DISCONNECT AND REMOVE THE EXISTING REFRIGERANT PIPING BETWEEN THE COMPRESSOR AND THE EVAPORATOR, FOLLOW ALL REGULATIONS AND OWNER PROCEDURES FOR EVACUATION OF REFRIGERANT.
11 DISCONNECT AND REMOVE CW PIPING BACK TO BACKFLOW PREVENTER. REFER TO THE P-SERIES DRAWINGS FOR THE PIPING CONTINUATION.
12 DISCONNECT AND REMOVE PIPING TO THE LEVEL BELOW.
13 DISCONNECT AND REMOVE PIPING BACK TO THE ISOLATION VALVE. PROVIDE BLANK-OFF AT VALVE UNTIL PIPING IS RECONNECTED.
14 REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS FOR THE AIR HANDLING UNIT SERVING THE LOADING DOCK.
15 DISCONNECT AND REMOVE THE EXISTING ABANDONED GLYCOL HOT WATER SYSTEM IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO ALL PIPING, THE PUMPS AND THE ASSOCIATED VIBRATION ISOLATION BASE AND HOUSEKEEPING PAD, AIR SEPARATOR, EXPANSION TANK, GLYCOL STORAGE TANK, CW MAKE-UP.

X DEMOLITION NOTES:

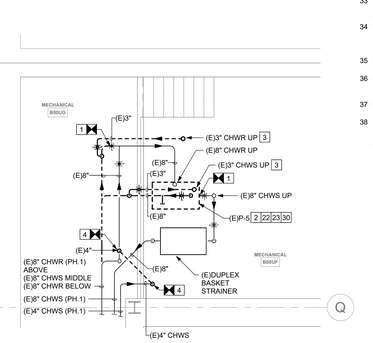
16 DISCONNECT AND REMOVE PIPING BACK TO ISOLATION VALVE. PROVIDE BLANK OFF FLANGE AND RE-INSULATE PIPING.
17 DISCONNECT AND REMOVE THE EXISTING HOT WATER SYSTEM IN ITS ENTIRETY, INCLUDING BUT NOT LIMITED TO ALL PIPING, THE PUMP, AIR SEPARATOR, EXPANSION TANK, AND CW MAKE-UP.
18 DISCONNECT AND REMOVE PIPING BACK TO THE ISOLATION VALVE AT THE MAIN. CAP AND SEAL WATERTIGHT.
19 DISCONNECT AND REMOVE THE GLYCOL HOT WATER SYSTEM AND ALL ASSOCIATED PIPING AND CONTROLS. THE GLYCOL HOT WATER SYSTEM INCLUDES BUT IS NOT LIMITED TO A STEAM TO GLYCOL WATER HEAT EXCHANGER, LEAD AND STANDBY PUMPS, GLYCOL STORAGE TANK, EXPANSION TANK, AIR SEPARATOR, AND EQUIPMENT CONCRETE PADS AND SUPPORTS.
20 DISCONNECT AND REMOVE THE REHEAT HOT WATER SYSTEM AND ALL ASSOCIATED PIPING AND CONTROLS. THE REHEAT HOT WATER SYSTEM INCLUDES BUT IS NOT LIMITED TO A STEAM TO WATER HEAT EXCHANGER, LEAD AND STANDBY PUMPS, EXPANSION TANK, AIR SEPARATOR, AND EQUIPMENT CONCRETE PADS AND SUPPORTS.
21 DISCONNECT AND REMOVE EXISTING STEAM AND CONDENSATE SYSTEM SERVING THE HEAT EXCHANGERS COMPLETE. THE SYSTEM INCLUDES BUT IS NOT LIMITED TO A CONDENSATE PUMP, SAFETY RELIEF VENTS, PRESSURE REDUCING VALVE STATION, EQUIPMENT CONCRETE PADS AND SUPPORTS. REMOVE STEAM AND CONDENSATE MAIN BACK TO THE EXISTING ISOLATION VALVE AS NOTED.
22 SYSTEM SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES.
23 SYSTEM SERVES THE LECTURE HALL 237.
24 DISCONNECT AND REMOVE THE COLD WATER BACK TO THE BRANCH ISOLATION VALVE WITHIN MECHANICAL ROOM G0064. CAP AND SEAL WATER TIGHT.
25 DISCONNECT AND REMOVE COLD WATER WITHIN THIS ROOM COMPLETE.
26 DISCONNECT AND REMOVE EXISTING PIPING WITHIN MECHANICAL ROOM G0064 COMPLETE.
27 DISCONNECT AND REMOVE PIPING TO THE FLOOR ABOVE.
28 DISCONNECT AND SALVAGE THE EXISTING PUMP BYPASS CONTROL VALVE. CONTROL VALVE SHALL BE TURNED OVER TO CAMPUS. CAP EXISTING BUTTERFLY VALVES WATER TIGHT. LOCK OUT AND TAG EXISTING VALVES AS NOT IN USE. REFER TO PIPING SCHEMATIC FOR FURTHER INFORMATION.
29 DISCONNECT AND REMOVE THE EXISTING BYPASS PIPING. CAP THE VALVES WATER TIGHT. THE BALANCE VALVE HAS FULL SHUTOFF CAPABILITIES. PROVIDE LOCKOUT ON VALVE AND TAG VALVES AS NOT IN USE. REFER TO PIPING SCHEMATIC FOR FURTHER INFORMATION.
30 DISCONNECT AND REMOVE PIPING AS NOTED TO ACCOMMODATE THE PHASE 2 RENOVATION. REFER TO THE PROJECT PHASING AND SHUTDOWN LIMITATIONS. PROVIDE ALL REQUIRED PROVISIONS TO MEET REQUIREMENTS.
31 DISCONNECT AND REMOVE 2" PERIMETER HOT WATER PIPING MAINS BACK TO INDICATED POINT. PIPING TO BE UPSIZED TO ACCOMMODATE PHASE 2.
32 DISCONNECT AND SALVAGE AIR SEPARATOR. TURN OVER TO CAMPUS. AIR SEPARATOR TO BE UPSIZED TO ACCOMMODATE PHASE 2.
33 DISCONNECT AND SALVAGE PERIMETER HOT WATER PUMP AIR SEPARATOR. TURN OVER TO CAMPUS. PUMPS TO BE UNSIZED TO ACCOMMODATE PHASE 2. CONTROL WIRING SHALL REMAIN FOR RECONNECTION.
34 DISCONNECT AND REMOVE 2" PERIMETER HOT WATER PIPING MAINS BACK TO HEAT EXCHANGER. PIPING TO BE UPSIZED TO ACCOMMODATE PHASE 2. CONTROL WIRING TO REMAIN FOR RECONNECTION. DISCONNECT AND REMOVE ALL VALVES AND PIPING SPECIALTIES AT HEAT EXCHANGER CONNECTION.
35 PROVIDE ALL MODIFICATIONS AS REQUIRED TO INSTALL ADDITIONAL PLATES FOR THE EXISTING TO REMAIN PERIMETER HOT WATER HEAT EXCHANGER.
36 DISCONNECT AND SALVAGE EXPANSION TANK. TURN OVER TO CAMPUS. EXPANSION TO BE UPSIZED TO ACCOMMODATE PHASE 2. MODIFY THE PIPING TO THE EXPANSION TANK AS REQUIRED TO ACCOMMODATE THE REPLACEMENT.
37 PERIMETER HOT WATER CHEMICAL FEEDER TO REMAIN. MODIFY THE PIPING CONNECTIONS AS THE MAINS AS REQUIRED TO ACCOMMODATE THE UPSIZING OF THE PIPING MAINS.
38 CHEMICAL FEEDER CONNECTED TO BUILDING CHILLED WATER SYSTEM. CHEMICAL POT FEEDER SHALL BE DISCONNECTED FROM BUILDING CHILLED WATER SYSTEM AND REPURPOSED TO SERVE THE PROCESS CHILLED WATER SYSTEM. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED. REFER TO PIPING SCHEMATIC FOR FURTHER INFORMATION.



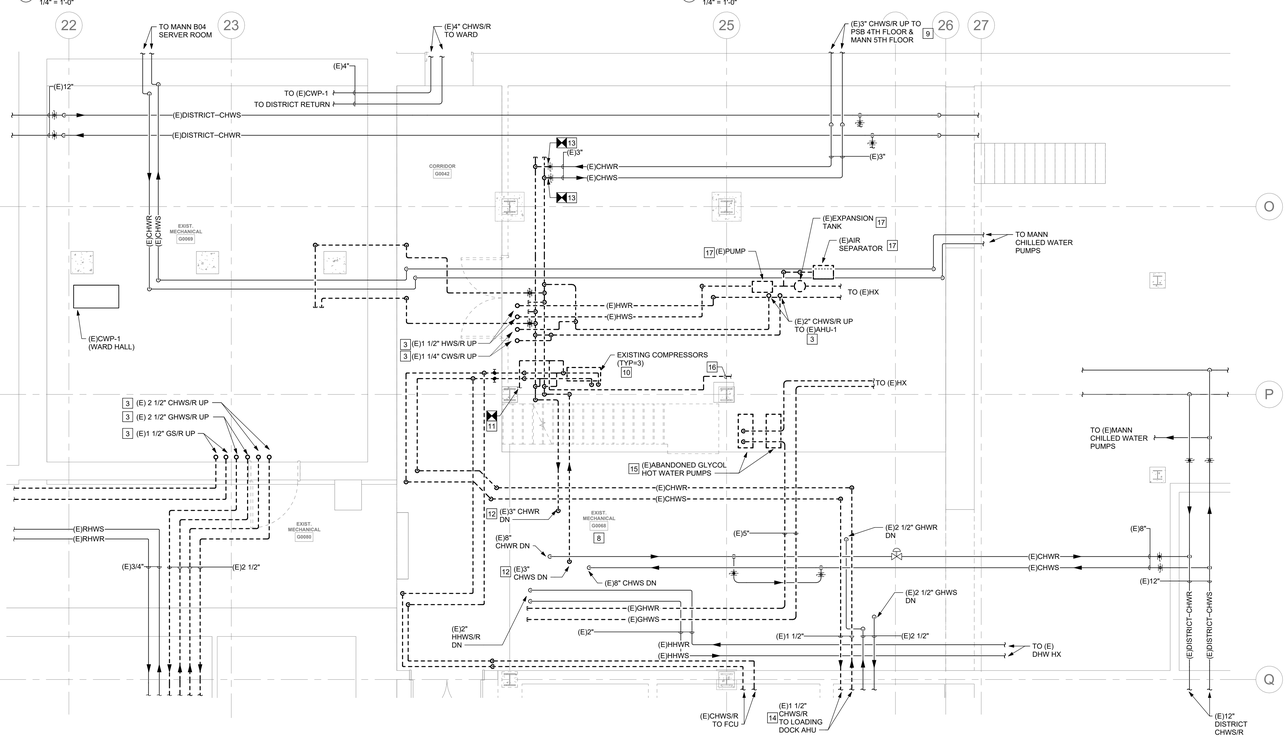
5 ENLARGED GROUND FLOOR PIPING DEMOLITION PLAN - MECH ROOM G0064 - PHASE 2
3/8" = 1'-0"



3 ENLARGED MECHANICAL TUNNEL PIPING DEMOLITION PLAN - HYDRONIC HEATING SYSTEMS - PHASE 2
1/4" = 1'-0"



4 ENLARGED MECHANICAL TUNNEL PIPING DEMOLITION PLAN - COOLING SYSTEMS - PHASE 2
1/4" = 1'-0"



2 ENLARGED GROUND FLOOR PIPING DEMOLITION PLAN - HYDRONIC HEATING & COOLING SYSTEMS - MECH ROOMS - PHASE 2
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
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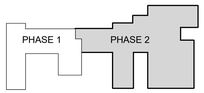
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

ENLARGED MECHANICAL ROOM DEMOLITION PLANS - PHASE 2

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Reg. Exp: 04/30/2029
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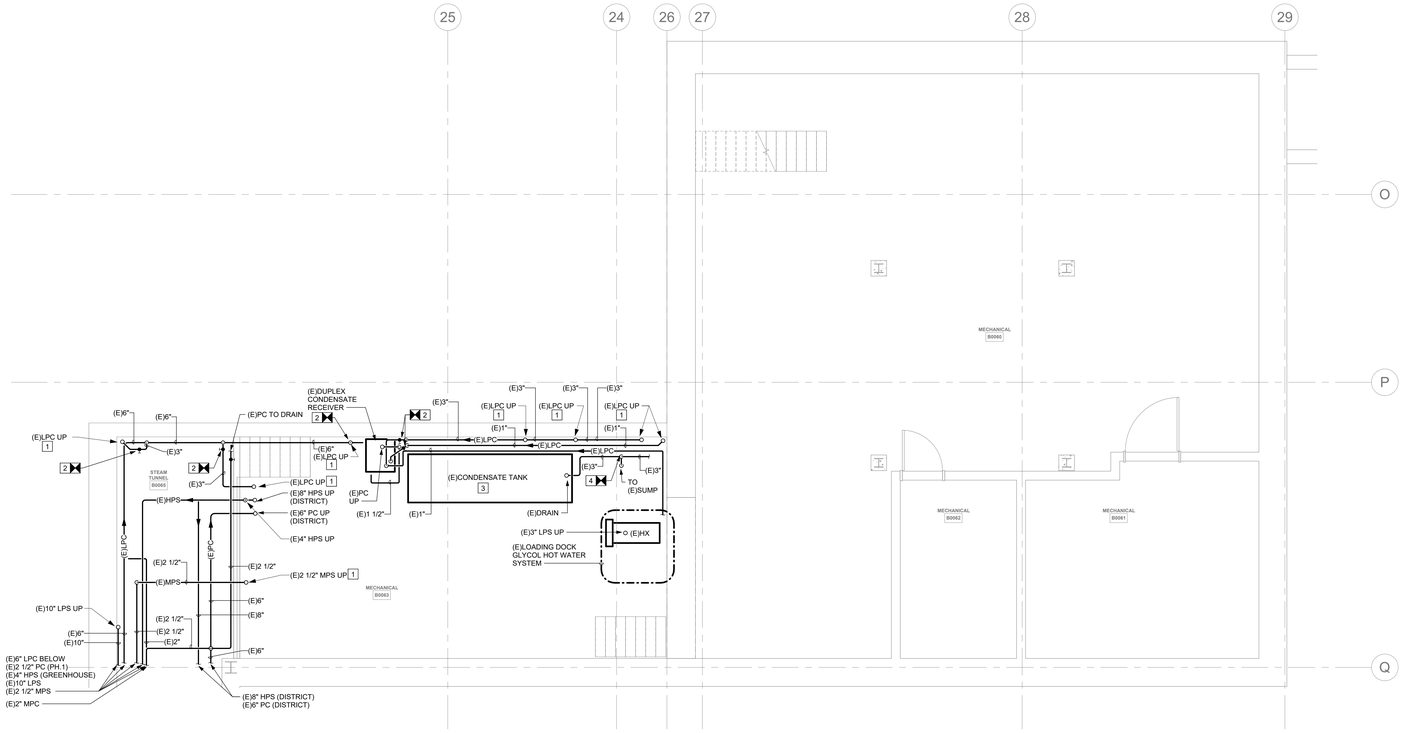
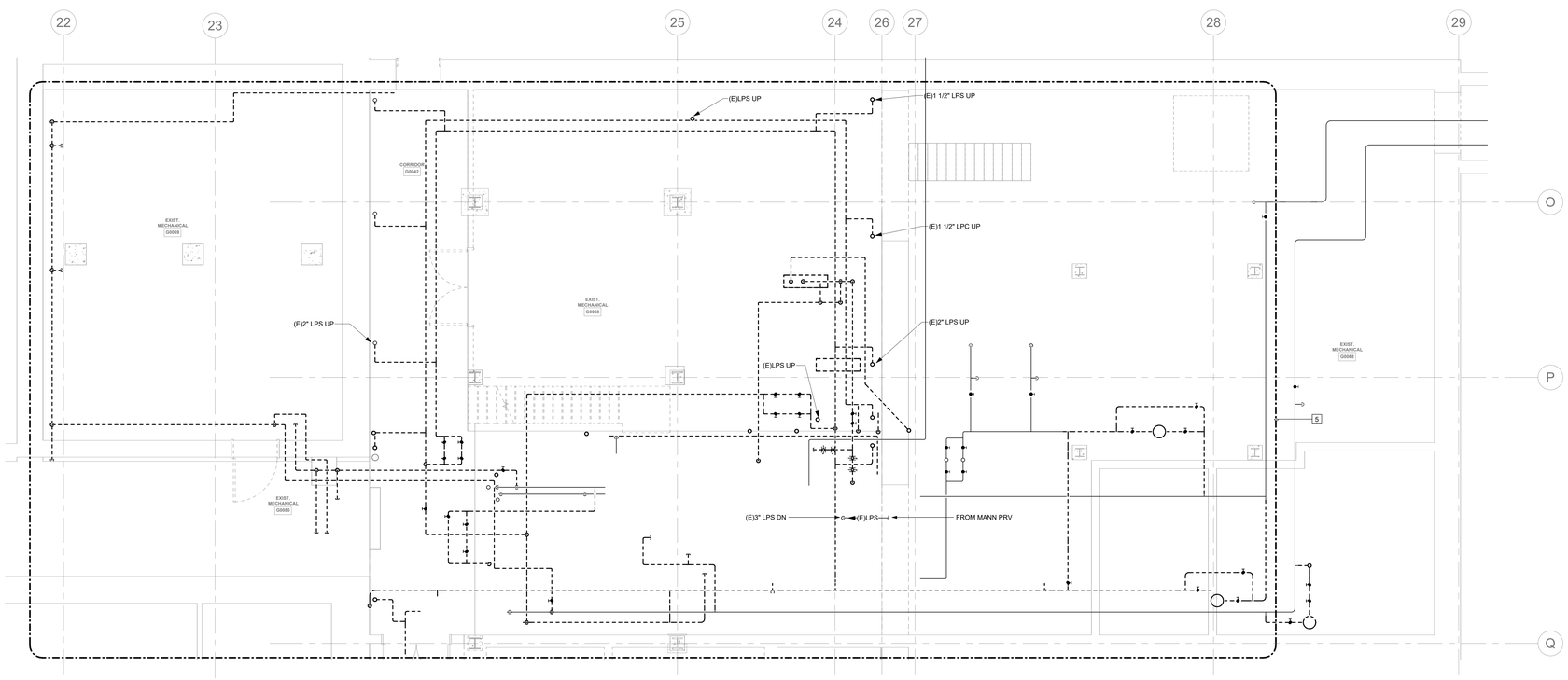


2 ENLARGED MECHANICAL TUNNEL PIPING DEMOLITION PLAN - STEAM HEATING SYSTEMS - PHASE 2

1/4" = 1'-0"



1 ENLARGED GROUND FLOOR PIPING DEMOLITION PLAN - STEAM HEATING SYSTEMS - MECH ROOMS - PHASE 2

1/4" = 1'-0"

GENERAL NOTES:

A. DISCONNECT AND REMOVE ALL EXISTING MECHANICAL SYSTEMS SERVING THE PLANT SCIENCE PHASE 2 RENOVATION COMPLETE, UNLESS NOTED OTHERWISE. EXISTING CONDITIONS ARE DOCUMENTED TO THE FULLEST EXTENT POSSIBLE SYSTEMS WITHIN INACCESSIBLE AREAS COULD NOT BE FIELD VERIFIED.

B. UNLESS NOTED OTHERWISE, IT IS THE INTENT FOR THE SYSTEMS SERVING THE PLANT SCIENCE BUILDING PHASE 1 AREA, THE LOADING DOCK, AND MANN LIBRARY TO REMAIN.

C. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

D. REFER TO HAZARDOUS MATERIAL DRAWINGS (HM SERIES) FOR ALL MECHANICAL DUCTWORK, PIPING, EQUIPMENT AND INSULATION TO BE REMOVED AS PART OF THE HAZARDOUS MATERIAL DEMOLITION

E. LEAD-BASED PAINT (LBP) AND ELEMENTAL LEAD HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS. ALL TRADES ARE REQUIRED TO COMPLY WITH OSHA 29 CFR 1926.62: LEAD EXPOSURE IN CONSTRUCTION; INTERIM FINAL RULE FOR ALL ACTIVITIES DURING WHICH AN EMPLOYEE MAY BE OCCUPATIONALLY EXPOSED TO LEAD. REFER TO SECTION 028313 LEAD REMEDIATION, THE HM SERIES DRAWINGS AND THE PRE-RENOVATION SURVEY REPORT BOUND IN THE PROJECT MANUAL FOR MORE INFORMATION ON IDENTIFIED LBP.

F. ELEMENTAL LEAD AND LEAD-BASED METAL COMPONENTS THAT ARE REMOVED AS PART OF THE PROJECT ARE TO BE RECYCLED. DO NOT DISPOSE OF LEAD-BASED METALS WITH THE CONSTRUCTION AND DEMOLITION DEBRIS WASTE STREAM.

G. ALL OZONE DEPLETING SUBSTANCES (I.E. CHLOROFLUOROCARBONS, FREON ETC.) ASSOCIATED WITH DRINKING FOUNTAINS, REFRIGERATION UNITS, CONDENSERS, ROOFTOP AC UNITS, WINDOW-MOUNTED AC UNITS, ETC. SHALL BE RECOVERED BY A LICENSED REFRIGERANT PROFESSIONAL AND SENT FOR PROPER DISPOSAL AND/OR RECYCLING IN COMPLIANCE WITH SECTION 608 OF THE FEDERAL CLEAN AIR ACT.

H. DISCONNECT AND REMOVE ALL PNEUMATIC TUBING BACK TO SOURCE. TUBING SHALL BE REMOVED COMPLETELY BACK TO THE MAIN. THE MAIN SHALL BE REMOVED BACK TO THE COMPRESSOR, UNLESS IT FEEDS EXISTING TO REMAIN EQUIPMENT. COPPER TUBING SHALL BE TERMINATED WITH SOLDERED END. POLY TUBING SHALL BE TERMINATED USING BRASS PLUGS. BENDING OVER COPPER TUBING, PINCHING/BRAZING, AND THE USE OF SHEETMETAL SCREWS TO MAKE TERMINATIONS ARE NOT ACCEPTABLE.

I. WHERE MECHANICAL EQUIPMENT IS INDICATED TO BE DEMOLISHED, REMOVE AN ASSOCIATED CONDENSATE DRAIN PIPING BACK TO THE NEAREST ACTIVE CONNECTION OR POINT OF TERMINATION. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

J. REFER TO P-SERIES DRAWINGS FOR SANITARY PIPING DEMOLITION.

X DEMOLITION NOTES:

1 DISCONNECT AND REMOVE PIPING TO THE FLOOR ABOVE.
2 DISCONNECT AND REMOVE PIPING BACK TO THE ISOLATION VALVE. CAP AND SEAL WATER TIGHT.
3 DISCONNECT AND REMOVE THE EXISTING ABANDONED CONDENSATE TANK IN IT'S ENTIRETY, INCLUDING BUT NOT LIMITED TO ALL PIPING, THE PUMPS, AND THE SUPPORTS. REMOVE ALL EXISTING CONSTRUCTION DEBRIS IN THE AREA.
4 DISCONNECT AND REMOVE PIPING BACK TO THE INDICATED POINT. CAP AND SEAL WATER TIGHT.
5 DISCONNECT AND REMOVE ALL EXISTING LOW AND MEDIUM PRESSURE STEAM AND CONDENSATE SYSTEMS SERVING THE RENOVATION AREA. THE PIPING SHALL BE REMOVED BACK TO THE CONNECTION TO THE HIGH PRESSURE STEAM MAIN AND THE CONDENSATE RECEIVER. DISCONNECT AND REMOVE THE EXISTING PRESSURE REDUCING STATION COMPLETE. DISCONNECT AND REMOVE ALL ABANDONED PIPING, EQUIPMENT AND CONTROLS.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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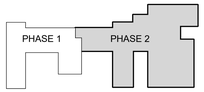

Keyplan

Job Number	31909.00
Drawing By	ZMH
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Filename	
Date	August 31, 2026

Revisions

ENLARGED MECHANICAL ROOM DEMOLITION PLANS - PHASE 2

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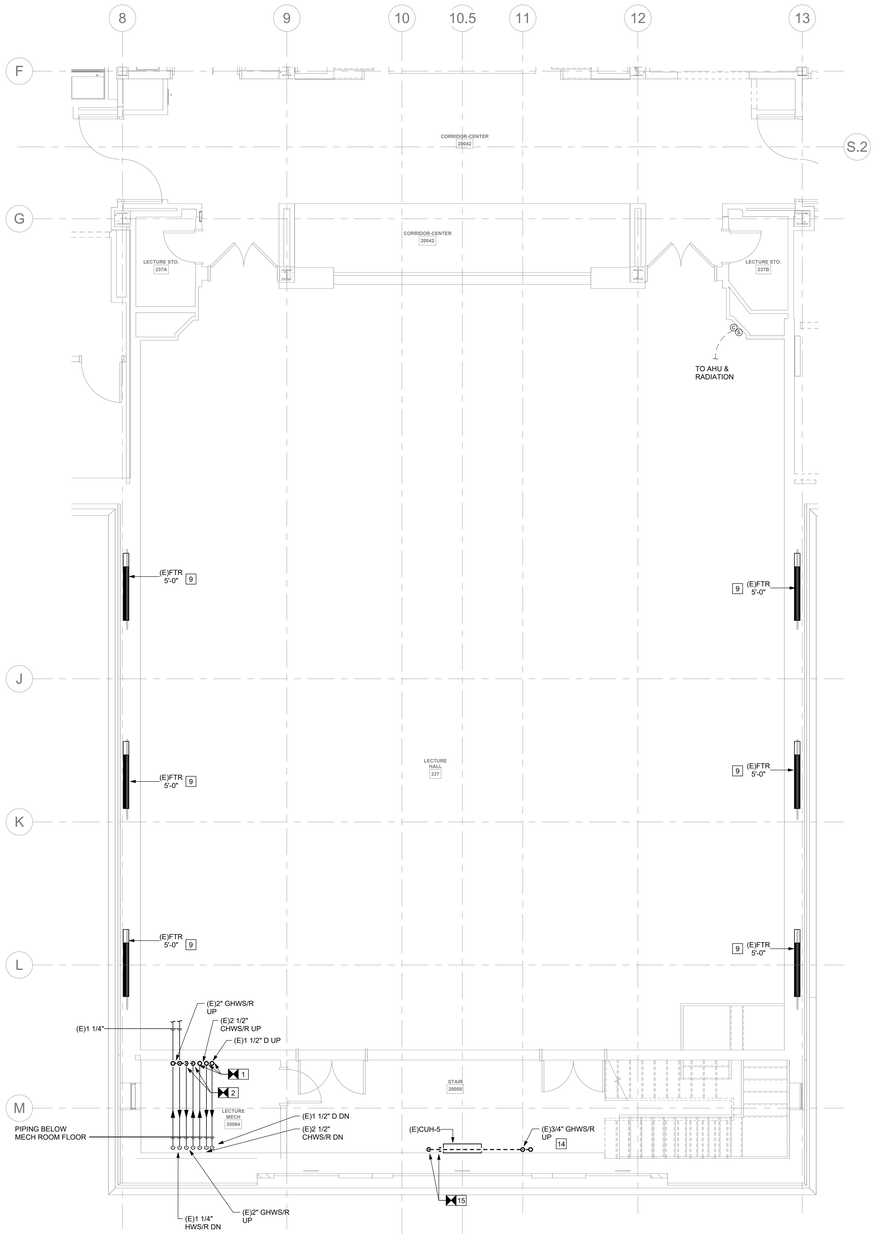
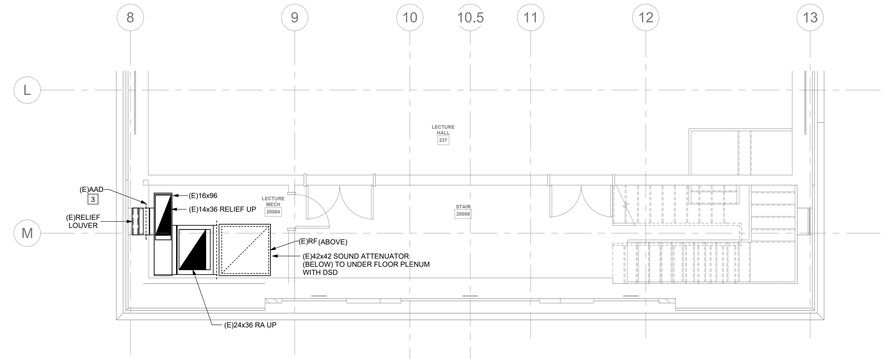


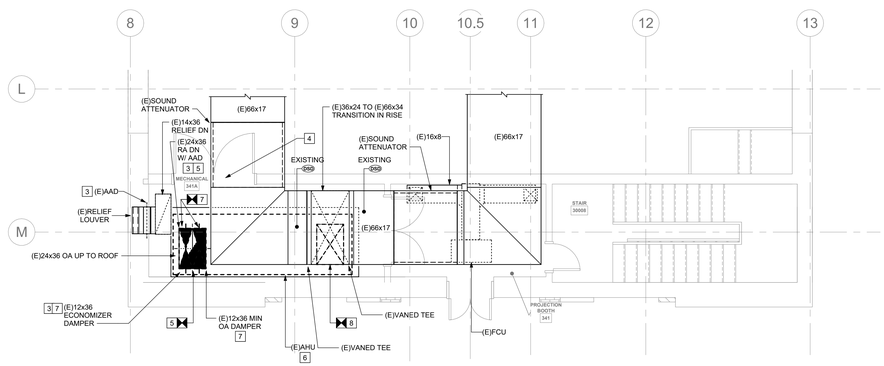
1 ENLARGED LECTURE HALL SECOND FLOOR PIPING DEMOLITION PLAN - PHASE 2

1/4" = 1'-0"



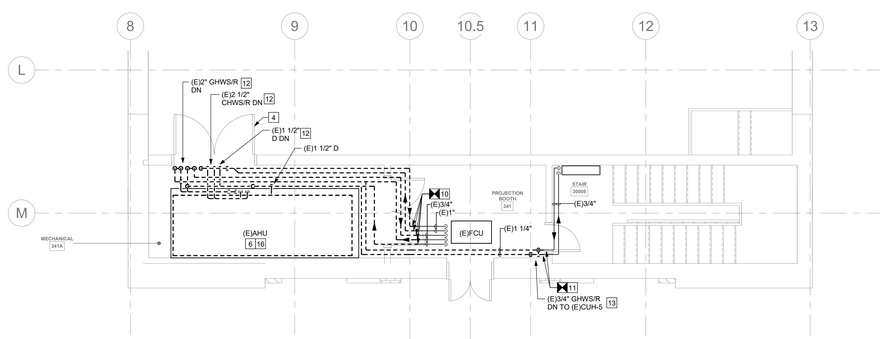
2 ENLARGED LECTURE HALL SECOND FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

1/4" = 1'-0"



3 ENLARGED LECTURE HALL THIRD FLOOR DUCTWORK DEMOLITION PLAN - PHASE 2

1/4" = 1'-0"



4 ENLARGED LECTURE HALL THIRD FLOOR PIPING DEMOLITION PLAN - PHASE 2

1/4" = 1'-0"

GENERAL NOTES:

A. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS FOR LECTURE HALL 237 SYSTEMS.

X DEMOLITION NOTES:

1. DISCONNECT AND REMOVE THE PIPING ON THIS FLOOR AS REQUIRED TO ACCOMMODATE THE AHU RIGGING.
2. DISCONNECT AND REMOVE GLYCOL HOT WATER PIPING TO ACCOMMODATE COIL PUMP.
3. THE EXISTING DAMPERS ARE WIRED TO A SINGLE CONTROL POINT. THE OA ECONOMIZER, THE TWO (2) RELIEF AIR DAMPERS AND THE RETURN AIR DAMPER WIRING SHALL BE MODIFIED TO PROVIDE INDIVIDUAL DAMPER POSITION CONTROL.
4. ACCESS DOORS TO THE THIRD FLOOR MECHANICAL ROOM FROM LECTURE HALL. ACCESS DOORS ARE CONCEALED BEHIND ACOUSTIC PANEL WITHIN LECTURE HALL AND BLOCKED BY EXISTING PIPING. REFER TO ARCHITECTURAL DRAWINGS TO MODIFICATIONS WITHIN THE LECTURE HALL TO ACCOMMODATE RIGGING OF THE AIR HANDLING UNIT THROUGH THE LECTURE HALL.
5. DISCONNECT AND REMOVE EXISTING RETURN AIR DAMPER DAMPER INTEGRAL TO THE AIR HANDLING UNIT. DISCONNECT AND REMOVE THE RETURN DUCTWORK AT THE BOTTOM UNIT CONNECTION AS REQUIRED TO ACCOMMODATE AIR HANDLING UNIT REPLACEMENT.
6. DISCONNECT AND REMOVE THE EXISTING AIR HANDLING UNIT. THE EXISTING CONCRETE PAD SHALL REMAIN FOR RE-USE AND EXTENSION. DISCONNECT AND REMOVE THE EXISTING CONTROLS. THE AUTOMATED LOGIC CONTROLLER SHALL BE REMOVED. THE CONTROL CABINET SHALL REMAIN FOR RE-USE.
7. DISCONNECT AND REMOVE EXISTING OUTSIDE DAMPER DAMPERS INTEGRAL TO THE AIR HANDLING UNIT. DISCONNECT AND REMOVE DUCTWORK A MINIMUM OF 4'-0" ABOVE UNIT TO ALLOW DUCT MOUNTED MOUNTED DAMPERS AND MINIMUM OA AIR FLOW STATION.
8. DISCONNECT AND REMOVE SUPPLY DUCTWORK AT UNIT CONNECTION AS REQUIRED TO ACCOMMODATE AIR HANDLING UNIT REPLACEMENT.
9. PRE-BALANCE EXISTING FIN RADIATION PRIOR TO ANY PIPING DEMOLITION.
10. DISCONNECT AND REMOVE EXISTING FAN COIL UNIT GLYCOL HOT WATER, CHILLED WATER AND DRAIN PIPING BACK TO THE PROJECTION BOOTH TO ACCOMMODATE AIR HANDLING UNIT REPLACEMENT.
11. DISCONNECT AND REMOVE EXISTING CABINET UNIT HEATER GLYCOL HOT WATER BACK TO THE PROJECTION BOOTH TO ACCOMMODATE AIR HANDLING UNIT REPLACEMENT.
12. DISCONNECT AND REMOVE THE PIPING DOWN TO THE FLOOR BELOW AS REQUIRED TO ACCOMMODATE THE AHU RIGGING.
13. DISCONNECT AND REMOVE THE PIPING DOWN TO THE FLOOR BELOW.
14. DISCONNECT AND REMOVE THE PIPING DOWN TO THE FLOOR ABOVE.
15. DISCONNECT AND REMOVE EXISTING BACK AS REQUIRED TO ACCOMMODATE NEW PIPING CONFIGURATION.
16. DISCONNECT AND REMOVE THE EXISTING AIR HANDLING UNIT. DISCONNECT AND REMOVE THE ASSOCIATED EXISTING CHILLED WATER, DRAIN, AND GLYCOL HOT WATER PIPING DOWN TO THE FLOOR BELOW.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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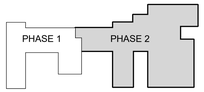

Keyplan

Job Number	31909.00
Drawing By	ZMH
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Filename	
Date	August 31, 2026

Revisions

ENLARGED LECTURE HALL DEMOLITION PLANS - PHASE 2

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GENERAL NOTES:

A. BALANCE VENTILATION AIR TO EACH FAN COIL PER AIRFLOW LISTED IN FAN COIL UNIT SCHEDULE ON SCHEDULES SHEET.

B. THE DUCTWORK AT THE VAV AND AIR VALVE INLET AND OUTLET SHALL MATCH THE SIZES SHOWN ON THE EQUIPMENT SCHEDULE.

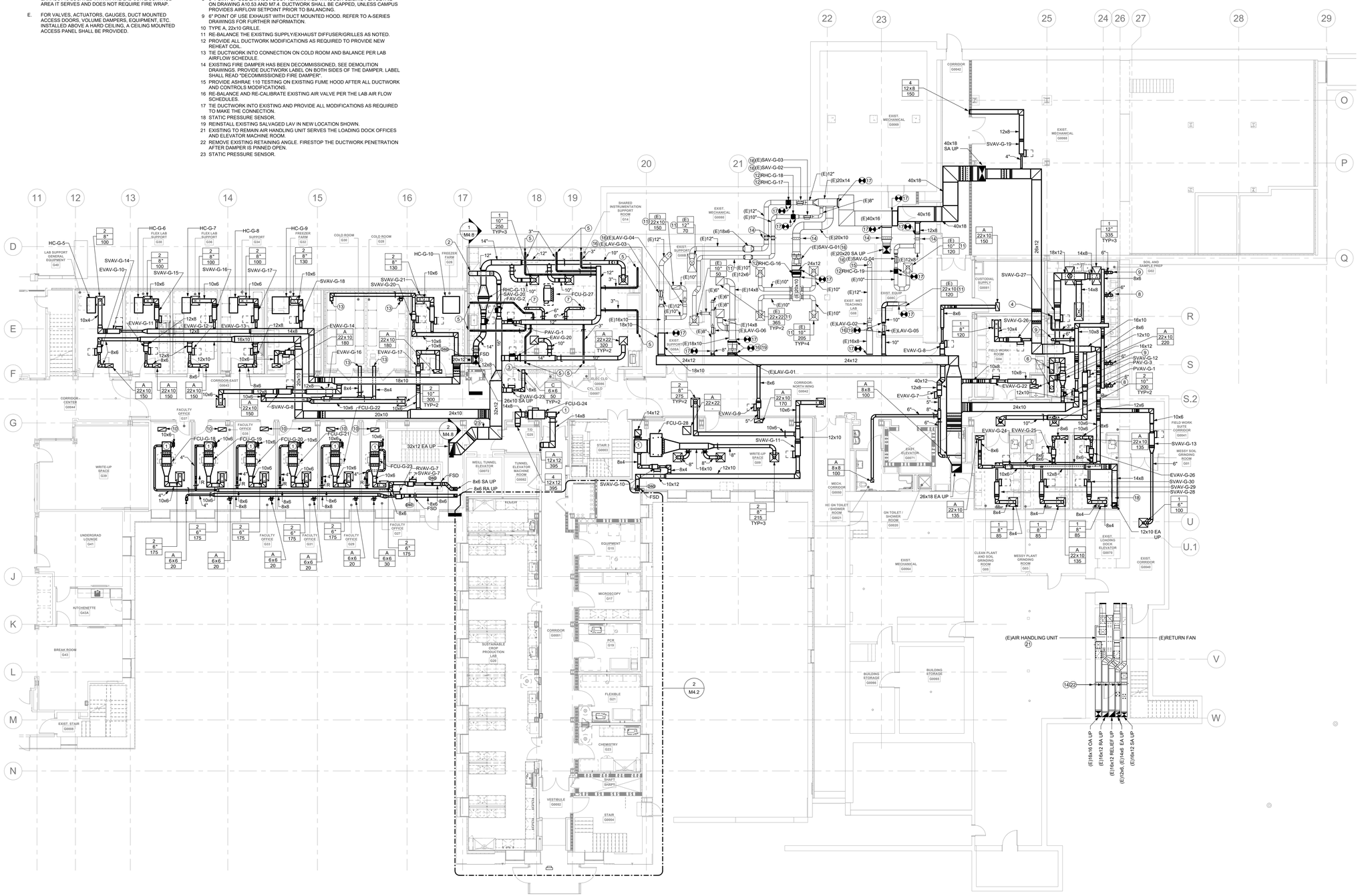
C. SMOKE DAMPER REMOTE TEST SWITCH SHALL BE COORDINATED WITH THE LOCATION OF THE DUCT SMOKE DETECTOR TEST/STATUS DEVICE AND LOCATED IN AN ACCESSIBLE LOCATION.

D. UNLESS OTHERWISE INDICATED, ALL LABORATORY EXHAUST IS LOCATED WITHIN THE LAB SUITE/CONTROL AREA IT SERVES AND DOES NOT REQUIRE FIRE WRAP.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 FAN COIL UNIT RETURN PLENUM SHALL MATCH UNIT CONNECTION SIZE. PLENUM HEIGHT SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE DUCTWORK CONNECTIONS.
2 PROVIDE FLEXIBLE DUCTWORK CONNECTION AT EACH ADJUSTABLE HEIGHT, ACCESSIBLE FUME HOOD. REFER TO DETAILS FOR FURTHER REQUIREMENTS.
3 PROVIDE EXHAUST DUCTWORK DOWN TO FINISHED FLOOR WITHIN CHASE. MOUNT (1) ONE EXHAUST GRILLE 6" AFF AND (1) ONE TIGHT TO CEILING.
4 3" EXHAUST DOWN TO VACUUM PUMP CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY OR LAB BENCH SERVICE CHASE. BALANCE TO 30 CFM. REFER TO DETAIL FOR CABINET CONNECTION REQUIREMENTS.
5 FUTURE POINT OF USE CONNECTION. TERMINATE 8'-0" AFF WITH BLAST GATE.
6 PROVIDE CONNECTION TO CANOPY HOOD.
7 CONNECTION TO SNORKEL. BALANCE TO 80 CFM.
8 6" POINT OF USE EXHAUST DUCT TERMINATED THROUGH CEILING PER DETAIL ON DRAWING A10.53 AND M7.4. DUCTWORK SHALL BE CAPPED, UNLESS CAMPUS PROVIDES AIRFLOW SETPOINT PRIOR TO BALANCING.
9 6" POINT OF USE EXHAUST WITH DUCT MOUNTED HOOD. REFER TO A-SERIES DRAWINGS FOR FURTHER INFORMATION.
10 TYPE A, 22x10 GRILLE.
11 RE-BALANCE THE EXISTING SUPPLY/EXHAUST DIFFUSER/GRILLES AS NOTED.
12 PROVIDE ALL DUCTWORK MODIFICATIONS AS REQUIRED TO PROVIDE NEW REHEAT COIL.
13 TIE DUCTWORK INTO CONNECTION ON COLD ROOM AND BALANCE PER LAB AIRFLOW SCHEDULE.
14 EXISTING FIRE DAMPER HAS BEEN DECOMMISSIONED. SEE DEMOLITION DRAWINGS. PROVIDE DUCTWORK LABEL ON BOTH SIDES OF THE DAMPER. LABEL SHALL READ "DECOMMISSIONED FIRE DAMPER".
15 PROVIDE ASHRAE 110 TESTING ON EXISTING FUME HOOD AFTER ALL DUCTWORK AND CONTROLS MODIFICATIONS.
16 RE-BALANCE AND RE-CALIBRATE EXISTING AIR VALVE PER THE LAB AIR FLOW SCHEDULES.
17 TIE DUCTWORK INTO EXISTING AND PROVIDE ALL MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
18 STATIC PRESSURE SENSOR.
19 REINSTALL EXISTING SALVAGED LAV IN NEW LOCATION SHOWN.
21 EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE LOADING DOCK OFFICES AND ELEVATOR MACHINE ROOM.
22 REMOVE EXISTING RETAINING ANGLE. FIRESTOP THE DUCTWORK PENETRATION AFTER DAMPER IS PINNED OPEN.
23 STATIC PRESSURE SENSOR.



1 MECHANICAL GROUND FLOOR DUCTWORK PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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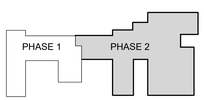
Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL GROUND FLOOR DUCTWORK PLAN - PHASE 2

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GENERAL NOTES:

A. BALANCE VENTILATION AIR TO EACH FAN COIL PER AIRFLOW LISTED IN FAN COIL UNIT SCHEDULE ON SCHEDULES SHEET.

B. THE DUCTWORK AT THE VAV AND AIR VALVE INLET AND OUTLET SHALL MATCH THE SIZES SHOWN ON THE EQUIPMENT SCHEDULE.

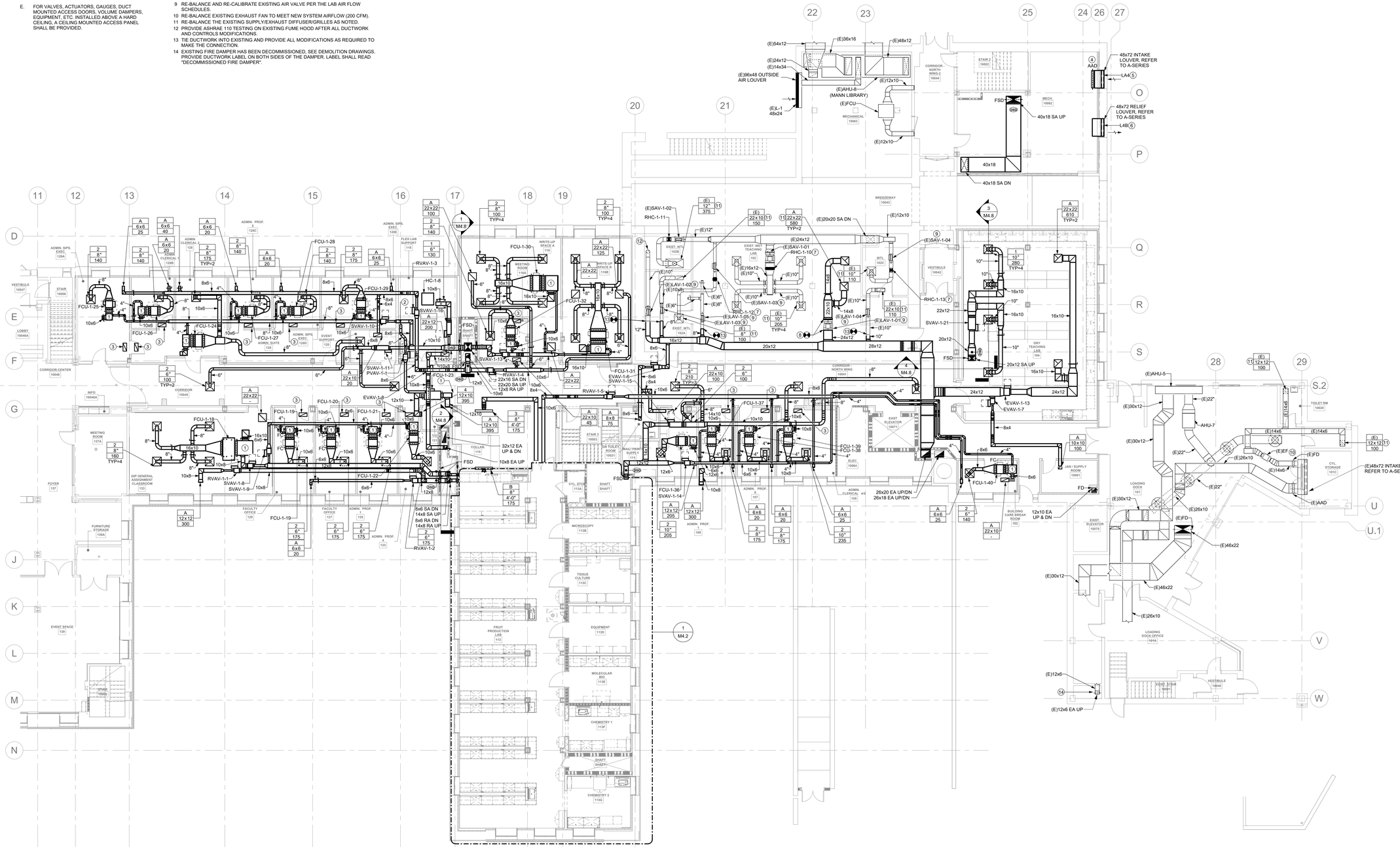
C. SMOKE DAMPER REMOTE TEST SWITCH SHALL BE COORDINATED WITH THE LOCATION OF THE DUCT SMOKE DETECTOR TEST/STATUS DEVICE AND LOCATED IN AN ACCESSIBLE LOCATION.

D. UNLESS OTHERWISE INDICATED, ALL LABORATORY EXHAUST IS LOCATED WITHIN THE LAB SUITE/CONTROL AREA IT SERVES AND DOES NOT REQUIRE FIRE WRAP.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1. FAN COIL UNIT RETURN PLENUM SHALL MATCH UNIT CONNECTION SIZE. PLENUM HEIGHT SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE DUCTWORK CONNECTIONS.
2. 6" EXHAUST DUCTWORK SHALL BE STUBBED THROUGH THE SOFFIT / CEILING FOR FUTURE SNORKEL / POINT EXHAUST CONNECTION. REFER TO DETAIL FOR FURTHER REQUIREMENTS.
3. TYPE A, 22x10 GRILLE.
4. TERMINATE OPEN ENDED DUCT WITH WIRE MESH SCREEN.
5. PROVIDE AUTOMATIC AIR DAMPER AND PLENUM FOR THE INTAKE LOUVER. LOUVER SHALL BE CONTROLLED BY EXISTING EXHAUST FANS EF-1-1 AND EF-7.
6. BLANK OFF BOTTOM 24" OF INTAKE LOUVER. PLENUM AND AUTOMATIC AIR DAMPER SHALL BE 48x48.
7. PROVIDE ALL DUCTWORK MODIFICATIONS AS REQUIRED TO PROVIDE NEW REHEAT COIL.
8. RE-INSTALL EXISTING SALVAGED AIR VALVE IN LOCATION SHOWN. PROVIDE ALL MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
9. RE-BALANCE AND RE-CALIBRATE EXISTING AIR VALVE PER THE LAB AIR FLOW SCHEDULES.
10. RE-BALANCE EXISTING EXHAUST FAN TO MEET NEW SYSTEM AIRFLOW (200 CFM).
11. RE-BALANCE THE EXISTING SUPPLY/EXHAUST DIFFUSER/GRILLES AS NOTED.
12. PROVIDE ASHRAE 110 TESTING ON EXISTING FUME HOOD AFTER ALL DUCTWORK AND CONTROLS MODIFICATIONS.
13. TIE DUCTWORK INTO EXISTING AND PROVIDE ALL MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
14. EXISTING FIRE DAMPER HAS BEEN DECOMMISSIONED. SEE DEMOLITION DRAWINGS. PROVIDE DUCTWORK LABEL ON BOTH SIDES OF THE DAMPER. LABEL SHALL READ "DECOMMISSIONED FIRE DAMPER".



1 MECHANICAL FIRST FLOOR DUCTWORK PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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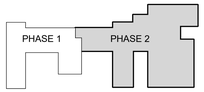

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
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Date August 31, 2026

Revisions

MECHANICAL FIRST FLOOR DUCTWORK PLAN - PHASE 2

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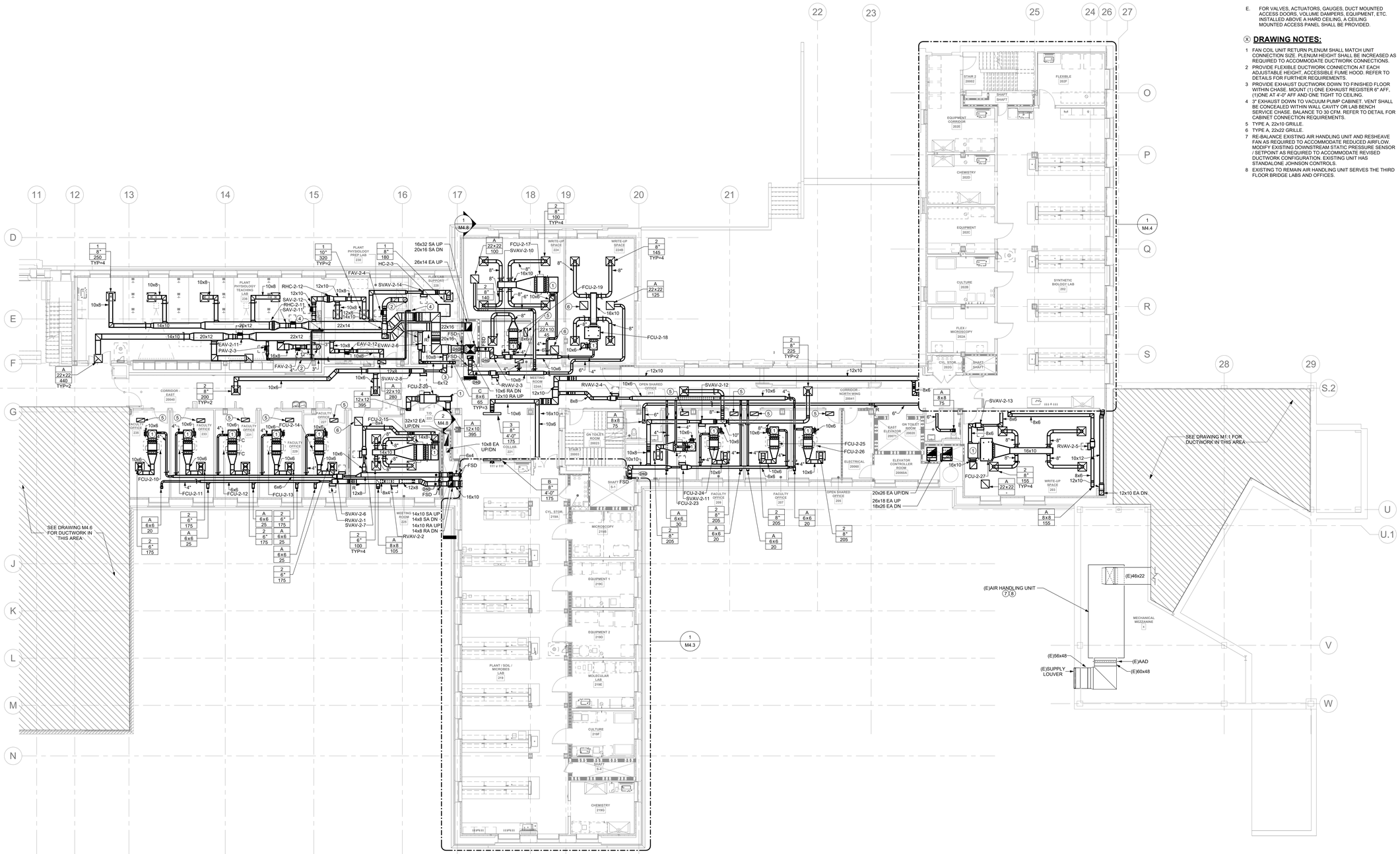
ⓧ DRAWING NOTES:

1. FAN COIL UNIT RETURN PLENUM SHALL MATCH UNIT CONNECTION SIZE. PLENUM HEIGHT SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE DUCTWORK CONNECTIONS.
2. PROVIDE FLEXIBLE DUCTWORK CONNECTION AT EACH ADJUSTABLE HEIGHT, ACCESSIBLE FUME HOOD. REFER TO DETAILS FOR FURTHER REQUIREMENTS.
3. PROVIDE EXHAUST DUCTWORK DOWN TO FINISHED FLOOR WITHIN CHASE. MOUNT (1) ONE EXHAUST REGISTER 6" AFF, (1)ONE AT 4'-0" AFF AND ONE TIGHT TO CEILING.
4. 3" EXHAUST DOWN TO VACUUM PUMP CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY OR LAB BENCH SERVICE CHASE. BALANCE TO 30 CFM. REFER TO DETAIL FOR CABINET CONNECTION REQUIREMENTS.
5. TYPE A, 22x10 GRILLE.
6. TYPE A, 22x22 GRILLE.
7. RE-BALANCE EXISTING AIR HANDLING UNIT AND RESHEAVE FAN AS REQUIRED TO ACCOMMODATE REDUCED AIRFLOW. MODIFY EXISTING DOWNSTREAM STATIC PRESSURE SENSOR / SETPOINT AS REQUIRED TO ACCOMMODATE REVISED DUCTWORK CONFIGURATION. EXISTING UNIT HAS STANDALONE JOHNSON CONTROLS.
8. EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES.



1 MECHANICAL SECOND FLOOR DUCTWORK PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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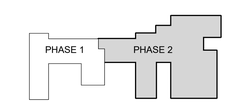

Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL SECOND FLOOR DUCTWORK PLAN - PHASE 2

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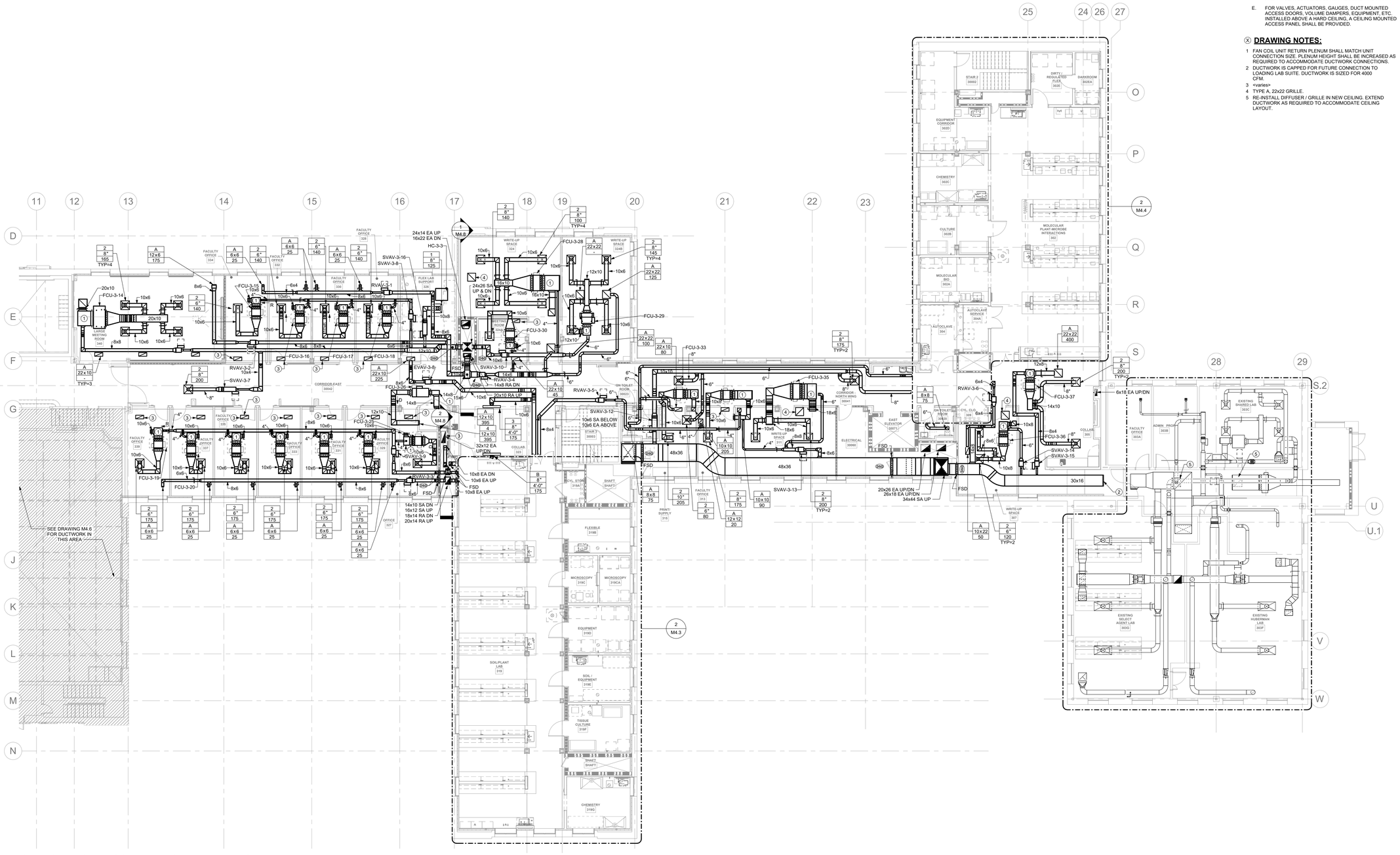
SEE DRAWING M4.8 FOR DUCTWORK IN THIS AREA
M4.8
M4.3
M4.4
S.2
U.1
LARGE MEETING ROOM 340
CORRIDOR-EAST 30042
CORRIDOR - NORTH WING 30041
ON TOILET ROOM 30023
ELECTRICAL 30066
EAST ELEVATOR 30071
FLEXIBLE 319B
MICROSCOPY 319C
MICROSCOPY 319CA
EQUIPMENT 319D
SOIL/PLANT LAB 319
SOIL / EQUIPMENT 319E
TISSUE CULTURE 319F
CHEMISTRY 319G
EXISTING SHARED LAB 303C
EXISTING SELECT AGENT LAB 303D
EXISTING HUBERMAN LAB 303F
ADMIN. PROF. 303B
FACULTY OFFICE 303A
EQUIPMENT CORRIDOR 302D
CHEMISTRY 302C
CULTURE 302B
MOLECULAR BIO. 302A
AUTOCLAVE SERVICE 304A
AUTOCLAVE 304
MOLECULAR PLANT-MICROBE INTERACTIONS 302
DARKROOM 302EA
STAIR 2 30002
STAIR 3 30003
48x36
30x16
20x26 EA UP/DN
26x18 EA UP/DN
34x44 SA UP
6x18 EA UP/DN
SVAV-3-13
SVAV-3-14
SVAV-3-15
FCU-3-36
FCU-3-37
RVAV-3-6
SVAV-3-12
10x8 SA BELOW
10x6 EA ABOVE
32x12 EA UP/DN
10x8 EA DN
10x6 EA UP
FSD
10x8 EA UP
14x10 SA DN
16x12 SA UP
18x14 RA DN
20x14 RA UP
24x14 EA UP
16x22 EA DN
HC-3-3
SVAV-3-16
SVAV-3-8
RVAV-3-1
FCU-3-28
FCU-3-29
FCU-3-30
FCU-3-33
FCU-3-35
RVAV-3-5
SVAV-3-10
RVAV-3-4
14x8 RA DN
20x10 RA UP
SVAV-3-9
FCU-3-19
FCU-3-20
FCU-3-26
FCU-3-25
FCU-3-18
FCU-3-17
FCU-3-16
FCU-3-15
FCU-3-14
RVAV-3-2
SVAV-3-7
EVAV-3-8
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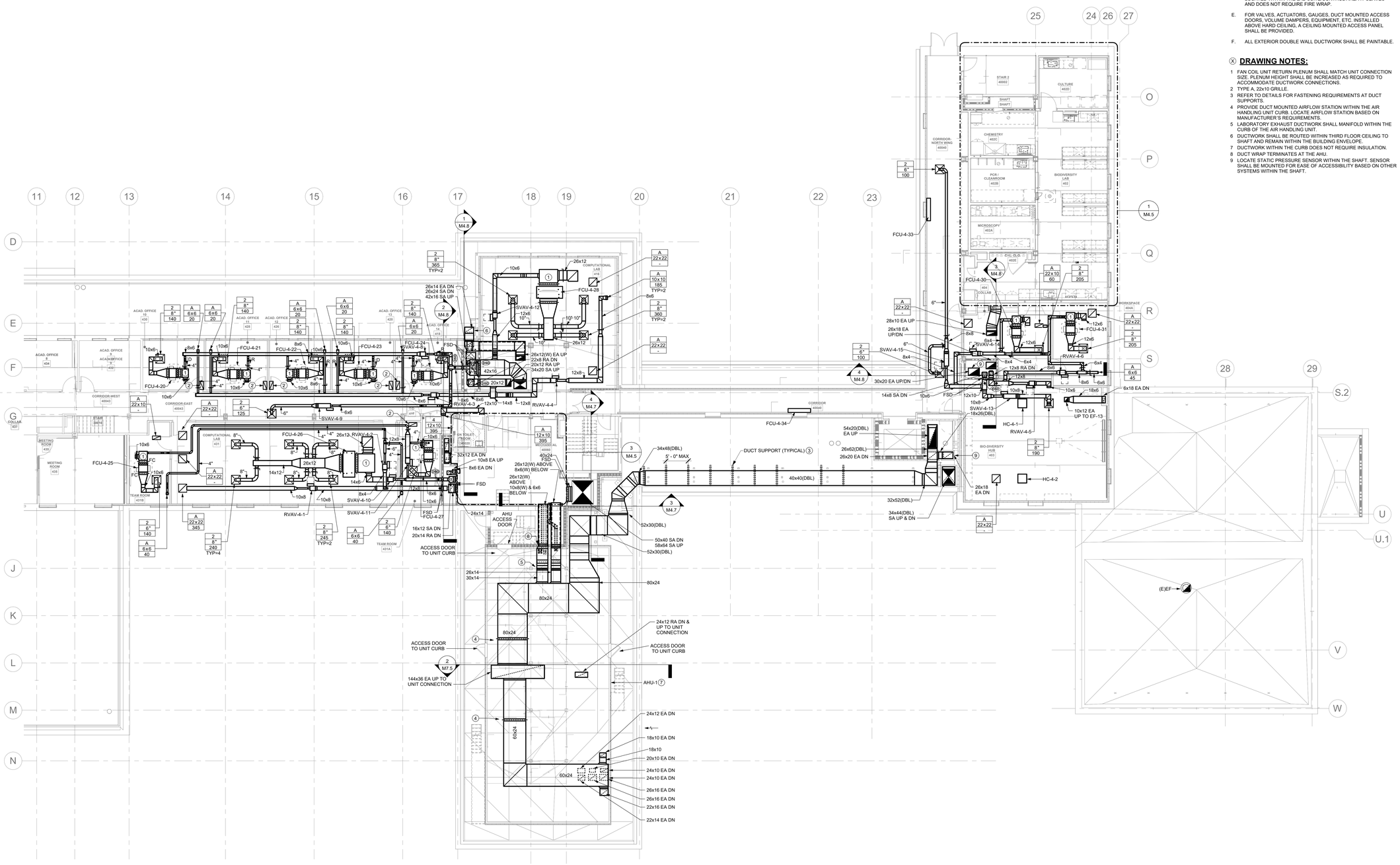

1 MECHANICAL FOURTH FLOOR DUCTWORK PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. BALANCE VENTILATION AIR TO EACH FAN COIL PER AIRFLOW LISTED IN FAN COIL UNIT SCHEDULE ON SCHEDULES SHEET.

B. THE DUCTWORK AT THE VAV AND AIR VALVE INLET AND OUTLET SHALL MATCH THE SIZES SHOWN ON THE EQUIPMENT SCHEDULE.

C. SMOKE DAMPER REMOTE TEST SWITCH SHALL BE COORDINATED WITH THE LOCATION OF THE DUCT SMOKE DETECTOR TEST/STATUS DEVICE AND LOCATED IN AN ACCESSIBLE LOCATION.

D. UNLESS OTHERWISE INDICATED, ALL LABORATORY EXHAUST IS LOCATED WITHIN THE LAB SUITE/CONTROL AREA IT SERVES AND DOES NOT REQUIRE FIRE WRAP.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

F. ALL EXTERIOR DOUBLE WALL DUCTWORK SHALL BE PAINTABLE.

ⓧ DRAWING NOTES:

1 FAN COIL UNIT RETURN PLENUM SHALL MATCH UNIT CONNECTION SIZE. PLENUM HEIGHT SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE DUCTWORK CONNECTIONS.
2 TYPE A, 22x10 GRILLE.
3 REFER TO DETAILS FOR FASTENING REQUIREMENTS AT DUCT SUPPORTS.
4 PROVIDE DUCT MOUNTED AIRFLOW STATION WITHIN THE AIR HANDLING UNIT CURB. LOCATE AIRFLOW STATION BASED ON MANUFACTURER'S REQUIREMENTS.
5 LABORATORY EXHAUST DUCTWORK SHALL MANIFOLD WITHIN THE CURB OF THE AIR HANDLING UNIT.
6 DUCTWORK SHALL BE ROUTED WITHIN THIRD FLOOR CEILING TO SHAFT AND REMAIN WITHIN THE BUILDING ENVELOPE.
7 DUCTWORK WITHIN THE CURB DOES NOT REQUIRE INSULATION.
8 DUCT WRAP TERMINATES AT THE AHU.
9 LOCATE STATIC PRESSURE SENSOR WITHIN THE SHAFT. SENSOR SHALL BE MOUNTED FOR EASE OF ACCESSIBILITY BASED ON OTHER SYSTEMS WITHIN THE SHAFT.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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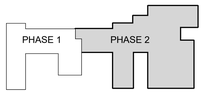

Keyplan

Job Number	31909.00
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Revisions

MECHANICAL FOURTH FLOOR DUCTWORK PLAN - PHASE 2

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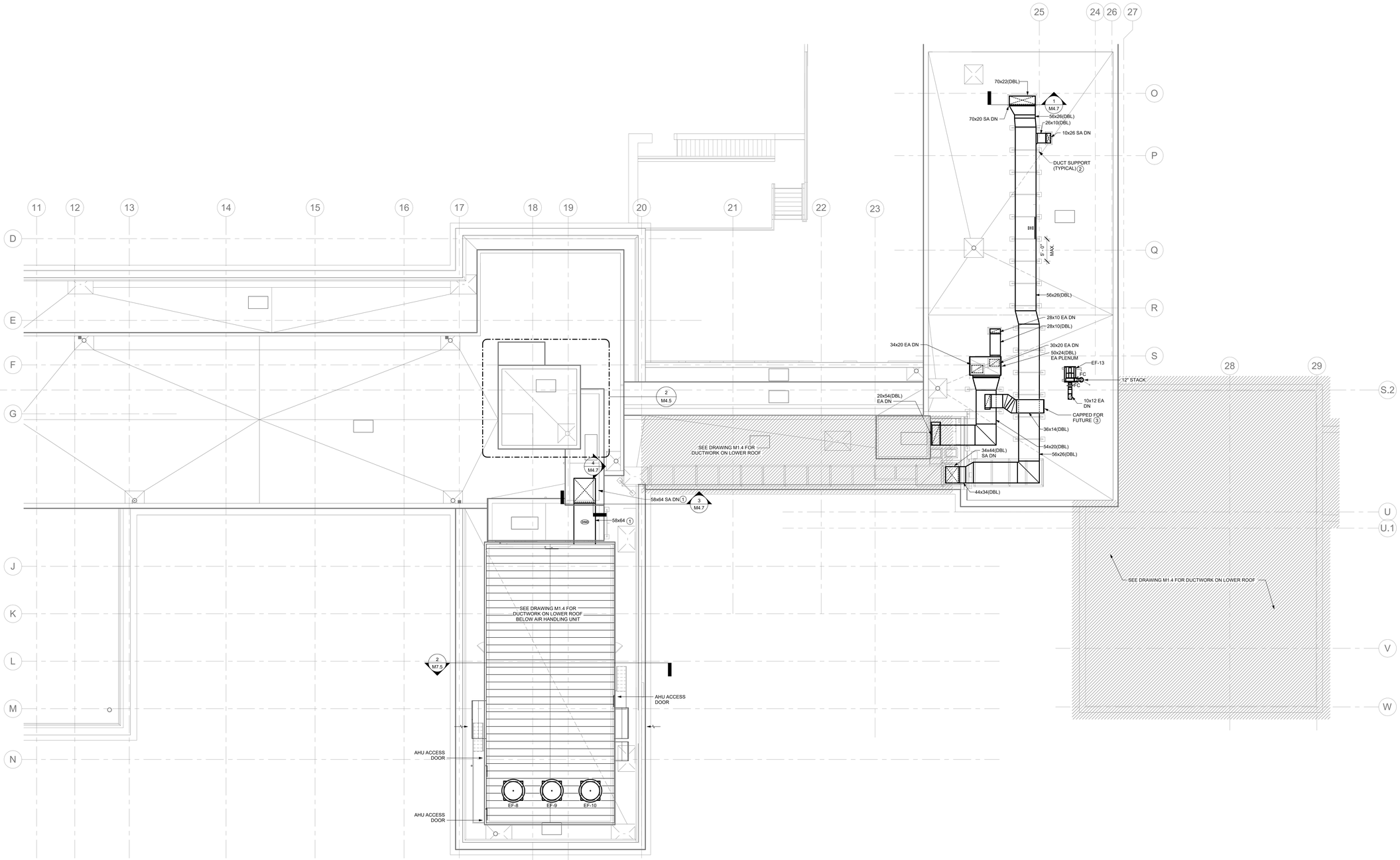
GENERAL NOTES:

A. ALL DOUBLE WALL DUCTWORK SHALL BE PAINTABLE.

DRAWING NOTES:

1 SUPPLY DUCTWORK IS LOCATED WITHIN THE BUILDING ENVELOPE.
2 REFER TO DETAILS FOR FASTENING REQUIREMENTS AT DUCT SUPPORTS.
3 DUCTWORK IS CAPPED FOR FUTURE CONNECTION TO LOADING DOCK LAB SUITE. DUCTWORK IS SIZED FOR 4000 CFM.



1 MECHANICAL ROOF DUCTWORK PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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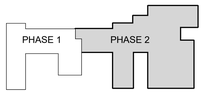
Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL ROOF DUCTWORK PLAN - PHASE 2

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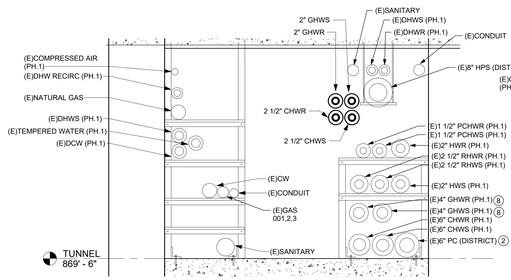
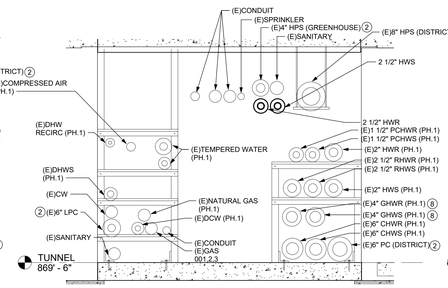


3 N/S TUNNEL SECTION
NOT TO SCALE



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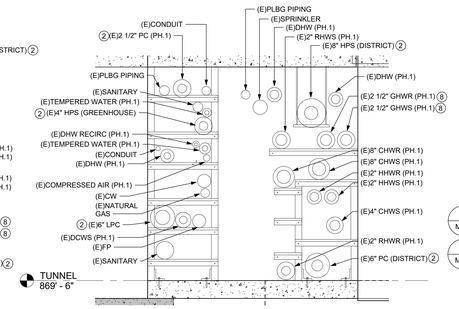

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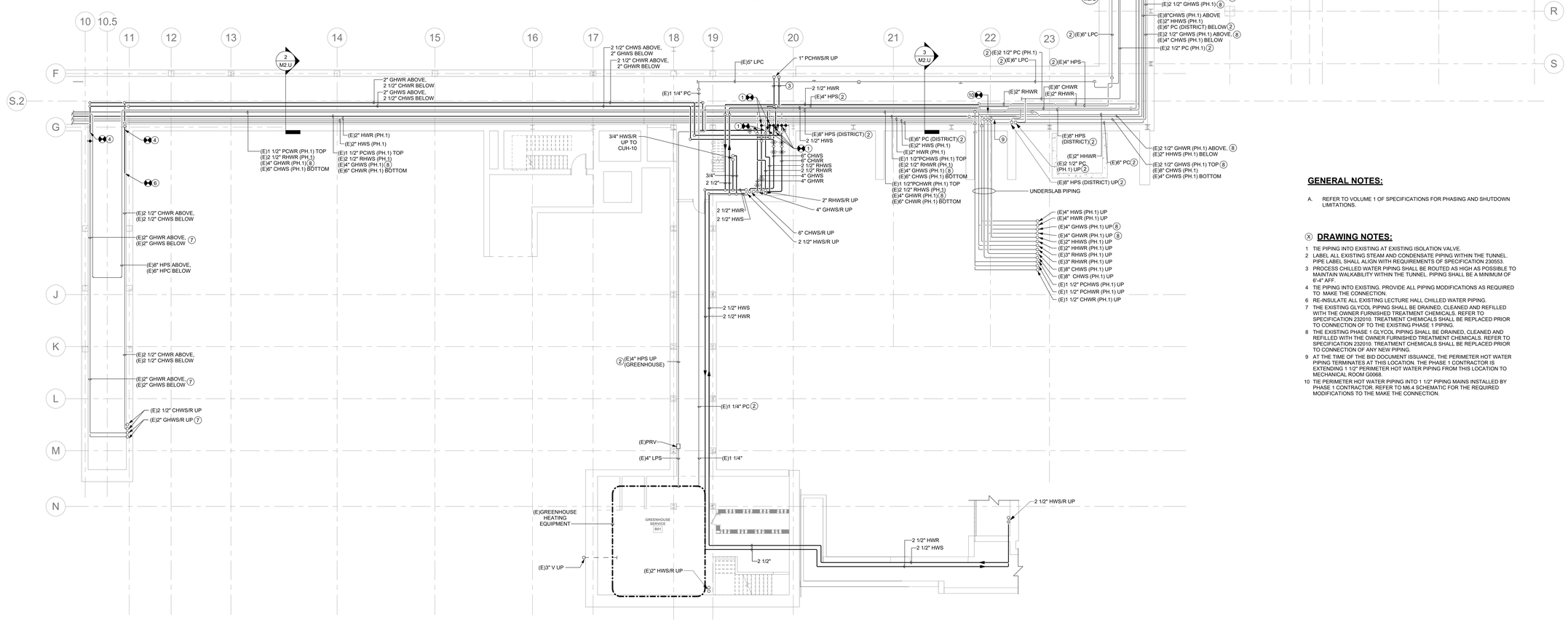
NOT TO SCALE



1 MECHANICAL TUNNEL PIPING PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

ⓧ DRAWING NOTES:

1 TIE PIPING INTO EXISTING AT EXISTING ISOLATION VALVE.
2 LABEL ALL EXISTING STEAM AND CONDENSATE PIPING WITHIN THE TUNNEL. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.
3 PROCESS CHILLED WATER PIPING SHALL BE ROUTED AS HIGH AS POSSIBLE TO MAINTAIN WALKABILITY WITHIN THE TUNNEL. PIPING SHALL BE A MINIMUM OF 6'-4" AFF.
4 TIE PIPING INTO EXISTING. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
6 RE-INSULATE ALL EXISTING LECTURE HALL CHILLED WATER PIPING.
7 THE EXISTING GLYCOL PIPING SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.
8 THE EXISTING PHASE 1 GLYCOL PIPING SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF ANY NEW PIPING.
9 AT THE TIME OF THE BID DOCUMENT ISSUANCE, THE PERIMETER HOT WATER PIPING TERMINATES AT THIS LOCATION. THE PHASE 1 CONTRACTOR IS EXTENDING 1 1/2" PERIMETER HOT WATER PIPING FROM THIS LOCATION TO MECHANICAL ROOM G0068.
10 TIE PERIMETER HOT WATER PIPING INTO 1 1/2" PIPING MAINS INSTALLED BY PHASE 1 CONTRACTOR. REFER TO M6.4 SCHEMATIC FOR THE REQUIRED MODIFICATIONS TO THE MAKE THE CONNECTION.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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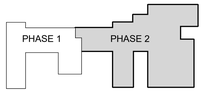
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL TUNNEL PIPING PLAN - PHASE 2

STATE OF NEW YORK · NICHOLAS T. DANIEL GRUBER · 094525 · LICENSED PROFESSIONAL ENGINEER

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Scale: As indicated

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GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

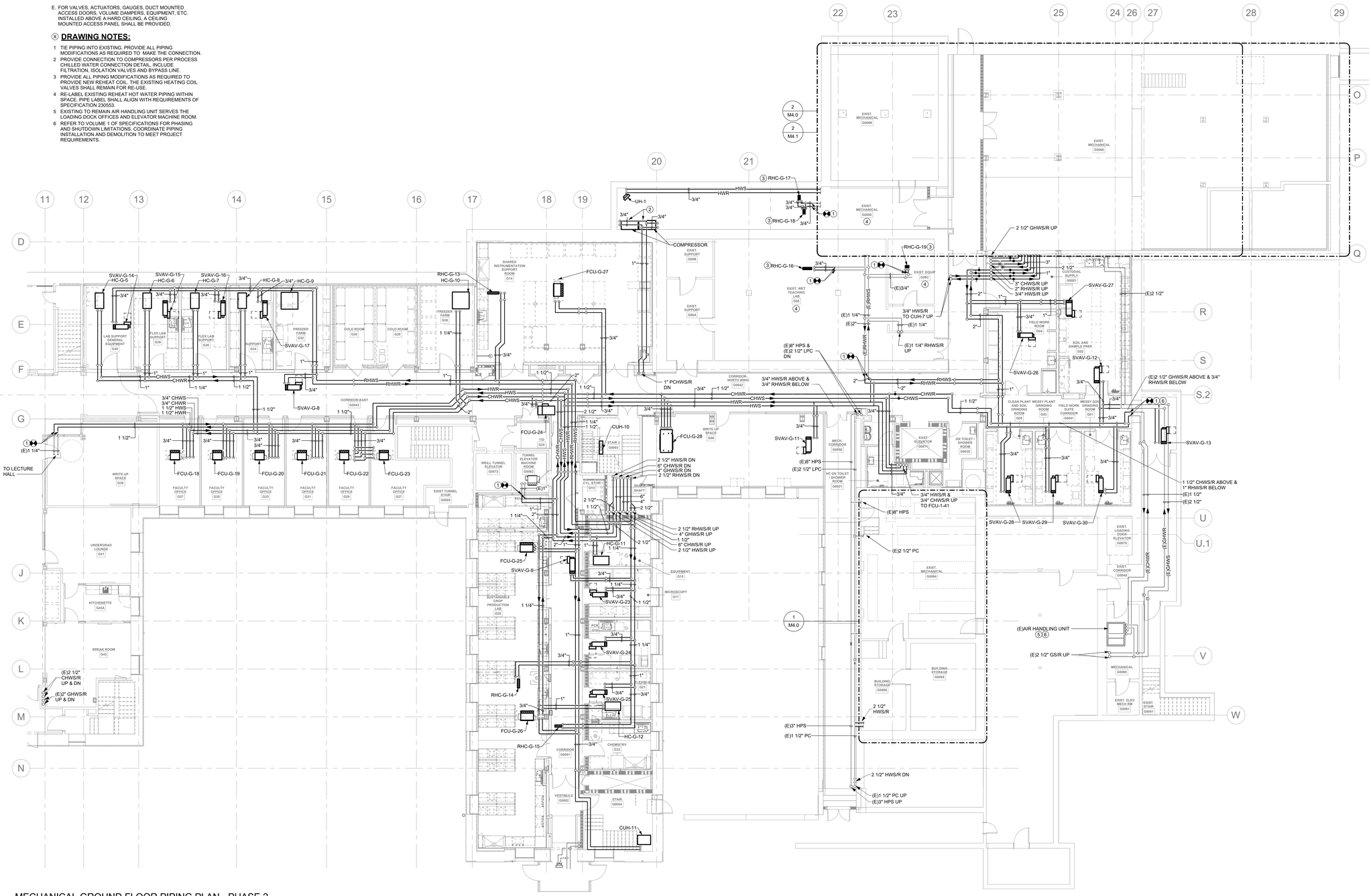
C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

D. REFER TO DUCTWORK PLANS FOR ROUTING OF FLAMMABLE CABINET VENT PIPING.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1. TIE PIPING INTO EXISTING. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
2. PROVIDE CONNECTION TO COMPRESSORS PER PROCESS CHILLED WATER CONNECTION DETAIL, INCLUDE FILTRATION, ISOLATION VALVES AND BYPASS LINE.
3. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO PROVIDE NEW REHEAT COIL. THE EXISTING HEATING COIL VALVES SHALL REMAIN FOR RE-USE.
4. RE-LABEL EXISTING REHEAT HOT WATER PIPING WITHIN SPACE. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.
5. EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE LOADING DOCK OFFICES AND ELEVATOR MACHINE ROOM.
6. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS. COORDINATE PIPING INSTALLATION AND DEMOLITION TO MEET PROJECT REQUIREMENTS.



1 MECHANICAL GROUND FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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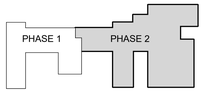
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL GROUND FLOOR PIPING PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL NAYLOR · 094525 · LICENSED PROFESSIONAL ENGINEER

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Scale: 1/8" = 1'-0"

M2.0

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GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

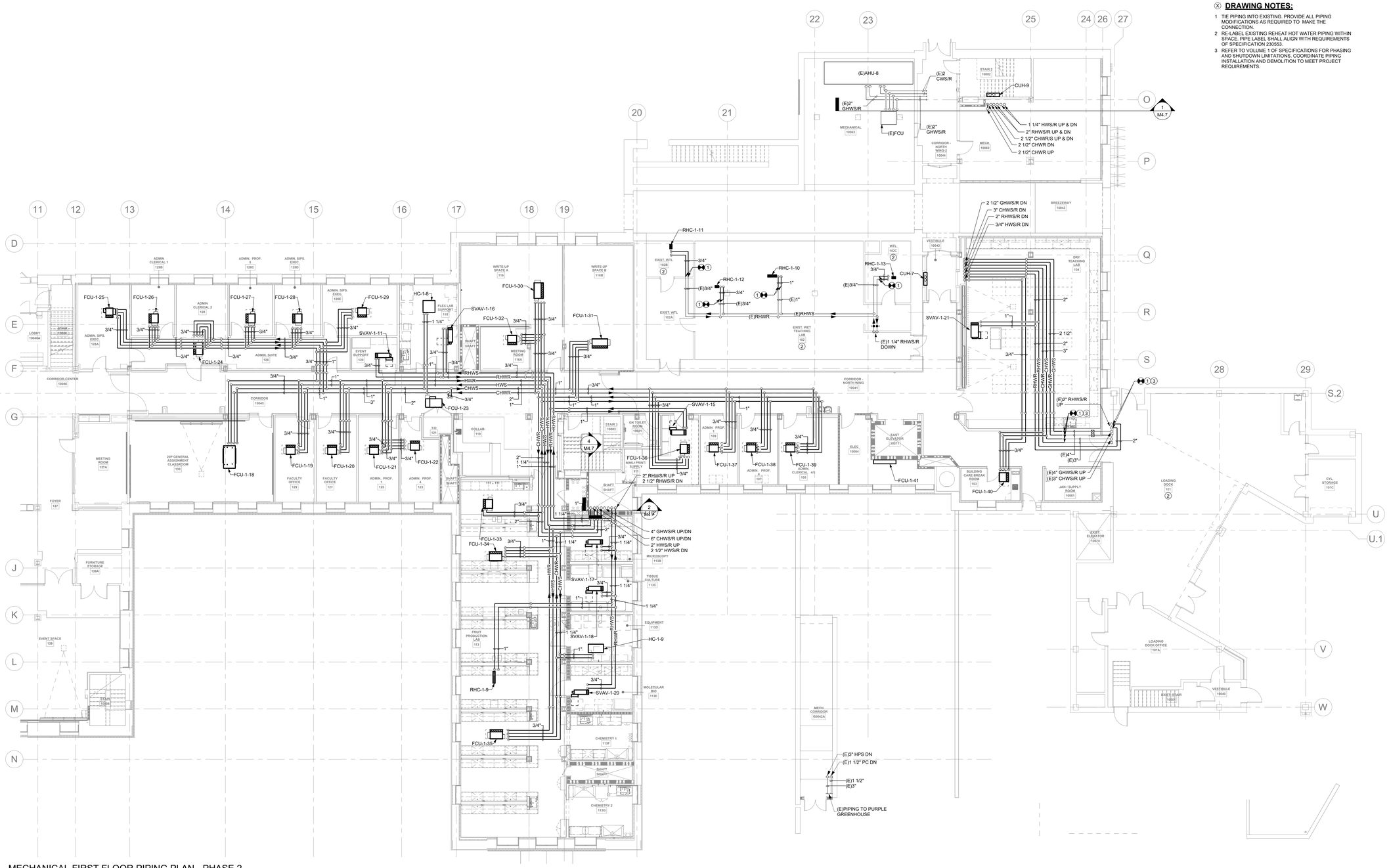
C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

D. REFER TO DUCTWORK PLANS FOR ROUTING OF FLAMMABLE CABINET VENT PIPING.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

(X) DRAWING NOTES:

1. TIE PIPING INTO EXISTING. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
2. RE-LABEL EXISTING REHEAT HOT WATER PIPING WITHIN SPACE. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.
3. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS. COORDINATE PIPING INSTALLATION AND DEMOLITION TO MEET PROJECT REQUIREMENTS.



1 MECHANICAL FIRST FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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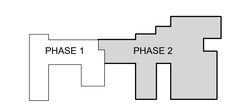

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Job Number 31909.00
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Revisions

MECHANICAL FIRST FLOOR PIPING PLAN - PHASE 2

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GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.

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D. REFER TO DUCTWORK PLANS FOR ROUTING OF FLAMMABLE CABINET VENT PIPING.

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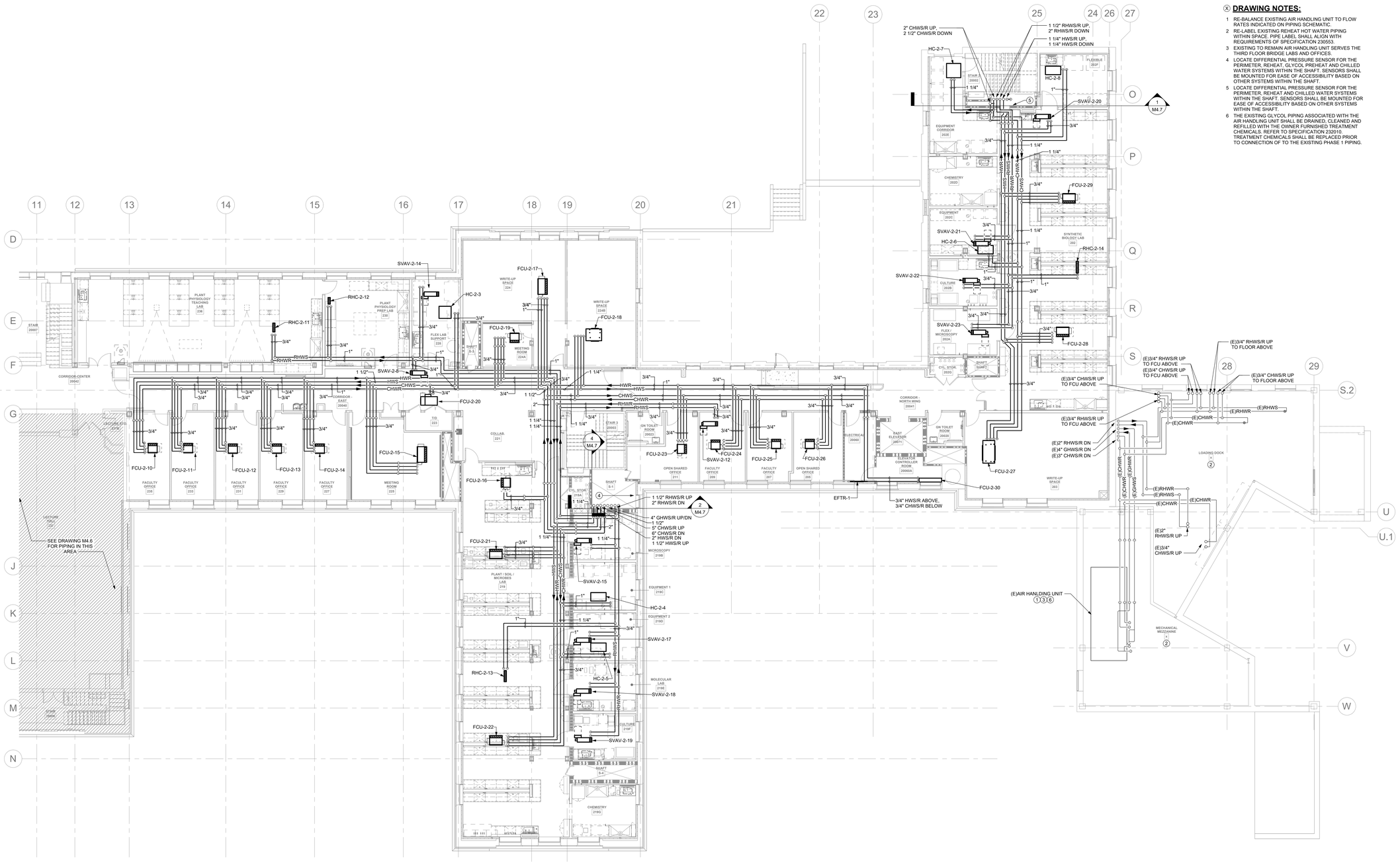
ⓧ DRAWING NOTES:

1. RE-BALANCE EXISTING AIR HANDLING UNIT TO FLOW RATES INDICATED ON PIPING SCHEMATIC.
2. RE-LABEL EXISTING REHEAT HOT WATER PIPING WITHIN SPACE. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.
3. EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES.
4. LOCATE DIFFERENTIAL PRESSURE SENSOR FOR THE PERIMETER, REHEAT, GLYCOL PREHEAT AND CHILLED WATER SYSTEMS WITHIN THE SHAFT. SENSORS SHALL BE MOUNTED FOR EASE OF ACCESSIBILITY BASED ON OTHER SYSTEMS WITHIN THE SHAFT.
5. LOCATE DIFFERENTIAL PRESSURE SENSOR FOR THE PERIMETER, REHEAT AND CHILLED WATER SYSTEMS WITHIN THE SHAFT. SENSORS SHALL BE MOUNTED FOR EASE OF ACCESSIBILITY BASED ON OTHER SYSTEMS WITHIN THE SHAFT.
6. THE EXISTING GLYCOL PIPING ASSOCIATED WITH THE AIR HANDLING UNIT SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.



1 MECHANICAL SECOND FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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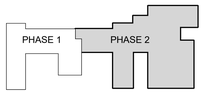

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL SECOND FLOOR PIPING PLAN - PHASE 2

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C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

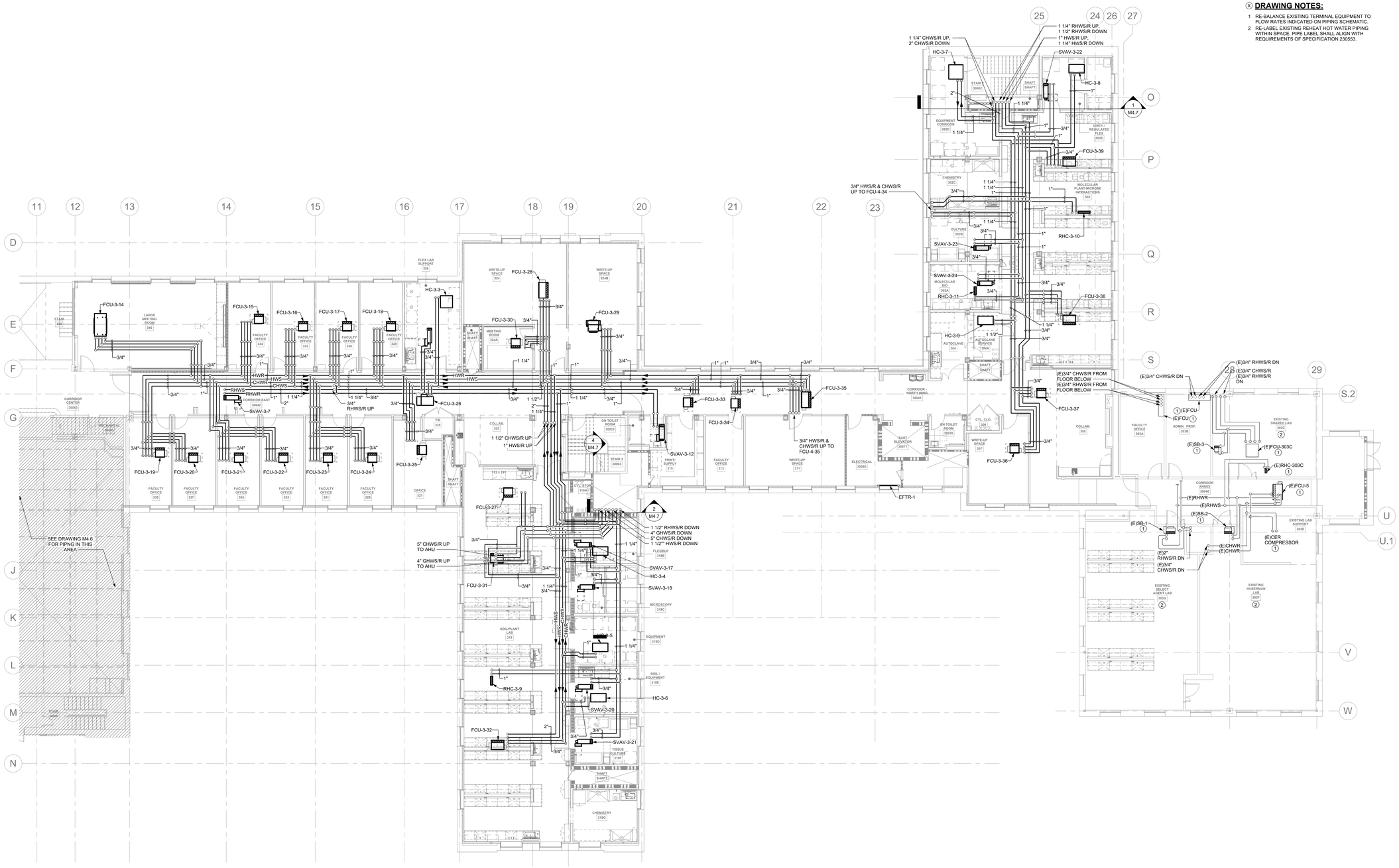
D. REFER TO DUCTWORK PLANS FOR ROUTING OF FLAMMABLE CABINET VENT PIPING.

E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 RE-BALANCE EXISTING TERMINAL EQUIPMENT TO FLOW RATES INDICATED ON PIPING SCHEMATIC.

2 RE-LABEL EXISTING REHEAT HOT WATER PIPING WITHIN SPACE. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.



1 MECHANICAL THIRD FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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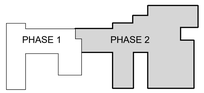

Keyplan

Job Number	31909.00
Drawing By	ZMH
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MECHANICAL THIRD FLOOR PIPING PLAN - PHASE 2

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C. REFER TO DUCTWORK PLANS FOR ROUTING OF CORROSIVE CABINET VENT PIPING.

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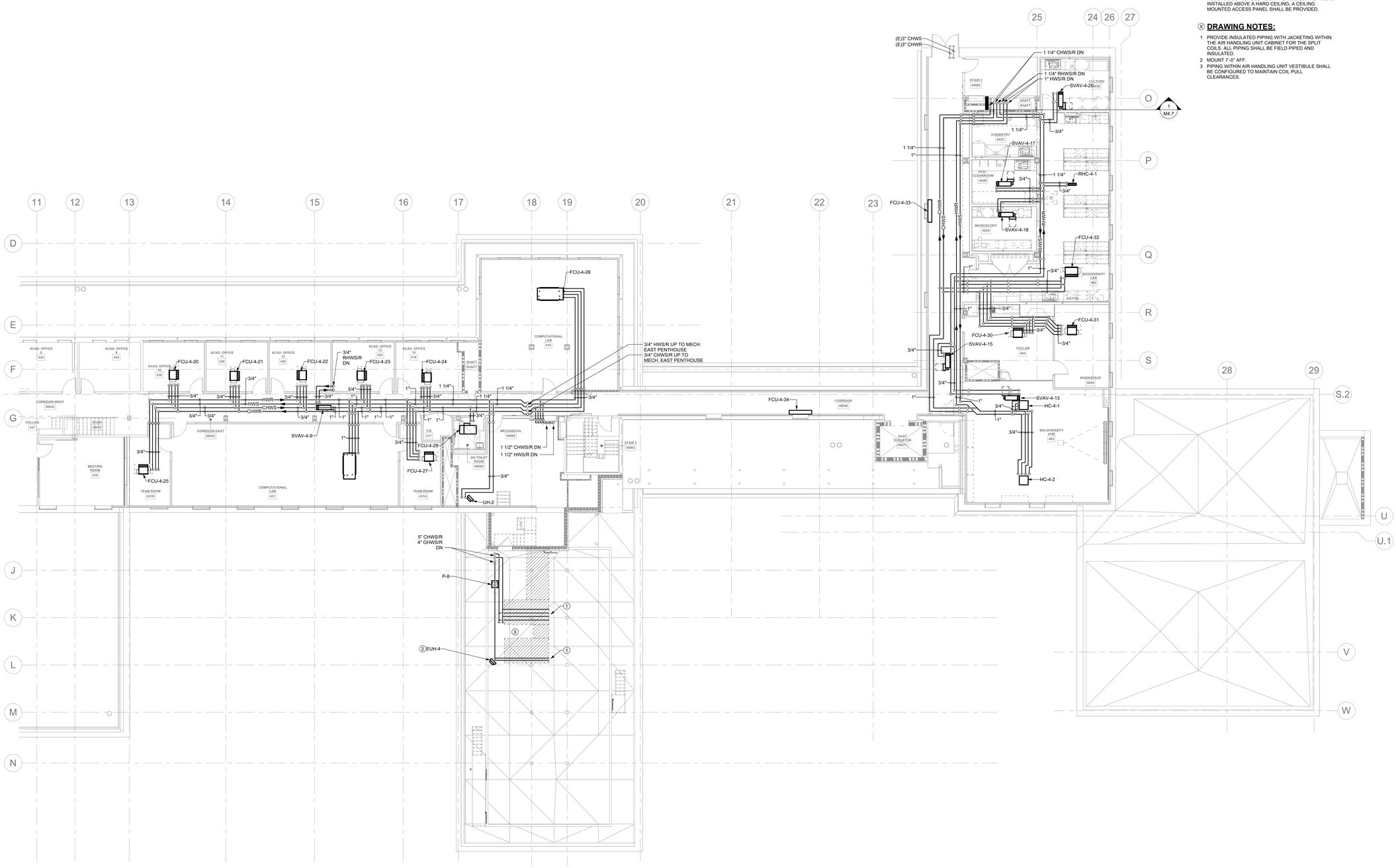
E. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

(X) DRAWING NOTES:

1 PROVIDE INSULATED PIPING WITH JACKETING WITHIN THE AIR HANDLING UNIT CABINET FOR THE SPLIT COILS. ALL PIPING SHALL BE FIELD PIPED AND INSULATED.

2 MOUNT 7'-0" AFF.

3 PIPING WITHIN AIR HANDLING UNIT VESTIBULE SHALL BE CONFIGURED TO MAINTAIN COIL PULL CLEARANCES.



1 MECHANICAL FOURTH FLOOR PIPING PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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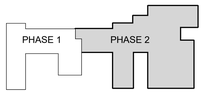
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL FOURTH FLOOR PIPING PLAN - PHASE 2

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M2.4

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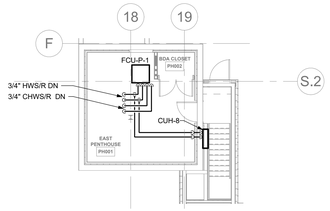
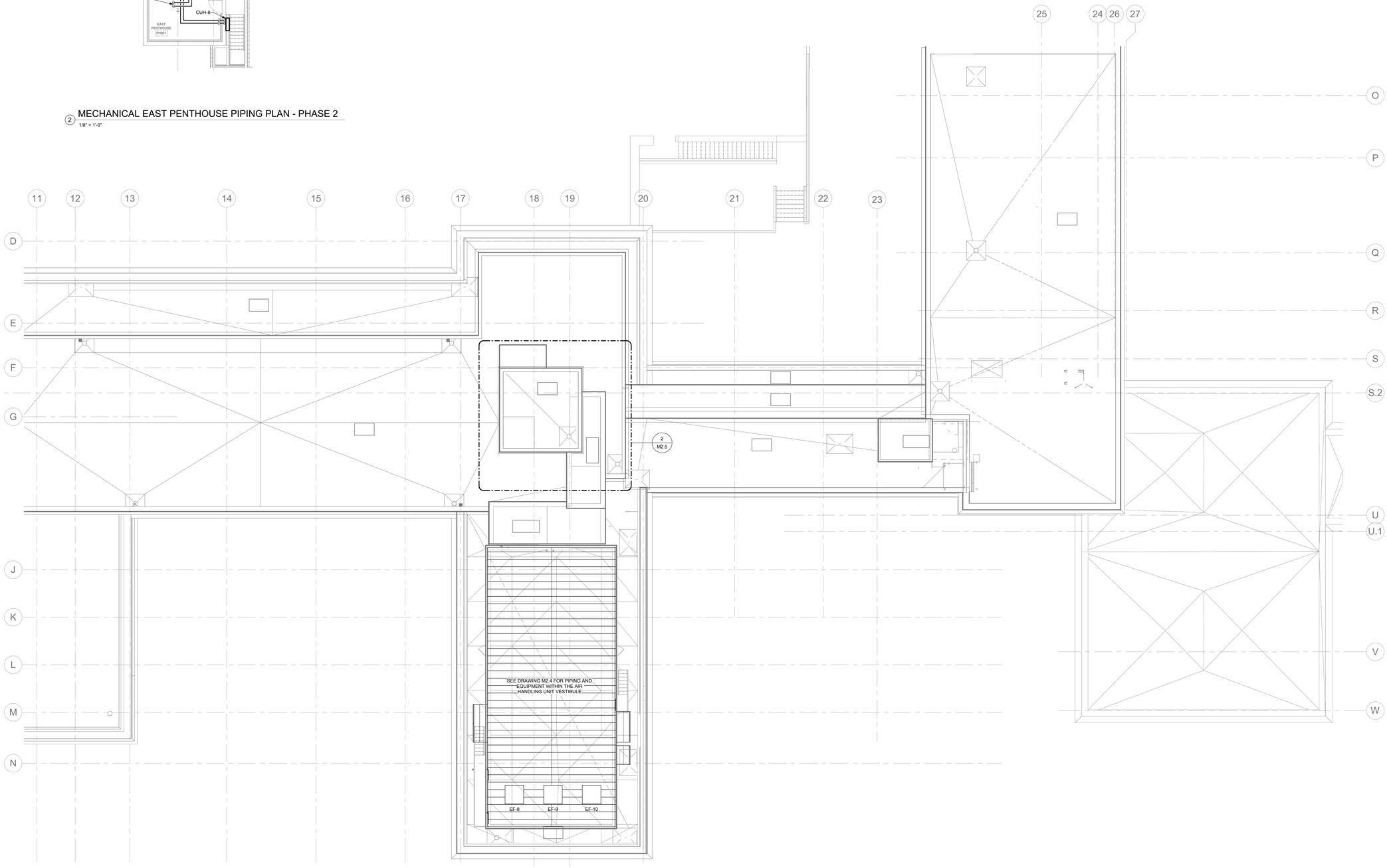
GENERAL NOTES:

A. UNLESS NOTED OTHERWISE, ALL BRANCH PIPING TO EQUIPMENT SHALL BE 3/4".

B. ALL BRANCH PIPING CONNECTIONS SHALL BE MADE AT THE TOP OF THE MAIN.



2 MECHANICAL EAST PENTHOUSE PIPING PLAN - PHASE 2
1/8" = 1'-0"



1 MECHANICAL ROOF PIPING PLAN - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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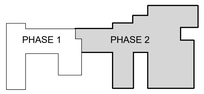

Keyplan

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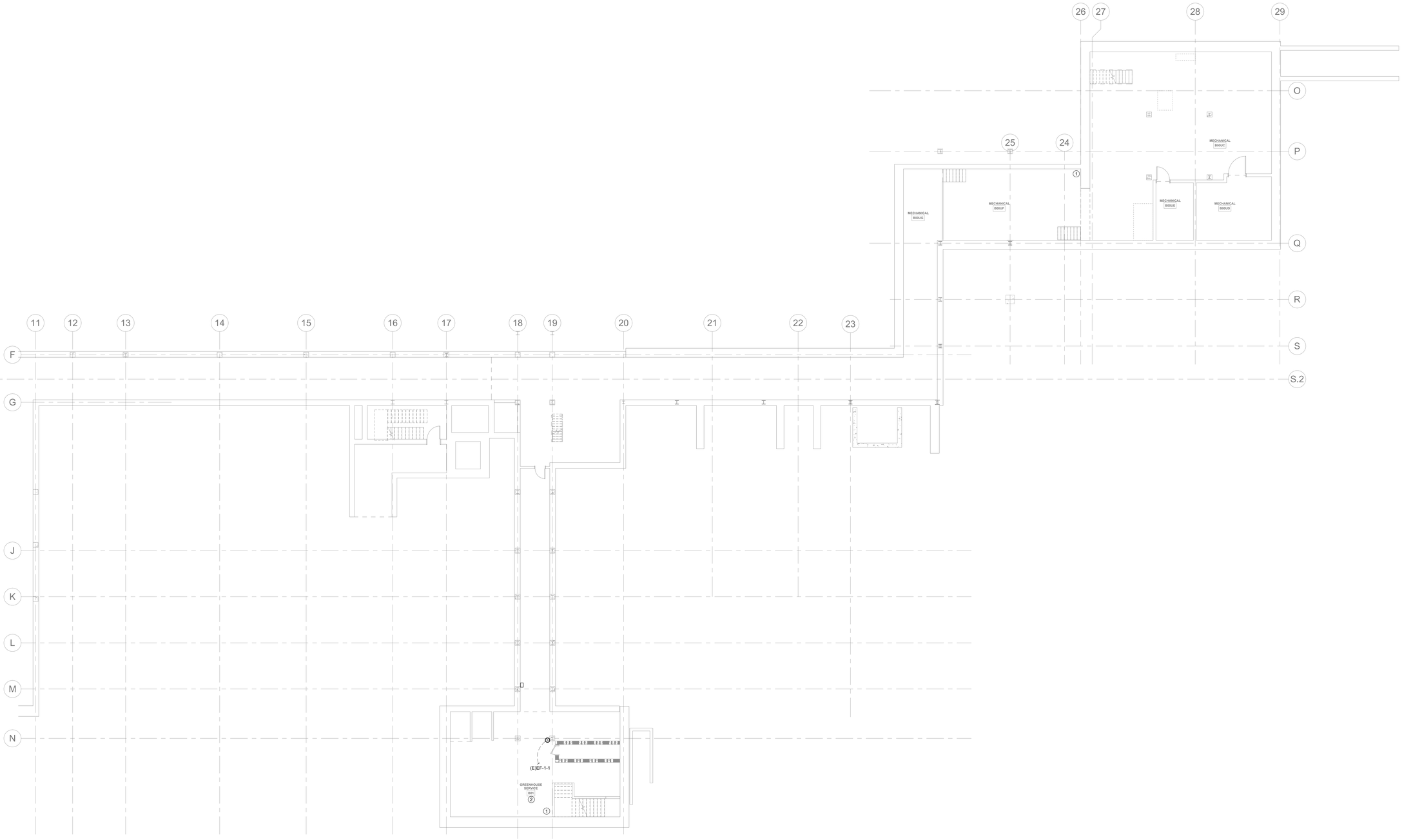
ⓧ DRAWING NOTES:

1 PROVIDE BMS MONITORING FOR THE EXISTING SANITARY RECEIVER.
2 NEGATIVE PRESSURIZATION



1 MECHANICAL TUNNEL CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

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Autodesk Docs://31909 SUCF Cornell Plant Sciences/31909_Cornell_PS8_MEP1_PH2_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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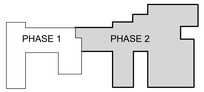
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
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Date	August 31, 2026

Revisions

MECHANICAL TUNNEL PRESSURIZATION & CONTROLS PLAN - PHASE 2

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GENERAL NOTES:

A. COORDINATE EXACT LOCATION OF VENTILATION SHUTDOWN SWITCHES AND SPACE SENSORS WITH A-SERIES DRAWINGS.

B. REFER TO E-SERIES DRAWINGS FOR OCCUPANCY SENSOR LOCATIONS. OCCUPANCY SENSORS ARE PROVIDED BY DIVISION 26. CONTROL WIRING FROM OCCUPANCY SENSOR TO BACS CONTROLLER SHALL BE PROVIDED BY DIVISION 23.

C. SUBMIT PROPOSED LOCATIONS FOR BMS PANELS. PANELS SHALL BE CONCEALED ABOVE THE CEILING OR LOCATED WITHIN MECHANICAL / ELECTRICAL SPACE.

D. POWER SHALL BE EXTENDED FROM JUNCTION BOXES, PROVIDED BY DIVISION 26, TO BMS PANELS BY DIVISION 23. REFER TO E-SERIES DRAWINGS FOR JUNCTION BOXES AND CIRCUITS INTENDED FOR BMS PANELS.

E. PROVIDE BMS MONITORING ALL COMBINATION FIRE SMOKE DAMPERS OR SMOKE DAMPERS. REFER TO PLANS FOR LOCATIONS.

F. PROVIDE COMBINATION SPACE TEMPERATURE AND HUMIDITY SENSOR FOR TEMPERATURE CONTROL IN ALL SPACES SERVED BY HEATING/COOLING EQUIPMENT.

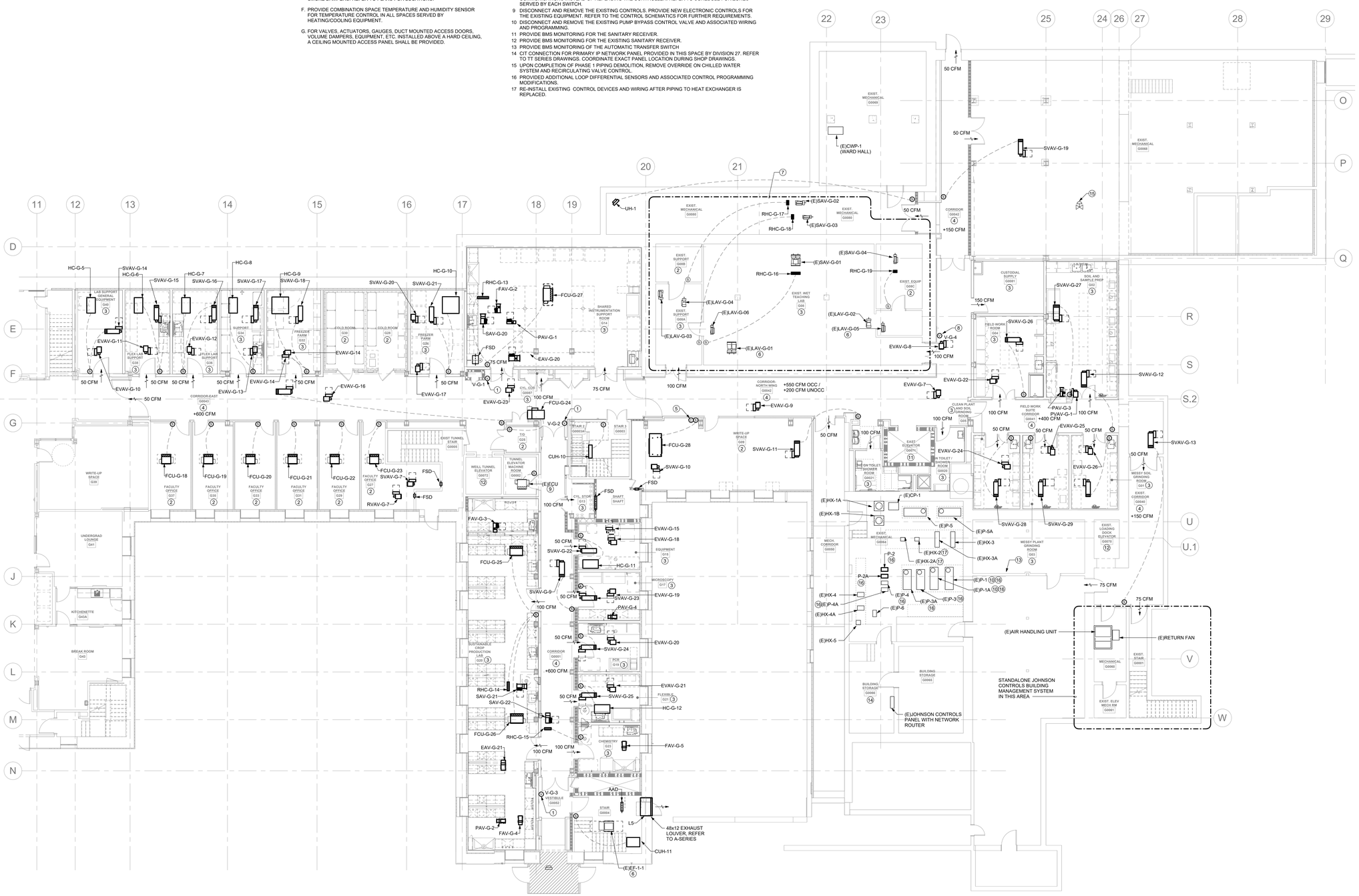
G. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL CONTROLLERS. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
2 NEUTRAL PRESSURIZATION
3 NEGATIVE PRESSURIZATION
4 POSITIVE PRESSURIZATION
5 PROVIDE COMBINATION SENSOR WITH CO2 MONITORING.
6 MODIFY THE EXISTING CONTROLS AS REQUIRED TO RELOCATE THE EXISTING EQUIPMENT TO THE LOCATION SHOWN.
7 THE EXISTING AUTOMATED LOGIC CONTROLS AND CONTROLLERS WITH EXISTING BACNET/ARCNET SHALL REMAIN. THE EXISTING SYSTEM SHALL BE RECOMMISSIONED. RECOMMISSIONING SHALL INCLUDE POINT TO POINT CHECKOUT WITH SENSOR RE-CALIBRATION. ALL PHYSICAL EQUIPMENT DEFICIENCIES IDENTIFIED AND SHALL BE REPORT TO CORNELL UNIVERSITY FOR RESOLUTION AND SHALL BE ADDRESSED ON A CASE-BY-CASE BASIS. THE AIR VALVE SETPOINTS SHALL BE REVISED AND RE-CALIBRATED PER THE AIRFLOW SCHEDULE. THE SEQUENCE OF OPERATION SHALL BE MODIFIED TO INCORPORATE THE EMERGENCY VENTILATION SHUTOFF SWITCH.
8 PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL EXISTING CONTROLLERS. FOR EXISTING CONTROLLERS WITHOUT SPARE I/O. PROVIDE NETWORK COMMUNICATIONS INSTEAD OF REPLACING THE CONTROLLER. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
9 DISCONNECT AND REMOVE THE EXISTING CONTROLS. PROVIDE NEW ELECTRONIC CONTROLS FOR THE EXISTING EQUIPMENT. REFER TO THE CONTROL SCHEMATICS FOR FURTHER REQUIREMENTS.
10 DISCONNECT AND REMOVE THE EXISTING PUMP BYPASS CONTROL VALVE AND ASSOCIATED WIRING AND PROGRAMMING.
11 PROVIDE BMS MONITORING FOR THE SANITARY RECEIVER.
12 PROVIDE BMS MONITORING FOR THE EXISTING SANITARY RECEIVER.
13 PROVIDE BMS MONITORING OF THE AUTOMATIC TRANSFER SWITCH
14 CIT CONNECTION FOR PRIMARY IP NETWORK PANEL PROVIDED IN THIS SPACE BY DIVISION 27. REFER TO TT SERIES DRAWINGS. COORDINATE EXACT PANEL LOCATION DURING SHOP DRAWINGS.
15 UPON COMPLETION OF PHASE 1 PIPING DEMOLITION, REMOVE OVERRIDE ON CHILLED WATER SYSTEM AND RECIRCULATING VALVE CONTROL.
16 PROVIDED ADDITIONAL LOOP DIFFERENTIAL SENSORS AND ASSOCIATED CONTROL PROGRAMMING MODIFICATIONS.
17 RE-INSTALL EXISTING CONTROL DEVICES AND WIRING AFTER PIPING TO HEAT EXCHANGER IS REPLACED.

SHUTDOWN SWITCH SCHEDULE

UNIT NO.	SERVICE
V-G-1	G14, G0087
V-G-2 / V-G-3	G13, G15, G17, G19, G21, G23
V-G-4	G08, G08A, G08B, G08C



1 MECHANICAL GROUND FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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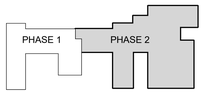
Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL GROUND FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL GRAEBER · 094525 · LICENSED PROFESSIONAL ENGINEER

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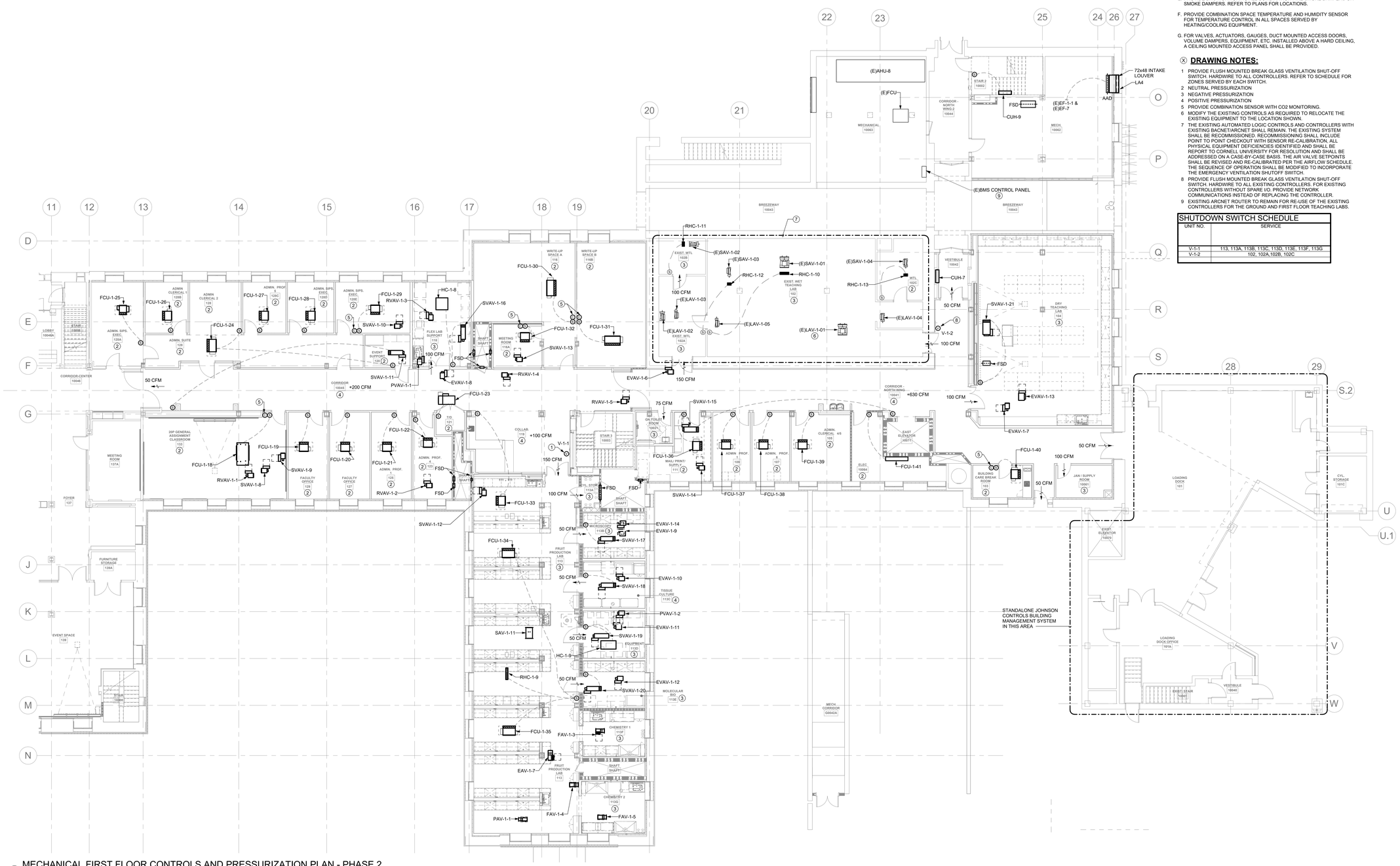

1 MECHANICAL FIRST FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2

1/8" = 1'-0"

GENERAL NOTES:

A. COORDINATE EXACT LOCATION OF VENTILATION SHUTDOWN SWITCHES AND SPACE SENSORS WITH A-SERIES DRAWINGS.

B. REFER TO E-SERIES DRAWINGS FOR OCCUPANCY SENSOR LOCATIONS. OCCUPANCY SENSORS ARE PROVIDED BY DIVISION 26. CONTROL WIRING FROM OCCUPANCY SENSOR TO BACS CONTROLLER SHALL BE PROVIDED BY DIVISION 23.

C. SUBMIT PROPOSED LOCATIONS FOR BMS PANELS. PANELS SHALL BE CONCEALED ABOVE THE CEILING OR LOCATED WITHIN MECHANICAL / ELECTRICAL SPACE.

D. POWER SHALL BE EXTENDED FROM JUNCTION BOXES, PROVIDED BY DIVISION 26, TO BMS PANELS BY DIVISION 23. REFER TO E-SERIES DRAWINGS FOR JUNCTION BOXES AND CIRCUITS INTENDED FOR BMS PANELS.

E. PROVIDE BMS MONITORING ALL COMBINATION FIRE SMOKE DAMPERS OR SMOKE DAMPERS. REFER TO PLANS FOR LOCATIONS.

F. PROVIDE COMBINATION SPACE TEMPERATURE AND HUMIDITY SENSOR FOR TEMPERATURE CONTROL IN ALL SPACES SERVED BY HEATING/COOLING EQUIPMENT.

G. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1. PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL CONTROLLERS. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
2. NEUTRAL PRESSURIZATION
3. NEGATIVE PRESSURIZATION
4. POSITIVE PRESSURIZATION
5. PROVIDE COMBINATION SENSOR WITH CO2 MONITORING.
6. MODIFY THE EXISTING CONTROLS AS REQUIRED TO RELOCATE THE EXISTING EQUIPMENT TO THE LOCATION SHOWN.
7. THE EXISTING AUTOMATED LOGIC CONTROLS AND CONTROLLERS WITH EXISTING BACNET/ARCNET SHALL REMAIN. THE EXISTING SYSTEM SHALL BE RECOMMISSIONED. RECOMMISSIONING SHALL INCLUDE POINT TO POINT CHECKOUT WITH SENSOR RE-CALIBRATION, ALL PHYSICAL EQUIPMENT DEFICIENCIES IDENTIFIED AND SHALL BE REPORT TO CORNELL UNIVERSITY FOR RESOLUTION AND SHALL BE ADDRESSED ON A CASE-BY-CASE BASIS. THE AIR VALVE SETPOINTS SHALL BE REVISED AND RE-CALIBRATED PER THE AIRFLOW SCHEDULE. THE SEQUENCE OF OPERATION SHALL BE MODIFIED TO INCORPORATE THE EMERGENCY VENTILATION SHUTOFF SWITCH.
8. PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL EXISTING CONTROLLERS. FOR EXISTING CONTROLLERS WITHOUT SPARE I/O. PROVIDE NETWORK COMMUNICATIONS INSTEAD OF REPLACING THE CONTROLLER.
9. EXISTING ARCNET ROUTER TO REMAIN FOR RE-USE OF THE EXISTING CONTROLLERS FOR THE GROUND AND FIRST FLOOR TEACHING LABS.

SHUTDOWN SWITCH SCHEDULE	
UNIT NO.	SERVICE
V-1-1	113, 113A, 113B, 113C, 113D, 113E, 113F, 113G
V-1-2	102, 102A,102B, 102C

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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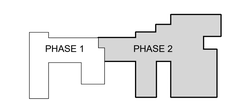

Keyplan

Job Number	31909.00
Drawing By	ZMH
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Revisions

MECHANICAL FIRST FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL GALLER · 094525 · LICENSED PROFESSIONAL ENGINEER

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GENERAL NOTES:

A. COORDINATE EXACT LOCATION OF VENTILATION SHUTDOWN SWITCHES AND SPACE SENSORS WITH A-SERIES DRAWINGS.

B. REFER TO E-SERIES DRAWINGS FOR OCCUPANCY SENSOR LOCATIONS. OCCUPANCY SENSORS ARE PROVIDED BY DIVISION 26. CONTROL WIRING FROM OCCUPANCY SENSOR TO BACS CONTROLLER SHALL BE PROVIDED BY DIVISION 23.

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F. PROVIDE COMBINATION SPACE TEMPERATURE AND HUMIDITY SENSOR FOR TEMPERATURE CONTROL IN ALL SPACES SERVED BY HEATING/COOLING EQUIPMENT.

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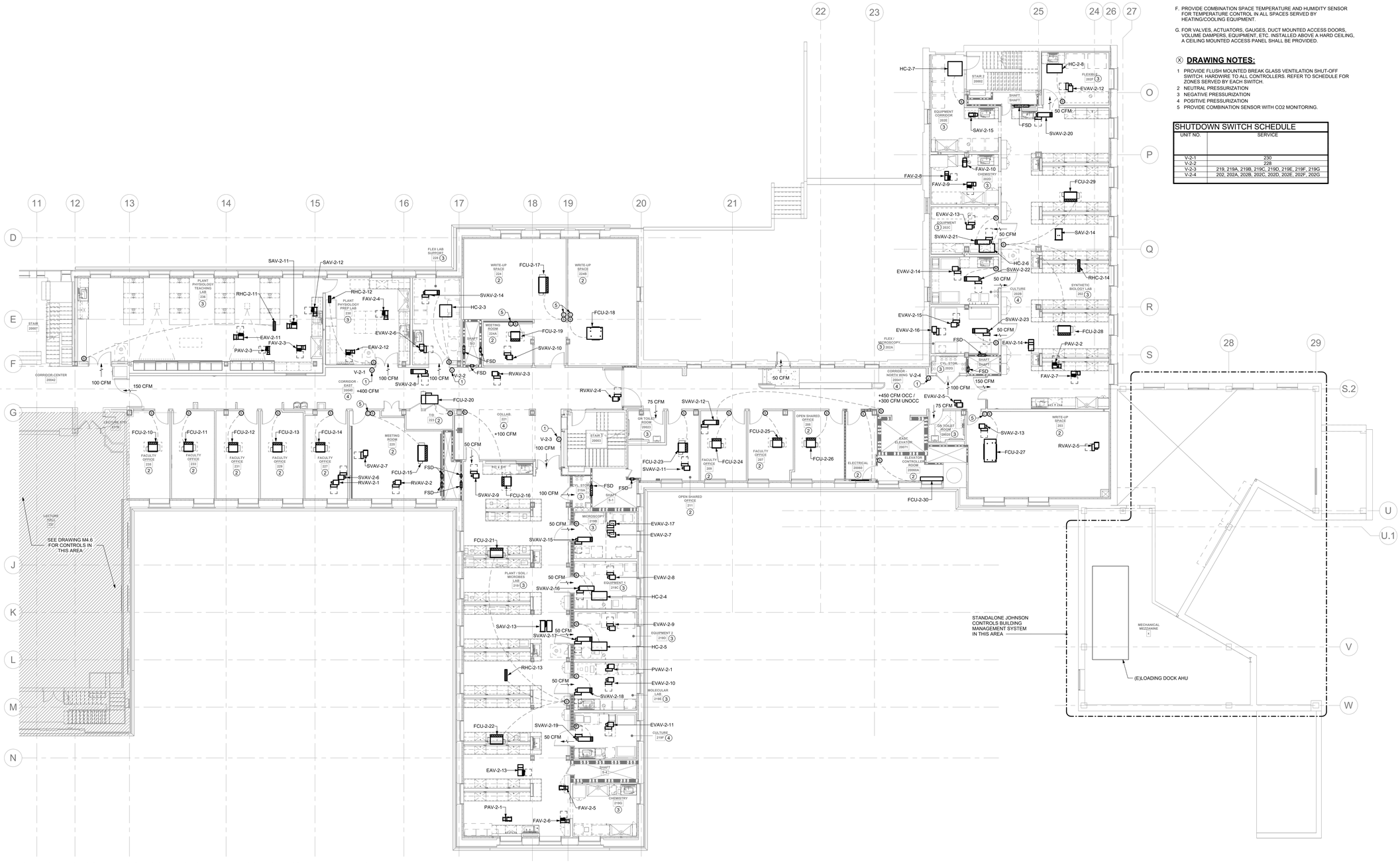
DRAWING NOTES:

1. PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL CONTROLLERS. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
2. NEUTRAL PRESSURIZATION
3. NEGATIVE PRESSURIZATION
4. POSITIVE PRESSURIZATION
5. PROVIDE COMBINATION SENSOR WITH CO2 MONITORING.

SHUTDOWN SWITCH SCHEDULE

UNIT NO.	SERVICE
V-2-1	230
V-2-2	228
V-2-3	219, 219A, 219B, 219C, 219D, 219E, 219F, 219G
V-2-4	202, 202A, 202B, 202C, 202D, 202E, 202F, 202G



1 MECHANICAL SECOND FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2

1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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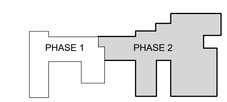
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL SECOND FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL MILLER · 094525 · LICENSED PROFESSIONAL ENGINEER

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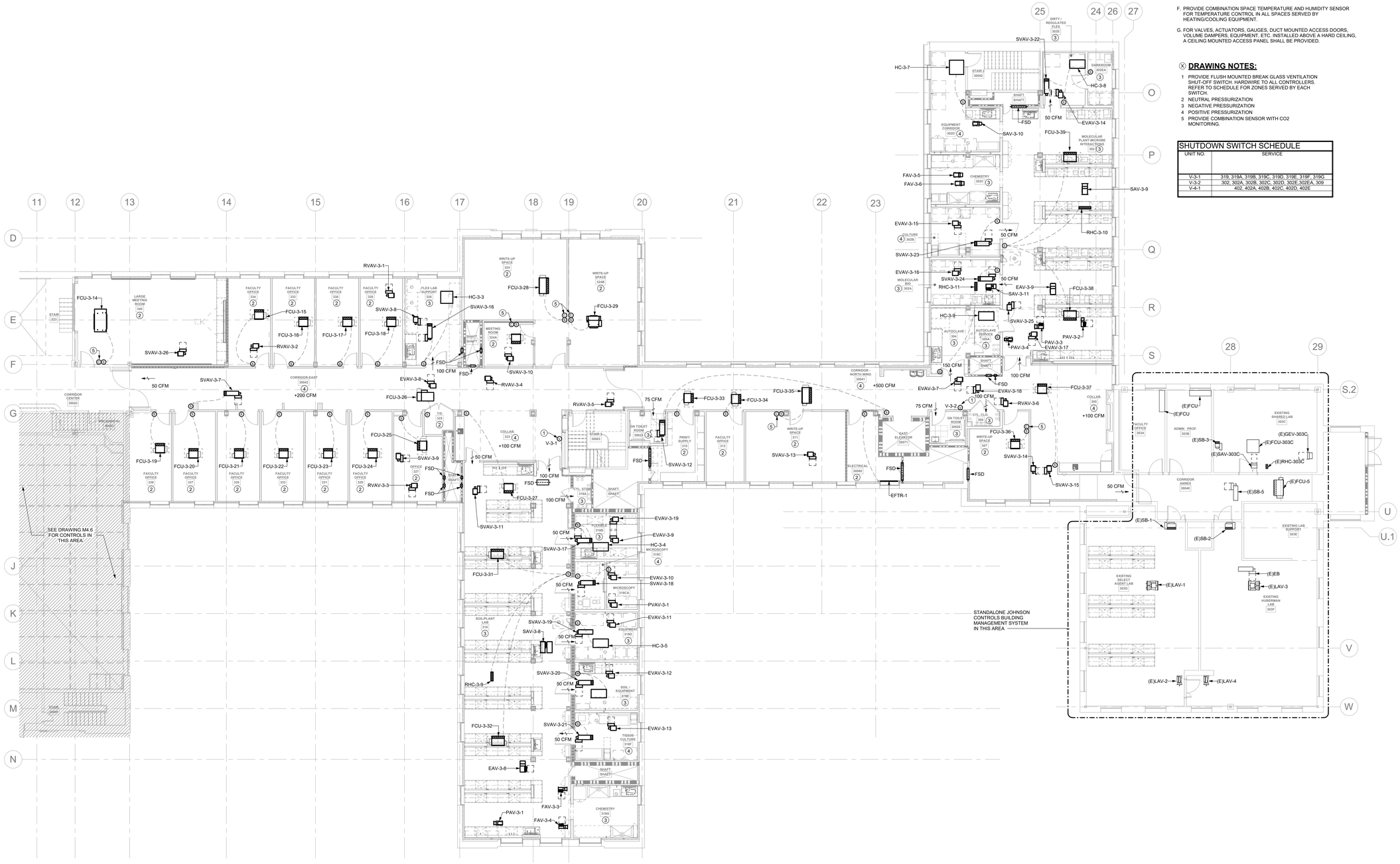

1 MECHANICAL THIRD FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2

1/8" = 1'-0"

GENERAL NOTES:

A. COORDINATE EXACT LOCATION OF VENTILATION SHUTDOWN SWITCHES AND SPACE SENSORS WITH A-SERIES DRAWINGS.

B. REFER TO E-SERIES DRAWINGS FOR OCCUPANCY SENSOR LOCATIONS. OCCUPANCY SENSORS ARE PROVIDED BY DIVISION 26. CONTROL WIRING FROM OCCUPANCY SENSOR TO BACS CONTROLLER SHALL BE PROVIDED BY DIVISION 23.

C. SUBMIT PROPOSED LOCATIONS FOR BMS PANELS. PANELS SHALL BE CONCEALED ABOVE THE CEILING OR LOCATED WITHIN MECHANICAL / ELECTRICAL SPACE.

D. POWER SHALL BE EXTENDED FROM JUNCTION BOXES, PROVIDED BY DIVISION 26, TO BMS PANELS BY DIVISION 23. REFER TO E-SERIES DRAWINGS FOR JUNCTION BOXES AND CIRCUITS INTENDED FOR BMS PANELS.

E. PROVIDE BMS MONITORING ALL COMBINATION FIRE SMOKE DAMPERS OR SMOKE DAMPERS. REFER TO PLANS FOR LOCATIONS.

F. PROVIDE COMBINATION SPACE TEMPERATURE AND HUMIDITY SENSOR FOR TEMPERATURE CONTROL IN ALL SPACES SERVED BY HEATING/COOLING EQUIPMENT.

G. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL CONTROLLERS. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
2 NEUTRAL PRESSURIZATION
3 NEGATIVE PRESSURIZATION
4 POSITIVE PRESSURIZATION
5 PROVIDE COMBINATION SENSOR WITH CO2 MONITORING.

SHUTDOWN SWITCH SCHEDULE

UNIT NO.	SERVICE
V-3-1	319, 319A, 319B, 319C, 319D, 319E, 319F, 319G
V-3-2	302, 302A, 302B, 302C, 302D, 302E,302EA, 309
V-4-1	402, 402A, 402B, 402C, 402D, 402E

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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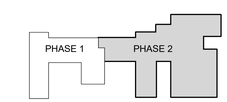
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL THIRD FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

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Reg. Exp: 04/30/2029
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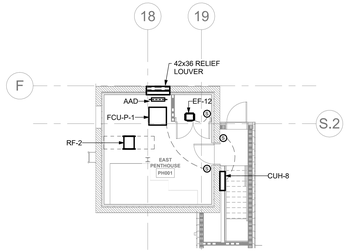
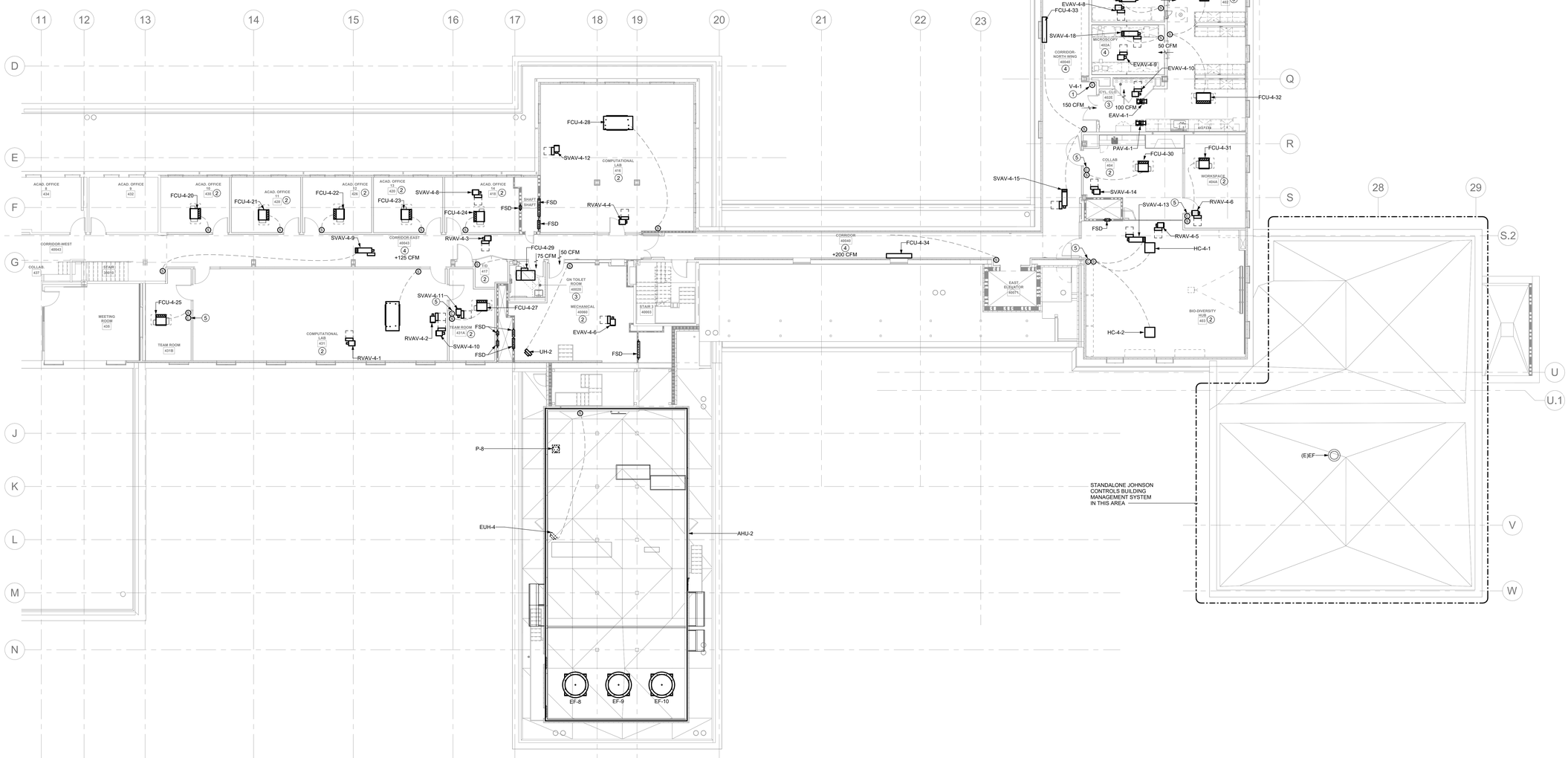


② MECHANICAL EAST PENTHOUSE CONTROLS PLAN - PHASE 2
1/8" = 1'-0"



① MECHANICAL FOURTH FLOOR CONTROLS AND PRESSURIZATION PLAN - PHASE 2
1/8" = 1'-0"

GENERAL NOTES:

A. COORDINATE EXACT LOCATION OF VENTILATION SHUTDOWN SWITCHES AND SPACE SENSORS WITH A-SERIES DRAWINGS.

B. REFER TO E-SERIES DRAWINGS FOR OCCUPANCY SENSOR LOCATIONS. OCCUPANCY SENSORS ARE PROVIDED BY DIVISION 26. CONTROL WIRING FROM OCCUPANCY SENSOR TO BACS CONTROLLER SHALL BE PROVIDED BY DIVISION 23.

C. SUBMIT PROPOSED LOCATIONS FOR BMS PANELS. PANELS SHALL BE CONCEALED ABOVE THE CEILING OR LOCATED WITHIN MECHANICAL / ELECTRICAL SPACE.

D. POWER SHALL BE EXTENDED FROM JUNCTION BOXES, PROVIDED BY DIVISION 26, TO BMS PANELS BY DIVISION 23. REFER TO E-SERIES DRAWINGS FOR JUNCTION BOXES AND CIRCUITS INTENDED FOR BMS PANELS.

E. PROVIDE BMS MONITORING ALL COMBINATION FIRE SMOKE DAMPERS OR SMOKE DAMPERS. REFER TO PLANS FOR LOCATIONS.

F. PROVIDE COMBINATION SPACE TEMPERATURE AND HUMIDITY SENSOR FOR TEMPERATURE CONTROL IN ALL SPACES SERVED BY HEATING/COOLING EQUIPMENT.

G. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 PROVIDE FLUSH MOUNTED BREAK GLASS VENTILATION SHUT-OFF SWITCH. HARDWIRE TO ALL CONTROLLERS. REFER TO SCHEDULE FOR ZONES SERVED BY EACH SWITCH.
2 NEUTRAL PRESSURIZATION
3 NEGATIVE PRESSURIZATION
4 POSITIVE PRESSURIZATION
5 PROVIDE COMBINATION SENSOR WITH CO2 MONITORING.

SHUTDOWN SWITCH SCHEDULE

UNIT NO.	SERVICE
V-4-1	402, 402A, 402B, 402C, 402D, 402E

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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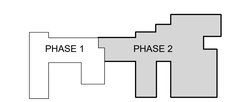
Notes:



Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL FOURTH FLOOR PRESSURIZATION & CONTROLS PLAN - PHASE 2

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GENERAL NOTES:

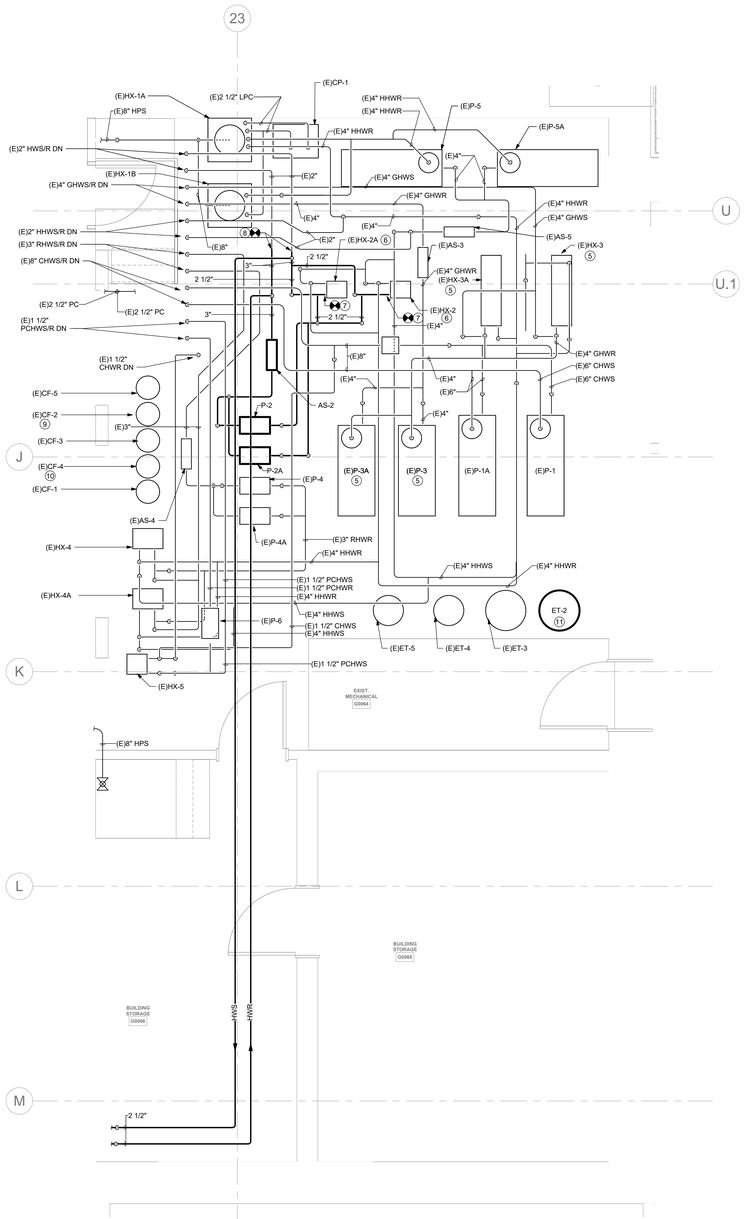
A. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS.

ⓧ DRAWING NOTES:

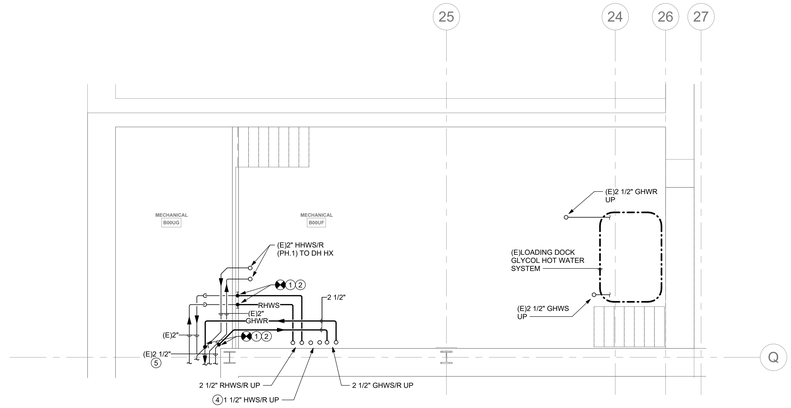
1 TIE PIPING INTO EXISTING ISOLATION VALVE.
2 REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS. COORDINATE PIPING INSTALLATION AND DEMOLITION TO MEET PROJECT REQUIREMENTS.
3 RE-INSULATE ALL EXISTING TO REMAIN PIPING UPON COMPLETION OF HAZARDOUS MATERIAL ABATEMENT.
4 AT THE TIME OF THE BID DOCUMENT ISSUANCE, THE PERIMETER HOT WATER PIPING IS NOT INSTALLED IN THIS AREA. THE PHASE 1 CONTRACTOR IS EXTENDING 1 1/2" PERIMETER HOT WATER PIPING TO MECHANICAL ROOM G0068.
5 THE EXISTING PHASE 1 GLYCOL PIPING SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF ANY NEW PIPING.
6 PROVIDE 18 ADDITIONAL PLATES FOR THE EXISTING HEAT EXCHANGER TO MEET THE SCHEDULED PERFORMANCE. RE-INSULATE HEAT EXCHANGER UPON COMPLETION OF MODIFICATIONS. FACTORY TRAINED TECHNICIAN SHALL SUPERVISE DISASSEMBLY AND REASSEMBLY OF THE HEAT EXCHANGER.
7 TIE PIPING INTO EXISTING HEAT EXCHANGER AND PROVIDE VALVES AND PIPING SPECIALTIES PER THE PIPING SCHEMATIC AT THE HEAT EXCHANGER CONNECTION. RE-INSTALL EXISTING CONTROL DEVICES AND WIRING.
8 TIE PIPING INTO EXISTING. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
9 PERIMETER HOT WATER CHEMICAL FEEDER TO REMAIN. PROVIDE PIPING MODIFICATIONS AS REQUIRED TO RECONNECT TO THE PIPING MAINS.

ⓧ DRAWING NOTES:

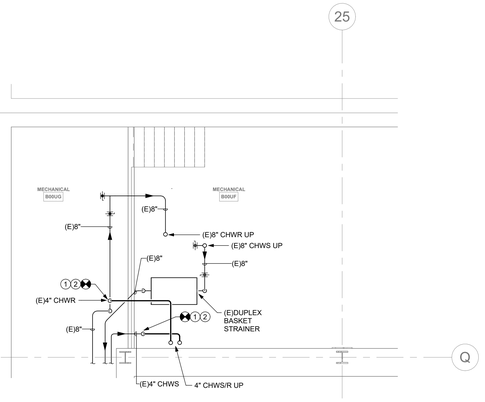
10 PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO REPURPOSE CHEMICAL FEEDER TO SERVE THE PROCESS CHILLED WATER SYSTEM. REFER TO PIPING SCHEMATIC FOR FURTHER INFORMATION.
11 PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO ACCOMMODATE THE EXPANSION TANK REPLACEMENT.



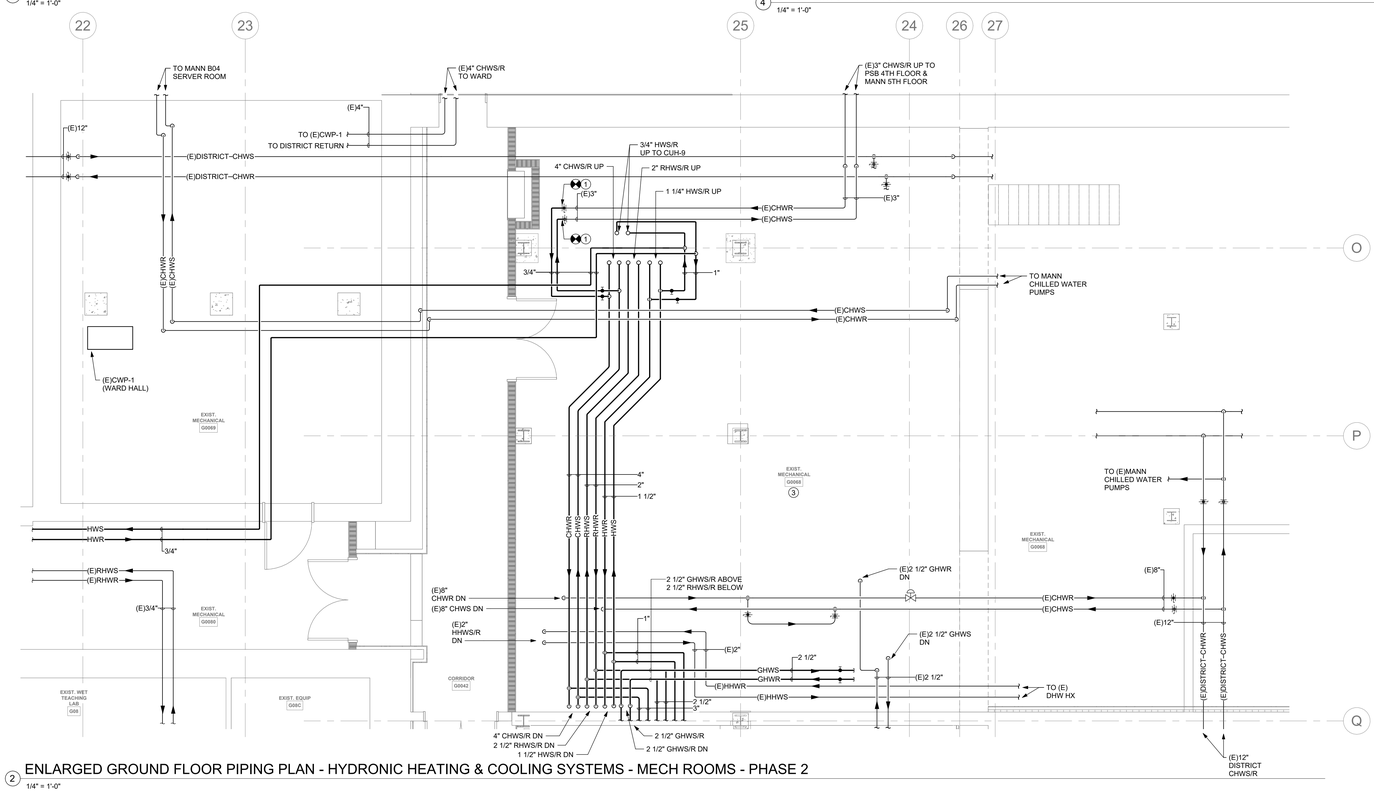
1 ENLARGED GROUND FLOOR PIPING PLAN - MECH ROOM G0064 - PHASE 2
3/8" = 1'-0"



3 ENLARGED MECHANICAL TUNNEL PIPING PLAN - HYDRONIC HEATING SYSTEMS - PHASE 2
1/4" = 1'-0"



4 ENLARGED MECHANICAL TUNNEL PIPING PLAN - COOLING SYSTEMS - PHASE 2
1/4" = 1'-0"



2 ENLARGED GROUND FLOOR PIPING PLAN - HYDRONIC HEATING & COOLING SYSTEMS - MECH ROOMS - PHASE 2
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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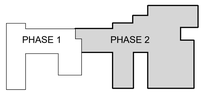
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
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Revisions

ENLARGED MECHANICAL ROOM PLANS - PHASE 2

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Scale: As indicated

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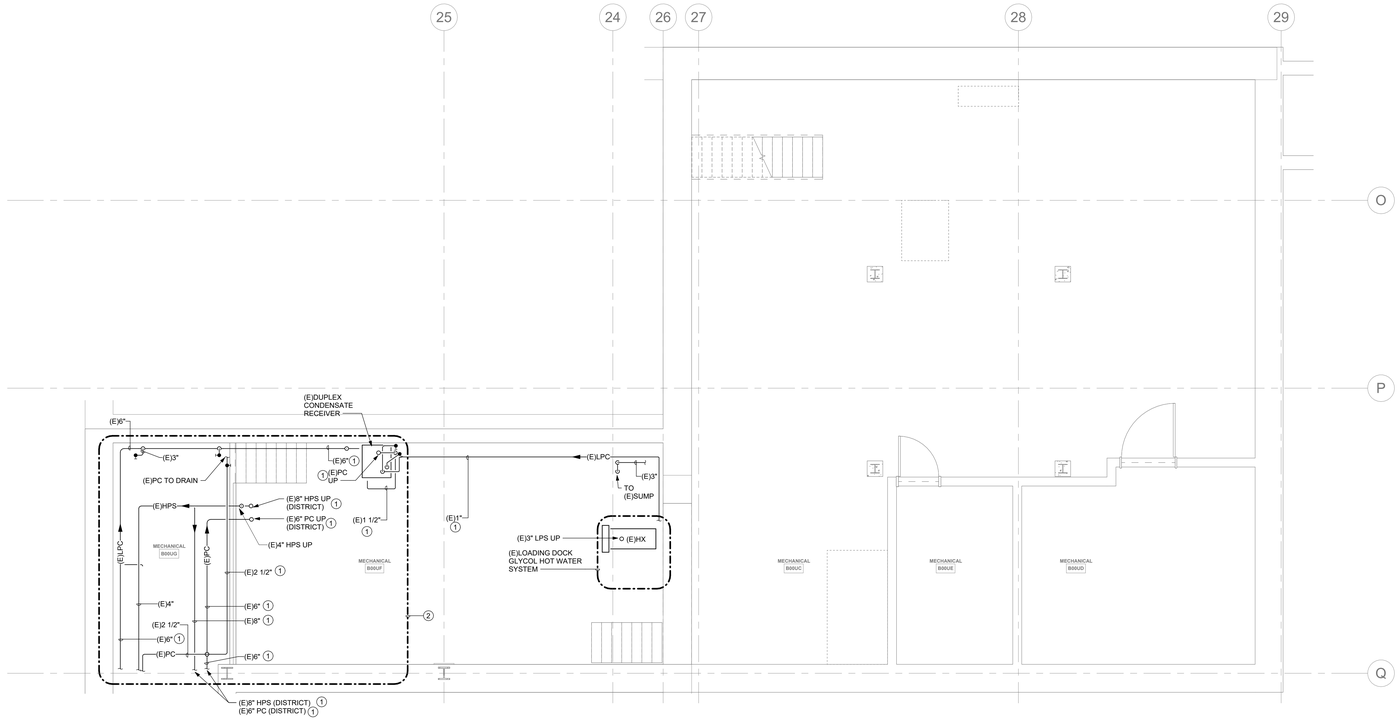
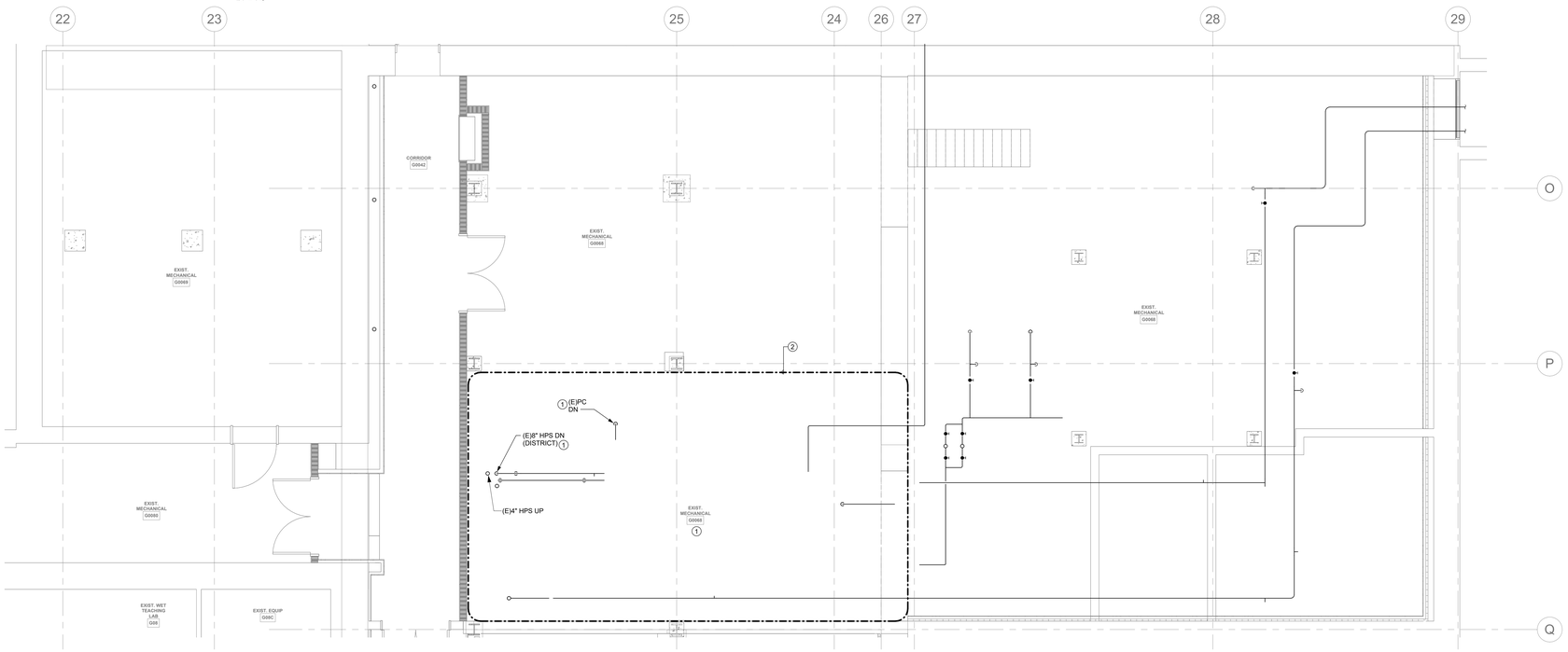


1 ENLARGED MECHANICAL TUNNEL PIPING PLAN - STEAM HEATING SYSTEMS - PHASE 2

1/4" = 1'-0"



2 ENLARGED GROUND FLOOR PIPING PLAN - STEAM HEATING SYSTEMS - MECH ROOMS - PHASE 2

1/4" = 1'-0"

ⓧ DRAWING NOTES:

1 LABEL ALL EXISTING STEAM AND CONDENSATE PIPING WITHIN THE TUNNEL. PIPE LABEL SHALL ALIGN WITH REQUIREMENTS OF SPECIFICATION 230553.

2 RE-INSULATE ALL EXISTING TO REMAIN PIPING UPON COMPLETION OF HAZARDOUS MATERIAL ABATEMENT.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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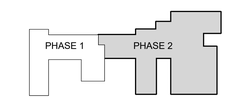

Keyplan

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ENLARGED MECHANICAL ROOM PLANS - PHASE 2

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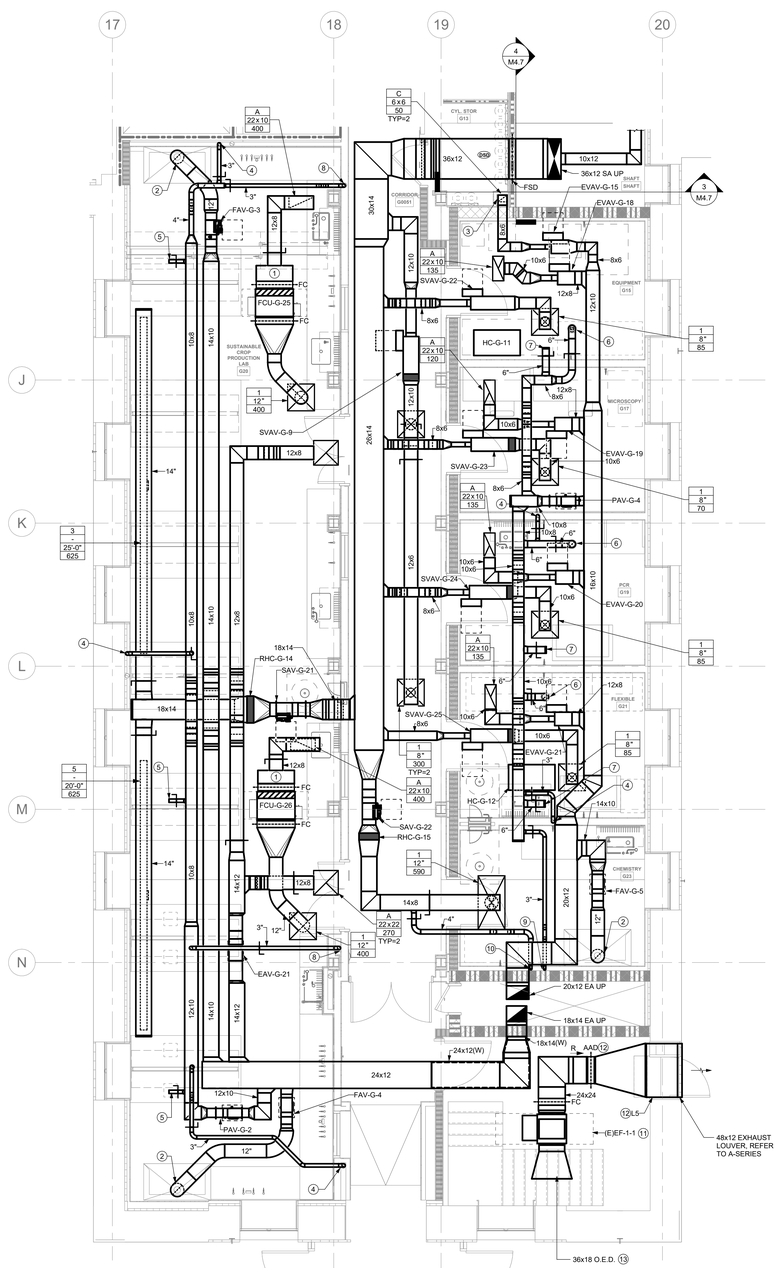
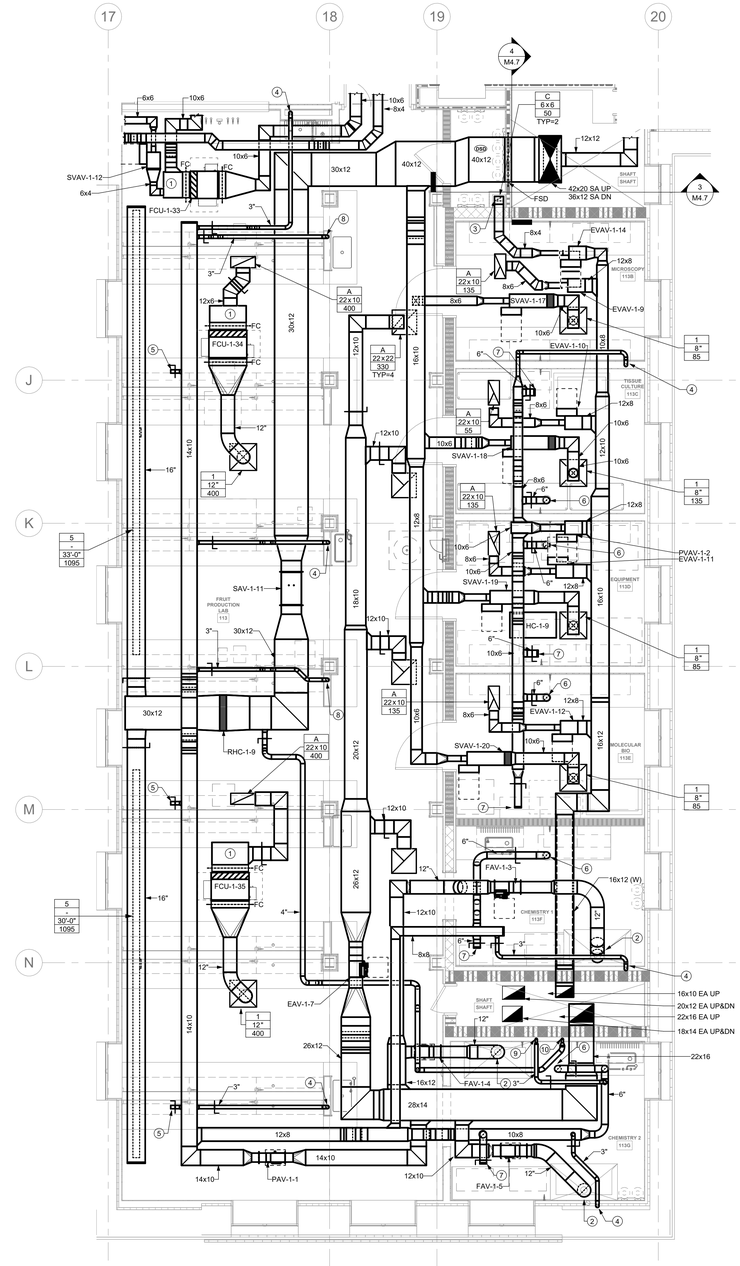


② ENLARGED MECHANICAL GROUND FLOOR DUCTWORK PLAN - EAST WING - PHASE 2

1/4" = 1'-0"



① ENLARGED MECHANICAL FIRST FLOOR DUCTWORK PLAN - EAST WING - PHASE 2

1/4" = 1'-0"

GENERAL NOTES:

A. BALANCE VENTILATION AIR TO EACH FAN COIL PER AIRFLOW LISTED IN FAN COIL UNIT SCHEDULE ON SCHEDULES SHEET.

B. THE DUCTWORK AT THE VAV AND AIR VALVE INLET AND OUTLET SHALL MATCH THE SIZES SHOWN ON THE EQUIPMENT SCHEDULE.

C. SMOKE DAMPER REMOTE TEST SWITCH SHALL BE COORDINATED WITH THE LOCATION OF THE DUCT SMOKE DETECTOR TEST/STATUS DEVICE AND LOCATED IN AN ACCESSIBLE LOCATION.

D. UNLESS OTHERWISE INDICATED, ALL LABORATORY EXHAUST IS LOCATED WITHIN THE LAB SUITE/CONTROL AREA IT SERVES AND DOES NOT REQUIRE FIRE WRAP.

E. PROVIDE 3" STAINLESS STEEL SHOE TAP, VOLUME DAMPER OR BLAST GATE AND IPS FEMALE THREADED CONNECTION AT EACH CORROSIVE CABINET EXHAUST VENT CONNECTION TO THE DUCTWORK MAIN. FROM THE CORROSIVE CABINET TO THE THREADED CONNECTION SHALL BE POLYPROPYLENE PER THE PIPING SYSTEMS SPECIFICATION.

F. PROVIDE 3" GALVANIZED STEEL SHOE TAP, VOLUME DAMPER OR BLAST GATE AND IPS FEMALE THREADED CONNECTION AT EACH FLAMMABLE CABINET EXHAUST VENT CONNECTION TO THE DUCTWORK MAIN. FROM THE FLAMMABLE CABINET TO THE THREADED CONNECTION SHALL BE SCHEDULE 40 STEEL PER THE PIPING SYSTEMS SPECIFICATION.

G. PROVIDE 3" GALVANIZED STEEL IPS FEMALE THREADED CONNECTION AT EACH FLAMMABLE CABINET SUPPLY VENT 4" REDUCER. FROM THE FLAMMABLE CABINET TO THE THREADED CONNECTION SHALL BE SCHEDULE 40 STEEL PER THE PIPING SYSTEMS SPECIFICATION.

H. POINT OF EXHAUST DUCTWORK IS SIZED FOR 80 CFM. POINT OF USE EXHAUST SYSTEM IS SIZED WITH DIVERSITY. REFER TO LABORATORY AIRFLOW SCHEDULES FOR SYSTEM CAPACITY.

I. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1. FAN COIL UNIT RETURN PLENUM SHALL MATCH UNIT CONNECTION SIZE. PLENUM HEIGHT SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE DUCTWORK CONNECTIONS.
2. PROVIDE FLEXIBLE DUCTWORK CONNECTION AT ADJUSTABLE HEIGHT, ACCESSIBLE FUME HOOD. REFER TO DETAILS FOR FURTHER REQUIREMENTS.
3. PROVIDE EXHAUST DUCTWORK DOWN TO FINISHED FLOOR WITHIN CHASE. MOUNT (1) ONE EXHAUST GRILLE 6" AFF AND (1) ONE TIGHT TO CEILING.
4. 3" EXHAUST DOWN TO VACUUM PUMP CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY OR LAB BENCH SERVICE CHASE. BALANCE TO 30 CFM. REFER TO DETAIL FOR CABINET CONNECTION REQUIREMENTS.
5. 3" POINT OF USE EXHAUST DUCT TERMINATED THROUGH SOFFIT PER DETAIL ON DRAWING A10.54 AND M7.4. REFER TO A-SERIES DRAWINGS FOR ADDITIONAL INFORMATION. DUCTWORK SHALL BE CAPPED, UNLESS CAMPUS PROVIDES AIRFLOW SETPOINT PRIOR TO BALANCING.
6. 3" POINT OF USE EXHAUST DUCT TERMINATED THROUGH CEILING PER DETAIL ON DRAWING A10.53 AND M7.4. TRANSITION FROM 6" TO 3" PRIOR TO CEILING PENETRATION. DUCTWORK SHALL BE CAPPED, UNLESS CAMPUS PROVIDES AIRFLOW SETPOINT PRIOR TO BALANCING.
7. 6" POINT OF USE EXHAUST DUCT TAP FOR FUTURE. CAP AIR TIGHT.
8. 3" EXHAUST DOWN TO CORROSIVE CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY OR LAB BENCH SERVICE CHASE. BALANCE TO 10 CFM.
9. 2" EXHAUST DOWN TO FLAMMABLE CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY. AT THE WALL PENETRATION, DUCTWORK SHALL TRANSITION FROM 2" TO 4". BALANCE TO 25 CFM. REFER TO DRAWING A10.54 AND M7.4 FOR CABINET CONNECTION REQUIREMENTS.
10. 2" SUPPLY DOWN TO FLAMMABLE CABINET. DUCT SHALL BE CONCEALED WITHIN WALL CAVITY. AT THE WALL PENETRATION, DUCTWORK SHALL TRANSITION FROM 2" TO 4". BALANCE TO 25 CFM. REFER TO DRAWING A10.54 AND M7.4 FOR CABINET CONNECTION REQUIREMENTS.
11. RELOCATE EXISTING EXHAUST FAN EF-1-1 FROM MECHANICAL ROOM G0068. PROVIDE ALL MODIFICATIONS AS REQUIRED FOR DUCTWORK AND CONTROLS.
12. PROVIDE PLENUM FOR THE EXHAUST LOUVER.
13. TERMINATE OPEN ENDED DUCT WITH WIRE MESH SCREEN.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
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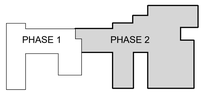
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

ENLARGED MECHANICAL GROUND AND FIRST FLOOR DUCTWORK PLANS - EAST WING - PHASE 2

STATE OF NEW YORK · NICHOLAS MICHAEL TOMASZEWSKI · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 0018443

BID DOCUMENTS
Scale: As indicated

M4.2

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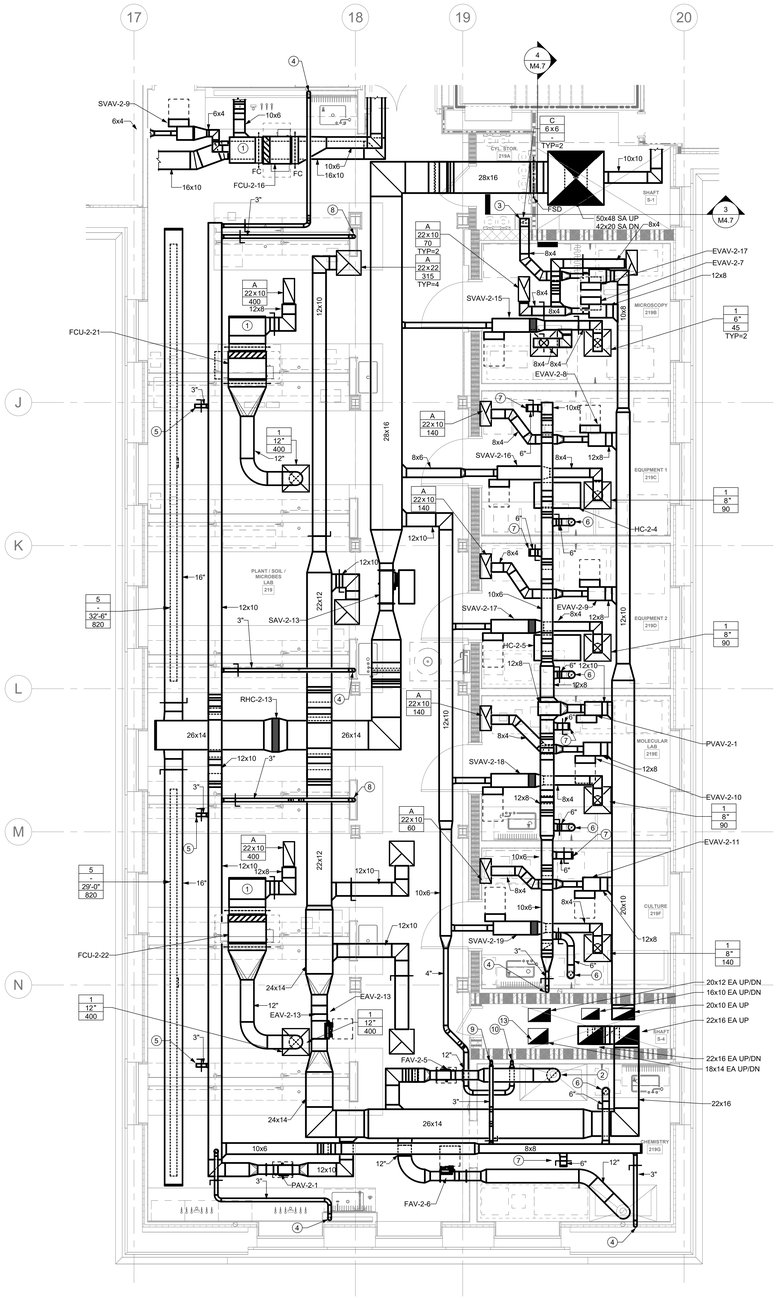
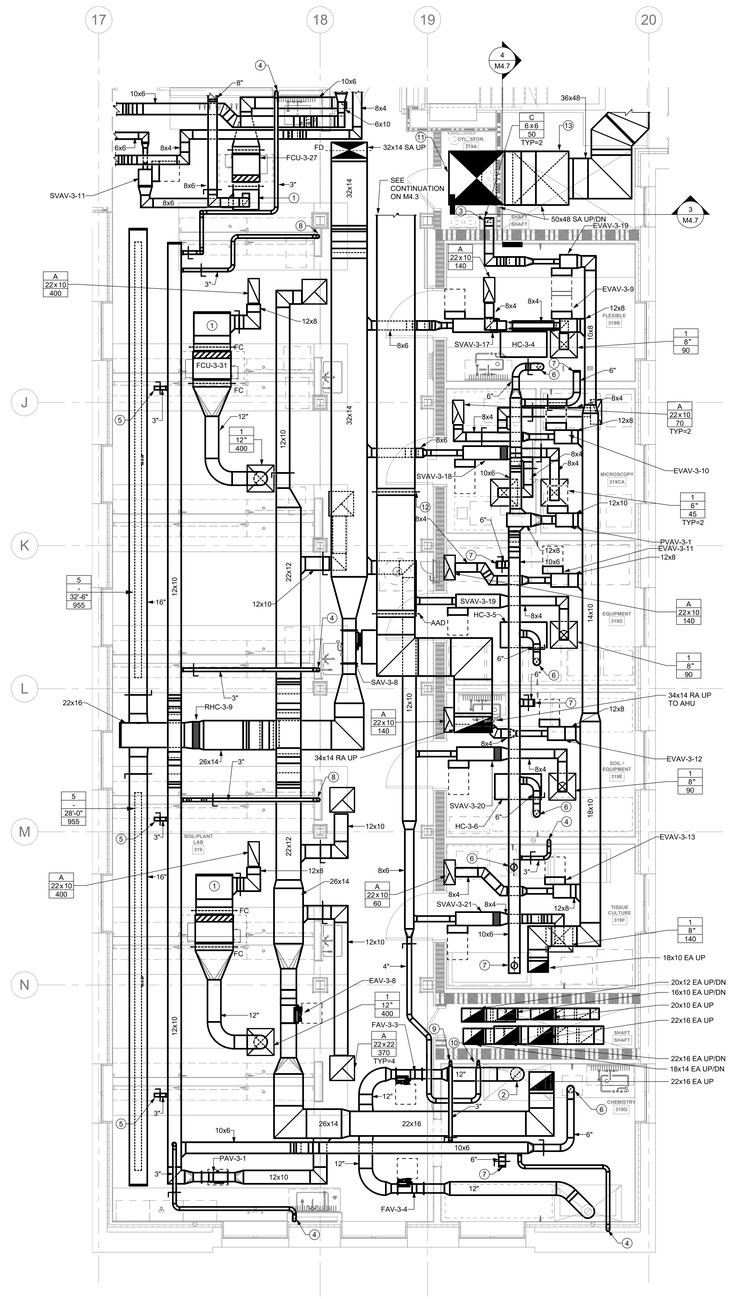


1 ENLARGED MECHANICAL SECOND FLOOR DUCTWORK PLAN - EAST WING - PHASE 2

1/4" = 1'-0"



2 ENLARGED MECHANICAL THIRD FLOOR DUCTWORK PLAN - EAST WING - PHASE 2

1/4" = 1'-0"

GENERAL NOTES:

A. BALANCE VENTILATION AIR TO EACH FAN COIL PER AIRFLOW LISTED IN FAN COIL UNIT SCHEDULE ON SCHEDULES SHEET.

B. THE DUCTWORK AT THE VAV AND AIR VALVE INLET AND OUTLET SHALL MATCH THE SIZES SHOWN ON THE EQUIPMENT SCHEDULE.

C. SMOKE DAMPER REMOTE TEST SWITCH SHALL BE COORDINATED WITH THE LOCATION OF THE DUCT SMOKE DETECTOR TEST/STATUS DEVICE AND LOCATED IN AN ACCESSIBLE LOCATION.

D. UNLESS OTHERWISE INDICATED, ALL LABORATORY EXHAUST IS LOCATED WITHIN THE LAB SUITE/CONTROL AREA IT SERVES AND DOES NOT REQUIRE FIRE WRAP.

E. PROVIDE 3" STAINLESS STEEL SHOE TAP, VOLUME DAMPER OR BLAST GATE AND IPS FEMALE THREADED CONNECTION AT EACH CORROSIVE CABINET EXHAUST VENT CONNECTION TO THE DUCTWORK MAIN. FROM THE CORROSIVE CABINET TO THE THREADED CONNECTION SHALL BE POLYPROPYLENE PER THE PIPING SYSTEMS SPECIFICATION.

F. PROVIDE 3" GALVANIZED STEEL SHOE TAP, VOLUME DAMPER OR BLAST GATE AND IPS FEMALE THREADED CONNECTION AT EACH FLAMMABLE CABINET EXHAUST VENT CONNECTION TO THE DUCTWORK MAIN. FROM THE FLAMMABLE CABINET TO THE THREADED CONNECTION SHALL BE SCHEDULE 40 STEEL PER THE PIPING SYSTEMS SPECIFICATION.

G. PROVIDE 3" GALVANIZED STEEL IPS FEMALE THREADED CONNECTION AT EACH FLAMMABLE CABINET SUPPLY VENT 4" REDUCER. FROM THE FLAMMABLE CABINET TO THE THREADED CONNECTION SHALL BE SCHEDULE 40 STEEL PER THE PIPING SYSTEMS SPECIFICATION.

H. POINT OF EXHAUST DUCTWORK IS SIZED FOR 80 CFM. POINT OF USE EXHAUST SYSTEM IS SIZED WITH DIVERSITY. REFER TO LABORATORY AIRFLOW SCHEDULES FOR SYSTEM CAPACITY.

I. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

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11 SUPPLY RISER SHALL OFFSET WITHIN THE SHAFT ABOVE THE RATED CEILING OF THE CYLINDER STORAGE 319A.
12 PROVIDE DUCT MOUNTED AIRFLOW STATION. LOCATE AIRFLOW STATION BASED ON MANUFACTURER'S REQUIREMENTS.
13 LOCATE STATIC PRESSURE SENSOR WITHIN THE SHAFT. SENSOR SHALL BE MOUNTED FOR EASE OF ACCESSIBILITY BASED ON OTHER SYSTEMS WITHIN THE SHAFT.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575

Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506

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Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650

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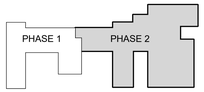

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

ENLARGED MECHANICAL SECOND AND THIRD FLOOR DUCTWORK PLANS - EAST WING - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL NAGLE · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 0018443

BID DOCUMENTS
Scale: As indicated

M4.3

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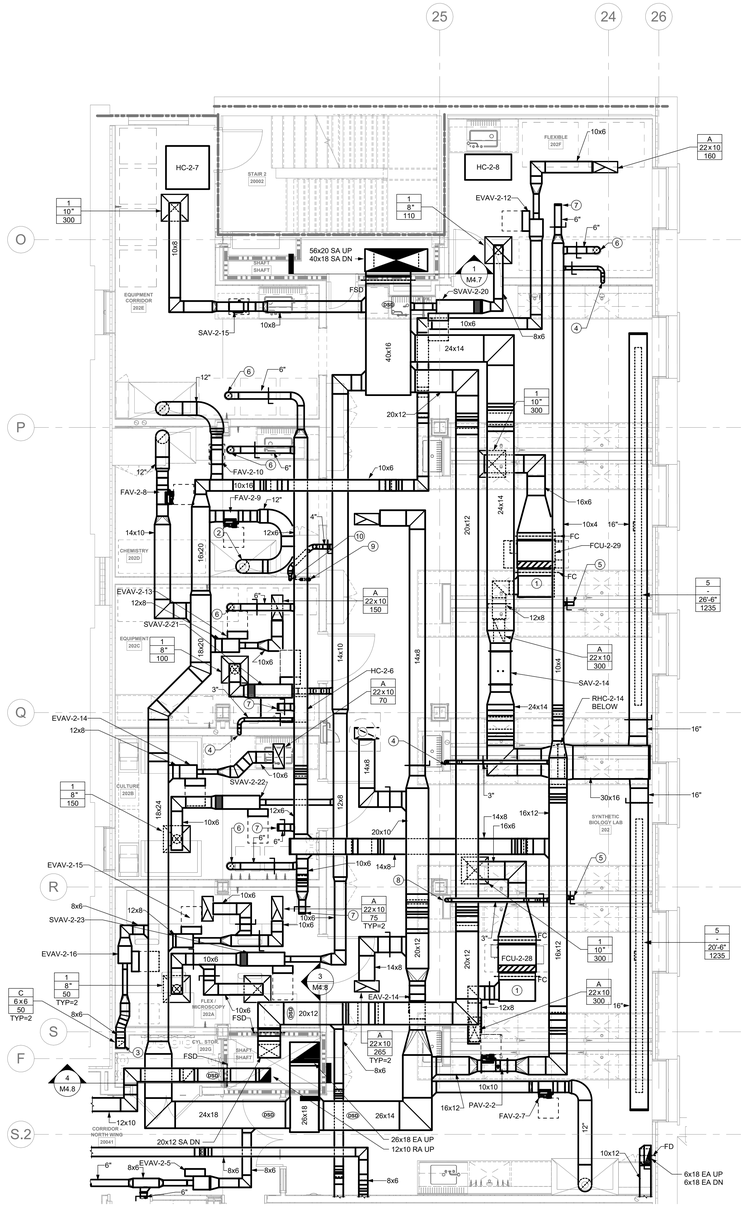
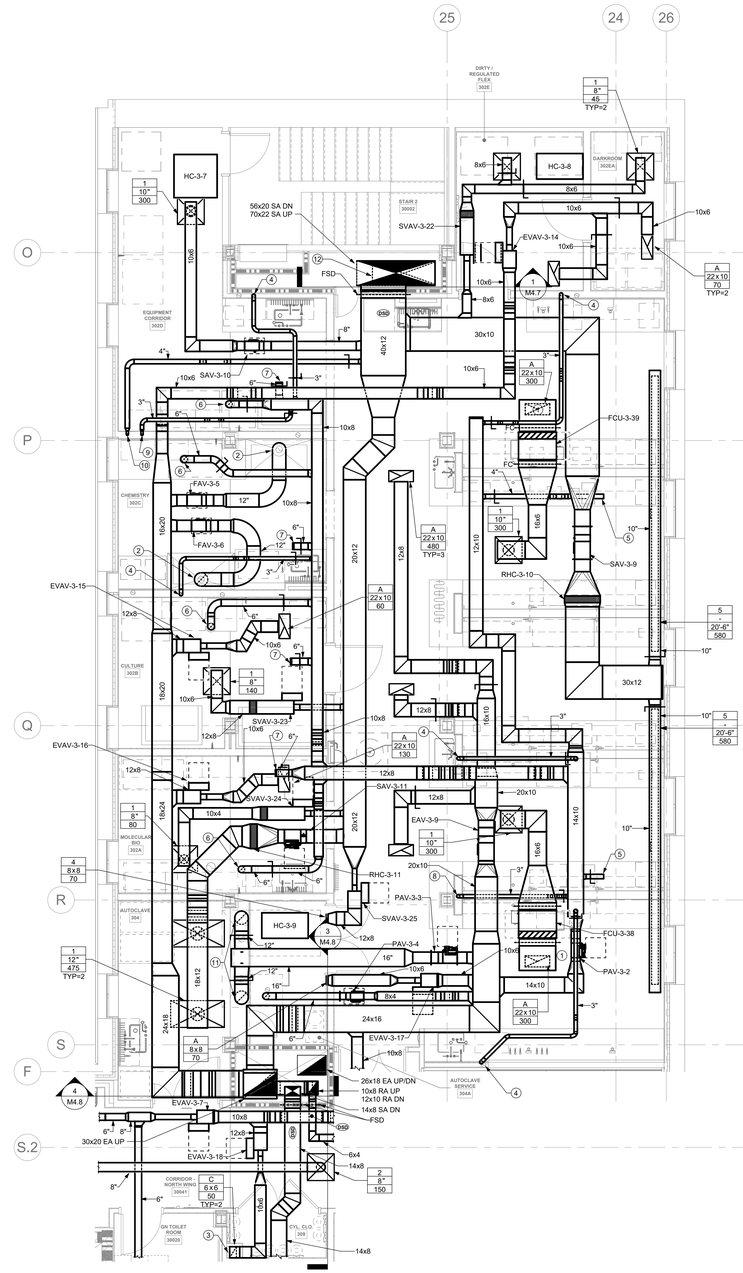


1 ENLARGED MECHANICAL SECOND FLOOR DUCTWORK PLAN - NORTH WING - PHASE 2

1/4" = 1'-0"



2 ENLARGED MECHANICAL THIRD FLOOR DUCTWORK PLAN - NORTH WING - PHASE 2

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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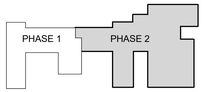

Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

ENLARGED MECHANICAL SECOND AND THIRD FLOOR DUCTWORK PLANS - NORTH WING - PHASE 2

STATE OF NEW YORK · NICOLETT DANIEL TAYLOR · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 0018443

BID DOCUMENTS
Scale: As indicated

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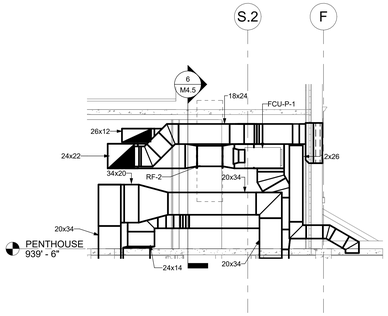
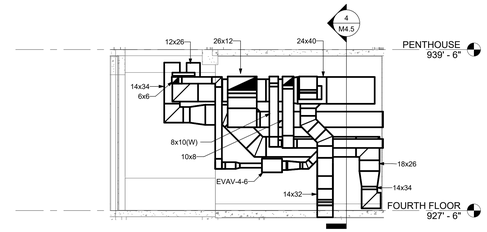
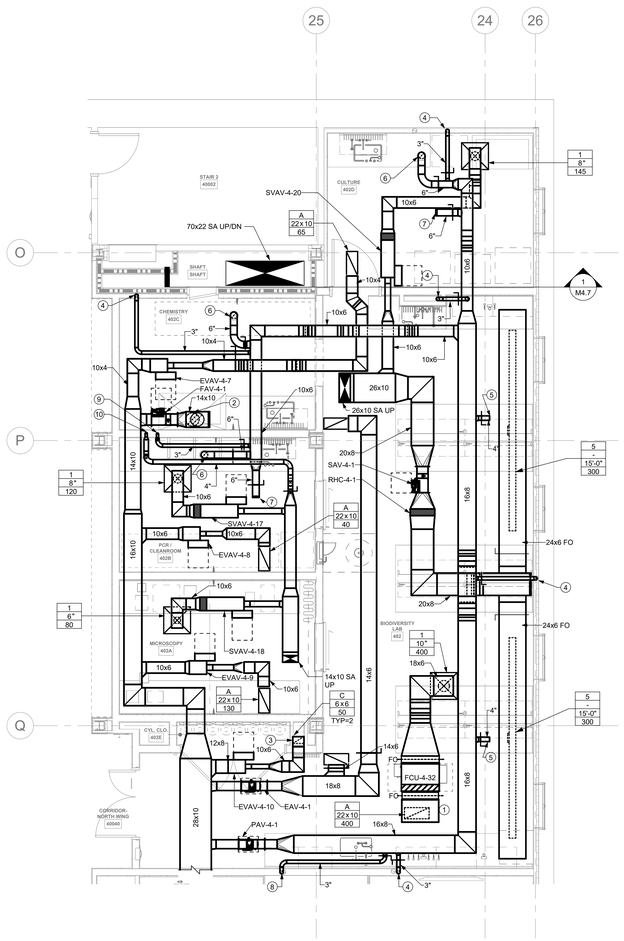


7 ENLARGED MECHANICAL NORTH/SOUTH PENTHOUSE SECTION - PHASE 2
1/4" = 1'-0"



5 ENLARGED FOURTH FLOOR MECHANICAL NORTH/SOUTH SECTION - PHASE 2
1/4" = 1'-0"



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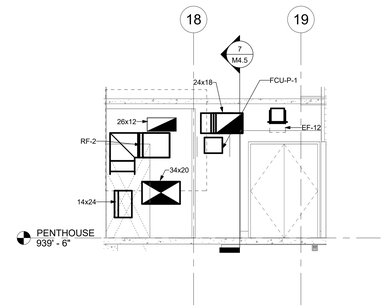
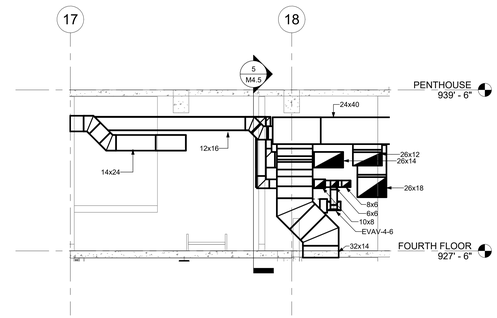
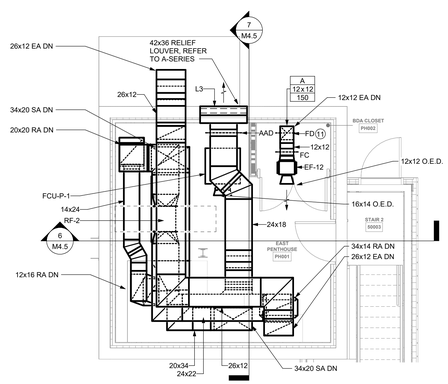
1/4" = 1'-0"



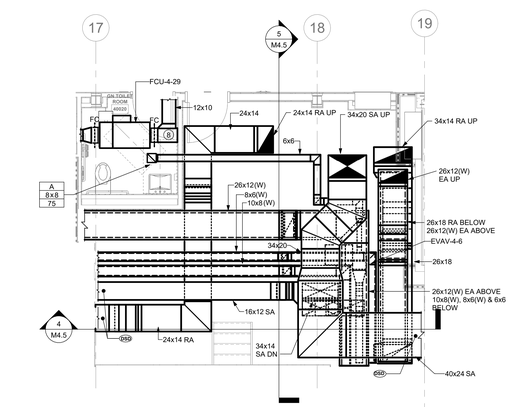
6 ENLARGED MECHANICAL EAST/WEST PENTHOUSE SECTION - PHASE 2
1/4" = 1'-0"



4 ENLARGED FOURTH FLOOR MECHANICAL EAST/WEST SECTION - PHASE 2
1/4" = 1'-0"



2 ENLARGED MECHANICAL EAST PENTHOUSE DUCTWORK PLAN - PHASE 2
1/4" = 1'-0"



3 ENLARGED FOURTH FLOOR MECHANICAL ROOM DUCTWORK PLAN - PHASE 2
1/4" = 1'-0"

GENERAL NOTES:

A. BALANCE VENTILATION AIR TO EACH FAN COIL PER AIRFLOW LISTED IN FAN COIL UNIT SCHEDULE ON SCHEDULES SHEET.

B. THE DUCTWORK AT THE VAV AND AIR VALVE INLET AND OUTLET SHALL MATCH THE SIZES SHOWN ON THE EQUIPMENT SCHEDULE.

C. SMOKE DAMPER REMOTE TEST SWITCH SHALL BE COORDINATED WITH THE LOCATION OF THE DUCT SMOKE DETECTOR TEST/STATUS DEVICE AND LOCATED IN AN ACCESSIBLE LOCATION.

D. UNLESS OTHERWISE INDICATED, ALL LABORATORY EXHAUST IS LOCATED WITHIN THE LAB SUITE/CONTROL AREA IT SERVES AND DOES NOT REQUIRE FIRE WRAP.

E. PROVIDE 3" STAINLESS STEEL SHOE TAP, VOLUME DAMPER OR BLAST GATE AND IPS FEMALE THREADED CONNECTION AT EACH CORROSIVE CABINET EXHAUST VENT CONNECTION TO THE DUCTWORK MAIN. FROM THE CORROSIVE CABINET TO THE THREADED CONNECTION SHALL BE POLYPROPYLENE PER THE PIPING SYSTEMS SPECIFICATION.

F. PROVIDE 3" GALVANIZED STEEL SHOE TAP, VOLUME DAMPER OR BLAST GATE AND IPS FEMALE THREADED CONNECTION AT EACH FLAMMABLE CABINET EXHAUST VENT CONNECTION TO THE DUCTWORK MAIN. FROM THE FLAMMABLE CABINET TO THE THREADED CONNECTION SHALL BE SCHEDULE 40 STEEL PER THE PIPING SYSTEMS SPECIFICATION.

G. PROVIDE 3" GALVANIZED STEEL IPS FEMALE THREADED CONNECTION AT EACH FLAMMABLE CABINET SUPPLY VENT 4" REDUCER. FROM THE FLAMMABLE CABINET TO THE THREADED CONNECTION SHALL BE SCHEDULE 40 STEEL PER THE PIPING SYSTEMS SPECIFICATION.

H. POINT OF EXHAUST DUCTWORK IS SIZED FOR 80 CFM. POINT OF USE EXHAUST SYSTEM IS SIZED WITH DIVERSITY. REFER TO LABORATORY AIRFLOW SCHEDULES FOR SYSTEM CAPACITY.

I. FOR VALVES, ACTUATORS, GAUGES, DUCT MOUNTED ACCESS DOORS, VOLUME DAMPERS, EQUIPMENT, ETC. INSTALLED ABOVE A HARD CEILING, A CEILING MOUNTED ACCESS PANEL SHALL BE PROVIDED.

ⓧ DRAWING NOTES:

1 FAN COIL UNIT RETURN PLENUM SHALL MATCH UNIT CONNECTION SIZE. PLENUM HEIGHT SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE DUCTWORK CONNECTIONS.
2 PROVIDE FLEXIBLE DUCTWORK CONNECTION AT ADJUSTABLE HEIGHT, ACCESSIBLE FUME HOOD. REFER TO DETAILS FOR FURTHER REQUIREMENTS.
3 PROVIDE EXHAUST DUCTWORK DOWN TO FINISHED FLOOR WITHIN CHASE. MOUNT (1) ONE EXHAUST GRILLE 6" AFF AND (1) ONE TIGHT TO CEILING.
4 3" EXHAUST DOWN TO VACUUM PUMP CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY OR LAB BENCH SERVICE CHASE. BALANCE TO 30 CFM. REFER TO DETAIL FOR CABINET CONNECTION REQUIREMENTS.
5 3" POINT OF USE EXHAUST DUCT TERMINATED THROUGH SOFFIT PER DETAIL ON DRAWING A10.54 AND M7.4. REFER TO A-SERIES DRAWINGS FOR ADDITIONAL INFORMATION. DUCTWORK SHALL BE CAPPED, UNLESS CAMPUS PROVIDES AIRFLOW SETPOINT PRIOR TO BALANCING.
6 3" POINT OF USE EXHAUST DUCT TERMINATED THROUGH CEILING PER DETAIL ON DRAWING A10.53 AND M7.4. TRANSITION FROM 6" TO 3" PRIOR TO CEILING PENETRATION. DUCTWORK SHALL BE CAPPED, UNLESS CAMPUS PROVIDES AIRFLOW SETPOINT PRIOR TO BALANCING.
7 6" POINT OF USE EXHAUST DUCT TAP FOR FUTURE. CAP AIR TIGHT.
8 3" EXHAUST DOWN TO CORROSIVE CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY OR LAB BENCH SERVICE CHASE. BALANCE TO 10 CFM.
9 2" EXHAUST DOWN TO FLAMMABLE CABINET. VENT SHALL BE CONCEALED WITHIN WALL CAVITY. AT THE WALL PENETRATION, DUCTWORK SHALL TRANSITION FROM 2" TO 4". BALANCE TO 25 CFM. REFER TO DRAWING A10.54 AND M7.4 FOR CABINET CONNECTION REQUIREMENTS.
10 2" SUPPLY DOWN TO FLAMMABLE CABINET. DUCT SHALL BE CONCEALED WITHIN WALL CAVITY. AT THE WALL PENETRATION, DUCTWORK SHALL TRANSITION FROM 2" TO 4". BALANCE TO 25 CFM. REFER TO DRAWING A10.54 AND M7.4 FOR CABINET CONNECTION REQUIREMENTS.
11 PROVIDE FIRE DAMPER AT 2-HR RATED CEILING PENETRATION.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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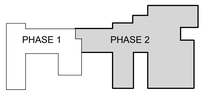
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

ENLARGED MECHANICAL FOURTH FLOOR DUCTWORK PLANS - PHASE 2

STATE OF NEW YORK · NICHOLAS MARCELLO TRUPPI · 094525 · LICENSED PROFESSIONAL ENGINEER

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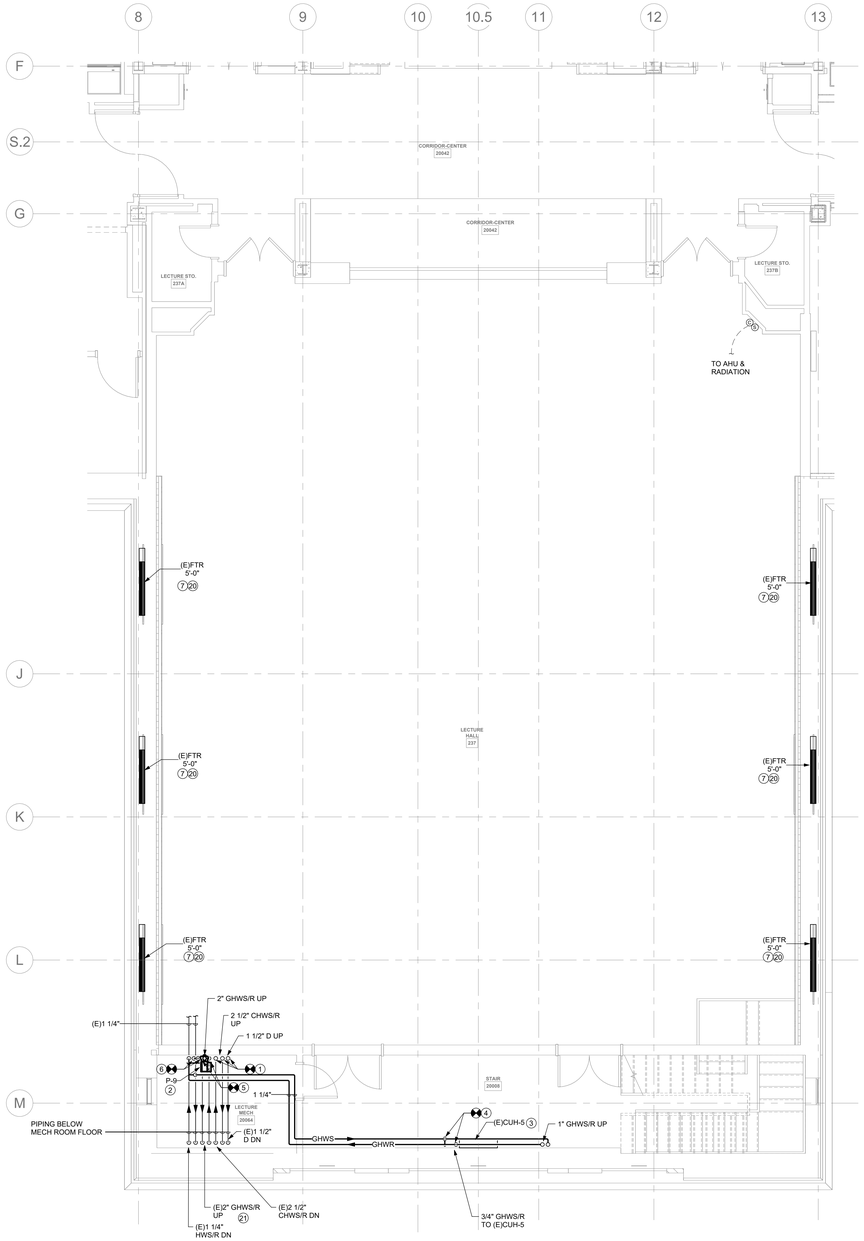
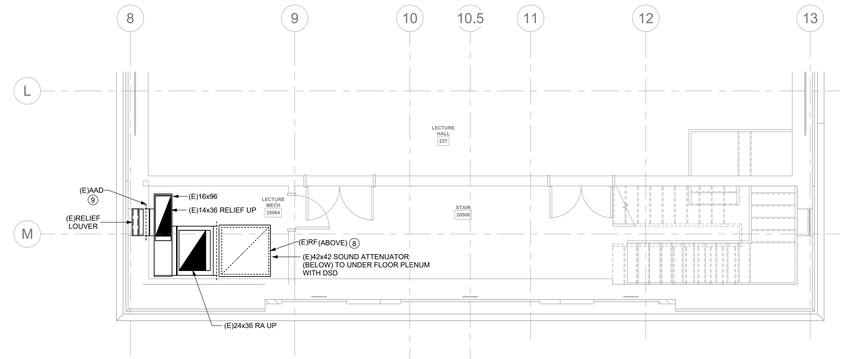


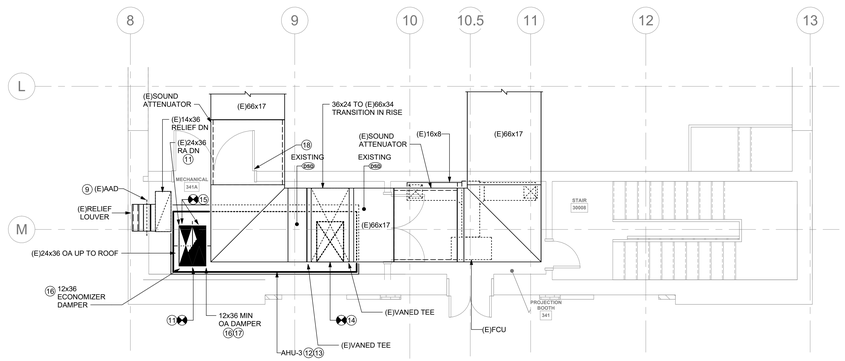
2 ENLARGED LECTURE HALL SECOND FLOOR PIPING PLAN - PHASE 2

1/4" = 1'-0"



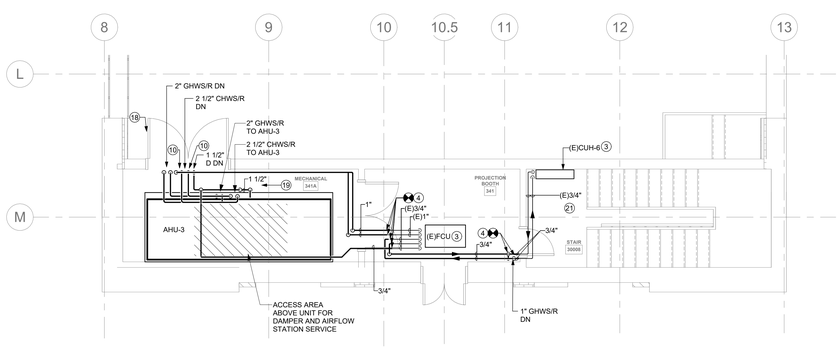
1 ENLARGED LECTURE HALL SECOND FLOOR DUCTWORK PLAN - PHASE 2

1/4" = 1'-0"



3 ENLARGED LECTURE HALL THIRD FLOOR DUCTWORK PLAN - PHASE 2

1/4" = 1'-0"



4 ENLARGED LECTURE HALL THIRD FLOOR PIPING PLAN - PHASE 2

1/4" = 1'-0"

GENERAL NOTES:

A. REFER TO VOLUME 1 OF SPECIFICATIONS FOR PHASING AND SHUTDOWN LIMITATIONS FOR LECTURE HALL 237 SYSTEMS.

ⓧ DRAWING NOTES:

1. THE PIPING INTO EXISTING, ROUTE TO THE FLOOR ABOVE AND PROVIDE ALL MODIFICATIONS TO MAKE THE CONNECTION UPON COMPLETION OF THE AIR HANDLING UNIT RIGGING.
2. PROVIDE VERTICAL INLINE COIL PUMP FOR AHU-3. REFER TO AHU COIL CONNECTION DETAIL FOR ALL PIPING REQUIREMENTS.
3. RE-BALANCE EXISTING TERMINAL EQUIPMENT TO FLOW RATES INDICATED ON PIPING SCHEMATIC.
4. TIE PIPING INTO EXISTING. PROVIDE ALL PIPING MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
5. TIE PIPING INTO EXISTING. ROUTE OFFSET THE PIPING AS REQUIRED TO ACCOMMODATE INLINE COIL PUMP.
6. TIE 1 1/4" PIPING INTO EXISTING GLYCOL PREHEAT RISERS BELOW START OF AHU COIL PUMP AND COIL VALVE CONNECTIONS.
7. REBALANCE EXISTING FIN RADIATION. FLOW RATE TO BE DETERMINED BASED ON PRE-BALANCE.
8. CLEAN AND RE-CALIBRATE THE RETURN FAN AIRFLOW STATION.
9. RE-WIRE EXISTING DAMPER ACTUATOR CONTROL WIRING TO A DEDICATED ANALOG OUTPUT AT THE CONTROLLER. DAMPER SHALL NO LONGER BE WIRED IN PARALLEL WITH OTHER DAMPERS.
10. TIE 1" CHILLED WATER PIPING INTO TO 2 1/2" CHWS/R RISER JUST ABOVE FLOOR PENETRATION TO ALLOW COIL SPECIALTIES TO BE MOUNTED IN RISER.
11. TIE EXISTING RETURN AIR DUCTWORK INTO AIR HANDLING UNIT BOTTOM CONNECTION WITH INTEGRAL DAMPER. PROVIDE ALL DUCTWORK MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTIONS.
12. PROVIDE FACTORY BUILT, AIR HANDLING UNIT WITH SHIPPING SPLITS TO ACCOMMODATE THE RIGGING LIMITATIONS. CONCRETE PAD SHALL BE EXTENDED AS REQUIRED TO ACCOMMODATE UNIT.
13. PROVIDE BMS CONTROLLER TO ACCOMMODATE AIR HANDLING UNIT REPLACEMENT AND ADDITIONAL MONITORING POINTS. ALL EXISTING TO REMAIN CONTROL POINTS SHALL BE WIRED TO THE NEW CONTROLLER.
14. TIE DUCTWORK INTO EXISTING. PROVIDE ALL DUCTWORK MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
15. PROVIDE 12x36 MINIMUM OA AND 12x26 ECONOMIZER OA DUCTWORK AS REQUIRED TO PROVIDE DUCT MOUNTED DAMPERS AND MINIMUM OUTSIDE AIR FLOW STATION. TIE DUCTWORK INTO EXISTING AND PROVIDE ALL MODIFICATIONS AS REQUIRED TO MAKE THE CONNECTION.
16. MOUNT DAMPER AT THE ELEVATION REQUIRED TO INSTALL MINIMUM OUTSIDE AIR FLOW STATION PER MANUFACTURER'S RECOMMENDATIONS.
17. PROVIDE MINIMUM OUTSIDE AIR FLOW STATION BETWEEN DAMPER AND AIR HANDLING UNIT CONNECTION.
18. ACCESS DOORS TO THE THIRD FLOOR MECHANICAL ROOM FROM LECTURE HALL. REFER TO ARCHITECTURAL DRAWINGS TO MODIFICATIONS WITHIN THE LECTURE HALL TO ACCOMODATE RIGGING OF THE AIR HANDLING UNIT THROUGH THE LECTURE HALL.
19. PROVIDE A MINIMUM OF 18" CLEAR WALKWAY TO THE REAR ACCESS DOOR.
20. CLEAN EXISTING FIN RADIATION FINS. PROVIDE PHOTOGRAPHS OF BEFORE AND AFTER CLEANING.
21. THE EXISTING GLYCOL PIPING SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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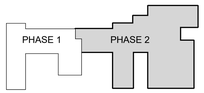
Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

ENLARGED LECTURE HALL PLANS - PHASE 2

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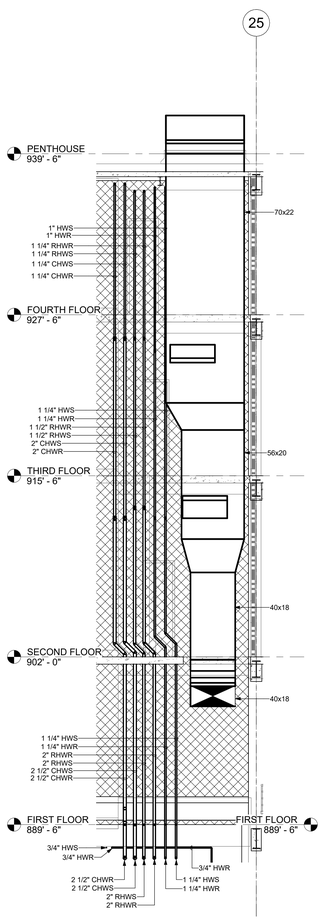
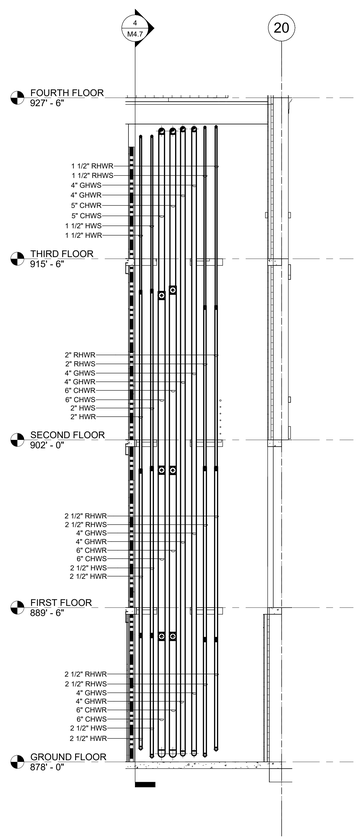
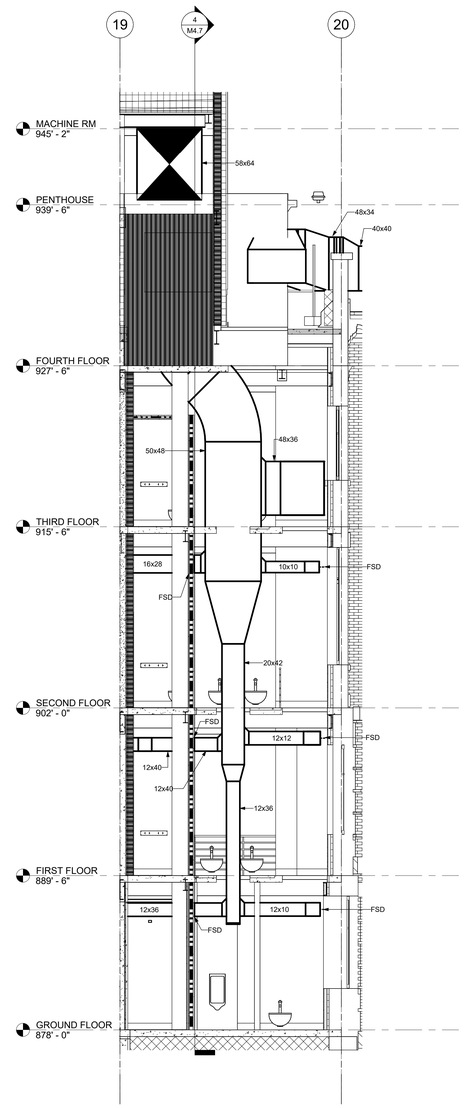


1 ENLARGED E/W NORTH WING SHAFT PLANS - HVAC
1/4" = 1'-0"



2 ENLARGED E/W NORTH WING SHAFT PIPING PLANS - HVAC
1/4" = 1'-0"



3 ENLARGED E/W NORTH WING SHAFT DUCTWORK PLANS - HVAC2
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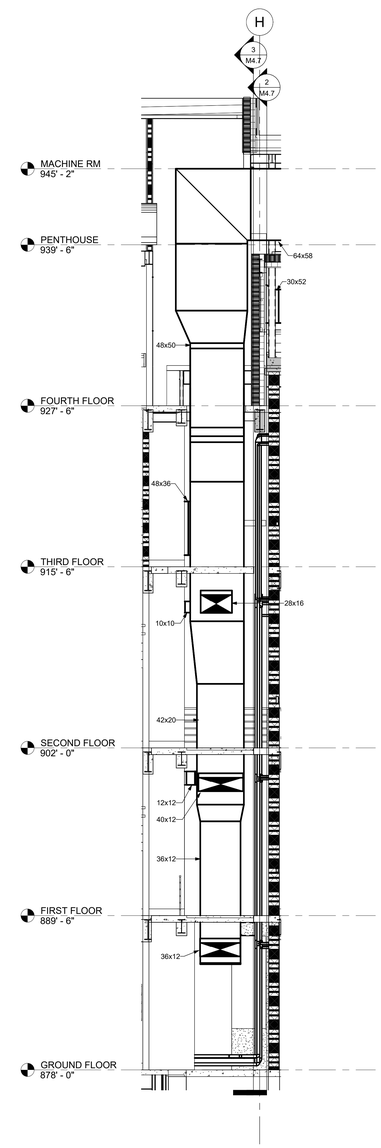

4 ENLARGED E/W NORTH WING SHAFT PLANS - HVAC3
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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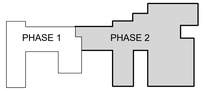

Keyplan

Job Number 31909.00
Drawing By ZMH
Checked By NMT
Filename
Date August 31, 2026

Revisions

MECHANICAL SECTIONS - PHASE 2

STATE OF NEW YORK
LICENSED PROFESSIONAL ENGINEER
GARETT DANIEL MILLER
094525
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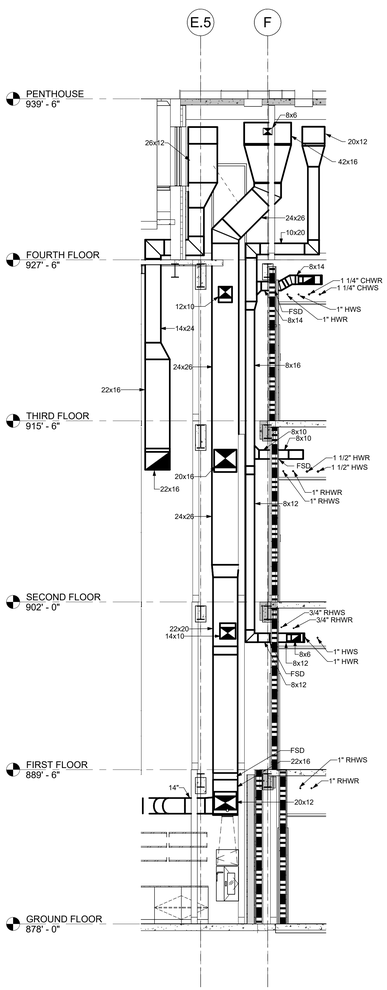
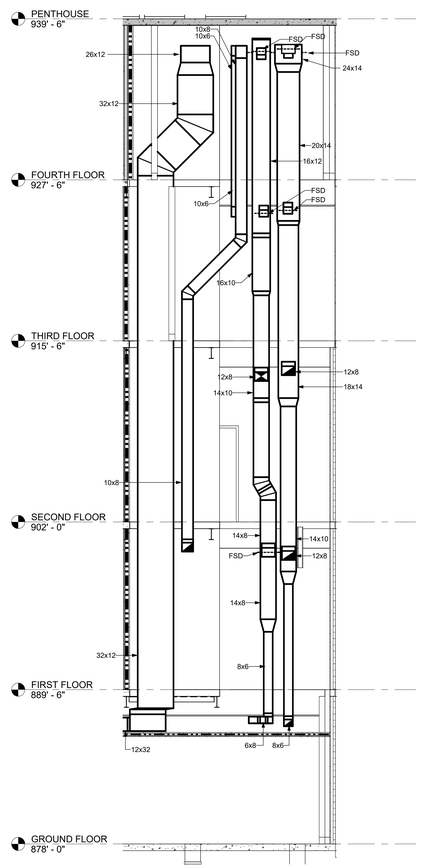


1 ENLARGED E/W NORTH WING SHAFT PLANS - HVAC4
1/4" = 1'-0"



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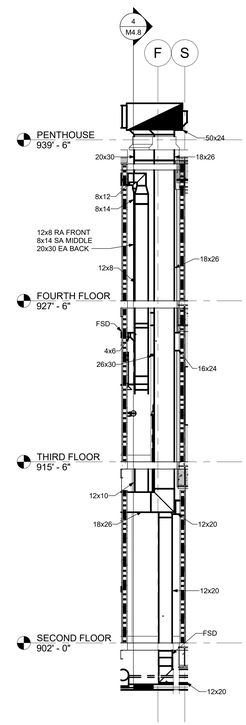

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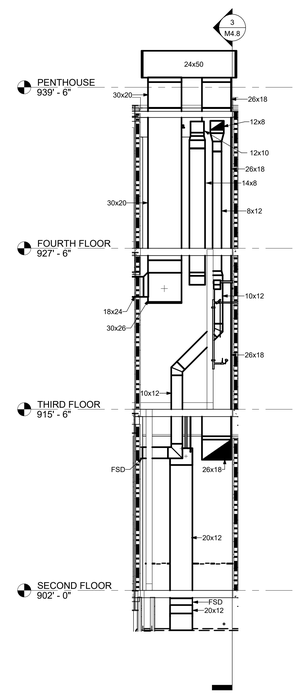

4 ENLARGED E/W NORTH WING SHAFT PLANS - HVAC4
1/4" = 1'-0"

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SUCF Project No. 161026-00

236 Tower Road
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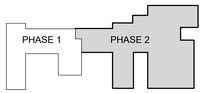

Keyplan

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STEAM LOAD SHED MATRIX						
CONTROL POINT	LOAD SHED 1 STEAM	LOAD SHED 2 STEAM	LOAD SHED 3 STEAM	LOAD SHED 4 STEAM	LOAD SHED 5 STEAM	LOAD SHED 6 STEAM
ZONE CONTROL						
NON-RESEARCH SPACES	INDEX SPACE TO UNOCCUPIED MODE				INDEX TEMPERATURE SET POINT TO 60°F	
RESEARCH SPACES	INDEX SPACE TO UNOCCUPIED MODE, RESETTABLE TO OCCUPIED MODE				INDEX SPACE AIR CHANGE RATE TO MIN UNOCCUPIED ACPH AND SPACE TEMPERATURE SETPOINT TO 60°F	
CRITICAL SPACES (2)	UNDER CONTROL					
AIR HANDLING SYSTEM CONTROL						
MIXED AIR FAN SYSTEMS - ATRIUM / HALLWAY	UNDER CONTROL	INDEX TO 100% RECIRCULATION			INDEX UNIT "OFF"	
MIXED AIR FAN SYSTEMS - OFFICE / CLASSROOM / AUDITORIUM	UNDER CONTROL	INDEX OUTDOOR AIR DAMPER TO MIN POSITION		INDEX TO 100% RECIRCULATION	INDEX UNIT "OFF"	
MIXED AIR FAN SYSTEMS - CRITICAL (2)	UNDER CONTROL					
100% OUTSIDE AIR SYSTEMS - NON CRITICAL	UNDER CONTROL		INDEX DISCHARGE AIR TEMPERATURE TO 55°F	INDEX UNIT "OFF"		
100% OUTSIDE AIR SYSTEMS - CRITICAL (2)	UNDER CONTROL		INDEX DISCHARGE AIR TEMPERATURE TO 55°F (1)			
LABORATORY MAKE-UP AIR SYSTEMS	UNDER CONTROL				INDEX DISCHARGE AIR TEMPERATURE TO 55°F (1)	
LABORATORY EXHAUST SYSTEMS	UNDER CONTROL					
GENERAL EXHAUST SYSTEMS	UNDER CONTROL	INDEX "OFF"				
HYDRONIC SYSTEM CONTROL						
REHEAT LOOP SYSTEM - NON CRITICAL	UNDER CONTROL		INDEX LOOP TEMPERATURE TO 140°F OR MAINTAIN RESET SCHEDULE, WHICHEVER IS LOWER	CLOSE STEAM VALVE, PUMPS "ON"		
REHEAT LOOP SYSTEMS - CRITICAL (2)	UNDER CONTROL					
GLYCOL HEATING LOOP SYSTEM	UNDER CONTROL					

NOTES:
(1) RETAIN ORIGINAL SETPOINT IF LOWER THAN 55°F.
(2) THE DETERMINATION OF WHETHER A SYSTEM OR ZONE IS CONSIDERED "CRITICAL" SHALL BE DETERMINED ON A CASE-BY-CASE BASIS. GENERALLY ANIMAL ROOMS, SERVER ROOMS AND LIBRARIES ARE THE ONLY SPACES THAT ARE PREQUALIFIED AS "CRITICAL". EACH PROJECT SHALL CONDUCT AN INDEPENDENT MEETING WITH THE PRIMARY PURPOSE OF MAKING LOAD SHED DECISIONS.

1 STEAM LOAD SHED MATRIX
NTS

CHILLED WATER LOAD SHED MATRIX				
CONTROL POINT	LOAD SHED 1 CHILLED WATER DAYTIME (DEFCON 2)	LOAD SHED 2 CHILLED WATER NIGHT (DEFCON 3)	LOAD SHED 3 CHILLED WATER EMERGENCY (DEFCON 1)	LOAD SHED 4 CHILLED WATER LSC EMERGENCY (DEFCON)
ZONE CONTROL				
NON-RESEARCH SPACES	INDEX SPACE TO UNOCCUPIED MODE			
	CHILLED WATER COIL CONTROL VALVE UNDER CONTROL	INDEX CHILLED WATER COIL CONTROL VALVE CLOSED		
RESEARCH SPACES	INDEX SPACE TO UNOCCUPIED MODE, RESETTABLE TO OCCUPIED MODE			INDEX CHILLED WATER CONTROL VALVE CLOSED
CRITICAL SPACES (2)	UNDER CONTROL			
AIR HANDLING SYSTEM CONTROL				
MIXED AIR FAN SYSTEMS - ATRIUM / HALLWAY	INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 70°F (1)	INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 75°F (1)	INDEX CHILLED WATER CONTROL VALVE CLOSED	
MIXED AIR FAN SYSTEMS - OFFICE / CLASSROOM / AUDITORIUM	INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 65°F (1)	INDEX TO 100% RECIRCULATION		
		INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 70°F (1)	INDEX CHILLED WATER CONTROL VALVE CLOSED	INDEX CHILLED WATER CONTROL VALVE CLOSED
				INDEX TO 100% RECIRCULATION (1)
MIXED AIR FAN SYSTEMS - CRITICAL (2)	UNDER CONTROL			
100% OUTSIDE AIR SYSTEMS - NON CRITICAL	INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 65°F (1)	INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 70°F (1)	INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 75°F (1)	INDEX CHILLED WATER CONTROL VALVE CLOSED
100% OUTSIDE AIR SYSTEMS - CRITICAL (2)	UNDER CONTROL			
LABORATORY MAKE-UP AIR SYSTEMS	UNDER CONTROL			INDEX DISCHARGE AIR TEMPERATURE SETPOINT TO 65°F (1)
LABORATORY EXHAUST SYSTEMS	UNDER CONTROL			
GENERAL EXHAUST SYSTEMS	UNDER CONTROL		INDEX "OFF"	
HYDRONIC SYSTEM CONTROL				
BUILDING RECIRCULATION LOOP - NON CRITICAL	INDEX CHILLED WATER TEMPERATURE TO 53°F		INDEX PUMPS "OFF" AND OPEN RECICULATING LOOP VALVE TO 100%	
BUILDING RECIRCULATION LOOP - CRITICAL (2)	UNDER CONTROL			
PROCESS CHILLED WATER COOLING LOOP	UNDER CONTROL			

NOTES:
(1) RETAIN FREE COOLING IF REQUIRED AND AVAILABLE.
(2) THE DETERMINATION OF WHETHER A SYSTEM OR ZONE IS CONSIDERED "CRITICAL" SHALL BE DETERMINED ON A CASE-BY-CASE BASIS. GENERALLY ANIMAL ROOMS, SERVER ROOMS AND LIBRARIES ARE THE ONLY SPACES THAT ARE PREQUALIFIED AS "CRITICAL". EACH PROJECT SHALL CONDUCT AN INDEPENDENT MEETING WITH THE PRIMARY PURPOSE OF MAKING LOAD SHED DECISIONS.

2 CHILLED WATER LOAD SHED MATRIX
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334

DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339

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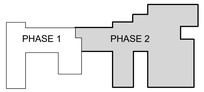
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By NMT
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Date August 31, 2026

Revisions

LOAD SHED MATRICES

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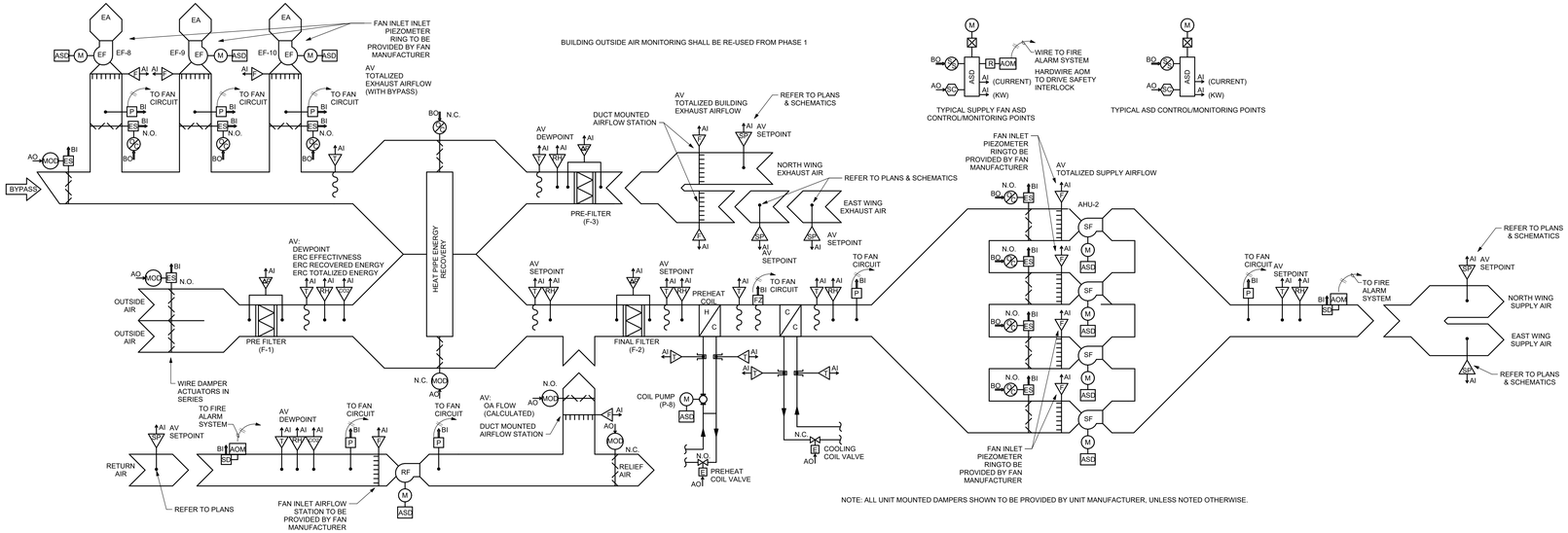

NOTE: ALL UNIT MOUNTED DAMPERS SHOWN TO BE PROVIDED BY UNIT MANUFACTURER, UNLESS NOTED OTHERWISE.

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
RETURN FAN DOWNSTREAM STATIC PRESSURE / SETPOINT (IN WC)			X		X			X	X	X	10% DEVIATION FROM SETPOINT	X	
RETURN FAN DUCT SMOKE DETECTOR STATUS	X											X	
RETURN AIR TEMPERATURE (°F)			X					X				X	
RETURN AIR RELATIVE HUMIDITY (% RH)			X					X				X	
RETURN AIR DEWPOINT (°F)					X			X				X	
RETURN AIR CARBON DIOXIDE			X		X			X				X	MONITORING ONLY
RETURN FAN SUCTION PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X				X				X	X	LOW LIMIT	X	
RETURN FAN AIRFLOW (CFM)			X					X				X	INSTALL IN INLET CONE
RETURN FAN ASD START/STOP COMMAND (ON/OFF)		X						X				X	INTERLOCK WITH FA SYSTEM
RETURN FAN ASD SPEED COMMAND / SETPOINT (%)				X	X			X				X	
RETURN FAN ASD STATUS (CURRENT)			X					X	X	X	FAILURE	X	VIA CONTACT ON DRIVE
RETURN FAN ASD POWER (KW)			X					X				X	
RETURN FAN DISCHARGE PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X				X				X	X	HIGH LIMIT	X	
RELIEF DAMPER POSITION COMMAND (%)				X				X				X	INSULATED DAMPER
RETURN (RA) AIRFLOW (CFM)			X					X				X	DUCT MOUNTED
OUTSIDE AIRFLOW (CFM)					X			X				X	OA (CFM) = TOTALIZED SA (CFM) - RA (CFM)
RETURN DAMPER POSITION COMMAND (%)				X				X				X	
OUTSIDE AIR DAMPER POSITION COMMAND (%)				X				X				X	INSULATED DAMPER
OUTSIDE AIR DAMPER STATUS (OPEN / CLOSED)	X							X				X	
OA PRE-FILTER RACK DIFFERENTIAL PRESSURE (IN WC)			X					X	X	X	HIGH LIMIT	X	
OUTSIDE AIR RELATIVE HUMIDITY (% RH)			X					X				X	
OUTSIDE AIR DEWPOINT (°F)					X			X				X	
OUTSIDE AIR TEMPERATURE (°F)			X					X				X	
OUTSIDE AIR CARBON DIOXIDE			X		X			X				X	MONITORING ONLY
HRC SUPPLY BYPASS DAMPER POSITION COMMAND (%)				X				X				X	FROST CONTROL
HRC SUPPLY COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X					X				X	
HRC SUPPLY COIL LEAVING AIR RELATIVE HUMIDITY (% RH)			X					X				X	
HRC HEAT RECOVERY EFFECTIVENESS - WINTER						X		X				X	CALCULATE BASED ON ENTHALPY
HRC HEAT RECOVERY EFFECTIVENESS - SUMMER						X		X				X	CALCULATE BASED ON ENTHALPY
HRC RECOVERED ENERGY (BTUH) - WINTER						X		X				X	CALCULATE BASED ON ENTHALPY
HRC RECOVERED ENERGY (BTUH) - SUMMER						X		X				X	CALCULATE BASED ON ENTHALPY
HRC TOTALIZED RECOVERED ENERGY (BTU/YR)						X		X				X	CALCULATE BASED ON ENTHALPY
FINAL-FILTER RACK DIFFERENTIAL PRESSURE (IN WC)			X					X	X	X	HIGH LIMIT	X	
PREHEAT COIL ENTERING AIR TEMPERATURE (°F)			X					X				X	
PREHEAT COIL ENTERING AIR RELATIVE HUMIDITY (% RH)			X					X				X	
PREHEAT COIL VALVE POSITION COMMAND (%)				X				X	X	X	5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
PREHEAT COIL SUPPLY WATER TEMPERATURE (°F)			X			X		X	X	X		X	
PREHEAT COIL RETURN WATER TEMPERATURE (°F)			X			X		X	X	X		X	
PREHEAT COIL PUMP ASD START/STOP COMMAND (ON/OFF)		X						X				X	
PREHEAT COIL PUMP ASD SPEED COMMAND / SETPOINT (%)				X	X			X				X	
PREHEAT COIL PUMP ASD STATUS (CURRENT)			X					X	X	X	FAILURE	X	VIA CONTACT ON DRIVE
PREHEAT COIL PUMP ASD POWER (KW)			X					X				X	
PREHEAT COIL DISCHARGE AIR TEMPERATURE (°F)			X					X				X	
COOLING COIL LOW LIMIT TEMPERATURE STATUS	X							X	X	X	LOW LIMIT	X	
COOLING COIL VALVE POSITION COMMAND (%)				X				X	X	X	5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
COOLING COIL CHILLED WATER SUPPLY TEMPERATURE (°F)			X					X				X	
COOLING COIL CHILLED WATER RETURN TEMPERATURE (°F)			X					X				X	
COOLING COIL DISCHARGE AIR TEMPERATURE (°F)			X					X				X	
COOLING COIL DISCHARGE AIR RELATIVE HUMIDITY (% RH)			X					X				X	
SUPPLY FAN SUCTION PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X				X				X	X	LOW LIMIT	X	
SUPPLY FAN ISOLATION DAMPER COMMAND		X						X				X	(TYP=4)
SUPPLY FAN AIRFLOW (CFM)			X					X				X	INSTALL IN INLET CONE (TYP=4)
SUPPLY FAN ASD START/STOP COMMAND (ON/OFF)		X						X				X	INTERLOCK WITH FA SYSTEM (TYP=4)
SUPPLY FAN ASD SPEED COMMAND / SETPOINT (%)				X	X			X				X	(TYP=4)
SUPPLY FAN ASD STATUS (CURRENT)			X					X	X	X	FAILURE	X	VIA CONTACT ON DRIVE (TYP=4)
SUPPLY FAN ASD POWER (KW)			X					X				X	(TYP=4)
SUPPLY FAN ISOLATION DAMPER STATUS (OPEN / CLOSED)	X							X				X	(TYP=4)
TOTALIZED SUPPLY FAN AIRFLOW (CFM)						X		X					
SUPPLY FAN DISCHARGE PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X					X			X	X	HIGH LIMIT	X	
AHU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X			X		X	X	X	DEVIATION FROM SETPOINT	X	
AHU DISCHARGE AIR RELATIVE HUMIDITY (% RH)			X					X				X	
SUPPLY FAN DUCT SMOKE DETECTOR STATUS	X											X	
SUPPLY FAN DOWNSTREAM STATIC PRESSURE / SETPOINT (IN WC)			X			X		X	X	X	10% DEVIATION FROM SETPOINT	X	(TYP=2)
EXHAUST FAN DOWNSTREAM STATIC PRESSURE / SETPOINT (IN WC)			X			X		X	X	X	10% DEVIATION FROM SETPOINT	X	(TYP=3)
EXHAUST FAN AIRFLOW (FROM BUILDING) (CFM)			X					X				X	DUCT MOUNTED (TYP=2)
TOTALIZED EXHAUST AIRFLOW (FROM BUILDING) (CFM)						X		X					
EXHAUST FILTER RACK DIFFERENTIAL PRESSURE (IN WC)			X					X	X	X	HIGH LIMIT	X	
HRC EXHAUST COIL ENTERING AIR TEMPERATURE (°F)			X					X				X	
HRC EXHAUST COIL ENTERING AIR RELATIVE HUMIDITY (% RH)			X					X				X	
HRC EXHAUST COIL ENTERING AIR DEWPOINT (°F)						X		X				X	
HRC EXHAUST BYPASS DAMPER COMMAND		X						X				X	
HRC EXHAUST COIL LEAVING AIR TEMPERATURE (°F)			X					X				X	
EXHAUST FAN BYPASS DAMPER POSITION COMMAND (%)				X				X				X	INSULATED DAMPER
EXHAUST FAN BYPASS DAMPER STATUS (OPEN / CLOSED)	X							X				X	
EXHAUST FAN ISOLATION DAMPER COMMAND		X						X				X	INSULATED DAMPER (TYP=3)
EXHAUST FAN ISOLATION DAMPER STATUS (OPEN / CLOSED)	X							X				X	(TYP=3)
EXHAUST FAN SUCTION PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X					X			X	X	LOW LIMIT	X	(TYP=3)
EXHAUST FAN ASD START/STOP COMMAND (ON/OFF)		X						X				X	(TYP=3)
EXHAUST FAN ASD SPEED COMMAND / SETPOINT (%)				X	X			X				X	(TYP=3)
EXHAUST FAN ASD STATUS (CURRENT)			X					X	X	X	FAILURE	X	VIA CONTACT ON DRIVE (TYP=3)
EXHAUST FAN ASD POWER (KW)			X					X				X	(TYP=3)
EXHAUST FAN AIRFLOW (BYPASS) (CFM)			X					X				X	INSTALL IN INLET CONE (TYP=3)
TOTALIZED EXHAUST AIRFLOW (WITH BYPASS) (CFM)						X		X				X	

1 AIR HANDLING UNIT WITH HEAT PIPE RECOVERY CONTROL SCHEMATIC AND SYSTEM SUMMARY

NTS

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

AIR HANDLING UNIT (AHU-2)
SUPPLY AIR FANS
RETURN FAN (RF-2)
HEAT PIPE ENERGY RECOVERY COILS (HRC-1 & HRC-2)
GLYCOL PRE-HEAT COIL
CHILLED WATER COOLING COIL
GLYCOL PREHEAT COIL PUMPS (P-8)
LAB EXHAUST FANS (EF-8, EF-9 & EF-10)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

POWER FOR THE TEMPERATURE CONTROL PANEL SHALL BE FED FROM EMERGENCY POWER.

CONTROLLED EQUIPMENT SHALL BE FED FROM EMERGENCY POWER.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

DURING HEATING MODE, THE HEATING CONTROL VALVE SHALL CONTINUE TO CONTROL WHEN THE FAN IS OFF FOR CONTINUED FREEZE PROTECTION.

DESIGN INTENT: EXHAUST FANS OPERATE VARIABLE VOLUME AT PART SPEED WITH BYPASS AIRFLOW AS NEEDED IN LIEU OF CONSTANT SPEED OPERATION. FANS SHALL STAGE ON BASED ON THE MOST ENERGY EFFICIENT PART SPEED OPERATION.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

AHU DISCHARGE AIR TEMPERATURE (DAT): SEE RESET SCHEDULE

ERC DISCHARGE AIR TEMPERATURE: AHU DAT SETPOINT - 2°F

FREEZESTAT LOW LIMIT TEMPERATURE: 38°F

PRE FILTER DIFFERENTIAL PRESSURE HIGH LIMIT: 0.75" W.C.

FINAL FILTER DIFFERENTIAL PRESSURE HIGH LIMIT: 1.5" W.C.

SUPPLY FAN DISCHARGE HIGH STATIC PRESSURE LIMIT: 6.0" W.C.

SUPPLY FAN SUCTION LOW STATIC PRESSURE LIMIT: -6.0" W.C.

EXHAUST FAN SUCTION LOW STATIC PRESSURE LIMIT: -10.0" W.C.

RETURN FAN DISCHARGE HIGH STATIC PRESSURE LIMIT: 6.0" W.C.

RETURN FAN SUCTION LOW STATIC PRESSURE LIMIT: -6.0" W.C.

RETURN FAN DOWNSTREAM STATIC PRESSURE: - X" W.C.

SUPPLY FAN DOWNSTREAM STATIC PRESSURE: X" W.C

EXHAUST FAN DOWNSTREAM STATIC PRESSURE: - X" W.C

SUPPLY FAN MINIMUM START SPEED: 3,200 CFM (25% OF MAX)

EXHAUST FAN MINIMUM OPERATING AIRFLOW: 11,000 CFM (3000 FPM THRU STACK)

EXHAUST FAN MINIMUM OPERATING SPEED: X% (3,000 FPM THRU STACK)

RETURN FAN MINIMUM START SPEED: 1,000 CFM (25% OF MAX)

OUTSIDE AIR FLOW RATE: CALCULATED VALUE SUPPLY AIRFLOW CFM (MEASURED) MINUS RETURN AIRFLOW RATE (MEASURED)

BUILDING OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

FAN START/STOP

AIR HANDLING UNIT SUPPLY FAN SHALL BE INTERLOCKED WITH THE ASSOCIATED LABORATORY EXHAUST FAN.

THE SUPPLY AND EXHAUST FANS SHALL BE ENABLED AT ALL TIMES, REGARDLESS OF BUILDING OCCUPANCY SCHEDULE.

OCCUPIED: THE RETURN AIR FAN SHALL START AND OPERATE CONTINUOUSLY BASED ON THE TIME OF DAY SCHEDULE.

UNOCCUPIED: DURING THE SCHEDULED OCCUPIED PERIOD, THE RETURN FAN SHALL BE INDEXED TO START WHENEVER ANY SPACE ASSOCIATED WITH THE SYSTEM IS OCCUPIED, AS DETERMINED VIA SPACE OCCUPANCY SENSORS. THE SYSTEM SHALL STOP AND INDEX BACK TO UNOCCUPIED MODE WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF 30 MINUTES.

SHUTOFF DAMPER CONTROL

WHEN THE RETURN FAN IS OFF, THE RETURN AIR DAMPER AND RELIEF DAMPER SHALL BE CLOSED.

WHEN THE RETURN FAN IS INDEXED TO START, THE RETURN AIR DAMPER SHALL PROVE OPEN VIA END SWITCH PRIOR TO STARTING THE FAN.

WHEN THE SUPPLY AND EXHAUST FANS ARE OFF, THE OUTSIDE AIR, EXHAUST AIR AND RELIEF DAMPER SHALL CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN.

WHEN THE SUPPLY AND EXHAUST FANS ARE INDEXED TO START, THE OUTSIDE AIR AND ASSOCIATED EXHAUST AIR DAMPERS SHALL PROVE OPEN VIA END SWITCH PRIOR TO STARTING THE SYSTEM FANS.

SUPPLY FAN SPEED CONTROL

THE SUPPLY AIR FAN SHALL MODULATE VIA A VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT. THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE DAMPER POSITION AT 95% OPEN.

THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS

RETURN FAN SPEED CONTROL

THE RETURN AIR FAN SHALL MODULATE VIA A VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT. THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE DAMPER POSITION AT 95% OPEN.

THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS

EXHAUST FAN SYSTEM CONTROL

THE EXHAUST FANS SHALL MODULATE VIA A VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT. THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE DAMPER POSITION AT 95% OPEN.

THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS.

THE SYSTEM SHALL MAINTAIN EACH MINIUM FAN INLET AIRFLOW, WHICH IS DESIGNED FOR A MINIMUM STACK DISCHARGE VELOCITY OF 3000 FPM. THE ASSOCIATED FAN SPEED SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS.

ON A CALL TO OPERATE, THE LEAD FAN SHALL BE INDEXED TO START AND RUN AT MINIMUM START SPEED (20%), AT WHICH TIME THE ASSOCIATED FAN ISOLATION DAMPER SHALL BE INDEXED TO OPEN. ONCE THE DAMPER IS PROVEN OPEN, THE LEAD FAN SHALL MODULATE TO MINIMUM OPERATING SPEED.

IF THE EXHAUST DUCT STATIC PRESSURE FALLS MORE NEGATIVE THAN SETPOINT WITH THE LEAD FAN AT MINIMUM SPEED, THE BYPASS DAMPER WILL OPEN AND MODULATE TO MAINTAIN SETPOINT. IF THE EXHAUST DUCT STATIC PRESSURE RISES MORE POSITIVE THAN SETPOINT, THE BYPASS DAMPER SHALL MODULATE CLOSED AS NEEDED TO MAINTAIN SETPOINT.

IF THE EXHAUST DUCT STATIC PRESSURE CONTINUES TO RISE MORE POSITIVE THAN SETPOINT WITH THE EXHAUST FAN EXCEEDING **XX%** SPEED. THE LAG FAN SHALL BE ADDED.

FANS SHALL CONTINUE TO STAGE ON AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT, FOLLOWING THE SEQUENCE ABOVE.

IF THE EXHAUST DUCT STATIC PRESSURE FALLS MORE NEGATIVE THAN SETPOINT WITH THE EXHAUST FAN FALLING BELOW **XX%** SPEED. THE LAG/STANDBY FAN SHALL BE SUBTRACTED. THE LAG/STANDBY BY FAN SHALL BE INDEXED OFF, AND THE ASSOCIATED ISOLATION DAMPERS SHALL CLOSED. THE BYPASS DAMPER SHALL SIMULTANEOUSLY OPEN WITH THE SHUTTING DOWN OF THE LAG FAN.

FANS SHALL CONTINUE TO STAGE OFF AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT, FOLLOWING THE SEQUENCE ABOVE.

THE FAN SPEED SETPOINTS FOR STAGING SHALL BE CONFIRMED BASED ON ENERGY CALCULATIONS AND BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS.

ONCE A MONTH ON A MONDAY AT 6AM (ADJUSTABLE BY OWNER), THE LEAD FAN SHALL INDEX TO LAG, THE LAG FAN SHALL INDEX TO STANDBY.

ON FAILURE OF THE LEAD FAN, THE LEAD FAN SHALL INDEX TO STANDY, THE LAG FAN SHALL INDEX TO LEAD, AND THE STANDY FAN SHALL INDEX TO LAG.

ON FAILURE OF AIR HANDLING UNIT ASSOCIATED WITH THE LABORATORY EXHAUST FAN, THE SYSTEM SHALL INDEX AIRFLOW CONTROL. THE BYPASS DAMPER SHALL CLOSE, AND THE FAN SHALL INDEX TO 40% OF FULL DESIGN FLOW.

(FAILURE MODE SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS TO ENSURE BUILDING IS NOT UNDERPRESSURIZED).

HEAT RECOVERY CONTROL

WINTER MODE: WINTER MODE SHALL BE INITIATED WHEN THE OUTSIDE AIR TEMPERATURE IS 7-10°F BELOW THE SUPPLY AIR DISCHARGE AIR TEMPERATURE SETPOINT AND THE HEAT PIPE DISCHARGE AIR TEMPERATURE IS BELOW SETPOINT. THE OUTSIDE AIR AND EXHAUST AIR BYPASS DAMPERS SHALL BE CLOSED.

INTERMEDIATE MODE: INTERMEDIATE MODE SHALL BE INITIATED WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE THE SUPPLY AIR TEMPERATURE SETPOINT AND 5°F BELOW THE EXHAUST AIR TEMPERATURE AND THE OUTSIDE AIR TEMPERATURE IS ABOVE THE HEAT PIPE DISCHARGE AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR AND EXHAUST BYPASS DAMPERS SHALL MODULATE OPEN.

SUMMER MODE: SUMMER MODE SHALL BE INITIATED WHEN THE OUTSIDE AIR TEMPERATURE IS 7-10°F ABOVE THE EXHAUST AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR AND EXHAUST BYPASS DAMPERS SHALL BE CLOSED.

ANTI-FROST MODE: ANTI-FROST MODE SHALL BE INITIATED WHEN THE LEAVING EXHAUST AIR TEMPERATURE FALLS BELOW 34 DEG F AND INLET EXHAUST AIR DEWPOINT TEMPERATURE IS GREATER THAN THE LEAVING EXHAUST AIR TEMPERATURE. THE BYPASS DAMPERS SHALL MODULATE AS REQUIRED TO MAINTAIN THE EXHAUST AIR LEAVING TEMPERATURE ABOVE THE INLET EXHAUST AIR DEWPOINT TEMPERATURE.

SUPPLY AIR TEMPERATURE CONTROL

DISCHARGE AIR TEMPERATURE RESET: THE AHU DISCHARGE AIR TEMPERATURE SHALL BE ALLOWED TO RESET BASED ON THE FOLLOWING SCHEDULE:

OAT = 75°F & ABOVE --- DAT = 55°F

OAT = 55°F & BELOW --- DAT = 65°F

WHEN THE AHU DISCHARGE AIR TEMPERATURE SETPOINT IS 65°F AND A ZONE (WITHOUT SUPPLEMENTAL COOLING) IS CANNOT MEET THE COOLING SETPOINT, THE DISCHARGE AIR TEMPERATURE SHALL BE RESET INCREMENTALLY TO 55°F UNTIL THE ZONE SETPOINT IS SATISFIED.

WHEN THE AHU DISCHARGE AIR TEMPERATURE FALLS BELOW SETPOINT, THE CHILLED WATER CONTROL VALVE SHALL BE CLOSED. THE PREHEAT COIL GLYCOL COIL PUMP SHALL START AND THE PREHEAT COIL CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT.

WHEN AHU DISCHARGE AIR TEMPERATURE RISES ABOVE SETPOINT, THE PREHEAT COIL CONTROL VALVE SHALL BE CLOSED, THE PREHEAT COIL GLYCOL COIL PUMP SHALL BE OFF AND THE CHILLED WATER CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT.

MODULATED ECONOMIZER MODE (MAT CONTROL)

WHEN THE RETURN AIR TEMPERATURE RISES ABOVE THE COOLING SETPOINT, AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE AHU DISCHARGE AIR TEMPERATURE SETPOINT, MODULATED ECONOMIZER MODE (MAT CONTROL) SHALL BE INITIATED.

THE OUTSIDE AIR, RETURN AIR AND RELIEF AIR DAMPERS SHALL MODULATE TO MAINTAIN THE AHU DISCHARGE AIR TEMPERATURE SETPOINT.

LOW LIMIT: WHEN THE MIXED AIR TEMPERATURE FALLS BELOW SETPOINT, THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL INDEX TO MINIMUM. THE RETURN AIR DAMPER SHALL INDEX TO MAXIMUM POSITION AND HEATING MODE SHALL BE INITIATED.

HIGH LIMIT: WHEN THE MIXED AIR TEMPERATURE RISES ABOVE SETPOINT, THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL INDEX TO FULL OPEN AND THE RETURN AIR DAMPER SHALL CLOSE AND INTEGRATED ECONOMIZER MODE SHALL BE INITIATED.

INTEGRATED ECONOMIZER MODE

THE SYSTEM SHALL BE EQUIPPED WITH DIFFERENTIAL DRY BULB INTEGRATED ECONOMIZER CONTROL.

WHEN THE RETURN AIR CONTINUES TO RISE ABOVE THE COOLING SETPOINT, THE RETURN AIR TEMPERATURE IS ABOVE THE OUTDOOR AIR TEMPERATURE, AND THE OUTDOOR AIR DEWPOINT TEMPERATURE IS BELOW 60°F, INTEGRATED ECONOMIZER MODE SHALL BE INITIATED. THE OUTSIDE AIR AND RELIEF DAMPERS SHALL OPEN AND THE RETURN AIR DAMPER SHALL BE CLOSED. THE OUTSIDE AIR DAMPER SHALL BE OPEN. THE CHILLED WATER CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT.

LOW LIMIT SHUTOFF: INTEGRATED ECONOMIZER CONTROL SHALL BE DISABLED, AND MODULATED ECONOMIZER MODE SHALL BE INITIATED WHEN THE OUTSIDE AIR TEMPERATURE FALLS BELOW THE AHU DISCHARGE AIR TEMPERATURE SETPOINT.

HIGH LIMIT SHUTOFF: INTEGRATED ECONOMIZER CONTROL SHALL BE DISABLED WHEN THE OUTDOOR AIR TEMPERATURE EXCEEDS THE RETURN AIR TEMPERATURE. THE OUTSIDE AIR DAMPER SHALL INDEX TO MINIMUM. THE RELIEF DAMPERS SHALL BE CLOSED, AND THE RETURN AIR DAMPER SHALL INDEX TO MAXIMUM POSITION AND COOLING MODE SHALL BE INITIATED.

SAFETIES

FREEZE PROTECTION: THE SUPPLY AND EXHAUST AIR FANS SHALL SHUT DOWN, THE OUTSIDE AIR, RELIEF AIR AND EXHAUST AIR DAMPERS SHALL CLOSE. THE RETURN FAN SHALL START, THE GLYCOL COIL PUMPS SHALL START AND THE CONTROL VALVES SHALL OPEN UPON ACTIVATION OF THE LOW LIMIT TEMPERATURE SWITCH.

HIGH FAN STATIC: THE SUPPLY, RETURN AND EXHAUST AIR FANS SHALL SHUT DOWN, THE ASSOCIATED DAMPER (OUTSIDE AIR, RETURN/RELIEF AND EXHAUST AIR) SHALL CLOSE UPON ACTIVATION OF THE HIGH FAN DISCHARGE STATIC PRESSURE SWITCH.

LOW FAN STATIC: THE SUPPLY, RETURN AND EXHAUST AIR FANS SHALL SHUT DOWN, THE ASSOCIATED DAMPER (OUTSIDE AIR, RETURN/RELIEF AND EXHAUST AIR) SHALL CLOSE UPON ACTIVATION OF THE LOW FAN SUCTION STATIC PRESSURE SWITCH.

SMOKE DETECTION: THE SUPPLY / RETURN FAN SHALL SHUT DOWN AND THE OUTSIDE AIR / RELIEF DAMPER SHALL CLOSE UPON ACTIVATION OF A DUCT SMOKE DETECTOR.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
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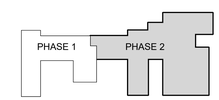
Notes:



Keyplan

Job Number 31909.00
Drawing By NMT
Checked By NMT
Filename
Date August 31, 2026

Revisions

CONTROL SCHEMATIC & SYSTEM SUMMARY - PHASE 2

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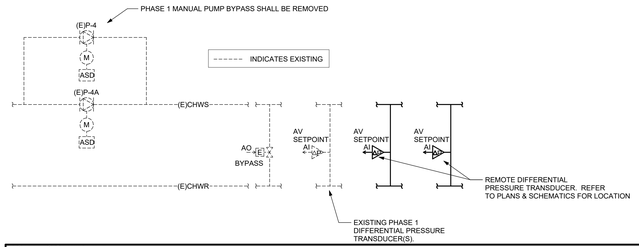


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM				
									BACS	EMCS	DESCRIPTION		
REHEAT HOT WATER LOOP DIFFERENTIAL PRESSURE / SETPOINT (PSID)			X		X			X	X	X	10% DEVIATION FROM SETPOINT	X	TYP=2

1 EXISTING REHEAT HOT WATER CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXISTING BUILDING REHEAT HOT WATER LOOP

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

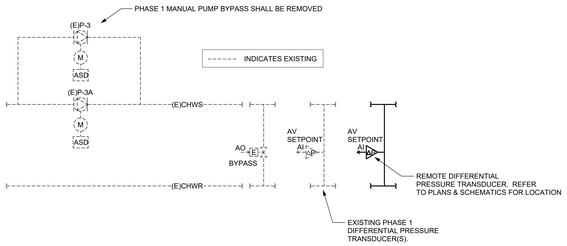
ALL SETPOINTS SHALL BE ADJUSTABLE.

MODIFY EXISTING SEQUENCE OPERATION AS FOLLOWS:

SPEED CONTROL:

WHEN ENABLED, PUMPS SHALL MODULATE VIA VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE LOOP DIFFERENTIAL PRESSURE SETPOINT. THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE CONTROL VALVE POSITION AT 95% OPEN.

THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM				
									BACS	EMCS	DESCRIPTION		
PREHEAT HOT WATER LOOP DIFFERENTIAL PRESSURE / SETPOINT (PSID)			X		X			X	X	X	10% DEVIATION FROM SETPOINT	X	

2 EXISTING PREHEAT HOT WATER CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXISTING BUILDING PREHEAT HOT WATER LOOP

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

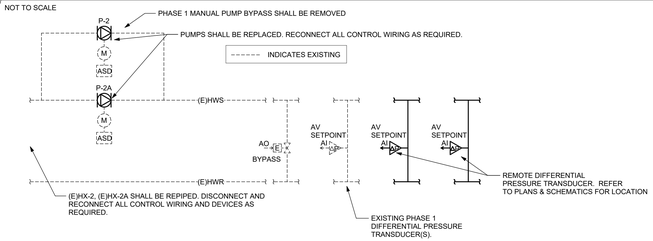
ALL SETPOINTS SHALL BE ADJUSTABLE.

MODIFY EXISTING SEQUENCE OPERATION AS FOLLOWS:

SPEED CONTROL:

WHEN ENABLED, PUMPS SHALL MODULATE VIA VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE LOOP DIFFERENTIAL PRESSURE SETPOINT. THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE CONTROL VALVE POSITION AT 95% OPEN.

THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM				
									BACS	EMCS	DESCRIPTION		
PERIMET HOT WATER LOOP DIFFERENTIAL PRESSURE / SETPOINT (PSID)			X		X			X	X	X	10% DEVIATION FROM SETPOINT	X	TYP=2

3 EXISTING PERIMETER HOT WATER CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXISTING BUILDING PERIMETER HOT WATER LOOP

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

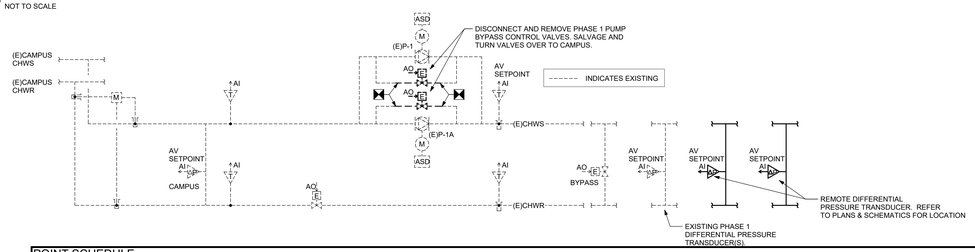
ALL SETPOINTS SHALL BE ADJUSTABLE.

MODIFY EXISTING SEQUENCE OPERATION AS FOLLOWS:

SPEED CONTROL:

WHEN ENABLED, PUMPS SHALL MODULATE VIA VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE LOOP DIFFERENTIAL PRESSURE SETPOINT. THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE CONTROL VALVE POSITION AT 95% OPEN.

THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM				
									BACS	EMCS	DESCRIPTION		
BUILDING CHILLED WATER LOOP DIFFERENTIAL PRESSURE / SETPOINT (PSID)			X		X			X	X	X	10% DEVIATION FROM SETPOINT	X	TYP=2

4 EXISTING CHILLED WATER CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXISTING BUILDING CHILLED WATER LOOP

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

UPON COMPLETION OF PHASE 1 PIPING DEMOLITION, REMOVE OVERRIDE ON CHILLED WATER SYSTEM AND RECIRCULATING VALVE CONTROL.

MODIFY EXISTING SEQUENCE OPERATION AS FOLLOWS:

SPEED CONTROL:

WHEN ENABLED, PUMPS SHALL MODULATE VIA VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE LOOP DIFFERENTIAL PRESSURE SETPOINT. THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE CONTROL VALVE POSITION AT 95% OPEN.

THE LOOP DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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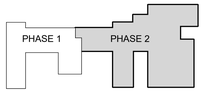
Notes:



Keyplan

Job Number	31909.00
Drawing By	NMT
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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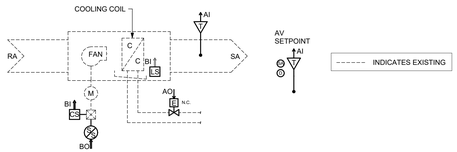


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	EMCS	DESCRIPTION	SHOWN ON GRAPHIC	NOTES
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X						X				X	
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	

1 EXISTING ELEV. MACHINE ROOM G0082 TWO PIPE FAN COIL CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXISTING COOLING ONLY FAN COIL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINT: 80°F

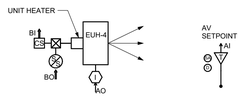
FAN COIL START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

THE FAN SHALL OPERATE AT CONSTANT SPEED WHENEVER THE SYSTEM IS INDEXED TO OPERATE.

ZONE TEMPERATURE CONTROL

IF THE ZONE TEMPERATURE RISES ABOVE THE COOLING TEMPERATURE SETPOINT, THE COOLING CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SETPOINT.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	EMCS	DESCRIPTION	SHOWN ON GRAPHIC	NOTES
FAN MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
FAN MOTOR START/STOP		X						X				X	
ELECTRIC COIL COMMAND				X				X				X	
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	

2 AHU VESTIBULE ELECTRIC UNIT HEATER CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

ELECTRIC UNIT HEATER

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE HEATING TEMPERATURE SETPOINT: 65°F

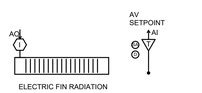
START/STOP

THE FAN SHALL START BASED ON SPACE TEMPERATURE FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

THE FAN SHALL OPERATE AT CONSTANT SPEED WHENEVER THE SYSTEM IS INDEXED TO OPERATE.

ZONE TEMPERATURE CONTROL

IF THE ZONE TEMPERATURE FALLS BELOW THE HEATING TEMPERATURE SETPOINT, THE UNIT HEATER SHALL ENERGIZE TO MAINTAIN SPACE TEMPERATURE SETPOINT.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	EMCS	DESCRIPTION	SHOWN ON GRAPHIC	NOTES
ELECTRIC COIL COMMAND				X				X				X	
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	

3 TYPICAL HEATING ONLY ELECTRIC ROOM CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

ELECTRIC FIN RADIATION

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

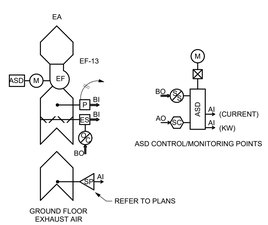
SPACE HEATING TEMPERATURE SETPOINT: 65°F

START/STOP

THE SYSTEM SHALL START BASED ON SPACE TEMPERATURE FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

IF THE ZONE TEMPERATURE FALLS BELOW THE HEATING TEMPERATURE SETPOINT, THE FIN RADIATION SHALL ENERGIZE TO MAINTAIN SPACE TEMPERATURE SETPOINT.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	EMCS	DESCRIPTION	SHOWN ON GRAPHIC	NOTES
EXHAUST FAN SUCTION PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X				X				X		LOW LIMIT	X	
EXHAUST FAN ASD START/STOP COMMAND (ON/OFF)		X						X				X	
EXHAUST FAN ASD SPEED COMMAND / SETPOINT (%)				X	X			X				X	
EXHAUST FAN ASD STATUS (CURRENT)			X					X	X		FAILURE	X	
EXHAUST FAN ASD POWER (KW)			X					X				X	
EXHAUST FAN ISOLATION DAMPER COMMAND		X						X				X	
EXHAUST FAN ISOLATION DAMPER STATUS (OPEN / CLOSED)	X							X				X	
EXHAUST FAN DOWNSTREAM STATIC PRESSURE / SETPOINT (IN WC)			X		X			X	X		10% DEVIATION FROM SETPOINT	X	

4 EXHAUST FAN EF-13 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXHAUST FAN (EF-13)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

POWER FOR THE TEMPERATURE CONTROL PANEL SHALL BE FED FROM EMERGENCY POWER.

CONTROLLED EQUIPMENT SHALL BE FED FROM EMERGENCY POWER.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

EXHAUST FAN SUCTION LOW STATIC PRESSURE LIMIT: -10.0" W.C.

EXHAUST FAN DOWNSTREAM STATIC PRESSURE: - X" W.C

EXHAUST FAN MINIMUM START SPEED: 200 CFM (30% OF MAX)

FAN START/STOP

THE EXHAUST FAN SHALL BE ENABLED AT ALL TIMES, REGARDLESS OF BUILDING OCCUPANCY SCHEDULE.

SHUTOFF DAMPER CONTROL

WHEN THE EXHAUST FAN IS OFF, THE DAMPER SHALL BE CLOSED.

EXHAUST FAN SPEED CONTROL

THE EXHAUST AIR FAN SHALL MODULATE VIA A VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT. THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE DAMPER POSITION AT 95% OPEN.

THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE DETERMINED DURING SYSTEM BALANCING BY THE CONTROL AND TAB CONTRACTORS.

ON FAILURE OF AIR HANDLING UNIT ASSOCIATED WITH THE EXHAUST FAN, THE FAN SHALL INDEX TO MINIMUM AIRFLOW.

SAFETIES

LOW FAN STATIC: THE EXHAUST AIR FAN SHALL SHUT DOWN, THE DAMPER SHALL CLOSE UPON ACTIVATION OF THE LOW FAN SUCTION STATIC PRESSURE SWITCH.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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T 315 836 4062

Watson Engineering
Plumbing
4500 State Route 434
Apalachin, NY 13732
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DM Engineers
Fire Protection Engineers
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Yonkers, NY 10704
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D2D Green Design
Sustainability PH2
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T 212 725-6800

Watts Architects & Engineers
Asbestos, Haz Mat
95 Perry Street, Suite 300
Buffalo, NY 14203
T 716 206-5122

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142 Hanlon Rd
Holliston, MA 01746
T 508 397-8417

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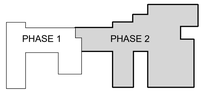
32 Broadway, Suite 801
New York, NY 10004
T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	NMT
Checked By	NMT
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Date	August 31, 2026

Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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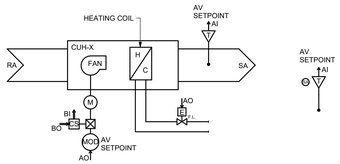


POINT SCHEDULE														
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS								SHOWN ON GRAPHIC	NOTES
										ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION			
STEAM LOAD SHED						X (6)								BINARY NETWORK INPUTS FROM EMCS
FAN MOTOR STATUS (ON/OFF)	X								X	X		FAILURE	X	
FAN MOTOR START/STOP		X							X				X	
FAN MOTOR SPEED COMMAND (%) / SETPOINT				X					X				X	
HEATING COIL VALVE POSITION COMMAND (%)				X					X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HEATING COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X				X				X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕				X	X		± 4°F FROM SETPOINT	X	

1 TYPICAL CABINET UNIT HEATER CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

CABINET UNIT HEATER

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED: 70°F - 6.0°F

SPACE OCCUPANCY

OCCUPANCY SHALL BE DETERMINED BASED UPON A TIME OF DAY SCHEDULE.

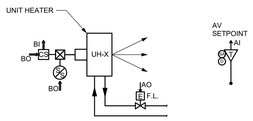
START/STOP

THE FANS SHALL START TO MAINTAIN THE HEATING SETPOINTS WHENEVER THE SPACE IS IN OCCUPIED OR UNOCCUPIED MODE.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A PROGRAMMED SCHEDULE.

OCCUPIED/UNOCCUPIED HEATING: IF THE ZONE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT THE FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.



POINT SCHEDULE														
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS								SHOWN ON GRAPHIC	NOTES
										ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION			
STEAM LOAD SHED						X (6)								BINARY NETWORK INPUTS FROM EMCS
FAN MOTOR STATUS (ON/OFF)	X								X	X		FAILURE	X	
FAN MOTOR START/STOP		X							X				X	
HEATING COIL VALVE POSITION COMMAND (%)				X					X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕				X	X		± 4°F FROM SETPOINT	X	

2 TYPICAL UNIT HEATER CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

UNIT HEATER

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED: 70°F - 6.0°F

SPACE OCCUPANCY

OCCUPANCY SHALL BE DETERMINED BASED UPON A TIME OF DAY SCHEDULE.

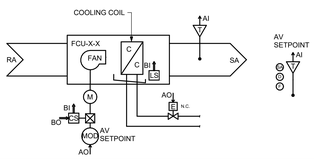
START/STOP

THE FANS SHALL START TO MAINTAIN THE HEATING SETPOINTS WHENEVER THE SPACE IS IN OCCUPIED OR UNOCCUPIED MODE.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A PROGRAMMED SCHEDULE.

OCCUPIED/UNOCCUPIED HEATING: IF THE ZONE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT THE FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.



POINT SCHEDULE														
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS								SHOWN ON GRAPHIC	NOTES
										ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION			
CHILLED WATER LOAD SHED						X (4)								BINARY NETWORK INPUTS FROM EMCS
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X								X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X							X				X	
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X					X				X	
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X					X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X				X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X								X	X		OVERFLOW	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕				X	X		± 4°F FROM SETPOINT	X	

3 TYPICAL TELE/DATA ROOM & ELEV. MACHINE ROOM G0061 TWO PIPE FAN COIL CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

COOLING ONLY FAN COIL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

IT ROOM: 75°F
ELEVATOR MACHINE ROOM: 80°F

FAN COIL START/STOP

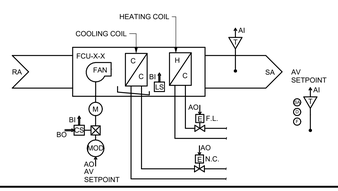
THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

IF THE ZONE TEMPERATURE RISES ABOVE THE TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.



POINT SCHEDULE														
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS								SHOWN ON GRAPHIC	NOTES
										ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION			
STEAM LOAD SHED						X (6)								BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)								BINARY NETWORK INPUTS FROM EMCS
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X								X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X							X				X	
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X					X				X	
HEATING COIL VALVE POSITION COMMAND (%)				X					X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X					X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X				X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X								X	X		OVERFLOW	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕				X	X		± 4°F FROM SETPOINT	X	

4 ELECTRIC ROOM 10064, EAST PENTHOUSE PH001 & ELEVATOR CONTROL ROOM 20064 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

4 PIPE FAN COIL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

ELECTRIC ROOM SPACE TEMPERATURE SETPOINTS:

HEATING: 65°F
COOLING: 80°F

EAST PENTHOUSE SPACE TEMPERATURE SETPOINTS:

HEATING: 65°F
COOLING: 75°F

FAN COIL START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

HEATING: IF THE ZONE TEMPERATURE FALLS BELOW THE HEATING TEMPERATURE SETPOINT THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

COOLING: IF THE ZONE TEMPERATURE RISES ABOVE THE COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062

Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334

DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339

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Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650

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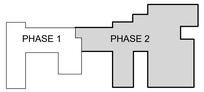
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	NMT
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Filename	
Date	August 31, 2026

Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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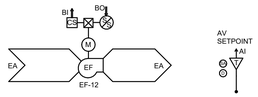


POINT SCHEDULE													
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
EXHAUST FAN START/STOP COMMAND (ON/OFF)		X						X				X	
EXHAUST FAN STATUS			X					X	X		FAILURE	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXHAUST FAN

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINT: 80°F

EXHAUST FAN START/STOP

THE FAN SHALL START BASED ON SPACE TEMPERATURE RISING ABOVE THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

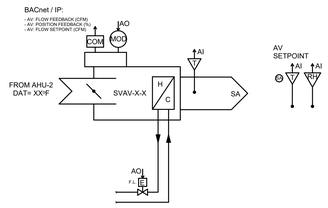
THE FAN SHALL OPERATE AT CONSTANT SPEED WHENEVER THE SYSTEM IS INDEXED TO OPERATE.

ZONE TEMPERATURE CONTROL

IF THE ZONE TEMPERATURE EXCEEDS THE SPACE COOLING TEMPERATURE SETPOINT AS SENSED BY A SPACE TEMPERATURE SENSOR, THE EXHAUST FAN BE ENABLED AND OPERATE FOR A MINIMUM OF 30 MINUTES.

1 BDA CLOSET CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE



AIRFLOW SCHEDULE				
UNIT NO.	SERVICE	PAIRED EXHAUST VAV	OCCUPIED AIR FLOW (CFM)	UNOCCUPIED AIR FLOW (CFM)
SVAV-G-8	CORRIDOR G0043	-	450	450
SVAV-G-9	CORRIDOR G0051	-	600	600
SVAV-G-11	CORRIDOR G0042	EVAV-G-7, EVAV-G-8	550	200
SVAV-G-12	CORRIDOR G0041	-	350	350
SVAV-G-13	CORRIDOR G0040	-	100	100
SVAV-1-11	CORRIDOR 10045	-	150	150
SVAV-1-15	CORRIDOR 10041 / 111	EVAV-1-6, EVAV-1-7	725	550
SVAV-2-8	CORRIDOR 20040	-	350	350
SVAV-2-12	CORRIDOR 20041	EVAV-2-5	400	250
SVAV-3-7	CORRIDOR 30042	-	150	150
SVAV-3-12	CORRIDOR 30041 / 315	EVAV-3-7	530	300
SVAV-4-9	CORRIDOR 40043	EVAV-4-6	75	75

POINT SCHEDULE													
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
SPACE TEMPERATURE / SETPOINT (°F)			X					X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

CORRIDOR SUPPLY AIR TERMINAL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F
UNOCCUPIED: 81°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F
UNOCCUPIED: 64°F

SUPPLY AIRFLOW RATE (CFM): SEE AIRFLOW SCHEDULE

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

SUPPLY AIR VAV BOX CONTROL

SPACE OCCUPANCY SETPOINTS SHALL BE DETERMINED BASED ON TIME OF DAY SCHEDULE.

OCCUPIED: THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIRFLOW SETPOINT.

UNOCCUPIED: THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIRFLOW SETPOINT.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A PROGRAMMED SCHEDULED OCCUPANCY.

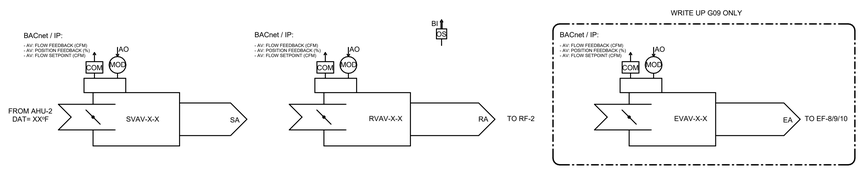
OCCUPIED HEATING: IF THE ZONE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE HEATING COIL CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT.

OCCUPIED COOLING: THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE REHEAT COIL VALVE SHALL BE CLOSED.

UNOCCUPIED HEATING/ COOLING: THE ABOVE OCCUPIED SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING / COOLING TEMPERATURE SETPOINT.

2 TYPICAL CORRIDOR CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE



POINT SCHEDULE													
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
RETURN / EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
RETURN / EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
RETURN / EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
RETURN / EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
SPACE OCCUPANCY	X						X	X				X	

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

VENTILATION SUPPLY AIR TERMINAL UNIT
VENTILATION RETURN / EXHAUST AIR TERMINAL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SUPPLY AIRFLOW RATE (CFM): SEE VAV SCHEDULE

RETURN / EXHAUST AIRFLOW RATE (CFM): SEE VAV SCHEDULE

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

SPACE OCCUPANCY

ZONE OCCUPANCY SHALL BE DETERMINED BASED ON A COMBINATION OF TIME OF DAY SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DURING THE SCHEDULED OCCUPANCY PERIOD, THE ZONE SHALL BE INITIALLY INDEXED TO OCCUPIED AND OPERATE FOR THE MINIMUM DURATION, AT WHICH TIME THE SPACE OCCUPANCY SENSOR SHALL INDEX THE SPACE BETWEEN OCCUPIED AND OCCUPIED SETBACK MODE.

DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE OCCUPANCY SENSOR SHALL INDEX THE ZONE TO OCCUPIED FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL INDEX BACK TO UNOCCUPIED WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF MINIMUM DURATION.

FOR ZONES WITH MULTIPLE SPACES, AN OCCUPANCY SENSOR SHALL BE PROVIDED IN EACH SPACE, AND ZONE OCCUPANCY SHALL BE BASED ON OCCUPANCY INPUTS FROM ANY OF THE SPACE OCCUPANCY SENSORS ASSOCIATED WITH THAT ZONE.

SUPPLY & RETURN / EXHAUST AIR VAV BOX CONTROL

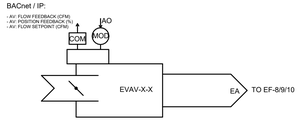
OCCUPIED: THE AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIRFLOW SETPOINT.

UNOCCUPIED: THE AIR TERMINAL UNIT SHALL BE CLOSED.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED AIRFLOW CONTROL SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

3 TYPICAL PAIRED, COMBINED AIR TERMINAL CONTROL CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE



POINT SCHEDULE													
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

TOILET EXHAUST AIR TERMINAL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

EXHAUST AIRFLOW RATE (CFM): SEE VAV SCHEDULE

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

EXHAUST AIR VAV BOX CONTROL

SPACE OCCUPANCY SETPOINTS SHALL BE DETERMINED BASED ON TIME OF DAY SCHEDULE.

OCCUPIED: THE EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE EXHAUST AIRFLOW RATE.

UNOCCUPIED: THE EXHAUST AIR VAV SHALL BE CLOSED.

4 TYPICAL TOILET AND JANITOR CLOSET EXHAUST CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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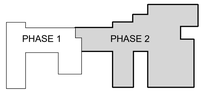
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd., Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St., Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	NMT
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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BID DOCUMENTS
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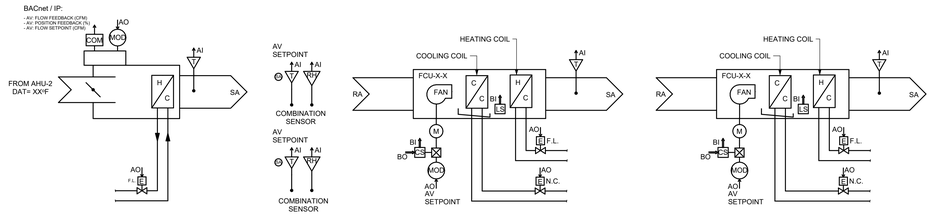


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	TYP=2
FAN COIL UNIT MOTOR START/STOP		X						X				X	TYP=2
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	TYP=2
FCU HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP=2
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP=2
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	TYP=2
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	TYP=2
SPACE TEMPERATURE / SETPOINT (°F)			X		><			X	X		± 4°F FROM SETPOINT	X	TYP=2
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	TYP=2 MONITORING ONLY

1 CORRIDOR 40040 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

CORRIDOR SUPPLY AIR TERMINAL UNIT
4 PIPE FAN COIL UNITS

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES FOR THE VAV CONTROL AND NON-RESEARCH SPACES FOR THE FAN COIL UNIT CONTROL

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F
UNOCCUPIED: 81°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F
UNOCCUPIED: 64°F

SUPPLY AIRFLOW RATE (CFM): SEE VAV SCHEDULE

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

SUPPLY AIR VAV BOX CONTROL

OCCUPIED / UNOCCUPIED: THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIRFLOW RATE.

FAN COIL START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON TIME OF DAY SCHEDULE.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, SETPOINT THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

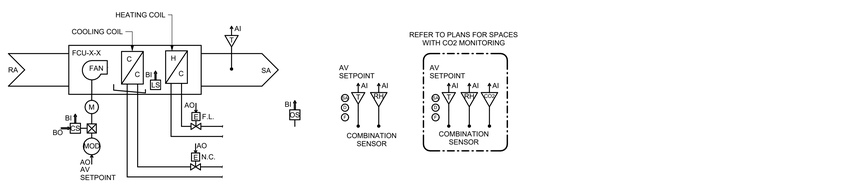
UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

FOR SPACES WITH MULTIPLE FAN COIL UNITS, THE FAN COILS UNITS SHALL STAGE ON ONE AT A TIME AS REQUIRED TO MAINTAIN THE TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X						X				X	
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	
HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		><			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE CARBON DIOXIDE / SETPOINT			X		X			X	X		> 900 PPM	X	MONITORING ONLY, REFER TO PLANS
SPACE OCCUPANCY	X						X	X				X	

2 TYPICAL OFFICE SPACE, 4 PIPE FAN COIL UNIT CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

4 PIPE FAN COIL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F
OCCUPIED SETBACK: 78°F
UNOCCUPIED: 81°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F
OCCUPIED SETBACK: 67°F
UNOCCUPIED: 64°F

MINIMUM SPACE OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: COORDINATE WITH OWNER

SPACE OCCUPANCY

ZONE OCCUPANCY SHALL BE DETERMINED BASED ON A COMBINATION OF TIME OF DAY SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DURING THE SCHEDULED OCCUPANCY PERIOD, THE ZONE SHALL BE INITIALLY INDEXED TO OCCUPIED AND OPERATOR FOR A MINIMUM OF 30 MINUTES, AT WHICH TIME THE SPACE OCCUPANCY SENSOR SHALL INDEX THE SPACE BETWEEN OCCUPIED AND OCCUPIED SETBACK MODE.

DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE OCCUPANCY SENSOR SHALL INDEX THE ZONE TO OCCUPIED FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL INDEX BACK TO UNOCCUPIED WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF 30 MINUTES.

FAN COIL START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULED AND ZONE OCCUPANCY.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND IF THE ZONE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

OCCUPIED SETBACK: IF THE ZONE IS UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY, THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINTS.

UNOCCUPIED HEATING SETBACK: WHEN THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, IF THE ZONE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED TEMPERATURE SETPOINTS.

UNOCCUPIED COOLING SETBACK: WHEN THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, IF THE ZONE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED COOLING SEQUENCE SHALL APPLY, THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED TEMPERATURE SETPOINTS.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

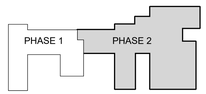
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	NMT
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · GARY DANIEL BAKER · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
Cert. of Auth: 0018443

BID DOCUMENTS
Scale: NOT TO SCALE

M5.6

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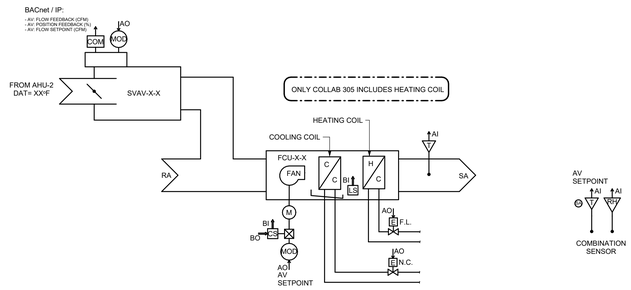


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X						X				X	
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	
HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	COLLAB 305 ONLY
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

AIRFLOW SCHEDULE

UNIT NO.	SERVICE	PAIRED EXHAUST VAV	OCCUPIED AIR FLOW (CFM)	UNOCCUPIED AIR FLOW (CFM)
SVAV-1-12	COLLAB 119	-	100	100
SVAV-2-9	COLLAB 221	-	100	100
SVAV-3-11	COLLAB 323	-	100	100
SVAV-3-15	COLLAB 305	-	100	100

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

4 PIPE FAN COIL UNIT
VENTILATION AIR TERMINAL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES FOR THE VAV CONTROL AND NON-RESEARCH SPACES FOR THE FAN COIL UNIT CONTROL.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F
OCCUPIED SETBACK: 78°F
UNOCCUPIED: 81°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F
OCCUPIED SETBACK: 67°F
UNOCCUPIED: 64°F

SUPPLY AIRFLOW RATE (CFM): SEE AIRFLOW SCHEDULE

MINIMUM SPACE OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: COORDINATE WITH OWNER

SPACE OCCUPANCY

ZONE OCCUPANCY SHALL BE DETERMINED BASED ON A COMBINATION OF TIME OF DAY SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DURING THE SCHEDULED OCCUPANCY PERIOD, THE ZONE SHALL BE INITIALLY INDEXED TO OCCUPIED AND OPERATOR FOR A MINIMUM OF 30 MINUTES, AT WHICH TIME THE SPACE OCCUPANCY SENSOR SHALL INDEX THE SPACE BETWEEN OCCUPIED AND OCCUPIED SETBACK MODE.

DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE OCCUPANCY SENSOR SHALL INDEX THE ZONE TO OCCUPIED FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL INDEX BACK TO UNOCCUPIED WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF 30 MINUTES.

SUPPLY AIR VAV BOX CONTROL

OCCUPIED / UNOCCUPIED: THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIRFLOW RATE.

FAN COIL START/STOP

THE SYSTEM SHALL START AND INDEX TO MINIMUM POSITION TO WHENEVER THE SPACE IS IN OCCUPIED MODE AND SHALL START TO MAINTAIN THE HEATING AND COOLING SETPOINTS WHENEVER THE SPACE IS IN OCCUPIED SETBACK OR UNOCCUPIED MODE.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULED AND ZONE OCCUPANCY.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND IF THE ZONE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT . THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

OCCUPIED SETBACK: IF THE ZONE IS UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINTS.

UNOCCUPIED HEATING SETBACK: WHEN THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD. IF THE ZONE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE FAN COIL UNIT SHALL START AND THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED TEMPERATURE SETPOINTS.

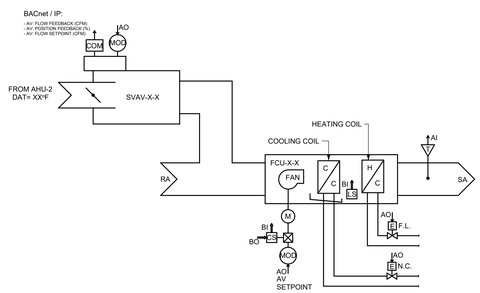
UNOCCUPIED COOLING SETBACK: WHEN THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD. IF THE ZONE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT SHALL START AND THE ABOVE OCCUPIED COOLING SEQUENCE SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED TEMPERATURE SETPOINTS.

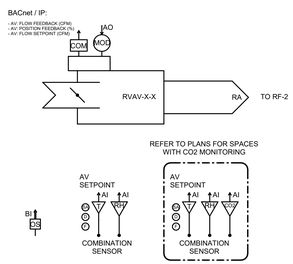
SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

1 TYPICAL COLLAB SPACE CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE





POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
RETURN / EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
RETURN / EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
RETURN / EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
RETURN / EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X						X				X	
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	
HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE CARBON DIOXIDE / SETPOINT			X		X			X	X	X	> 900 PPM	X	MONITORING ONLY, REFER TO PLANS
SPACE OCCUPANCY	X						X	X				X	

2 TYPICAL MEETING ROOM CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

4 PIPE FAN COIL UNIT
VENTILATION SUPPLY AIR TERMINAL UNIT
VENTILATION RETURN TERMINAL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F
OCCUPIED SETBACK: 78°F
UNOCCUPIED: 81°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F
OCCUPIED SETBACK: 67°F
UNOCCUPIED: 64°F

MINIMUM SPACE OCCUPANCY INDEX TIME: 30 MINUTES

SUPPLY AIRFLOW RATE (CFM): SEE VAV SCHEDULE

RETURN AIRFLOW RATE (CFM): SEE VAV SCHEDULE

ZONE OCCUPANCY SCHEDULE: COORDINATE WITH OWNER

SPACE OCCUPANCY

ZONE OCCUPANCY SHALL BE DETERMINED BASED ON A COMBINATION OF TIME OF DAY SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DURING THE SCHEDULED OCCUPANCY PERIOD, THE ZONE SHALL BE INITIALLY INDEXED TO OCCUPIED AND OPERATOR FOR A MINIMUM OF 30 MINUTES, AT WHICH TIME THE SPACE OCCUPANCY SENSOR SHALL INDEX THE SPACE BETWEEN OCCUPIED AND OCCUPIED SETBACK MODE.

DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE OCCUPANCY SENSOR SHALL INDEX THE ZONE TO OCCUPIED FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL INDEX BACK TO UNOCCUPIED WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF 30 MINUTES.

SUPPLY & RETURN AIR VAV BOX CONTROL

OCCUPIED: THE AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIRFLOW SETPOINT.

UNOCCUPIED: THE AIR TERMINAL UNIT SHALL BE CLOSED.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED AIRFLOW CONTROL SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FAN COIL START/STOP

THE SYSTEM SHALL START AND INDEX TO MINIMUM POSITION TO WHENEVER THE SPACE IS IN OCCUPIED MODE AND SHALL START TO MAINTAIN THE HEATING AND COOLING SETPOINTS WHENEVER THE SPACE IS IN OCCUPIED SETBACK OR UNOCCUPIED MODE.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULED AND ZONE OCCUPANCY.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND IF THE ZONE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT . THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT.

OCCUPIED SETBACK: IF THE ZONE IS UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINTS.

UNOCCUPIED HEATING SETBACK: WHEN THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD. IF THE ZONE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE FAN COIL UNIT SHALL START AND THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED TEMPERATURE SETPOINTS.

UNOCCUPIED COOLING SETBACK: WHEN THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD. IF THE ZONE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT SHALL START AND THE ABOVE OCCUPIED COOLING SEQUENCE SHALL APPLY. THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED TEMPERATURE SETPOINTS.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Jade Stone Engineering Electrical Engineers — 444 Vanduzee St., Watertown, NY 13601, T 315 836 4062

Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334

DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339

Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377

Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688

Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650

D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967

Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800

Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122

Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

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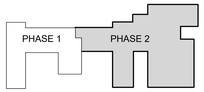

Keyplan

Job Number	31909.00
Drawing By	NMT
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · GARRY DANIEL ELLENZWEIG · 094525 · LICENSED PROFESSIONAL ENGINEER

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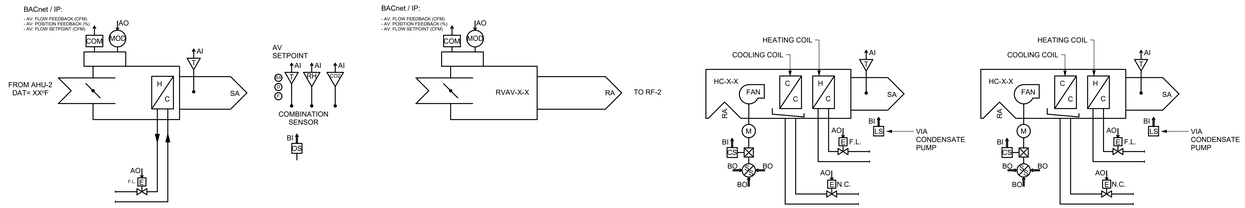


CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOWN ON GRAPHIC	NOTES
									ALARM			
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION		
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
RETURN VAV DAMPER POSITION COMMAND (%)				X				X				X	
RETURN VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
RETURN VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
RETURN VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HYDRONIC CASSETTE MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	TYP>2
HYDRONIC CASSETTE MOTOR SPEED - LOW		X						X				X	TYP>2
HYDRONIC CASSETTE MOTOR SPEED - MEDIUM		X						X				X	TYP>2
HYDRONIC CASSETTE MOTOR SPEED - HIGH		X						X				X	TYP>2
HC HEATING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP>2
HC COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP>2
HYDRONIC CASSETTE DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	TYP>2
HYDRONIC CASSETTE CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	TYP>2
SPACE TEMPERATURE / SETPOINT (°F)			X		✂			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE CARBON DIOXIDE / SETPOINT			X		X			X	X		> 900 PPM	X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

1 BIOHUB 403 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

4 PIPE FAN COIL UNIT
VENTILATION SUPPLY AIR TERMINAL UNIT WITH REHEAT
VENTILATION RETURN AIR TERMINAL UNIT

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F
OCCUPIED SETBACK: 78°F
UNOCCUPIED: 81°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F
OCCUPIED SETBACK: 67°F
UNOCCUPIED: 64°F

MINIMUM SPACE OCCUPANCY INDEX TIME: 30 MINUTES

SUPPLY AIRFLOW RATE (CFM): SEE VAV SCHEDULE

RETURN AIRFLOW RATE (CFM): SEE VAV SCHEDULE

ZONE OCCUPANCY SCHEDULE: COORDINATE WITH OWNER

SPACE OCCUPANCY

ZONE OCCUPANCY SHALL BE DETERMINED BASED ON A COMBINATION OF TIME OF DAY SCHEDULE AND A SPACE OCCUPANCY SENSOR.

DURING THE SCHEDULED OCCUPANCY PERIOD, THE ZONE SHALL BE INITIALLY INDEXED TO OCCUPIED AND OPERATOR FOR A MINIMUM OF 30 MINUTES, AT WHICH TIME THE SPACE OCCUPANCY SENSOR SHALL INDEX THE SPACE BETWEEN OCCUPIED AND OCCUPIED SETBACK MODE.

DURING THE SCHEDULED UNOCCUPIED PERIOD, THE SPACE OCCUPANCY SENSOR SHALL INDEX THE ZONE TO OCCUPIED FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL INDEX BACK TO UNOCCUPIED WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF 30 MINUTES.

SUPPLY & RETURN AIR VAV BOX CONTROL

OCCUPIED: THE AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIRFLOW SETPOINT.

UNOCCUPIED: THE AIR TERMINAL UNIT SHALL BE CLOSED.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED AIRFLOW CONTROL SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FAN COIL START/STOP

THE SYSTEM SHALL START AND INDEX TO MINIMUM POSITION TO WHENEVER THE SPACE IS IN OCCUPIED MODE AND SHALL START TO MAINTAIN THE HEATING AND COOLING SETPOINTS WHENEVER THE SPACE IS IN OCCUPIED SETBACK OR UNOCCUPIED MODE.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULED AND ZONE OCCUPANCY.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, SETPOINT THE HYDRONIC CASSETTE (HC) FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF HC CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE HC FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

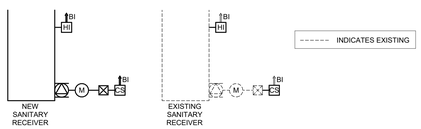
OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE HC FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE HC SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT . THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF:



POINT SCHEDULE												
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOWN ON GRAPHIC	NOTES
									ALARM			
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION	
SANITARY RECEIVER LEVEL	X							X	X	X	HIGH LEVEL	X	
PUMP STATUS	X							X	X	X	FAILURE	X	VIA CURRENT SENSOR

2 TYPICAL SANITARY SERVICE MONITORING CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

SANITARY SERVICE MONITORING

GENERAL

SYSTEM SHALL BE MONITORED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

POINT SCHEDULE												
CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOWN ON GRAPHIC	NOTES
									ALARM			
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION	
TRANSFER SWITCHES POSITION	X							X				X	TYPICAL OF 2

3 ELECTRICAL EQUIPTMENT MONITORING POINTS CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

AUTOMATIC TRANSFER SWITCH MONITORING

GENERAL

SYSTEM SHALL BE MONITORED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575

Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506

Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590

Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062

Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334

DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339

Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377

Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688

Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650

D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967

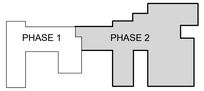
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800

Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122

Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

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Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · GARY DANIEL GRUBER · 094525 · LICENSED PROFESSIONAL ENGINEER

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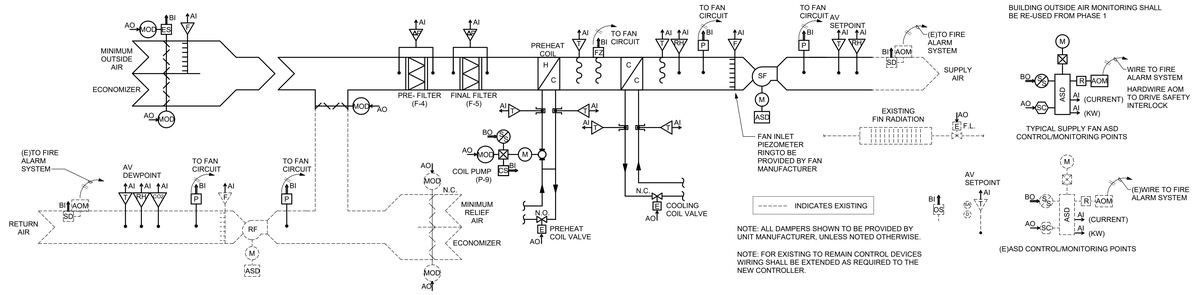


NOTE: ALL DAMPERS SHOWN TO BE PROVIDED BY UNIT MANUFACTURER, UNLESS NOTED OTHERWISE.

NOTE: FOR EXISTING TO REMAIN CONTROL DEVICES WIRING SHALL BE EXTENDED AS REQUIRED TO THE NEW CONTROLLER.

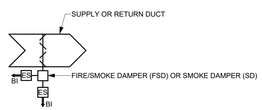
BUILDING OUTSIDE AIR MONITORING SHALL BE RE-USED FROM PHASE 1

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	EMCS	DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
RETURN FAN DUCT SMOKE DETECTOR STATUS	X											X	
RETURN AIR TEMPERATURE (°F)			X					X				X	
RETURN AIR RELATIVE HUMIDITY (% RH)			X					X				X	
RETURN AIR DEWPOINT (°F)					X			X				X	
RETURN AIR CARBON DIOXIDE (PPM)			X		X			X				X	
RETURN FAN AIR FLOW (CFM)			X					X				X	EXISTING FAN INLET
RETURN FAN SUCTION PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X				X				X	X	LOW LIMIT	X	
RETURN FAN ASD START/STOP COMMAND (ON/OFF)		X						X				X	EXISTING ASD
RETURN FAN ASD SPEED COMMAND / SETPOINT (%)				X	X			X				X	EXISTING ASD
RETURN FAN ASD STATUS (CURRENT)			X					X	X	X	FAILURE	X	EXISTING ASD, VIA CONTACT ON DRIVE
RETURN FAN ASD POWER (KW)			X					X				X	EXISTING ASD, VIA CONTACT ON DRIVE
MINIMUM RELIEF DAMPER POSITION COMMAND (%)				X				X				X	EXISTING DAMPER & ACTUATOR
ECONOMIZER RELIEF DAMPER POSITION COMMAND (%)				X				X				X	EXISTING DAMPER & ACTUATOR
RETURN DAMPER POSITION COMMAND (%)				X				X				X	
MINIMUM OUTSIDE AIR DAMPER POSITION COMMAND (%)		X						X				X	
MINIMUM OUTSIDE AIR DAMPER STATUS (OPEN / CLOSED)	X							X				X	
MINIMUM OUTSIDE AIR FLOW (CFM)					X			X				X	
ECONOMIZER OUTSIDE AIR DAMPER POSITION COMMAND (%)		X						X				X	
OA PRE-FILTER RACK DIFFERENTIAL PRESSURE (IN WC)			X					X	X	X	HIGH LIMIT	X	
FINAL-FILTER RACK DIFFERENTIAL PRESSURE (IN WC)			X					X	X	X	HIGH LIMIT	X	
PREHEAT COIL ENTERING AIR TEMPERATURE (°F)			X					X				X	
PREHEAT COIL ENTERING AIR RELATIVE HUMIDITY (% RH)			X					X				X	
PREHEAT COIL VALVE POSITION COMMAND (%)				X				X	X	X	5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
PREHEAT COIL SUPPLY WATER TEMPERATURE (°F)			X		X			X	X	X		X	
PREHEAT COIL RETURN WATER TEMPERATURE (°F)			X		X			X	X	X		X	
PREHEAT COIL PUMP START/STOP COMMAND (ON/OFF)		X						X				X	
PREHEAT COIL PUMP SPEED COMMAND / SETPOINT (%)				X	X			X				X	
PREHEAT COIL PUMP ASD STATUS (CURRENT)			X					X	X	X	FAILURE	X	
PREHEAT COIL DISCHARGE AIR TEMPERATURE (°F)			X					X				X	
COOLING COIL LOW LIMIT TEMPERATURE STATUS	X							X	X	X	LOW LIMIT	X	
COOLING COIL VALVE POSITION COMMAND (%)				X				X	X	X	5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
COOLING COIL CHILLED WATER SUPPLY TEMPERATURE (°F)			X					X				X	
COOLING COIL CHILLED WATER RETURN TEMPERATURE (°F)			X					X				X	
COOLING COIL DISCHARGE AIR TEMPERATURE (°F)			X					X				X	
COOLING COIL DISCHARGE AIR RELATIVE HUMIDITY (% RH)			X					X				X	
SUPPLY FAN SUCTION PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X				X				X	X	LOW LIMIT	X	
SUPPLY FAN AIR FLOW (CFM)			X					X				X	INSTALL IN INLET CONE
SUPPLY FAN ASD START/STOP COMMAND (ON/OFF)		X						X				X	INTERLOCK WITH FA SYSTEM
SUPPLY FAN ASD SPEED COMMAND / SETPOINT (%)				X	X			X				X	
SUPPLY FAN ASD STATUS (CURRENT)			X					X	X	X	FAILURE	X	VIA CONTACT ON DRIVE
SUPPLY FAN ASD POWER (KW)			X					X				X	
SUPPLY FAN DISCHARGE PRESSURE SWITCH STATUS / SETPOINT (IN WC)	X				X				X	X	HIGH LIMIT	X	
AHU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X	X	DEVIATION FROM SETPOINT	X	
AHU DISCHARGE AIR RELATIVE HUMIDITY (% RH)			X					X				X	
SUPPLY FAN DUCT SMOKE DETECTOR STATUS	X											X	
RADIATION HEATING COIL VALVE POSITION COMMAND (%)				X				X	X			X	EXISTING VALVE
SPACE TEMPERATURE / SETPOINT (°F)			X					X	X		± 4°F FROM SETPOINT	X	EXISTING SENSOR
SPACE OCCUPANCY	X						X	X				X	EXISTING SENSOR

1 AIR HANDLING UNIT AHU-3 CONTROL SCHEMATIC AND SYSTEM SUMMARY

1/8" = 1'-0"

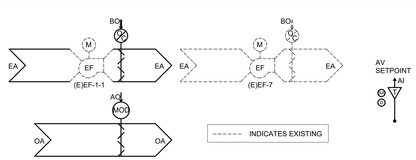


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	EMCS	DESCRIPTION	SHOWN ON GRAPHIC	NOTES
FIRE/SMOKE OR SMOKE DAMPER OPEN STATUS	X							X				X	
FIRE/SMOKE OR SMOKE DAMPER CLOSED STATUS	X							X	X	X	CLOSED	X	

2 TYPICAL SMOKE DAMPER MONITORING CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	EMCS	DESCRIPTION	SHOWN ON GRAPHIC	NOTES
EXHAUST FAN ISOLATION DAMPER COMMAND		X						X				X	
OUTSIDE DAMPER POSITION COMMAND (%)				X				X				X	
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	

5 TUNNEL EXHAUST CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

AIR HANDLING UNIT (AHU-3)
EXISTING RETURN FAN
GLYCOL PRE-HEAT COIL
CHILLED WATER COOLING COIL
GLYCOL PREHEAT COIL PUMP (P-9)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

DURING HEATING MODE, THE HEATING CONTROL VALVE SHALL CONTINUE TO CONTROL WHEN THE FAN IS OFF FOR CONTINUED FREEZE PROTECTION.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR AUDITORIUMS.

SETPOINTS

AHU DISCHARGE AIR TEMPERATURE (DAT): SEE RESET SCHEDULE

FREEZE STAT LOW LIMIT TEMPERATURE: 38°F

PRE FILTER DIFFERENTIAL PRESSURE HIGH LIMIT: 0.75" W.C.

FINAL FILTER DIFFERENTIAL PRESSURE HIGH LIMIT: 1.5" W.C.

SUPPLY FAN DISCHARGE HIGH STATIC PRESSURE LIMIT: 6.0" W.C.

SUPPLY FAN SUCTION LOW STATIC PRESSURE LIMIT: -6.0" W.C.

EXHAUST FAN SUCTION LOW STATIC PRESSURE LIMIT: -10.0" W.C.

RETURN FAN DISCHARGE HIGH STATIC PRESSURE LIMIT: 6.0" W.C.

RETURN FAN SUCTION LOW STATIC PRESSURE LIMIT: -6.0" W.C.

RETURN FAN DOWNSTREAM STATIC PRESSURE: - X" W.C.

SUPPLY FAN DOWNSTREAM STATIC PRESSURE: X" W.C

SUPPLY FAN MINIMUM START SPEED: 1,875 CFM (25% OF MAX)

RETURN FAN MINIMUM START SPEED: 1,875 CFM (25% OF MAX)

BUILDING OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

FAN START/STOP

AIR HANDLING UNIT SUPPLY FAN SHALL BE INTERLOCKED WITH THE ASSOCIATED LABORATORY EXHAUST FAN.

THE SUPPLY AND EXHAUST FANS SHALL BE ENABLED AT ALL TIMES, REGARDLESS OF BUILDING OCCUPANCY SCHEDULE.

OCCUPIED: THE RETURN AIR FAN SHALL START AND OPERATE CONTINUOUSLY BASED ON THE TIME OF DAY SCHEDULE.

UNOCCUPIED: DURING THE SCHEDULED OCCUPIED PERIOD, THE RETURN FAN SHALL BE INDEXED TO START WHENEVER ANY SPACE ASSOCIATED WITH THE SYSTEM IS OCCUPIED, AS DETERMINED VIA SPACE OCCUPANCY SENSORS. THE SYSTEM SHALL STOP AND INDEX BACK TO UNOCCUPIED MODE WHEN OCCUPANCY IS NOT SENSED FOR A PERIOD OF 30 MINUTES.

SHUTOFF DAMPER CONTROL

WHEN THE RETURN FAN IS OFF, THE RETURN AIR DAMPER AND RELIEF DAMPER SHALL BE CLOSED.

WHEN THE RETURN FAN IS INDEXED TO START, THE RETURN AIR DAMPER SHALL OPEN PRIOR TO STARTING THE FAN.

WHEN THE SUPPLY FAN IS OFF, THE OUTSIDE AIR AND RELIEF DAMPERS SHALL CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN.

WHEN THE SUPPLY AND RETURN FANS ARE INDEXED TO START, THE OUTSIDE AIR AND ASSOCIATED EXHAUST AIR DAMPERS SHALL PROVE OPEN VIA END SWITCH PRIOR TO STARTING THE SYSTEM FANS.

SUPPLY FAN SPEED CONTROL

THE SUPPLY AIR FAN SHALL MODULATE VIA A VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT. THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE DAMPER POSITION AT 95% OPEN.

RETURN FAN SPEED CONTROL

THE RETURN AIR FAN SHALL MODULATE VIA A VARIABLE FREQUENCY DRIVE AS REQUIRED TO MAINTAIN THE DOWNSTREAM STATIC PRESSURE SETPOINT. THE DOWNSTREAM STATIC PRESSURE SETPOINT SHALL BE RESET AS NEEDED TO MAINTAIN THE CRITICAL ZONE DAMPER POSITION AT 95% OPEN.

SUPPLY AIR TEMPERATURE CONTROL

DISCHARGE AIR TEMPERATURE RESET: THE AHU DISCHARGE AIR TEMPERATURE SHALL BE ALLOWED TO RESET BASED ON THE FOLLOWING SCHEDULE:

OAT = 75°F & ABOVE --- DAT = 55°F

OAT = 55°F & BELOW --- DAT = 65°F

WHEN THE AHU DISCHARGE AIR TEMPERATURE SETPOINT IS 65°F AND A ZONE (WITHOUT SUPPLEMENTAL COOLING) IS CANNOT MEET THE COOLING SETPOINT, THE DISCHARGE AIR TEMPERATURE SHALL BE RESET INCREMENTALLY TO 55°F UNTIL THE ZONE SETPOINT IS SATISFIED.

WHEN THE AHU DISCHARGE AIR TEMPERATURE FALLS BELOW SETPOINT, THE CHILLED WATER CONTROL VALVE SHALL BE CLOSED, THE PREHEAT COIL GLYCOL COIL PUMP SHALL START AND THE PREHEAT COIL CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT.

WHEN AHU DISCHARGE AIR TEMPERATURE RISES ABOVE SETPOINT, THE PREHEAT COIL CONTROL VALVE SHALL BE CLOSED, THE PREHEAT COIL GLYCOL COIL PUMP SHALL BE OFF AND THE CHILLED WATER CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN SETPOINT.

MODULATED ECONOMIZER MODE (MAT CONTROL)

WHEN THE RETURN AIR TEMPERATURE RISES ABOVE THE COOLING SETPOINT, AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE AHU DISCHARGE AIR TEMPERATURE SETPOINT, MODULATED ECONOMIZER MODE (MAT CONTROL) SHALL BE INITIATED.

THE OUTSIDE AIR, RETURN AIR AND RELIEF AIR DAMPERS SHALL MODULATE TO MAINTAIN THE AHU DISCHARGE AIR TEMPERATURE SETPOINT.

LOW LIMIT: WHEN THE MIXED AIR TEMPERATURE FALLS BELOW SETPOINT, THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL INDEX TO MINIMUM, THE RETURN AIR DAMPER SHALL INDEX TO MAXIMUM POSITION AND HEATING MODE SHALL BE INITIATED.

HIGH LIMIT: WHEN THE MIXED AIR TEMPERATURE RISES ABOVE SETPOINT, THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL INDEX TO FULL OPEN AND THE RETURN AIR DAMPER SHALL CLOSE AND INTEGRATED ECONOMIZER MODE SHALL BE INITIATED.

INTEGRATED ECONOMIZER MODE

THE SYSTEM SHALL BE EQUIPPED WITH DIFFERENTIAL DRY BULB INTEGRATED ECONOMIZER CONTROL.

WHEN THE RETURN AIR CONTINUES TO RISE ABOVE THE COOLING SETPOINT, THE RETURN AIR TEMPERATURE IS ABOVE THE OUTDOOR AIR TEMPERATURE, AND THE OUTDOOR AIR DEWPOINT TEMPERATURE IS BELOW 60°F, INTEGRATED ECONOMIZER MODE SHALL BE INITIATED. THE OUTSIDE AIR AND RELIEF DAMPERS SHALL OPEN AND THE RETURN AIR DAMPER SHALL BE CLOSED. THE OUTSIDE AIR DAMPER SHALL BE OPEN. THE CHILLED WATER CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT.

LOW LIMIT SHUTOFF: INTEGRATED ECONOMIZER CONTROL SHALL BE DISABLED, AND MODULATED ECONOMIZER MODE SHALL BE INITIATED WHEN THE OUTSIDE AIR TEMPERATURE FALLS BELOW THE AHU DISCHARGE AIR TEMPERATURE SETPOINT.

HIGH LIMIT SHUTOFF: INTEGRATED ECONOMIZER CONTROL SHALL BE DISABLED WHEN THE OUTDOOR AIR TEMPERATURE EXCEEDS THE RETURN AIR TEMPERATURE. THE OUTSIDE AIR DAMPER SHALL INDEX TO MINIMUM, THE RELIEF DAMPERS SHALL BE CLOSED, AND THE RETURN AIR DAMPER SHALL INDEX TO MAXIMUM POSITION AND COOLING MODE SHALL BE INITIATED.

SAFETIES

FREEZE PROTECTION: THE SUPPLY FAN SHALL SHUT DOWN, THE OUTSIDE AIR, AND RELIEF AIR DAMPERS SHALL CLOSE, THE RETURN FAN SHALL START, THE GLYCOL COIL PUMPS SHALL START AND THE CONTROL VALVES SHALL OPEN UPON ACTIVATION OF THE LOW LIMIT TEMPERATURE SWITCH.

HIGH FAN STATIC: THE SUPPLY AND RETURN FANS SHALL SHUT DOWN, THE ASSOCIATED DAMPER (OUTSIDE AIR AND RETURN/RELIEF) SHALL OPEN UPON ACTIVATION OF THE HIGH FAN DISCHARGE STATIC PRESSURE SWITCH.

LOW FAN STATIC: THE SUPPLY AND RETURN FANS SHALL SHUT DOWN, THE ASSOCIATED DAMPER (OUTSIDE AIR, RETURN/RELIEF AND EXHAUST AIR) SHALL CLOSE UPON ACTIVATION OF THE LOW FAN SUCTION STATIC PRESSURE SWITCH.

SMOKE DETECTION: THE SUPPLY AND RETURN FAN SHALL SHUT DOWN AND THE OUTSIDE AIR AND RELIEF DAMPER SHALL CLOSE UPON ACTIVATION OF A DUCT SMOKE DETECTOR.

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

SMOKE MONITORING

GENERAL

SYSTEM SHALL BE MONITORED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

EXISTING EXHAUST FANS (EF-1-1 & EF-7)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SAFETIES SHALL BE HARD WIRED INTO THE FAN MOTOR POWER CIRCUIT, AND SHALL REQUIRE MANUAL RESET.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR NON-RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINT: 80°F

OUTSIDE AIR MINIMUM FLOW: 2000 CFM

OUTSIDE AIR MAXIMUM FLOW: 4000 CFM

SHUTOFF DAMPER CONTROL

WHEN THE EXHAUST FAN IS OFF, THE ASSOCIATED RELIEF DAMPER SHALL BE CLOSED. WHEN BOTH EXHAUST FANS ARE OFF, THE OUTSIDE AIR DAMPER SHALL BE CLOSED.

WHEN THE EXHAUST FANS IS INDEXED TO START, THE OUTSIDE AIR AND RELIEF DAMPER SHALL OPEN PRIOR TO STARTING THE FAN.

EXHAUST FAN START/STOP

THE FAN(S) SHALL START BASED ON SPACE TEMPERATURE RISING ABOVE THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

THE FAN SHALL OPERATE AT CONSTANT SPEED WHENEVER THE SYSTEM IS INDEXED TO OPERATE.

ZONE TEMPERATURE CONTROL

IF THE ZONE TEMPERATURE EXCEEDS THE SPACE COOLING TEMPERATURE SETPOINT AS SENSED BY A SPACE TEMPERATURE SENSOR, THE EXHAUST FAN BE ENABLED AND OPERATE FOR A MINIMUM OF 30 MINUTES.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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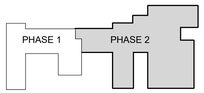
Notes:



Keyplan

Job Number	31909.00
Drawing By	NMT
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL WALKER · 094525 · LICENSED PROFESSIONAL ENGINEER

Reg. Exp: 04/30/2029
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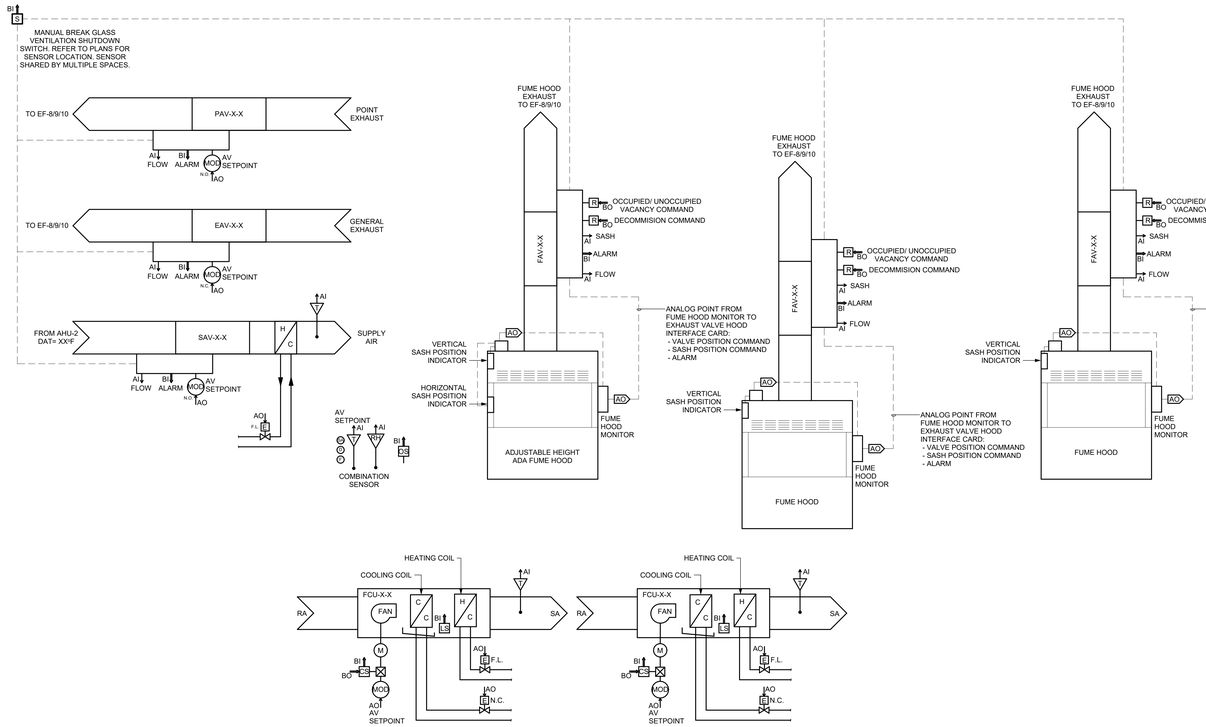

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FUME HOOD EXHAUST AIR VALVES (FAV)
GENERAL EXHAUST AIR VALVE (EAV)
POINT EXHAUST AIR VALVE (PAV)
SUPPLY AIR VALVE (SAV)
DUCT MOUNTED REHEAT COIL (RHC)
4 PIPE FAN COIL UNITS (FCU)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED:	75°F ± 1.5°F
UNOCCUPIED SETBACK:	75°F + 3.0°F
UNOCCUPIED:	75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED:	70°F ± 1.5°F
UNOCCUPIED SETBACK:	70°F - 3.0°F
UNOCCUPIED:	70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACPH):
REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

FUME HOOD EXHAUST AIRFLOW RATE (CFM):
NOT CONTROLLED BY BACS. VALVE IS CONTROLLED BY FUME HOOD MONITOR TO MAINTAIN FACE VELOCITY SETPOINTS.

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE - FUME HOOD EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

FUME HOOD FACE VELOCITY (CFM):
NOT CONTROLLED BY BACS. FACE VELOCITY SETPOINTS ARE PROGRAMMED INTO FUME HOOD MONITOR.

FACE VELOCITY CONTROL

THE FUME HOOD SHALL BE EQUIPPED WITH A FUME HOOD MONITOR AND SASH POSITION INDICATOR.

THE MONITOR SHALL MODULATE THE FUME HOOD EXHAUST VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT.

THE MONITOR SHALL, AS A MINIMUM, HAVE THE FOLLOWING CAPABILITIES:

- SASH POSITION INPUT
- STANDBY MODE INPUT TO ALLOW ADJUST OF FACE VELOCITY
- HOOD DECOMMISSION MODE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE BACS SHALL SEND AN OCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE OCCUPIED FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, AND THE SASH IS AT OR BELOW 18-INCHES, THE BACS SHALL SEND AN UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE 65 FPM FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED AND THE FUME HOOD SASH IS ABOVE 18-INCHES, THE BACS SHALL NOT SEND THE SPACE UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO MAINTAIN THE OCCUPIED SASH OPEN AIRFLOW SETPOINT. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

VACANT MODE: THE BACS SHALL SEND A DECOMMISSION COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO CLOSE. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN AIRFLOW SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, FUME HOOD, POINT EXHAUST AND GENERAL EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

FAN COIL START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, SETPOINT THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FOR SPACES WITH MULTIPLE FAN COIL UNITS, THE FAN COILS UNITS SHALL STAGE ON ONE AT A TIME AS REQUIRED TO MAINTAIN THE TEMPERATURE SETPOINT.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	TYP = 3
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	TYP = 3
FUME HOOD SASH POSITION			X					X	X		SASH OPEN (18") FOR 24 CONTINUOUS HOURS OR MORE	X	TYP = 3
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND				X								X	TYP = 3
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND				X								X	TYP = 3
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
GENERAL EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
GENERAL EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
POINT EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
POINT EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
SUPPLY VALVE ALARM	X								X		FAILURE	X	
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	TYP = 2
FAN COIL UNIT MOTOR START/STOP		X						X				X	TYP = 2
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	TYP = 2
FCU HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	TYP = 2
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	TYP = 2
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	EXHAUST AIR: OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	(ACH)	80 FPM (CFM)	(ACH)	OCCUPIED SASH OPEN (NOTE 7) 100 FPM (CFM)	(ACH)	OCCUPIED SASH CLOSED (CFM)	(ACH)	UNOCCUPIED SASH FULL (NOTE 4) 100 FPM (CFM)	(ACH)	UNOCCUPIED SASH OPEN (NOTE 5) 65 FPM (CFM)	(ACH)	UNOCCUPIED SASH CLOSED (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3) 100 FPM (CFM)	80 FPM (CFM)	OCC SASH CLOSED (CFM)	OCC SASH CLOSED (CFM)	UNOCC SASH FULL (CFM)	UNOCC SASH OPEN (CFM)	UNOCC SASH CLOSED (CFM)	XFER ALL MODES (CFM)
LAB 113, 113F, 113G	VAV LAB	2258	8.8	536	1.6	2258	6.8	FAV-1-3	10	1300	120	625		500		625		190		625		410		190													
								FAV-1-4	10	1300	120	625		500		625		190		625		410		190													
								FAV-1-5	10	1300	120	625	7.0	500	6.0	625	8.0	190	6.0	625	7.0	410	5.1	190	3.1	SAV-1-11	12x18	3200	260	2270	1950	965	1950	2270	965	965	-50
								PAV-1-1	8	800	80	195		195		510		195		195		195		195													
								EAV-1-7	14	2750	250	250		305		250		1235		250		250		250													
								TOTAL				2320		2000		2635		2000		2320		1675		1015													

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. OCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST AIR FLOW REPRESENTS A 80-100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. FUME HOOD AIR VALVE BASIS OF DESIGN WILL BE 100 FPM @ 18-INCHES SASH HEIGHT. FINAL AIRFLOW SETPOINT ESTABLISHED DURING HOOD CERTIFICATION.
4. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
5. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.
6. POINT EXHAUST AIR VALVE AT MINIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS.
7. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS AND FUTURE POINT OF USE CONNECTIONS.

1 LAB 113 CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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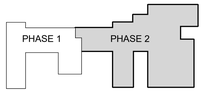
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By NMT
Checked By NMT
Filename
Date August 31, 2026

Revisions

LAB CONTROL SCHEMATIC & SYSTEM SUMMARY - PHASE 2

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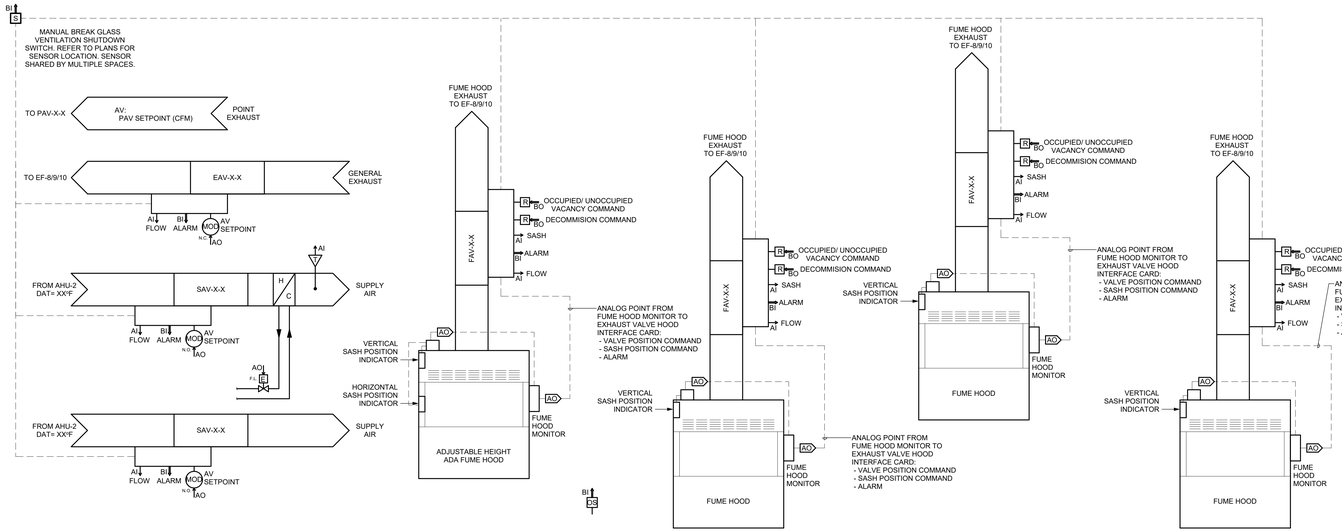
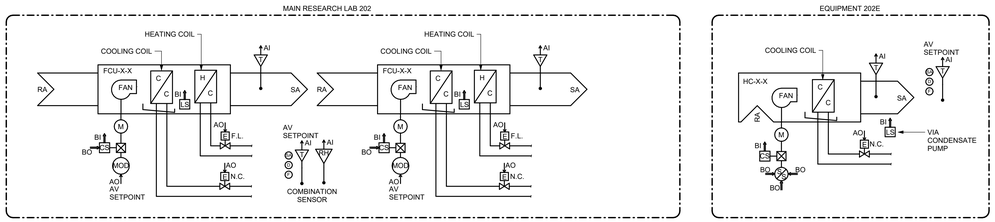




SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FUME HOOD EXHAUST AIR VALVES (FAV)
GENERAL EXHAUST AIR VALVE (EAV)
SUPPLY AIR VALVES (SAV)
DUCT MOUNTED REHEAT COILS (RHC)
4 PIPE FAN COIL UNITS (FCU)
2 PIPE HYDRONICS CASSETTE UNITS (HC)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F ± 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACPH):
REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

FUME HOOD EXHAUST AIRFLOW RATE (CFM):
NOT CONTROLLED BY BACS. VALVE IS CONTROLLED BY FUME HOOD MONITOR TO MAINTAIN FACE VELOCITY SETPOINTS.

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE - FUME HOOD EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

FUME HOOD FACE VELOCITY (CFM):
NOT CONTROLLED BY BACS. FACE VELOCITY SETPOINTS ARE PROGRAMMED INTO FUME HOOD MONITOR.

FACE VELOCITY CONTROL

THE FUME HOOD SHALL BE EQUIPPED WITH A FUME HOOD MONITOR AND SASH POSITION INDICATOR.

THE MONITOR SHALL MODULATE THE FUME HOOD EXHAUST VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT.

THE MONITOR SHALL, AS A MINIMUM, HAVE THE FOLLOWING CAPABILITIES:

- SASH POSITION INPUT
- STANDBY MODE INPUT TO ALLOW ADJUST OF FACE VELOCITY
- HOOD DECOMMISSION MODE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE BACS SHALL SEND AN OCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE OCCUPIED FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, AND THE SASH IS AT OR BELOW 18-INCHES, THE BACS SHALL SEND AN UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE 65 FPM FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED AND THE FUME HOOD SASH IS ABOVE 18-INCHES, THE BACS SHALL NOT SEND THE SPACE UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO MAINTAIN THE OCCUPIED SASH OPEN AIRFLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

VACANT MODE: THE BACS SHALL SEND A DECOMMISSION COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO CLOSE. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN AIRFLOW SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, FUME HOOD AND GENERAL EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

FAN COIL / HYDRONIC CASSETTE START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL — FAN COIL UNIT ZONE

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FOR SPACES WITH MULTIPLE FAN COIL UNITS, THE FAN COILS UNITS SHALL STAGE ON ONE AT A TIME AS REQUIRED TO MAINTAIN THE TEMPERATURE SETPOINT.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

ZONE TEMPERATURE CONTROL — HYDRONIC CASSETTE ZONE

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE HYDRONIC CASSETTE (HC) FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	TYP = 4
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	TYP = 4
FUME HOOD SASH POSITION			X					X	X		SASH OPEN (18") FOR 24 CONTINUOUS HOURS OR MORE	X	TYP = 4
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND				X								X	TYP = 4
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND				X								X	TYP = 4
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
GENERAL EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
GENERAL EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST AIR FLOW SETPOINT (CFM)					X							X	
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	TYP = 2
SUPPLY VALVE ALARM	X								X		FAILURE	X	TYP = 2
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	TYP = 2
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	TYP = 2
FAN COIL UNIT MOTOR START/STOP		X						X				X	TYP = 2
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	TYP = 2
FCU HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	TYP = 2
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	TYP = 2
HYDRONIC CASSETTE MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
HYDRONIC CASSETTE MOTOR SPEED - LOW		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - MEDIUM		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - HIGH		X						X				X	
HC COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HYDRONIC CASSETTE DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
HYDRONIC CASSETTE CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	TYP = 2
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	EXHAUST AIR: OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	(ACH)	80 FPM (CFM)	(ACH)	OCCUPIED SASH OPEN (NOTE 7) 100 FPM (CFM)	(ACH)	OCCUPIED SASH CLOSED (CFM)	(ACH)	UNOCCUPIED SASH FULL OPEN (NOTE 4) 100 FPM (CFM)	(ACH)	UNOCCUPIED SASH OPEN (NOTE 5) 65 FPM (CFM)	(ACH)	UNOCCUPIED SASH CLOSED (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3) 100 FPM (CFM)	80 FPM (CFM)	OCC SASH OPEN (NOTE 7) (CFM)	OCC SASH CLOSED (CFM)	UNOCC SASH FULL (CFM)	UNOCC SASH OPEN (CFM)	UNOCC SASH CLOSED (CFM)	XFER ALL MODES (CFM)
LAB 202, 202D, 202E	VAV	2079	9.0	504	1.6	2079	6.7	FAV-2-7	10	1300	120	625		500		625		190		625		410		190		SAV-2-20	12x18	3200	260	2470	2130	2670	2130	2470	910	910	-50
								FAV-2-8	10	1300	120	625		500		625		190		625		410		190													
								FAV-2-9	10	1300	120	625		500		625		190		625		410		190													
								FAV-2-10	10	1300	120	625	9.0	500	8.0	625	9.7	190	8.0	625	9.0	410	6.3	190	4.0												
								PAV-2-3		(NOTE 8)		70		70		270		70		70		70		70													
								EAV-2-20	14	2750	250	250		410		250		1650		250		250		430		SAV-2-22	8	800	80	300	300	300	300	300	300	300	
								TOTAL				2820		2480		3020		2480		2820		1960		1260		TOTAL				2770	2430	2970	2430	2770	1210	1210	

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. OCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST AIR FLOW REPRESENTS A 80-100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. FUME HOOD AIR VALVE BASIS OF DESIGN WILL BE 100 FPM @ 18-INCHES SASH HEIGHT. FINAL AIRFLOW SETPOINT ESTABLISHED DURING HOOD CERTIFICATION.
4. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
5. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.
6. POINT EXHAUST AIR VALVE AT MINIMUM FLOW FOR ACID AND VACUUM CABINETS.
7. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR ACID AND VACUUM CABINETS AND FUTURE POINT OF USE CONNECTIONS.
8. REFER TO POINT EXHAUST AIRFLOW SCHEDULE FOR VALVE INFORMATION. VALVE IS SHARED FOR MULTIPLE SPACES.

1 LAB 202 CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

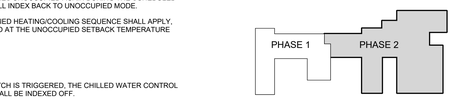
RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By NMT
Checked By NMT
Filename
Date August 31, 2026

Revisions

LAB CONTROL SCHEMATIC & SYSTEM SUMMARY - PHASE 2

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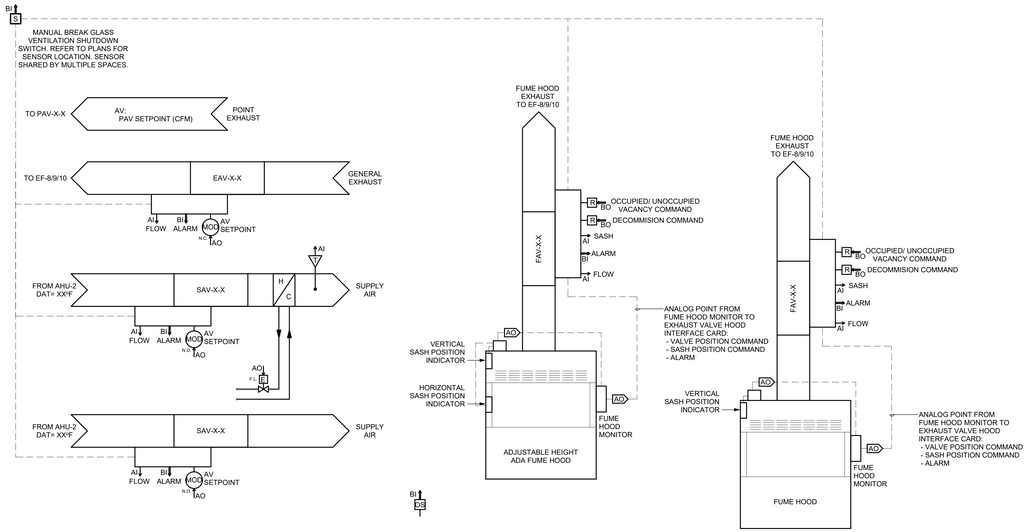

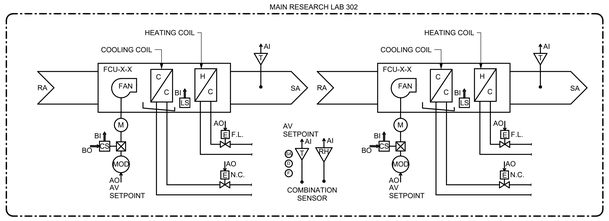

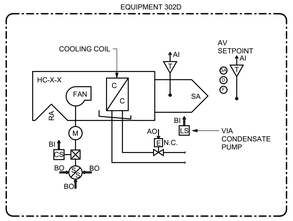

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FUME HOOD EXHAUST AIR VALVES (FAV)
GENERAL EXHAUST AIR VALVE (EAV)
SUPPLY AIR VALVES (SAV)
DUCT MOUNTED REHEAT COILS (RHC)
4 PIPE FAN COIL UNITS (FCU)
2 PIPE HYDRONICS CASSETTE UNITS (HC)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

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THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED:	75°F ± 1.5°F
UNOCCUPIED SETBACK:	75°F + 3.0°F
UNOCCUPIED:	75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED:	70°F ± 1.5°F
UNOCCUPIED SETBACK:	70°F - 3.0°F
UNOCCUPIED:	70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACPH):
REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

FUME HOOD EXHAUST AIRFLOW RATE (CFM):
NOT CONTROLLED BY BACS. VALVE IS CONTROLLED BY FUME HOOD MONITOR TO MAINTAIN FACE VELOCITY SETPOINTS.

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE - FUME HOOD EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

FUME HOOD FACE VELOCITY (CFM):
NOT CONTROLLED BY BACS. FACE VELOCITY SETPOINTS ARE PROGRAMMED INTO FUME HOOD MONITOR.

FACE VELOCITY CONTROL

THE FUME HOOD SHALL BE EQUIPPED WITH A FUME HOOD MONITOR AND SASH POSITION INDICATOR.

THE MONITOR SHALL MODULATE THE FUME HOOD EXHAUST VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT.

THE MONITOR SHALL, AS A MINIMUM, HAVE THE FOLLOWING CAPABILITIES:

- SASH POSITION INPUT
- STANDBY MODE INPUT TO ALLOW ADJUST OF FACE VELOCITY
- HOOD DECOMMISSION MODE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE BACS SHALL SEND AN OCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE OCCUPIED FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, AND THE SASH IS AT OR BELOW 18-INCHES, THE BACS SHALL SEND AN UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE 65 FPM FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED AND THE FUME HOOD SASH IS ABOVE 18-INCHES, THE BACS SHALL NOT SEND THE SPACE UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO MAINTAIN THE OCCUPIED SASH OPEN AIRFLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

VACANT MODE: THE BACS SHALL SEND A DECOMMISSION COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO CLOSE. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN AIRFLOW SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, FUME HOOD AND GENERAL EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

FAN COIL / HYDRONIC CASSETTE START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL — FAN COIL UNIT ZONE

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FOR SPACES WITH MULTIPLE FAN COIL UNITS, THE FAN COILS UNITS SHALL STAGE ON ONE AT A TIME AS REQUIRED TO MAINTAIN THE TEMPERATURE SETPOINT.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

ZONE TEMPERATURE CONTROL — HYDRONIC CASSETTE ZONE

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE HYDRONIC CASSETTE (HC) FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EBACS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	TYP = 2
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	TYP = 2
FUME HOOD SASH POSITION			X					X	X		SASH OPEN (18') FOR 24 CONTINUOUS HOURS OR MORE	X	TYP = 2
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND				X								X	TYP = 2
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND				X								X	TYP = 2
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
GENERAL EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
GENERAL EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST AIR FLOW SETPOINT (CFM)					X							X	
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	TYP = 2
SUPPLY VALVE ALARM	X								X		FAILURE	X	TYP = 2
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	TYP = 2
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	TYP = 2
FAN COIL UNIT MOTOR START/STOP		X						X				X	TYP = 2
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	TYP = 2
FCU HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	TYP = 2
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	TYP = 2
HYDRONIC CASSETTE MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
HYDRONIC CASSETTE MOTOR SPEED - LOW		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - MEDIUM		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - HIGH		X						X				X	
HC COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HYDRONIC CASSETTE DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
HYDRONIC CASSETTE CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	TYP = 2
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	(ACH)	80 FPM (CFM)	(ACH)	EXHAUST AIR OCCUPIED SASH OPEN (NOTE 7) 100 FPM (CFM)	(ACH)	OCCUPIED SASH CLOSED (CFM)	(ACH)	UNOCCUPIED SASH FULL (NOTE 4) 100 FPM (CFM)	(ACH)	UNOCCUPIED SASH OPEN (NOTE 5) 65 FPM (CFM)	(ACH)	UNOCCUPIED SASH CLOSED (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	SUPPLY AIR OCCUPIED SASH OPEN (NOTE 3) 100 FPM (CFM)	80 FPM (CFM)	OCC SASH OPEN (NOTE 7) (CFM)	OCC SASH CLOSED (CFM)	UNOCC SASH FULL (CFM)	UNOCC SASH OPEN (CFM)	UNOCC SASH CLOSED (CFM)	XFER ALL MODES (CFM)
LAB 302 / 302C / 302D	VAV	1817	8.0	457	1.9	1817	7.5	FAV-3-5	10	1300	120	625		500		625		190		625		410		190		SAV-3-9	14	2750	250	1245	1045	1440	1045	1245	815	375	-100
								FAV-3-6	10	1300	120	625		500		625		190		625		410		190													
								PAV-3-2		(NOTE 8)		215	6.8	215	6.0	410	7.6	215	6.0	215	6.8	215	5.0	215	3.2												
								EAV-3-9	12	1790	180	180		230		180		850		180		180		180		SAV-3-10	8	800	80	300	300	300	300	300	300	300	
								TOTAL				1645		1445		1840		1445		1645		1215		775		TOTAL				1545	1345	1740	1345	1545	1115	675	

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. OCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST AIR FLOW REPRESENTS A 80-100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. FUME HOOD AIR VALVE BASIS OF DESIGN WILL BE 100 FPM @ 18-INCHES SASH HEIGHT. FINAL AIRFLOW SETPOINT ESTABLISHED DURING HOOD CERTIFICATION.
4. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
5. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.
6. POINT EXHAUST AIR VALVE AT MINIMUM FLOW FORCORROSIVE, FLAMMABLE AND VACUUM CABINETS.
7. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS AND FUTURE POINT OF USE CONNECTIONS.

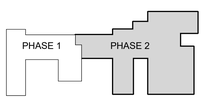
1 LAB 302 CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd., Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St., Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	NMT
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

LAB CONTROL SCHEMATIC & SYSTEM SUMMARY - PHASE 2

STATE OF NEW YORK · NICHOLAS DANIEL MALLER · 094525 · LICENSED PROFESSIONAL ENGINEER
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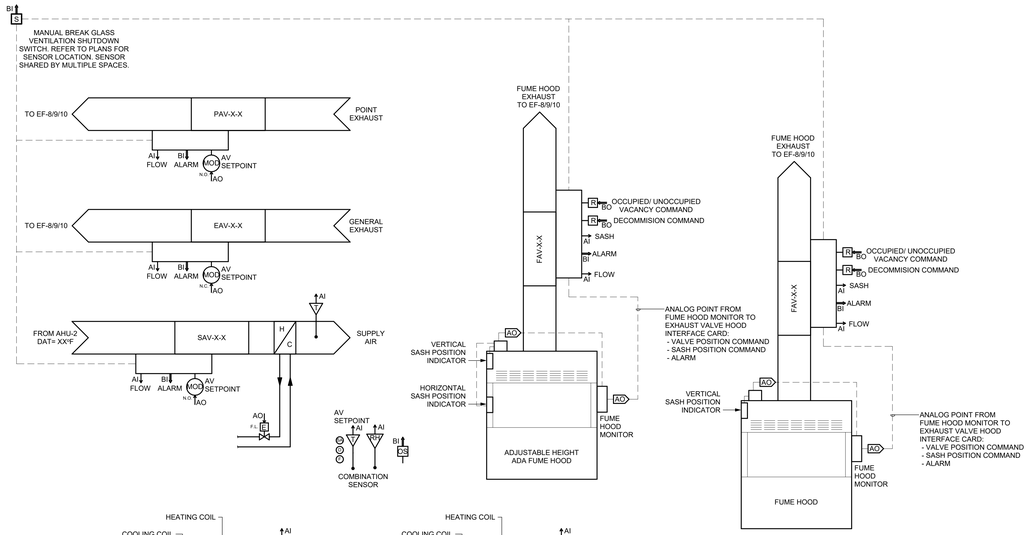

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FUME HOOD EXHAUST AIR VALVES (FAV)
GENERAL EXHAUST AIR VALVE (EAV)
POINT EXHAUST AIR VALVE (PAV)
SUPPLY AIR VALVE (SAV)
DUCT MOUNTED REHEAT COIL (RHC)
4 PIPE FAN COIL UNITS (FCU)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED:	75°F ± 1.5°F
UNOCCUPIED SETBACK:	75°F + 3.0°F
UNOCCUPIED:	75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED:	70°F ± 1.5°F
UNOCCUPIED SETBACK:	70°F - 3.0°F
UNOCCUPIED:	70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

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REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

FUME HOOD EXHAUST AIRFLOW RATE (CFM):
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REFER TO LAB AIRFLOW SCHEDULE

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE - FUME HOOD EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

FUME HOOD FACE VELOCITY (CFM):
NOT CONTROLLED BY BACS. FACE VELOCITY SETPOINTS ARE PROGRAMMED INTO FUME HOOD MONITOR.

FACE VELOCITY CONTROL

THE FUME HOOD SHALL BE EQUIPPED WITH A FUME HOOD MONITOR AND SASH POSITION INDICATOR.

THE MONITOR SHALL MODULATE THE FUME HOOD EXHAUST VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT.

THE MONITOR SHALL, AS A MINIMUM, HAVE THE FOLLOWING CAPABILITIES:

- SASH POSITION INPUT
- STANDBY MODE INPUT TO ALLOW ADJUST OF FACE VELOCITY
- HOOD DECOMMISSION MODE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE BACS SHALL SEND AN OCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE OCCUPIED FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, AND THE SASH IS AT OR BELOW 18-INCHES, THE BACS SHALL SEND AN UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE 65 FPM FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED AND THE FUME HOOD SASH IS ABOVE 18-INCHES, THE BACS SHALL NOT SEND THE SPACE UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO MAINTAIN THE OCCUPIED SASH OPEN AIRFLOW SETPOINT. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

VACANT MODE: THE BACS SHALL SEND A DECOMMISSION COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO CLOSE. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN AIRFLOW SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, FUME HOOD, POINT EXHAUST AND GENERAL EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

FAN COIL START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, SETPOINT THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FOR SPACES WITH MULTIPLE FAN COIL UNITS, THE FAN COILS UNITS SHALL STAGE ON ONE AT A TIME AS REQUIRED TO MAINTAIN THE TEMPERATURE SETPOINT.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	TYP = 2
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	TYP = 2
FUME HOOD SASH POSITION			X					X	X		SASH OPEN (18") FOR 24 CONTINUOUS HOURS OR MORE	X	TYP = 2
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND				X								X	TYP = 2
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND				X								X	TYP = 2
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
GENERAL EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
GENERAL EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
POINT EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
POINT EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
SUPPLY VALVE ALARM	X								X		FAILURE	X	
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	TYP = 2
FAN COIL UNIT MOTOR START/STOP		X						X				X	TYP = 2
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	TYP = 2
FCU HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	TYP = 2
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	TYP = 2
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	TYP = 2
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	VALVE RANGE MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	(ACH)	80 FPM (CFM)	(ACH)	OCCUPIED SASH OPEN (NOTE 7) 100 FPM (CFM)	(ACH)	OCCUPIED SASH CLOSED (CFM)	(ACH)	UNOCCUPIED SASH FULL (NOTE 4) 100 FPM (CFM)	(ACH)	UNOCCUPIED SASH OPEN (NOTE 5) 65 FPM (CFM)	(ACH)	UNOCCUPIED SASH CLOSED (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	VALVE RANGE MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3) 100 FPM (CFM)	80 FPM (CFM)	OCC SASH OPEN OPEN (NOTE 7) 100 FPM (CFM)	OCC SASH CLOSED (CFM)	UNOCC SASH FULL (CFM)	UNOCC SASH OPEN (CFM)	UNOCC SASH CLOSED (CFM)	XFER ALL MODES (CFM)
CROP PRODUCTION LAB G20	FAV-G-3	10	1300	120	625		500		625		190		625		410		190													
	FAV-G-4	10	1300	120	625		500		625		190		625		410		190													
	EAV-G-21	10	1300	120	120	8.9	120	7.4	120	9.9	500	6.0	120	8.9	120	6.3	120	3.7	SAV-G-21	12	1790	180	1280	1030	1450	790	1280	850	410	-200
	PAV-G-2	8	800	80	110		110		280		110		110		110		110													
	TOTAL				1480		1230		1650		990		1480		1050		610													
LAB 219 / 219G	FAV-2-5	10	1300	120	625		500		625		190		625		410		190													
	FAV-2-6	10	1300	120	625		500		625		190		625		410		190													
	PAV-2-1	8	800	80	165	6.0	165	6.0	610	7.3	165	6.0	165	6.0	165	4.3	165	3.0	SAV-2-13	12x18	3200	260	1740	1740	2110	1740	1740	1235	870	0
	EAV-2-13	14	2750	250	325		575		250		1195		325		250		325													
	TOTAL				1740		1740		2110		1740		1740		1235		870													
LAB 319 / 319G	FAV-3-3	10	1300	120	625		500		625		190		625		410		190													
	FAV-3-4	10	1300	120	625		500		625		190		625		410		190													
	PAV-3-1	8	800	80	165	6.0	165	6.0	565	6.4	165	6.0	165	6.0	165	3.8	165	3.0	SAV-3-8	12x18	3200	260	1860	1860	1965	1830	1830	1135	880	-100
	EAV-3-8	14	2750	250	545		795		250		1385		515		250		435													
	TOTAL				1960		1960		2065		1930		1930		1235		980													

NOTES
1. 0
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. OCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST AIR FLOW REPRESENTS A 80-100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. FUME HOOD AIR VALVE BASIS OF DESIGN WILL BE 100 FPM @ 18-INCHES SASH HEIGHT. FINAL AIRFLOW SETPOINT ESTABLISHED DURING HOOD CERTIFICATION.
4. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
5. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.
6. POINT EXHAUST AIR VALVE AT MINIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS.
7. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS AND FUTURE POINT OF USE CONNECTIONS.

1 TYPICAL TWO FUME HOOD, ONE POINT EXHAUST, ONE GENERAL EXHAUST AND ONE SUPPLY AIR VALVE CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
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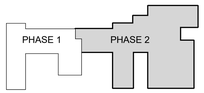
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By NMT
Checked By NMT
Filename
Date August 31, 2026

Revisions

LAB CONTROL SCHEMATIC & SYSTEM SUMMARY - PHASE 2

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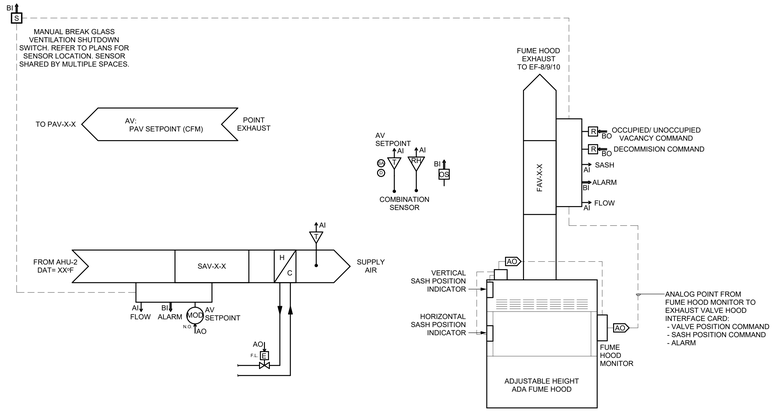
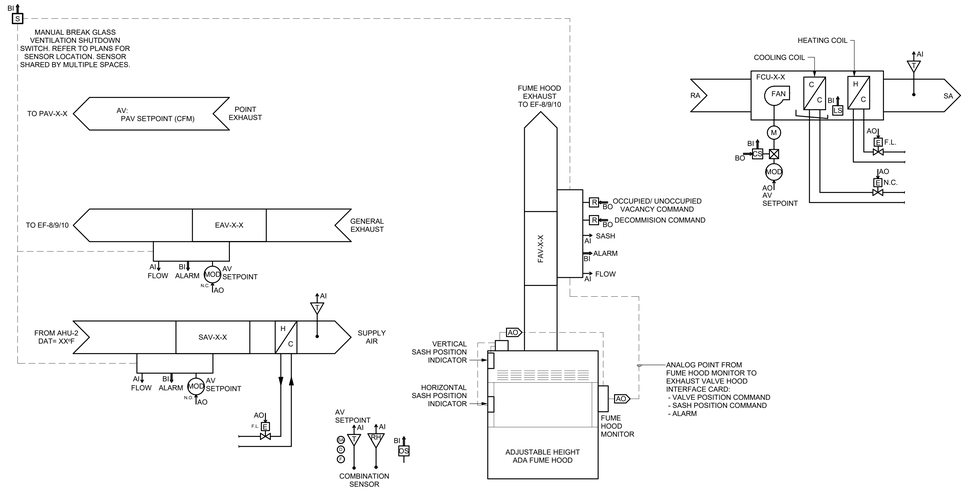


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS								SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM		BACS	EMCS		
										DESCRIPTION				
STEAM LOAD SHED						**X (6)**								BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						**X (4)**								BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X					X	
TOTAL EXHAUST SETPOINT (CFM)					X			X					X	
LAB AIR CHANGE RATE (ACH)					X			X					X	
FLOW OFFSET SETPOINT (CFM)					X								X	
FLOW OFFSET ACTUAL (CFM)					X								X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X				X	
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X					X	
FUME HOOD SASH POSITION			X					X	X				X	
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND				X									X	
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND				X									X	
POINT EXHAUST AIR FLOW SETPOINT (CFM)					X								X	LAB 402 ONLY
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X					X	
SUPPLY VALVE ALARM	X								X				X	
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X				X	
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X					X	
REHEAT COIL VALVE COMMAND (%)				X				X	X				X	
BREAKGLASS VENTILATION STOP	X							X	X		X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		><			X	X				X	
SPACE RELATIVE HUMIDITY (%RH)			X					X					X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X					X	

LAB AIRFLOW SCHEDULE

| ROOM NUMBER | DESCRIPTION (NOTE 1) | ROOM DIMENSIONS | | CODE MINIMUM VENTILATION | | | | EXHAUST AIR | | | | | | | | | |



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
FUME HOOD SASH POSITION			X					X	X		SASH OPEN (18') FOR 24 CONTINUOUS HOURS OR MORE	X	
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND				X								X	
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND				X								X	
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
GENERAL EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
GENERAL EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST AIR FLOW SETPOINT (CFM)					X							X	LAB 402 ONLY
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
SUPPLY VALVE ALARM	X								X		FAILURE	X	
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X						X				X	
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	
FCU HEATING COIL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FUME HOOD EXHAUST AIR VALVE (FAV)
GENERAL EXHAUST AIR VALVE (EAV)
SUPPLY AIR VALVE (SAV)
DUCT MOUNTED REHEAT COIL (RHC)
4 PIPE FAN COIL UNIT (FCU)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F + 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACPH):
REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

FUME HOOD EXHAUST AIRFLOW RATE (CFM):
NOT CONTROLLED BY BACS. VALVE IS CONTROLLED BY FUME HOOD MONITOR TO MAINTAIN FACE VELOCITY SETPOINTS.

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE - FUME HOOD EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

FUME HOOD FACE VELOCITY (CFM):
NOT CONTROLLED BY BACS. FACE VELOCITY SETPOINTS ARE PROGRAMMED INTO FUME HOOD MONITOR

FACE VELOCITY CONTROL

THE FUME HOOD SHALL BE EQUIPPED WITH A FUME HOOD MONITOR AND SASH POSITION INDICATOR.

THE MONITOR SHALL MODULATE THE FUME HOOD EXHAUST VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT.

THE MONITOR SHALL, AS A MINIMUM, HAVE THE FOLLOWING CAPABILITIES:

- SASH POSITION INPUT
- STANDBY MODE INPUT TO ALLOW ADJUST OF FACE VELOCITY
- HOOD DECOMMISSION MODE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE BACS SHALL SEND AN OCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE OCCUPIED FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, AND THE SASH IS AT OR BELOW 18-INCHES, THE BACS SHALL SEND AN UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE 65 FPM FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED AND THE FUME HOOD SASH IS ABOVE 18-INCHES, THE BACS SHALL NOT SEND THE SPACE UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO MAINTAIN THE OCCUPIED SASH OPEN AIRFLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

VACANT MODE: THE BACS SHALL SEND A DECOMMISSION COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO CLOSE. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN AIRFLOW SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, FUME HOOD AND GENERAL EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

FAN COIL START/STOP

THE SYSTEM SHALL START AND INDEX TO MINIMUM POSITION TO WHENEVER THE SPACE IS IN OCCUPIED MODE AND SHALL START TO MAINTAIN THE HEATING AND COOLING SETPOINTS WHENEVER THE SPACE IS IN OCCUPIED SETBACK OR UNOCCUPIED MODE.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE SPACE CONTINUES TO FALL BELOW SETPOINT, SETPOINT THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE HEATING COIL CONTROL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE HEATING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE COOLING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	EXHAUST AIR: OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	(ACH)	80 FPM (CFM)	(ACH)	OCCUPIED SASH OPEN (NOTE 7) 100 FPM (CFM)	(ACH)	OCCUPIED SASH CLOSED (CFM)	(ACH)	UNOCCUPIED SASH FULL (NOTE 4) 100 FPM (CFM)	(ACH)	UNOCCUPIED SASH OPEN (NOTE 5) 65 FPM (CFM)	(ACH)	UNOCCUPIED SASH CLOSED (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	SUPPLY AIR: VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	80 FPM (CFM)	OCC SASH OPEN (NOTE 7) (CFM)	OCC SASH CLOSED (CFM)	UNOCC SASH FULL (CFM)	UNOCC SASH OPEN (CFM)	UNOCC SASH CLOSED (CFM)	XFER ALL MODES (CFM)
LAB 402 / 402C	VAV	941	8.0	299	2.4	941	7.5	FAV-4-1	10	1300	120	625	6.9	500	6.0	625	8.2	190	6.0	625	6.9	410	5.1	190	3.4	SAV-4-1	10	1300	120	760	650	925	650	760	545	325	-100
								EAV-4-1	8	800	80	80		95		80		405		80		80		80													
								PAV-4-1	(NOTE 8)			155		155		320		155		155		155		155													
								TOTAL				860		750		1025		750		860		645		425													

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. OCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST AIR FLOW REPRESENTS A 80-100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. FUME HOOD AIR VALVE BASIS OF DESIGN WILL BE 100 FPM @ 18-INCHES SASH HEIGHT. FINAL AIRFLOW SETPOINT ESTABLISHED DURING HOOD CERTIFICATION.
4. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
5. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.
6. POINT EXHAUST AIR VALVE AT MINIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS.
7. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS AND FUTURE POINT OF USE CONNECTIONS.
8. REFER TO POINT EXHAUST AIRFLOW SCHEDULE FOR VALVE INFORMATION. VALVE IS SHARED FOR MULTIPLE SPACES.

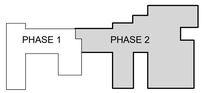
1 LAB 402 CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By NMT
Checked By NMT
Filename
Date August 31, 2026

Revisions

LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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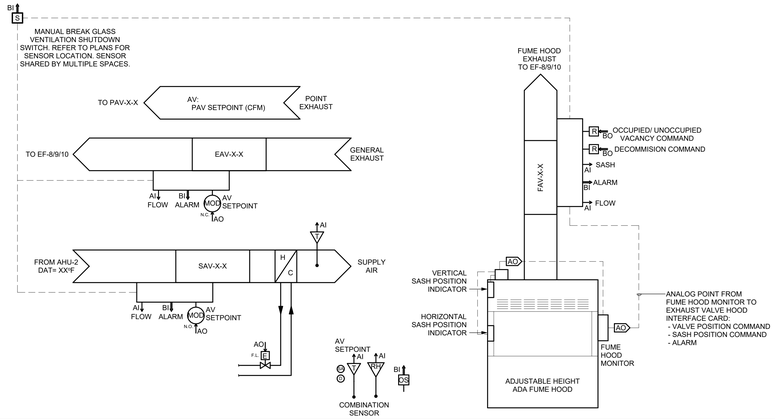


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
FUME HOOD SASH POSITION			X					X	X		SASH OPEN (18') FOR 24 CONTINUOUS HOURS OR MORE	X	
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND				X								X	
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND				X								X	
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
GENERAL EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
GENERAL EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST AIR FLOW SETPOINT (CFM)					X							X	
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
SUPPLY VALVE ALARM	X								X		FAILURE	X	
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		✂			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	EXHAUST AIR OCCUPIED SASH OPEN (NOTE 3) 100 FPM (CFM)	(ACH)	80 FPM (CFM)	(ACH)	OCCUPIED SASH CLOSED (CFM)	(ACH)	UNOCCUPIED SASH FULL (NOT 4) 100 FPM (CFM)	(ACH)	UNOCCUPIED SASH OPEN (NOTE 5) 65 FPM (CFM)	(ACH)	UNOCCUPIED SASH CLOSED (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	SUPPLY AIR VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3) 100 FPM (CFM)	80 FPM (CFM)	OCC SASH CLOSED (CFM)	UNOCC SASH FULL (CFM)	UNOCC SASH OPEN (CFM)	UNOCC SASH CLOSED (CFM)	XFER ALL MODES (CFM)
PLANT PSYSIOLOGY TEACH LAB 236	ACHR (NOTE 1)	1156	9.5	338	1.8	1156	6.3	FAV-2-3	10	1300	120	625	6.0	500	6.0	190	6.0	625	4.6	410	3.4	190	3.0	SAV-2-11	12	1790	180	1005	1000	1000	735	520	450	-100
								EAV-2-11	12	1790	180	450		570		880		180		180		330												
								PAV-2-3	(NOTE 7)			30		30		30		30		30		30												
								TOTAL				1105		1100		1100		835		620		550												
PLANT PSYSIOLOGY PREP LAB 230	VAV (NOTE 6)	371	9.5	197	3.3	371	6.3	FAV-2-4	10	1300	120	625	12.5	500	10.4	190	8.5	625	12.5	410	8.9	190	5.1	SAV-2-12	10	1300	120	635	510	400	635	420	200	-100
								EAV-2-12	8	800	80	80		80		280		80		80		80												
								PAV-2-3	(NOTE 7)			30		30		30		30		30		30												
								TOTAL				735		610		500		735		520		300												

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE FUME HOOD DOES NOT PROVIDE ENOUGH EXHAUST ALONE TO MAINTAIN THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. OCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST AIR FLOW REPRESENTS A 80-100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. FUME HOOD AIR VALVE BASIS OF DESIGN WILL BE 100 FPM @ 18-INCHES SASH HEIGHT. FINAL AIRFLOW SETPOINT ESTABLISHED DURING HOOD CERTIFICATION.
4. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
5. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY. SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.
6. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
7. REFER TO POINT EXHAUST AIRFLOW SCHEDULE FOR VALVE INFORMATION. VALVE IS SHARED FOR MULTIPLE SPACES.

1 TYPICAL FUME HOOD, GENERAL EXHAUST AND SUPPLY AIR VALVE CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FUME HOOD EXHAUST AIR VALVE (FAV)
GENERAL EXHAUST AIR VALVE (EAV)
SUPPLY AIR VALVE (SAV)
DUCT MOUNTED REHEAT COIL (RHC)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F + 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACPH):
REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

FUME HOOD EXHAUST AIRFLOW RATE (CFM):
NOT CONTROLLED BY BACS. VALVE IS CONTROLLED BY FUME HOOD MONITOR TO MAINTAIN FACE VELOCITY SETPOINTS.

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE - FUME HOOD EXHAUST AIRFLOW RATE

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

FUME HOOD FACE VELOCITY (CFM):
NOT CONTROLLED BY BACS. FACE VELOCITY SETPOINTS ARE PROGRAMMED INTO FUME HOOD MONITOR.

FACE VELOCITY CONTROL

THE FUME HOOD SHALL BE EQUIPPED WITH A FUME HOOD MONITOR AND SASH POSITION INDICATOR.

THE MONITOR SHALL MODULATE THE FUME HOOD EXHAUST VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT.

THE MONITOR SHALL, AS A MINIMUM, HAVE THE FOLLOWING CAPABILITIES:

- SASH POSITION INPUT
- STANDBY MODE INPUT TO ALLOW ADJUST OF FACE VELOCITY
- HOOD DECOMMISSION MODE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE BACS SHALL SEND AN OCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE OCCUPIED FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, AND THE SASH IS AT OR BELOW 18-INCHES, THE BACS SHALL SEND AN UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE 65 FPM FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED AND THE FUME HOOD SASH IS ABOVE 18-INCHES, THE BACS SHALL NOT SEND THE SPACE UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO MAINTAIN THE OCCUPIED SASH OPEN AIRFLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

VACANT MODE: THE BACS SHALL SEND A DECOMMISSION COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO CLOSE. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN AIRFLOW SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, FUME HOOD AND GENERAL EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE REHEAT COIL CONTROL VALVE SHALL CLOSE.

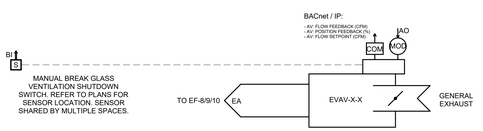
OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE REHEAT COIL CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE REHEAT COIL CONTROL VALVE AT 100% OPEN, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL. THE FUME HOOD EXHAUST AIR VALVE POSITION IS UNCHANGED.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL. THE FUME HOOD EXHAUST AIR VALVE POSITION IS UNCHANGED.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	EXHAUST AIR VALVE RANGE MAX (CFM)	MIN (CFM)	AIRFLOW (CFM)	(ACH)	XFER ALL MODES (CFM)
CYLINDER STORAGE G13	ACHR	40	8.0	27	5.1	40	7.5	EVAV-G-15	4	230	23	100	19	-100
CYLINDER CLOSET G0087	ACHR	40	8.0	27	5.1	40	7.5	EVAV-G-23	4	230	23	100	19	-100
CYLINDER STORAGE 113A	ACHR	28	7.0	25	7.7	28	8.6	EVAV-1-14	4	230	23	100	31	-100
CYLINDER STORAGE 219A	ACHR	28	7.0	25	7.7	28	8.6	EVAV-2-17	4	230	23	100	31	-100
CYLINDER CLOSET 202G	ACHR	28	9.1	25	5.9	28	6.6	EVAV-2-16	4	230	23	100	24	-100
CYLINDER CLOSET 309	ACHR	23	7.0	24	9.0	23	8.6	EVAV-3-18	4	230	23	100	37	-100
CYLINDER STORAGE 319A	ACHR	28	8.0	25	6.7	28	7.5	EVAV-3-19	4	230	23	100	27	-100
CYLINDER CLOSET 402E	ACHR	15	8.0	23	11.4	15	7.5	EVAV-4-10	4	230	23	100	50	-100

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.

2 TYPICAL CYLINDER CLOSET CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

GENERAL EXHAUST AIR TERMINAL UNIT (EVAV)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

LABORATORY AIRFLOW CONTROL

THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW SETPOINT.

THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377

Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688

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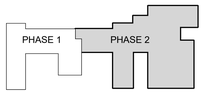
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800

Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122

Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

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LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · GARRETT DANIEL ELLENZWEIG · 094525 · LICENSED PROFESSIONAL ENGINEER

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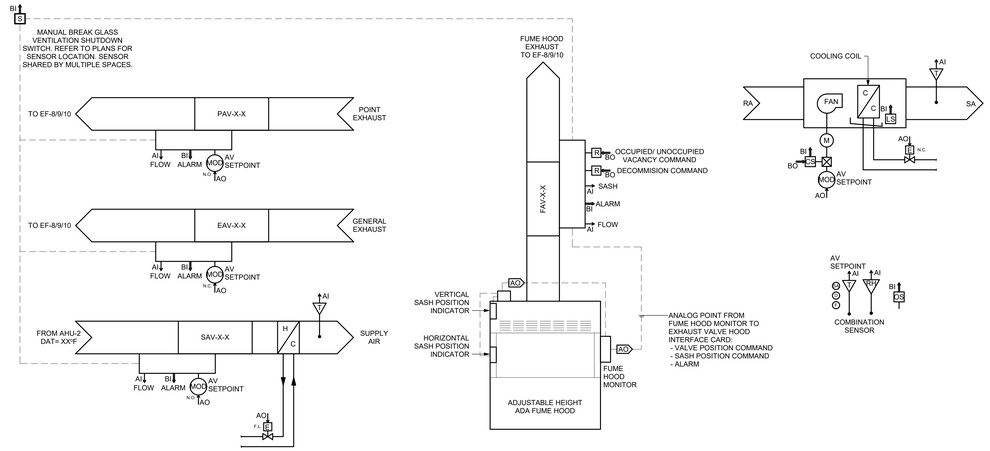


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
FUME HOOD EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
FUME HOOD EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
FUME HOOD SASH POSITION			X					X	X		SASH OPEN (18") FOR 24 CONTINUOUS HOURS OR MORE	X	
FUME HOOD EXHAUST AIR VALVE OCC / UNOCC COMMAND					X							X	
FUME HOOD EXHAUST AIR VALVE DECOMMISSION COMMAND					X							X	
GENERAL EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
GENERAL EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
GENERAL EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
POINT EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
POINT EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
SUPPLY VALVE ALARM	X								X		FAILURE	X	
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FAN COIL UNIT MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
FAN COIL UNIT MOTOR START/STOP		X						X				X	
FAN COIL UNIT MOTOR SPEED COMMAND (%) / SETPOINT				X				X				X	
FCU COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
FCU DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
FCU CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		✂			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

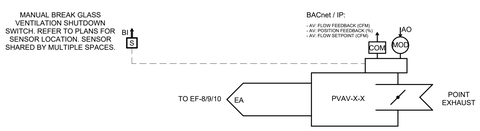
LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST AIR EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	(ACH)	80 FPM (CFM)	(ACH)	OCCUPIED SASH OPEN (NOTE 7) 100 FPM (CFM)	(ACH)	OCCUPIED SASH CLOSED (CFM)	(ACH)	UNOCCUPIED SASH FULL (NOTE 4) 100 FPM (CFM)	(ACH)	UNOCCUPIED SASH OPEN (NOTE 5) 65 FPM (CFM)	(ACH)	UNOCCUPIED SASH CLOSED (CFM)	(ACH)	SUPPLY AIR SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED SASH OPEN (NOTE 3 & 6) 100 FPM (CFM)	80 FPM (CFM)	OCC SASH OPEN (NOTE 7) (CFM)	OCC SASH CLOSED (CFM)	UNOCC SASH FULL (CFM)	UNOCC SASH OPEN (CFM)	UNOCC SASH CLOSED (CFM)	XFER ALL MODES (CFM)
SHARED INSTUMENTATION ROOM G14	VAV	1029	8.0	315	2.3	1029	7.5	FAV-G-2	10	1300	120	625		500		625		190		625		410		190													
								EAV-G-20	8	800	80	80	6.5	140	6.0	80	9.7	80	3.4	80	6.5	80	5.0	80	3.4												
								PAV-G-1	8	800	80	190		190		620		190		190		190		190													
								TOTAL				895		830		1325		460		895		680		460													

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. OCCUPIED SASH OPEN MODE: FUME HOOD EAHAUST AIR FLOW REPRESENTS A 80-100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT. FUME HOOD AIR VALVE BASIS OF DESIGN WILL BE 100 FPM @ 18-INCHES SASH HEIGHT. FINAL AIRFLOW SETPOINT ESTABLISHED DURING HOOD CERTIFICATION.
4. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
5. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.
6. POINT EXHAUST AIR VALVE AT MINIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS.
7. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CORROSIVE, FLAMMABLE AND VACUUM CABINETS AND FUTURE POINT OF USE CONNECTIONS.

1 LAB G14 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE



LAB AIRFLOW SCHEDULE

ROOM NUMBER	EXHAUST AIR EXHAUST POINT (NOTE 1)	VALVE SIZE (NOTE 2)	VALVE RANGE (NOTE 5) MAX (CFM)	MIN (CFM)	OCC (NOTE 3) (CFM)	UNOCC (CFM)	OCC (NOTE 4) (CFM)	UNOCC (CFM)
1ST FLOOR EAST WING LABS	PVAV-1-2	6	515	52	30	30	330	330
2ND FLOOR EAST WING LABS	PVAV-2-1	7	700	70	30	30	430	430
3RD FLOOR EAST WING LABS	PVAV-3-1	7	700	70	30	30	430	430

NOTES
1. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL RANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
2. VALVE SIZE ASSUMES (2) FUTURE CONNECTIONS PER LAB WITH 50% DIVERSITY.
3. POINT EXHAUST AIR TERMINAL UNIT AT MAXIMUM FLOW FOR CURRENT CABINET VENTING AND POINT OF USE CONNECTIONS.
4. POINT EXHAUST AIR TERMINAL UNIT AT MAXIMUM FLOW FOR FUTURE CABINET VENTING AND POINT OF USE CONNECTIONS.
5. IF NO POINT EXHAUST CONNECTIONS ARE REQUIRED AT TIME OF BALANCING, ONE FUTURE TAP SHALL BE BALANCED TO MEET THE MINIMUM AIRFLOW RATE OF THE AIR TERMINAL UNIT.

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
POINT EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
POINT EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
POINT EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
POINT EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION

2 TYPICAL SHARED POINT EXHAUST AIR TERMINAL UNIT CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FUME HOOD EXHAUST AIR VALVE (FAV)
GENERAL EXHAUST AIR VALVE (EAV)
POINT EXHAUST AIR VALVE (PAV)
SUPPLY AIR VALVE (SAV)
DUCT MOUNTED REHEAT COIL (RHC)
2 PIPE FAN COIL UNIT (FCU)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F + 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACPH):
REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

FUME HOOD EXHAUST AIRFLOW RATE (CFM):
NOT CONTROLLED BY BACS. VALVE IS CONTROLLED BY FUME HOOD MONITOR TO MAINTAIN FACE VELOCITY SETPOINTS.

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE - FUME HOOD EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

FUME HOOD FACE VELOCITY (CFM):
NOT CONTROLLED BY BACS. FACE VELOCITY SETPOINTS ARE PROGRAMMED INTO FUME HOOD MONITOR.

FACE VELOCITY CONTROL

THE FUME HOOD SHALL BE EQUIPPED WITH A FUME HOOD MONITOR AND SASH POSITION INDICATOR.

THE MONITOR SHALL MODULATE THE FUME HOOD EXHAUST VALVE TO MAINTAIN THE FACE VELOCITY SETPOINT.

THE MONITOR SHALL, AS A MINIMUM, HAVE THE FOLLOWING CAPABILITIES:

- SASH POSITION INPUT
- STANDBY MODE INPUT TO ALLOW ADJUST OF FACE VELOCITY
- HOOD DECOMMISSION MODE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE BACS SHALL SEND AN OCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE OCCUPIED FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, AND THE SASH IS AT OR BELOW 18-INCHES, THE BACS SHALL SEND AN UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE BETWEEN MINIMUM AND MAXIMUM POSITIONS AS NEEDED TO MAINTAIN THE 65 FPM FACE VELOCITY SETPOINT BASED ON THE SASH POSITION. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED AND THE FUME HOOD SASH IS ABOVE 18-INCHES, THE BACS SHALL NOT SEND THE SPACE UNOCCUPIED COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO MAINTAIN THE OCCUPIED SASH OPEN AIRFLOW SETPOINT. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

VACANT MODE: THE BACS SHALL SEND A DECOMMISSION COMMAND TO THE FUME HOOD EXHAUST AIR VALVE. THE FUME HOOD MONITOR SHALL INDEX THE FUME HOOD EXHAUST AIR VALVE TO CLOSE. THE POINT EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN AIRFLOW SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, FUME HOOD, POINT EXHAUST AND GENERAL EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

FAN COIL START/STOP

THE FAN COIL SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE FAN COIL UNIT FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE FAN COIL UNIT CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE FAN COIL SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

FOR SPACES WITH MULTIPLE FAN COIL UNITS, THE FAN COILS UNITS SHALL STAGE ON ONE AT A TIME AS REQUIRED TO MAINTAIN THE TEMPERATURE SETPOINT.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

POINT EXHAUST AIR TERMINAL UNIT (PVAV)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

LABORATORY AIRFLOW CONTROL

THE POINT EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW SETPOINT.

REGARDLESS OF THE OCCUPANCY MODE, THE POINT EXHAUST AIR TERMINAL UNIT SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
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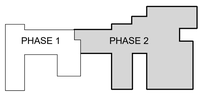
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By NMT
Checked By NMT
Filename
Date August 31, 2026

Revisions

LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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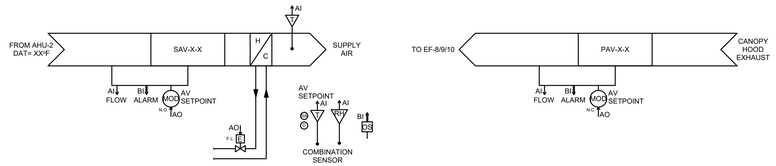


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
CANOPY HOOD AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
CANOPY HOOD AIR VALVE ALARM	X								X		FAILURE	X	
CANOPY HOOD AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X				X	X	10% FLOW DEVIATION FROM SETPOINT	X	
SUPPLY AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
SUPPLY VALVE ALARM	X								X		FAILURE	X	
SUPPLY AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X				X	X	10% FLOW DEVIATION FROM SETPOINT	X	
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X									X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	EXHAUST AIR VALVE RANGE MAX (CFM)	MIN (CFM)	MAX COOLING / MAX HOOD (NOTE 3) (CFM)	(ACH)	OCCUPIED (NOTE 3) (CFM)	(ACH)	UNOCCUPIED (NOTE 3) (CFM)	(ACH)	UNOCCUPIED (NOTE 4) (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	SUPPLY AIR VALVE RANGE MAX (CFM)	MIN (CFM)	MAX (NOTE 3) (CFM)	OCC (NOTE 3) (CFM)	OCC (NOTE 4) (CFM)	UNOCC (NOTE 3) (CFM)	UNOCC (NOTE 4) (CFM)	XFER ALL MODES (CFM)
AUTOCLAVE 304	AC/HR	175	8.0	52	2.2	175	7.5	PAV-3-3	12	1780	180	1100	47.1	1100	47.1	270	11.6	SAV-3-11	10	1300	120	950	120						-150

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.

1 AUTOCLAVE 304 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

GENERAL EXHAUST AIR VALVE (EAV)
SUPPLY AIR VALVE (SAV)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F + 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACH):
REFER TO LAB AIRFLOW SCHEDULE
ACH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

TOTAL SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
GENERAL EXHAUST AIRFLOW RATE + OFFSET

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

LABORATORY AIRFLOW CONTROL

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY AND EXHAUST AIR VALVES SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE REHEAT COIL CONTROL VALVE SHALL CLOSE.

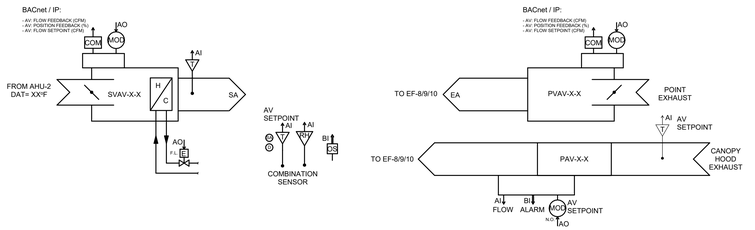
OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE REHEAT COIL CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE REHEAT COIL CONTROL VALVE AT 100% OPEN, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT. THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
CANOPY EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
CANOPY EXHAUST AIR VALVE ALARM									X		FAILURE	X	
CANOPY EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X				X	X	10% FLOW DEVIATION FROM SETPOINT	X	
POINT EXHAUST VAV DAMPER POSITION COMMAND (%)					X				X			X	
CANOPY EXHAUST AIR TEMPERATURE / SETPOINT (°F)			X		X				X			X	
POINT EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X				X	X	10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
POINT EXHAUST VAV AIRFLOW SETPOINT (CFM)					X				X			X	BACnet IP NETWORK POINT
SUPPLY VAV DAMPER POSITION COMMAND (%)				X					X			X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X				X	X	10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X				X			X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X				X	X	COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X				X			X	
REHEAT COIL VALVE COMMAND (%)				X					X	X	5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		✕				X	X	± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X									X	MONITORING ONLY
SPACE OCCUPANCY								X	X			X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST POINT (NOTE 2)	VALVE SIZE	EXHAUST AIR VALVE RANGE MAX (CFM)	MIN (CFM)	MAX COOLING / MAX HOOD (NOTE 3) (CFM)	(ACH)	OCCUPIED (NOTE 3) (CFM)	(ACH)	UNOCCUPIED (NOTE 3) (CFM)	(ACH)	UNOCCUPIED (NOTE 4) (CFM)	(ACH)	SUPPLY POINT (NOTE 2)	VALVE SIZE	SUPPLY AIR VALVE RANGE MAX (CFM)	MIN (CFM)	MAX (NOTE 3) (CFM)	OCC (NOTE 3) (CFM)	OCC (NOTE 4) (CFM)	UNOCC (NOTE 3) (CFM)	UNOCC (NOTE 4) (CFM)	XFER ALL MODES (CFM)
SOIL AND SAMPLE PREP G02	VAV	475	8.0	216	3.4	475	7.5	PAV-G-3	12	1790	180	1100	19.4	375	8.0	180	9.6	300	4.7	300	11.5	SVAV-G-27	12	2060	206	1130	405	510	200	630	-100
								PVAV-G-1	7	700	70	130		130		430		130		430											
								TOTAL				1230		505		610		300		730											

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE PROCESS EXHAUST EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CURRENT POINT OF USE CONNECTIONS.
4. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR FUTURE POINT OF USE CONNECTIONS.

2 LAB G02 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

POINT EXHAUST AIR VALVE (PAV)
POINT EXHAUST AIR TERMINAL UNIT (PVAV)
SUPPLY AIR TERMINAL UNIT (SVAV)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F + 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

CANOPY HOOD EXHAUST TEMPERATURE SETPOINTS: 80°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACPH):
REFER TO LAB AIRFLOW SCHEDULES
ACPH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE + OFFSET

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

LABORATORY AIRFLOW CONTROL

AIR VALVE / TERMINAL UNIT POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE POINT EXHAUST AIR VALVE / TERMINAL UNIT SHALL MODULATED AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW SETPOINT. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, THE POINT EXHAUST AIR VALVE / TERMINAL UNIT SHALL MODULATED AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW SETPOINT. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

ZONE TEMPERATURE CONTROL

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE REHEAT COIL CONTROL VALVE SHALL CLOSE. IF THE SPACE TEMPERATURE CONTINUES TO RISE ABOVE THE TEMPERATURE SETPOINT, THE CANOPY HOOD POINT EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE OCCUPIED AND MAX COOLING / MAX HOOD FLOW SETPOINTS. IF THE CANOPY HOOD DUCT TEMPERATURE RISES ABOVE SETPOINT, THE CANOPY HOOD POINT EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE OCCUPIED AND MAX COOLING / MAX HOOD FLOW SETPOINTS TO MAINTAIN THE TEMPERATURE SETPOINT.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED HEATING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED HEATING TEMPERATURE SETPOINT.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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Jade Stone Engineering Electrical Engineers — 444 Vanduzee St., Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688
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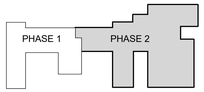
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

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Revisions

LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · GARY DANIEL BAKER · LICENSED PROFESSIONAL ENGINEER · 094525

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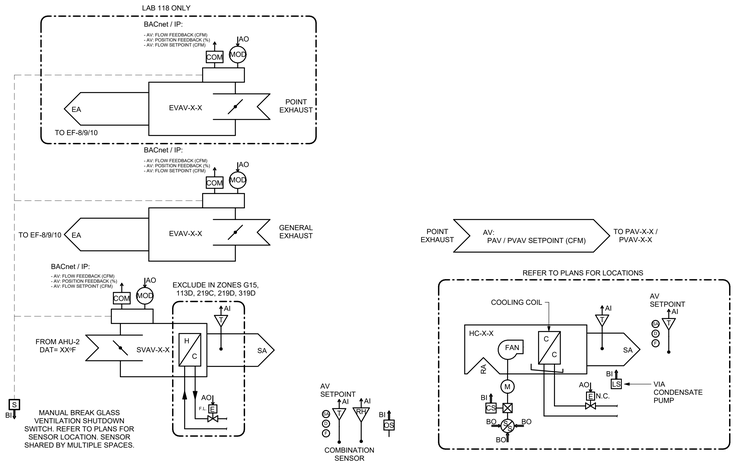

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
POINT EXHAUST AIR FLOW SETPOINT (CFM)					X							X	
POINT EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	LAB 118 ONLY
POINT EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT; LAB 118 ONLY
POINT EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT; LAB 118 ONLY
POINT EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT; LAB 118 ONLY
GENERAL EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
GENERAL EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	EXCLUDE IN ZONES G15, 113D, 219C, 219D, 319D
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	EXCLUDE IN ZONES G15, 113D, 219C, 219D, 319D
HYDRONIC CASSETTE MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
HYDRONIC CASSETTE MOTOR SPEED - LOW		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - MEDIUM		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - HIGH		X						X				X	
HC COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HYDRONIC CASSETTE DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X		X	X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
HYDRONIC CASSETTE CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		✕			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE - NEGATIVE PRESSURIZATION

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	(ACH)	NYS EXHAUST AIRFLOW (CFM)	(ACH)	EXHAUST AIR: EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	OCCUPIED (NOTE 3) (CFM)	(ACH)	OCCUPIED (NOTE 4) (CFM)	(ACH)	UNOCCUPIED (NOTE 3) (CFM)	(ACH)	UNOCCUPIED (NOTE 4) (CFM)	(ACH)	SUPPLY AIR: SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	MIN (CFM)	OCC (NOTE 3) (CFM)	OCC (NOTE 4) (CFM)	UNOCC (NOTE 3) (CFM)	UNOCC (NOTE 4) (CFM)	XFER ALL MODES (CFM)
EQUIPMENT G15	AC/HR	150	8.8	157	7.1	150	6.8	EVAV-G-18	5	360	36	135		50		80		0		SVAV-G-22	6	515	52	85	200	30	150	-50
								PAV-G-4		(NOTE 5)		0	6.1	200	11.4	0	3.6	200	9.1									
								TOTAL				135		250		80		200										
PCR G19	AC/HR	150	8.8	157	7.1	150	6.8	EVAV-G-20	5	360	36	105		50		50		0		SVAV-G-24	5	360	36	85	200	30	150	-50
								PAV-G-4		(NOTE 5)		30	6.1	200	11.4	30	3.6	200	9.1									
								TOTAL				135		250		80		200										
FLEXIBLE G21	AC/HR	150	8.8	157	7.1	150	6.8	EVAV-G-21	5	360	36	135		50		80		0		SVAV-G-25	5	360	36	85	200	30	150	-50
								PAV-G-4		(NOTE 5)		0	6.1	200	11.4	0	3.6	200	9.1									
								TOTAL				135		250		80		200										
FLEX LAB SUPPORT 118	AC/HR	254	9.0	176	4.6	254	6.7	EVAV-1-8	6	515	52	200		205		130		80		SVAV-1-16	5	360	36	100	205	30	80	-100
								PVAV-1-1		(NOTE 5)		0	5.2	100	8.0	0	3.4	100	4.7									
								TOTAL				200		305		130		180										
EQUIPMENT 113D	AC/HR	155	8.8	158	7.0	155	6.9	EVAV-1-11	5	360	36	135		50		80		0		SVAV-1-19	6	515	52	85	200	30	150	-50
								PVAV-1-2		(NOTE 5)		0	6.0	200	11.1	0	3.5	200	8.8									
								TOTAL				135		250		80		200										
MOLECULAR BIO 113E	AC/HR	155	8.8	158	7.0	155	6.9	EVAV-1-12	5	360	36	135		50		80		0		SVAV-1-20	5	360	36	85	200	30	150	-50
								PVAV-1-2		(NOTE 5)		0	6.0	200	11.1	0	3.5	200	8.8									
								TOTAL				135		250		80		200										
FLEX/MICROSCOPY 202A	AC/HR	165	9.0	160	6.5	165	6.7	EVAV-2-15	5	360	36	150		50		80		0		SVAV-2-23	5	360	36	130	200	60	150	-50
								PAV-2-2		(NOTE 5)		30	7.3	200	10.1	30	4.4	200	8.1									
								TOTAL				180		250		110		200										
EQUIPMENT 202C	AC/HR	165	9.0	160	6.5	165	6.7	EVAV-2-13	5	360	36	150		50		80		0		SVAV-2-21	5	360	36	100	200	30	150	-50
								PAV-2-2		(NOTE 5)		0	6.1	200	10.1	0	3.2	200	8.1									
								TOTAL				150		250		80		200										
FLEXIBLE 202F	AC/HR	175	9.0	162	6.2	175	6.7	EVAV-2-12	5	360	36	160		50		80		0		SVAV-2-20	6	515	52	110	200	30	150	-50
								PAV-2-2		(NOTE 5)		0	6.1	200	9.5	0	3.0	200	7.6									
								TOTAL				160		250		80		200										
EQUIPMENT 1 219C	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-2-8	5	360	36	140		50		80		0		SVAV-2-16	6	515	52	90	200	30	150	-50
								PVAV-2-1		(NOTE 5)		0	6.0	200	10.8	0	3.4	200	8.6									
								TOTAL				140		250		80		200										
EQUIPMENT 2 219D	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-2-9	5	360	36	140		50		80		0		SVAV-2-17	5	360	36	90	200	30	150	-50
								PVAV-2-1		(NOTE 5)		0	6.0	200	10.8	0	3.4	200	8.6									
								TOTAL				140		250		80		200										
MOLECULAR LAB 219E	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-2-10	5	360	36	140		50		80		0		SVAV-2-18	5	360	36	90	200	30	150	-50
								PVAV-2-1		(NOTE 5)		0	6.0	200	10.8	0	3.4	200	8.6									
								TOTAL				140		250		80		200										
MOLECULAR BIO 302A	AC/HR	160	8.0	159	7.4	160	7.5	EVAV-3-16	5	360	36	130		50		80		0		SVAV-3-24	5	360	36	80	200	30	150	-50
								PAV-3-2		(NOTE 5)		0	6.1	200	11.7	0	3.8	200	9.4									
								TOTAL				130		250		80		200										
FLEXIBLE 319B	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-3-9	5	360	36	140		50		80		0		SVAV-3-17	5	360	36	90	200	30	150	-50
								PVAV-3-1		(NOTE 5)		0	6.0	200	10.8	0	3.4	200	8.6									
								TOTAL				140		250		80		200										
EQUIPMENT 319D	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-3-11	5	360	36	140		50		80		0		SVAV-3-19	6	515	52	90	200	30	150	-50
								PVAV-3-1		(NOTE 5)		0	6.0	200	10.8	0	3.4	200	8.6									
								TOTAL				140		250		80		200										
SOIL/EQUIPMENT 319E	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-3-12	5	360	36	140		50		80		0		SVAV-3-20	5	360	36	90	200	30	150	-50
								PVAV-3-1		(NOTE 5)		0	6.0	200	10.8	0	3.4	200	8.6									
								TOTAL				140		250		80		200										

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CURRENT POINT OF USE CONNECTIONS.
4. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR FUTURE POINT OF USE CONNECTIONS.
5. REFER TO POINT EXHAUST AIRFLOW SCHEDULE FOR VALVE INFORMATION. VALVE IS SHARED FOR MULTIPLE SPACES.

1 TYPICAL POINT EXHAUST, GENERAL EXHAUST AND SUPPLY AIR TERMINAL UNITS CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

GENERAL EXHAUST AIR TERMINAL UNIT (EVAV)
SUPPLY AIR TERMINAL UNIT (SVAV)
POINT EXHAUST AIR TERMINAL UNIT (PVAV) — LAB 118 ONLY
HYDRONIC CASSETTE (HC)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE FOR NEGATIVE PRESSURIZATION LABS.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE FOR POSITIVE PRESSURIZATION LABS.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F + 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

AIRFLOW SETPOINTS — NEGATIVE PRESSURIZATION

TOTAL EXHAUST AIR CHANGE RATE (ACH):
REFER TO LAB AIRFLOW SCHEDULE
ACH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

TOTAL SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
GENERAL EXHAUST AIRFLOW RATE + OFFSET

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

AIRFLOW SETPOINTS — POSITIVE PRESSURIZATION

TOTAL SUPPLY AIR CHANGE RATE (ACH):
REFER TO LAB AIRFLOW SCHEDULE
ACH = TOTAL SUPPLY CFM X 60 / ROOM VOLUME

TOTAL SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

POINT EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
SUPPLY AIRFLOW RATE + OFFSET

GENERAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
TOTAL EXHAUST AIRFLOW RATE — POINT EXHAUST AIR FLOW RATE

LABORATORY AIRFLOW CONTROL — NEGATIVE PRESSURIZATION

AIR TERMINAL UNIT POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY AND EXHAUST AIR TERMINAL UNITS SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

LABORATORY AIRFLOW CONTROL — POSITIVE PRESSURIZATION

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, THE SUPPLY EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY AND EXHAUST AIR TERMINAL UNITS SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

LABORATORY AIRFLOW CONTROL — LAB 118 ONLY

AIR VALVE POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE POINT EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT AND THE GENERAL EXHAUST AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, THE POINT EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE AIR FLOW SETPOINT AND THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY, POINT EXHAUST AND GENERAL EXHAUST AIR TERMINAL UNITS SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

HYDRONIC CASSETTE START/STOP

THE HYDRONIC CASSETTE FAN SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL (WITHOUT HYDRONIC CASSETTE)

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE REHEAT COIL CONTROL VALVE SHALL CLOSE.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE REHEAT COIL CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE REHEAT COIL CONTROL VALVE AT 100% OPEN, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE REHEAT COIL CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE REHEAT COIL CONTROL VALVE AT 100% OPEN, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

FOR ZONES WITHOUT REHEAT COILS, THE SEQUENCES ABOVE SHALL APPLY WITHOUT REHEAT COIL CONTROL.

ZONE TEMPERATURE CONTROL (WITH HYDRONIC CASSETTE)

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE HYDRONIC CASSETTE (HC) FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE REHEAT COIL CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE REHEAT COIL CONTROL VALVE AT 100% OPEN, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

FOR ZONES WITHOUT REHEAT COILS, THE SEQUENCES ABOVE SHALL APPLY WITHOUT REHEAT COIL CONTROL.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5

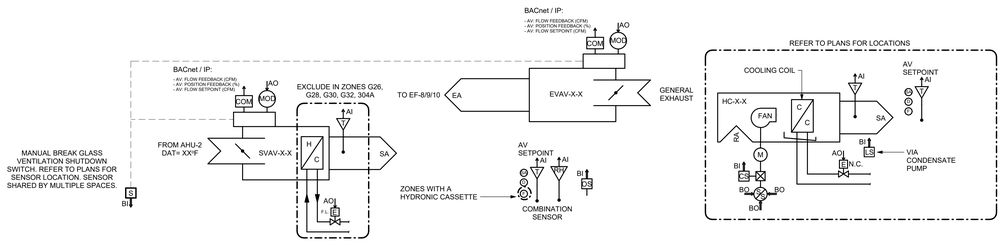
LAB AIRFLOW SCHEDULE - POSITIVE PRESSURIZATION

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	ROOM DIMENSIONS HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	NYS OUTDOOR AIRFLOW (ACH)	NYS EXHAUST AIRFLOW (CFM)	NYS EXHAUST AIRFLOW (ACH)	EXHAUST AIR: EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	VALVE RANGE MIN (CFM)	OCC (NOTE 3) (CFM)	OCC (NOTE 4) (CFM)	UNOCC (NOTE 3) (CFM)	UNOCC (NOTE 4) (CFM)	SUPPLY AIR: SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	VALVE RANGE MIN (CFM)	OCCUPIED (NOTE 3) (CFM)	OCCUPIED (NOTE 3) (CFM)	OCCUPIED (NOTE 4) (CFM)	OCCUPIED (NOTE 4) (CFM)	UNOCCUPIED (NOTE 3) (CFM)	UNOCCUPIED (NOTE 3) (CFM)	UNOCCUPIED (NOTE 4) (CFM)	UNOCCUPIED (NOTE 4) (ACH)	XFER ALL MODES (CFM)
TISSUE CULTURE 113C	AC/HR	155	8.8	158	7.0	155	6.9	EVAV-1-10	5	360	36	55	50	0	0	SVAV-1-18	5	360	36	135	6.0	250	11.1	80	3.5	200	8.8	50
								PVAV-1-1		(NOTE 5)		30	150	30	150													
								TOTAL				85	200	30	150													
CULTURE 202B	AC/HR	165	9.0	160	6.5	165	6.7	EVAV-2-14	4	230	23	70	50	0	0	SVAV-2-22	5	360	36	150	6.1	250	10.1	80	3.2	200	8.1	50
								PAV-2-2		(NOTE 5)		30	150	30	150													
								TOTAL				100	200	30	150													
CULTURE 219F	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-2-11	5	360	36	60	50	0	0	SVAV-2-19	5	360	36	140	6.0	250	10.8	80	3.4	200	8.6	50
								PVAV-2-1		(NOTE 5)		30	150	30	150													
								TOTAL				90	200	30	150													
CULTURE 302B	AC/HR	175	8.0	162	6.9	175	7.5	EVAV-3-15	5	360	36	60	50	0	0	SVAV-3-23	5	360	36	140	6.0	250	10.7	80	3.4	200	8.6	50
								PAV-3-2		(NOTE 5)		30	150	30	150													
								TOTAL				90	200	30	150													
TISSUE CULTURE 319F	AC/HR	155	9.0	158	6.8	155	6.7	EVAV-3-13	5	360	36	60	50	0	0	SVAV-3-21	5	360	36	140	6.0	250	10.8	80	3.4	200	8.6	50
								PVAV-3-1		(NOTE 5)		30	150	30	150													
								TOTAL				90	200	30	150													
CULTURE 402D	AC/HR	180	8.0	162	6.8	180	7.5	EVAV-4-7	5	360	36	65	50	0	0	SVAV-4-16	5	360	36	145	6.0	250	10.4	80	3.3	200	8.3	50
								PAV-4-1		(NOTE 5)		30	150	30	150													
								TOTAL				95	200	30	150													
PCR/ CLEANROOM 402B	AC/HR	150	8.0	157	7.9	150	7.5	EVAV-4-8	4	230	23	40	50	0	0	SVAV-4-17	5	360	36	120	6.0	250	12.5	80	4.0	200	10.0	50
								PAV-4-1		(NOTE 5)		30	150	30	150													
								TOTAL				70	200	30	150													

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CURRENT POINT OF USE CONNECTIONS.
4. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR FUTURE POINT OF USE CONNECTIONS.
5. REFER TO POINT EXHAUST AIRFLOW SCHEDULE FOR VALVE INFORMATION. VALVE IS SHARED FOR MULTIPLE SPACES.

1 TYPICAL POINT EXHAUST, GENERAL EXHAUST AND SUPPLY AIR TERMINAL UNITS LAB AIRFLOW SCHEDULE CONTINUED

NOT TO SCALE



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS BI	BO	AI	AO	SOFTWARE POINTS AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION	SHOWN ON GRAPHIC	NOTES
STEAM LOAD SHED						X (6)							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						X (4)							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
GENERAL EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
GENERAL EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
REHEAT COIL LEAVING AIR TEMPERATURE / SETPOINT (°F)			X		X			X				X	EXCLUDE IN ZONES G26, G28, G30, G32, 304A
REHEAT COIL VALVE COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	EXCLUDE IN ZONES G26, G28, G30, G32, 304A
HYDRONIC CASSETTE MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
HYDRONIC CASSETTE MOTOR SPEED - LOW		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - MEDIUM		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - HIGH		X						X				X	
HC COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HYDRONIC CASSETTE DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
HYDRONIC CASSETTE CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
BREAKGLASS VENTILATION STOP	X							X	X	X		X	REFER TO PLANS FOR SENSOR LOCATION
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS AREA (SF)	ROOM DIMENSIONS HEIGHT (FT)	CODE MINIMUM VENTILATION NYS OUTDOOR AIRFLOW (CFM)	NYS OUTDOOR AIRFLOW (ACH)	NYS EXHAUST AIRFLOW (CFM)	NYS EXHAUST AIRFLOW (ACH)	EXHAUST AIR: EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	VALVE RANGE MIN (CFM)	OCCUPIED (CFM)	OCCUPIED (ACH)	UNOCCUPIED (CFM)	UNOCCUPIED (ACH)	SUPPLY AIR: SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE MAX (CFM)	VALVE RANGE MIN (CFM)	OCC (CFM)	UNOCC (CFM)	XFER ALL MODES (CFM)
MESSY SOIL GRINDING ROOM G01	AC/HR	169	8.0	50	2.2	169	7.5	EVAV-G-26	5	360	36	135	6.0	80	3.6	SVAV-G-19	5	360	36	85	30	-50
MESSY PLANT GRINDING ROOM G03	AC/HR	169	8.0	50	2.2	169	7.5	EVAV-G-25	5	360	36	135	6.0	80	3.6	SVAV-G-29	5	360	36	85	30	-50
FIELD WORK ROOM G04	AC/HR	275	8.0	70	1.9	275	7.5	EVAV-G-22	6	515	52	220	6.0	130	3.5	SVAV-G-26	6	515	52	120	30	-100
CLEAN PLANT AND SOIL GRINDING ROOM G05	AC/HR	169	8.0	50	2.2	169	7.5	EVAV-G-24	5	360	36	135	6.0	80	3.6	SVAV-G-28	5	360	36	85	30	-50
MICROSCOPY G17	AC/HR	150	8.0	47	2.4	150	7.5	EVAV-G-19	5	360	36	120	6.0	80	4.0	SVAV-G-23	4	230	23	70	30	-50
FREEZER FARM G26	AC/HR	225	8.0	61	2.0	225	7.5	EVAV-G-17	6	515	52	180	6.0	90	3.0	SVAV-G-21	6	515	52	130	40	-50
FREEZER FARM G32	AC/HR	225	8.0	61	2.0	225	7.5	EVAV-G-14	6	515	52	180	6.0	90	3.0	SVAV-G-18	6	515	52	130	40	-50
SUPPORT G34	AC/HR	187	8.0	54	2.2	187	7.5	EVAV-G-13	5	360	36	150	6.0	80	3.2	SVAV-G-17	5	360	36	100	30	-50
FLEX LAB SUPPORT G36	AC/HR	187	8.0	54	2.2	187	7.5	EVAV-G-12	5	360	36	150	6.0	80	3.2	SVAV-G-16	5	360	36	100	30	-50
FLEX LAB SUPPORT G38	AC/HR	187	8.0	54	2.2	187	7.5	EVAV-G-11	5	360	36	150	6.0	80	3.2	SVAV-G-15	5	360	36	100	30	-50
LAB SUPPORT GENERAL EQUIPMENT G40	AC/HR	187	8.0	54	2.2	187	7.5	EVAV-G-10	5	360	36	150	6.0	80	3.2	SVAV-G-14	5	360	36	100	30	-50
DRY TEACHING LAB 104	AC/HR	1362	9.0	265	1.3	1362	6.7	EVAV-1-13	14	2800	281	1220	6.0	610	3.0	SVAV-1-21	14	2800	281	1120	510	-100
MICROSCOPY 113B	AC/HR	150	9.0	47	2.1	150	6.7	EVAV-1-9	5	360	36	135	6.0	80	3.6	SVAV-1-17	5	360	36	85	30	-50
MICROSCOPY 219B	AC/HR	155	9.0	48	2.1	155	6.7	EVAV-2-7	5	360	36	140	6.0	80	3.4	SVAV-2-15	5	360	36	90	30	-50
FLEX LAB SUPPORT 228	AC/HR	211	9.0	58	1.8	211	6.7	EVAV-2-6	6	515	52	190	6.0	100	3.2	SVAV-2-14	5	360	36	90	0	-100
FLEX LAB SUPPORT 326	AC/HR	247	9.0	64	1.7	247	6.7	EVAV-3-8	6	515	52	225	6.1	150	4.0	SVAV-3-16	6	515	52	125	50	-100
MICROSCOPY 319CA/C	AC/HR	155	9.0	48	2.1	155	6.7	EVAV-3-10	5	360	36	140	6.0	80	3.4	SVAV-3-18	5	360	36	90	30	-50
DIRTY/REGULATED FLEX 302E/EA	AC/HR	175	8.0	52	2.2	175	7.5	EVAV-3-14	5	360	36	140	6.0	80	3.4	SVAV-3-22	5	360	36	90	30	-50
MICROSCOPY 402A	AC/HR	145	9.0	46	2.1	145	6.7	EVAV-4-9	5	360	36	130	6.0	80	3.7	SVAV-4-18	5	360	36	80	30	-50

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.

2 TYPICAL GENERAL EXHAUST AND SUPPLY AIR TERMINAL UNIT CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

GENERAL EXHAUST AIR TERMINAL UNIT (EVAV)
SUPPLY AIR TERMINAL UNIT (SVAV)
HYDRONIC CASSETTE (HC)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

SPACE COOLING TEMPERATURE SETPOINTS:

OCCUPIED: 75°F ± 1.5°F
UNOCCUPIED SETBACK: 75°F + 3.0°F
UNOCCUPIED: 75°F + 6.0°F

SPACE HEATING TEMPERATURE SETPOINTS:

OCCUPIED: 70°F ± 1.5°F
UNOCCUPIED SETBACK: 70°F - 3.0°F
UNOCCUPIED: 70°F - 6.0°F

MINIMUM LABORATORY OCCUPANCY INDEX TIME: 30 MINUTES

ZONE OCCUPANCY SCHEDULE: 6 AM TO 6 PM, MON-FRI

TOTAL EXHAUST AIR CHANGE RATE (ACH):
REFER TO LAB AIRFLOW SCHEDULE
ACH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

TOTAL SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
GENERAL EXHAUST AIRFLOW RATE + OFFSET

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

LABORATORY AIRFLOW CONTROL

AIR TERMINAL UNIT POSITIONS SHALL BE BASED ON MODE. UNDER NORMAL CONTROL, ROOM OCCUPANCY SHALL BE DETERMINED VIA ROOM OCCUPANCY SENSORS.

WHEN THE ROOM IS OCCUPIED, THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

WHEN THE ROOM IS UNOCCUPIED, THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE UNOCCUPIED AIR CHANGE RATE. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

REGARDLESS OF THE OCCUPANCY MODE, ALL THE SUPPLY AND EXHAUST AIR TERMINAL UNITS SHALL COMMAND CLOSED UPON ACTIVATION OF THE MANUAL VENTILATION SHUTDOWN SWITCH.

HYDRONIC CASSETTE START/STOP

THE HYDRONIC CASSETTE FAN SHALL BE ENERGIZED BASED ON SPACE TEMPERATURE EXCEEDING OR FALLING BELOW THE SPACE TEMPERATURE SETPOINT AS SENSED BY THE SPACE TEMPERATURE SENSOR.

ZONE TEMPERATURE CONTROL (WITHOUT HYDRONIC CASSETTE)

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE REHEAT COIL CONTROL VALVE SHALL CLOSE.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE REHEAT COIL CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE REHEAT COIL CONTROL VALVE AT 100% OPEN, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

FOR ZONES WITHOUT REHEAT COILS, THE SEQUENCES ABOVE SHALL APPLY WITHOUT REHEAT COIL CONTROL.

ZONE TEMPERATURE CONTROL (WITH HYDRONIC CASSETTE)

TEMPERATURE SETPOINTS SHALL BE DETERMINED BASED ON A COMBINATION OF PROGRAMMED SCHEDULE AND SPACE OCCUPANCY SENSORS.

OCCUPIED HEATING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. WHEN THE SPACE TEMPERATURE IS AT SETPOINT, THE REHEAT COIL CONTROL VALVES SHALL BE CLOSED.

OCCUPIED COOLING: IF THE SPACE IS OCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD AND THE ZONE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING TEMPERATURE SETPOINT, THE HYDRONIC CASSETTE (HC) FAN SHALL INDEX TO MINIMUM POSITION AND THE COOLING COIL VALVE SHALL FIRST MODULATE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. IF THE HC CANNOT MAINTAIN SPACE TEMPERATURE SET POINT WITH THE COOLING COIL CONTROL VALVE AT 100% OPEN, THE HC FAN SPEED SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM POSITIONS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REHEAT COIL CONTROL VALVE SHALL BE CLOSED.

OCCUPIED SETBACK: IF THE SPACE BECOMES UNOCCUPIED DURING THE SCHEDULED OCCUPIED PERIOD, THE ABOVE OCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE OCCUPIED SETBACK TEMPERATURE SETPOINT.

UNOCCUPIED HEATING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT, THE REHEAT CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. IF THE REHEAT COIL CANNOT MAINTAIN SPACE TEMPERATURE SETPOINT WITH THE REHEAT COIL CONTROL VALVE AT 100% OPEN, THE GENERAL EXHAUST AIR VALVE SHALL MODULATE BETWEEN THE UNOCCUPIED AND OCCUPIED AIRFLOW SETPOINTS AS NEEDED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE SUPPLY AIR VALVE SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

UNOCCUPIED COOLING: IF THE SPACE IS UNOCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD AND THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, THE ABOVE OCCUPIED SETBACK SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED COOLING TEMPERATURE SETPOINT AND THE REHEAT COIL AND FAN COIL HEATING COIL CONTROL VALVE SHALL CLOSE.

IF THE ZONE BECOMES OCCUPIED DURING THE SCHEDULED UNOCCUPIED PERIOD, THE OCCUPIED HEATING/COOLING SEQUENCES SHALL APPLY FOR THE DURATION OF OCCUPANCY. THE ZONE SHALL BE MAINTAINED AT THE OCCUPIED TEMPERATURE SETPOINTS. WHEN THE ZONES BECOMES UNOCCUPIED AGAIN DURING THE SCHEDULED UNOCCUPIED PERIOD, THE ZONE SHALL INDEX BACK TO UNOCCUPIED MODE.

VACANT MODE: THE ABOVE UNOCCUPIED HEATING/COOLING SEQUENCE SHALL APPLY, BUT THE SPACE SHALL BE MAINTAINED AT THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT.

FOR ZONES WITHOUT REHEAT COILS, THE SEQUENCES ABOVE SHALL APPLY WITHOUT REHEAT COIL CONTROL.

SAFETIES

IF THE CONDENSATE OVERFLOW SWITCH IS TRIGGERED, THE CHILLED WATER CONTROL VALVE SHALL CLOSE AND THE FAN SHALL BE INDEXED OFF.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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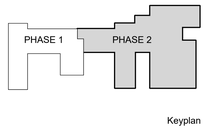
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number	31909.00
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Filename	
Date	August 31, 2026

Revisions

LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

STATE OF NEW YORK · DANIEL J. WALKER · LICENSED PROFESSIONAL ENGINEER · 094525

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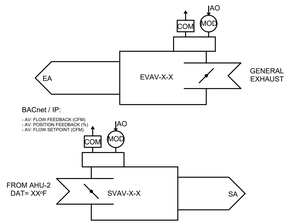


POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOWN ON GRAPHIC	NOTES
								ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION		
STEAM LOAD SHED						**X (6)**							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						**X (4)**							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
GENERAL EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
GENERAL EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT

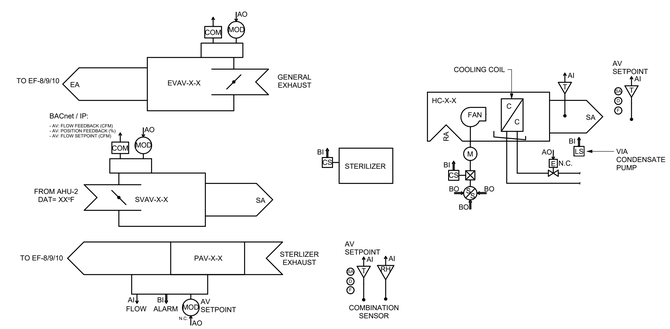
LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS		CODE MINIMUM VENTILATION				EXHAUST AIR						SUPPLY AIR						XFER
		AREA	HEIGHT	NYS OUTDOOR AIRFLOW		NYS EXHAUST AIRFLOW		EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE		OCCUPIED		SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE		OCC		ALL MODES
										MAX	MIN					MAX	MIN			
		(SF)	(FT)	(CFM)	(ACH)	(CFM)	(ACH)			(CFM)	(CFM)	(CFM)	(ACH)			(CFM)	(CFM)	(CFM)	(CFM)	(CFM)
COLD ROOM G28	AC/HR	150	8.0	47	2.4	150	7.5	EVAV-G-16	4	230	23	50	2.5	SVAV-G-20	4	230	23	50	0	
COLD ROOM G30		150	8.0	47	2.4	150	7.5					50	2.5					50	0	

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.

1 COLD ROOM G28 & G30 CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE



POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOWN ON GRAPHIC	NOTES
								ALARM				
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	DESCRIPTION		
STEAM LOAD SHED						**X (6)**							BINARY NETWORK INPUTS FROM EMCS
CHILLED WATER LOAD SHED						**X (4)**							BINARY NETWORK INPUTS FROM EMCS
TOTAL EXHAUST AIRFLOW (CFM)					X			X				X	
TOTAL EXHAUST SETPOINT (CFM)					X			X				X	
LAB AIR CHANGE RATE (ACH)					X			X				X	
FLOW OFFSET SETPOINT (CFM)					X							X	
FLOW OFFSET ACTUAL (CFM)					X							X	
GENERAL EXHAUST VAV DAMPER POSITION COMMAND (%)				X				X				X	
GENERAL EXHAUST VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
GENERAL EXHAUST VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
SUPPLY VAV DAMPER POSITION COMMAND (%)				X				X				X	
SUPPLY VAV AIRFLOW FEEDBACK (CFM)					X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	BACnet IP NETWORK POINT
SUPPLY VAV AIRFLOW SETPOINT (CFM)					X			X				X	BACnet IP NETWORK POINT
SUPPLY VAV POSITION FEEDBACK (%)					X			X	X		COMMAND DOES NOT EQUAL FEEDBACK	X	BACnet IP NETWORK POINT
POINT EXHAUST AIR VALVE FLOW FEEDBACK (CFM)			X					X				X	
POINT EXHAUST AIR VALVE ALARM	X								X		FAILURE	X	
POINT EXHAUST AIR VALVE POSITION COMMAND / SETPOINT (CFM)				X	X			X	X		10% FLOW DEVIATION FROM SETPOINT	X	
HYDRONIC CASSETTE MOTOR STATUS (ON/OFF)	X							X	X		FAILURE	X	
HYDRONIC CASSETTE MOTOR SPEED - LOW		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - MEDIUM		X						X				X	
HYDRONIC CASSETTE MOTOR SPEED - HIGH		X						X				X	
HC COOLING COIL CONTROL VALVE POSITION COMMAND (%)				X				X	X		5°F Δ ACROSS COIL WITH VALVE COMMANDED CLOSED	X	
HYDRONIC CASSETTE DISCHARGE AIR TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT / SENSOR FAILURE	X	
HYDRONIC CASSETTE CONDENSATE OVERFLOW SWITCH STATUS	X							X	X		OVERFLOW	X	
SPACE TEMPERATURE / SETPOINT (°F)			X		X			X	X		± 4°F FROM SETPOINT	X	
SPACE RELATIVE HUMIDITY (%RH)			X					X				X	MONITORING ONLY
SPACE OCCUPANCY	X						X	X				X	

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS		CODE MINIMUM VENTILATION				EXHAUST AIR								SUPPLY AIR						XFER
		AREA	HEIGHT	NYS OUTDOOR AIRFLOW		NYS EXHAUST AIRFLOW		EXHAUST POINT (NOTE 2)	VALVE SIZE	VALVE RANGE		OCCUPIED		UNOCCUPIED		SUPPLY POINT (NOTE 2)	VALVE SIZE	VALVE RANGE		OCC	UNOCC	ALL MODES
										MAX	MIN							MAX	MIN			
		(SF)	(FT)	(CFM)	(ACH)	(CFM)	(ACH)			(CFM)	(CFM)	(CFM)	(ACH)	(CFM)	(ACH)			(CFM)	(CFM)	(CFM)	(CFM)	(CFM)
AUTOCLAVE SERVICE 304A	AC/HR	65	8.0	35	4.0	65	7.5	EVAV-3-17	4	230	23	70	8.1	70	8.1	SVAV-3-25	4	230	23	70	70	0

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.

2 AUTOCLAVE SERVICE 304A CONTROL SCHEMATIC AND SYSTEM SUMMARY

NOT TO SCALE

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

GENERAL EXHAUST AIR TERMINAL UNIT (EVAV)
SUPPLY AIR TERMINAL UNIT (SVAV)

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

THE BACS SHALL BE CAPABLE OF RETAINING ITS PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST TEN HOURS.

ALL SETPOINTS SHALL BE ADJUSTABLE.

THE BACS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK.

LABORATORY AIR CHANGE RATE ARE BASED ON TOTAL EXHAUST AIRFLOW FROM THE SPACE.

THE SPACE SHALL BE CONTROLLED TO AN AIR CHANGE RATE. THE BACS SHALL CALCULATE THE REQUIRED CFM USING THE ROOM GROSS VOLUME (AREA x CEILING HEIGHT).

LOAD SHED: REFER TO LOAD SHED MATRICES FOR THE SYSTEM CONTROL REQUIREMENTS FOR RESEARCH SPACES.

SETPOINTS

TOTAL EXHAUST AIR CHANGE RATE (ACH):
REFER TO LAB AIRFLOW SCHEDULE
ACH = TOTAL EXHAUST CFM X 60 / ROOM VOLUME

TOTAL EXHAUST AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE

TOTAL SUPPLY AIRFLOW RATE (CFM):
REFER TO LAB AIRFLOW SCHEDULE
GENERAL EXHAUST AIRFLOW RATE + OFFSET

SPACE AIR DIFFERENTIAL OFFSET (CFM):
REFER TO LAB AIRFLOW SCHEDULE

LABORATORY AIRFLOW CONTROL

THE ROOM SHALL ALWAYS BE OCCUPIED. THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE OCCUPIED AIR CHANGE RATE. THE SUPPLY AIR TERMINAL UNIT SHALL MODULATE AS NEEDED TO MAINTAIN THE SPECIFIED AIRFLOW DIFFERENTIAL.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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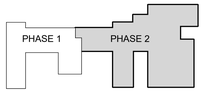

Keyplan

Job Number	31909.00
Drawing By	NMT
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Filename	
Date	August 31, 2026

Revisions

LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
REHEAT COIL VALVE COMMAND (%)												X	EXTEND EXISTING WIRING TO NEW VALVE
BREAKGLASS VENTILATION STOP	X							X	X	X		X	CONNECT TO EXISTING CONTROLLER

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS		CODE MINIMUM VENTILATION				EXHAUST AIR										SUPPLY AIR							XFER
		AREA	HEIGHT	NYS OUTDOOR AIRFLOW		NYS EXHAUST AIRFLOW		EXHAUST POINT	OCCUPIED SASH OPEN 100 FPM		OCCUPIED SASH CLOSED		UNOCCUPIED SASH FULL (NOTE 2) 100 FPM		UNOCCUPIED SASH OPEN (NOTE 3) 65 FPM		UNOCCUPIED SASH CLOSED	SUPPLY POINT	OCC SASH OPEN 100 FPM	OCC SASH CLOSED	UNOCC SASH FULL	UNOCC SASH OPEN	UNOCC SASH CLOSED		ALL MODES
		(SF)	(FT)	(CFM)	(ACH)	(CFM)	(ACH)		(CFM)	(ACH)	(CFM)	(ACH)	(CFM)	(ACH)	(CFM)	(ACH)	(CFM) (ACH)		(CFM)	(CFM)	(CFM)	(CFM)	(CFM)		(CFM)
EXISTING WET TEACHING LAB G08	AC/HR	1154	8.0	338	2.2	1154	7.5	(E)LAV-G-02	650	6.0	195	6.0	650	6.0	425	4.0	195 3.0	(E)SAV-G-01	820	820	820	515	360		-100
								(E)LAV-G-01	270		725		270		190		265								
								(E)LAV-G-06	0		0		0		0		0								
								TOTAL	920		920		920		615		460								

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
3. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.

1 EXISTING LAB CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS							SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM BACS	ALARM EMCS	ALARM DESCRIPTION		
REHEAT COIL VALVE COMMAND (%)												X	EXTEND EXISTING WIRING TO NEW VALVE
BREAKGLASS VENTILATION STOP	X							X	X	X		X	CONNECT TO EXISTING CONTROLLER

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS		CODE MINIMUM VENTILATION				EXHAUST AIR					SUPPLY AIR				XFER
		AREA	HEIGHT	NYS OUTDOOR AIRFLOW		NYS EXHAUST AIRFLOW		EXHAUST POINT	OCCUPIED		UNOCCUPIED		SUPPLY POINT	OCC	UNOCC		ALL MODES
		(SF)	(FT)	(CFM)	(ACH)	(CFM)	(ACH)		(CFM)	(ACH)	(CFM)	(ACH)		(CFM)	(CFM)		(CFM)
EXISTING SUPPORT G08B	AC/HR	88	8.0	36	3.1	88	7.5	(E)LAV-G-03	70	6.0	35	3.0	(E)SAV-G-02	70	35		0
EXISTING SUPPORT G08C	AC/HR	150	8.0	47	2.4	150	7.5	(E)LAV-G-05	120	6.0	60	3.0	(E)SAV-G-04	120	60		0
WET TEACHING LAB 102C	AC/HR	135	8.0	44	2.5	135	7.5	(E)LAV-1-04	110	6.1	75	4.2	(E)SAV-1-04	110	75		0

NOTES
1. THIS REPRESENTS A LABORATORY WHERE EXHAUST AIRFLOW IS DRIVEN BY THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.

2 EXISTING LAB CONTROL SCHEMATIC AND SYSTEM SUMMARY
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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

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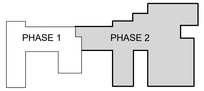

Keyplan

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Date August 31, 2026

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LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION		
REHEAT COIL VALVE COMMAND (%)												X	EXTEND EXISTING WIRING TO NEW VALVE
BREAKGLASS VENTILATION STOP	X							X	X	X		X	CONNECT TO EXISTING CONTROLLER

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS		CODE MINIMUM VENTILATION				EXHAUST AIR												SUPPLY AIR							XFER
		AREA	HEIGHT	NYS OUTDOOR AIRFLOW		NYS EXHAUST AIRFLOW		EXHAUST POINT (NOTE 2)	OCCUPIED SASH OPEN 100 FPM		OCCUPIED SASH CLOSED		UNOCCUPIED SASH FULL (NOTE 3) 100 FPM		UNOCCUPIED SASH OPEN (NOTE 4) 65 FPM		UNOCCUPIED SASH CLOSED		SUPPLY POINT (NOTE 2)	OCC SASH OPEN 100 FPM	OCC SASH CLOSED	UNOCC SASH FULL	UNOCC SASH OPEN	UNOCC SASH CLOSED	ALL MODES
		(SF)	(FT)	(CFM)	(ACH)	(CFM)	(ACH)		(CFM)	(ACH)	(CFM)	(ACH)	(CFM)	(ACH)	(CFM)	(ACH)	(CFM)	(ACH)		(CFM)	(CFM)	(CFM)	(CFM)	(CFM)	(CFM)
EXISTING WET LAB 102B	VAV	87	8.0	146	12.6	87	7.5	(E)LAV-1-02	475	40.9	145	12.5	475	40.9	310	26.7	145	12.5	(E)SAV-1-02	375	45	375	210	45	-100

NOTES
1. THIS REPRESENTS A LABORATORY WHERE THE REQUIREMENTS OF THE FUME HOODS EXCEEDS THE MINIMUM REQUIRED AIR CHANGE RATES ESTABLISHED FOR THE LABORATORY.
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL FANGE WITH ACTUAL AIRFLOW SET IN SOFTWARE.
3. UNOCCUPIED SASH FULL MODE: FUME HOOD EXHAUST AIRFLOW REPRESENTS A 100 FPM FACE VELOCITY AT 18-INCH SASH HEIGHT, SASH IS ABOVE 18-INCHES. FUME HOOD EXHAUST SHALL NOT INDEX TO UNOCCUPIED MODE.
4. UNOCCUPIED SASH OPEN MODE: FUME HOOD EXHAUST REPRESENTS AT 65 FPM FACE VELOCITY, SASH IS AT OR BELOW 18-INCHES. FUME HOOD EXHAUST SHALL INDEX TO UNOCCUPIED MODE.

1 EXISTING LAB CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

POINT SCHEDULE

CONTROL POINT NAME	HARDWARE POINTS				SOFTWARE POINTS						SHOWN ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	BACS	EMCS	ALARM DESCRIPTION		
REHEAT COIL VALVE COMMAND (%)												X	EXTEND EXISTING WIRING TO NEW VALVE
BREAKGLASS VENTILATION STOP	X							X	X	X		X	CONNECT TO EXISTING CONTROLLER

LAB AIRFLOW SCHEDULE

ROOM NUMBER	DESCRIPTION (NOTE 1)	ROOM DIMENSIONS		CODE MINIMUM VENTILATION				EXHAUST AIR												SUPPLY AIR							XFER
		AREA	HEIGHT	NYS OUTDOOR AIRFLOW		NYS EXHAUST AIRFLOW		EXHAUST POINT	OCCUPIED (NOTE 2)		OCCUPIED (NOTE 3)		UNOCCUPIED (NOTE 2)		UNOCCUPIED (NOTE 3)		SUPPLY POINT	OCC (NOTE 3)	OCC (NOTE 4)	UNOCC (NOTE 3)	UNOCC (NOTE 4)	ALL MODES
		(SF)	(FT)	(CFM)	(ACH)	(CFM)	(ACH)		(CFM)	(ACH)	(CFM)	(ACH)	(CFM)	(ACH)	(CFM)	(ACH)		(CFM)	(CFM)	(CFM)	(CFM)	(CFM)
EXISTING SUPPORT G08A	AC/HR	187	8.0	164	6.6	187	7.5	(E)LAV-G-04	150		50		100		0									
								(E)LAV-G-06	0	6.0	100	6.0	0	4.0	100	4.0	(E)SAV-G-03	50	50	0	0	-100
								TOTAL	150		150		100		100							
EXISTING WET LAB 102A	AC/HR	187	8.0	164	6.6	187	7.5	(E)LAV-1-03	150		50		100		0									
								(E)LAV-1-05	0	6.0	100	6.0	0	4.0	100	4.0	(E)SAV-1-03	100	100	50	50	-50
								TOTAL	150		150		100		100							
EXISTING WET TEACHING LAB 102	AC/HR	1157	8.0	338	2.2	1157	7.5	(E)LAV-1-01	920		820		460		360							
								(E)LAV-1-05	0	6.0	100	6.0	0	3.0	100	3.0	(E)SAV-1-01	820	820	360	360	-100
								TOTAL	920		920		460		460							

NOTES
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2. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR CURRENT POINT OF USE CONNECTIONS.
3. POINT EXHAUST AIR VALVE AT MAXIMUM FLOW FOR FUTURE POINT OF USE CONNECTIONS.

2 EXISTING LAB CONTROL SCHEMATIC AND SYSTEM SUMMARY
NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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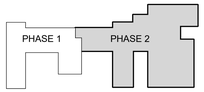

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LAB CONTROL SCHEMATICS & SYSTEM SUMMARIES - PHASE 2

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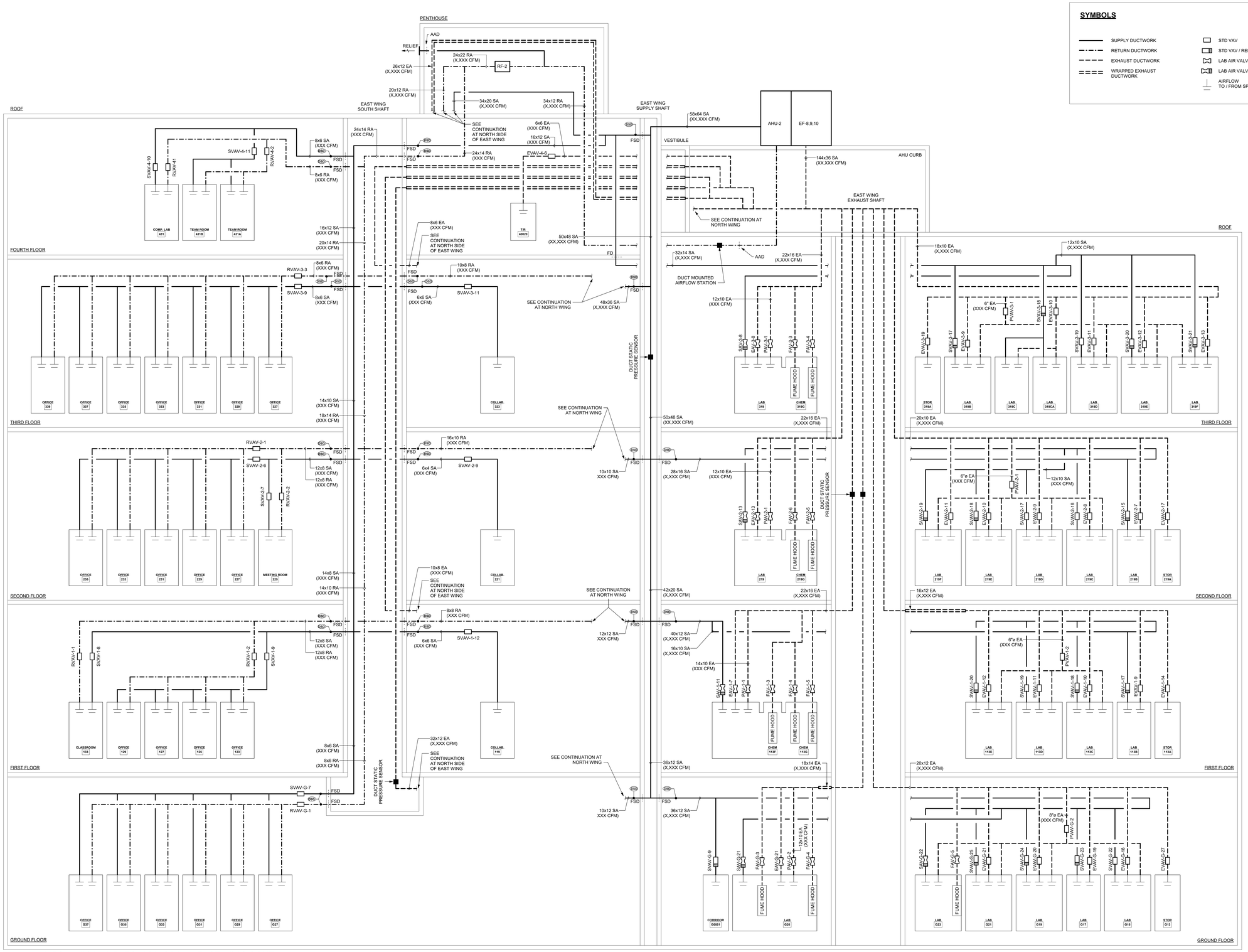

1 MECHANICAL AIRFLOW DIAGRAM - EAST WING SOUTH

NOT TO SCALE

SYMBOLS

- SUPPLY DUCTWORK
- RETURN DUCTWORK
- EXHAUST DUCTWORK
- WRAPPED EXHAUST DUCTWORK
- STD VAV
- STD VAV / REHEAT
- LAB AIR VALVE
- LAB AIR VALVE / REHEAT
- AIRFLOW TO / FROM SPACE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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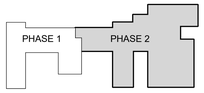

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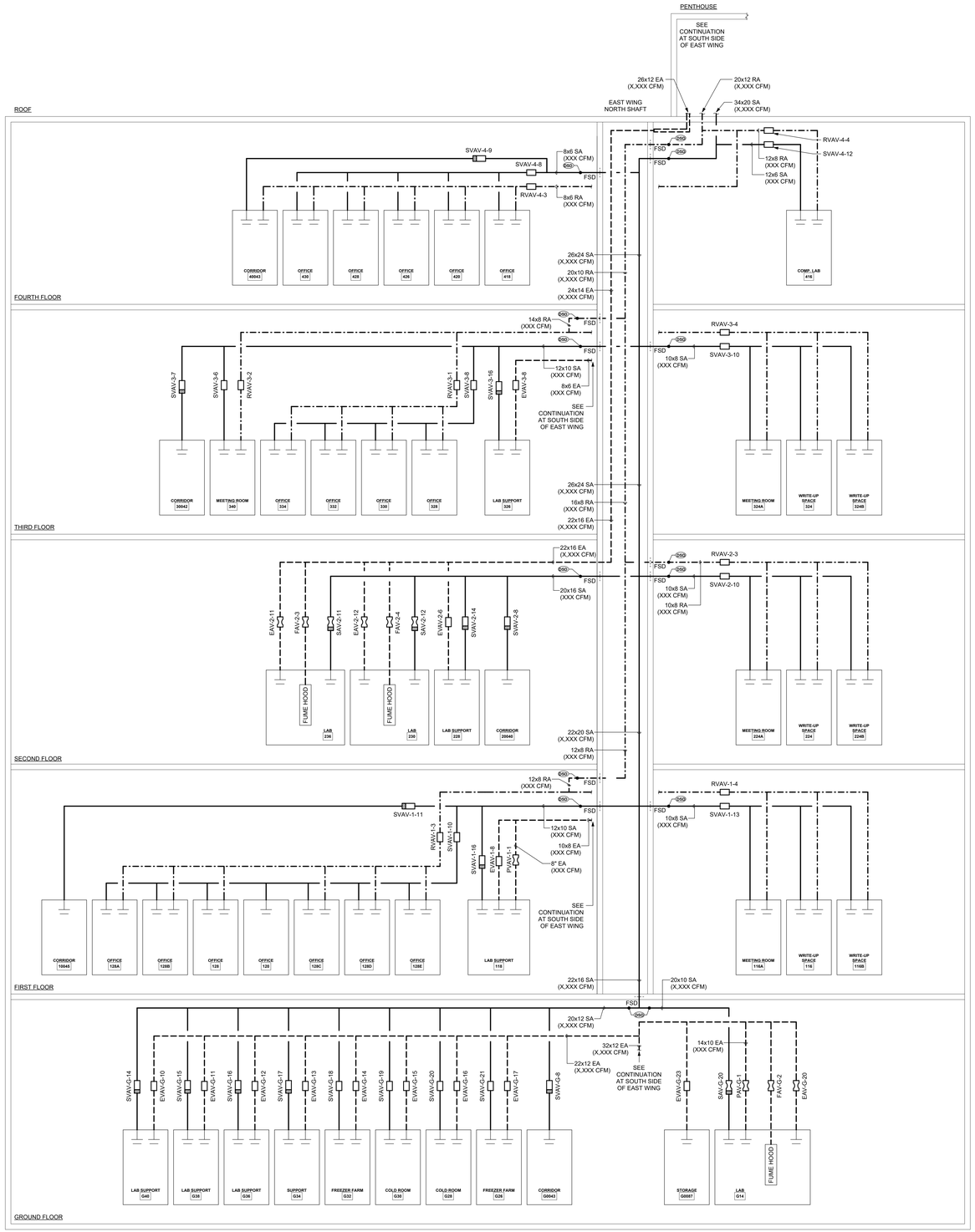

1 MECHANICAL AIRLFOW DIAGRAM - EAST WING NORTH
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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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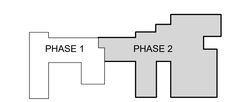

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MECHANICAL AIRFLOW DIAGRAM - EAST WING NORTH - PHASE 2

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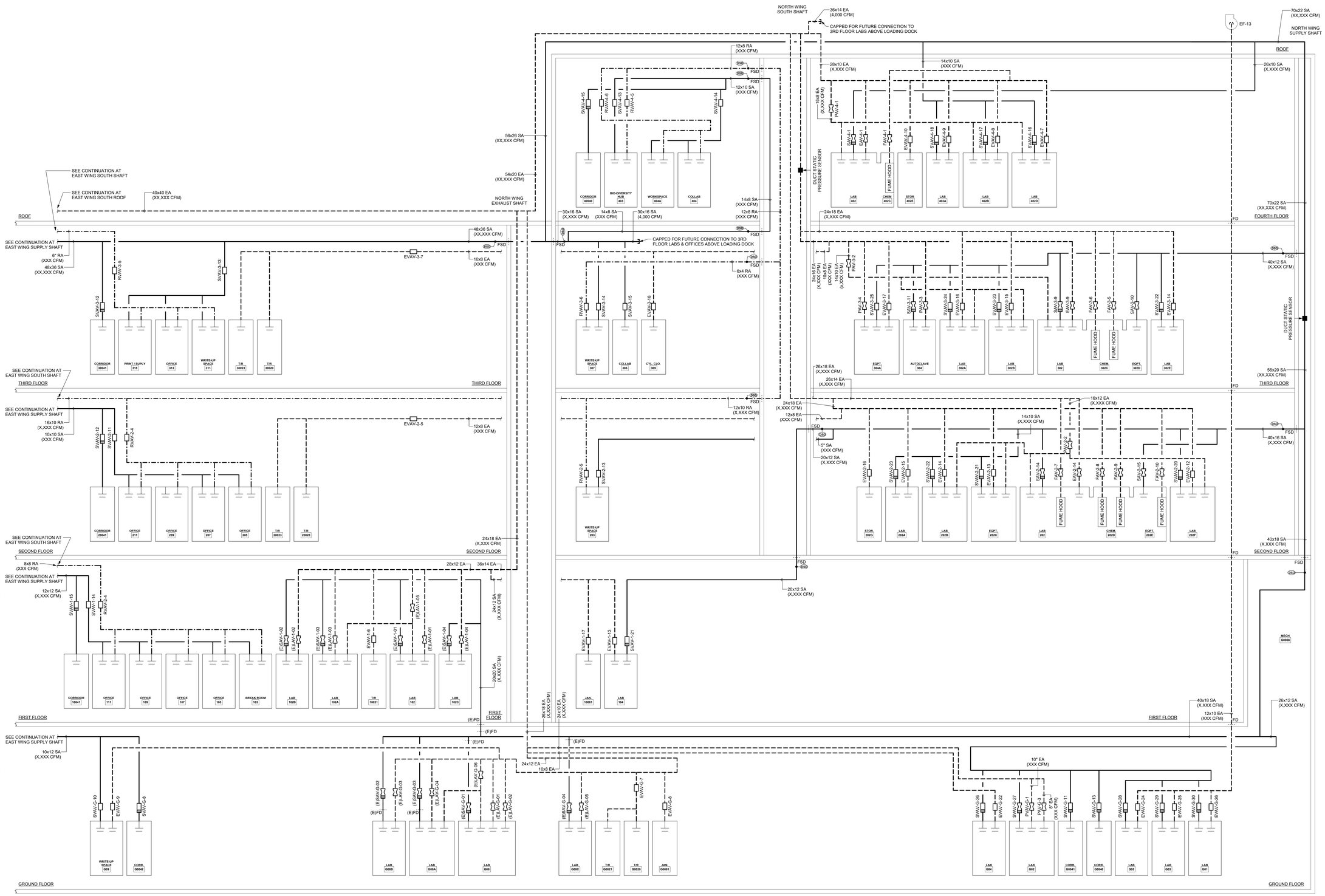

1 MECHANICAL AIRLFOW DIAGRAM - NORTH WING
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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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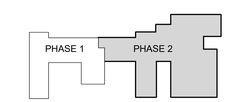

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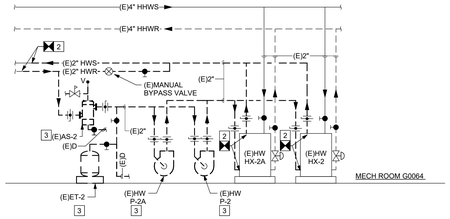


MECHANICAL PERIMETER HOT WATER FLOW DEMOLITION DIAGRAM

2 NOT TO SCALE

X DEMOLITION NOTES:

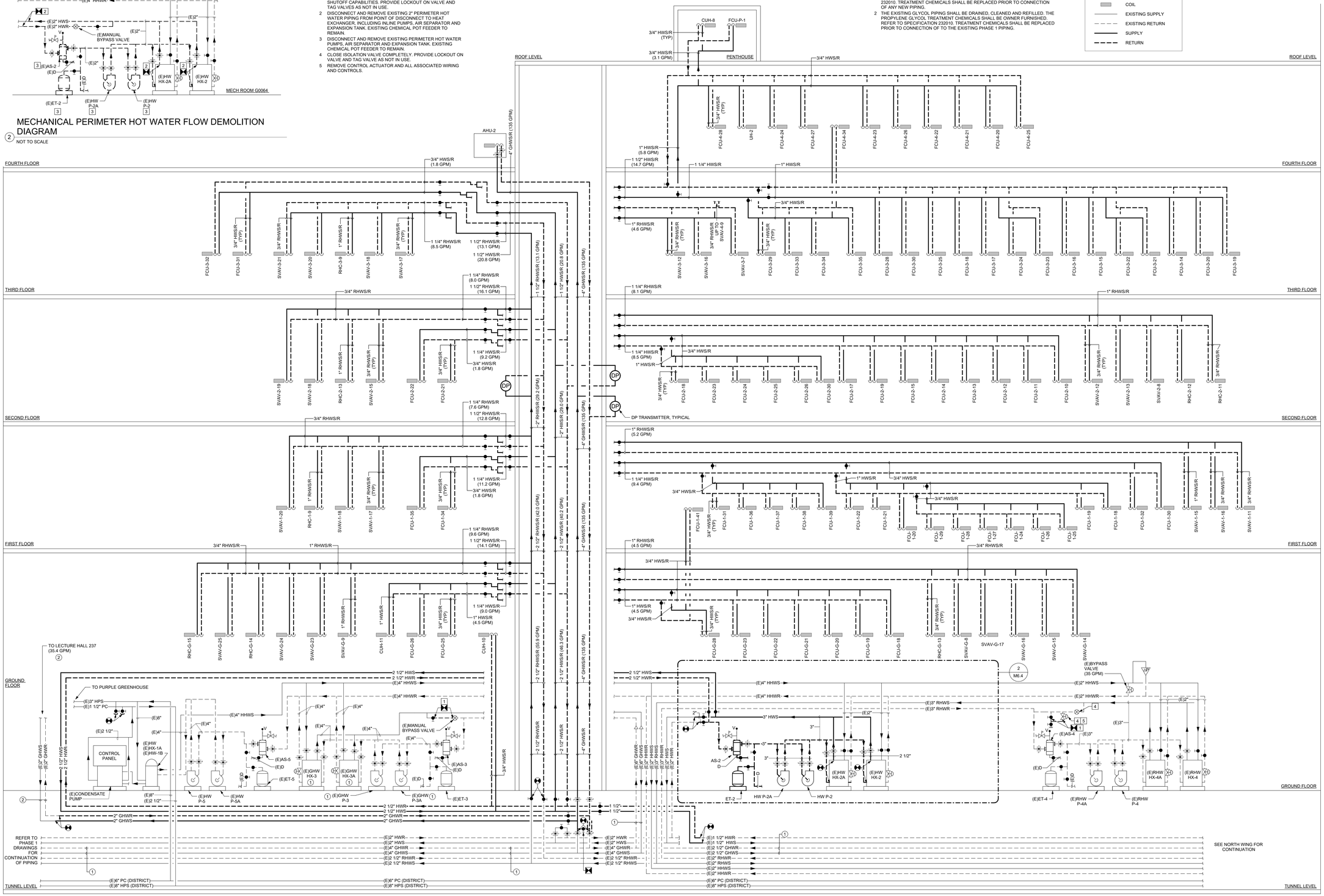
1. DISCONNECT AND REMOVE THE EXISTING BYPASS PIPING. CAP THE VALVES WATER TIGHT. THE BALANCE VALVE HAS FULL SHUTOFF CAPABILITIES. PROVIDE LOCKOUT ON VALVE AND TAG VALVES AS NOT IN USE.
2. DISCONNECT AND REMOVE EXISTING 2" PERIMETER HOT WATER PIPING FROM POINT OF DISCONNECT TO HEAT EXCHANGER, INCLUDING INLINE PUMPS, AIR SEPARATOR AND EXPANSION TANK. EXISTING CHEMICAL POT FEEDER TO REMAIN.
3. DISCONNECT AND REMOVE EXISTING PERIMETER HOT WATER PUMPS, AIR SEPARATOR AND EXPANSION TANK. EXISTING CHEMICAL POT FEEDER TO REMAIN.
4. CLOSE ISOLATION VALVE COMPLETELY. PROVIDE LOCKOUT ON VALVE AND TAG VALVE AS NOT IN USE.
5. REMOVE CONTROL ACTUATOR AND ALL ASSOCIATED WIRING AND CONTROLS.

X DRAWING NOTES:

1. THE EXISTING PHASE 1 GLYCOL PIPING SHALL BE DRAINED AND REFILLED WITH THE OWNER FURNISHED. TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF ANY NEW PIPING.
2. THE EXISTING GLYCOL PIPING SHALL BE DRAINED, CLEANED AND REFILLED. THE PROPYLENE GLYCOL TREATMENT CHEMICALS SHALL BE OWNER FURNISHED. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.

SYMBOLS

- COIL
- EXISTING SUPPLY
- EXISTING RETURN
- SUPPLY
- RETURN



MECHANICAL HOT WATER FLOW DIAGRAM - EAST WING

1 NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

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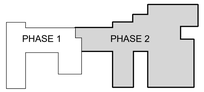

Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL HOT WATER FLOW DIAGRAM - EAST WING - PHASE 2

STATE OF NEW YORK · LUKE GARRETT DANIEL BAKER · 094525 · LICENSED PROFESSIONAL ENGINEER

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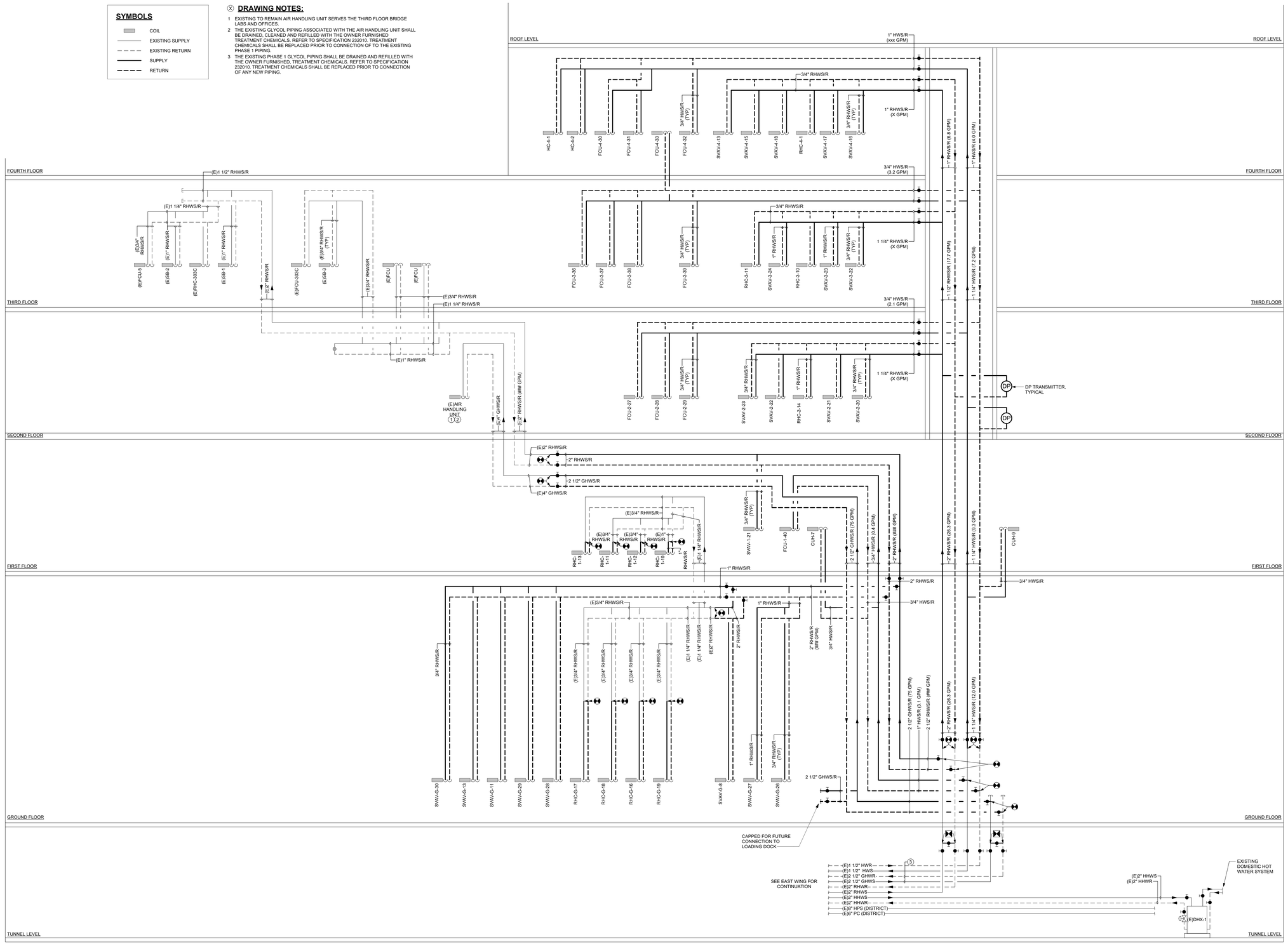
SYMBOLS

- COIL
- EXISTING SUPPLY
- EXISTING RETURN
- SUPPLY
- RETURN

ⓧ DRAWING NOTES:

1. EXISTING TO REMAIN AIR HANDLING UNIT SERVES THE THIRD FLOOR BRIDGE LABS AND OFFICES.
2. THE EXISTING GLYCOL PIPING ASSOCIATED WITH THE AIR HANDLING UNIT SHALL BE DRAINED, CLEANED AND REFILLED WITH THE OWNER FURNISHED TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF TO THE EXISTING PHASE 1 PIPING.
3. THE EXISTING PHASE 1 GLYCOL PIPING SHALL BE DRAINED AND REFILLED WITH THE OWNER FURNISHED, TREATMENT CHEMICALS. REFER TO SPECIFICATION 232010. TREATMENT CHEMICALS SHALL BE REPLACED PRIOR TO CONNECTION OF ANY NEW PIPING.



1 MECHANICAL HOT WATER FLOW DIAGRAM - NORTH WING

NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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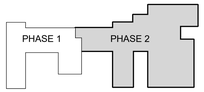

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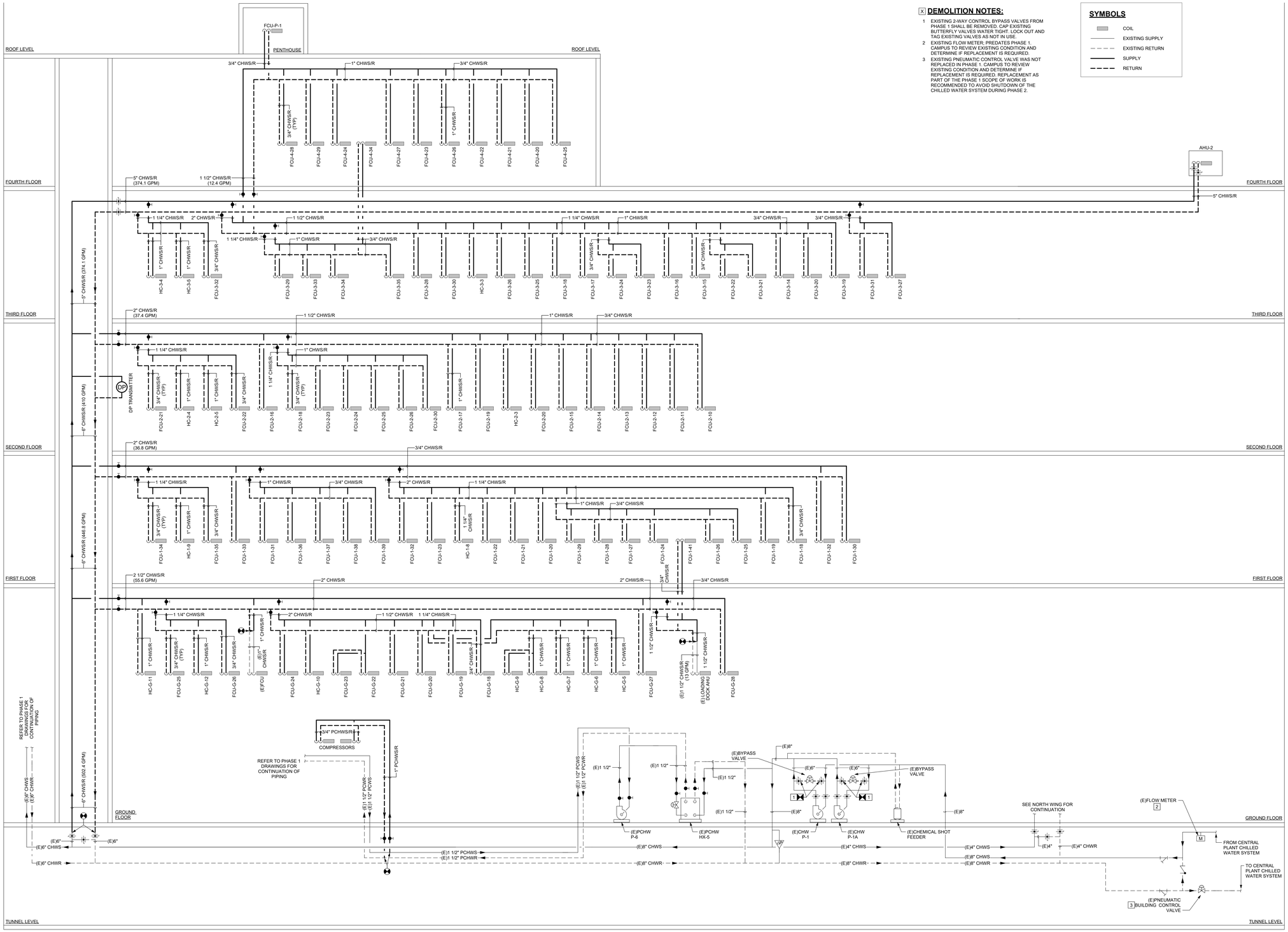

1 MECHANICAL CHILLED WATER FLOW DIAGRAM - EAST WING

NOT TO SCALE

DEMOLITION NOTES:

1. EXISTING 2-WAY CONTROL BYPASS VALVES FROM PHASE 1 SHALL BE REMOVED. CAP EXISTING BUTTERFLY VALVES WATER TIGHT. LOCK OUT AND TAG EXISTING VALVES AS NOT IN USE.
2. EXISTING FLOW METER: PREDATES PHASE 1. CAMPUS TO REVIEW EXISTING CONDITION AND DETERMINE IF REPLACEMENT IS REQUIRED.
3. EXISTING PNEUMATIC CONTROL VALVE WAS NOT REPLACED IN PHASE 1. CAMPUS TO REVIEW EXISTING CONDITION AND DETERMINE IF REPLACEMENT IS REQUIRED. REPLACEMENT AS PART OF THE PHASE 1 SCOPE OF WORK IS RECOMMENDED TO AVOID SHUTDOWN OF THE CHILLED WATER SYSTEM DURING PHASE 2.

SYMBOLS

- COIL
- EXISTING SUPPLY
- EXISTING RETURN
- SUPPLY
- RETURN

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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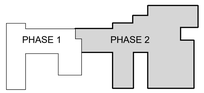

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MECHANICAL CHILLED WATER FLOW DIAGRAM - EAST WING - PHASE 2

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1 MECHANICAL CHILLED WATER FLOW DIAGRAM - NORTH WING

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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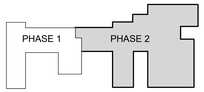

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MECHANICAL CHILLED WATER FLOW DIAGRAM - NORTH WING - PHASE 2

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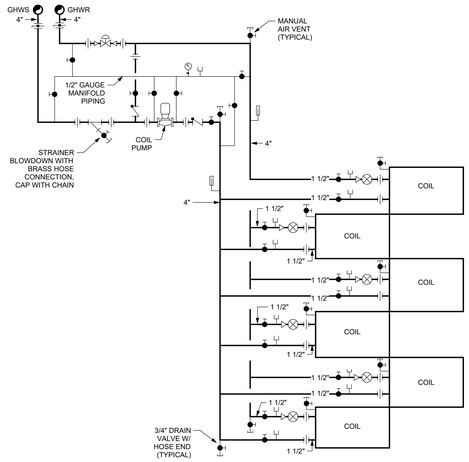


DETAIL NOTES:

A. ARRANGE PIPING TO ALLOW REMOVAL OF COIL WITHOUT REMOVAL OF PIPING AHEAD OF UNIONS AND TO ALLOW ACCESS TO FILTERSAND ACCESS PANELS.

B. PIPE COIL FOR COUNTERFLOW ARRANGEMENT. SUPPLY CONNECTION SHALL BE ON THE DISCHARGE AIR SIDE OF THE COIL.

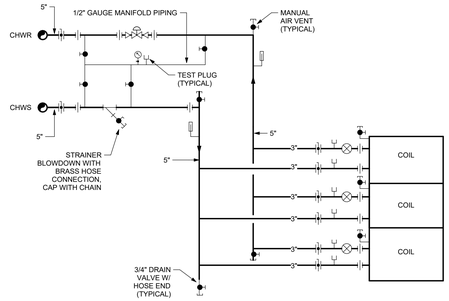
C. USE GAUGE TAPPINGS ON PUMP TO CONNECT TO THE GAUGE MANIFOLD.

D. INSTALL CHECK VALVE HORIZONTALLY, OR VERTICALLY WITH FLOW UPWARD. INSTALL STRAINER HORIZONTALLY.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

1 AHU-2 GLYCOL PREHEAT COIL PIPING DETAIL - 2 WAY WITH PUMP

NTS



DETAIL NOTES:

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B. PIPE COIL FOR COUNTERFLOW ARRANGEMENT. SUPPLY CONNECTION SHALL BE ON THE DISCHARGE AIR SIDE OF THE COIL.

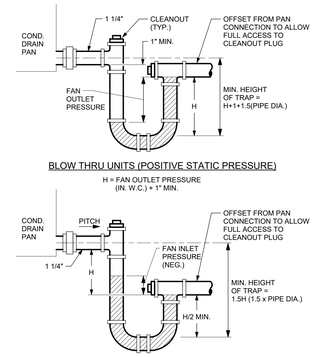
C. INSTALL STRAINER HORIZONTALLY.

D. LOCATE THE PRESSURE GAUGE AT A POINT ACCESSIBLE FROM THE FLOOR. IF THE GAUGE VALVES ARE NOT WITHIN REACH OF GAUGE LOCATION, ADD A SECOND SET OF VALVES AT THE GAUGE.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

2 AHU-2 CHILLED WATER COIL PIPING DETAIL - 2 WAY

NTS



DETAIL NOTES:

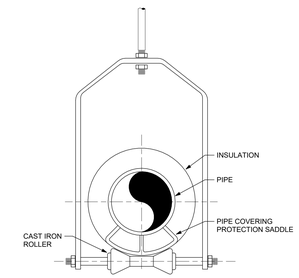
A. AHU'S TO HAVE A 6" HOUSEKEEPING PAD AND A 6" HIGH (MIN.) FACTORY BASE RAIL.

B. PROVIDE INDIVIDUAL DRAIN PAN TRAP ASSEMBLY FOR OUTSIDE AIR, COIL AND HUMIDIFIER SECTIONS. TERMINATE DRAINS AT NEAREST FLOOR DRAIN.

C. SEE SPECIFICATIONS FOR PIPE TYPE.

3 CONDENSATE DRAIN TRAP DETAIL

NTS



DETAIL NOTES:

A. GRINNELL FIGURE 181 PIPE ROLL.

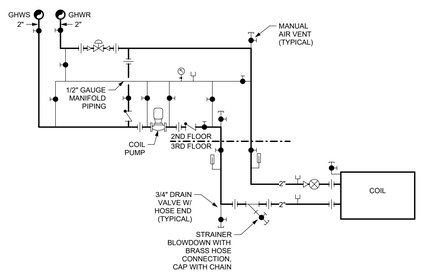
B. GRINNELL FIGURE 160 (SERIES) PROTECTION SADDLE.

C. MIN. THREADED ROD SERIES; 2" THRU 3 1/2" - 1/2" DIA., 4"&5" - 5/8" DIA., 6" & 8" - 3/4" DIA., 10" & 12" - 7/8" DIA., 14" - 1" DIA.

D. UPPER ATTACHMENTS VARY, EG. HORIZONTAL TRAVELERS, BEAM CLAMPS "C"-C-AMPS, WELD LEGS, CONSTANT SUPPORT HANGER ETC. (REFER TO DRAWING NOTES)

4 ADJUSTABLE STEEL YOKE PIPIE ROLLER

NTS



DETAIL NOTES:

A. ARRANGE PIPING TO ALLOW REMOVAL OF COIL WITHOUT REMOVAL OF PIPING AHEAD OF UNIONS AND TO ALLOW ACCESS TO FILTERS AND ACCESS PANELS.

B. PIPE COIL FOR COUNTERFLOW ARRANGEMENT. SUPPLY CONNECTION SHALL BE ON THE DISCHARGE AIR SIDE OF THE COIL.

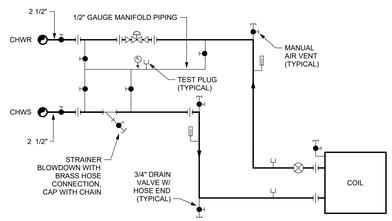
C. INSTALL STRAINER HORIZONTALLY.

D. LOCATE THE PRESSURE GAUGE AT A POINT ACCESSIBLE FROM THE FLOOR. IF THE GAUGE VALVES ARE NOT WITHIN REACH OF GAUGE LOCATION, ADD A SECOND SET OF VALVES AT THE GAUGE.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

5 AHU-3 PREHEAT COIL PIPING DETAIL - 2 WAY WITH PUMP

NTS



DETAIL NOTES:

A. ARRANGE PIPING TO ALLOW REMOVAL OF COIL WITHOUT REMOVAL OF PIPING AHEAD OF UNIONS AND TO ALLOW ACCESS TO FILTERS AND ACCESS PANELS.

B. PIPE COIL FOR COUNTERFLOW ARRANGEMENT. SUPPLY CONNECTION SHALL BE ON THE DISCHARGE AIR SIDE OF THE COIL.

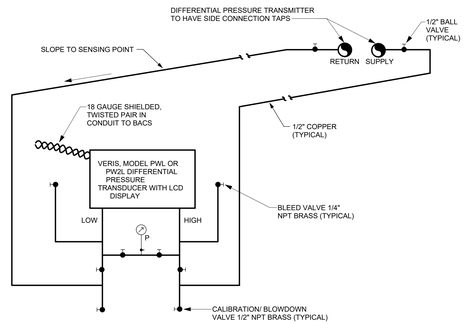
C. INSTALL STRAINER HORIZONTALLY.

D. LOCATE THE PRESSURE GAUGE AT A POINT ACCESSIBLE FROM THE FLOOR. IF THE GAUGE VALVES ARE NOT WITHIN REACH OF GAUGE LOCATION, ADD A SECOND SET OF VALVES AT THE GAUGE.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

6 AHU-3 CHILLED WATER COIL PIPING DETAIL - 2 WAY

NTS



DETAIL NOTES:

A. INSTALL SENSING POINTS IN CENTERLINE OF PIPIE IN A HORIZONTAL RUN.

B. SENSING LINES SHALL BE SLOPED DOWN ALL THE WAY TO THE TRANSMITTER.

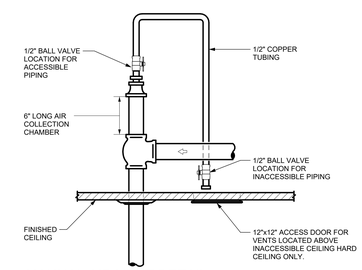
C. ONE VALVE TO PRESSURE GAUGE SHALL BE CLOSED.

D. DETAIL APPLIES TO CHILLED WATER, HOT WATER HEATING, AND GLYCOL HEATING SYSTEMS.

E. IF A 3-VALVE MANIFOLD IS USED WITH THE TRANSMITTER, THE VALVING SHOWN ON DETAIL SHALL ALSO BE PROVIDED.

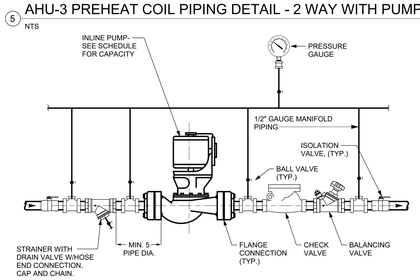
7 DIFFERENTIAL PRESSURE TRANSMITTER DETAIL

NTS



8 MANUAL AIR VENT DETAIL

NTS



DETAIL NOTES:

A. PROVIDE UNION ON PUMP INLET AND OUTLET IF PUMP IS NOT FLANGED.

B. INSTALL PUMP WITH SHAFT HORIZONTAL. PIPING MAY BE INSTALLED HORIZONTAL, AS SHOWN, OR VERTICAL DEPENDING ON SITE CONDITIONS.

C. INSTALL CHECK VALVE HORIZONTALLY, OR VERTICALLY WITH FLOW UPWARD. INSTALL STRAINER HORIZONTALLY.

D. USE GAUGE TAPPINGS ON PUMP TO CONNECT TO THE GAUGE MANIFOLD. REFER TO COIL DETAIL OR PIPING SCHEMATIC FOR EXTENTS OF GAUGE MANIFOLD.

E. OMIT BALANCING VALVE ON VARIABLE FLOW SYSTEMS.

F. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPED COIL FIT OUT KITS.

9 INLINE PUMP PIPING DETAIL

NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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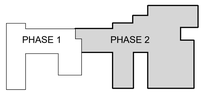

Keyplan

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Revisions

MECHANICAL DETAILS - PHASE 2

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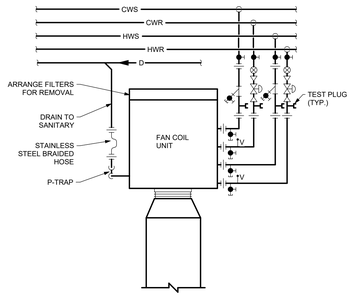


DETAIL NOTES:

A. HANG UNIT FROM STRUCTURE AS HIGH AS POSSIBLE WITH STEEL ROD AND VIBRATION ISOLATORS.

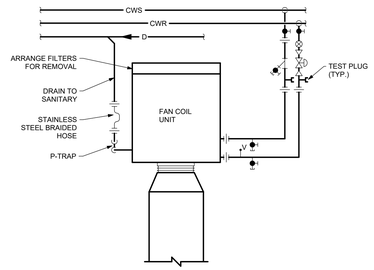
B. UNIT SHALL BE ACCESSIBLE FROM BELOW. MECHANICAL AND ELECTRICAL WORK SHALL NOT BE LOCATED BELOW UNIT. ARRANGEMENT SHALL PERMIT REMOVAL OF FAN COIL UNIT FOR MAJOR SERVICING.

C. CONTROL PANEL SHALL BE ACCESSIBLE FOR SERVICING.

D. DRAIN PIPING BY DIVISION 22.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

1 CEILING MOUNTED FAN COIL UNIT DETAIL - FOUR PIPE
NTS



DETAIL NOTES:

A. HANG UNIT FROM STRUCTURE AS HIGH AS POSSIBLE WITH STEEL ROD AND VIBRATION ISOLATORS.

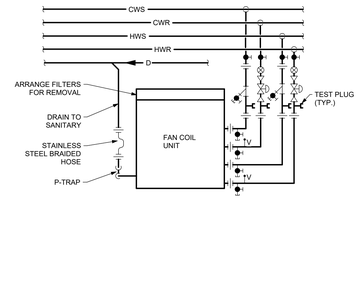
B. UNIT SHALL BE ACCESSIBLE FROM BELOW. MECHANICAL AND ELECTRICAL WORK SHALL NOT BE LOCATED BELOW UNIT. ARRANGEMENT SHALL PERMIT REMOVAL OF FAN COIL UNIT FOR MAJOR SERVICING.

C. CONTROL PANEL SHALL BE ACCESSIBLE FOR SERVICING.

D. DRAIN PIPING BY PLUMBING CONTRACTOR.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC CONTROL VALVES, COMBINATION DEVICES OR PRE-PIPED COIL FIT OUT KITS.

2 CEILING MOUNTED FAN COIL UNIT DETAIL - TWO PIPE
NTS



DETAIL NOTES:

A. HANG UNIT FROM STRUCTURE AS HIGH AS POSSIBLE WITH STEEL ROD AND VIBRATION ISOLATORS.

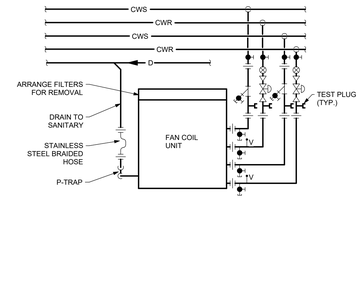
B. UNIT SHALL BE ACCESSIBLE FROM BELOW. MECHANICAL AND ELECTRICAL WORK SHALL NOT BE LOCATED BELOW UNIT. ARRANGEMENT SHALL PERMIT REMOVAL OF FAN COIL UNIT FOR MAJOR SERVICING.

C. CONTROL PANEL SHALL BE ACCESSIBLE FOR SERVICING.

D. DRAIN PIPING BY DIVISION 22.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

3 CEILING MOUNTED HYDRONIC CASSETTE UNIT DETAIL - FOUR PIPE
NTS



DETAIL NOTES:

A. HANG UNIT FROM STRUCTURE AS HIGH AS POSSIBLE WITH STEEL ROD AND VIBRATION ISOLATORS.

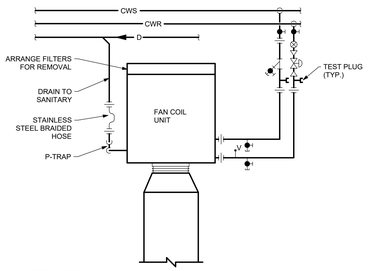
B. UNIT SHALL BE ACCESSIBLE FROM BELOW. MECHANICAL AND ELECTRICAL WORK SHALL NOT BE LOCATED BELOW UNIT. ARRANGEMENT SHALL PERMIT REMOVAL OF FAN COIL UNIT FOR MAJOR SERVICING.

C. CONTROL PANEL SHALL BE ACCESSIBLE FOR SERVICING.

D. DRAIN PIPING BY DIVISION 22.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

4 CEILING MOUNTED HYDRONIC CASSETTE UNIT DETAIL - FOUR PIPE COOLING
NTS



DETAIL NOTES:

A. HANG UNIT FROM STRUCTURE AS HIGH AS POSSIBLE WITH STEEL ROD AND VIBRATION ISOLATORS.

B. UNIT SHALL BE ACCESSIBLE FROM BELOW. MECHANICAL AND ELECTRICAL WORK SHALL NOT BE LOCATED BELOW UNIT. ARRANGEMENT SHALL PERMIT REMOVAL OF FAN COIL UNIT FOR MAJOR SERVICING.

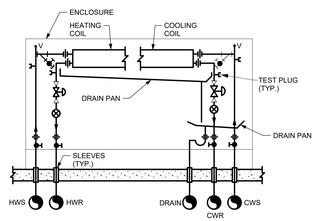
C. CONTROL PANEL SHALL BE ACCESSIBLE FOR SERVICING.

D. DRAIN PIPING BY DIVISION 22.

E. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPIED COIL FIT OUT KITS.

F. PROVIDE FLEX CONNECT AT INLET AND OUTLET DUCTWORK CONNECTIONS.

5 CEILING MOUNTED FAN COIL UNIT DETAIL - TWO PIPE
NTS



DETAIL NOTES:

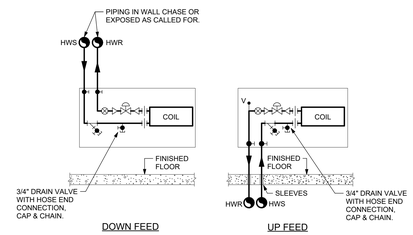
A. ARRANGE PIPING TO ALLOW INSTALLATION OF PIPE INSULATION. PIPES ARE NOT TO COME IN CONTACT WITH EACH OTHER OR CABINET.

B. DRAIN PIPING BY DIVISION 22.

C. PROVIDE 3-WAY VALVES WHERE SHOWN ON PLANS - PIPE ACCORDING TO CONTROL VALVE SUPPLIER.

D. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE-PIPED FIT OUT KITS.

6 CONSOLE FAN COIL UNIT PIPING DETAIL - FOUR PIPE
NTS

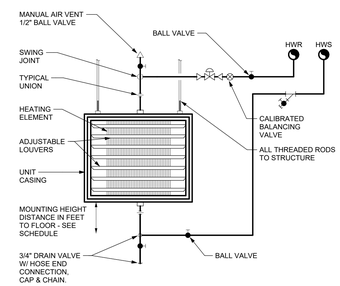


DETAIL NOTES:

A. PIPING FOR CEILING MOUNTED UNITS IS SIMILAR.

B. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE-PIPED FIT OUT KITS.

7 CABINET UNIT HEATER PIPNG DETAIL - HOT WATER
NTS

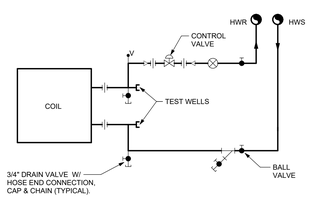


DETAIL NOTES:

A. SUPPORT HOT WATER SUPPLY AND RETURN PIPING INDEPENDENT OF UNIT HEATER.

B. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC CONTROL VALVES, COMBINATION DEVICES OR PRE-PIPED COIL FIT OUT KITS.

8 HORIZONTAL UNIT HEATER PIPING DETAIL - HOT WATER
NTS



DETAIL NOTES:

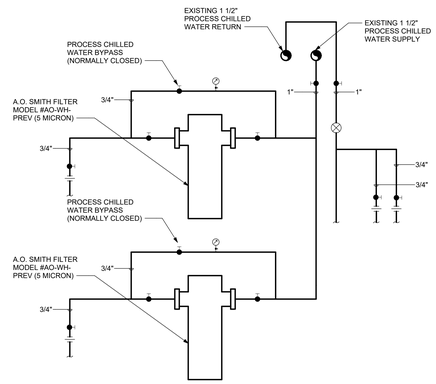
A. ARRANGE PIPING FOR REMOVAL OF COIL WITHOUT DISTURBING PIPING AHEAD OF UNIONS.

B. PROVIDE DUCT ACCESS DOOR UPSTREAM OF COIL.

C. PIPE COIL FOR COUNTERFLOW AEEANGEMENT IF COIL IS MORE THEN ONE ROW. HOT WATER SUPPLY CONNECTION SHALL BE ON THE DISCHARGE AIR SIDE OF THE COIL.\

D. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE PIPED COIL FIT OUT KITS.

9 TERMINAL REHEAT COIL PIPING DETAIL - HOT WATER
NTS



DETAIL NOTES:

A. THIS DETAIL APPLIES TO PROCESS CHILLED WATER EQUIPMENT CONNECTION REQUIREMENTS FOR OWNER FURNISHED, OWNER INSTALLED EQUIPMENT.

B. LOCATE ALL VALVES AND SPECILATIES AT AN ACCESSIBLE HEIGHT.

C. THE FOLLOWING ARE NOT ALLOWED: DIELECTRIC UNIONS, AUTOMATIC FLOW CONTROL VALVES, COMBINATION DEVICES OR PRE-PIPED COIL FIT OUT KITS.

10 PROCESS CHILLED WATER MANIFOLD DETAIL
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
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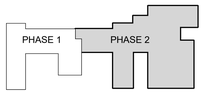
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL DETAILS - PHASE 2

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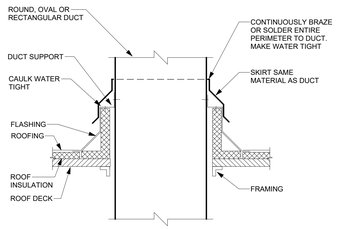


DETAIL NOTES:

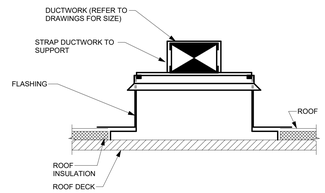
A. REFER TO A-SERIES DRAWINGS FOR SUPPORT RAILS.

B. TO PROVIDE WEATHERTIGHT SKIRT.

C. PROVIDE SHIMS WHERE REQUIRED TO LEVEL CURB.

D. TO PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550-WIND RESTRAINT FOR HVAC SYSTEMS.

1 DUCT PENETRATION CURB DETAIL
NTS



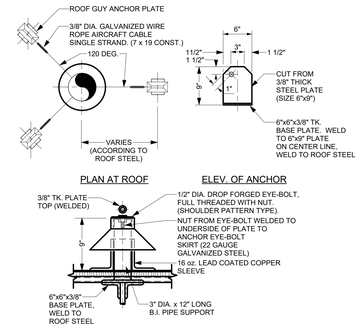
DETAIL NOTES:

A. REFER TO A-SERIES DRAWINGS FOR SUPPORT RAILS.

B. PROVIDE SHIMS WHERE REQUIRED TO LEVEL SUPPORT.

C. TO PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550-WIND RESTRAINT FOR HVAC SYSTEMS.

2 DUCTWORK SUPPORT DETAIL
NTS



ALTERNATE GUY-WIRE ROOF ANCHOR

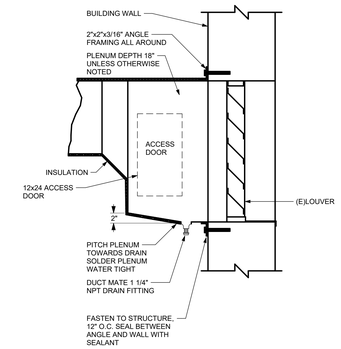
DETAIL NOTES:

A. FOR STACKS UP TO 20'-0", PROVIDE (1) SET OF GUY WIRES ATTACHED TO STACK AT A POINT 2/3 OF THE FULL HEIGHT OF STACK ABOVE ROOF. FOR STACKS OVER 20'-0", PROVIDE (2) SETS OF GUY WIRES, AT APPROX. 1/3 SPACINGS.

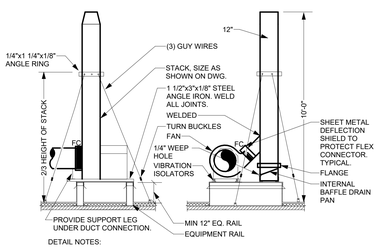
B. PROVIDE UV STABILIZED HIGH DENSITY PLASTIC GUY WIRE MARKER (8' LENGTH) FOR EACH GUY WIRE.

C. PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550-WIND RESTRAINT FOR HVAC SYSTEMS.

3 GUY-WIRE DETAIL
NOT TO SCALE



4 LOWER PLENUM DETAIL
NTS



DETAIL NOTES:

A. REFER TO A-SERIES DRAWINGS FOR SUPPORT RAILS.

B. LOCATE, SET AND SECURE CURB.

C. PROVIDE SHIMS WHERE REQUIRED TO LEVEL RAIL.

D. LENGTH OF RAILS AS REQUIRED. PROVIDE BLOCKING BENEATH SUPPORTS IN FLUTES OF METAL DECKS.

F. GUY WIRES SHALL BE AT 60 DEG MAXIMUM TO ROOF DECK AND ENCASED IN A WHITE, 2-INCH (51 mm) MINIMUM DIAMETER PLASTIC PIPE.

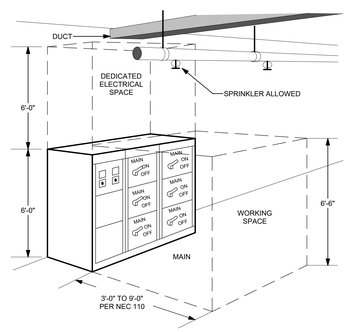
G. PROVIDE WIND RESTRAINT PER SPECIFICATION SECTION 230550-WIND RESTRAINT FOR HVAC SYSTEMS.

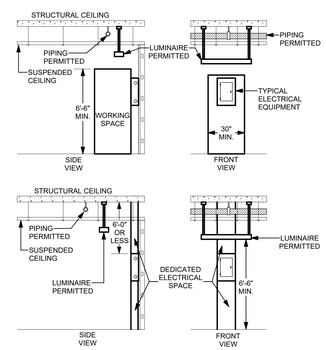
H. STACK SHALL BE CONSTRUCTED OF SAME MATERIAL AND TWO (2) GAUGE HEAVIER THAN CALLED FOR IN SPECIFICATIONS.

I. PROVIDE MINIMUM (3) THREE DUCT DIAMETERS OF STRAIGHT LENGTH AT FAN INLET.

J. REFER TO EQUIPMENT SUPPORT AND GUY WIRE DETAILS.

5 ROOF MOUNTED FAN SUPPORT DETAIL
NTS





DETAIL NOTES:

A. ELECTRICAL EQUIPMENT INCLUDES PANELS, TRANSFORMERS, DISCONNECTS, STARTERS, MOTOR CONTROL CENTERS, SWITCHGEAR, ADJUSTABKE SPEED DRIVES, AND FUSED SWITCHES (THIS ALSO APPLIES TO ELECTRICAL GEAR MOUNTED DIRECTLY ON MECHANICAL EQUIPMENT).

B. DEDICATED ELECTRICAL SPACE IS DEFINED BY NEC 110.

C. NO PIPING OR DUCTWORK MAY BE INSTALLED IN DEDICATED ELECTRICAL SPACE OR WORKING SPACE.

6 PIPING AND DUCTWORK OVER ELECTRICAL EQUIPMENT DETAIL
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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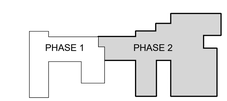
Notes:



Keyplan

Job Number	31909.00
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Revisions

MECHANICAL DETAILS - PHASE 2

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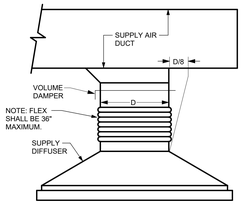
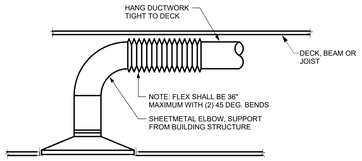
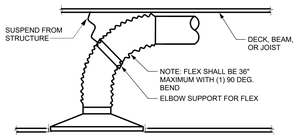


SUPPLY AIR DIFFUSER DETAIL - VERTICAL FLEXIBLE DUCT



SUPPLY AIR DIFFUSER DETAIL - RADIUS FLEXIBLE DUCT - STRAP



SUPPLY AIR DIFFUSER DETAIL - HORIZONTAL FLEXIBLE DUCT

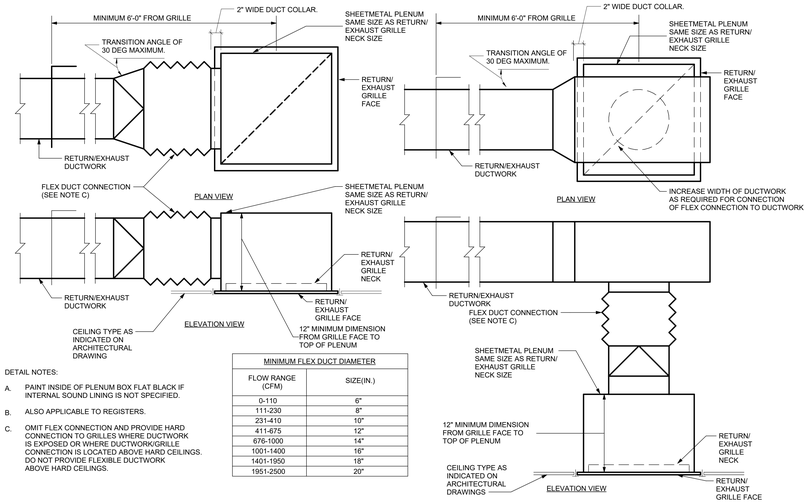
DETAIL NOTES:

A. DUCT AND DIFFUSER SIZE AND TYPE AS SHOWN ON DRAWINGS.

B. VOLUME DAMPER SHALL BE MINIMUM OF 4'-0" FROM DIFFUSER.

1 SUPPLY AIR DIFFUSER DETAIL

NTS



DETAIL NOTES:

A. PAINT INSIDE OF PLENUM BOX FLAT BLACK IF INTERNAL SOUND LINING IS NOT SPECIFIED.

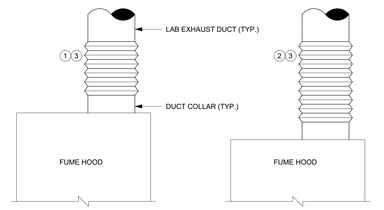
B. ALSO APPLICABLE TO REGISTERS.

C. OMIT FLEX CONNECTION AND PROVIDE HARD CONNECTION TO GRILLES WHERE DUCTWORK IS EXPOSED OR WHERE DUCTWORK/GRILLE CONNECTION IS LOCATED ABOVE HARD CEILINGS. DO NOT PROVIDE FLEXIBLE DUCTWORK ABOVE HARD CEILINGS.

MINIMUM FLEX DUCT DIAMETER	
FLOW RANGE (CFM)	SIZE(IN.)
0-110	6"
111-230	8"
231-410	10"
411-675	12"
676-1000	14"
1001-1400	16"
1401-1950	18"
1951-2500	20"

10 RETURN/EXHAUST GRILLE PLENUM DETAIL - DUCTED

NTS



FUME HOOD WITH WORK SURFACE AT NON-ADA HEIGHT, 36" A.F.F.

FUME HOOD WITH WORK SURFACE AT ADA HEIGHT, 30" A.F.F.

DETAIL NOTES:

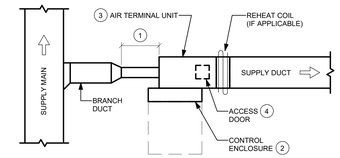
1. ROUND FLEXIBLE EXHAUST DUCT CONNECTION, SHOWING FULLY COMPRESSED TO ACCOMMODATE 37" WORK SURFACE HEIGHT.

2. ROUND FLEXIBLE EXHAUST DUCT CONNECTION, SHOWING FULLY EXTENDED TO ACCOMMODATE 30" WORK SURFACE HEIGHT.

3. FLEXIBLE EXHAUST DUCT SHALL BE BLO-R-VAC, 12" ROUND NOMINAL DIMENSION, HOSE IS COMPRESSIBLE TO 60% OF ITS LENGTH. COLOR IS BLUE. SUITABLE FOR CHEMICAL FUME EXTRACTION.

3 ADA FUME HOOD INSTALLATION DETAIL

NTS



KEYED NOTES:

1. RIGID STRAIGHT DUCTWORK UPSTREAM OF THE TERMINAL UNIT SHALL BE A MINIMUM OF 3 TIMES THE DIAMETER OF INLET. NOT TO EXCEED 5'-0" TOTAL IN LENGTH.

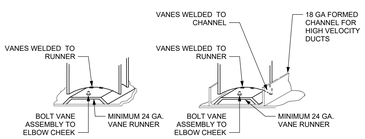
2. MAINTAIN MINIMUM 1'-6" SERVICE CLEARANCE IN FRONT OF ENCLOSURE TO ALLOW FOR SERVICE/ACCESS.

3. COMPONENT ARRANGEMENT MAY VARY BY MANUFACTURER. PROVIDE INSULATION VAPOR BARRIER AS SPECIFIED.

4. ACCESS DOOR TO BE LOCATED AT THE BOTTOM OF THE UNIT. CONTRACTOR TO COORDINATE COIL AND CONTROL ENCLOSURE HANDING. ROTATING UNIT IN FIELD SUCH THAT ACCESS DOOR IS ON TOP OF UNIT IS NOT ACCEPTABLE.

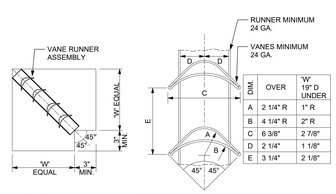
4 VAV BOX DETAIL

NTS



VANE RUNNER ASSEMBLY UP TO 2000 FPM

VANE RUNNER ASSEMBLY OVER 2000 FPM



DIM	OVER	"W" 19" D UNDER
A	2 1/4" R	1" R
B	4 1/4" R	2" R
C	6 3/8"	2 7/8"
D	2 1/4"	1 1/8"
E	3 1/4"	2 1/8"

5 VANED ELBOW DETAIL

NTS

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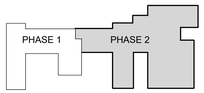
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	ZMH
Checked By	NMT
Filename	
Date	August 31, 2026

Revisions

MECHANICAL DETAILS - PHASE 2

STATE OF NEW YORK · NICHOLAS MICHAEL TOMASELLI · 094525 · LICENSED PROFESSIONAL ENGINEER

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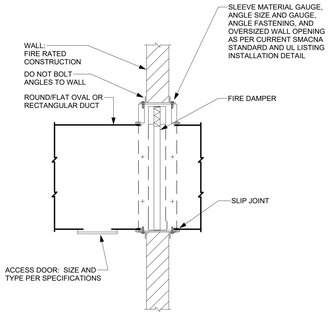


DETAIL NOTES:

A. HORIZONTAL AND 80% FREE AREA DAMPER INSTALLATION SIMILAR.

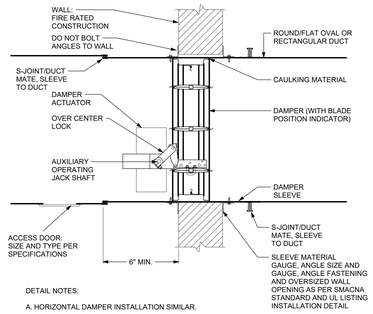
B. FOR DOUBLE WALL DUCT, USE INSULATION END CAP AND INSULATE SLEEVE.

C. FOR FIRE DAMPERS TO BE PROVIDED IN EXISTING OR NEW DUCTS PENETRATING EXISTING WALLS, THIS CONTRACTOR IS REQUIRED TO REFRAME AND RECONSTRUCT THE EXISTING WALL PENETRATION AND FRAMING AS PER SMACNA FIRE DAMPER OPENING PROTOCOL DETAIL FIG. 3-1 (FIRE DAMPER GUIDE) AS WELL AS MANUFACTURER AND UL LISTING INSTALLATION DETAIL.

D. MOUNT ACCESS DOOR IN SECTION OF REMOVABLE DUCT WHEN ACCESS DOOR IS LESS THAN 12 IN. BY 12 IN.

1 FIRE DAMPER INSTALLATION DETAIL

NTS



DETAIL NOTES:

A. HORIZONTAL DAMPER INSTALLATION SIMILAR.

B. FOR DOUBLE WALL DUCT, USE INSULATION END CAP, INSULATE SLEEVE.

C. ACTUATOR SHALL BE MOUNTED OUTSIDE OF THE AIR STREAM AND MAY BE PLACED IN MULTIPLE LOCATIONS (I.E. BEFORE OR AFTER DAMPER).

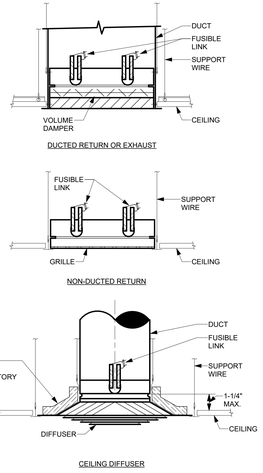
D. FOR COMBINATION FIRE/SMOKE DAMPERS TO BE PROVIDED IN EXISTING OR NEW DUCTS PENETRATING EXISTING WALLS, THIS CONTRACTOR IS REQUIRED TO REFRAME AND RECONSTRUCT THE EXISTING WALL PENETRATION AND FRAMING AS PER SMACNA FIRE DAMPER OPENING PROTOCOL DETAIL FIG. 3-1 (FIRE DAMPER GUIDE) AS WELL AS MANUFACTURER AND UL LISTING INSTALLATION DETAIL.

E. THE DAMPER REMOTE TEST SWITCH AND DAMPER POSITION INDICATOR SHALL BE LOCATED NEXT TO THE SMOKE DETECTOR REMOTE TEST STATION.

F. MOUNT ACCESS DOOR IN SECTION OF REMOVABLE DUCT WHEN ACCESS DOOR IS LESS THAN 12 IN. BY 12 IN.

2 COMBINATION FIRE/SMOKE DAMPER INSTALLATION DETAIL

NTS



4 FIRE DAMPER AT CEILING PENETRATION DETAIL

NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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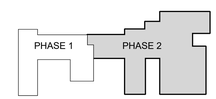

Keyplan

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MECHANICAL DETAILS - PHASE 2

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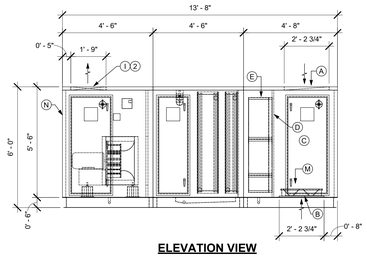
AHU-3DRAWING NOTES:

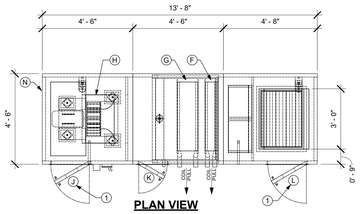
1 ACCESS DOOR SIZE TO BE CONFIRMED PRIOR TO ORDER BASED ON MECHANICAL ROOM SPACE CONSTRAINTS.
2 FIELD MEASURE UNIT LAYOUT WITHIN MECHANICAL ROOM FOR EXACT SUPPLY AIR DISCHARGE LOCATION.

AHU-3 COMPONENTS:

A 36x24 OUTSIDE AIR INLET
B 36x24 RETURN AIR INLET
C MIXED AIR PLENUM
D F-4 PRE-FILTER (MERV 8)
E F-5 FINAL FILTER (MERV 13)
F GLYCOL PREHEAT COIL
G COOLING COIL
H PREFPRATED SUPPLY FAN SECTION
I 36x24 SUPPLY AIR DISCHARGE
J 58x24 ACCESS DOOR
K 58x18 ACCESS DOOR
L 58x18 ACCESS DOOR
M 36x26.75 RETURN AIR DAMPER
N FAN PLUG PANEL



ELEVATION VIEW



PLAN VIEW

1 AIR HANDLING UNIT AHU-3 COMPONENT DETAIL
3/8" = 1'-0"

AHU-2 DRAWING NOTES:

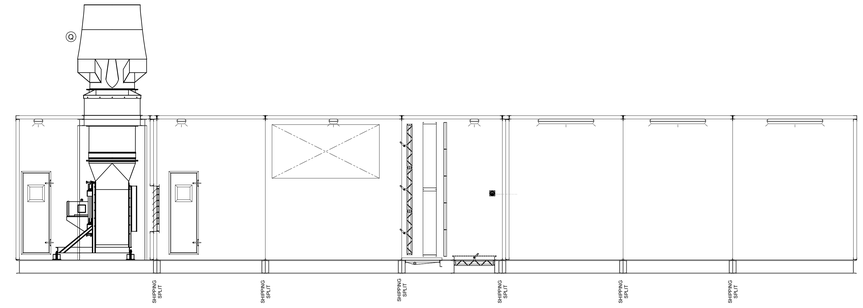
1 ACCESS DOOR SIZE TO BE CONFIRMED PRIOR TO ORDER BASED ON MECHANICAL ROOM SPACE CONSTRAINTS.

AHU-2 SUPPLY AIR TUNNEL COMPONENTS:

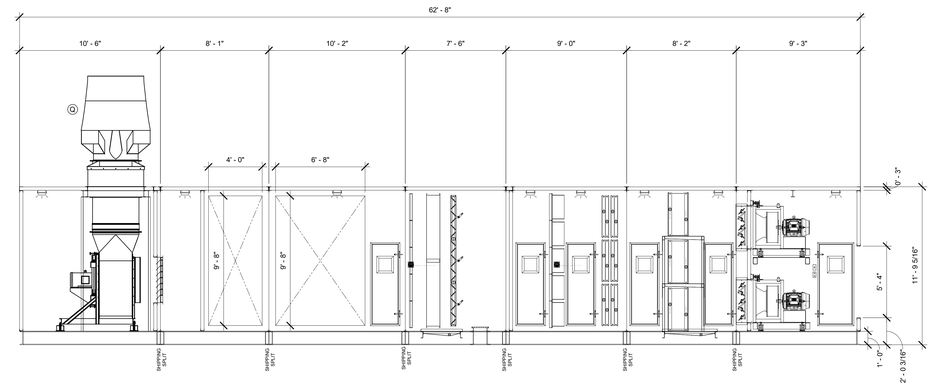
A OUTSIDE AIR INLET SECTION
B PRE-FILTER (MERV 8)
C OUTSIDE AIR HEAT PIPE ENERGY RECOVERY COIL
D RETURN AIR INLET SECTION
E FINAL FILTER (MERV 14)
F PREHEAT COIL SECTION
G COOLING COIL SECTION
H FAN SECTION (FAN ARRAY)
I DISCHARGE PLENUM
J 72x24 ACCESS DOOR

AHU-2 EXHAUST AIR TUNNEL COMPONENTS:

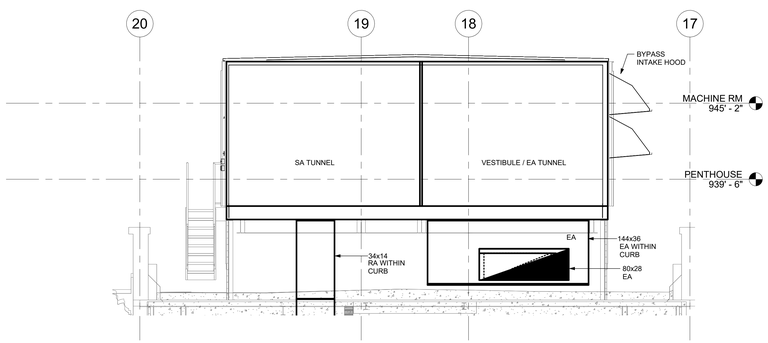
J 72x24 ACCESS DOOR
K EXHAUST AIR INLET SECTION
L PRE-FILTER (MERV 8)
M EXHAUST AIR HEAT PIPE ENERGY RECOVERY COIL
N BYPASS INTAKE HOOD
O MIXING BOX / DISCHARGE PLENUM
P FAN ISOLATION DAMPER
Q ROOF CURB



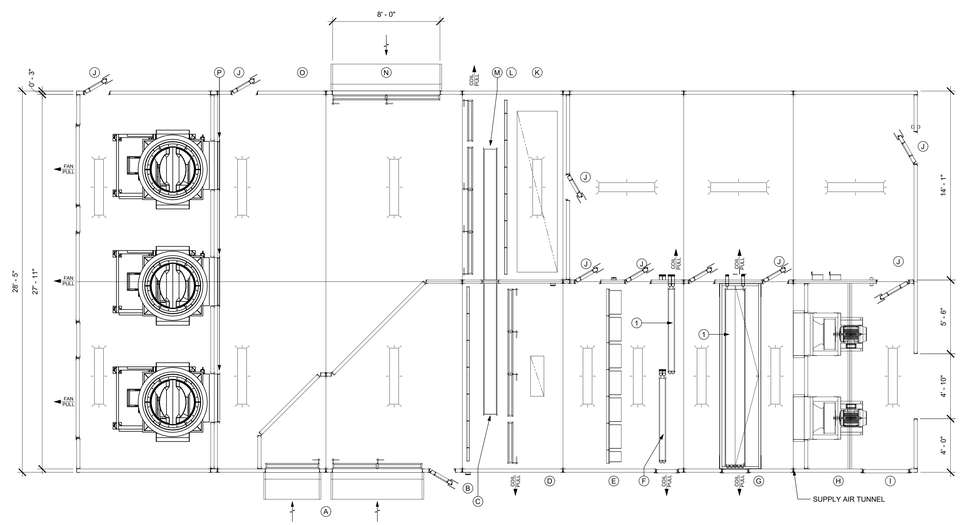
EXHAUST AIR TUNNEL ELEVATION



SUPPLY AIR TUNNEL ELEVATION



2 AIR HANDLING UNIT AHU-2 SECTION
1/4" = 1'-0"



PLAN VIEW

3 AIR HANDLING UNIT AHU-2 COMPONENT DETAIL
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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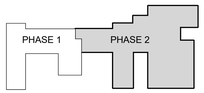

Keyplan

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Filename
Date August 31, 2026

Revisions

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AIR HANDLING UNIT SCHEDULE - CHILLED WATER / HOT WATER

UNIT NO.	LOCATION	SERVICE	SUPPLY FAN: TOTAL AIR FLOW (CFM)	OUTSIDE AIR MINIMUM (CFM)	EXT. STATIC (In. WC)	TOTAL STATIC (In. WC)	FAN CHARACTERISTICS: FLOW (CFM)	TYPE	FAN NO. & MIN DIA.	MAX BHP	FAN RPM	FEI	DRIVE	MOTOR: HP	RPM	VOLTS	PHASE	STARTER	COOLING COIL (CHILLED WATER) CAPACITY: SENSIBLE (MBH)	TOTAL (MBH)	AIR SIDE: AIR P.D. (In. WC)	EAT (DEG. F): DB	WB	LAT (DEG. F): DB	WB	MAX. FACE VEL. (FPM)	WATER SIDE - 100% WATER: WATER FLOW (GPM)	WATER P.D. (Ft. HD)	ENT. WATER TEMP. (DEG. F)	LVG. WATER TEMP. (DEG. F)	NUMBER IN FACE	ROWS	FINS PER INCH	HEATING COIL (40% PROPYLENE GLYCOL) CAPACITY (MBH)	AIR SIDE: ENT. AIR TEMP. (DEG. F)	LVG. AIR TEMP. (DEG. F)	MAX. FACE VEL. (FPM)	WATER SIDE: AIR P.D. (In. WC)	WATER FLOW (GPM)	WATER P.D. (Ft. HD)	ENT. WATER TEMP. (DEG. F)	LVG. WATER TEMP. (DEG. F)	NUMBER IN FACE	ROWS	FINS PER INCH	MANUFACTURER	REMARKS
AHU-2	ROOF	PHASE 2	51,000	-	3.5	8.2	12,750 17,000	PLENUM	4 @ 27 3 @ 27	22.86 32.12	1926 2181	1.32 1.23	DIRECT	40	1800	460	3	ASD BY DIV 26	1,983.6	3,438.2	1.2	87	72.3	51	51	415	383	20.3	47	65	3	12	12	1,992.7	28.8	65	466	0.11	135	7.5	130	100	6	2	8	BUFFALO AIR HANDLING	1,2,3,4,5
AHU-3	341A	LECTURE 237	7,500	2,400	1.2	4.97	7,500	PLENUM	1 @ 20	8.59	2674	1.34	DIRECT	10	1800	208	3	ASD BY DIV 26	206	276	0.94	79.2	66.2	54.5	54.1	458	36.7	4.8	47	62	1	8	10	399	38	87.4	458	0.27	28.6	7.6	130	100	1	3	10	YORK CUSTOM	1,6

REMARKS:
1. REFER TO AIR FILTER SCHEDULE FOR AIR FILTRATION REQUIREMENTS.
2. REFER TO HEAT PIPE SCHEDULE FOR PERFORMANCE DATA.
3. AHU FANS SIZED TO PROVIDE 51,000 CFM TOTAL WITH N-1 REDUDANCY.
4. PROVIDE VERTICAL HAT CHANNEL ON EXTERIOR CASING (48" ON CENTER) OF THE UNIT FOR SCREEN WALL ATTACHEMENT.
5. ALUMINUM CONSTRUCTION.
6. GALVANIZED CONSTRUCTION.

PUMP SCHEDULE

PUMP NO.	LOCATION	SERVICE	UNIT TYPE & DESCRIPTION	PUMP CAPACITY: FLOW (GPM)	TOTAL HEAD IN FEET	MOTOR CHARACTERISTICS: RPM	HP	VOLTS	PHASE	STARTER	IMPELLER SIZE (DIA. In.)	FLUID TEMP. (DEG. F)	MIN. PUMP EFF. (%)	MAX. BHP	SUCTION & DISCHARGE SIZES (In.)	MANUFACTURER & MODEL NO.	REMARKS
P-2	MECH G0064	PERIMETER HW	INLINE	100	130	3600	10	460	3	ASD BY DIV 26	6	130	61.3	5.24	2	BELL & GOSSETT E-80 - 2x2x7B	
P-2A	MECH G0064	PERIMETER HW	INLINE	100	130	3600	10	460	3	ASD BY DIV 26	6	130	61.3	52.4	2	BELL & GOSSETT E-80 - 2x2x7B	1
P-8	AHU VEST.	AHU-2 PREHEAT COIL PUMP	INLINE	135	40	1800	3	460	3	ASD BY DIV 26	6.875	130	72.8	1.91	3	BELL & GOSSETT E-80 - 3x3x7C	2
P-9	20064	AHU-3 PREHEAT COIL PUMP	INLINE	29	40	3600	1	208	1	INTEGRAL	-	130	39.8	0.74	1.5	BELL & GOSSETT ECOCIRC XL 65-130	2

REMARKS:
1. STAND BY
2. GLYCOL - PROPYLENE, 40%

FAN SOUND SCHEDULE

UNIT NO.	LOCATION	AIR FLOW (CFM)	FAN OUTLET SOUND POWER LEVELS [Db]: 63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	LWA	REMARKS
EF-8,9,10	FAN OUTLET	23,150	95	97	94	88	87	88	83	73	94	1
EF-8,9,10	FAN OUTLET	11,000	93	92	85	81	83	82	75	65	88	1
EF-13	FAN INLET	650	90	74	72	56	54	53	48	40	68	
RF-2	FAN INLET	4,600	71	80	78	76	75	70	64	60	79	
AHU-2	FAN OUTLET	12,750	91	92	97	95	88	79	74	71	93	1
AHU-2	FAN OUTLET	12,750	97	98	103	101	94	85	80	79	101	2
AHU-2	FAN OUTLET	17,000	95	95	102	101	95	86	80	79	101	1,3
AHU-2	FAN OUTLET	17,000	100	100	107	106	100	91	85	84	106	2,3
AHU-3	FAN OUTLET	7,500	79	78	88	82	77	77	76	69		
AHU-3	CASING RADIATED	7,500	64	62	70	62	58	50	41	29	65	

REMARKS:
1. INDIVIDUAL FAN SOUND POWER.
2. TOTAL PACKAGE SOUND FOR 51,000 CFM.
3. N-1 FAN CONFIGURATION.

RADIATION SCHEDULE - ELECTRIC

UNIT NO.	CAPACITY (BTU)	HEATING ELEMENT: WATTS	VOLTS	PHASE	FLA	HZ	SCCR (kA)	ENCLOSURE: HEIGHT (In.)	LENGTH (In.)	WIDTH (In.)	MOUNTING HEIGHT TO TOP	MANUFACTURER & MODEL No.	REMARKS
EFTR-1	4265	1250	277	1	4.5	60	5	6-3/4	60	2-7/8	7-3/4	QMARK QMKC2575W	-

UNIT HEATER SCHEDULE - ELECTRIC

UNIT NO.	LOCATION	TYPE	ELEC CHARACTERISTICS: MOTOR HP	CAPACITY (kW)	VOLTS	PHASE	MANUFACTURER & MODEL No.	REMARKS
EUH-4	AHU-2 VEST.	HORIZONTAL	3	3	277	1	QMARK MUH0371	1

REMARKS:
1. EQUIPMENT SHALL BE INSTALLED INSIDE AHU-2 VESTIBULE. FINAL ELEVATION TO BE COORDINATED.

REGISTER GRILLE AND DIFFUSER SCHEDULE

TYPE	APPLICATION	MATERIAL	FINISH	MANUFACTURER & MODEL NO.	REMARKS
1	SUPPLY	STEEL	WHITE	TITUS TRITEC	
2	SUPPLY	STEEL	WHITE	TITUS OMNI	
3	SUPPLY	STEEL	WHITE	TITUS FT-10	
4	SUPPLY	STEEL	WHITE	TITUS 272RL	
5	SUPPLY	STEEL	WHITE	TITUS ML-38	
A	EXHAUST/RETURN	STEEL	WHITE	TITUS 355-RL	
B	EXHAUST/RETURN	STEEL	WHITE	TITUS FT-10	
C	EXHAUST/RETURN	STEEL	WHITE	TITUS 355-RL	1

REMARKS:
1. PROVIDE WITH OPPOSED BLADE DAMPER.

POINT EXHAUST VAV - SINGLE DUCT - AIR TERMINAL UNIT SCHEDULE

UNIT NO.	SERVICE	MAX AIR FLOW (CFM)	MIN AIR FLOW (CFM)	MIN INLET PRESS AT MAX CFM (In. WC)	INLET SIZE (In.)	RAD N.C. AT 1" S.P.	DISCH N.C. AT 1" S.P.	MANUFACTURER & MODEL NO.	REMARKS
PVAV-G-1	SOIL AND SAMPLE PREP G02	430	110	1	7	19	25	KREUGER LMHS	1
PVAV-1-1	FLEX LAB 118	100	100	1	4	-	17	KREUGER LMHS	1
PVAV-1-2	1ST FLOOR EAST WING LABS	330	52	1	6	14	20	KREUGER LMHS	1
PVAV-2-1	2ND FLOOR EAST WING LABS	430	70	1	7	14	21	KREUGER LMHS	1
PVAV-3-1	3RD FLOOR EAST WING LABS	430	70	1	7	14	21	KREUGER LMHS	1

REMARKS:
1. FIBER FREE LINER.

RETURN VAV - SINGLE DUCT - AIR TERMINAL UNIT SCHEDULE

UNIT NO.	SERVICE	MAX AIR FLOW (CFM)	MIN AIR FLOW (CFM)	MIN INLET PRESS AT MAX CFM (In. WC)	INLET SIZE (In.)	RAD N.C. AT 1" S.P.	DISCH N.C. AT 1" S.P.	MANUFACTURER & MODEL NO.	REMARKS
RVAV-G-1	OFFICE G37/G35/G33/G31/G29/G27	130	0	1	4	11	22	KREUGER LMHS	1
RVAV-1-1	CLASSROOM 133	300	0	1	7	13	20	KREUGER LMHS	1
RVAV-1-2	OFFICE 129/127/125/123	80	0	1	4	-	13	KREUGER LMHS	1
RVAV-1-3	OFFICE 128A/128B/128/128C/128D/128E/120	170	0	1	5	-	18	KREUGER LMHS	1
RVAV-1-4	WRITE-UP SPACES 116/116A/116B	270	0	1	6	12	18	KREUGER LMHS	1
RVAV-1-5	OFFICE 109/107/105/103	90	0	1	4	-	16	KREUGER LMHS	1
RVAV-2-1	235/233/231/229/227	120	0	1	4	-	21	KREUGER LMHS	1
RVAV-2-2	MEETING ROOM 225	105	0	1	4	-	18	KREUGER LMHS	1
RVAV-2-3	WRITE-UP SPACE 224/224B/224A	270	0	1	6	12	18	KREUGER LMHS	1
RVAV-2-4	OFFICE 211/209/207/205	90	0	1	4	-	16	KREUGER LMHS	1
RVAV-2-5	WRITE-UP SPACE 203	155	0	1	5	-	16	KREUGER LMHS	1
RVAV-3-1	OFFICE 334/332/330/328	100	0	1	4	-	17	KREUGER LMHS	1
RVAV-3-2	LARGE MEETING ROOM 340	175	0	1	5	-	18	KREUGER LMHS	1
RVAV-3-3	OFFICE 339/337/335/333/331/329/327	175	0	1	5	-	18	KREUGER LMHS	1
RVAV-3-4	WRITE-UP SPACE 324/324A/324B	270	0	1	6	12	18	KREUGER LMHS	1
RVAV-3-5	WRITE-UP 311 / OFFICE 313	110	0	1	4	-	18	KREUGER LMHS	1
RVAV-3-6	WRITE-UP SPACE 307	50	0	1	4	-	-	KREUGER LMHS	1
RAV-4-1	COMPUTATIONAL LAB 431	345	0	1	7	13	20	KREUGER LMHS	1
RAV-4-2	TEAM ROOM 431A/431B	80	0	1	4	-	13	KREUGER LMHS	1
RAV-4-3	ACAD. OFFICE 430/428/426/420/418	100	0	1	4	-	17	KREUGER LMHS	1
RAV-4-4	COMPUTATIONAL LAB 416	365	0	1	7	13	20	KREUGER LMHS	1
RAV-4-5	BIO-DIVERSITY HUB 403	190	0	1	6	-	13	KREUGER LMHS	1
RAV-4-6	COLLAB 404 / WORKSPACE 404A	105	0	1	4	-	18	KREUGER LMHS	1

REMARKS:
1. FIBER FREE LINER

AIR FILTER SCHEDULE

FILTER BANK NO.	LOCATION	SERVICE	TYPE	SYSTEM AIR FLOW (CFM)	MAX. RATED VELOCITY (FPM)	INITIAL P.D. (In. WC)	FINAL P.D. (In. WC)	CARTRIDGES: NO.	SIZE: HEIGHT (In.)	WIDTH (In.)	LENGTH (In.)	ARRANGEMENT	HOLDING FRAME	EFFICIENCY: MERV RATING	EFFICIENCIES (%)	MEDIA AREA (Sq. Ft.)	PLEATS PER LINEAR Ft.	MANUFACTURER & MODEL NO.	REMARKS
F-1	AHU-2 SA TUNNEL	HRC-1 / AHU-2 PRE-FILTER	PLEATED PANEL	51,000	500	0.31	0.62	5	24	12	2	1W x 5H	FRONT ACCESS	MERV 8A	-	8	15	CAMFILL-FARR 30/30	1
								30	24	24	2	6W x 5H				17			
F-2	AHU-2 SA TUNNEL	AHU-2 FINAL FILTER	V-BANK	51,000	500	0.22	1	5	24	12	12	1W x 5H	FRONT ACCESS	MERV 13A	80-90	131	-	VILEDON MV-85	1
								30	24	24	12	6W x 5H				58			
F-3	AHU-2 EA TUNNEL	HRC-2 PRE-FILTER	PLEATED PANEL	46,300	500	0.31	0.62	5	24	12	2	1W x 5H	FRONT ACCESS	MERV 8A	-	8	15	CAMFILL-FARR 30/30	1
								30	24	24	2	6W x 5H				17			
F-4	AHU-3	AHU-3 PRE-FILTER	PLEATED PANEL	7,500	500	0.31	0.62	2	12	24	2	2W x 1H	FRONT ACCESS	MERV 8A	-	8	15	CAMFILL-FARR 30/30	1
								4	24	24	2	2W x 2H				17			
F-5	AHU-3	AHU-3 FINAL FILTER	V-BANK	7,500	500	0.22	1	2	12	24	12	2W x 1H	FRONT ACCESS	MERV 13A	80-90	131	-	VILEDON MV-85	1
								4	24	24	12	2W x 2H				58			

REMARKS:
1. PROVIDE SPARE SET OF FILTERS.

ENERGY RECOVERY HEAT PIPE COIL SCHEDULE

UNIT NO.	LOCATION	SERVICE	TYPE	MOUNTING	MODE	CAPACITY (MBH)	AIR SIDE: AIR FLOW (CFM)	BYPASS AIR FLOW (CFM)	ENT. AIR TEMP. (DEG. F): DB	WB	LVG. AIR TEMP. (DEG. F): DB	WB	AIR P.D. (In. W.C.)	MAX. FACE VELOCITY (SFPM)	ENTHALPY RECOVERY RATIO (ERR)	TILT ANGLE	NUMBER IN FACE	ROWS DEEP	FINS PER INCH	COIL FACE DIMENSIONS: LENGTH (In.)	WIDTH (In.)	MANUFACTURER & MODEL No.	REMARKS
HRC-1	AHU-2 SA TUNNEL	AHU-2	SIDE BY SIDE HORIZONTAL	STANDARD W/ BYPASS	WINTER	2,389.1	46,300	0	-5	-5.5	36.8	26.0	0.93	625	56.1	2	2	8	12	118	105	HPT HA-AOS-20812A-10500-11800	1,2,3,4,5,6
					FROST	1,798.8	32,950	13,350	-5	-5.5	24.7	18.	0.41	383	41.6								
HRC-2	AHU-2 EA TUNNEL	EF-8, 9, 10			WINTER	2,389.1	46,300	0	70	50	23.8	23.8	0.85	535	56.1	-	2	8	12	118	105		1,2,3,4,5,6,7
					FROST	1,798.8	46,300	46,300	70	50	34	31.4	0.77	535	41.6								

REMARKS:
1. PERFORMANCE IS OPTIMIZED FOR WINTER / HEATING MODE. HEAT PIPE WILL BE DISABLED DURING COOLING.
2. BYPASS DAMPERS SIZED FOR FROST CONTROL.
3. WINTER MODE PERFORMANCE IS BASED ON FROST CONTROL DISABLED.
4. REFRIGERANT R-32.
5. ALUMINUM FINS.
6. FOAM GAP FILL.
7. FIN COATING FOR CORRRSION PROTECTION.

FAN SCHEDULE - INDUCED FLOW EXHAUST FAN

UNIT NO.	LOCATION	SERVICE	FAN CHARACTERISTICS: TYPE	BLADE TYPE	MAX INLET FLOW (CFM)	MIN. INLET FLOW (CFM)	EXT. STATIC (In. WC)	TOTAL STATIC (In. WC)	TOTAL DISCHARGE FLOW (CFM)	MAX NOZZLE VELOCITY (FPM)	MIN NOZZLE VELOCITY (FPM)	WIND BAND VELOCITY (FPM)	PLUME HEIGHT (Ft.-In.)	MAX. BHP	FAN RPM	MIN. WHEEL DIA.	MAX. TIP SPEED (RPM)	MAX. DISCHARGE SOUND (LWA)	DRIVE	MOTOR CHARACTERISTICS: MIN. FEG	RPM	HP	VOLTS	HZ	PHASE	STARTER	MANUFACTURER & MODEL NO.	REMARKS
EF-8	ROOF	BUILDING EXHAUST	AIRFOIL	BI	23,150	11,000	2.5	4.8	40,000	6,413	3,050	2,975	42"-0"	30.8	1331	36.5	12,720	94	DIRECT	90	1200	50	460	60	3	ASD BY DIV 26	MK PLASTICS AXIJET-S 3650	1,2,3,4,5,6
EF-9	ROOF	BUILDING EXHAUST	AIRFOIL	BI	23,150	11,000	2.5	4.8	40,000	6,413	3,050	2,975	42"-0"	30.8	1331	36.5	12,720	94	DIRECT	90	1200	50	460	60	3	ASD BY DIV 26	MK PLASTICS AXIJET-S 3650	1,2,3,4,5,6
EF-10	ROOF	BUILDING EXHAUST	AIRFOIL	BI	23,150	11,000	2.5	4.8	40,000	6,413	3,050	2,975	42"-0"	30.8	1331	36.5	12,720	94	DIRECT	90	1200	50	460	60	3	ASD BY DIV 26	MK PLASTICS AXIJET-S 3650	1,2,3,4,5,6

REMARKS:
1. DRAIN & PLUG.
2. NEMA 3R DISCONNECT SWITCH (FIELD WIRED).
3. ISOLATION DAMPER.
4. FAN SYSTEM SIZED TO PROVIDE 51,000 CFM TOTAL AT N+1 REDUDANCY.
5. LOCATED IN AHU-2 ENCLOSURE. REFER TO DETAIL DRAWING.
6. CUSTOM COLOR TO MATCH MORIN PARCHMENT FOR EXTERIOR COMPONENTS.

FAN SCHEDULE

UNIT NO.	LOCATION	SERVICE	FAN CHARACTERISTICS: TYPE	CFM	S.P. (In. WC)	MAX. BHP	FAN RPM	MAX. TIP SPEED (FPM)	MAX. OUTLET VELOCITY (FPM)	INLET SONES / LwA	DRIVE	FEI	MOTOR CHARACTERISTICS: RPM	HP	VOLTS	HZ	PHASE	STARTER	MANUFACTURER & MODEL NO.	REMARKS
RF-2	PENTHOUSE	RETURN	INLINE	4,600	1.75	1.95	1,170	8,270	903	15	DIRECT	1.41	1,170	2	480	60	3	ASD BY DIV 26	GREENHECK QEID-22-75	1
EF-12	BDA CLOSET PH002	BDA CLOSET PH002	CEILING	150	0.3	0.07	825	1,458	401	1.2	DIRECT	-	-	127W	115	60	1	BY DIV 26	GREENHECK CSP-A200	
EF-13	ROOF	SOIL ROOMS	CENT	650	1	0.17	964	3,943	1,467	68	DIRECT	-	964	1/2	208	60	3	ASD BY DIV 26	GREENHECK IP-9	2

REMARKS:
1. FAN INLET PIEZOMETER RINGS.
2. SPARK RESISTANCE B.

HEATING COIL SCHEDULE - HOT WATER

UNIT NO.	LOCATION	SERVICE	TYPE	MOUNTING	CAPACITY (MBH)	AIR SIDE: AIR FLOW (CFM)	ENT. AIR TEMP. (DEG. F)	LVG. AIR TEMP. (DEG. F)	AIR P.D. (In. W.C.)	MAX. FACE VELOCITY (FPM)	WATER SIDE - 100% WATER: WATER FLOW (GPM)	ENT. WATER TEMP. (DEG. F)	LVG. WATER TEMP. (DEG. F)	WATER P.D. (Ft. HD)	ROWS DEEP	FINS PER INCH	COIL FACE DIMENSIONS: HEIGHT (In.)	LENGTH (In.)	MANUFACTURER & MODEL No.	REMARKS
RHC-G-13	INSTRUMENTATION G14	INSTRUMENTATION G14	STANDARD	FLANGED	35.7	1045	55	85	0.14	480	2.4	130	100	0.6	4	6	22	15	AEROFIN CA-W-101	-
RHC-G-14	LAB G20	LAB G20	STANDARD	FLANGED	47.5	1450	55	85	0.18	533	3.2	130	100	1.0	4	6	24	16.5	AEROFIN CA-W-101	-
RHC-G-15	CORRIDOR G0051	CHEMISTRY G23	STANDARD	FLANGED	19.1	590	55	85	0.15	476	1.4	130	100	0.4	4	6	14	13.5	AEROFIN CA-W-101	-
RHC-G-16	EXIST. WET TEACHING LAB G08	EXIST. WET TEACHING LAB G08	STANDARD	FLANGED	35.7	1130	55	85	0.14	480	2.4	130	100	0.6	4	6	22	15	AEROFIN CA-W-101	-
RHC-G-17	MECH G0080	EXISTING SUPPORT G08B	STANDARD	FLANGED	3.8	100	55	90	0.03	180	0.32	130	106	0.1	2	11	9	9	AEROFIN CA-HWP-100	-
RHC-G-18	MECH G0080	EXISTING SUPPORT G08A	STANDARD	FLANGED	3.8	95	55	90	0.03	180	0.32	130	106	0.1	2	11	9	9	AEROFIN CA-HWP-100	-
RHC-G-19	EXISTING EQUIP G08C	EXISTING EQUIP G08C	STANDARD	FLANGED	5	160	55	85	0.11	331	0.5	130	100	0.1	2	8	9	7.5	AEROFIN CA-HWP-100	-
RHC-1-9	LAB 113	LAB 113/113F/113G	STANDARD	FLANGED	84.3	2640	55	85	0.16	520	5.7	130	100	1.9	4	6	30	24	AEROFIN CA-W-101	-
RHC-1-10	EXIST. WET TEACHING LAB 102	EXIST. WET TEACHING LAB 102	STANDARD	FLANGED	35.7	1130	55	85	0.14	480	2.4	130	100	0.6	4	6	22	15	AEROFIN CA-W-101	-
RHC-1-11	EXISTING WET LAB 102B	EXISTING WET LAB 102B	STANDARD	FLANGED	12.1	375	55	85	0.16	499	1	130	100	0.4	4	6	12	12	AEROFIN CA-W-101	-
RHC-1-12	EXIST. WET TEACHING LAB 102	EXISTING WET LAB 102A	STANDARD	FLANGED	3.8	100	55	90	0.03	180	0.32	130	106	0.1	2	11	9	9	AEROFIN CA-HWP-100	-
RHC-1-13	EXISTING WET LAB 102C	EXISTING WET LAB 102C	STANDARD	FLANGED	5	145	55	85	0.11	331	0.5	130	110	0.1	2	8	9	7.5	AEROFIN CA-HWP-100	-
RHC-2-11	TEACHING LAB 236	TEACHING LAB 236	STANDARD	FLANGED	47.5	1465	55	85	0.18	533	3.2	130	100	1.0	4	6	24	16.5	AEROFIN CA-W-101	-
RHC-2-12	TEACHING LAB 236	PREP LAB 230	STANDARD	FLANGED	20.6	635	55	85	0.16	499	1.4	130	100	0.4	4	6	14	13.5	AEROFIN CA-W-101	-
RHC-2-13	LAB 219/219G	LAB 219/219G	STANDARD	FLANGED	74.4	2300	55	85	0.16	525	5.0	130	100	1.5	4	6	30	21	AEROFIN CA-W-101	-
RHC-2-14	LAB 202	LAB 202/202D/202E	STANDARD	FLANGED	84.3	2670	55	85	0.16	520	5.7	130	100	1.9	4	6	30	24	AEROFIN CA-W-101	-
RHC-3-9	LAB 319/319G	LAB 319/319G	STANDARD	FLANGED	84.3	2600	55	85	0.16	520	5.7	130	100	1.9	4	6	30	24	AEROFIN CA-W-101	-
RHC-3-10	LAB 302/302C	LAB 302/302C	STANDARD	FLANGED	53	1650	55	85	0.15	503	3.6	130	100	1.2	4	6	26	18	AEROFIN CA-W-101	-
RHC-3-11	MOLECULAR BIO 302A	AUTOCLAVE 304	STANDARD	FLANGED	35.7	1100	55	85	0.14	480	2.4	130	100	0.6	4	6	22	15	AEROFIN CA-W-101	-
RHC-4-1	LAB 402/402C	LAB 402/402C	STANDARD	FLANGED	32.4	1000	55	85	0.15	480	2.2	130	100	0.5	4	6	22	15	AEROFIN CA-W-101	-

CABINET UNIT HEATER SCHEDULE - HOT WATER

UNIT NO.	LOCATION	TYPE	CAPACITY (MBH)	AIR SIDE: AIR FLOW (CFM)	ENT. AIR TEMP. (DEG. F)	LVG. AIR TEMP. (DEG. F)	WATER SIDE: FLOW RATE (GPM)	WATER P.D. (Ft. HD)	ENT. WATER TEMP. (DEG. F)	LVG. WATER TEMP. (DEG. F)	FLUID	FAN MOTOR: RPM	HP	VOLTS	PHASE	NOMINAL DIMENSIONS: LENGTH (In.)	HEIGHT (In.)	DEPTH (In.)	MANUFACTURER & MODEL No.	REMARKS
CUH-7	VEST. 10043	RECESSED WALL	7.5	185	60	98	1.5	0.15	130	110	WATER	1050	1/10	115	1	35	25	9-1/2	STERLING RW-1120-02	1,2
CUH-8	STAIR 2 S0003	RECESSED WALL	7.5	185	60	98	1.5	0.15	130	110	WATER	1050	1/10	115	1	35	25	9-1/2	STERLING RW-1120-02	1,2
CUH-9	STAIR 3 1005A	FLOOR MOUNTED	7.5	185	60	98	1.5	0.15	130	110	WATER	1050	1/10	115	1	35	25	9-1/2	STERLING F-1000-02	1
CUH-10	STAIR G0003	FLOOR MOUNTED	7.5	185	60	98	1.5	0.15	130	110	WATER	1050	1/10	115	1	35	25	9-1/2	STERLING F-1000-02	1
CUH-11	STAIR G0004	CEILING MOUNTED	7.5	185	60	98	1.5	0.15	130	110	WATER	1050	1/10	115	1	35	25	9-1/2	STERLING C-1180-02	1

REMARKS:
1. PROVIDE WITH EC MOTOR
2. PROVIDE FULLY RECESSED CABINET

UNIT HEATER SCHEDULE - HOT WATER

UNIT NO.	LOCATION	TYPE	CAPACITY (MBH)	AIR SIDE: AIR FLOW (CFM)	ENT. AIR TEMP (DEG. F)	LVG. AIR TEMP (DEG. F)	WATER SIDE: FLOW RATE (GPM)	WATER P.D. (Ft. HD)	ENT. WATER TEMP. (DEG. F)	LVG. WATER TEMP. (DEG. F)	FLUID	FAN MOTOR: RPM	HP	VOLTS	PHASE	MOUNTING HEIGHT (Ft.-In.)	THROW (Ft.)	MANUFACTURER & MODEL No.	REMARKS
UH-1	MECH G0080	HORIZONTAL	11.75	480	65	94	2.7	0.09	130	110	WATER	1140	25W	115	1	9	28	STERLING HS-36	-
UH-2	MECH 40060	HORIZONTAL	11.75	480	65	94	2.7	0.09	130	110	WATER	1140	25W	115	1	9	28	STERLING HS-36	-

EXISTING HEAT EXCHANGER SCHEDULE - WATER TO WATER

UNIT NO.	LOCATION	SERVICE	TYPE	EXISTING PERFORMANCE: CAPACITY (MBH)	HEAT TRANSFER SURFACE AREA (Sq. Ft.)	EXCESS SURFACE AREA	PLATES	PASSES / CHANNELS	HIGH TEMP. SIDE: FLOW RATE (GPM)	WATER TEMP.: ENT. (DEG. F)	LVG. (DEG. F)	PRESS. DROP (Ft. HD)	LOW TEMP. SIDE: FLOW RATE (GPM)	WATER TEMP.: ENT. (DEG. F)	LVG. (DEG. F)	PRESS. DROP (Ft. HD)	NEW PERFORMANCE: CAPACITY (MBH)	HEAT TRANSFER SURFACE AREA (Sq. Ft.)	EXCESS SURFACE AREA	PLATES	PASSES / CHANNELS	HIGH TEMP. SIDE: FLOW RATE (GPM)	WATER TEMP.: ENT. (DEG. F)	LVG. (DEG. F)	PRESS. DROP (Ft. HD)	LOW TEMP. SIDE: FLOW RATE (GPM)	WATER TEMP.: ENT. (DEG. F)	LVG. (DEG. F)	PRESS. DROP (Ft. HD)	MANUFACTURER & MODEL NO.	REMARKS
(E)HX-2	MECH ROOM G0064	PERIMETER	PLATE & FRAME	369.1	21	10.7	15	1 / 7	10	180	105	3.23	25	100	130	17.7	738.3	50.5	40	33	1 / 16	20	180	105	2.75	50	100	130

SUPPLY VAV - SINGLE DUCT - AIR TERMINAL UNIT SCHEDULE - HOT WATER REHEAT

UNIT NO.	SERVICE	MAX AIR FLOW (CFM)	MIN AIR FLOW (CFM)	MIN INLET PRESS AT MAX CFM (In. WC)	INLET SIZE (In.)	RAD N.C. AT 1" S.P.	DISCH N.C. AT 1" S.P.	REHEAT COIL - 100% WATER CAPACITY (MBH)	AIR SIDE AIRFLOW (CFM)	EAT (DEG F)	LAT (DEG F)	APD (In. WC)	MAX FACE VEL. (FPM)	WATER SIDE FLOW (GPM)	WPD (Ft. HD)	EWT (DEG F)	LWT (DEG F)	ROWS DEEP	FPI	MANUFACTURER & MODEL NO.	REMARKS
SVAV-G-7	OFFICE G37/G35/G33/G31/G29/G27	130	0	1	4	11	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-G-8	CORRIDOR G0043	600	600	1	9	-	12	19.6	600	55	85	0.15	500	2.5	0.41	130	113.8	2	12	KREUGER LMHS	1,2
SVAV-G-9	CORRIDOR G0051	600	600	1	9	-	12	19.6	600	55	85	0.15	500	2.5	0.41	130	113.8	2	12	KREUGER LMHS	1,2
SVAV-G-10	WRITE UP SPACE G09	170	0	1	5	-	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-G-11	CORRIDOR G0042	600	200	1	9	-	12	18	600	55	85	0.15	500	2.5	0.41	130	113.8	2	12	KREUGER LMHS	1,2
SVAV-G-12	CORRIDOR G0041	400	400	1	6	14	18	13.1	400	55	85	0.3	500	1.2	0.35	130	107.3	3	10	KREUGER LMHS	1,2
SVAV-G-13	CORRIDOR G0040	100	100	1	4	-	16	3.3	100	55	85	0.01	500	0.8	0.28	130	121.2	1	12	KREUGER LMHS	1,2
SVAV-G-14	LAB SUPPORT G40	200	30	1	5	0.12	-	6.6	200	55	85	0.06	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-G-15	FLEX LAB SUPPORT G38	200	30	1	5	0.12	-	6.6	200	55	85	0.06	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-G-16	FLEX LAB SUPPORT G36	200	30	1	5	0.12	-	6.6	200	55	85	0.06	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-G-17	SUPPORT G34	200	30	1	5	0.12	-	6.6	200	55	85	0.06	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-G-18	FREEZER G32	240	40	1	6	11	17	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1,2
SVAV-G-19	CORRIDOR G0042	150	150	1	4	14	22	5.6	150	55	89	0.04	500	0.9	0.16	130	117.6	2	10	KREUGER LMHS	1,2
SVAV-G-20	COLD ROOM G28/G30	100	100	1	4	-	17	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1
SVAV-G-21	FREEZER G26	240	40	1	6	11	17	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1,2
SVAV-G-22	EQUIPMENT G15	250	30	1	6	11	18	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1,2
SVAV-G-23	MICROSCOPY G17	160	30	1	4	0.15	16	5.8	160	55	85	0.04	500	0.9	0.17	130	117	2	10	KREUGER LMHS	1,2
SVAV-G-24	PCR G19	250	30	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	117	2	10	KREUGER LMHS	1,2
SVAV-G-25	FLEXIBLE G21	250	30	1	5	0.19	11	8.2	250	55	88	0.09	500	1.4	0.27	130	117	2	10	KREUGER LMHS	1,2
SVAV-G-26	FIELD WORK ROOM G04	295	30	1	6	0.17	12	9.7	295	55	85	0.12	500	2.2	0.54	130	121	2	10	KREUGER LMHS	1,2
SVAV-G-27	SOIL AND SAMPLE PREP G02	1430	1130	1	12	0.61	16	45.8	1430	55	85	0.54	500	3.5	0.65	130	105	3	10	KREUGER LMHS	1,2
SVAV-G-28	GRINDING ROOM G05	180	30	1	5	0.1	-	6.1	180	55	86	0.05	500	0.9	0.17	130	116	2	10	KREUGER LMHS	1,2
SVAV-G-29	GRINDING ROOM G03	180	30	1	5	0.1	-	6.1	180	55	86	0.05	500	0.9	0.17	130	116	2	10	KREUGER LMHS	1,2
SVAV-G-30	GRINDING ROOM G01	180	30	1	5	0.1	-	6.1	180	55	89	0.05	500	0.9	0.17	130	116	2	10	KREUGER LMHS	1,2
SVAV-1-8	CLASSROOM 133	300	0	1	7	13	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-1-9	OFFICE 129/127/125/123	80	0	1	4	-	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-1-10	OFFICE 128A/128B/128/128C/128D/128E/120	170	0	1	5	-	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-1-11	CORRIDOR 10045	200	200	1	5	0.12	-	6.6	200	55	85	0.06	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-1-12	COLLAB 119	100	100	1	4	-	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-1-13	WRITE-UP SPACES 116/116A/116B	270	0	1	6	12	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-1-14	OFFICE 109/107/105/103	90	0	1	4	-	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-1-15	CORRIDOR 10041 / 111	725	725	1	9	11	12	23.7	725	55	85	0.27	500	2.1	0.3	130	105.7	3	10	KREUGER LMHS	1,2
SVAV-1-16	FLEX LAB SUPPORT 118	205	30	1	5	0.13	-	6.7	205	55	85	0.07	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-1-17	MICROSCOPY 113B	180	30	1	5	0.1	-	6.1	180	55	85	0.05	500	0.9	0.17	130	116	2	10	KREUGER LMHS	1,2
SVAV-1-18	TISSUE CULTURE 113C	250	80	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	117	2	10	KREUGER LMHS	1,2
SVAV-1-19	EQUIPMENT 113D	250	30	1	6	11	18	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1,2
SVAV-1-20	MOLECULAR BIO 113E	250	30	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	117	2	10	KREUGER LMHS	1,2
SVAV-1-21	DRY TEACHING LAB 104	1635	510	1	14	0.39	-	53.5	1635	55	85	0.33	500	3.8	0.54	130	102	3	10	KREUGER LMHS	1,2
SVAV-2-6	OFFICE 235/233/231/229/227	120	0	1	4	-	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-2-7	MEETING ROOM 225	105	0	1	4	-	21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-2-8	CORRIDOR 20040	400	400	1	6	14	18	13.1	400	55	85	0.3	500	1.2	0.35	130	107.3	3	10	KREUGER LMHS	1,2
SVAV-2-9	COLLAB 221	100	100	1	4	-	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-2-10	WRITE-UP SPACE 224/224B/224A	270	0	1	6	12	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-2-11	OFFICE 211/209/207/205	90	0	1	4	-	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-2-12	CORRIDOR 20041	450	300	1	-	-	18	14.7	450	55	85	0.08	500	2	0.35	130	114.8	2	10	KREUGER LMHS	1,2
SVAV-2-13	WRITE-UP SPACE 203	155	0	1	5	-	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-2-14	FLEX LAB SUPPORT 228	260	90	1	5	0.2	12	8.5	260	55	85	0.1	500	1.5	0.29	130	116	2	10	KREUGER LMHS	1,2
SVAV-2-15	MICROSCOPY 219B	185	30	1	5	0.11	-	6.2	185	55	86	0.06	500	0.9	0.17	130	116	2	10	KREUGER LMHS	1,2
SVAV-2-16	EQUIPMENT 1 219C	250	30	1	6	11	18	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1,2
SVAV-2-17	EQUIPMENT 2 219D	250	30	1	5	0.19	11	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1,2
SVAV-2-18	MOLECULAR LAB 219E	250	30	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-2-19	CULTURE 219F	250	80	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-2-20	FLEXIBLE 202F	250	30	1	6	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-2-21	EQUIPMENT 202C	250	30	1	5	0.17	13	9.8	250	55	85	0.12	500	2.3	0.6	130	118	2	10	KREUGER LMHS	1,2
SVAV-2-22	CULTURE 202B	250	80	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-2-23	MICROSCOPY 202A	250	30	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-3-6	LARGE MEETING ROOM 340	175	0	1	5	-	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-7	CORRIDOR 30042	200	200	1	5	0.12	-	6.6	200	55	85	0.06	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-3-8	OFFICE 334/332/330/328	100	0	1	4	-	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-9	OFFICE 339/337/335/333/331/329/327	175	0	1	5	-	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-10	WRITE-UP SPACE 324/324A/324B	270	0	1	6	12	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-11	COLLAB 323	100	100	1	4	-	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-12	CORRIDOR 30041 / 315	580	580	1	9	-	12	19.6	580	55	85	0.15	500	2.5	0.41	130	113.8	2	12	KREUGER LMHS	1,2
SVAV-3-13	WRITE-UP 311 / OFFICE 313	110	0	1	4	-	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-14	WRITE-UP SPACE 307	50	0	1	4	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-15	COLLAB 305	100	100	1	4	-	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-3-16	FLEX LAB SUPPORT 326	295	50	1	6	0.17	12	9.7	295	55	85	0.12	500	2.2	0.54	130	121	2	10	KREUGER LMHS	1,2
SVAV-3-17	FLEXIBLE 319B	250	30	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-3-18	MICROSCOPY 319CA/C	185	30	1	5	0.11	-	6.2	185	55	86	0.06	500	0.9	0.17	130	116	2	10	KREUGER LMHS	1,2
SVAV-3-19	EQUIPMENT 319D	250	30	1	6	11	18	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1,2
SVAV-3-20	SOIL/EQUIPMENT 319E	250	30	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-3-21	TISSUE CULTURE 319F	250	80	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-3-22	LAB 302E/ 302EA	185	30	1	5	0.11	-	6.2	185	55	86	0.06	500	0.9	0.17	130	116	2	10	KREUGER LMHS	1,2
SVAV-3-23	CULTURE 302B	250	80	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-3-24	MOLECULAR BIO 302A	250	30	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-3-25	AUTOCLAVE SERVICE 304A	70	70	1	4	-	11	N/A	N/A	N/A	N/A	NA	NA	NA	NA	N/A	N/A	NA	NA	KREUGER LMHS	1
SVAV-4-8	ACAD. OFFICE 430/428/426/420/418	100	0	1	4	-	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-4-9	CORRIDOR 40043	125	125	1	4	14	22	5.6	125	55	89	0.04	500	0.9	0.16	130	117.6	2	10	KREUGER LMHS	1,2
SVAV-4-10	COMPUTATIONAL LAB 431	345	0	1	7	13	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-4-11	TEAM ROOM 431A/431B	80	0	1	4	-	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-4-12	COMPUTATIONAL LAB 416	365	0	1	7	13	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-4-13	BIO-DIVERSITY HUB 403	190	0	1	5	14	25	6.3	190	55	85	0.06	500	0.9	0.17	130	116.1	2	10	KREUGER LMHS	1,2
SVAV-4-14	COLLAB 404 / WORKSPACE 404A	105	0	1	4	-	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	KREUGER LMHS	1
SVAV-4-15	CORRIDOR 40040	200	200	1	5	0.12	-	6.6	200	55	85	0.06	500	1	0.18	130	116	2	10	KREUGER LMHS	1,2
SVAV-4-16	CULTURE 402D	250	80	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-4-17	PCR/CLEANROOM 402B	250	80	1	5	0.19	11	8.2	250	55	85	0.09	500	1.4	0.27	130	118	2	10	KREUGER LMHS	1,2
SVAV-4-18	MICROSCOPY 402A	175	30	1	5	0.1	-	6.1	175	55	87	0.05	500	0.9	0.17	130	117	2	10	KREUGER LMHS	1,2

REMARKS:
1. FIBER FREE LINER
2. PROVIDE 3" INTEGRAL SOUND ATTENUATOR

POINT EXHAUST LAB AIR VALVE SCHEDULE

UNIT NO.	SERVICE	SIZE (In.)	FACTORY RANGE MAX AIR FLOW (CFM)	FACTORY RANGE MIN AIR FLOW (CFM)	OPERATIONAL RANGE MAX AIR FLOW (CFM)	OPERATIONAL RANGE MIN AIR FLOW (CFM)	MOUNTING POSITION	MINIMUM OPERATING PRESSURE (In. WC.)	MANUFACTURER & MODEL NO.	REMARKS
PAV-G-1	INSTRUMENTATION G14	8	800	80	620	190	HORIZONTAL	0.3	ACCUTROL AVC6000	1,2,3
PAV-G-2	LAB G20	8	800	80	280	110	HORIZONTAL	0.25	ACCUTROL AVC6000	1,2,3
PAV-G-3	LAB G02 CANOPY HOOD	12	1790	180	1100	1100	HORIZONTAL	0.18	ACCUTROL AVC6000	1,2,3,4
PAV-G-4	GRD FLOOR EAST WING LABS	8	800	80	360	85	HORIZONTAL	0.1	ACCUTROL AVC6000	1,2,3
PAV-1-1	LAB 113/113F/113G	8	800	80	510	195	HORIZONTAL	0.2	ACCUTROL AVC6000	1,2,3
PAV-2-1	LAB 219/219G	8	800	80	610	165	HORIZONTAL	0.27	ACCUTROL AVC6000	1,2,3
PAV-2-2	2ND FLOOR NORTH WING LABS	8	800	80	615	215	HORIZONTAL	0.27	ACCUTROL AVC6000	1,2,3
PAV-2-3	LAB 230 / 236	6	300	30	60	60	HORIZONTAL	0.05	ACCUTROL AVC6000	1,2,3
PAV-3-1	LAB 319/319G	8	800	80	610	165	HORIZONTAL	0.27	ACCUTROL AVC6000	1,2,3
PAV-3-2	3RD FLOOR NORTH WING LABS	10	1300	120	760	245	HORIZONTAL	0.15	ACCUTROL AVC6000	1,2,3
PAV-3-3	AUTOCLAVE 304	12	1780	180	1100	1100	HORIZONTAL	0.2	ACCUTROL AVC6000	1,2,3,4
PAV-3-4	AUTOCLAVE 304A	6	300	30	85	85	HORIZONTAL	0.05	ACCUTROL AVC6000	1,2,3,4
PAV-4-1	4TH FLOOR NORTH LAB WING	8	800	80	600	185	HORIZONTAL	0.27	ACCUTROL AVC6000	1,2,3

REMARKS:
1. PROVIDE WITH TIGHT SHUT-OFF
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL RANGE WITH ACTUAL SETPOINTS IN SOFTWARE
3. PROVIDE WITH FAN STATIC RESET IF VENTURI STYLE VALVE IS PROVIDED
4. HIGH TEMPERATURE, 304SS CONSTRUCTION

GENERAL EXHAUST LAB AIR VALVE SCHEDULE

UNIT NO.	LOCATION	SERVICE	SIZE (In.)	FACTORY RANGE MAX AIR FLOW (CFM)	FACTORY RANGE MIN AIR FLOW (CFM)	OPERATIONAL RANGE MAX AIR FLOW (CFM)	OPERATIONAL RANGE MIN AIR FLOW (CFM)	MOUNTING POSITION	MINIMUM OPERATING PRESSURE (In. WC.)	MANUFACTURER & MODEL NO.	REMARKS
EAV-G-20	INSTRUMENTION G14	INSTRUMENTION G14	8	800	80	630	80	HORIZONTAL	0.3	ACCUTROL AVC6000	1,2,3
EAV-G-21	LAB G20	LAB G20	10	1300	120	870	120	HORIZONTAL	0.2	ACCUTROL AVC6000	1,2,3
EAV-1-7	LAB 113	LAB 113/113F/113G	14	2750	250	1960	250	HORIZONTAL	0.25	ACCUTROL AVC6000	1,2,3
EAV-2-11	TEACHING LAB 236	TEACHING LAB 236	12	1790	180	1275	180	HORIZONTAL	0.22	ACCUTROL AVC6000	1,2,3
EAV-2-12	PREP LAB 230	PREP LAB 230	8	800	80	280	80	HORIZONTAL	0.1	ACCUTROL AVC6000	1,2,3
EAV-2-13	LAB 219/219G	LAB 219/219G	14	2750	250	1810	250	HORIZONTAL	0.2	ACCUTROL AVC6000	1,2,3
EAV-2-14	LAB 202	LAB 202/202D/202E	14	2750	250	1650	250	HORIZONTAL	0.15	ACCUTROL AVC6000	1,2,3
EAV-3-8	LAB 319/319G	LAB 319/319G	14	2750	250	1610	250	HORIZONTAL	0.15	ACCUTROL AVC6000	1,2,3
EAV-3-9	LAB 302	LAB 302/302C	12	1790	180	1440	180	HORIZONTAL	0.25	ACCUTROL AVC6000	1,2,3
EAV-4-1	LAB 402/402C	LAB 402/402C	8	800	80	295	150	HORIZONTAL	0.15	ACCUTROL AVC6000	1,2,3

REMARKS:
1. PROVIDE WITH TIGHT SHUT-OFF
2. THE MAX / MIN POSITIONS ON THE VALVE WILL BE SET AT THE FACTORY TO THE FULL RANGE WITH ACTUAL SETPOINTS IN SOFTWARE
3. PROVIDE WITH FAN STATIC RESET IF VENTURI STYLE VALVE IS PROVIDED

EXHAUST VAV - SINGLE DUCT - AIR TERMINAL UNIT SCHEDULE

UNIT NO.	SERVICE	MAX AIR FLOW (CFM)	MIN AIR FLOW (CFM)	MIN INLET PRESS AT MAX CFM (In. WC)	INLET SIZE (In.)	RAD N.C. AT 1" S.P.	DISCH N.C. AT 1" S.P.	MANUFACTURER & MODEL NO.	REMARKS
EAV-G-7	GROUND FLR TOILET	200	0	1	6	-	14	KREUGER LMHS	1
EAV-G-8	CUST. G0081	150	0	1	5	-	16	KREUGER LMHS	1
EAV-G-9	WRITE-UP SPACE G09	170	0	1	5	-	18	KREUGER LMHS	1
EAV-G-10	LAB SUPPORT G40	200	100	1	5	-	21	KREUGER LMHS	1
EAV-G-11	FLEX LAB SUPPORT G38	200	100	1	5	-	21	KREUGER LMHS	1
EAV-G-12	FLEX LAB SUPPORT G36	200	100	1	5	-	21	KREUGER LMHS	1
EAV-G-13	SUPPORT G34	200	100	1	5	-	21	KREUGER LMHS	1
EAV-G-14	FREEZER G32	240	120	1	6	11	17	KREUGER LMHS	1
EAV-G-15	CYL. STOR G13	100	100	1	4	-	17	KREUGER LMHS	1
EAV-G-16	COLD ROOM G28	100	100	1	4	-	17	KREUGER LMHS	1
EAV-G-17	FREEZER G26	240	120	1	6	11	17	KREUGER LMHS	1
EAV-G-18	EQUIPMENT G15	180	90	1	5	-	19	KREUGER LMHS	1
EAV-G-19	MICROSCOPY G17	180	90	1	5	-	19	KREUGER LMHS	1
EAV-G-20	PCR G19	180	50	1	5	-	19	KREUGER LMHS	1
EAV-G-21	FLEXIBLE G21	180	50	1	5	-	19	KREUGER LMHS	1
EAV-G-22	FIELD WORK ROOM G04	295	150	1	6	13	20	KREUGER LMHS	1
EAV-G-23	CYL. CLO G0087	100	100	1	4	-	17	KREUGER LMHS	1
EAV-G-24	GRINDING ROOM G05	180	100	1	5	-	19	KREUGER LMHS	1
EAV-G-25	GRINDING ROOM G03	180	100	1	5	-	19	KREUGER LMHS	1
EAV-G-26	GRINDING ROOM G01	180	100	1	5	-	19	KREUGER LMHS	1
EAV-1-6	TOILET ROOM 10023 / 111	175	0	1	4	-	12	KREUGER LMHS	1
EAV-1-7	JAN / SUPPLY ROOM 10061	100	0	1	4	-	17	KREUGER LMHS	1
EAV-1-8	FLEX LAB SUPPORT 118	305	130	1	6	14	19	KREUGER LMHS	1
EAV-1-9	MICROSCOPY 113B	180	90	1	5	-	19	KREUGER LMHS	1
EAV-1-10	TISSUE CULTURE 113C	150	50	1	5	-	16	KREUGER LMHS	1
EAV-1-11	EQUIPMENT 113D	180	50	1	5	-	19	KREUGER LMHS	1
EAV-1-12	MOLECULAR BIO 113E	180	50	1	5	-	19	KREUGER LMHS	1
EAV-1-13	DRY TEACHING LAB 104	1635	840	1	14	20	22	KREUGER LMHS	1
EAV-1-14	CYL. 113A	100	100	1	4	-	17	KREUGER LMHS	1
EAV-2-5	TOILET ROOMS	150	0	1	5	-	16	KREUGER LMHS	1
EAV-2-6	FLEX LAB SUPPORT 228	260	130	1	6	12	18	KREUGER LMHS	1
EAV-2-7	MICROSCOPY 219B	185	50	1	5	-	19	KREUGER LMHS	1
EAV-2-8	EQUIPMENT 1 219C	185	50	1	5	-	19	KREUGER LMHS	1
EAV-2-9	EQUIPMENT 2 219D	185	50	1	5	-	19	KREUGER LMHS	1
EAV-2-10	MOLECULAR LAB 219E	185	50	1	5	-	19	KREUGER LMHS	1
EAV-2-11	CULTURE 219F	160	50	1	5	-	17	KREUGER LMHS	1
EAV-2-12	FLEXIBLE 202F	210	50	1	5	-	21	KREUGER LMHS	1
EAV-2-13	EQUIPMENT 202C	200	50	1	5	-	21	KREUGER LMHS	1
EAV-2-14	CULTURE 202B	70	50	1	4	-	11	KREUGER LMHS	1
EAV-2-15	MICROSCOPY 202A	200	50	1	5	-	21	KREUGER LMHS	1
EAV-2-16	CYL. STOR 202G

FAN COIL UNIT SCHEDULE - CHILLED WATER/HOT WATER

UNIT NO.	SERVICE	TYPE	AIR SIDE AIR FLOW (CFM)	AIR SIDE MIN O.A. (CFM)	AIR SIDE EXT. STATIC (in. WC)	COOLING COIL - 100% WATER CAPACITY SENSIBLE (MBH)	COOLING COIL - 100% WATER CAPACITY TOTAL (MBH)	COOLING COIL - 100% WATER EAT (DEG. F) DB	COOLING COIL - 100% WATER EAT (DEG. F) WB	COOLING COIL - 100% WATER LAT (DEG. F) DB	COOLING COIL - 100% WATER LAT (DEG. F) WB	COOLING COIL - 100% WATER WATER FLOW (GPM)	COOLING COIL - 100% WATER WATER P.D. (Ft. HD)	COOLING COIL - 100% WATER ENT. WATER TEMP. (DEG. F)	COOLING COIL - 100% WATER LVG. WATER TEMP. (DEG. F)	HEATING COIL - 100% WATER ROWS	HEATING COIL - 100% WATER FPI	HEATING COIL - 100% WATER CAPACITY (MBH)	HEATING COIL - 100% WATER ENT. AIR TEMP. (DEG. F)	HEATING COIL - 100% WATER LVG. AIR TEMP. (DEG. F)	HEATING COIL - 100% WATER WATER FLOW (GPM)	HEATING COIL - 100% WATER WATER P.D. (Ft. HD)	HEATING COIL - 100% WATER ENT. WATER TEMP. (DEG. F)	HEATING COIL - 100% WATER LVG. WATER TEMP. (DEG. F)	SUPPLY FAN OUTLET SOUND POWER LEVELS (Db) ROWS	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	FAN MOTOR RPM	HP	VOLTS	PHASE	MANUFACTURER & MODEL No.	REMARKS
FCU-G-18	FACULTY OFFICE G37	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-G-19	FACULTY OFFICE G35	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-G-20	FACULTY OFFICE G33	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-G-21	FACULTY OFFICE G31	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-G-22	FACULTY OFFICE G29	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-G-23	FACULTY OFFICE G27	HORZ. CONCEALED	175	30	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-G-24	TEL/DATA G25	HORZ. CONCEALED	395	0	0.25	7.9	10.4	75	65	57	56.4	1.5	3.02	47	62.1	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	63	62	61	59	55	50	41	907	(1) @ 1/3	120	1	JOHNSON CONTROLS FNP06	2,3,4,5,6
FCU-G-25	SUSTAINABLE LAB G20	HORZ. CONCEALED	400	0	0.25	9.0	12.9	75	65	54.1	54.1	2.2	4.4	47	59	5	12	10.6	70	93.8	0.9	3.2	130	107	1	12	58	56	53	53	49	42	33	1346	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-G-26	SUSTAINABLE LAB G20	HORZ. CONCEALED	400	0	0.25	9.0	12.9	75	65	54.1	54.1	2.2	4.4	47	59	5	12	10.6	70	93.8	0.9	3.2	130	107	1	12	58	56	53	53	49	42	33	1346	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-G-27	INSTRUMENTATION LAB G14	HORZ. EXPOSED	600	0	0.5	12.9	16.9	75	65	56.2	55.8	2.5	1.5	47	62	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	63	62	61	58	54	42	1003	(1) @ 1/2	120	1	JOHNSON CONTROLS FNX12	2,3,4,5,6
FCU-G-28	WRITE UP SPACE G09	HORZ. CONCEALED	635	170	0.5	14.6	20.5	75	65	54.3	54.1	2.9	2.2	47	62.1	6	10	15.4	70	90.3	1.3	0.5	130	108.2	1	10	68	63	61	61	57	53	42	964	(2) @ 1/3	120	1	JOHNSON CONTROLS FNP16	2,3,4,5,6
FCU-1-18	CLASSROOM 133	HORZ. CONCEALED	635	300	0.5	14.6	20.5	75	65	54.3	54.1	2.9	2.2	47	62.1	6	10	15.4	70	90.3	1.3	0.5	130	108.2	1	10	68	63	61	61	57	53	42	964	(2) @ 1/3	120	1	JOHNSON CONTROLS FNP16	2,3,4,5,6
FCU-1-19	FACULTY OFFICE 129	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-20	FACULTY OFFICE 127	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-21	ADMIN PROF 125	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-22	ADMIN PROF 123	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-23	TEL/DATA 121	HORZ. CONCEALED	395	0	0.25	7.9	10.4	75	65	57	56.4	1.5	3.02	47	62.1	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	63	62	61	59	55	50	41	907	(1) @ 1/3	120	1	JOHNSON CONTROLS FNP06	2,3,4,5,6
FCU-1-24	ADMIN 128	HORZ. CONCEALED	350	60	0.35	7.9	10.4	75	65	57	56.4	1.5	3.02	47	62.1	5	10	7.6	70	87	0.4	0.8	130	92.9	1	10	63	62	61	59	55	50	41	907	(1) @ 1/3	120	1	JOHNSON CONTROLS FNP06	2,3,4,5,6
FCU-1-25	ADMIN 128A	HORZ. CONCEALED	140	25	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-26	ADMIN 128B	HORZ. CONCEALED	140	20	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-27	ADMIN 128C	HORZ. CONCEALED	140	20	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-28	ADMIN 128D	HORZ. CONCEALED	140	20	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-29	ADMIN 128E	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-30	WRITE UP SPACE 116	HORZ. CONCEALED	400	100	0.35	8.2	11.3	75	65	56.3	55.9	1.5	2.3	47	62	5	10	7.6	70	87	0.4	0.8	130	92.9	1	10	56	55	53	54	49	41	32	1242	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D08	1,3,4,5,6
FCU-1-31	WRITE UP SPACE 116B	HORZ. CONCEALED	400	125	0.35	8.2	11.3	75	65	56.3	55.9	1.5	2.3	47	62	5	10	7.6	70	87	0.4	0.8	130	92.9	1	10	56	55	53	54	49	41	32	1242	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D08	1,3,4,5,6
FCU-1-32	MEETING ROOM 116A	HORZ. CONCEALED	140	45	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-33	COLLAB 119	HORZ. CONCEALED	175	100	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-34	FRUIT LAB 113	HORZ. CONCEALED	400	0	0.25	9.0	12.9	75	65	54.1	54.1	2.2	4.4	47	59	5	12	10.6	70	93.8	0.9	3.22	130	106.8	1	12	58	56	53	53	49	42	33	1346	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-1-35	FRUIT LAB 113	HORZ. CONCEALED	400	0	0.25	9.0	12.9	75	65	54.1	54.1	2.2	4.4	47	59	5	12	10.6	70	93.8	0.9	3.22	130	106.8	1	12	58	56	53	53	49	42	33	1346	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-1-36	PRINT SUPPLY 111	HORZ. CONCEALED	205	0	0.25	4.3	5.8	75	65	55.9	55.5	0.9	1.7	47	60	4	12	5.3	70	93.1	0.9	1.7	130	101	4	12	53	51	51	49	44	36	28	1135	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-37	ADMIN PROF 109	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-38	ADMIN PROF 107	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-39	ADMIN/CLERICAL 105	HORZ. CONCEALED	235	25	0.25	5.0	6.8	75	65	55.7	55.4	0.9	2.2	47	62	5	12	5.6	70	91.4	0.4	0.5	130	100	1	12	55	53	53	51	47	39	30	1218	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-40	BREAK ROOM 103	HORZ. CONCEALED	140	25	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-1-41	ELEC 10064	VERT. EXPOSED	395	0	0	7.0	9.3	75	65	58.8	57.2	1.5	4.9	47	60	3	12	10.6	70	93.6	0.8	2.7	130	104	1	12	57	61	55	53	48	42	38	1091	(1) @ 1/4	120	1	JOHNSON CONTROLS FWX-C06	2,3,4,5
FCU-2-10	FACULTY OFFICE 235	HORZ. CONCEALED	175	20	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-11	FACULTY OFFICE 233	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-12	FACULTY OFFICE 231	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-13	FACULTY OFFICE 229	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-14	FACULTY OFFICE 227	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-15	MEETING 225	HORZ. CONCEALED	400	105	0.35	9.1	13.3	75	65	54.3	54.0	2.0	4.2	47	60	5	12	7.5	70	87.8	0.4	0.8	130	90.9	1	12	56	56	53	54	49	42	32	1257	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D08	1,3,4,5,6
FCU-2-16	COLLAB 221	HORZ. CONCEALED	175	100	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	52	51	50	48	43	34	27	1242	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-17	WRITE UP SPACE 224	HORZ. CONCEALED	400	100	0.35	8.2	11.3	75	65	56.3	55.9	1.5	2.3	47	62	5	10	7.6	70	87	0.4	0.8	130	92.9	1	10	56	55	53	54	49	41	32	1242	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D08	1,3,4,5,6
FCU-2-18	WRITE UP SPACE 224B	HORZ. CONCEALED	565	125	0.35	11.0	14.1	75	65	57.5	56.8	2.0	1.9	47	62	6	10	14	70	91.8	0.9	0.4	130	99	2	5	68	65	64	64	60	58	47	1091	(1) @ 1/3	120	1	JOHNSON CONTROLS FNP08	2,3,4,5,6
FCU-2-19	MEETING ROOM 224A	HORZ. CONCEALED	140	45	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-20	TEL/DATA 223	HORZ. CONCEALED	395	0	0.25	7.9	10.4	75	65	57	56.4	1.5	3.02	47	62.1	6	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	63	62	61	59	55	50	41	907	(1) @ 1/3	120	1	JOHNSON CONTROLS FNP06	2,3,4,5,6
FCU-2-21	PLANT LAB 219	HORZ. CONCEALED	400	0	0.25	9.0	12.9	75	65	54.1	54.1	2.2	4.4	47	59	5	12	10.6	70	93.8	0.9	3.22	130	106.8	1	12	58	56	53	53	49	42	33	1346	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-2-22	PLANT LAB 219	HORZ. CONCEALED	400	0	0.25	9.0	12.9	75	65	54.1	54.1	2.2	4.4	47	59	5	12	10.6	70	93.8	0.9	3.22	130	106.8	1	12	58	56	53	53	49	42	33	1346	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-2-23	OFFICE 211	HORZ. CONCEALED	205	30	0.25	4.3	5.8	75	65	55.9	55.5	0.9	1.7	47	60	4	12	5.3	70	93.1	0.9	1.7	130	101	4	12	53	51	51	49	44	36	28	1135	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-24	FACULTY OFFICE 209	HORZ. CONCEALED	205	20	0.25	4.3	5.8	75	65	55.9	55.5	0.9	1.7	47	60	4	12	5.3	70	93.1	0.9	1.7	130	101	4	12	53	51	51	49	44	36	28	1135	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-25	FACULTY OFFICE 207	HORZ. CONCEALED	205	20	0.25	4.3	5.8	75	65	55.9	55.5	0.9	1.7	47	60	4	12	5.3	70	93.1	0.9	1.7	130	101	4	12	53	51	51	49	44	36	28	1135	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-26	FACULTY OFFICE 205	HORZ. CONCEALED	205	20	0.25	4.3	5.8	75	65	55.9	55.5	0.9	1.7	47	60	4	12	5.3	70	93.1	0.9	1.7	130	101	4	12	53	51	51	49	44	36	28	1135	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-2-27	WRITE UP SPACE 203	HORZ. CONCEALED	615	155	0.5	12.9	16.9	75	65	56.2	55.8	2.5	1.5	47	62	6	10	9.2	70	80.4	0.5	0.1	130	100	1	10	67	63	62	61	58	54	42	1003	(1) @ 1/2	120	1	JOHNSON CONTROLS FNP12	2,3,4,5,6
FCU-2-28	SYNTHETIC BIO LAB 202	HORZ. CONCEALED	300	0	0.25	6.9	10	75	65	54.0	53.8	1.7	2.5	47	59	5	12	8.2	70	94.3	0.8	0.3	130	109	1	12	55	52	50	49	45	36	28	1211	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-2-29	SYNTHETIC BIO LAB 202	HORZ. CONCEALED	300	0	0.25	6.9	10	75	65	54.0	53.8	1.7	2.5	47	59	5	12	8.2	70	94.3	0.8	0.3	130	109	1	12	55	52	50	49	45	36	28	1211	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D06	1,3,4,5,6
FCU-2-30	ELEVATOR CONTROL ROOM 20060A	HORZ. EXPOSED	395	0	0	7.0	9.3	75	65	58.8	57.2	1.5	4.9	47	60	3	12	10.6	70	93.6	0.8	2.7	130	104	1	12	57	61	55	53	48	42	38	1091	(1) @ 1/4	120	1	JOHNSON CONTROLS FWX-C06	2,3,4,5
FCU-3-14	LARGE MEETING ROOM 340	HORZ. CONCEALED	645	175	0.5	12.67	17.5	75	65	57.1	56.3	2.5	2.58	47	62	4	10	12.3	70	85	0.7	0.19	130	100	1	10	67	62	61	60	57	52	41	948	(2) @ 1/3	120	1	JOHNSON CONTROLS FNP16	2,3,4,5,6
FCU-3-15	FACULTY OFFICE 334	HORZ. CONCEALED	140	25	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-3-16	FACULTY OFFICE 332	HORZ. CONCEALED	140	25	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-3-17	FACULTY OFFICE 330	HORZ. CONCEALED	140	25	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-3-18	FACULTY OFFICE 328	HORZ. CONCEALED	140	25	0.25	3.2	4.61	75	65	54.3	54.1	0.7	1.21	47	60.5	5	12	4.6	70	99	0.4	0.45	130	105	1	12	51	49	49	47	42	32	26	1064	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-3-19	FACULTY OFFICE 339	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-3-20	FACULTY OFFICE 337	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-3-21	FACULTY OFFICE 335	HORZ. CONCEALED	175	25	0.25	3.75	5.18	75	65	55.6	55.4	0.7	1.25	47	62	5	12	5	70	95.5	0.4	0.45	130	103	1	12	52	51	50	48	43	34	27	1115	(1) @ 1/4	120	1	JOHNSON CONTROLS FHP-D04	1,3,4,5,6
FCU-3-22	FACUL

GENERAL NOTES

SYMBOLS AND ABBREVIATIONS
1. THIS SHEET CONTAINS SYMBOLS AND ABBREVIATIONS TYPICALLY SHOWN ON ELECTRICAL DRAWINGS AND SCHEMATICS. THIS CONTRACT DRAWING SET MAY NOT CONTAIN ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET.

PERMITS AND INSPECTIONS
1. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND ARRANGE FOR ALL REQUIRED INSPECTIONS IN ACCORDANCE WITH STATE AND LOCAL GOVERNING AUTHORITIES.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2023 NEC, AND STATE AND LOCAL GOVERNING REGULATIONS.
3. PERFORM WORK AS REQUIRED BY CODES, REGULATIONS, LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES WITH LAWFUL JURISDICTION. ALL MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM

SCOPE
1. UNLESS OTHERWISE INDICATED, PROVIDE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM INCLUDING ALL NECESSARY MATERIAL, LABOR, AND EQUIPMENT.
2. ALL DISCONNECTS REQUIRED BY CODE MAY NOT BE SHOWN. CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS AND OVERCURRENT PROTECTIVE DEVICES.
3. ALL EQUIPMENT AND MATERIAL SHALL BE LABELED AND LISTED, AND INSTALLED IN ACCORDANCE WITH THEIR LISTING.
4. PROVIDE ELECTRICAL CONNECTION FOR EVERY FIXTURE, OR ITEM OF EQUIPMENT REQUIRING SAME, WHICH IS SHOWN OR LISTED ON ANY CONTRACT DRAWING
5. CONTRACTOR SHALL PROVIDE NECESSARY SUPPORT FRAMING, STIFFENERS, BRACING, AND HANGERS WHETHER SHOWN OR NOT TO ENSURE A COMPLETE AND DURABLE SYSTEM. SUPPORT FRAMING CONNECTIONS SHALL BE WELDED UNLESS SPECIFICALLY SHOWN OTHERWISE. ACTUAL SUPPORTS MAY VARY FROM THOSE SHOWN IN DETAILS TO ACCOMMODATE EXISTING FIELD CONDITIONS.
6. THE WORK INCLUDED IN THIS CONTRACT ENCOMPASSES THE DRAWINGS AND SPECIFICATIONS. WORK INCLUDED ON THE DRAWINGS ONLY, OR IN THE SPECIFICATIONS ONLY, SHALL BE INCORPORATED AS IF INCLUDED IN BOTH. ALL SYSTEMS SHOWN ARE INTENDED TO BE COMPLETE AND FULLY FUNCTIONING. THE CONTRACTOR SHALL PROVIDE SUCH COMPONENTS AS NECESSARY FOR A FULLY FUNCTIONING SYSTEM.
7. ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE.
8. CONTRACTOR SHALL FIELD VERIFY ALL SITE CONDITIONS AND DIMENSIONS PRIOR TO COMMENCEMENT OF ANY WORK OR SHOP FABRICATION. REQUIRED CHANGES TO WORK SHOWN ON CONSTRUCTION DRAWINGS SHALL BE APPROVED BY THE ENGINEER IN WRITING, OTHER TRADES, AND OWNER AS REQUIRED PRIOR TO ANY CONSTRUCTION.

COORDINATION OF WORK
1. THE CONTRACTOR SHALL COORDINATE AND VERIFY THAT WORKING AND DEDICATED EQUIPMENT SPACE REQUIREMENTS ARE MET PER NEC AND AHJ.
2. FIELD LOCATE ALL CORE DRILL LOCATIONS.
3. BEFORE CUTTING OR DRILLING INTO BUILDING ELEMENTS INSPECT AND LAYOUT WORK TO AVOID DAMAGING STRUCTURAL ELEMENTS AND BUILDING UTILITIES.
4. BEFORE SELECTING MATERIAL/EQUIPMENT AND PROCEEDING WITH WORK, INSPECT AREAS WHERE MATERIAL AND EQUIPMENT ARE TO BE INSTALLED TO INSURE SUITABILITY, AND CHECK NEEDED SPACE FOR PLACEMENT, CLEARANCES AND INTERCONNECTIONS.
5. POSSIBLE SYSTEM SHUT-DOWNS AND WORK AREAS CLOSURES MUST BE COORDINATED WITH THE OWNER.
6. VERIFY RECEPTACLE, SWITCH, & COVER PLATE COLORS WITH OWNER.
7. TURN OVER TO THE OWNER ALL MANUFACTURER'S WARRANTIES FOR EQUIPMENT AND MATERIALS PROVIDED.

DEFINITIONS
1. THE DEFINITION OF ELECTRICAL TERMS USED SHALL BE AS DEFINED IN THE EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AS REFERENCED IN THE BUILDING CODE OF NEW YORK STATE.
2. THE TERM "INDICATED" SHALL MEAN "AS SHOWN ON CONTRACT DOCUMENTS (SPECIFICATIONS, DRAWINGS, AND RELATED ATTACHMENTS)".
3. THE TERM "PROVIDE" SHALL MEAN "TO FURNISH, INSTALL, AND CONNECT COMPLETELY".
4. THE TERM "SIZE" SHALL MEAN ONE OR MORE OF THE FOLLOWING: "LENGTH, CURRENT AND VOLTAGE RATING, NUMBER OF POLES, NEMA SIZE, AND OTHER SIMILAR ELECTRICAL CHARACTERISTICS".

PLANS
1. ELECTRICAL PLANS, DETAILS, AND ONE LINE DIAGRAMS SHOW THE GENERAL LOCATION AND ARRANGEMENT OF THE ELECTRICAL SYSTEM. THEY ARE DIAGRAMMATIC AND DO NOT SHOW ALL CONDUIT BODIES, CONNECTORS, BENDS, FITTINGS, HANGERS, AND ADDITIONAL PULL BOXES WHICH THE CONTRACTOR MUST PROVIDE TO COMPLETE THE ELECTRICAL SYSTEM.
2. ELECTRICAL PLANS AND DETAILS DO NOT SHOW ALL INTERFERENCES AND CONDITIONS, VISIBLE AND/OR HIDDEN, THAT MAY EXIST. CONTRACTOR MUST INSPECT AND SURVEY THE SPACE BEFORE PERFORMING THE WORK.
3. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND REPRESENT A COMPLETED PROJECT. MINOR MODIFICATIONS OF WORK SHALL BE PROVIDED BY THE CONTRACTOR TO COMPLY WITH PROJECT REQUIREMENTS, LOCATIONS OF DEVICES AND EQUIPMENT SHOW A GENERAL ARRANGEMENT AND INTENDED FUNCTION. ALL COMPONENTS SHOWN ON THE RISER DIAGRAMS, BUT NOT ON THE PLAN OR VICE VERSA, SHALL BE INCLUDED AS IF SHOWN ON BOTH. EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS. BEFORE INSTALLATION OF WORK, CHECK FOR SWINGS AND ALL REQUIRED CLEARANCES, TO AVOID INTERFERENCE WITH OTHER TRADES. COORDINATE WITH ALL CONTRACT DOCUMENTS, SHOP DRAWINGS AND EQUIPMENT DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED CONTRACT DRAWINGS.

METHODS
1. ALL EXTERIOR CONDUITS TO HAVE DUCT SEAL INSTALLED AT ALL ENDS, BOXES, WEATHERHEADS, PENETRATIONS TO INTERIOR SPACES, ETC.
2. DUCT BANKS SHALL NOT BE ROUTED DIRECTLY ABOVE OR BELOW EXISTING/PROPOSED UTILITIES EXCEPT WHEN CROSSING. WHERE CROSSING EXISTING OR PROPOSED UTILITIES DUCT BANKS SHALL CROSS AT 90 DEGREE ANGLES.
3. ALL CONDUIT SYSTEMS EXPOSED TO TEMPERATURE DIFFERENTIALS, IN POTENTIAL CONDENSING ATMOSPHERES, EXTERIOR INSTALLED, OR INSTALLED UNDERGROUND SHALL HAVE PROVISIONS FOR DRAINING WATER OUT OF CONDUIT SYSTEMS.
4. WHERE WIRE SIZE IS NOT NOTED ON DRAWINGS, CONTRACTOR SHALL SIZE ACCORDING TO THE NEC AND SHALL ADHERE TO THE FOLLOWING CRITERIA:
   - EQUIPMENT CIRCUITS AND FEEDERS LESS THAN OR EQUAL TO 100A SHALL BE SIZED USING THE 60°C COPPER AMPACITY COLUMN (NEC T310.16).
   - EQUIPMENT CIRCUITS AND FEEDERS GREATER THAN 100A SHALL BE SIZED USING THE 75°C COPPER AMPACITY COLUMN (NEC T310.16). MINIMUM WIRE SIZE SHALL BE #12 THHN/THWN.
   - ALUMINUM SHALL NOT BE USED.
   - ALL CONDUCTORS TO BE STRANDED.

UNDERGROUND UTILITIES
1. UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES WHETHER FUNCTIONAL OR ABANDONED WITHIN THE PROJECT AREA ARE SHOWN ON THESE DRAWINGS.
2. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE BEGINNING WORK & SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM HIS/HER WORK.
3. THE CONTRACTOR SHALL NOTIFY "DIG SAFELY NEW YORK" 1-800-962-7962 PRIOR TO ANY EXCAVATION.
4. NO ATTEMPT WAS MADE TO LOCATE SUBSURFACE STRUCTURES, ABOVEGROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE EXISTING UTILITIES NEEDED TO COMPLETE THE WORK AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. CONTRACTOR SHALL COMPLY WITH THE STATE OF NEW YORK DEPARTMENT OF PUBLIC SERVICE, 16NYCRR PART 753.
5. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER AND OWNER.
6. CONTRACTOR SHALL PROTECT ALL EXISTING STORM WATER DRAINAGE FACILITIES, INCLUDING PIPES, DRAINAGE STRUCTURES, SWALES, DITCHES, ETC. CONTRACTOR SHALL REPLACE AND RESTORE ANY AND ALL OF THESE FACILITIES, AFFECTED BY CONSTRUCTION ACTIVITIES, AT NO ADDITIONAL COST TO THE OWNER.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES DURING OPERATIONS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY SURVEY OR RIGHT-OF-WAY MONUMENTS DISTURBED DURING CONSTRUCTION. THE CONTRACTOR SHALL EMPLOY A LICENSED LAND SURVEYOR TO RESTORE ALL DISTURBED MONUMENTS TO THEIR ORIGINAL LOCATION.
9. RESTORE ALL SURFACES TO AS GOOD OR BETTER CONDITION THAN BEFORE CONSTRUCTION AS SOON AS POSSIBLE FOLLOWING COMPLETION OF WORK IN ANY AREA.
10. THE CONTRACTOR SHALL BECOME FAMILIAR WITH SITE CONDITIONS AND SHALL INCLUDE PROVISIONS TO AVOID CONFLICTS WITH AND/OR RESTORE SITE FEATURES IN THE BID.
11. ALL SUITABLE EXCAVATED MATERIAL SHALL BE REUSED ON SITE AND BE SUITABLY STABILIZED SO THAT IT CANNOT REASONABLY RE-ENTER ANY BODY OF WATER.
12. ALL EXCAVATION SHALL BE CONDUCTED IN ACCORDANCE WITH OSHA STANDARDS, LOCAL REGULATIONS, STATE REGULATIONS, AND FEDERAL REGULATIONS.

MICRO-PHASING:
1. PROVIDE 3ϕ, 208Y/120V, 60A, 30-POLE TEMPORARY PANELS IN/NEAR THE WORK AREA BOUNDARY AS INDICATED ON NEW WORK POWER DRAWINGS.
2. TEMPORARY PANELS AT EACH FLOOR SHALL BE CONNECTED TO AVAILABLE SPARE CIRCUIT BREAKERS IN THE 1600A AND 800A PANELBOARD LOCATED IN ROOM B00UD AT BASEMENT LEVEL, REQUIRING A ONE-TIME TEMPORARY SHUTDOWN OF THE 1600A AND 800A PANELS.
3. ACCOUNT FOR 125 HOURS FOR CIRCUIT TRACING THAT MAY NEED TO BE REQUIRED.
4. CONTRACTOR SHALL FIELD VERIFY CIRCUITS FROM WITHIN THE WORK AREA WHICH FEED OCCUPIED AREAS OF THE BUILDING. ONCE CONTRACTORS TRACE THE CIRCUITS, MIGRATE THOSE CIRCUITS TO TEMPORARY PANELS, ADHERING TO THE 2-WEEK MINIMUM, 4-WEEK PREFERRED ADVANCE NOTICE REQUIREMENT FOR DOWNTIME.

GENERAL SCHEDULES

DRAWING NOTATION

- HEAVY & DASHED AND/OR HATCHED INDICATES EXISTING EQUIPMENT TO BE DEMOLISHED/REMOVED BY CONTRACTOR
- LIGHT & SOLID INDICATES EXISTING EQUIPMENT TO REMAIN.
- HEAVY & SOLID INDICATES EQUIPMENT TO BE PROVIDED BY CONTRACTOR.

TEXT ADJACENT TO EQUIPMENT IS SOMETIMES ADDED FOR EXTRA CLARIFICATION ON DEMO/EXISTING TO REMAIN ITEMS. REFER TO LIST BELOW FOR DEFINITIONS.

TBR	EXISTING EQUIPMENT TO BE REMOVED BY CONTRACTOR
ETR	EXISTING EQUIPMENT TO REMAIN. CONTRACTOR SHALL MAINTAIN IN OPERATION.
ERE	EXISTING EQUIPMENT TO BE REMOVED AND RELOCATED AS SHOWN BY CONTRACTOR.
ETN	EXISTING EQUIPMENT TO BE REMOVED AND REPLACED WITH NEW BY CONTRACTOR

POWER EQUIPMENT

SINGLE LINE DIAGRAM

- POWER TRANSFORMER
- PT — POTENTIAL TRANSFORMER
- CT — CURRENT TRANSFORMER
- FUSE
- **AF / **AT — MOLDED CASE CIRCUIT BREAKER; "AF" INDICATES AMPERE FRAME SIZE; "AT" INDICATES AMPERE TRIP SETTINGS
- 400AF / 300AT / 3 — FUSED DISCONNECT; "400AF" INDICATES AMPERE SWITCH SIZE; "300AT" INDICATES AMPERE FUSE SIZE
- 200A — DISCONNECT SWITCH (NON-FUSED); "200A" INDICATES AMPERE SWITCH SIZE
- SYSTEM GROUND OR EQUIPMENT GROUND
- PANELBOARD WITH MAIN CIRCUIT BREAKER; # = 3-PHASE VOLTAGE
- PANELBOARD WITH MAIN LUGS ONLY; # = 3-PHASE VOLTAGE
- EMERGENCY GENERATOR
- M — METER
- AUTOMATIC TRANSFER SWITCH

FLOOR PLAN

- SURFACE MTD BRANCH CIRCUIT PANELBOARD.
- RECESSED MTD BRANCH CIRCUIT PANELBOARD.
- # — LAB EQUIPMENT ELECTRICAL ROUGH-IN. REFER TO DRAWING E6.8. # DENOTES EQUIPMENT TAG
- AF/P — 240 VAC HEAVY DUTY NON-FUSED DISCONNECT SWITCH. "AF" - INDICATES FRAME SIZE; "P" - INDICATES # OF POLES
- AF/AT/P — 240 VAC HEAVY DUTY FUSED DISCONNECT SWITCH. "AF" - INDICATES FRAME SIZE; "AT" - INDICATES FUSE TRIP SIZE; "P" - INDICATES # OF POLES
- SPD — SURGE SUPPRESSION DEVICE
- M — ELECTRICAL CONNECTION AS DEFINED IN MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
- UTILITY POLE
- DB-XX — DESIGNATION FOR UNDERGROUND ELECTRICAL DUCT BANK
- FH — FUME HOOD ROUGH-IN
- DH — DOOR HARDWARE ROUGH-IN
- A — ANTENNA ROUGH-IN

REFER TO JUNCTION BOX SCHEDULE SHEET E6.6, FOR ADDITIONAL INFORMATION.

WIRING DEVICES

RECEPTACLES

1. FACEPLATE COLOR - STAINLESS STEEL, UON.
2. DEVICE COLOR - GRAY, UON.

- # — 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., HEAVY DUTY DUPLEX RECEPTACLE, MOUNTING HEIGHT 18" AFF UON.
- # — 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., HEAVY DUTY DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER.
- # — 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DOUBLE DUPLEX "QUAD" RECEPTACLE. MOUNTING HEIGHT 18"AFF UON.
- # — 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DOUBLE DUPLEX "QUAD" RECEPTACLE MOUNTED ABOVE COUNTER.
- # — 125 VOLT, 2 POLE, 3 WIRE, 20 AMP., HEAVY DUTY DUPLEX RECEPTACLE MOUNTED IN A FLOOR BOX. FLOOR BOX SHALL BE DUAL CHANNEL: WIREMOLD B80W2 OR SIMILAR. FOR USE IN CONCRETE. PROVIDE WITH TRIM APPLICABLE TO INSTALLATION.
- 208 VOLT, 2 POLE, 3 WIRE, 20 AMP., HEAVY DUTY SIMPLEX RECEPTACLE.

TEXT ADJACENT TO RECEPTACLES INDICATES CONFIGURATION OR ACCESSORIES. REFER TO LIST BELOW FOR DEFINITIONS.

#	INDICATES PANELBOARD CIRCUIT TO WHICH RECEPTACLE SHALL BE CIRCUITED. REFER TO HOMERUN FOR PANELBOARD DESIGNATION.
W	EXTERIOR RECEPTACLES SUBJECT TO DAMP ENVIRONMENTS SHALL HAVE WEATHER-PROOF-IN-USE BUBBLE COVER WITH PADLOCK CAPABILITY.
G	RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER
U	COMBINATION RECEPTACLE AND USB CHARGER.
TV	TELEVISION RECEPTACLE MOUNTED 60"AFF, UON.
C	OCCUPANCY SENSOR CONTROLLED RECEPTACLE - REFER TO DETAIL SHEET E8.1, FOR ADDITIONAL INFORMATION.
SB	INDICATES RECEPTACLE IS TO BE ON OPTIONAL STANDBY POWER.
CR	INDICATES RECEPTACLE IS TO BE ON LIFE SAFETY/CRITICAL BRANCH, COLOR RED FACEPLATE.

SURFACE RACEWAY USAGE

- # — DUAL CHANNEL METAL SURFACE RACEWAY V700 OR SIMILAR. MOUNTING HEIGHT 18" AFF, UON. AS INDICATED ON A-SERIES.

IN SOME AREAS SURFACE RACEWAY MAY BE REQUIRED, BUT NOT SHOWN. COORDINATE IN FIELD AND PROVIDE ACCORDINGLY. IN GENERAL - OBTAIN APPROVAL PRIOR TO USING SURFACE RACEWAY, WHERE NOT SPECIFICALLY SHOWN.

LIGHTING

LIGHT FIXTURES

- 'A' — UPPER CASE LETTER INDICATES FIXTURE TYPE.
- 'a' — LOWER CASE LETTER INDICATES SWITCH CONTROL. WHERE NO SWITCH CONTROL DESIGNATION IS PROVIDED, CONTROL SHALL BE VIA MASTER ROOM SWITCH OR MASTER ROOM OCCUPANCY SENSOR (WHERE PROVIDED).
- '#' — INDICATES PANELBOARD CIRCUIT TO WHICH FIXTURE SHALL BE CIRCUITED.

HALF HATCH INDICATES EMERGENCY LIGHT. REFER TO EMERGENCY LIGHTING DETAIL, SHEET E8.1, FOR ADDITIONAL INFORMATION.

EXIT & EGRESS

- CEILING-MOUNTED ILLUMINATED "EXIT" SIGN LIGHTING FIXTURE.
- WALL-MOUNTED ILLUMINATED "EXIT" SIGN LIGHTING FIXTURE.

NOTE: ARROWS INDICATE DIRECTION OF EGRESS.

EXIT SIGNS SHALL BE INSTALLED 7'-6" AFF. PROVIDE PENDANTS AS REQUIRED BY ROOM CEILING/STRUCTURE HEIGHT.

LIGHTING CONTROL

- LIGHT SWITCH. REFER TO LIGHTING CONTROL SYSTEM SCHEDULE, SHEET E6.5 FOR ADDITIONAL INFORMATION.
- TC — TIME CLOCK
- CR — CONTACTOR
- PC — PHOTOCELL
- EPC — EXTERIOR MOUNTED PHOTOCELL
- EPC — EMERGENCY POWER CONTROL
- XX — REFER TO LIGHTING CONTROL SYSTEM SCHEDULE, SHEET E6.5 FOR ADDITIONAL INFORMATION.

CIRCUITING LEGEND

CIRCUITING

- LP2A-13,5 — HOMERUN TO PANEL "LP2A", CIRCUITS #1,3,5 (VIA 20A-1P C/B'S). PROVIDE INSULATED GROUND CONDUCTOR IN ACCORDANCE WITH SPECIFICATIONS. NUMBER OF CIRCUITS INDICATED BY QUANTITY OF ARROW HEADS
- L2PA-2 — HOMERUN TO PANEL "L2PA" VIA 20A/1P CKT BKR. SEE BELOW PARAGRAPH 'HASH MARKS' FOR CONDUCTOR SIZING.
- HASH MARKS INDICATE QUANTITY OF #12 AWG COPPER CONDUCTORS IN CONDUIT. WHEN NO HASH MARKS ARE INDICATED, CONDUIT SHALL CONTAIN (2) #12 WIRES AND #12 GROUND WIRE. ASSUME 3/4" DIAMETER CONDUIT, UNLESS NOTED OTHERWISE NOTED. EXAMPLE SHOWN AT LEFT INDICATES 2 HOT (SHORT LINES), 2 NEUTRAL (LONG LINES), AND 1 GROUND WIRE (LONG LINE WITH TAIL).

NOTE
CONDUCTORS REQUIRED FOR LUMINAIRE SWITCHING ARE NOT ACCOUNTED FOR ON THE PLANS USING HASH MARKS. CONTRACTOR SHALL INCLUDE ANY NECESSARY CONDUCTORS REQUIRED FOR SWITCHING IN BID. SWITCHING DESIGNATIONS (LOWER CASE LETTERS) ARE SHOWN TO ILLUSTRATE SWITCHING INTENT.

CIRCUIT ROUTING SHOWN ON DRAWINGS SHALL BE CONSIDERED DIAGRAMMATIC ONLY. CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS AND ROUTE FEEDERS AFTER HAVING CONSIDERED ALL FIELD OBSTACLES

GENERAL ABBREVIATIONS

A	AMPERES	LTG	LIGHTING
ADA	AMERICANS WITH DISABILITIES ACT	LFMC	LIQUID-TIGHT FMC
AFF	ABOVE FINISH FLOOR		
AFG	ABOVE FINISH GRADE	MC	METAL CLAD CABLE
AHJ	AUTHORITY HAVING JURISDICTION	MCB	MAIN CIRCUIT BREAKER
AIC	AMPERE INTERRUPTING CAPACITY	MCP	MOTOR CIRCUIT PROTECTOR
AL	ALUMINUM	MFR	MANUFACTURER
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GAUGE		
AXL	ACROSS-THE-LINE MOTOR STARTER	NC	NORMALLY CLOSED
		NEC	NATIONAL ELECTRIC CODE
BFG	BELOW FINISH GRADE	NEMA	NAT'L ELECTRICAL MFR'S ASSOC.
BLDG	BUILDING	NF	NON FUSED
		NTS	NOT TO SCALE
C	CONDUIT		
CB	CIRCUIT BREAKER	P	POLE
CKT	CIRCUIT	PET	PROTECTIVE ENTRANCE TERMINAL
CL	CENTERLINE	PH	PHASE
CLF	CURRENT LIMITING FUSE	PVC	POLYVINYL CHLORIDE
CT	CURRENT TRANSFORMER		
CU	COPPER	QTY	QUANTITY
DWG	DRAWING	REQ'D	REQUIRED
		RMC	RIGID METAL CONDUIT
EC	ELECTRICAL CONTRACTOR	RTU	ROOF TOP UNIT
ECB	ENCLOSED CIRCUIT BREAKER		
EF	EXHAUST FAN	SP	SPARE
EM	EMERGENCY	TYP	TYPICAL
EMT	ELECTRICAL METALLIC TUBING		
F	FUSE	UG	UNDERGROUND OR UNDERGRADE
FLA	FULL LOAD AMPERES	UON,UNO	UNLESS OTHERWISE NOTED
FMC	FLEXIBLE METAL CONDUIT		
FT	FEET	V	VOLT
GFCI,GFI	GROUND-FAULT CIRCUIT INTERRUPTER	W	WIRE
GND,G	GROUND OR GROUNDING	WAP	WIRELESS ACCESS POINT
		WP	WEATHER PROOF RATED DEVICE
HOA	HAND, OFF, AUTOMATIC SWITCH		
		XFMR	TRANSFORMER
KCMIL	THOUSAND CIRCULAR MILS	Δ	DELTA
KVA	KILOVOLT AMPERES	Y	WYE
KW	KILOWATTS	ϕ	PHASE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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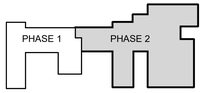
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL LEGENDS, NOTES, AND ABBREVIATIONS

STATE OF NEW YORK · SAMIR GARGAYANTI · 090906 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

E0.1

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GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA'S GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.

SHEET KEY NOTES:

1. REMOVE EXISTING EXTERIOR LIGHTING FIXTURE, COORDINATE PATCHING OF WALLS WITH A-SHEETS.
2. EXISTING WALL SCONCE IS TO BE REPLACED IN KIND. MAINTAIN EXISTING LIGHTING CIRCUIT AND SWITCHING MEANS FOR RECONNECTION TO REPLACEMENT WALL SCONCE.

1 ELECTRICAL SITE LIGHTING REMOVAL PLAN
SCALE 1" = 10'

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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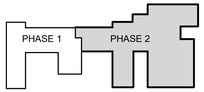
Notes:



Keyplan

Job Number	31909.00
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Revisions

ELECTRICAL SITE LIGHTING REMOVAL PLAN

STATE OF NEW YORK · SUSAN GARRAGHTY · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

E0.2

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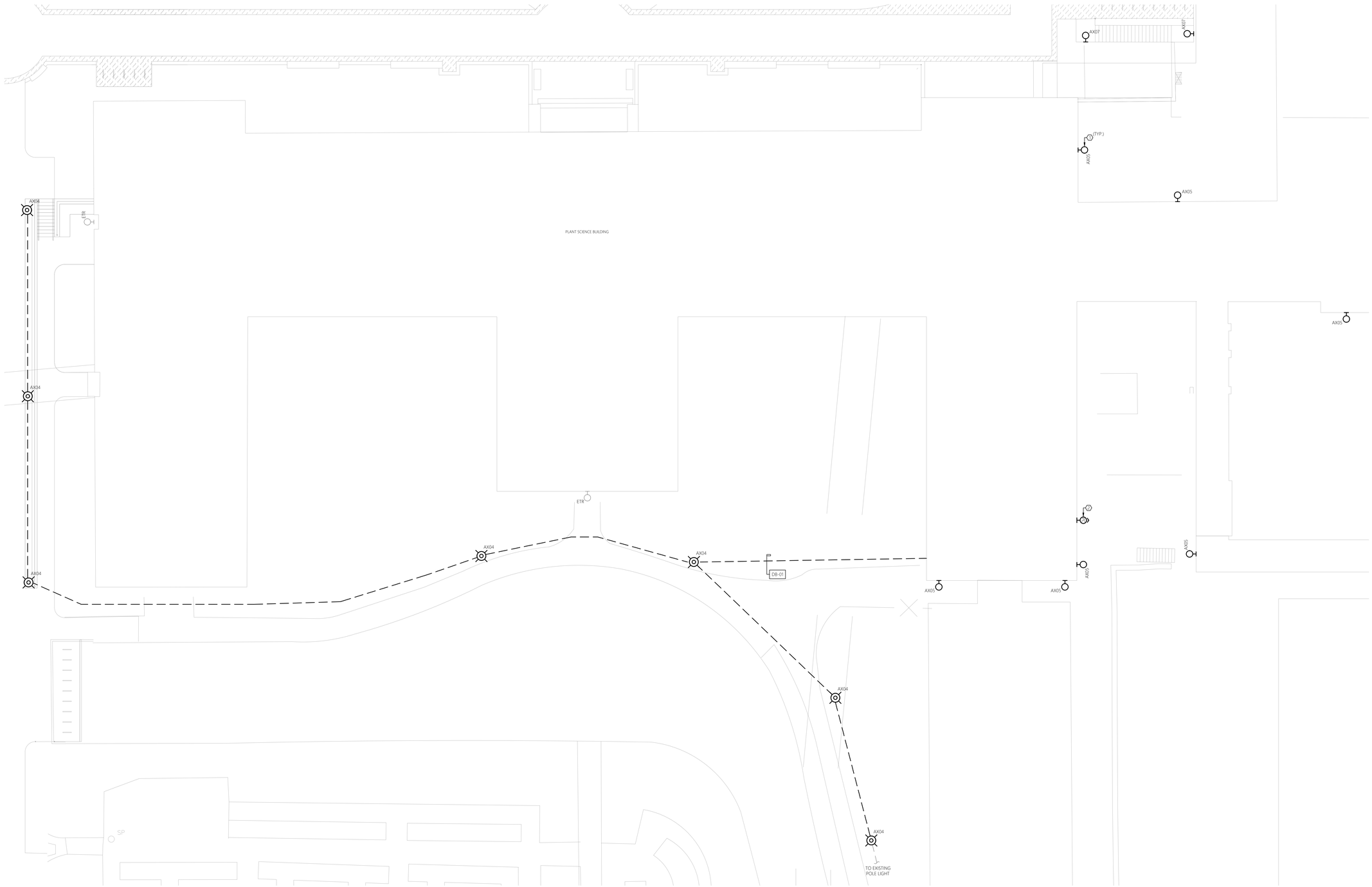
SHEET KEY NOTES:

1. CONNECT REPLACEMENT EXTERIOR LIGHTING FIXTURE INTO CIRCUIT/SWITCHING MEANS RETAINED DURING REMOVALS.
2. COORDINATE PHOTOCELL LOCATION IN FIELD WITH CAMPUS PRIOR TO ROUGH-IN. REFER TO EXTERIOR LIGHTING CONTROL RISER DIAGRAM, SHEET E8.2, FOR ADDITIONAL INFORMATION.



1 ELECTRICAL SITE LIGHTING NEW WORK PLAN
SCALE: 1" = 10'

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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Cornell CALS College of Agriculture and Life Sciences

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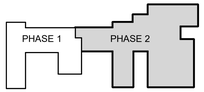

Keyplan

Job Number	31909.00
Drawing By	CCH
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Date	August 31, 2026

Revisions

ELECTRICAL SITE LIGHTING NEW WORK PLAN

STATE OF NEW YORK · SUZANNE GARRAGHAN · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

E0.3

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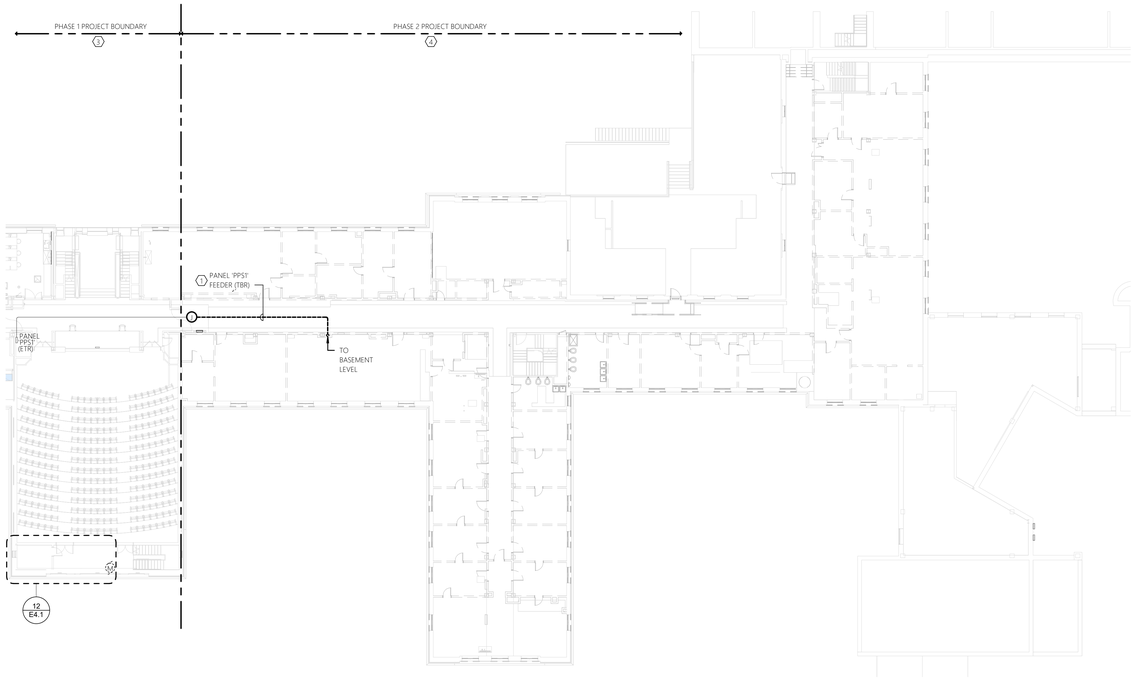

1 ELECTRICAL 2ND FLOOR REFERENCE REMOVAL PLAN
SCALE: 1/16" = 1'-0"

2 ELECTRICAL 2ND FLOOR REFERENCE CONDUIT ROUTING PLAN
SCALE: 1/16" = 1'-0"

GRAPHIC SCALE: 1/16" = 1'-0"
0 8' 16' 32' 48'

GENERAL SHEET NOTES:

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11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

1. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEEDER AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES.
2. REFER TO TUNNEL PLAN, SHEET E1.7A, FOR FEEDER ROUTING FROM BELOW.
3. IN PHASE 1 SCOPE AREA, REMOVE EXISTING PANEL PPS1 SOURCE FEEDER CONDUCTORS, AND MAINTAIN EXISTING CONDUIT. ABANDON CONDUIT IN PLACE AS TO NOT DISTURB RECENTLY RENOVATED CEILINGS.
4. IN PHASE 2 SCOPE AREA, REMOVE EXISTING PANEL PPS1 SOURCE FEEDER CONDUCTORS, AND ASSOCIATED CONDUIT BACK TO SOURCE PANEL WITHIN BASEMENT. PROVIDE CAP/JUNCTION BOX AT LOCATION WHERE CONDUIT (THAT IS TO BE ABANDONED IN PLACE) EXITS PHASE 1 SCOPE AREA BOUNDARY.
5. PROVIDE (4)#2/0 & #6G, IN 2"C FOR PANEL PPS1 FEED. IN PHASE 1 PROJECT BOUNDARY UTILIZE EXISTING CONDUIT SO AS TO NOT DISTURB EXISTING TO REMAIN CEILINGS. ROUTES SHOWN ARE SCHEMATIC IN NATURE. COORDINATE PATH IN FIELD WITH OTHER TRADES PRIOR TO ROUGH-IN. FIELD VERIFY EXISTING CONDUCTORS/CONDUIT SIZES & QUANTITIES AND MATCH.
6. IN PHASE 2 BOUNDARY, PROVIDE (4)#2/0 & #6G, 2"C FOR PANEL PPS1 FEED. ROUTES SHOWN ARE SCHEMATIC IN NATURE, COORDINATE PATH IN FIELD WITH OTHER TRADES PRIOR TO ROUGH-IN.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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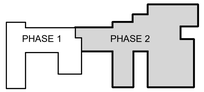

Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL REFERENCE PLANS

STATE OF NEW YORK · SHANE GARRAGHAN · 106086 · LICENSED PROFESSIONAL ENGINEER

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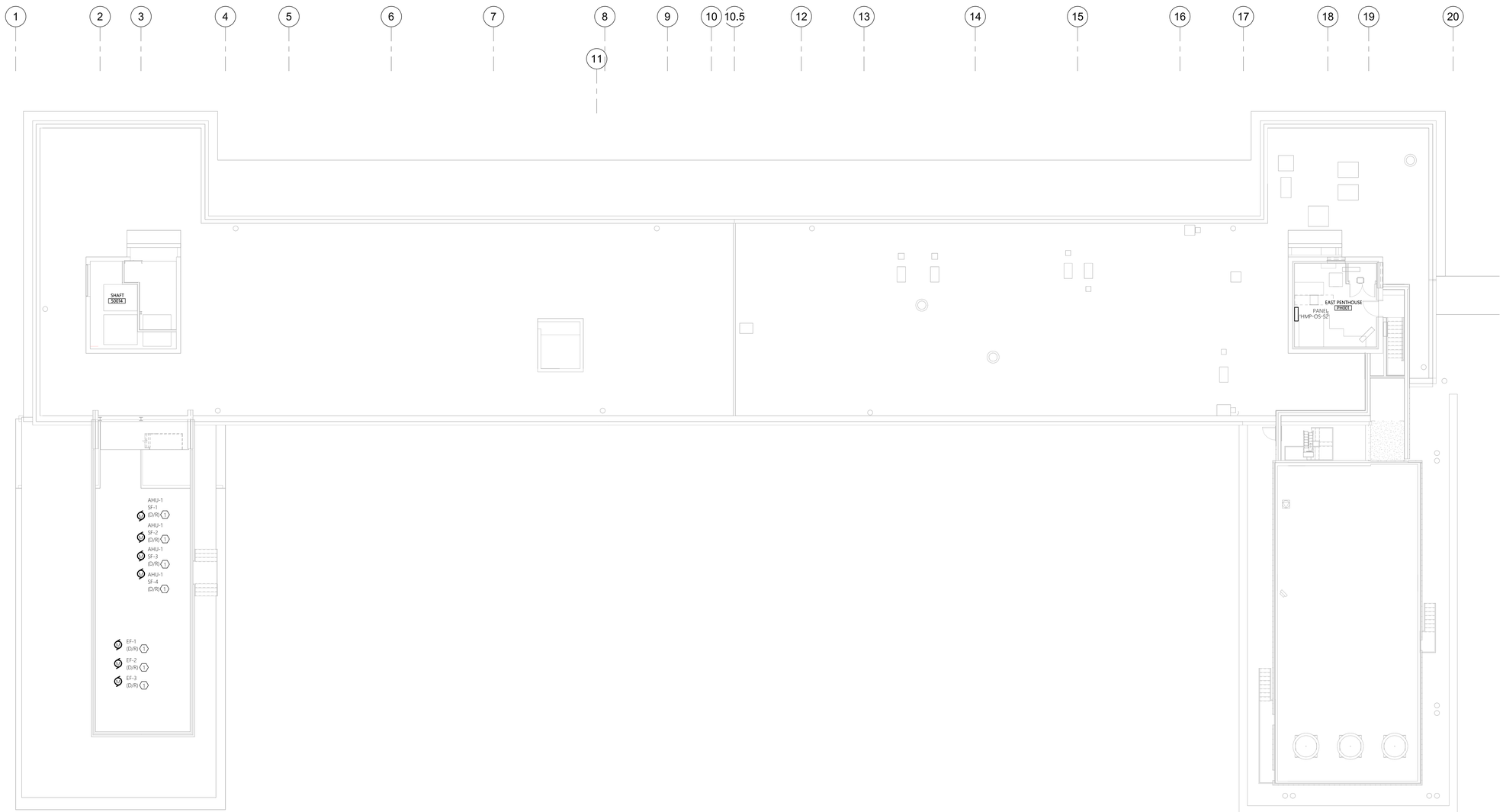
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

1. INTERCEPT EXISTING FAN CIRCUIT FROM PANEL HNP-R1 AT A STRATEGIC LOCATION AND MIGRATE TO PANEL HMP-OS-52. PROVIDE CIRCUIT EXTENSIONS AS NECESSARY. MATCH EXISTING CIRCUIT SIZE, TYPE, ETC. COORDINATE CIRCUIT EXTENSION ROUTING IN FIELD PRIOR TO ROUGH-IN.



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

1 ELECTRICAL OVERALL ROOF PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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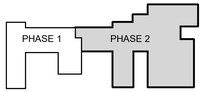

Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL OVERALL ROOF POWER PLAN

STATE OF NEW YORK
SAMIR GARRAHAN
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E0.5

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GENERAL DEMOLITION NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS & GENERAL NOTES.
2. THESE DEMOLITION DRAWINGS ARE SCHEMATIC IN NATURE & ARE BASED ON CASUAL FIELD OBSERVATIONS. IT IS NOT THE INTENTION OF THESE DRAWINGS TO INDICATE EVERY DEVICE/FIXTURE REQUIRING REMOVAL/DEMO, RATHER GENERAL SYSTEMS WHICH ARE TO BE REMOVED. IN GENERAL:

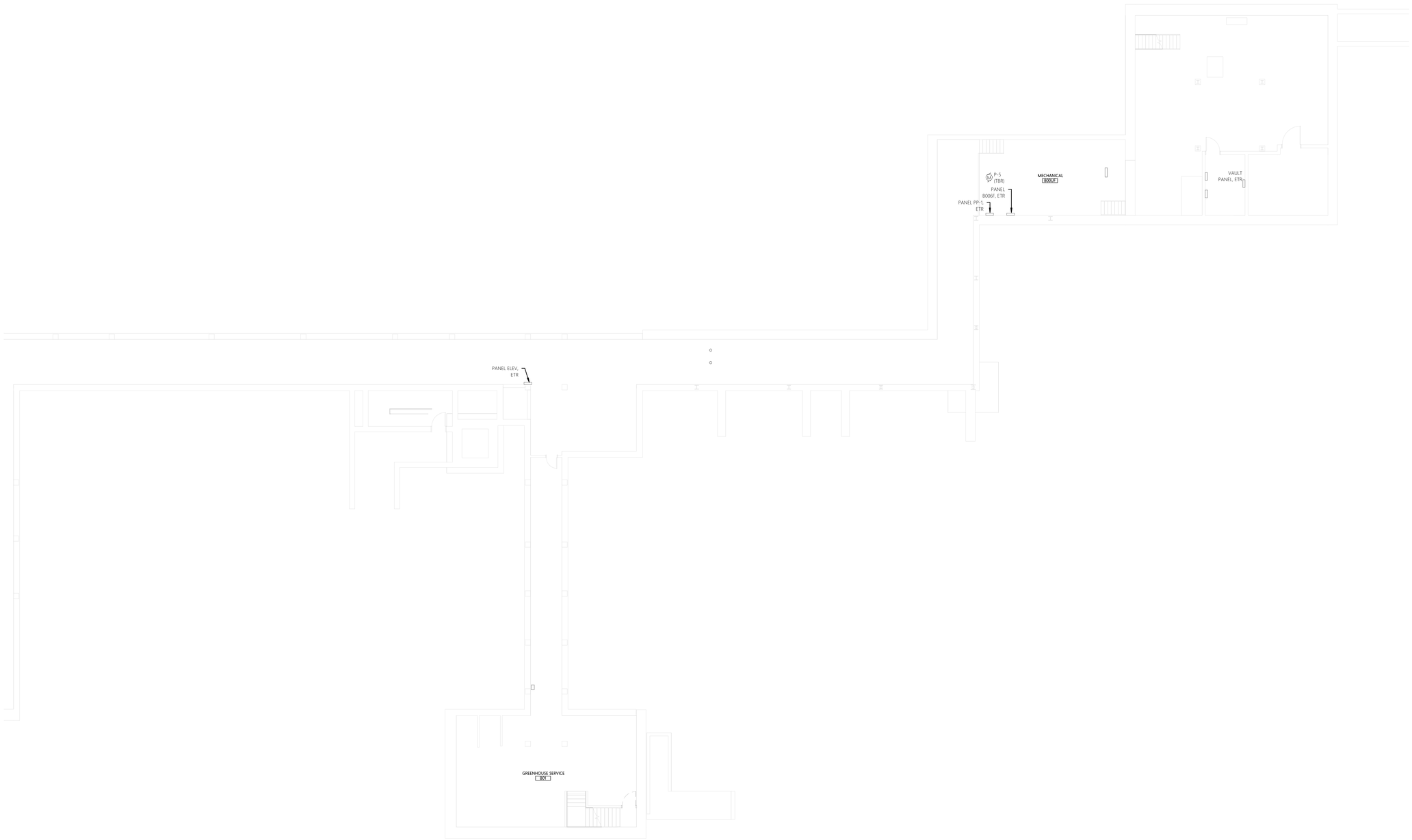
MECHANICAL EQUIPMENT & MISC. ELECTRICAL EQUIPMENT:
WHERE INDICATED TO BE REMOVED:
- REFER TO BOTH ELECTRICAL AND MECHANICAL DRAWINGS FOR AN ACCURATE DEPICTION OF ALL REMOVAL REQUIRED FOR THIS CONTRACT.
- REMOVE ALL WIRE & EXPOSED CONDUIT BACK TO SOURCE PANEL (UNLESS OTHERWISE NOTED).
- REMOVE ANY ASSOCIATED MOTOR STARTERS &/OR DISCONNECTS.
- REMOVE CIRCUIT WIRING FROM SOURCE ETR PANEL & LABEL BREAKER AS SPARE.
- PROVIDE REVISED TYPED PANELBOARD DIRECTORIES FOR ALL EXISTING TO REMAIN PANELS WHERE CIRCUITS ARE TO BE REMOVED.

RECEPTACLES:
- REMOVE ALL RECEPTACLES IMPACTED BY WALL MODIFICATION/DEMOLITION. REFER TO ARCHITECTURAL DRAWINGS WHERE NECESSARY. **NOTE** ALL RECEPTACLES MAY NOT BE SHOWN ON THESE DEMOLITION PLANS. MINOR FIELD VERIFICATION REQUIRED.
- REMOVE ALL ASSOCIATED WIRE & CONDUIT BACK TO SOURCE OR NEAREST ACTIVE JUNCTION BOX.
- WHERE NECESSARY, PROVIDE CIRCUIT EXTENSION(S) AS NEEDED TO MAINTAIN CIRCUITS IN ADJACENT NON-IMPACTED SPACES.

PANELBOARD REMOVAL AND REPLACEMENT:
- REFER TO SINGLE LINE DIAGRAM FOR SCOPE OF WORK.
- RECONNECTION AND EXTENSION OF NON-IMPACTED/EXISTING TO REMAIN CIRCUITS SHALL BE REQUIRED.

GENERAL CIRCUIT AND FEEDER REMOVAL AND REPLACEMENT:
- MAINTAIN ANY EXISTING NON-IMPACTED PANELBOARDS AND ANY NON-IMPACTED CIRCUITS WHICH ARE EXISTING TO REMAIN.
- WHERE CIRCUITS ARE AFFECTED BY MODIFICATION/REMOVAL ACTIVITIES, PROVIDE NECESSARY CIRCUIT EXTENSIONS AND ALL NECESSARY LABOR/MATERIALS AS NECESSARY TO REPAIR AND RE-CONNECT CIRCUIT(S).

LIGHTING: ROOMS WHERE LIGHTING IS INDICATED TO BE REMOVED -
UNLESS OTHERWISE INDICATED ON PLAN:
- REMOVE FIXTURES IN THE GENERAL AREAS INDICATED ON PLAN. EXACT QTY OF FIXTURES MAY VARY, FIELD VERIFY AND COORDINATE WITH GENERAL CONTRACT.
- REMOVE SWITCHING & SENSING DEVICES.
- REMOVE CONDUCTORS & CONDUIT BACK TO SOURCE.
- REMOVE CONTACTORS ASSOCIATED WITH LOW VOLTAGE SWITCHING DEVICES
- DISPOSE OF ALL LAMPS IN ACCORDANCE WITH STATE/FEDERAL AND EPA REQUIREMENTS.
- CORNELL SHALL HAVE RIGHT OF FIRST REFUSAL FOR ALL REMOVED FIXTURES. ALL REMAINING FIXTURES SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- REMOVE AND TURNOVER TO CORNELL, ALL EMEGENCY LIGHTING BATTERY PACKS AND ELECTRICAL EXIT SIGNS.



1 ELECTRICAL TUNNEL REMOVAL PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
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Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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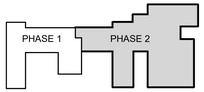
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL TUNNEL REMOVAL PLAN

STATE OF NEW YORK
SUSAN GARRAGHAN
106086
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

ED1
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SHEET KEY NOTES:

1. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES. REFER TO E0.4 FOR ADDITIONAL INFORMATION.
2. PROVIDE REMOVAL OF EXISTING LIGHTING FIXTURES WITH CORRIDOR TO FACILITATE WORK BY OTHER TRADES. STORE FIXTURES FOR REINSTALLATION UPON COMPLETION OF CORRIDOR AREA WORK. MAINTAIN EXISTING LIGHTING CIRCUIT FOR RECONNECTION. COORDINATE WITH A-SHEETS.
3. PROVIDE REMOVAL OF EXISTING FIXTURES WITHIN MECHANICAL ROOM. MAINTAIN EXISTING CIRCUIT FOR RE-USE WITH REPLACEMENT LIGHTING FIXTURES.

GENERAL DEMOLITION NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS & GENERAL NOTES.
2. THESE DEMOLITION DRAWINGS ARE SCHEMATIC IN NATURE & ARE BASED ON CASUAL FIELD OBSERVATIONS. IT IS NOT THE INTENTION OF THESE DRAWINGS TO INDICATE EVERY DEVICE/FIXTURE REQUIRING REMOVAL/DEMO, RATHER GENERAL SYSTEMS WHICH ARE TO BE REMOVED. IN GENERAL:

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- REFER TO BOTH ELECTRICAL AND MECHANICAL DRAWINGS FOR AN ACCURATE DEPICTION OF ALL REMOVAL REQUIRED FOR THIS CONTRACT.
- REMOVE ALL WIRE & EXPOSED CONDUIT BACK TO SOURCE PANEL (UNLESS OTHERWISE NOTED).
- REMOVE ANY ASSOCIATED MOTOR STARTERS &/OR DISCONNECTS.
- REMOVE CIRCUIT WIRING FROM SOURCE ETR PANEL & LABEL BREAKER AS SPARE.
- PROVIDE REVISED TYPED PANELBOARD DIRECTORIES FOR ALL EXISTING TO REMAIN PANELS WHERE CIRCUITS ARE TO BE REMOVED.

RECEPTACLES:
- REMOVE ALL RECEPTACLES IMPACTED BY WALL MODIFICATION/DEMOLITION. REFER TO ARCHITECTURAL DRAWINGS WHERE NECESSARY. **NOTE** ALL RECEPTACLES MAY NOT BE SHOWN ON THESE DEMOLITION PLANS. MINOR FIELD VERIFICATION REQUIRED.
- REMOVE ALL ASSOCIATED WIRE & CONDUIT BACK TO SOURCE OR NEAREST ACTIVE JUNCTION BOX.
- WHERE NECESSARY, PROVIDE CIRCUIT EXTENSION(S) AS NEEDED TO MAINTAIN CIRCUITS IN ADJACENT NON-IMPACTED SPACES.

PANELBOARD REMOVAL AND REPLACEMENT:
- REFER TO SINGLE LINE DIAGRAM FOR SCOPE OF WORK.
- RECONNECTION AND EXTENSION OF NON-IMPACTED/EXISTING TO REMAIN CIRCUITS SHALL BE REQUIRED.

GENERAL CIRCUIT AND FEEDER REMOVAL AND REPLACEMENT:
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- REMOVE CONDUCTORS & CONDUIT BACK TO SOURCE.
- REMOVE CONTACTORS ASSOCIATED WITH LOW VOLTAGE SWITCHING DEVICES
- DISPOSE OF ALL LAMPS IN ACCORDANCE WITH STATE/FEDERAL AND EPA REQUIREMENTS.
- CORNELL SHALL HAVE RIGHT OF FIRST REFUSAL FOR ALL REMOVED FIXTURES. ALL REMAINING FIXTURES SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- REMOVE AND TURNOVER TO CORNELL, ALL EMEGENCY LIGHTING BATTERY PACKS AND ELECTRICAL EXIT SIGNS.

1 ELECTRICAL GROUND FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"

2 ELECTRICAL GROUND FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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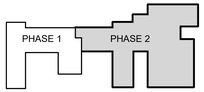
Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL GROUND FLOOR REMOVAL PLAN

STATE OF NEW YORK · DANIEL GARDAMANT · 106586 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

ED1.0

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SHEET KEY NOTES:

1. LOADING DOCK POWER SERVICE TO BE MAINTAINED IN GOOD CONDITION THROUGHOUT PROJECT.
2. REMOVE EXISTING SURFACE MOUNTED CONDUIT/WIRING BACK TO SOURCE AND ANY ASSOCIATED DEVICES. FIELD VERIFY CONDUCTORS/CONDUIT SERVE NO LOAD THAT IS EXISTING TO REMAIN. PATCH AND MATCH EXISTING SURFACES TO MATCH ADJACENT. COORDINATE ALL REMOVALS WITH CAMPUS PRIOR TO COMMENCEMENT OF DEMOLITION WORK.

GENERAL DEMOLITION NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS & GENERAL NOTES.
2. THESE DEMOLITION DRAWINGS ARE SCHEMATIC IN NATURE & ARE BASED ON CASUAL FIELD OBSERVATIONS. IT IS NOT THE INTENTION OF THESE DRAWINGS TO INDICATE EVERY DEVICE/FIXTURE REQUIRING REMOVAL/DEMO, RATHER GENERAL SYSTEMS WHICH ARE TO BE REMOVED. IN GENERAL:

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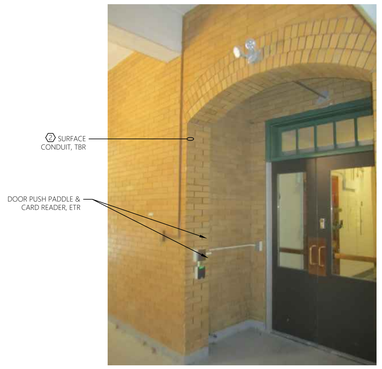
2 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS



3 ELECTRICAL PHOTOGRAPH REFERENCE
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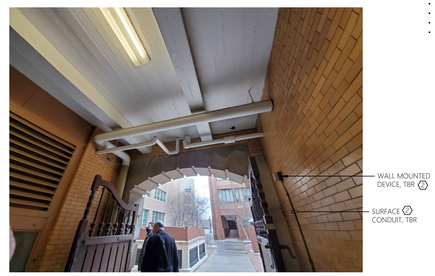

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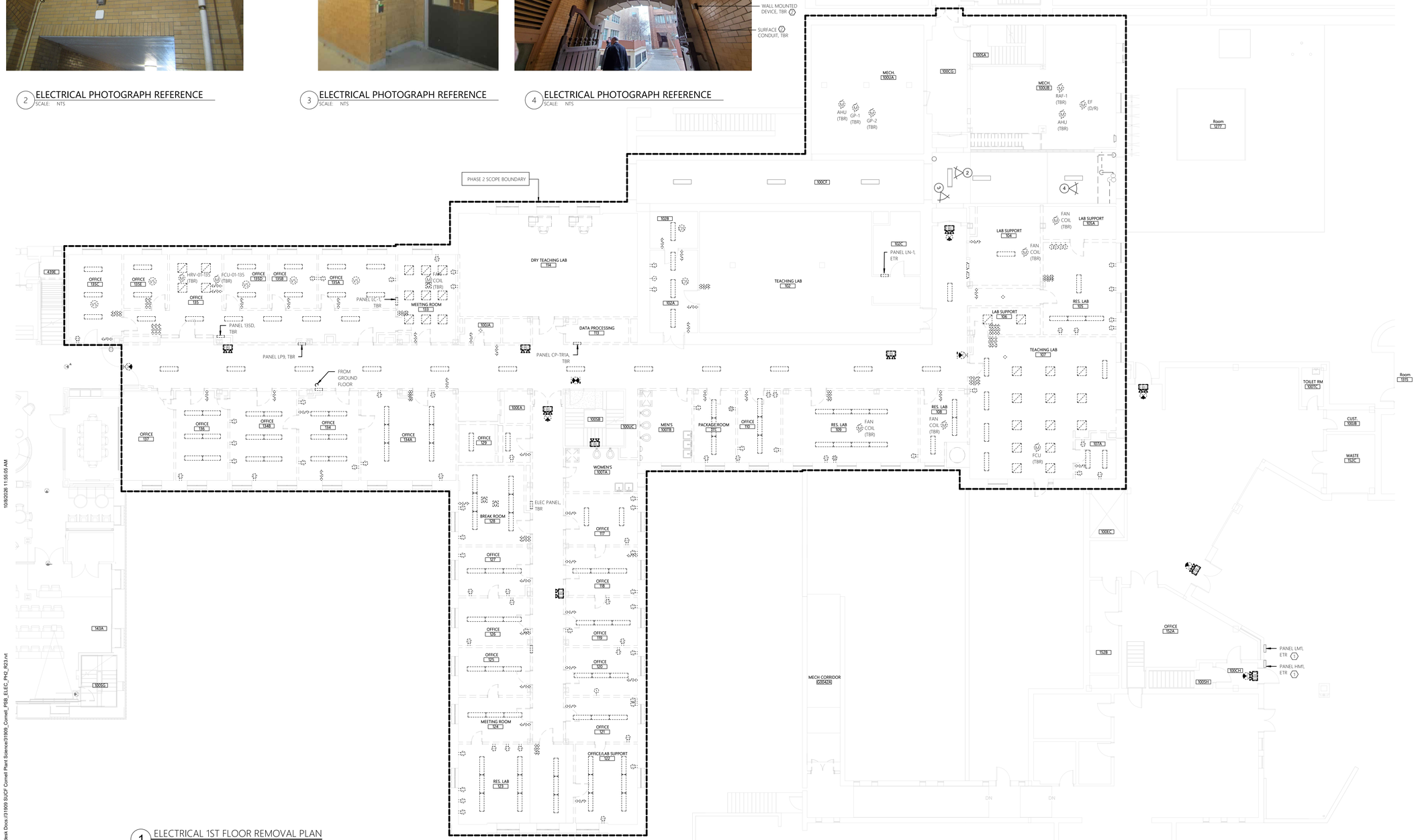

1 ELECTRICAL 1ST FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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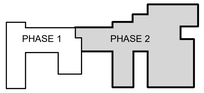
Notes:



Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL FIRST FLOOR REMOVAL PLAN

STATE OF NEW YORK · SHANE GARGANIGO · 106095 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

ED1.1

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SHEET KEY NOTES:

1. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES. REFER TO E0.4 FOR ADDITIONAL INFORMATION.
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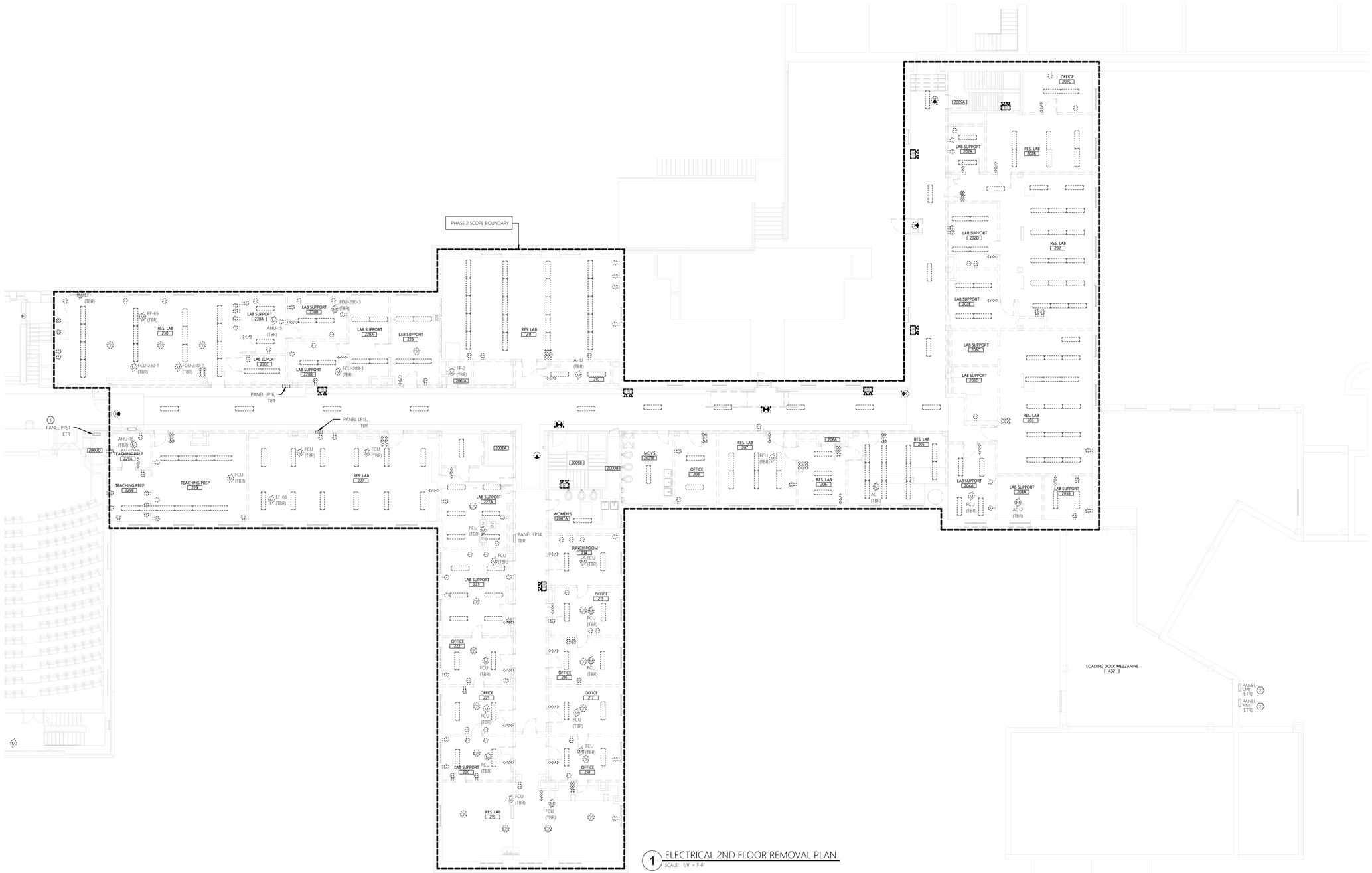

1 ELECTRICAL 2ND FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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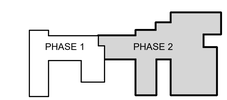

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL SECOND FLOOR REMOVAL PLAN

BID DOCUMENTS
Scale: As indicated

STATE OF NEW YORK · SAME GARABEDIAN · 126088 · LICENSED PROFESSIONAL ENGINEER

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SHEET KEY NOTES:

1. REMOVE EXTERIOR WALL FIXTURE & MOUNTING HARDWARE. REMOVE CONDUCTORS BACK TO NEAREST JUNCTION. SEAL VACATED OPENINGS.
2. LAB ELECTRICAL POWER SERVICE TO BE MAINTAINED IN GOOD CONDITION THROUGHOUT PROJECT.

GENERAL DEMOLITION NOTES:

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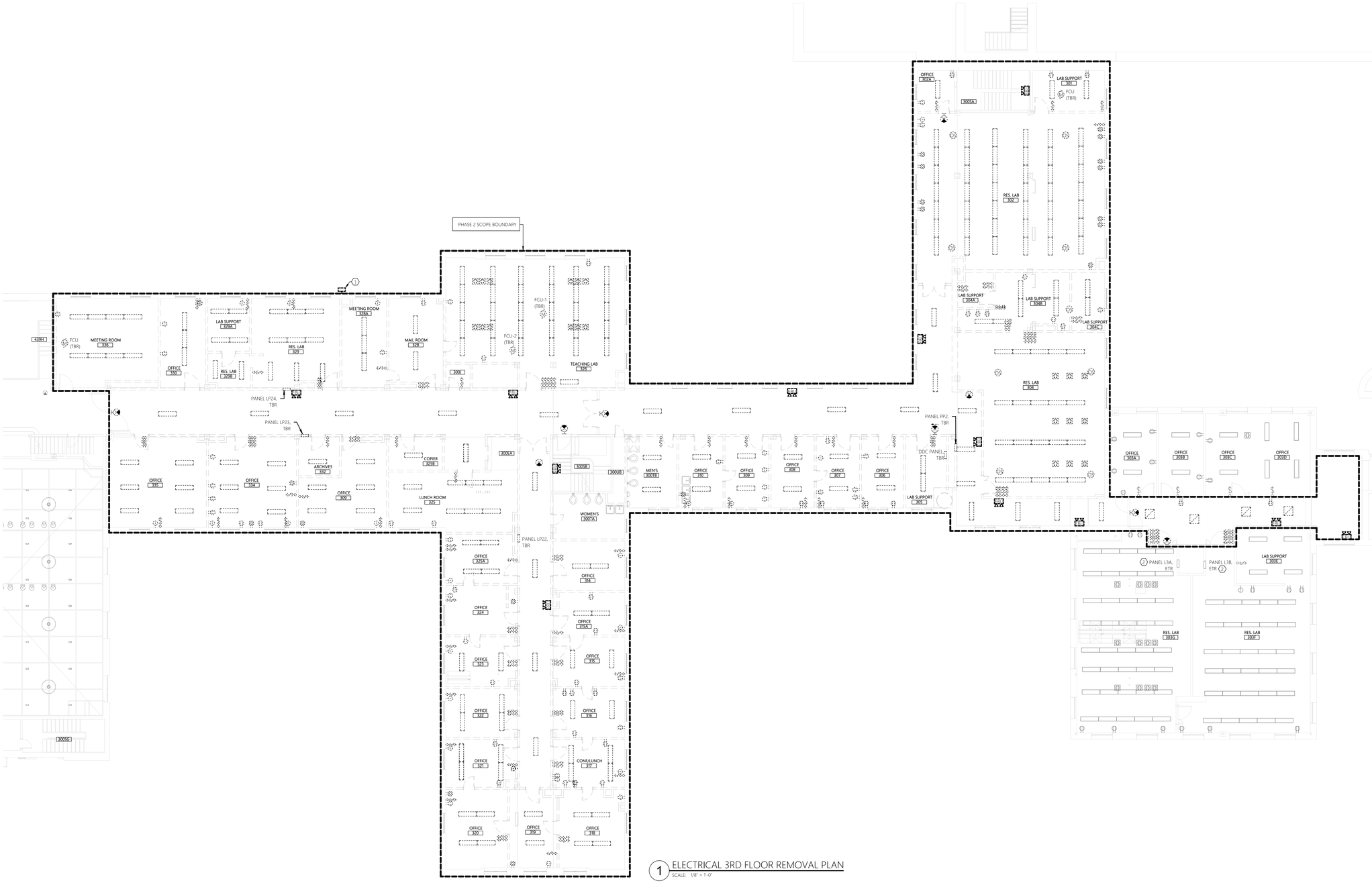
- REMOVE AND TURNOVER TO CORNELL, ALL EMEGENCY LIGHTING BATTERY PACKS AND ELECTRICAL EXIT SIGNS.



1 ELECTRICAL 3RD FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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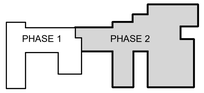
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL THIRD FLOOR REMOVAL PLAN

STATE OF NEW YORK · SAMUEL GARRAMONE · 106586 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

ED1.3

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GENERAL DEMOLITION NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS & GENERAL NOTES.
2. THESE DEMOLITION DRAWINGS ARE SCHEMATIC IN NATURE & ARE BASED ON CASUAL FIELD OBSERVATIONS. IT IS NOT THE INTENTION OF THESE DRAWINGS TO INDICATE EVERY DEVICE/FIXTURE REQUIRING REMOVAL/DEMO, RATHER GENERAL SYSTEMS WHICH ARE TO BE REMOVED. IN GENERAL:

MECHANICAL EQUIPMENT & MISC. ELECTRICAL EQUIPMENT:
WHERE INDICATED TO BE REMOVED:

- REFER TO BOTH ELECTRICAL AND MECHANICAL DRAWINGS FOR AN ACCURATE DEPICTION OF ALL REMOVAL REQUIRED FOR THIS CONTRACT.
- REMOVE ALL WIRE & EXPOSED CONDUIT BACK TO SOURCE PANEL (UNLESS OTHERWISE NOTED).
- REMOVE ANY ASSOCIATED MOTOR STARTERS &/OR DISCONNECTS.
- REMOVE CIRCUIT WIRING FROM SOURCE ETR PANEL & LABEL BREAKER AS SPARE.
- PROVIDE REVISED TYPED PANELBOARD DIRECTORIES FOR ALL EXISTING TO REMAIN PANELS WHERE CIRCUITS ARE TO BE REMOVED.

RECEPTACLES:

- REMOVE ALL RECEPTACLES IMPACTED BY WALL MODIFICATION/DEMOLITION. REFER TO ARCHITECTURAL DRAWINGS WHERE NECESSARY. **NOTE** ALL RECEPTACLES MAY NOT BE SHOWN ON THESE DEMOLITION PLANS. MINOR FIELD VERIFICATION REQUIRED.
- REMOVE ALL ASSOCIATED WIRE & CONDUIT BACK TO SOURCE OR NEAREST ACTIVE JUNCTION BOX.
- WHERE NECESSARY, PROVIDE CIRCUIT EXTENSION(S) AS NEEDED TO MAINTAIN CIRCUITS IN ADJACENT NON-IMPACTED SPACES.

PANELBOARD REMOVAL AND REPLACEMENT:

- REFER TO SINGLE LINE DIAGRAM FOR SCOPE OF WORK.
- RECONNECTION AND EXTENSION OF NON-IMPACTED/EXISTING TO REMAIN CIRCUITS SHALL BE REQUIRED.

GENERAL CIRCUIT AND FEEDER REMOVAL AND REPLACEMENT:

- MAINTAIN ANY EXISTING NON-IMPACTED PANELBOARDS AND ANY NON-IMPACTED CIRCUITS WHICH ARE EXISTING TO REMAIN.
- WHERE CIRCUITS ARE AFFECTED BY MODIFICATION/REMOVAL ACTIVITIES, PROVIDE NECESSARY CIRCUIT EXTENSIONS AND ALL NECESSARY LABOR/MATERIALS AS NECESSARY TO REPAIR AND RE-CONNECT CIRCUIT(S).

LIGHTING: ROOMS WHERE LIGHTING IS INDICATED TO BE REMOVED - UNLESS OTHERWISE INDICATED ON PLAN.

- REMOVE FIXTURES IN THE GENERAL AREAS INDICATED ON PLAN. EXACT QTY OF FIXTURES MAY VARY, FIELD VERIFY AND COORDINATE WITH GENERAL CONTRACT.
- REMOVE SWITCHING & SENSING DEVICES.
- REMOVE CONDUCTORS & CONDUIT BACK TO SOURCE.
- REMOVE CONTACTORS ASSOCIATED WITH LOW VOLTAGE SWITCHING DEVICES
- DISPOSE OF ALL LAMPS IN ACCORDANCE WITH STATE/FEDERAL AND EPA REQUIREMENTS.
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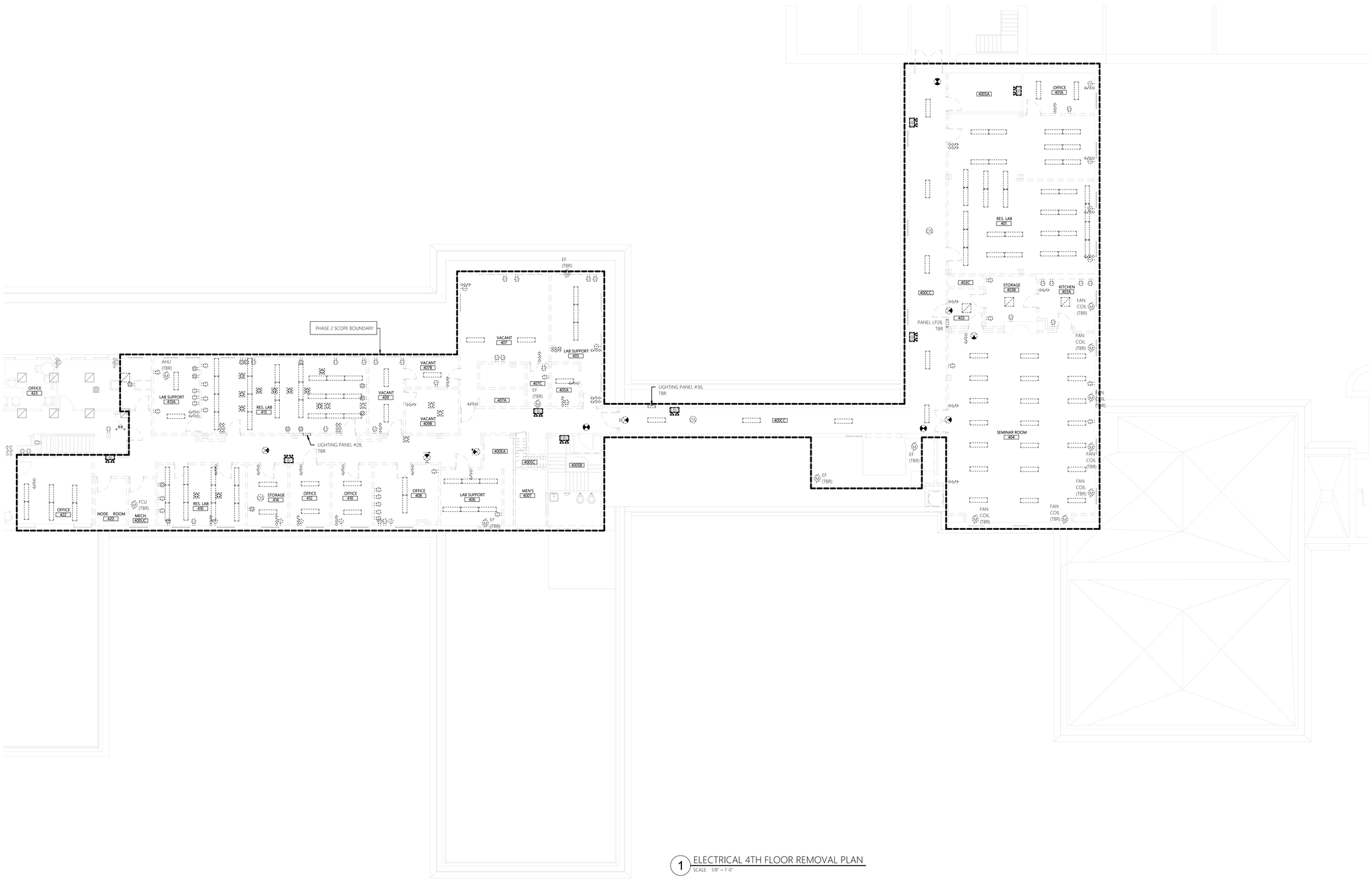

1 ELECTRICAL 4TH FLOOR REMOVAL PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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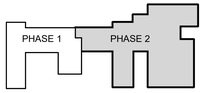
Notes:



Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL FOURTH FLOOR REMOVAL PLAN

STATE OF NEW YORK · DANIEL GARRIGHAN · 135495 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

ED1.4

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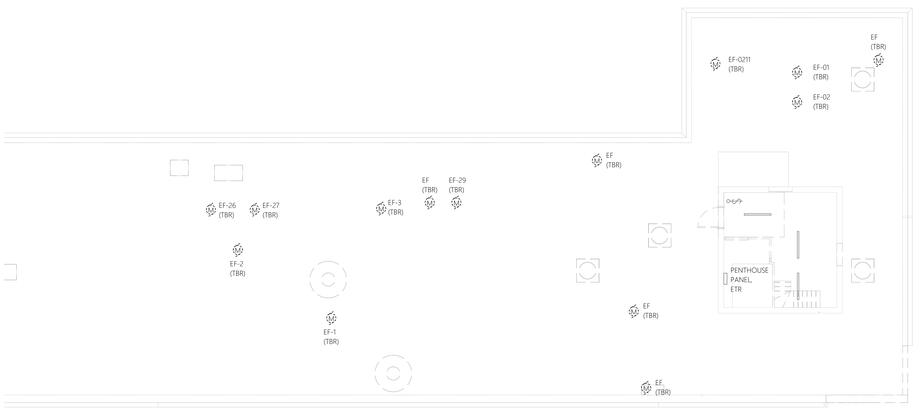
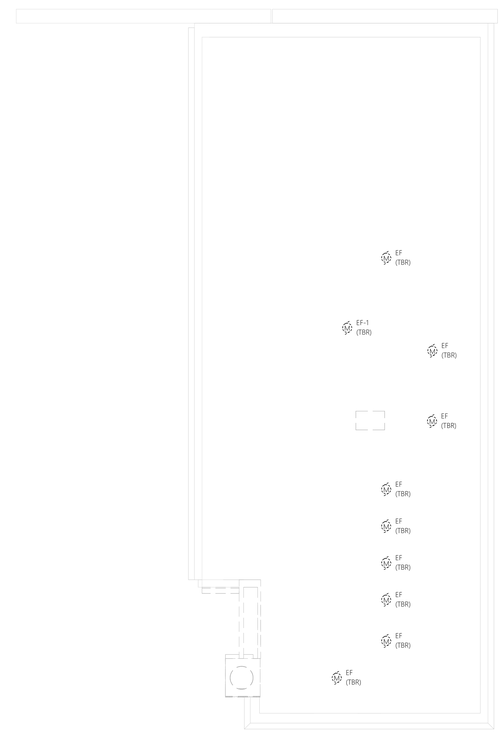


1 ELECTRICAL PENTHOUSE REMOVAL PLAN
SCALE: 1/8" = 1'-0"



RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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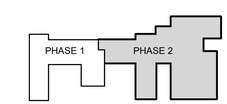
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL PENTHOUSE REMOVAL PLAN

STATE OF NEW YORK · SEAN GARRAGHAN · 106586 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

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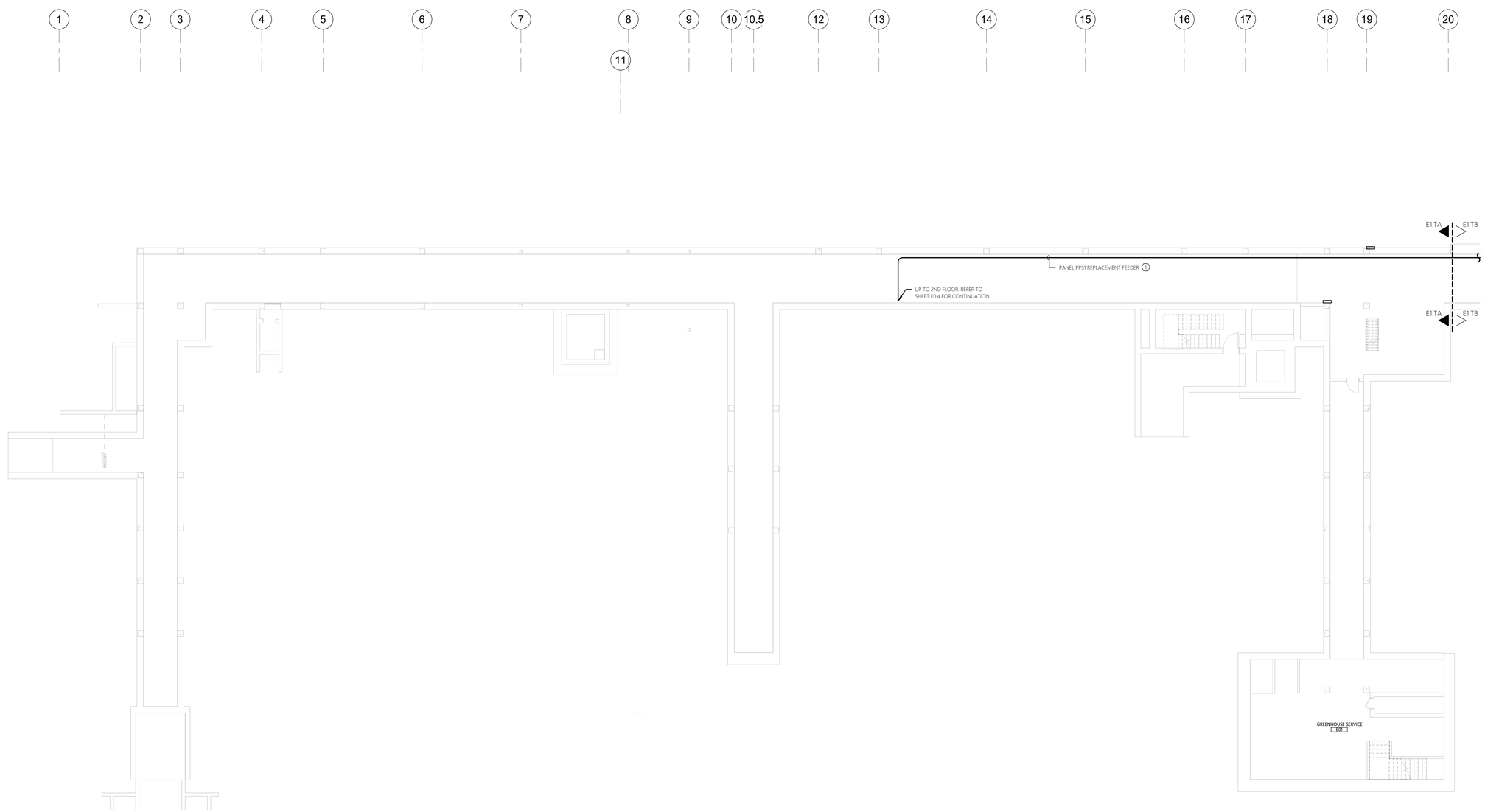
SHEET KEY NOTES:

1. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTIN IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.



1 ELECTRICAL TUNNEL POWER PLAN - PART A
SCALE: 1/8" = 1'-0"

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

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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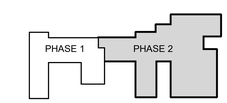
Notes:



Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL TUNNEL POWER PLAN - PART A

BID DOCUMENTS
Scale: As indicated

STATE OF NEW YORK · STATE GARRAGHAN · 106586 · LICENSED PROFESSIONAL ENGINEER

E1.TA

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SHEET KEY NOTES:

1. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTIN IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES.

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8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
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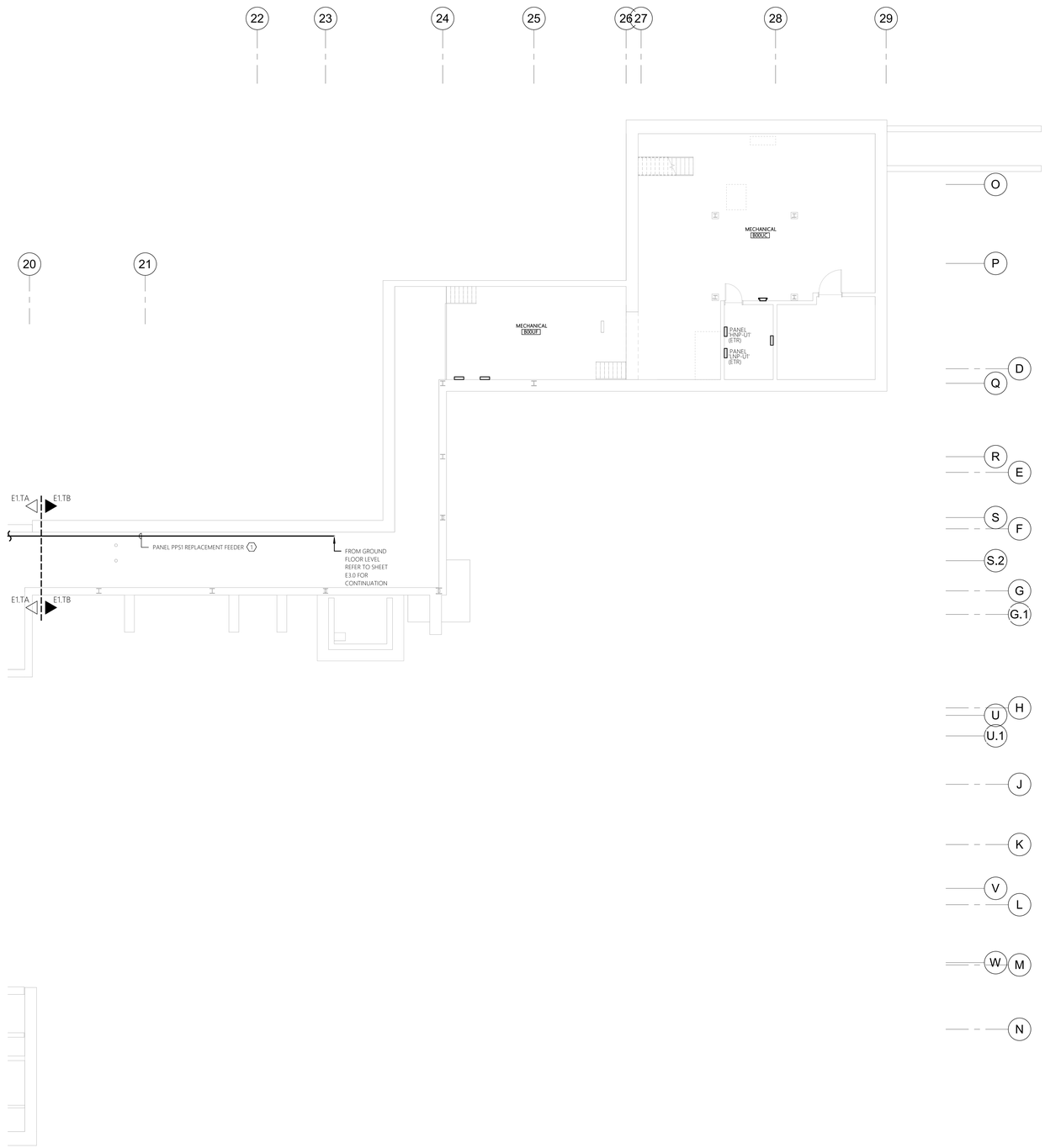

0 4' 8' 16'
SCALE: 1/8"=1'-0

1 ELECTRICAL TUNNEL POWER PLAN - PART B
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Notes:

Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL TUNNEL POWER PLAN - PART B

STATE OF NEW YORK
DANIEL GARRAMONE
036586
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E1.TB

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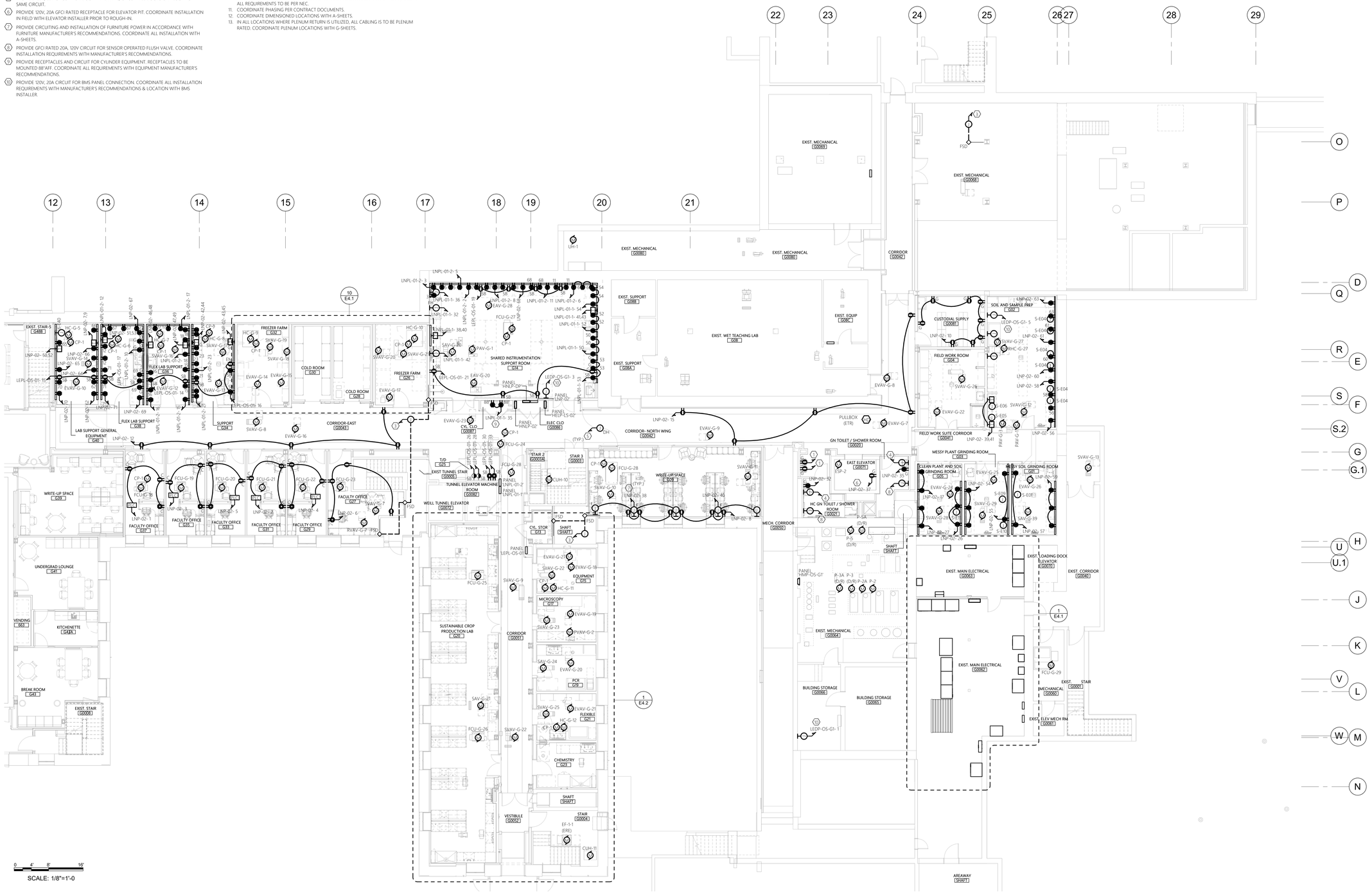
SHEET KEY NOTES:

1. PROVIDE 20A, 120V CIRCUIT AND GFCI RECEPTACLE FOR WATER FOUNTAIN. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
2. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL 'PPS1' FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES.
3. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR AREA FIRE RELAYS. COORDINATE INSTALLATION LOCATION AND REQUIREMENTS WITH CORNELL FIRE ALARM VENDOR AND FA SHEETS.
4. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR FAUCET. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE 120V, 20A CIRCUIT FOR DOOR HARDWARE. CIRCUIT ALL DOORS ON FLOOR TO SAME CIRCUIT.
6. PROVIDE 120V, 20A GFCI RATED RECEPTACLE FOR ELEVATOR PIT. COORDINATE INSTALLATION IN FIELD WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
7. PROVIDE CIRCUITING AND INSTALLATION OF FURNITURE POWER IN ACCORDANCE WITH FURNITURE MANUFACTURER'S RECOMMENDATIONS. COORDINATE ALL INSTALLATION WITH A-SHEETS.
8. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR OPERATED FLUSH VALVE. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
9. PROVIDE RECEPTACLES AND CIRCUIT FOR CYLINDER EQUIPMENT. RECEPTACLES TO BE MOUNTED 88"AFF. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
10. PROVIDE 120V, 20A CIRCUIT FOR BMS PANEL CONNECTION. COORDINATE ALL INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS & LOCATION WITH BMS INSTALLER.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.



1 ELECTRICAL 0-GROUND FLOOR PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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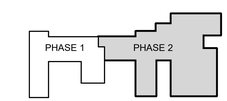
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL GROUND FLOOR POWER PLAN

BID DOCUMENTS
Scale: As indicated

STATE OF NEW YORK · SHane Garraghan · 106086 · LICENSED PROFESSIONAL ENGINEER

E1.0

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10/8/2026 11:55:20 AM

Autodesk Docs://31909 SUCF Cornell Plant Sciences/31909_Cornell_PSB_ELEC_PH2_R23.rvt

SHEET KEY NOTES:

1. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR WATER FOUNTAIN. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR AREA FIRE RELAYS. COORDINATE INSTALLATION LOCATION AND REQUIREMENTS WITH CORNELL FIRE ALARM VENDOR, AND FA SHEETS.
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6. PROVIDE 120V, 20A CIRCUIT FOR CEILING CORD REEL. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE GFCI RATED 20A, 120V CIRCUIT FOR SENSOR OPERATED FLUSH VALVE. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS.

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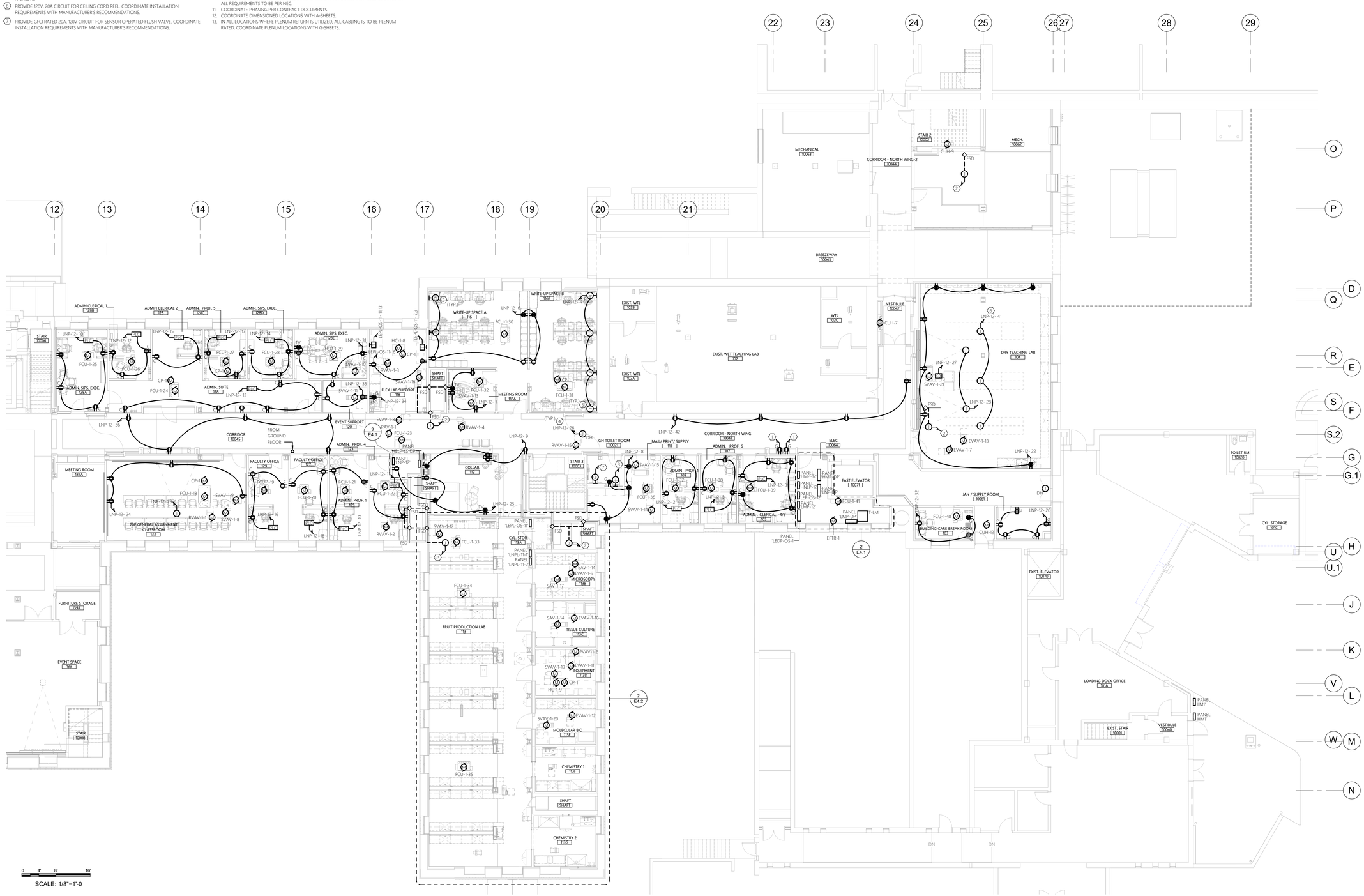

1 ELECTRICAL 1ST FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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SUNY State University Construction Fund

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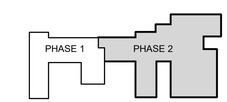

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL FIRST FLOOR POWER PLAN

STATE OF NEW YORK · DUANE GARRABRANT · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E1.1

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4. PROVIDE DEDICATED CIRCUIT FOR TABLE MOUNTED QUAD RECEPTACLES. COORDINATE INSTALLATION WITH MANUFACTURER'S RECOMMENDATIONS AND ARCHITECTURAL ELEVATIONS.
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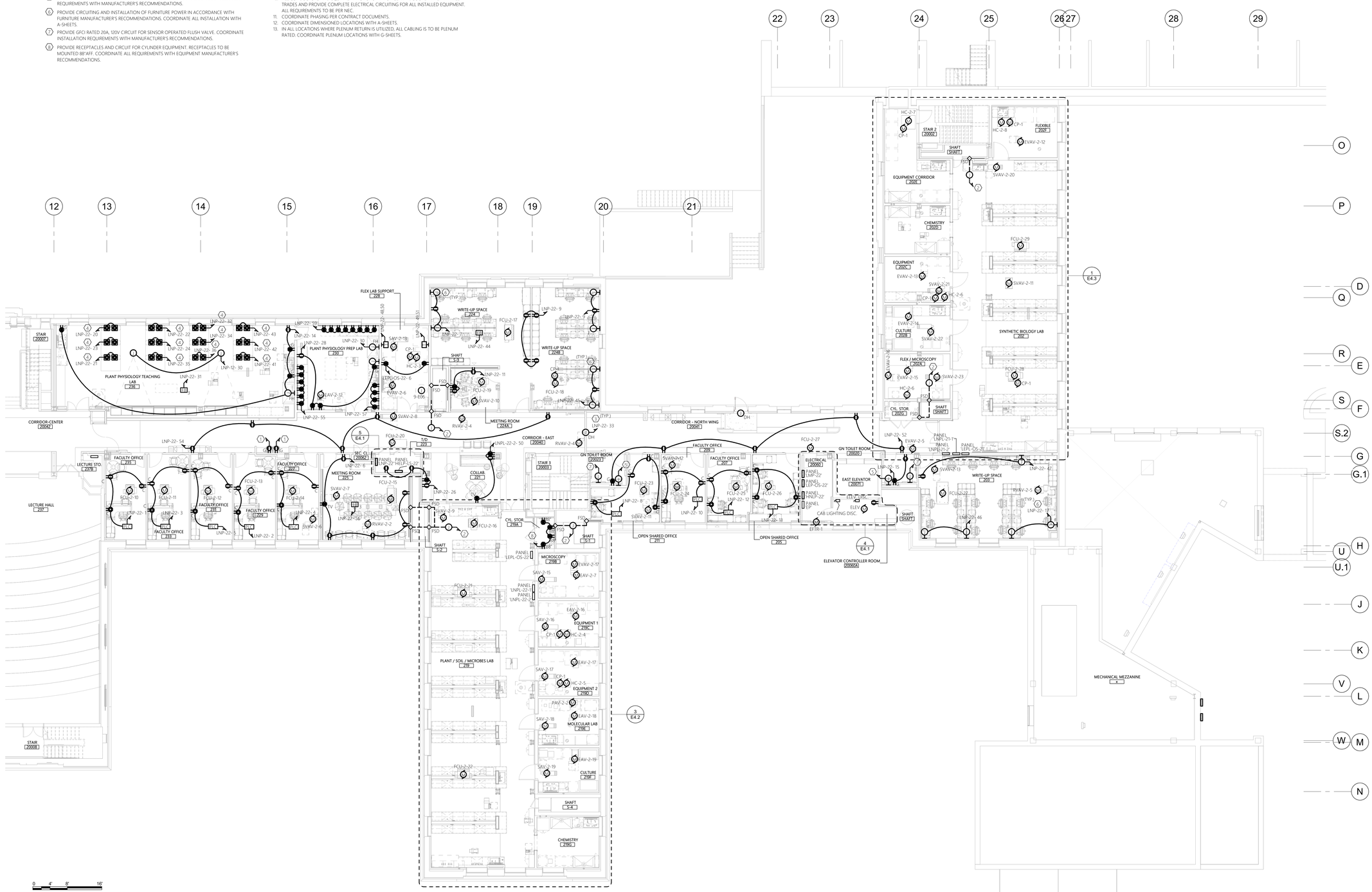

SCALE: 1/8"=1'-0

1 ELECTRICAL 2ND FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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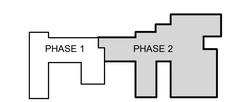

Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL SECOND FLOOR POWER PLAN

BID DOCUMENTS
Scale: As indicated

E1.2

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GENERAL SHEET NOTES:

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2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
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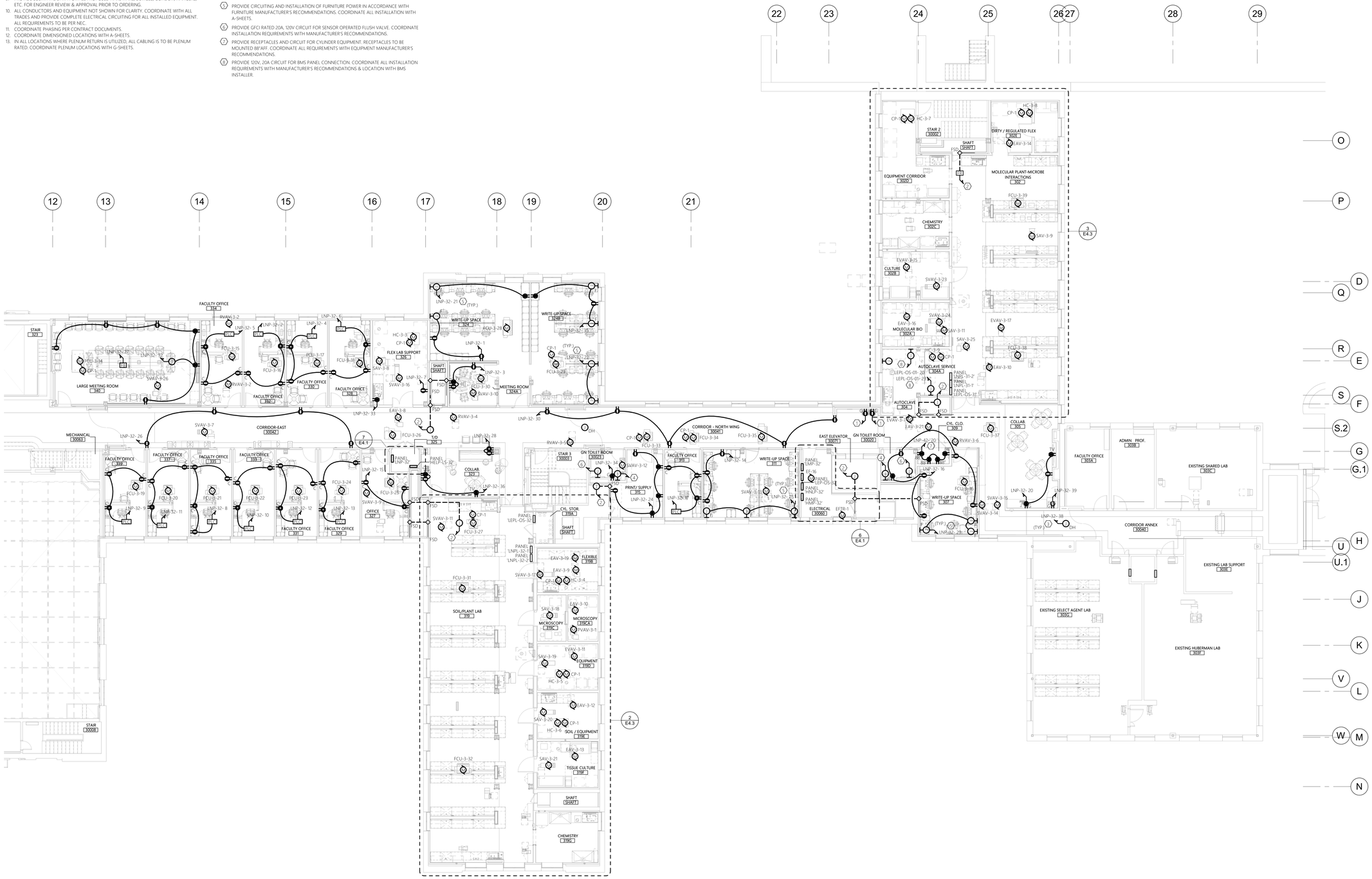

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SCALE: 1/8"=1'-0

1 ELECTRICAL 3RD FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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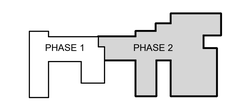

Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL THIRD FLOOR POWER PLAN

STATE OF NEW YORK
DANIEL GARRAMONE
036088
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E1.3

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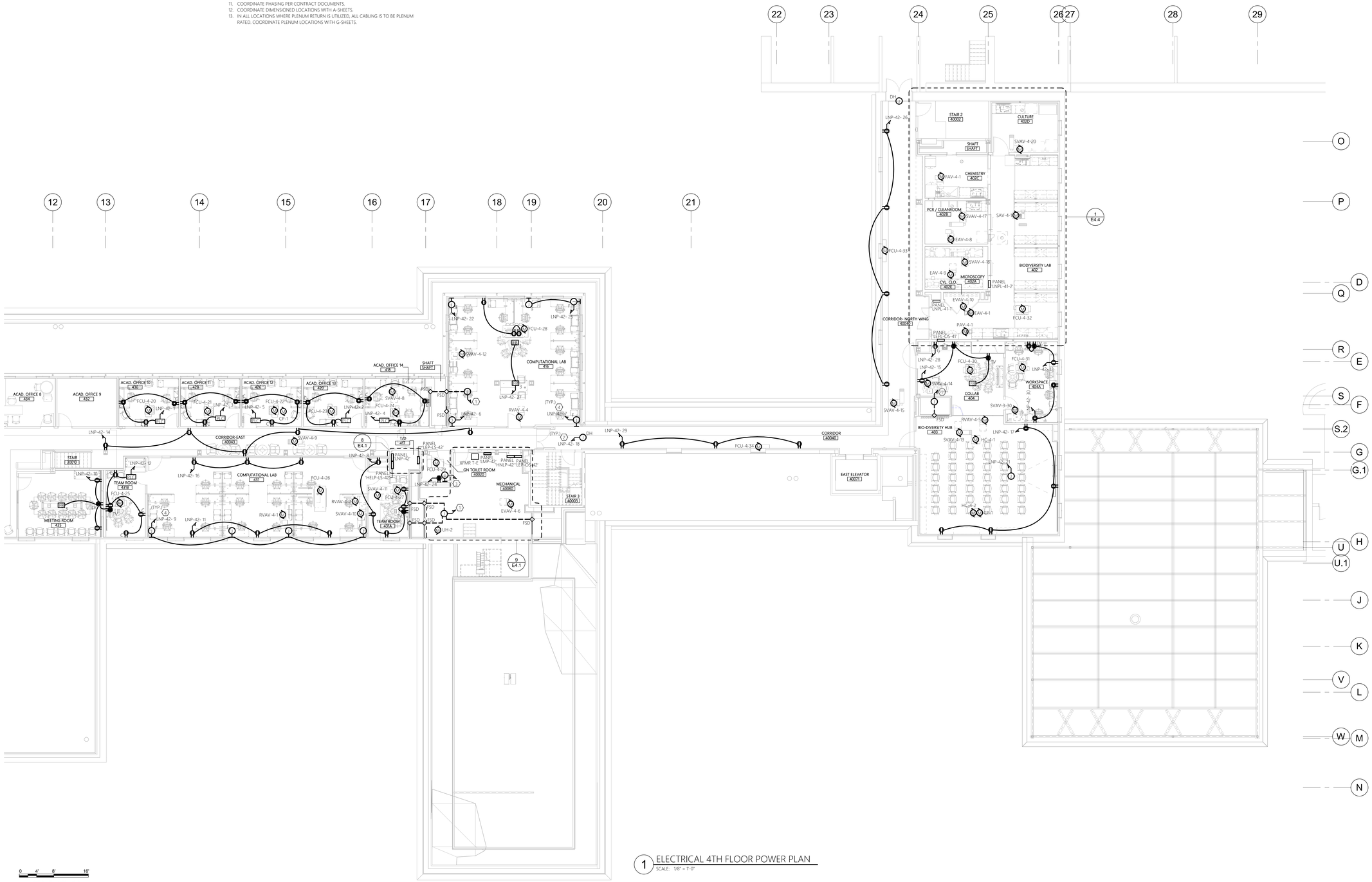

0 4' 8' 16'
SCALE: 1/8"=1'-0

1 ELECTRICAL 4TH FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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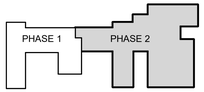
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL FOURTH FLOOR POWER PLAN

STATE OF NEW YORK · SAMIR GARLAPATI · 130698 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E1.4

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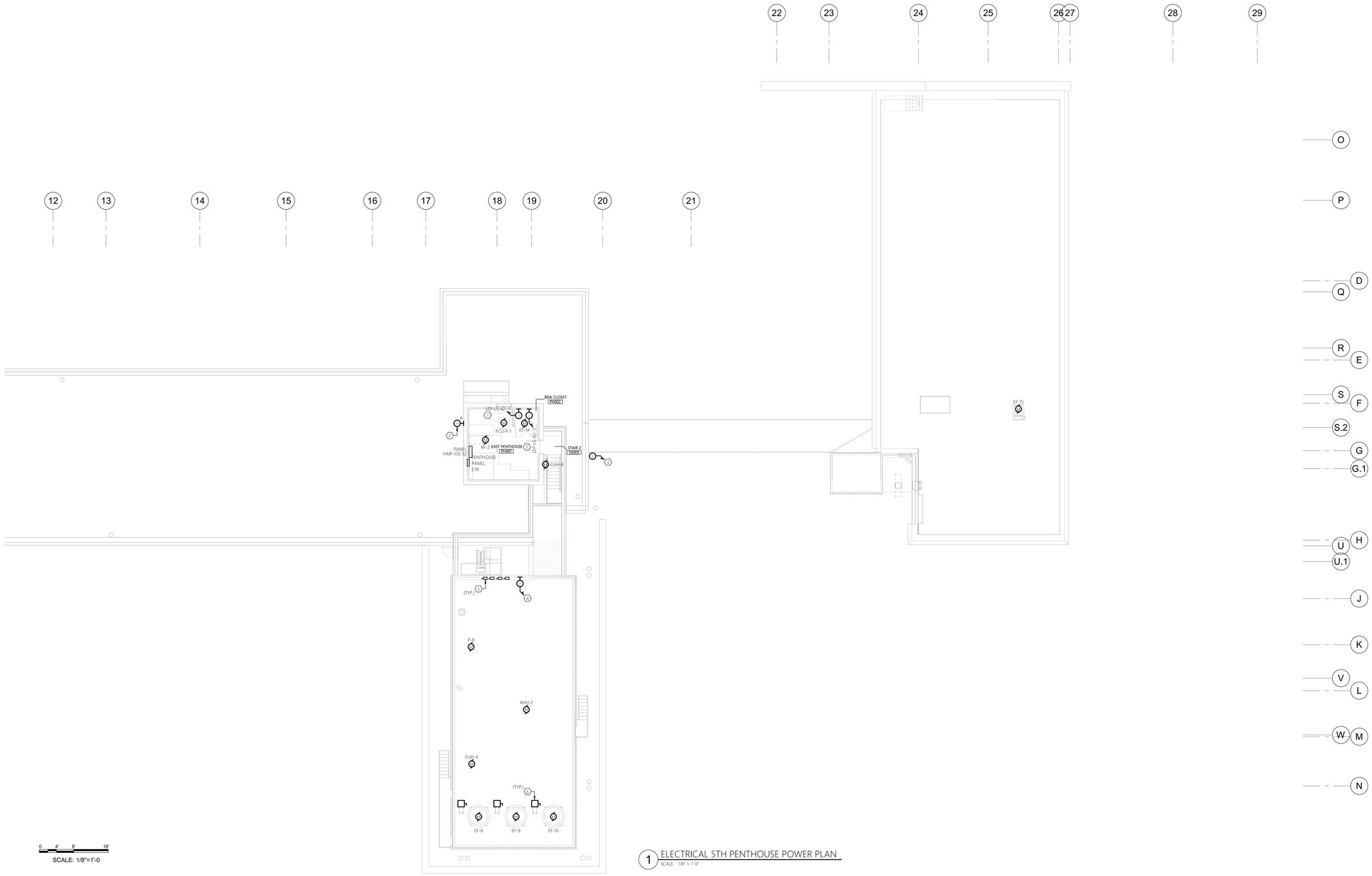
SHEET KEY NOTES:

1. PROVIDE DEDICATED 120V, 20A CIRCUIT FOR BDSA ANTENNA. COORDINATE ROUGH-IN WITH FA DRAWINGS. INSTALL PER MAKUFACTURER'S RECOMMENDATIONS FOR A COMPLETE AND OPERABLE SYSTEM WITH TURN-KEY INSTALLATION.
2. PROVIDE BONDING/GROUNDING OF ANTENNA PER NEC. REFER TO GROUNDING DETAIL, SHEET 8.2 FOR ADDITIONAL INFORMATION.
3. PROVIDE 120V, 20A CIRCUIT FOR HEAT TRACE. COORDINATE INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS. UTILIZE SPACE WITHIN EXISTING PENTHOUSE PANEL.
4. PROVIDE 120V, 20A CIRCUIT FOR MECHANICAL SPACE LIGHTING AND POWER. COORDINATE INSTALLATION REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN. UTILIZE SPACE WITHIN EXISTING PENTHOUSE PANEL.
5. INDICATIVE OF SUPPLY FAN VFD INSTALLATION LOCATION. COORDINATE EXACT INSTALLATION LOCATION AND REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN.
6. INDICATIVE OF EXHAUST FAN DISCONNECT INSTALLATION LOCATION. COORDINATE EXACT INSTALLATION LOCATION AND REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.



1 ELECTRICAL 5TH PENTHOUSE POWER PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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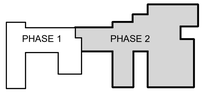

Keyplan

Job Number 31909.00
Drawing By KJM
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL PENTHOUSE POWER PLAN

STATE OF NEW YORK
SHANE GARRAGHAN
106086
LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
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E1.5

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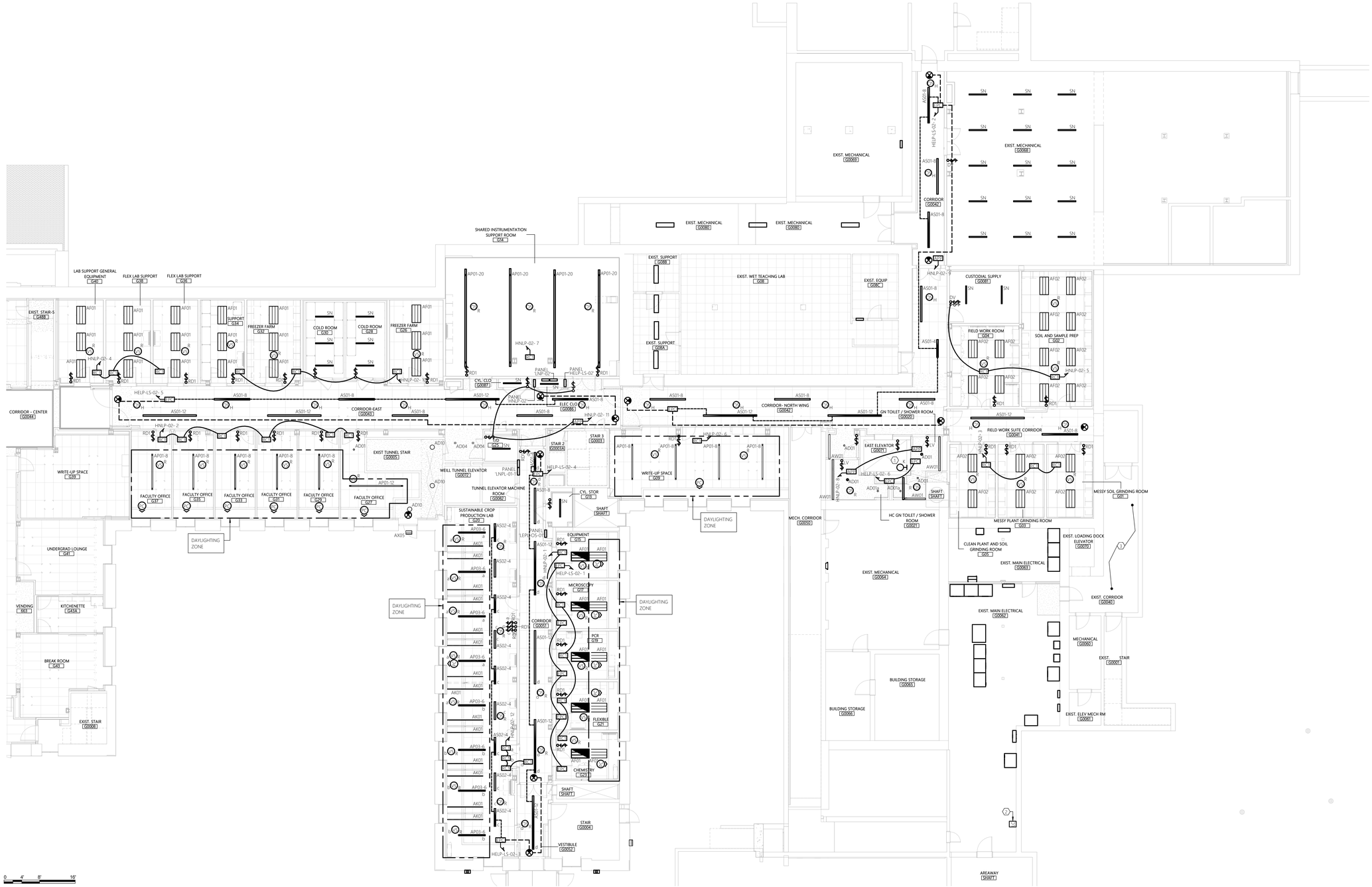
SHEET KEY NOTES:

1. COORDINATE ELEVATOR SHAFT LIGHT FIXTURE MOUNTING HEIGHT IN FIELD WITH A-SHEETS PRIOR TO ROUGH-IN.
2. COORDINATE LOCATION OF EXTERIOR LIGHTING CONTROLS IN FIELD WITH OWNER PRIOR TO ROUGH-IN. REFER TO EXTERIOR LIGHTING CONTROL DETAIL, SHEET E8.2 FOR ADDITIONAL INFORMATION.
3. REINSTALL FIXTURES THAT WERE TEMPORARILY REMOVED DURING REMOVALS PHASE. REINSTALL IN PREVIOUS LOCATIONS AND CONNECT TO EXISTING CIRCUIT MAINTAINED DURING REMOVALS.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGARS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. REFER TO LIGHTING CONTROL SCHEDULE, SHEET E6.5 FOR CIRCUITING REQUIREMENTS.



1 ELECTRICAL GROUND FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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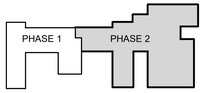
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL GROUND FLOOR LIGHTING PLAN

STATE OF NEW YORK · SAMUEL A. GARGIULO · 087 · LICENSED PROFESSIONAL ENGINEER

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E2.0

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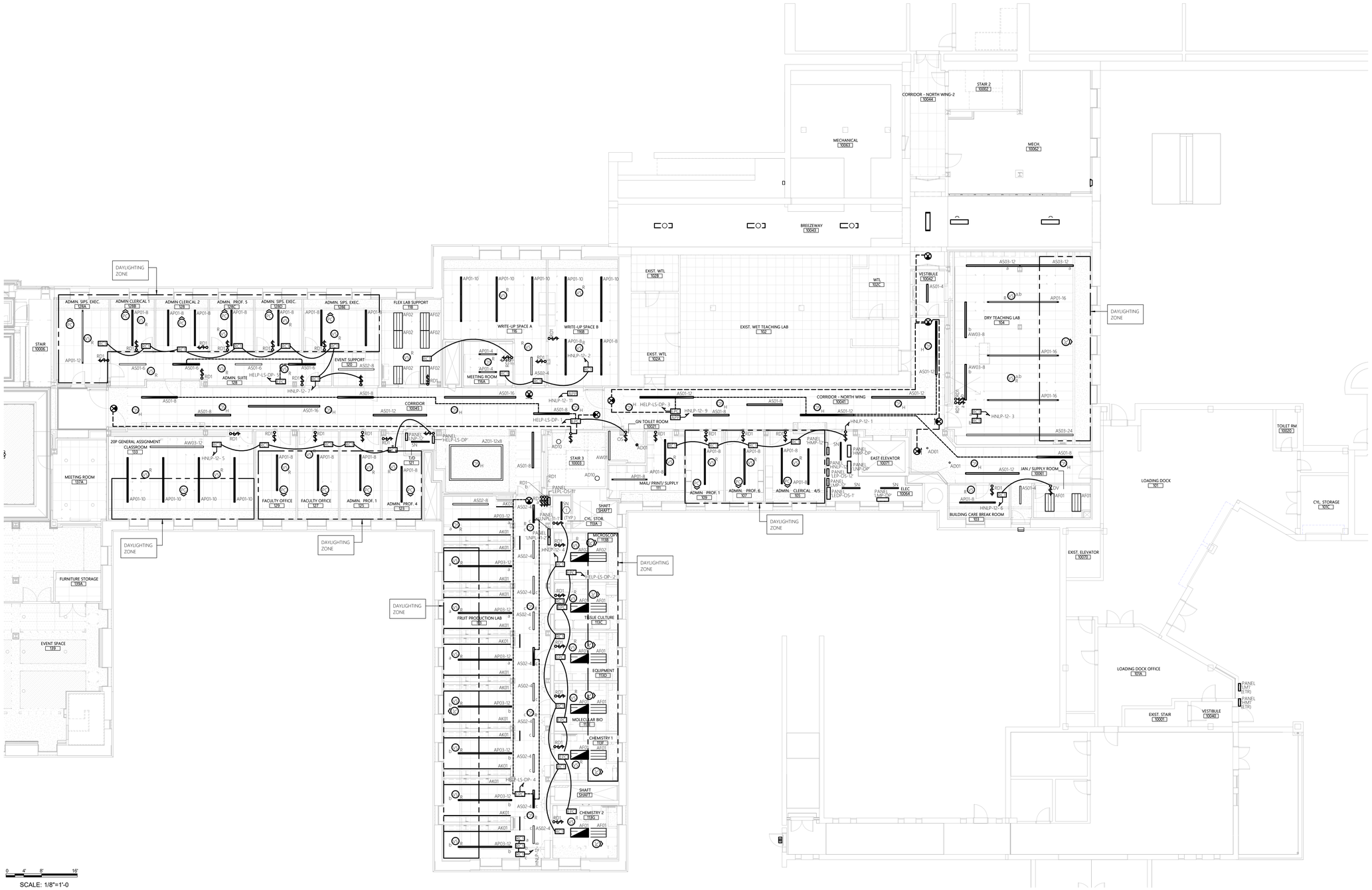
11. REFER TO LIGHTING CONTROL SCHEDULE, SHEET E6.5 FOR CIRCUITING REQUIREMENTS.



1 ELECTRICAL 1ST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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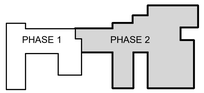

Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL FIRST FLOOR LIGHTING PLAN

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Scale: As indicated

STATE OF NEW YORK · SHANE GARRAMONE · 106086 · LICENSED PROFESSIONAL ENGINEER

E2.1

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GENERAL SHEET NOTES:

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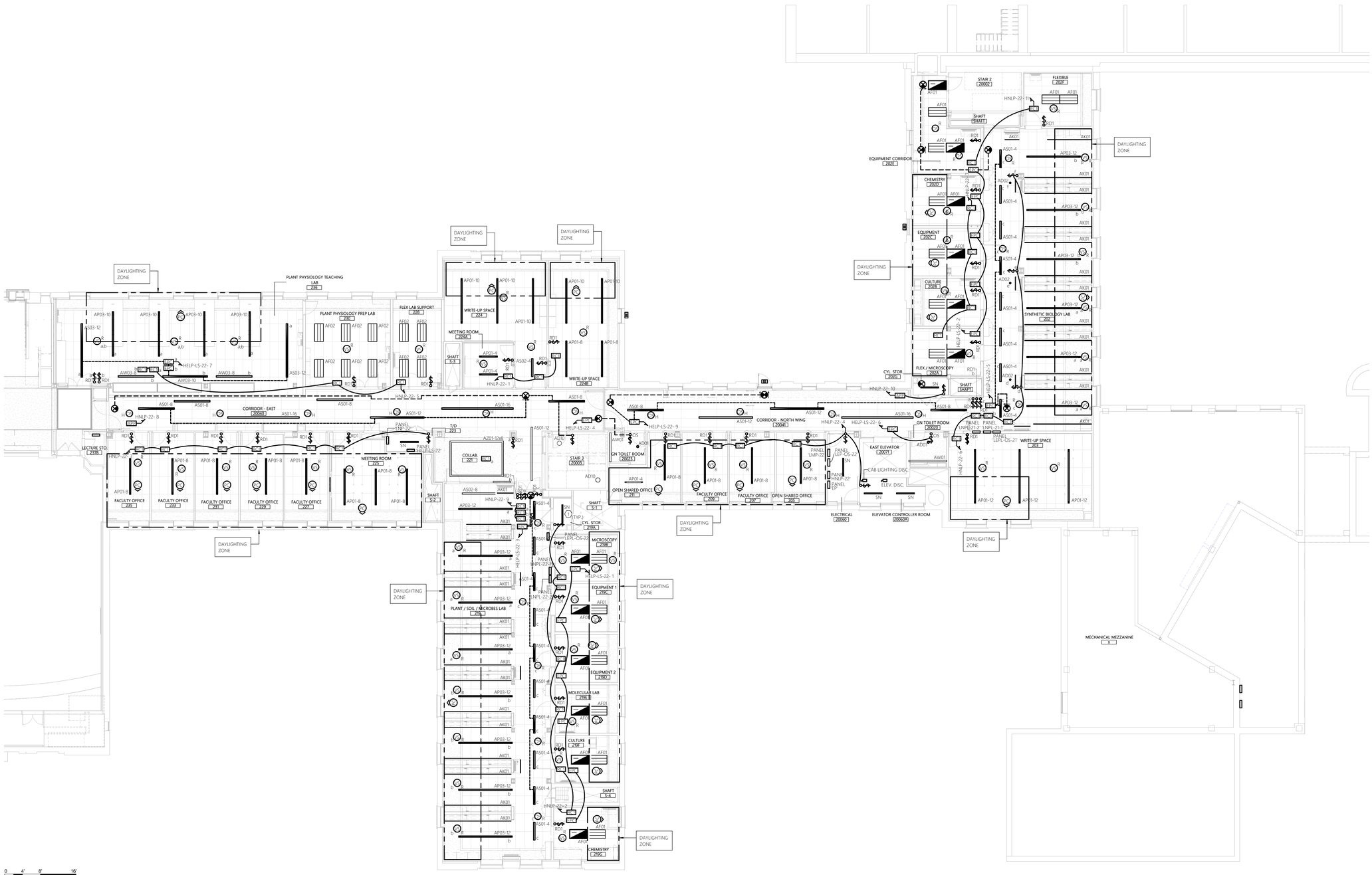
11. REFER TO LIGHTING CONTROL SCHEDULE, SHEET E6.5 FOR CIRCUITING REQUIREMENTS.



1 ELECTRICAL 2ND FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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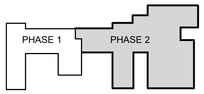
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL SECOND FLOOR LIGHTING PLAN

STATE OF NEW YORK · SAMUEL A. GARGANIGO · 085668 · LICENSED PROFESSIONAL ENGINEER

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E2.2

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GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
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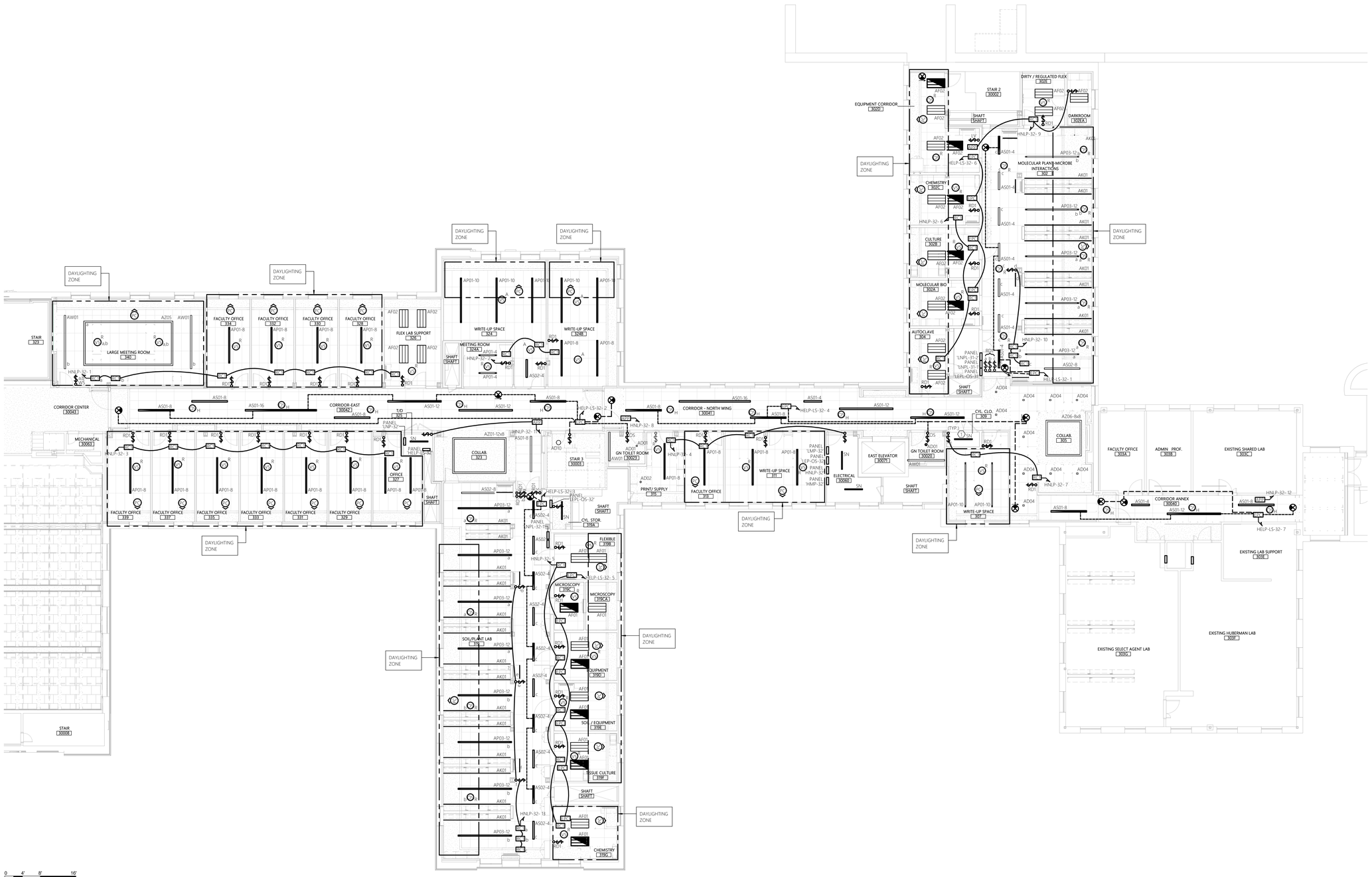
11. REFER TO LIGHTING CONTROL SCHEDULE, SHEET E6.5 FOR CIRCUITING REQUIREMENTS.



1 ELECTRICAL 3RD FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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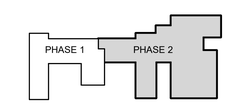
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL THIRD FLOOR LIGHTING PLAN

STATE OF NEW YORK · SAME GARGANIGAN · 126085 · LICENSED PROFESSIONAL ENGINEER

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Scale: As indicated

E2.3

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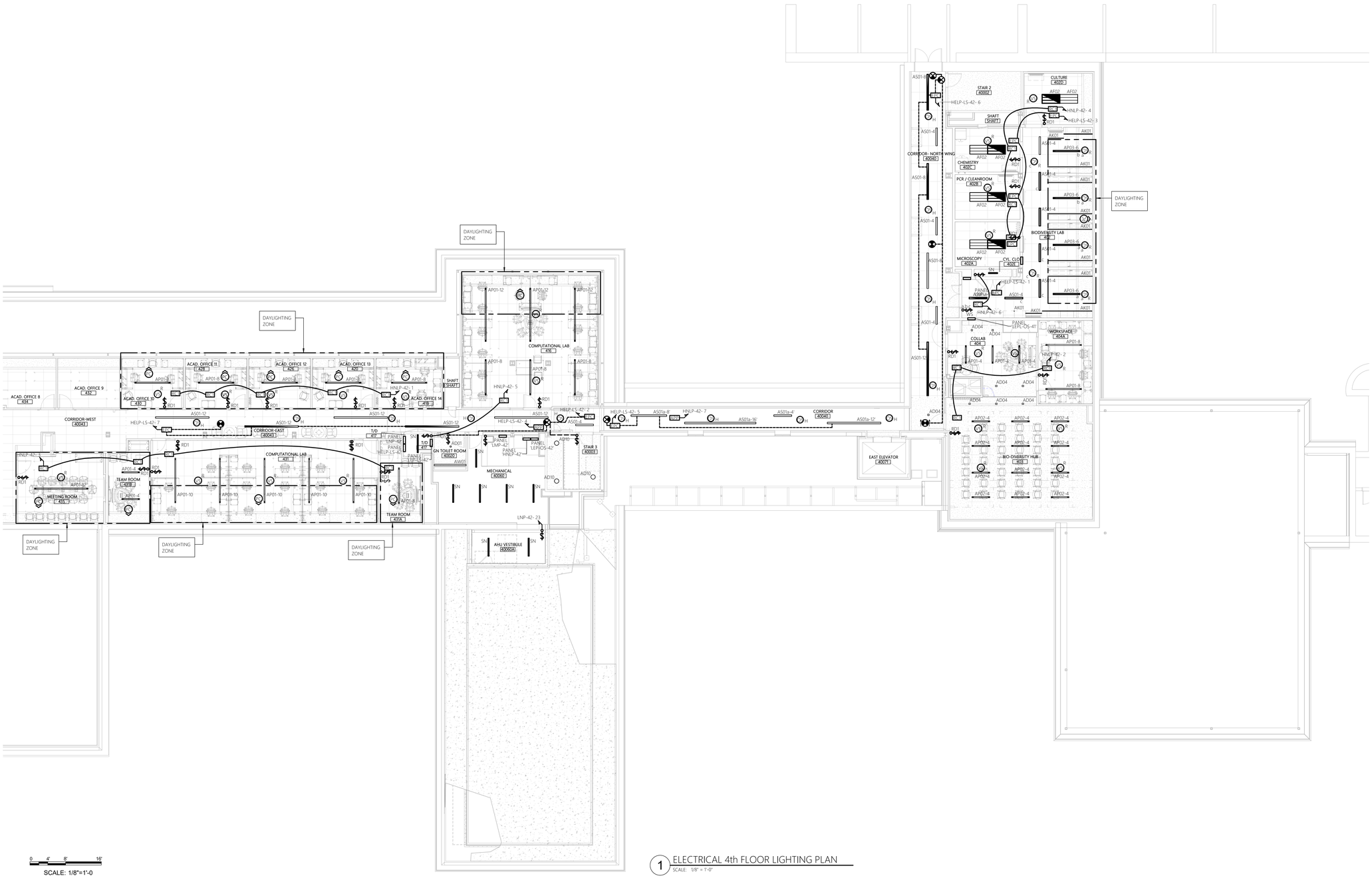
11. REFER TO LIGHTING CONTROL SCHEDULE, SHEET E6.5 FOR CIRCUITING REQUIREMENTS.



1 ELECTRICAL 4th FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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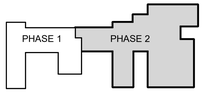
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL FOURTH FLOOR LIGHTING PLAN

STATE OF NEW YORK · STATE GARRAHAN · LICENSED PROFESSIONAL ENGINEER · 106066

BID DOCUMENTS
Scale: As indicated

E2.4

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SHEET KEY NOTES:

1. UTILIZE EXISTING SPACE WITHIN EXISTING PENTHOUSE PANEL FOR NEW PENTHOUSE LIGHTING CIRCUIT. MATCH BREAKER TYPE, AIC RATING, ETC.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGARS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
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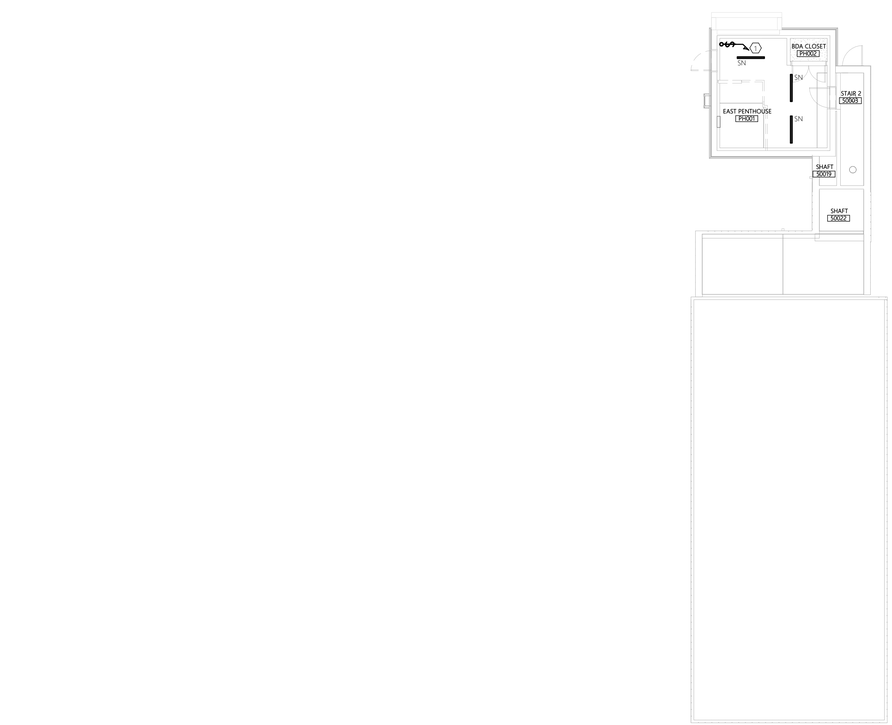
11. REFER TO LIGHTING CONTROL SCHEDULE SHEET E6.5 FOR CIRCUITING REQUIREMENTS.



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

1 ELECTRICAL 5TH PENTHOUSE LIGHTING PLAN
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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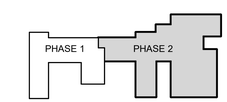
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL PENTHOUSE LIGHTING PLAN

BID DOCUMENTS
Scale: As indicated

E2.5

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GENERAL SHEET NOTES:

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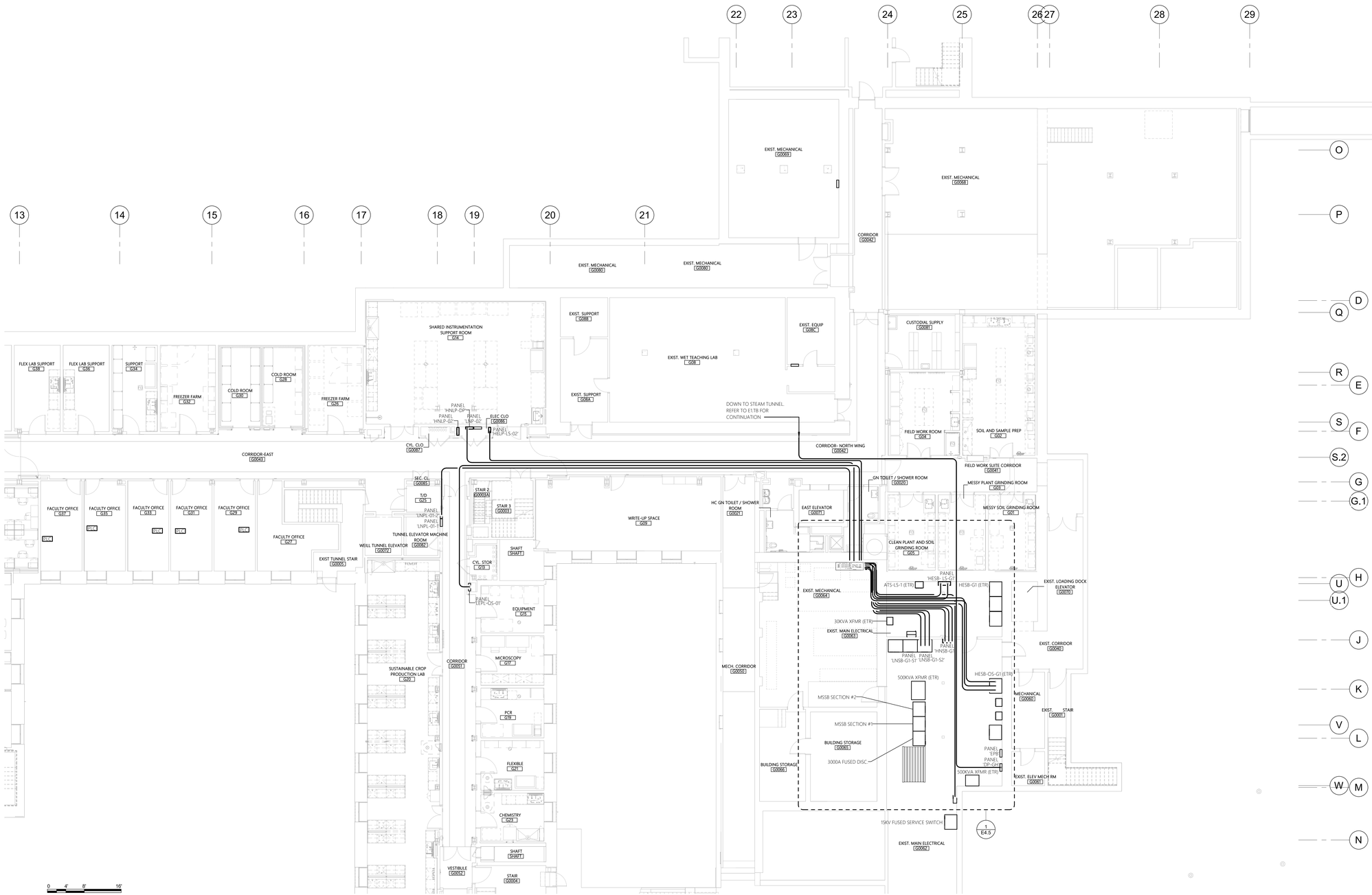
11. COORDINATE PHASING WITH A-SHEETS.
12. CONDUIT ROUTING SHOWN IS SCHEMATIC IN NATURE. COORDINATE ACTUAL PATHS IN FIELD WITH ALL TRADES PRIOR TO ROUGH-IN.



1 ELECTRICAL CONDUIT ROUTING PLAN - GROUND FLOOR
SCALE: 1/8" = 1'-0"

10/8/2026 11:56:18 AM

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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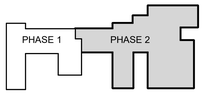
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	KJM
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL CONDUIT ROUTING PLAN- GROUND FLOOR

STATE OF NEW YORK · SAMI GARRAGHAN · 106586 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E3.0

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GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
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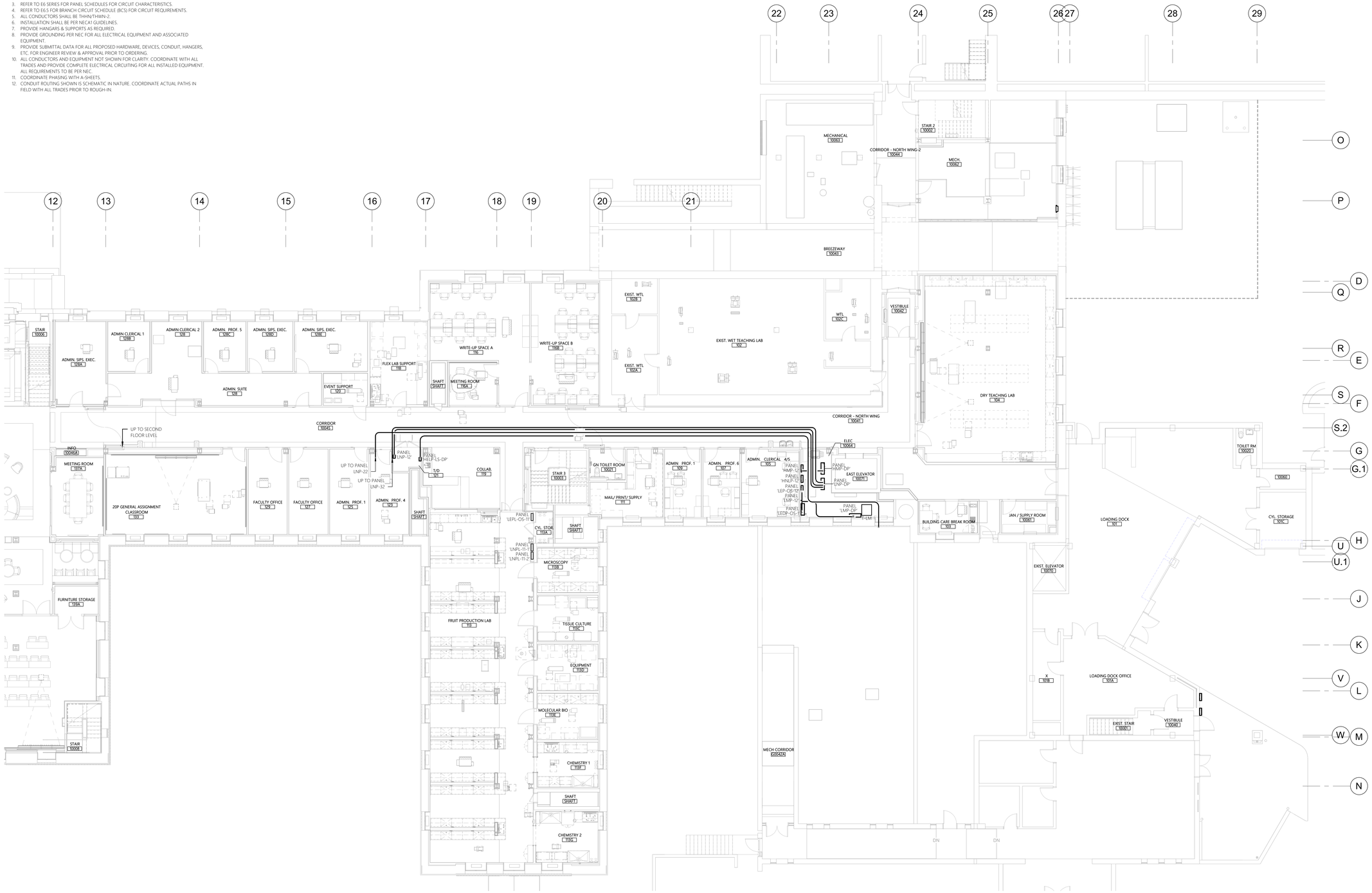
12. CONDUIT ROUTING SHOWN IS SCHEMATIC IN NATURE. COORDINATE ACTUAL PATHS IN FIELD WITH ALL TRADES PRIOR TO ROUGH-IN.



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SCALE: 1/8"=1'-0

1 ELECTRICAL CONDUIT ROUTING PLAN FIRST FLOOR
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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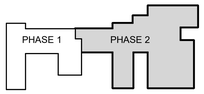
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL CONDUIT ROUTING PLAN- FIRST FLOOR

STATE OF NEW YORK · SAME GARRAGHAN · 106586 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E3.1

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GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
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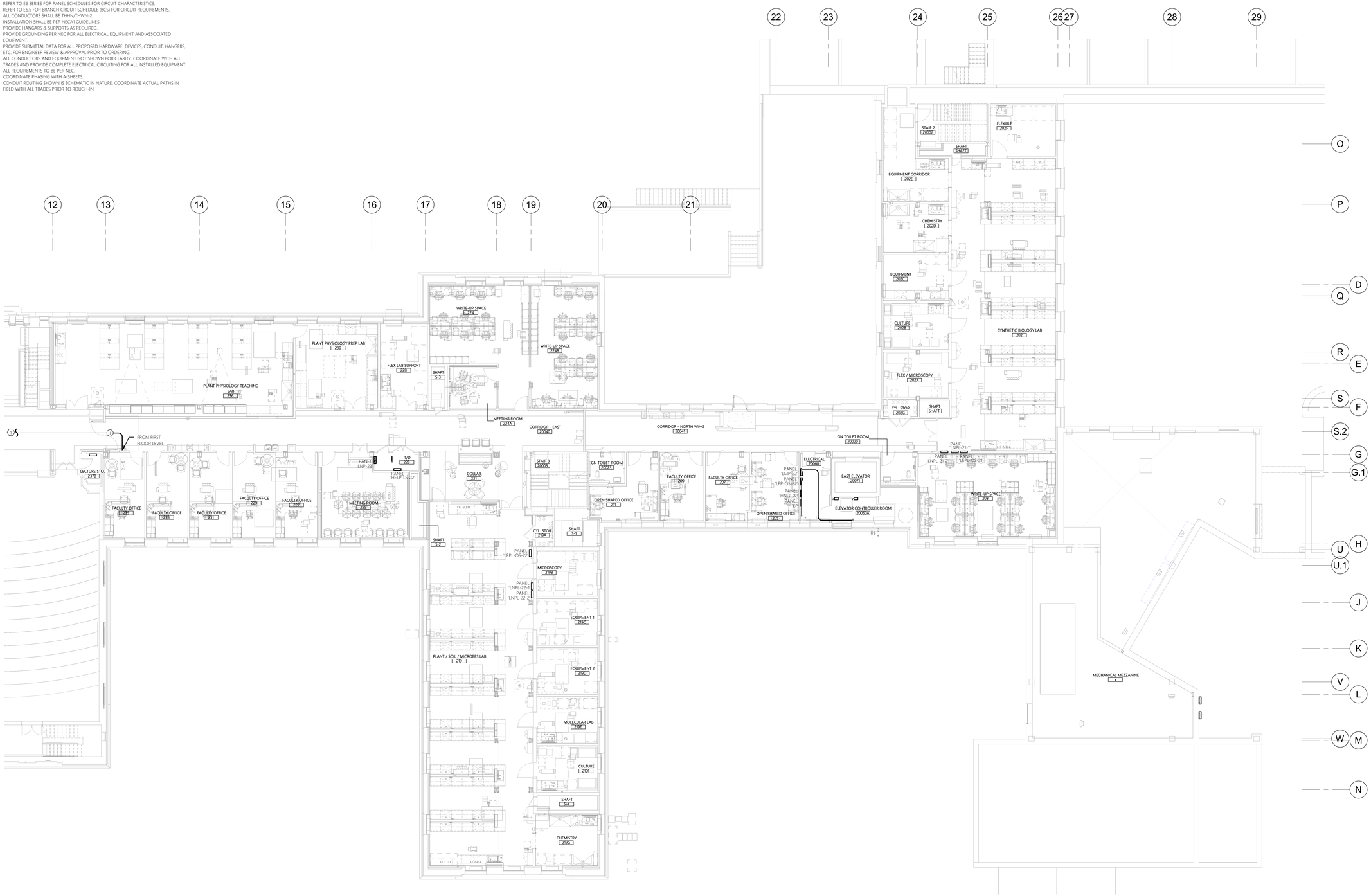
11. COORDINATE PHASING WITH A-SHEETS.
12. CONDUIT ROUTING SHOWN IS SCHEMATIC IN NATURE. COORDINATE ACTUAL PATHS IN FIELD WITH ALL TRADES PRIOR TO ROUGH-IN.

SHEET KEY NOTES:

1. REFER TO SHEET E0.4 FOR CONTINUATION.



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SCALE: 1/8"=1'-0

1 ELECTRICAL CONDUIT ROUTING PLAN- SECOND FLOOR

SCALE: 1/8" = 1'-0"

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Autodesk Docs://31909 SUCF Cornell Plant Science/31909_Cornell_PSB_ELEC_PH2_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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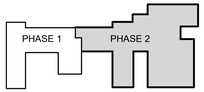
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL CONDUIT ROUTING PLAN- SECOND FLOOR

STATE OF NEW YORK · SAME GARRAFFO · 106066 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E3.2

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GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
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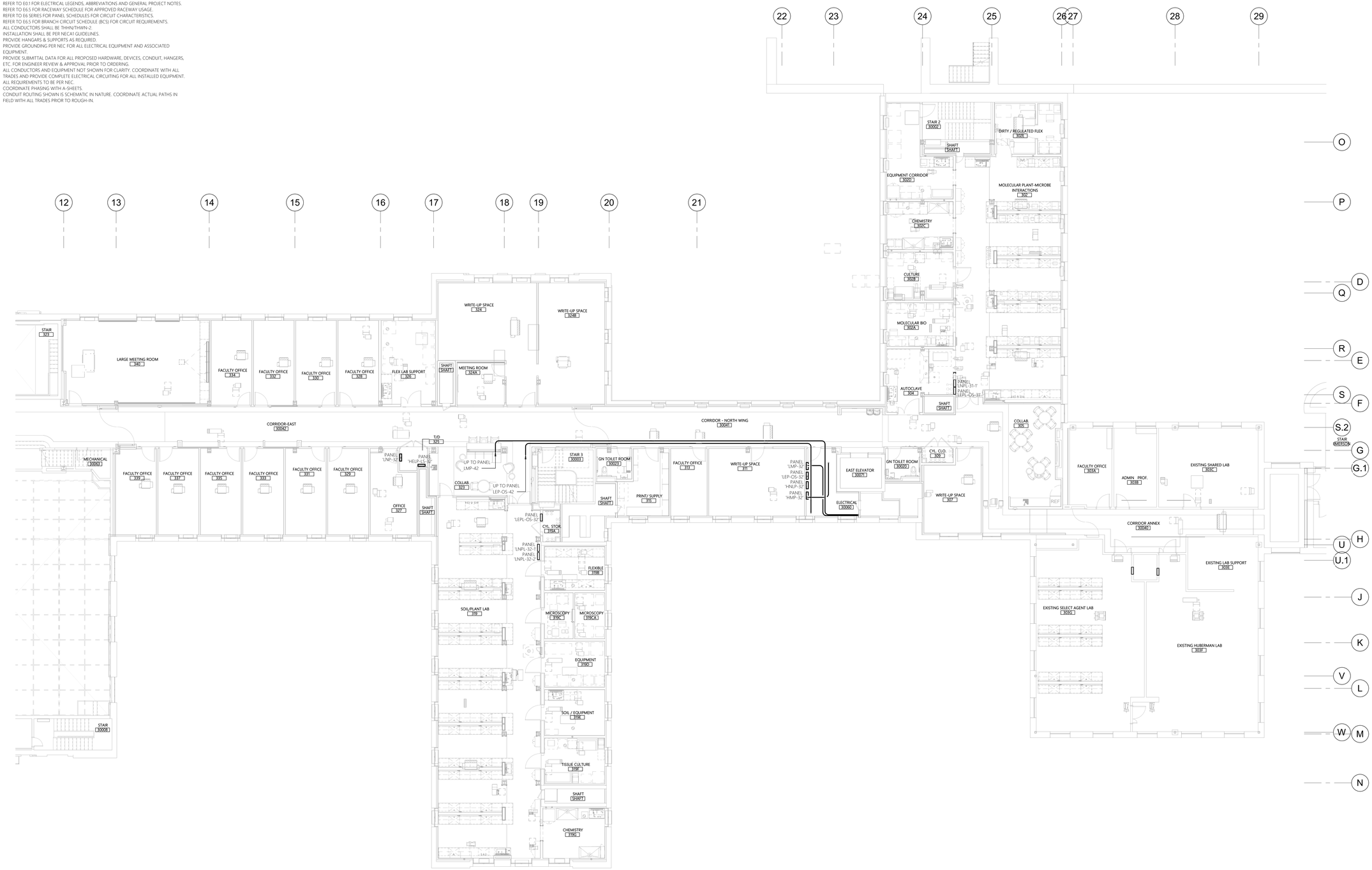

1 ELECTRICAL CONDUIT ROUTING PLAN- THIRD FLOOR
SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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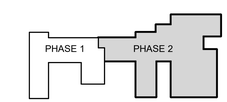

Keyplan

Job Number	31909.00
Drawing By	CCH
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Date	August 31, 2026

Revisions

ELECTRICAL CONDUIT ROUTING PLAN- THIRD FLOOR

STATE OF NEW YORK · SAME GARLIGNANI · 126098 · LICENSED PROFESSIONAL ENGINEER

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Scale: As indicated

E3.3

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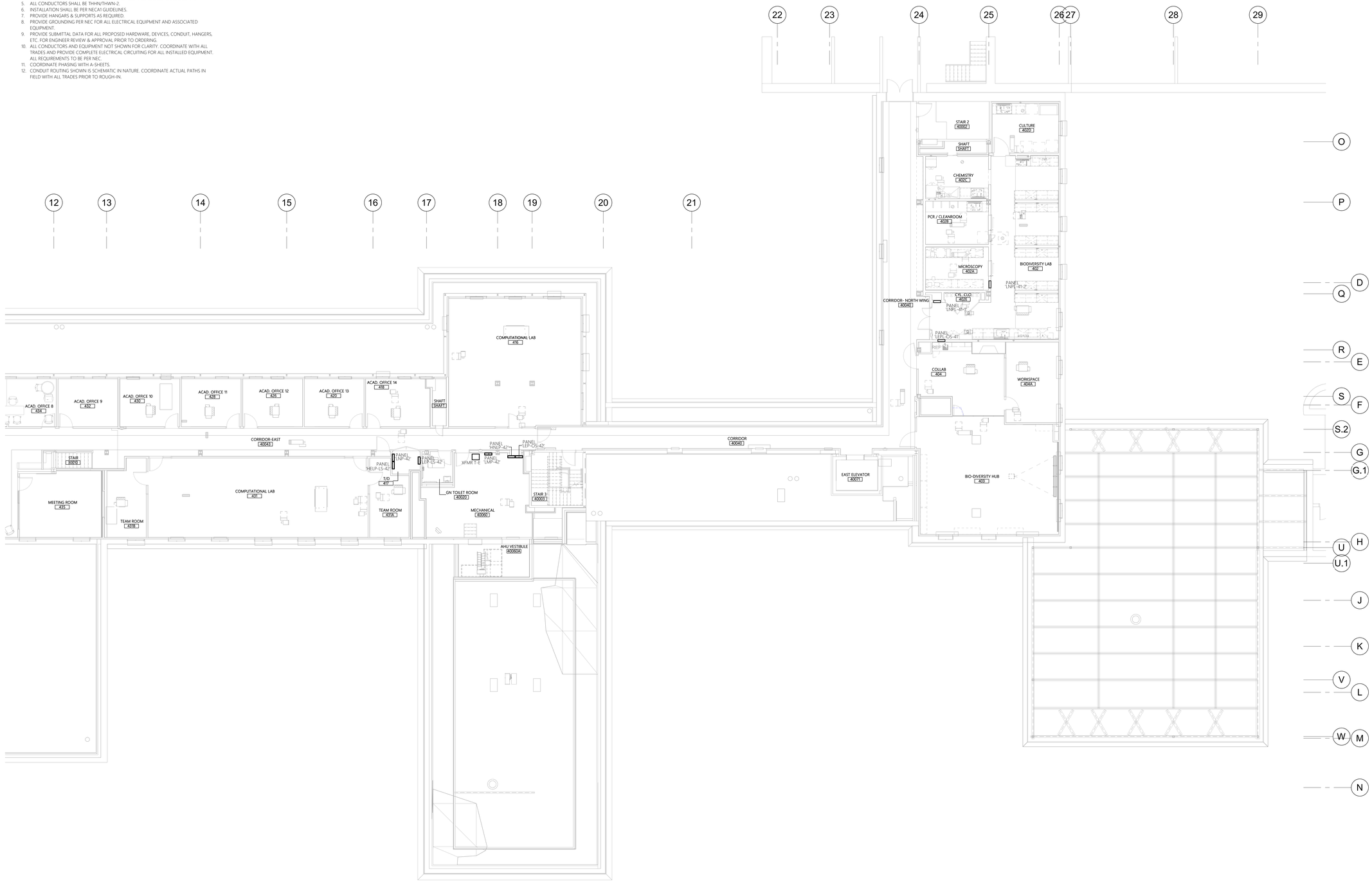
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING WITH A-SHEETS.
12. CONDUIT ROUTING SHOWN IS SCHEMATIC IN NATURE. COORDINATE ACTUAL PATHS IN FIELD WITH ALL TRADES PRIOR TO ROUGH-IN.



0 4' 8' 16'

SCALE: 1/8"=1'-0

1 ELECTRICAL CONDUIT ROUTING PLAN- FOURTH FLOOR
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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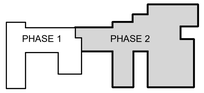

Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL CONDUIT ROUTING PLAN- FOURTH FLOOR

STATE OF NEW YORK · STATE GARRAHAN · 106066 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E3.4

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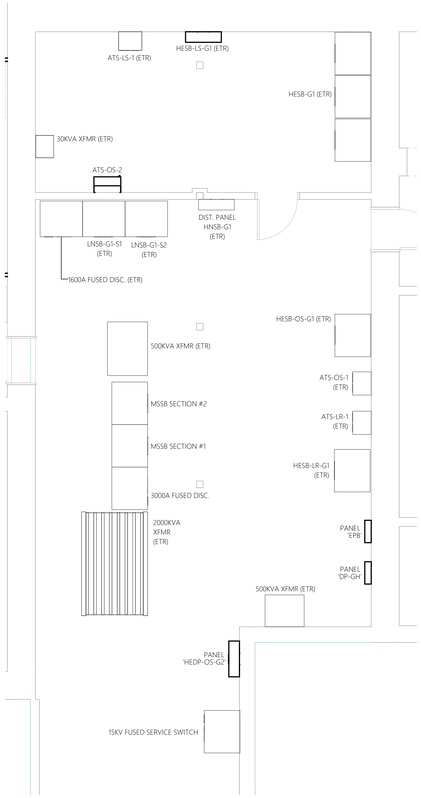
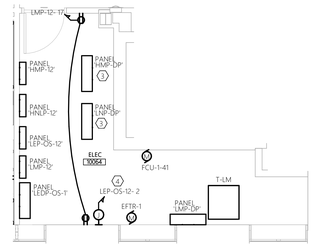


1 ELECTRICAL ENLARGED POWER PLAN - MAIN ELECTRICAL ROOM
SCALE: 1/4" = 1'-0"



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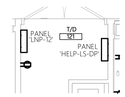
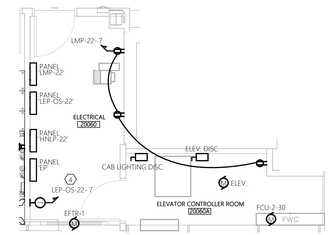


3 ELECTRICAL ENLARGED POWER PLAN - T/D 121
SCALE: 1/4" = 1'-0"



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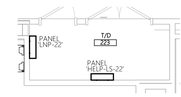

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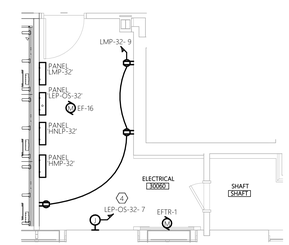

6 ELECTRICAL ENLARGED POWER PLAN - ELEC 30060
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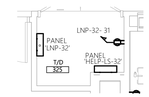

7 ELECTRICAL ENLARGED POWER PLAN - T/D 325
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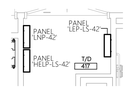

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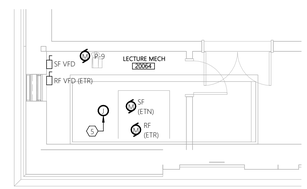
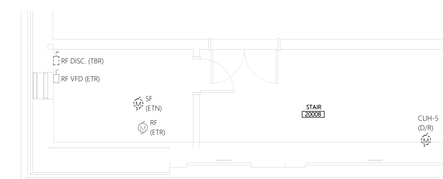
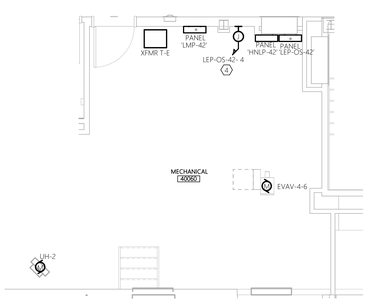
SCALE: 1/4" = 1'-0"



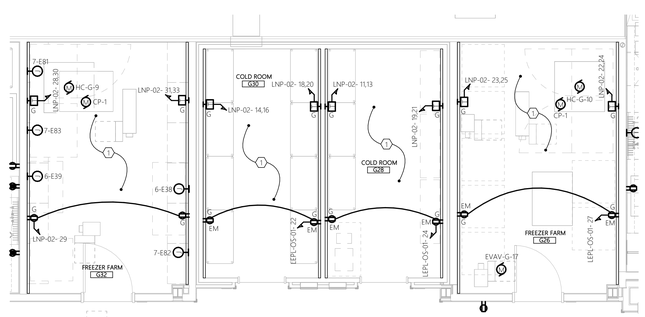
11 ELECTRICAL ENLARGED PLAN - LECTURE HALL MECH. ROOM
SCALE: 1/4" = 1'-0"



12 ELECTRICAL ENLARGED REMOVAL PLAN - LECTURE HALL MECH. ROOM
SCALE: 1/4" = 1'-0"



9 ELECTRICAL 4TH FLOOR POWER PLAN - MECH. 40060
SCALE: 1/4" = 1'-0"



10 ELECTRICAL ENLARGED PLAN - FREEZER FARMS & COLD ROOMS
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
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11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

1. RECEPTACLE AND POWER LAYOUT WITHIN FREEZER FARMS AND COLD ROOMS ARE NOT FINAL. COORDINATE FINAL COLD/FREEZER EQUIPMENT ELECTRICAL REQUIREMENTS WITH A-SHEETS PRIOR TO ROUGH-IN.
2. RECEPTACLE AND POWER LAYOUT WITHIN DATA ROOMS ARE NOT FINAL. COORDINATE FINAL DATA EQUIPMENT ELECTRICAL REQUIREMENTS WITH T-SHEETS PRIOR TO ROUGH-IN.
3. PROVIDE UNISTRUT MOUNTING FOR DISTRIBUTION PANELBOARDS IN ORDER TO AVOID STRUCTURAL BEAM.
4. PROVIDE 120V, 20A CIRCUIT FOR BMS PANEL CONNECTION. COORDINATE ALL INSTALLATION REQUIREMENTS WITH MANUFACTURER'S RECOMMENDATIONS & LOCATION WITH BMS INSTALLER.
5. PROVIDE DEDICATED 120V, 20A CIRCUITS FOR AHU-3 LIGHTING AND CONVENIENCE RECEPTACLES. COORDINATE REQUIREMENTS WITH H-SHEETS PRIOR TO ROUGH-IN.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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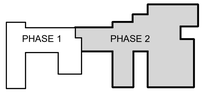
Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL ENLARGED PLANS

STATE OF NEW YORK · SHANE GARRABRANT · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E4.1

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

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Autodesk Docs://31909 SUCF Cornell Plant Sciences/31909_Cornell_PSB_ELEC_PH2_R23.rvt

SHEET KEY NOTES:

1. COORDINATE RECEPTACLE ROUGH-IN (MOUNTING HEIGHTS, QUANTITIES, CHARACTERISTICS, ETC.) WITH ARCHITECTURAL ELEVATIONS, DRAWING A10.11 PRIOR TO ROUGH-IN.
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4. PROVIDE RECEPTACLES AND CIRCUIT FOR CYLINDER EQUIPMENT. RECEPTACLES TO BE MOUNTED 18"AFF. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
5. COORDINATE KNEESPACE RECEPTACLES WITH WIRING FOR CASEWORK STANCHION MOUNTED DEVICES WITH GC AND CASEWORK PROVIDER.

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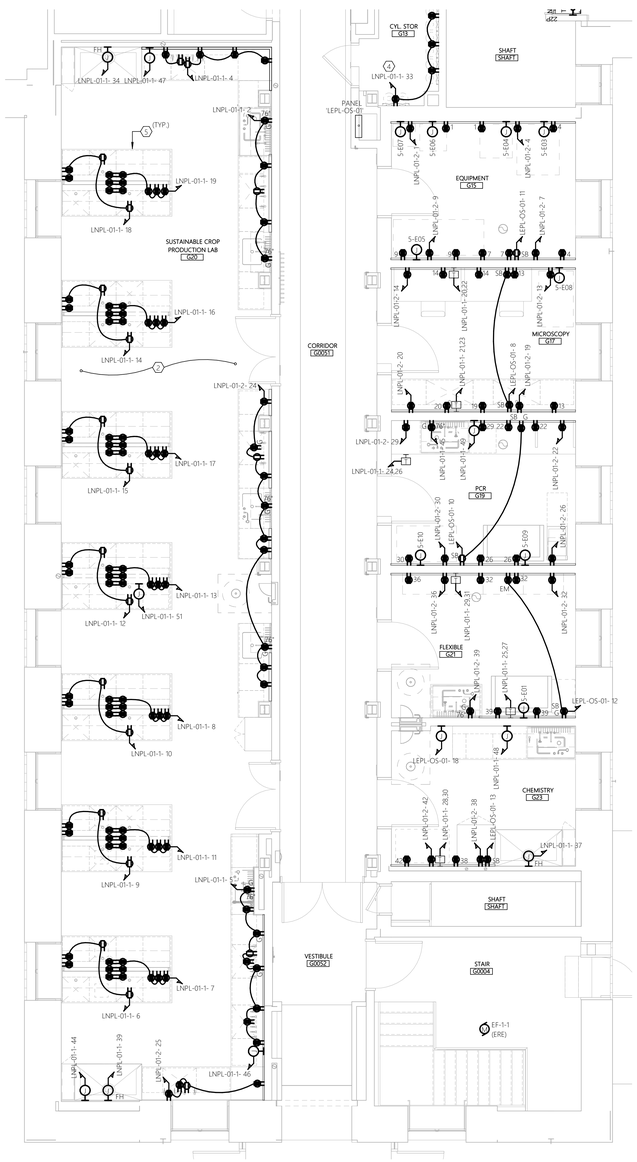
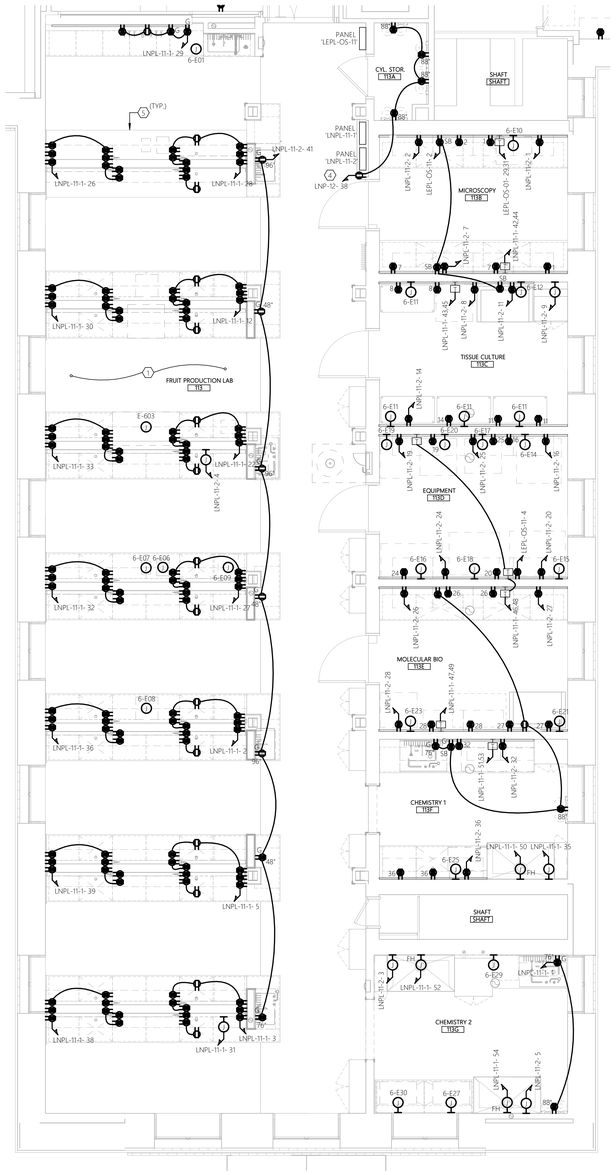
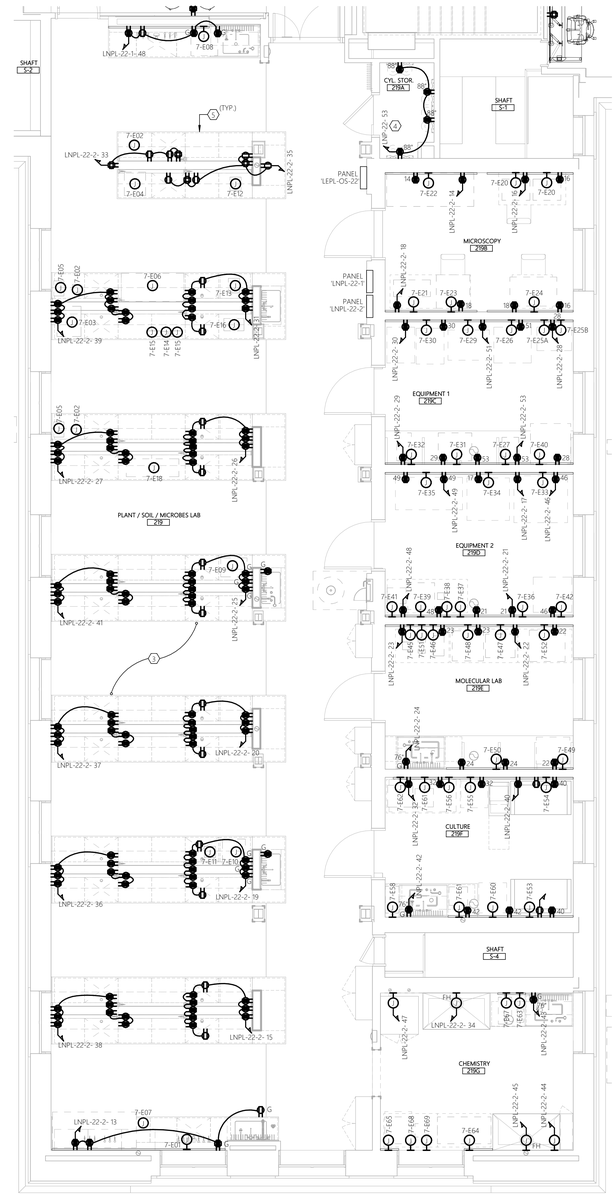


1 ELECTRICAL 0-GROUND FLOOR POWER PLAN - LAB AREA
SCALE: 1/4" = 1'-0"



2 ELECTRICAL 1ST FLOOR POWER PLAN - LAB AREA
SCALE: 1/4" = 1'-0"



3 ELECTRICAL 2ND FLOOR POWER PLAN - LAB AREA SOUTH
SCALE: 1/4" = 1'-0"

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

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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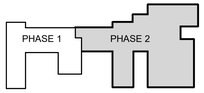

Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL ENLARGED PLANS - LAB AREAS

STATE OF NEW YORK · SHANE GARGARONO · 106586 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E4.2

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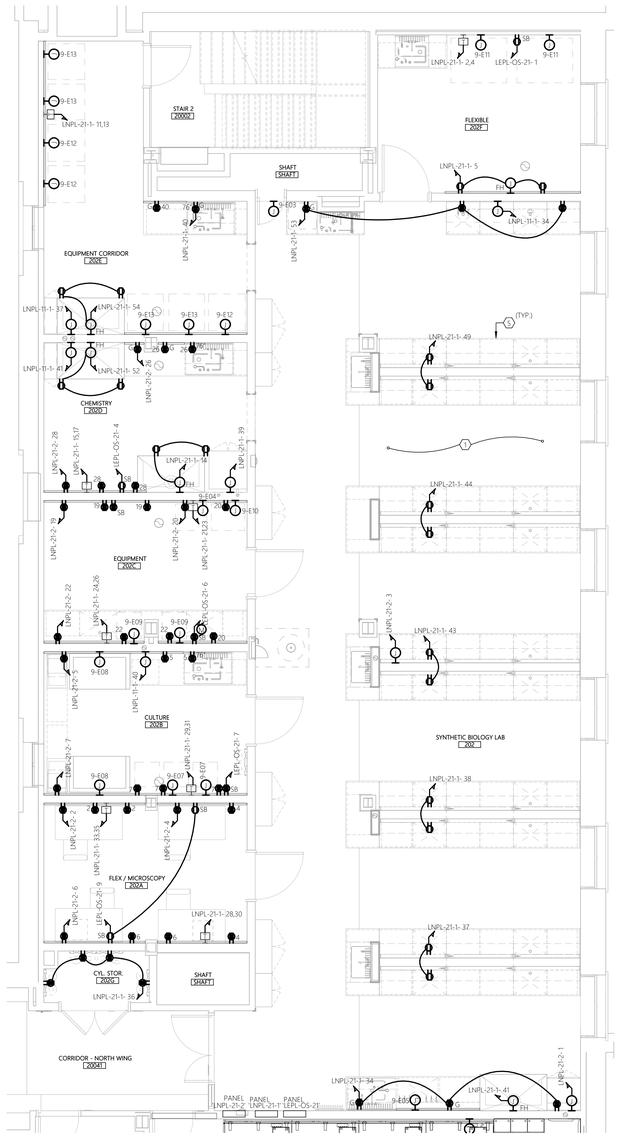
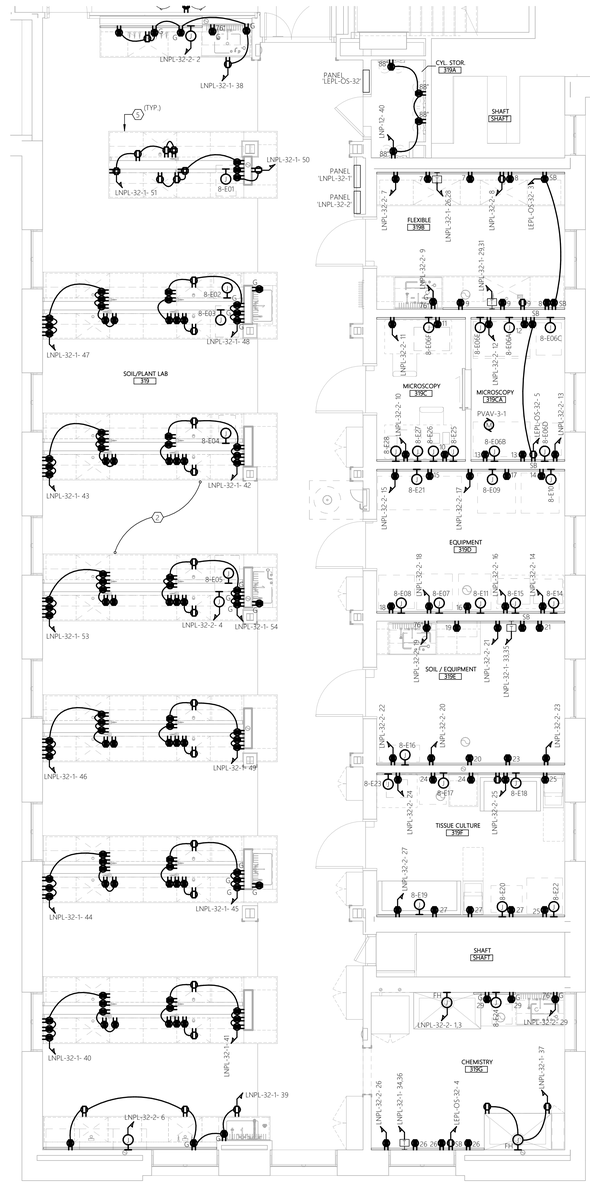
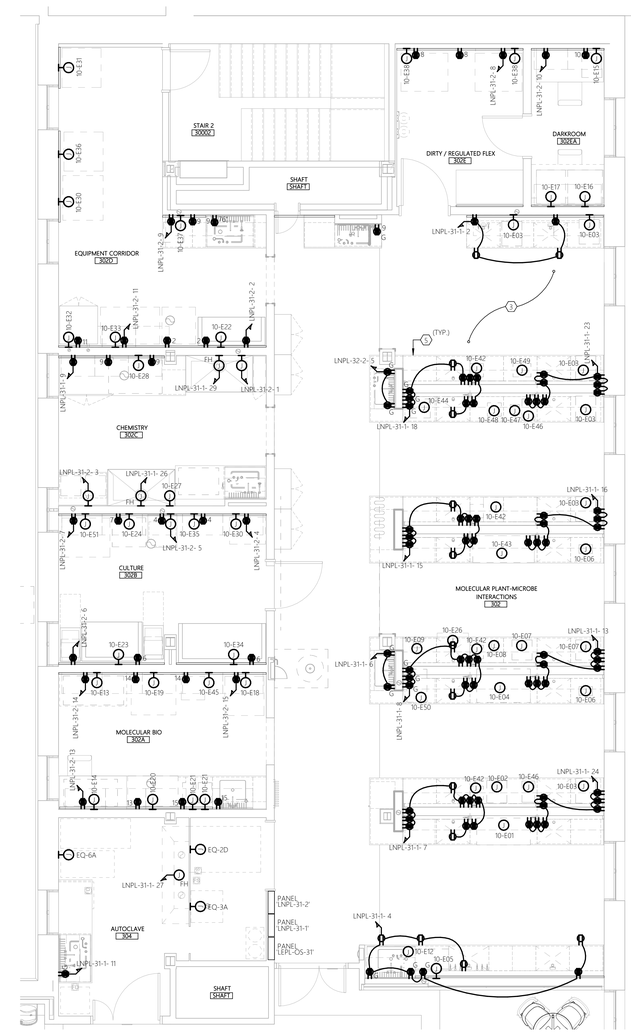


1 ELECTRICAL 2ND FLOOR POWER PLAN - LAB AREA NORTH
SCALE: 1/4" = 1'-0"



2 ELECTRICAL 3RD FLOOR POWER PLAN - LAB AREA SOUTH
SCALE: 1/4" = 1'-0"



3 ELECTRICAL 3RD FLOOR POWER PLAN - LAB AREA NORTH
SCALE: 1/4" = 1'-0"

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

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Cornell CALS College of Agriculture and Life Sciences

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Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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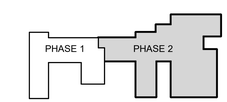
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL ENLARGED PLANS - LAB AREAS

STATE OF NEW YORK · SHANE GARBARINO · 106095 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E4.3

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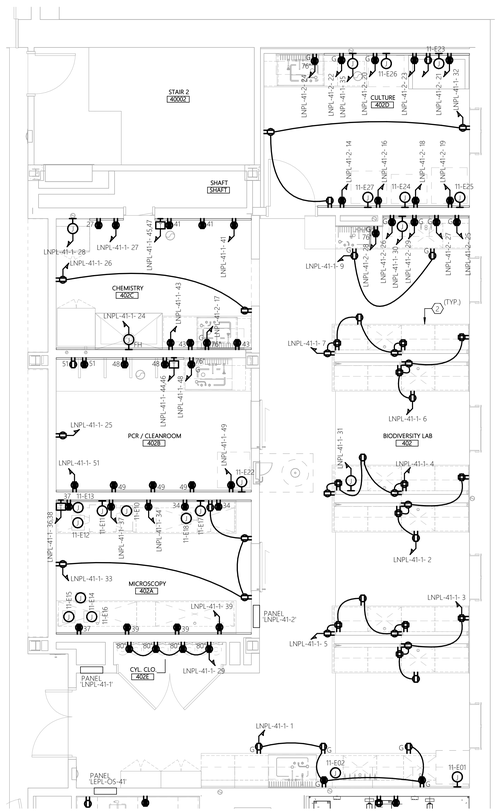
SHEET KEY NOTES:

1. COORDINATE RECEPTACLE ROUGH-IN (MOUNTING HEIGHTS, QUANTITIES, CHARACTERISTICS, ETC.) WITH ARCHITECTURAL ELEVATIONS, DRAWING A0.16 PRIOR TO ROUGH-IN.
2. COORDINATE KNEESPACE RECEPTACLES WITH WIRING FOR CASEWORK STANCHION MOUNTED DEVICES WITH GC AND CASEWORK PROVIDER.

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
6. INSTALLATION SHALL BE PER NECA1 GUIDELINES.
7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
10. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.



1 ELECTRICAL 4TH FLOOR POWER PLAN - LAB AREA

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

0 2' 4' 8'

SCALE: 1/4"=1'-0

10/8/2026 11:57:01 AM

Autodesk Docs://31909 SUCF Cornell Plant Sciences/31909_Cornell_PSB_ELEC_P42_R23.rvt

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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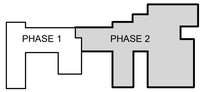
Notes:



Keyplan

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Revisions

ELECTRICAL ENLARGED PLANS - LAB AREAS

STATE OF NEW YORK · SAJAD GARRAGHAN · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E4.4

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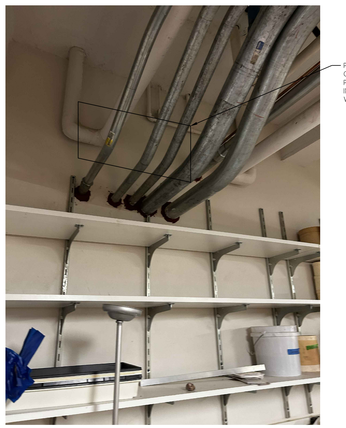
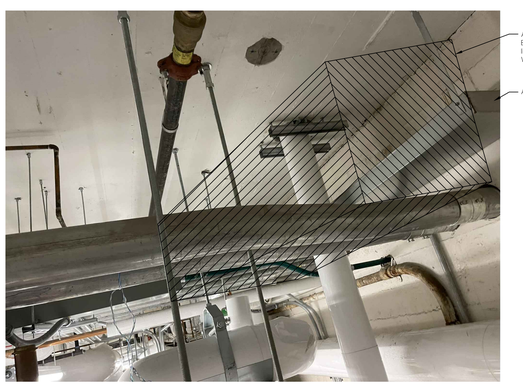
PROPOSED CONDUIT ROUTING LOCATION. CONDUIT TO ROUTED ALONG WALL. LOCATION SHOWN IS DIAGRAMMATIC IN NATURE. COORDINATE EXACT ROUTING AND CONDUIT CONFIGURATION IN FIELD WITH OWNER PRIOR TO ROUGH-IN.

3 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS



PROPOSED PUNCH-THRU LOCATION FOR CONDUIT ROUTING. REFER TO ENLARGED PLAN. THIS SHEET FOR ADDITIONAL INFORMATION. COORDINATE INSTALLATION WITH OWNER PRIOR TO ROUGH-IN.

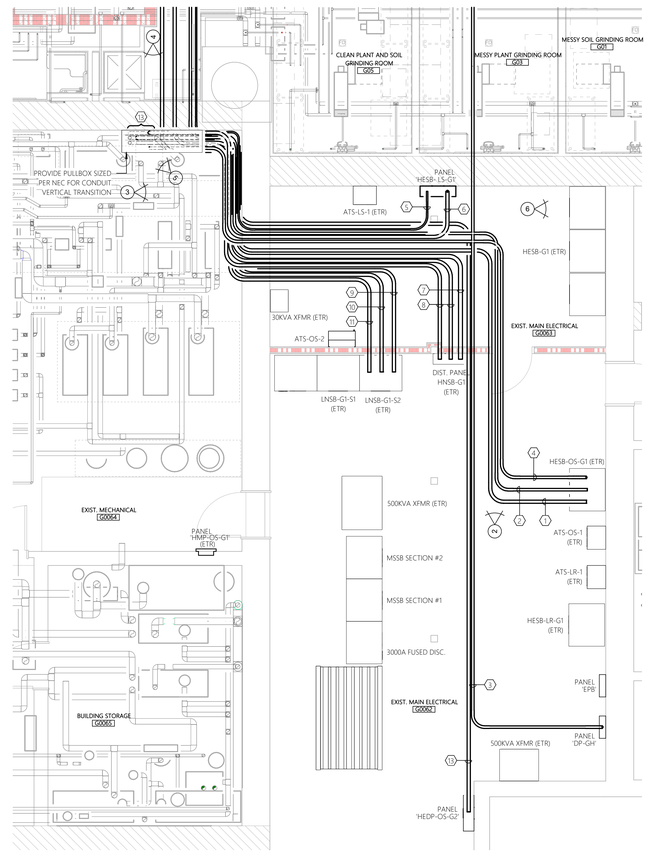
4 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS



APPROXIMATE LOCATION FOR PULLBOX. REFER TO ENLARGED PLAN THIS SHEET FOR ADDITIONAL INFORMATION. COORDINATE PULLBOX LOCATION WITH OWNER PRIOR TO ROUGH-IN.

ABANDONED DUCT (TBR)

5 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS



1 ELECTRICAL ENLARGED CONDUIT ROUTING PLAN
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. REFER TO E6.5 FOR RACEWAY SCHEDULE FOR APPROVED RACEWAY USAGE.
3. REFER TO E6 SERIES FOR PANEL SCHEDULES FOR CIRCUIT CHARACTERISTICS.
4. REFER TO E6.5 FOR BRANCH CIRCUIT SCHEDULE (BCS) FOR CIRCUIT REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE THHN/THWN-2.
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7. PROVIDE HANGERS & SUPPORTS AS REQUIRED.
8. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
9. PROVIDE SUBMITTAL DATA FOR ALL PROPOSED HARDWARE, DEVICES, CONDUIT, HANGERS, ETC. FOR ENGINEER REVIEW & APPROVAL PRIOR TO ORDERING.
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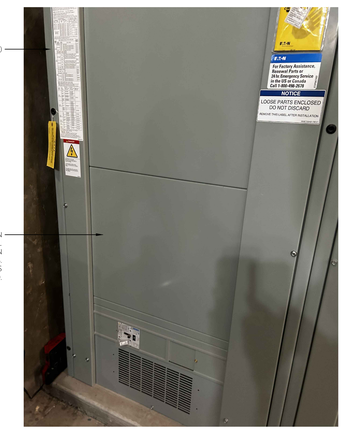
11. COORDINATE PHASING PER CONTRACT DOCUMENTS.
12. COORDINATE DIMENSIONED LOCATIONS WITH A-SHEETS.
13. IN ALL LOCATIONS WHERE PLENUM RETURN IS UTILIZED, ALL CABLING IS TO BE PLENUM RATED. COORDINATE PLENUM LOCATIONS WITH G-SHEETS.

SHEET KEY NOTES:

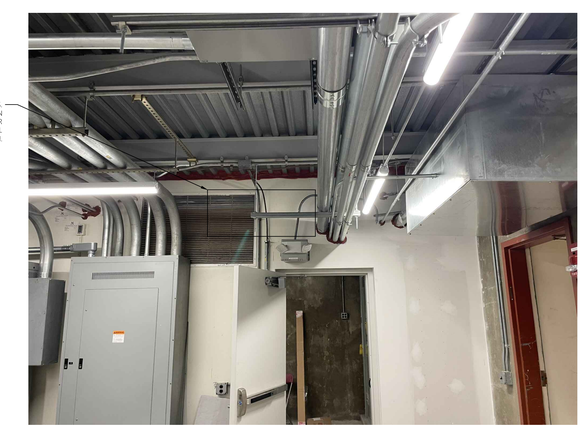
1. INDICATIVE OF CONDUIT ROUTING FOR PANEL LEPL-OS-22.
2. INDICATIVE OF CONDUIT ROUTING FOR PANEL LEPL-OS-01.
3. INDICATIVE OF CONDUIT ROUTING FOR PANEL PPS1. REFER TO E0.4 & E3.4C FOR ADDITIONAL INFORMATION.
4. INDICATIVE OF CONDUIT ROUTING FOR PANEL LEDP-OS-1.
5. INDICATIVE OF CONDUIT ROUTING FOR PANEL LEDP-LS-02.
6. INDICATIVE OF CONDUIT ROUTING FOR PANEL HELP-LS-DP.
7. INDICATIVE OF CONDUIT ROUTING FOR PANEL HMP-DP.
8. INDICATIVE OF CONDUIT ROUTING FOR PANEL HNLP-DP.
9. INDICATIVE OF CONDUIT ROUTING FOR PANEL LNPL-22A.
10. INDICATIVE OF CONDUIT ROUTING FOR PANEL LNPL-DP.
11. INDICATIVE OF CONDUIT ROUTING FOR PANEL LNPL-01.
12. CONDUITS RISE VERTICALLY TO FLOOR ABOVE. REFER TO SHEET E3.1 FOR CONTINUATION.
13. INDICATIVE OF CONDUIT ROUTING FOR PANEL LNP-DP.



SWITCHBOARD HESB-G1 (ETR)

PROVIDE NEW 400A, 3P POLE BREAKER WITHIN EXISTING SWITCHBOARD HESB-G1 FOR NEW PANEL FEED. INSTALL BREAKER WITHIN SECTION DESIGNATED FOR OPTIONAL STANDBY FEEDS. PROVIDE MODIFICATION OF SWITCHBOARD AS NECESSARY TO INSTALL BREAKER AND FEED.

6 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS



PROPOSED ROUTING LOCATION FOR CONDUITS. COORDINATE EXACT ROUTING LOCATION IN FIELD WITH OWNER PRIOR TO ROUGH-IN. REFER TO ENLARGED PLAN THIS SHEET FOR ADDITIONAL INFORMATION.

2 ELECTRICAL PHOTOGRAPH REFERENCE
SCALE: NTS

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

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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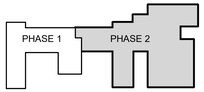

Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL ENLARGED CONDUIT ROUTING PLAN

STATE OF NEW YORK · SHANE GARRAHAN · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: As indicated

E4.5

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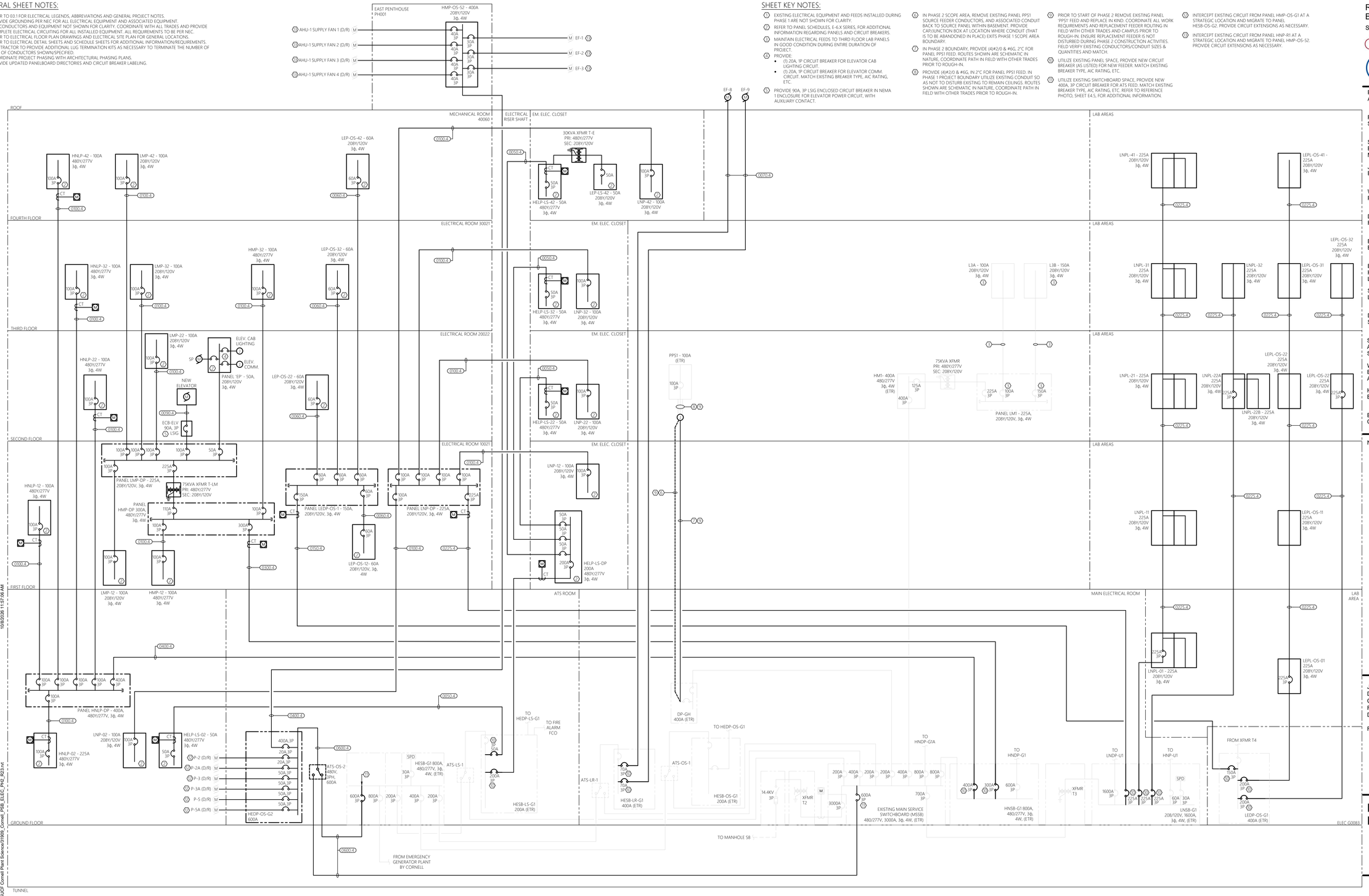
GENERAL SHEET NOTES:

1. REFER TO E0.1 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL PROJECT NOTES.
2. PROVIDE GROUNDING PER NEC FOR ALL ELECTRICAL EQUIPMENT AND ASSOCIATED EQUIPMENT.
3. ALL CONDUCTORS AND EQUIPMENT NOT SHOWN FOR CLARITY. COORDINATE WITH ALL TRADES AND PROVIDE COMPLETE ELECTRICAL CIRCUITING FOR ALL INSTALLED EQUIPMENT. ALL REQUIREMENTS TO BE PER NEC.
4. REFER TO ELECTRICAL FLOOR PLAN DRAWINGS AND ELECTRICAL SITE PLAN FOR GENERAL LOCATIONS.
5. REFER TO ELECTRICAL DETAIL SHEETS AND SCHEDULE SHEETS FOR ADDITIONAL INFORMATION/REQUIREMENTS.
6. CONTRACTOR TO PROVIDE ADDITIONAL LUG TERMINATION KITS AS NECESSARY TO TERMINATE THE NUMBER OF SETS OF CONDUCTORS SHOWN/SPECIFIED.
7. COORDINATE PROJECT PHASING WITH ARCHITECTURAL PHASING PLANS.
8. PROVIDE UPDATED PANELBOARD DIRECTORIES AND CIRCUIT BREAKER LABELING.

SHEET KEY NOTES:

1. EXISTING ELECTRICAL EQUIPMENT AND FEEDS INSTALLED DURING PHASE 1 ARE NOT SHOWN FOR CLARITY.
2. REFER TO PANEL SCHEDULES, E-6.X SERIES, FOR ADDITIONAL INFORMATION REGARDING PANELS AND CIRCUIT BREAKERS.
3. MAINTAIN ELECTRICAL FEEDS TO THIRD FLOOR LAB PANELS IN GOOD CONDITION DURING ENTIRE DURATION OF PROJECT.
4. PROVIDE:
   - (1) 20A, 1P CIRCUIT BREAKER FOR ELEVATOR CAB LIGHTING CIRCUIT.
   - (1) 20A, 1P CIRCUIT BREAKER FOR ELEVATOR COMM CIRCUIT. MATCH EXISTING BREAKER TYPE, AIC RATING, ETC.
5. PROVIDE 90A, 3P LSIG ENCLOSED CIRCUIT BREAKER IN NEMA 1 ENCLOSURE FOR ELEVATOR POWER CIRCUIT, WITH AUXILIARY CONTACT.
6. IN PHASE 2 SCOPE AREA, REMOVE EXISTING PANEL PPS1 SOURCE FEEDER CONDUCTORS, AND ASSOCIATED CONDUIT BACK TO SOURCE PANEL WITHIN BASEMENT. PROVIDE CAP/JUNCTION BOX AT LOCATION WHERE CONDUIT (THAT IS TO BE ABANDONED IN PLACE) EXITS PHASE 1 SCOPE AREA BOUNDARY.
7. IN PHASE 2 BOUNDARY, PROVIDE (4)#2/0 & #6G, 2"C FOR PANEL PPS1 FEED. ROUTES SHOWN ARE SCHEMATIC IN NATURE. COORDINATE PATH IN FIELD WITH OTHER TRADES PRIOR TO ROUGH-IN.
8. PROVIDE (4)#2/0 & #6G, IN 2"C FOR PANEL PPS1 FEED. IN PHASE 1 PROJECT BOUNDARY UTILIZE EXISTING CONDUIT SO AS NOT TO DISTURB EXISTING TO REMAIN CEILINGS. ROUTES SHOWN ARE SCHEMATIC IN NATURE. COORDINATE PATH IN FIELD WITH OTHER TRADES PRIOR TO ROUGH-IN.
9. PRIOR TO START OF PHASE 2 REMOVE EXISTING PANEL "PPS1" FEED AND REPLACE IN KIND. COORDINATE ALL WORK REQUIREMENTS AND REPLACEMENT FEEDER ROUTING IN FIELD WITH OTHER TRADES AND CAMPUS PRIOR TO ROUGH-IN. ENSURE REPLACEMENT FEEDER IS NOT DISTURBED DURING PHASE 2 CONSTRUCTION ACTIVITIES. FIELD VERIFY EXISTING CONDUCTORS/CONDUIT SIZES & QUANTITIES AND MATCH.
10. UTILIZE EXISTING PANEL SPACE. PROVIDE NEW CIRCUIT BREAKER (AS LISTED) FOR NEW FEEDER. MATCH EXISTING BREAKER TYPE, AIC RATING, ETC.
11. UTILIZE EXISTING SWITCHBOARD SPACE. PROVIDE NEW 400A, 3P CIRCUIT BREAKER FOR ATS FEED. MATCH EXISTING BREAKER TYPE, AIC RATING, ETC. REFER TO REFERENCE PHOTO, SHEET E4.5, FOR ADDITIONAL INFORMATION.
12. INTERCEPT EXISTING CIRCUIT FROM PANEL HMP-OS-G1 AT A STRATEGIC LOCATION AND MIGRATE TO PANEL HES8-OS-G2. PROVIDE CIRCUIT EXTENSIONS AS NECESSARY.
13. INTERCEPT EXISTING CIRCUIT FROM PANEL HNP-R1 AT A STRATEGIC LOCATION AND MIGRATE TO PANEL HMP-OS-S2. PROVIDE CIRCUIT EXTENSIONS AS NECESSARY.



1 PARTIAL ELECTRICAL SINGLE LINE DIAGRAM
SCALE: NTS NEW WORK

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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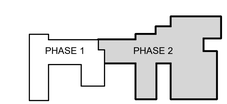

Keyplan

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Date	August 31, 2026

Revisions

ELECTRICAL SINGLE LINE DIAGRAM

STATE OF NEW YORK · SHANE GARBARINO · 106086 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

E5.1

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10/8/2026 11:57:06 AM

Branch Panel: LMP-DP

Location: ELEC 10064 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 225 A
Enclosure: 1 **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	2
3	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
				Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HELP-LS-22

Location: T/D 223 **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: HELP-LS-DP **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 50 A
Enclosure: 1 **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - 219B, 219C, 219D, 219E, 219F...	20 A	1	0 VA	0 VA					1	20 A	EM. LIGHTING - 202A, 202B, 202C, 202D, 202E	2
3	EM. LIGHTING - PLANT/SOIL/MICROBES LAB	20 A	1			0 VA	0 VA			1	20 A	EM. LIGHTING - CORRIDOR - EAST 20040	4
5	EM. LIGHTING - SYNTHETIC BIOLOGY LAB 202...	20 A	1					0 VA	0 VA	1	20 A	EM. LIGHTING - CORRIDOR NORTH WING...	6
7	EM. LIGHTING PLANT PHYSIO. TEACHING LA...	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

Branch Panel: HELP-LS-32

Location: T/D 325 **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: HELP-LS-DP **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 50 A
Enclosure: 1 **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - LAB 302	20 A	1	0 VA	0 VA					1	20 A	EM. LIGHTING - CORRIDOR-EAST 30042	2
3	EM. LIGHTING SOIL/PLANT LAB 319	20 A	1			0 VA	0 VA			1	20 A	EM. LIGHTING - CORRIDOR - NORTH WING...	4
5	EM. LIGHTING - 319B, 319C, 319CA, 319D, 319...	20 A	1					0 VA	0 VA	1	20 A	EM. LIGHTING - 302A, 302B, 302C, 302D	6
7	EM. LIGHTING - CORRIDOR ANNEX 30040	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

Branch Panel: HELP-LS-42

Location: T/D 417 **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: HELP-LS-DP **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 50 A
Enclosure: 1 **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - BIODIVERSITY LAB 402	20 A	1	0 VA	0 VA					1	20 A	EM. LIGHTING - CORRIDOR EAST 40043	2
3	EM. LIGHTING - 402A, 402B, 402C, 402D	20 A	1			0 VA	0 VA			1	20 A	Other	4
5	EM. LIGHTING - CORRIDOR 40040	20 A	1					0 VA	0 VA	1	20 A	EM. LIGHTING - CORRIDOR - NORTH WING...	6
7	EM. LIGHTING - CORRIDOR-EAST 40043	20 A	1	0 VA	0 VA					3	20 A	XFMR T-E	8
9						0 VA				--	--	--	10
11	Spare	20 A	1					0 VA	0 VA	--	--	--	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

Branch Panel: HNLP-12

Location: ELEC 10064 **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 100 A
Enclosure: 1 **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING - TOILET RM. 111, 109, 107, 105,...	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - 116, 116B, 116A, 118	2
3	LIGHTING - DRY TEACHING LAB 104	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - 113B, 113C, 113D, 113E, 113F, 113G	4
5	LIGHTING - 123, 125, 127, 129, 133	20 A	1					0 VA	0 VA	1	20 A	LIGHTING - BREAK ROOM 103 & SUPPLY...	6
7	LIGHTING - 120, 128, 128A, 128B, 128C, 128D...	20 A	1	0 VA	0 VA					1	20 A	113 LIGHTING	8
9	LIGHTING - CORRIDOR - NORTH WING 10041	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	LIGHTING - CORRIDOR 10045	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HNLP-22

Location: ELECTRICAL 20060 **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 100 A
Enclosure: 1 **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING - WRITE-UP SPACE 224 & 224B	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - 219B, 219C, 219D, 219E, 219F, 219G	2
3	LIGHTING - 225, 227, 229, 231, 233, 235	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - TOILET RM. OFFICES, ELECTRIC...	4
5	LIGHTING -LABS 230, 232 & FLEX LAB...	20 A	1					0 VA	0 VA	1	20 A	LIGHTING - TOILET RM. WRITE-UP 203, SYNT...	6
7	LIGHTING - 202A, 202B, 202C, 202D	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - CORRIDOR - EAST 20040	8
9	LIGHTING - PLANT/SOIL/MICROBES LAB	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - CORRIDOR - NORTH WING 20041	10
11	LIGHTING - 202A, 202B, 202C, 202D, 202E, 202F	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HNLP-32

Location: ELECTRICAL 30060 **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 100 A
Enclosure: 1 **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING - 326, 328, 330, 332, 334, 340	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - 324A, 324B, 324	2
3	LIGHTING - 327, 329, 331, 333, 335, 337, 339	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - 30060, 311, 313, 315	4
5	LIGHTING - 319B, 319C, 319CA, 319D, 319E...	20 A	1					0 VA	0 VA	1	20 A	LIGHTING - LABS 302C, 302B, 302A, 304	6
7	LIGHTING - WRITE-UP SPACE 307 & COLLAB...	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - CORRIDOR - NORTH WING 30041	8
9	LIGHTING - EQUIPMENT CORRIDOR 302D...	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - LAB 302	10
11	LIGHTING - CORRIDOR-EAST 30042	20 A	1					0 VA	0 VA	1	20 A	LIGHTING - CORRIDOR ANNEX 30040	12
13	319 LIGHTING	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

Branch Panel: HNLP-42

Location: MECHANICAL 40060 **Volts:** 480/277 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 100 A
Enclosure: 1 **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING - 418, 420, 426, 428, 430	20 A	1	0 VA	0 VA					1	20 A	LIGHTING - 403, 404, 404A	2
3	LIGHTING - 431A, 431, 431B, 435	20 A	1			0 VA	0 VA			1	20 A	LIGHTING - 402A, 402B, 402C, 402D	4
5	LIGHTING - COMP. LAB 416, GN TOILET ROO...	20 A	1					0 VA	0 VA	1	20 A	LIGHTING - BIODIVERSITY LAB 402	6
7	LIGHTING - CORRIDOR 40040	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-OS-32

Location: ELECTRICAL 30060 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: LEDP-OS-1 **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 60 A
Enclosure: 1 **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FCU-3-19, 20, 21, 22, 23, 24, 25	20 A	1	0 VA	0 VA					1	20 A	FCU-3-26, 33, 34	2
3	FCU-3-14, 15, 16, 17, 18	20 A	1			0 VA	0 VA			1	20 A	FCU-3-35, 36, 37, 38	4
5	FCU-3-27, 31, 32	20 A	1					0 VA	0 VA	1	20 A	FCU-3-39, 40	6
7	BMS CONNECTION	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street,

Branch Panel: LEDP-OS-1

Location: ELEC 10064 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 150 A
Enclosure: 1 **MCB Rating:** 150 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LEP-OS-12	60 A	3	0 VA	0 VA					3	60 A	LEP-OS-22	2
3	--	--	--			0 VA	0 VA			--	--	--	4
5	--	--	--					0 VA	0 VA	--	--	--	6
7	LE-OS-32	60 A	3	0 VA	0 VA					3	60 A	LEP-OS-42	8
9	--	--	--			0 VA	0 VA			--	--	--	10
11	--	--	--					0 VA	0 VA	--	--	--	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-OS-12

Location: ELEC 10064 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: LEDP-OS-1 **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 60 A
Enclosure: 1 **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FCU-1-33, 34, 35, 36, 38	20 A	1	0 VA	0 VA					1	20 A	Other	2
3	FCU-1-18, 19, 20, 21, 22	20 A	1			0 VA	0 VA			1	20 A	CUH-10	4
5	FCU-1-23, 24, 25, 26, 27, 28	20 A	1					0 VA	0 VA	1	20 A	CUH-11	6
7	CUH-7	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	CUH-9	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-OS-22

Location: ELECTRICAL 20060 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: LEDP-OS-1 **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 60 A
Enclosure: 1 **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FCU-2-10, 11, 12, 13, 14, 15	20 A	1	0 VA	0 VA					1	20 A	FCU-2-27, 28	2
3	FCU-2-17, 18, 19, 20	20 A	1			0 VA	0 VA			1	20 A	FCU-2-29, 30	4
5	FCU-2-23, 24, 25, 26	20 A	1					0 VA	0 VA	1	20 A	FCU-2-16, 21, 22	6
7	Other	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-LS-42

Location: T/D 417 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 50 A
Enclosure: 1 **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	BAS ANTENNA	20 A	1	0 VA	0 VA					1	20 A	Spare	2
3	BAS ANTENNA	20 A	1			0 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31													32
33													34
35													36
37													38
39													40
41													42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEP-OS-42

Location: MECHANICAL 40060 **Volts:** 120/208 Wye **A.I.C. Rating:** 10kA
Supply From: LEDP-OS-1 **Phases:** 3 **Mains Type:** MCB
Mounting: Surface **Wires:** 4 **Mains Rating:** 60 A
Enclosure: 1 **MCB Rating:** 60 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FCU-4-30, 31, 32, 33	20 A	1	0 VA	0 VA					1	20 A	FCU-20, 21, 22, 23, 24	2
3	FCU-4-25, 26, 27	20 A	1			0 VA	0 VA			1	20 A	BMS CONNECTION	4
5	FCU-4-25, 30	20 A	1					0 VA	0 VA	1	20 A	CUH-8	6
7													8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEPL-OS-21

Location: SYNTHETIC BIOLOGY LAB 202 **Volts:** 120/208 Wye **A.I.C. Rating:** 22kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Flush **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	202P RECEPTACLE	20 A	1	180 VA	600 VA					1	20 A	9-E12	2
3	9-E12	20 A	1			600 VA	180 VA			1	20 A	202D RECEPTACLE	4
5	9-E12	20 A	1					600 VA	180 VA	1	20 A	202C RECEPTACLE	6
7		20 A	1	180 VA	0 VA					1	20 A	Spare	8
9	202A RECEPTACLES	20 A	1			360 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	960 VA		1140 VA		780 VA					
			Total Amps:	8 A		10 A		7 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	2880 VA
Power	1800 VA	100.00%	1800 VA	**Total Est. Demand:**	2880 VA
Receptacle	1080 VA	100.00%	1080 VA	**Total Conn. Current:**	8 A
				Total Est. Demand Current:	8 A

Notes:

Branch Panel: LEPL-OS-31

Location: MOLECULAR PLANT-MICROB... **Volts:** 120/208 Wye **A.I.C. Rating:** 22kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Flush **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	2
3	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
				Total Conn. Load:	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: LEPL-OS-32

Location: SOIL/PLANT LAB 319 **Volts:** 120/208 Wye **A.I.C. Rating:** 22kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Flush **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	8-E22	20 A	1	600 VA	0 VA					1	20 A	FCU-3-28, 29, 30	2
3	319B RECEPTACLE	20 A	1			360 VA	180 VA			1	20 A	319G RECEPTACLE	4
5	319C RECEPTACLES	20 A	1					360 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	600 VA		540 VA		360 VA					
			Total Amps:	5 A		5 A		3 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	1500 VA
Power	600 VA	100.00%	600 VA	**Total Est. Demand:**	1500 VA
Receptacle	900 VA	100.00%	900 VA	**Total Conn. Current:**	4 A
				Total Est. Demand Current:	4 A

Notes:

Branch Panel: LEPL-OS-41

Location: BIODIVERSITY LAB 402 **Volts:** 120/208 Wye **A.I.C. Rating:** 22kA
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Flush **Wires:** 4 **Mains Rating:** 225 A
Enclosure: Indoor **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EUH-3	20 A	1	0 VA	0 VA					1	20 A	Spare	2
3	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

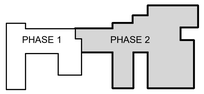
Notes:

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000 Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL SCHEDULES

STATE OF NEW YORK · DIANE GARDAMANT · 106595 · LICENSED PROFESSIONAL ENGINEER

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Branch Panel: LNP-DP

Location: ELEC 10064 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 22kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: 1 | **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LNP-12	100 A	3	8460...	6660...					3	100 A	LNP-22	2
3	--	--	--			7380...	9540...			--	--	--	4
5	--	--	--					7200...	1062...	--	--	--	6
7	LNP-32	100 A	3	5940...	5040...					3	100 A	LNP-42	8
9	--	--	--			5400...	5040...			--	--	--	10
11	--	--	--					6480...	4500...	--	--	--	12
13	LNP-02	100 A	3	5580...	0 VA					1	20 A	Spare	14
15	--	--	--			5040...	0 VA			1	20 A	Spare	16
17	--	--	--					6300...	0 VA	1	20 A	Spare	18
19	PANEL EP	20 A	3	0 VA	0 VA					1	20 A	Spare	20
21	--	--	--			0 VA	0 VA			1	20 A	Spare	22
23	--	--	--					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31													32
33													34
35													36
37													38
39													40
41													42
			Total Load:	31680 VA		32400 VA		35100 VA					
			Total Amps:	264 A		271 A		293 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 99180 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:** 54590 VA
Receptacle	99180 VA	55.04%	54590 VA	**Total Conn. Current:** 275 A
				Total Est. Demand Current: 152 A

Notes:

Branch Panel: LNP-12

Location: T/D 121 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: LNP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	WATER FOUNTAIN	20 A	1	180 VA	720 VA					1	20 A	RECEPTS. - ADMIN. PROF. 1	2
3	RECEPTS. - ADMIN. CLERICAL 4/5	20 A	1			1440...	0 VA			1	20 A	RECEPTS. - WRITE-UP SPACE 116B	4
5	RECEPTS. - ADMIN. PROF. 6	20 A	1					720 VA	900 VA	1	20 A	RECEPTS. - WRITE-UP SPACE 116	6
7	RECEPTS. - MEETING ROOM 116A	20 A	1	720 VA	720 VA					1	20 A	RECEPTS. - MAIL/PRINT/SUPPLY 111	8
9	RECEPTS. - COLLAB 119	20 A	1			1080...	900 VA			1	20 A	RECEPTS. - ADMIN SIPS. EXEC. 128A	10
11	RECEPTS. - ADMIN. PROF. 4	20 A	1					720 VA	720 VA	1	20 A	RECEPTS. - ADMIN. CLERICAL 1	12
13	RECEPTS. - ADMIN. SUITE 128	20 A	1	900 VA	720 VA					1	20 A	RECEPTS. - ADMIN. SIPS. EXEC. 128D	14
15	RECEPTS. - ADMIN CLERICAL 2	20 A	1			540 VA	720 VA			1	20 A	RECEPTS. - FACULTY OFFICE 129	16
17	RECEPTS. - ADMIN. PROF. 5	20 A	1					720 VA	720 VA	1	20 A	RECEPTS. - FACULTY OFFICE 127	18
19	RECEPTS. - ADMIN. PROF. 1	20 A	1	720 VA	900 VA					1	20 A	RECEPTS. - JAN. RM 10061	20
21	WATER FOUNTAIN	20 A	1			180 VA	1260...			1	20 A	RECEPTS. - DRY TEACHING LAB 104	22
23	RECEPTS. - COLLAB. 119	20 A	1					180 VA	900 VA	1	20 A	RECEPTS. - GENERAL ASSIGNMENT	24
25	RECEPTS. - COLLAB. 119	20 A	1	720 VA	0 VA					1	20 A	DOOR HARDWARE - CORRIDOR 10041	26
27	LECTERN POKE-THRU - DRY TEACHING LAB...	20 A	1			0 VA	0 VA			1	20 A	PROJECTORS - DRY TEACHING LAB 104	28
29	PROJECTOR - CLASSROOM 133	20 A	1					0 VA	0 VA	1	20 A	PROJECTORS - PLANT PHYS. TEACHING LAB...	30
31	RECEPTS. - ADMIN. SIPS. EXEC. 128E	20 A	1	720 VA	540 VA					1	20 A	RECEPTS. - BREAK ROOM 103	32
33	RECEPTS. - EVENT SUPPORT 120	20 A	1			360 VA	180 VA			1	20 A	RECEPT. - FLEX LAB SUPPORT 118	34
35	FCU-1-29, 30, 31	20 A	1					0 VA	900 VA	1	20 A	RECEPTS. - CORRIDOR 10045	36
37	HC-1-8, 9	20 A	2	0 VA	900 VA					1	20 A	RECEPTS. - CYL. STOR. 113A	38
39	--	--	--			0 VA	720 VA			1	20 A	RECEPTS. - CYL. STOR. 319A	40
41	OVERHEAD POWER REELS - DRY TEACHING...	20 A	1					0 VA	720 VA	1	20 A	RECEPTS. - CORRIDOR-NORTH 10041	42
			Total Load:	8460 VA		7380 VA		7200 VA					
			Total Amps:	71 A		62 A		60 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 23040 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:** 16520 VA
Receptacle	23040 VA	71.70%	16520 VA	**Total Conn. Current:** 64 A
				Total Est. Demand Current: 46 A

Notes:

Branch Panel: LNP-42

Location: T/D 417 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: LNP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - ACAD. OFFICE 10 430	20 A	1	900 VA	900 VA					1	20 A	RECEPTS. - ACAD. OFFICE 13 420	2
3	RECEPTS. - ACAD. OFFICE 11 428	20 A	1			900 VA	1080...			1	20 A	RECEPTS. - ACAD. OFFICE 14 418	4
5	RECEPTS. - ACAD. OFFICE 12 426	20 A	1					900 VA	0 VA	1	20 A	FURNITURE POWER - COMPUTATIONAL LAB.	6
7	FURNITURE POWER - COMPUTATIONAL LAB...	20 A	1	0 VA	900 VA					1	20 A	RECEPTS. - TEAM ROOM 431A	8
9	FURNITURE POWER - COMPUTATIONAL LAB...	20 A	1			0 VA	1440...			1	20 A	RECEPTS. - MEETING ROOM 435	10
11	RECEPTS. - COMPUTATIONAL LAB 431	20 A	1					540 VA	0 VA	1	20 A	RECEPTS. - TEAM ROOM 431B	12
13	RECEPTS. - WORKSPACE 404A	20 A	1	0 VA	900 VA					1	20 A	RECEPTS. - CORRIDOR-EAST 40043	14
15	RECEPTS. - COLLAB 404	20 A	1			540 VA	360 VA			1	20 A	RECEPTS. - COMPUTATIONAL LAB 431	16
17	RECEPTS. - BIO-DIVERSITY HUB 403	20 A	1					900 VA	0 VA	1	20 A	DOOR HARDWARE - CORRIDOR 40040	18
19	DOOR HARDWARE - CORRIDOR G0042	20 A	1	0 VA	720 VA					1	20 A	RECEPTS. - CYL. CLO. 309	20
21	PROJECTOR - BIO-DIVERSITY 403	20 A	1			0 VA	0 VA			1	20 A	FURNITURE POWER - COMPUTATIONAL LAB.	22
23	LIGHTING - AHU VESTIBULE 40060A	20 A	1					0 VA	180 VA	1	20 A	RECEPT. - GN TOILET ROOM 40020	24
25	FURNITURE POWER - COMPUTATIONAL LAB...	20 A	1	0 VA	720 VA					1	20 A	RECEPTS. - CORRIDOR-NORTH 40040	26
27	RECEPTS. - COMPUTATIONAL LAB 416	20 A	1			540 VA	180 VA			1	20 A	UNDERCOUNTER REFRIG. - COLLAB 404	28
29	RECEPTS. - CORRIDOR 40040	20 A	1					540 VA	1440...	1	20 A	RECEPTS. - WORKSPACE 404A	30
31				0 VA						1	20 A	Spare	32
33							0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	5040 VA		5040 VA		4500 VA					
			Total Amps:	43 A		43 A		38 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 14580 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:** 12290 VA
Receptacle	14580 VA	84.29%	12290 VA	**Total Conn. Current:** 40 A
				Total Est. Demand Current: 34 A

Notes:

Branch Panel: LNP-22

Location: T/D 223 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: LNP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - FACULTY OFFICE 235	20 A	1	540 VA	720 VA					1	20 A	RECEPTS. - FACULTY OFFICE 229	2
3	RECEPTS. - FACULTY OFFICE 233	20 A	1			720 VA	720 VA			1	20 A	RECEPTS. - FACULTY OFFICE 227	4
5	RECEPTS. - FACULTY OFFICE 231	20 A	1					720 VA	1080...	1	20 A	RECEPTS. - MEETING ROOM 223	6
7	RECEPTS. - WRITE-UP SPACE 224	20 A	1	0 VA	0 VA					1	20 A	RECEPTS. - GN TOILET RM & OPEN SHARED...	8
9	RECEPTS. - WRITE-UP SPACE 224B	20 A	1			1260...	720 VA			1	20 A	RECEPTS. - FACULTY OFFICE 209	10
11	RECEPTS. - MEETING ROOM 224A	20 A	1					540 VA	720 VA	1	20 A	RECEPTS. - FACULTY OFFICE 207	12
13	RECEPTS. - FACULTY OFFICE 205	20 A	1	1080...	180 VA					1	20 A	RECEPTS. - PLANT PHYSIOLOGY TEACHING...	14
15	RECEPTS. - GN TOILET RM 20020	20 A	1			360 VA	0 VA			1	20 A	SENSOR SINK - GN TOILET ROOM 20023	16
17	FURNITURE POWER - WRITE-UP SPACE 203	20 A	1					0 VA	0 VA	1	20 A	EVAV-2-8	18
19	SENSOR SINK - GN TOILET ROOM 20023	20 A	1	0 VA	720 VA					1	20 A	TABLE RECEPTS. - PLANT PHYSIOLOGY...	20
21	TABLE RECEPTS. - PLANT PHYSIOLOGY...	20 A	1			720 VA	720 VA			1	20 A	TABLE RECEPTS. - PLANT PHYSIOLOGY...	22
23	TABLE RECEPTS. - PLANT PHYSIOLOGY...	20 A	1					720 VA	720 VA	1	20 A	TABLE RECEPTS. - PLANT PHYSIOLOGY...	24
25	WATER FOUNTAIN	20 A	1	180 VA	1440...					1	20 A	RECEPTS. - ACAD. 221 & TQ 223	26
27	WATER FOUNTAIN	20 A	1			180 VA	720 VA			1	20 A	RECEPTS. - PLANT PHYSIOLOGY PREP LAB...	28
29	9-E06	20 A	1					0 VA	0 VA	1	20 A	230 FUME HOOD	30
31	LECTERN POKE-THRU - PLANT PHYS....	20 A	1	0 VA	720 VA					1	20 A	TABLE RECEPTS. - PLANT PHYSIOLOGY...	32
33	DOOR HARDWARE - CORRIDOR 20041	20 A	1			0 VA	720 VA			1	20 A	TABLE RECEPTS. - PLANT PHYSIOLOGY...	34
35	TABLE RECEPTS. - PLANT PHYSIOLOGY...	20 A	1					720 VA	720 VA	1	20 A	TABLE RECEPTS. - PLANT PHYSIOLOGY...	36
37	HC-2-3	20 A	2	0 VA	0 VA					2	20 A	HC-3-6, 7	38
39		--	--			0 VA	0 VA			--	--		40
41	TABLE RECEPTS. - PLANT PHYSIOLOGY...	20 A	1					720 VA	720 VA	1	20 A	TABLE RECEPTS. - PLANT PHYSIOLOGY...	42
43	TABLE RECEPTS. - PLANT PHYSIOLOGY...	20 A	1	0 VA	0 VA					1	20 A	FLOOR BOX - WRITE-UP SPACE 224	44
45	RECEPTS. - WRITE-UP SPACE 224B	20 A	1			0 VA	0 VA			1	20 A	FURNITURE POWER - WRITE-UP SPACE 203	46
47	RECEPTS. - WRITE-UP SPACE 203	20 A	1					180 VA	0 VA	2	20 A	228 208V RECEPTACLE	48
49	228 208V RECEPTACLE	20 A	2	0 VA	0 VA					--	--		50
51	--	--	--			0 VA	1980...			1	20 A	RECEPTS. - CORRIDOR-NORTH 20041	52
53	RECEPTS. - CYL. STOR. 219A	20 A	1					720 VA	900 VA	1	20 A	RECEPTS. - CORRIDOR EAST 20043	54
55	RECEPTS. - PLANT PHYSIOLOGY PREP LAB...	20 A	1	1080...	0 VA					1	20 A	FLOOR BOX - MEETING ROOM 225	56
57	RECEPTS. - PLANT PHYSIOLOGY PREP LAB...	20 A	1			720 VA							58
59	RECEPTS. - PLANT PHYSIOLOGY PREP LAB...	20 A	1					1440...					60
61													62
63													64
65													66
67													68
69													70
71													72
			Total Load:	6660 VA		9540 VA		10620 VA					
			Total Amps:	56 A		83 A		92 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 26820 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:** 18410 VA
Receptacle	26820 VA	68.64%	18410 VA	**Total Conn. Current:** 74 A
				Total Est. Demand Current: 51 A

Notes:

Branch Panel: LNPL-01-1

Location: CORRIDOR G0051 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 22kA
Supply From: | **Phases:** 3 | **Mains Type:** MLO
Mounting: Flush | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Indoor | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	5-E08	20 A	2	2600...	900 VA					1	20 A	LAB G20 RECEPTACLES	2
3	--	--	--			2600...	900 VA			1	20 A	LAB G20 RECEPTACLES	4
5	LAB G20 RECEPTACLES	20 A	1					1620...	720 VA	1	20 A	LAB G20 RECEPTACLES	6
7	LAB G20 RECEPTACLES	20 A	1	1620...	1620...					1	20 A	LAB G20 RECEPTACLES	8
9	LAB G20 RECEPTACLES	20 A	1			720 VA	720 VA			1	20 A	LAB G20 RECEPTACLES	10
11	LAB G20 RECEPTACLES	20 A	1					1620...	720 VA	1	20 A	LAB G20 RECEPTACLES	12
13	LAB G20 RECEPTACLES	20 A	1	1620...	720 VA					1	20 A	LAB G20 RECEPTACLES	14
15	LAB G20 RECEPTACLES	20 A	1			720 VA	0 VA			1	20 A	LAB G20 RECEPTACLES	16
17	LAB G20 RECEPTACLES	20 A	1					1620...	720 VA	1	20 A	LAB G20 RECEPTACLES	18
19	LAB G20 RECEPTACLES	20 A	1	180 VA	6240...					2	30 A	G17 208V RECEPTACLE	20
21	G17 208V RECEPTACLE	30 A	2			6240...	0 VA			--	--		22
23		--	--					0 VA	6240...	2	20 A	G19 208V RECEPTACLE	24
25	G21 208V RECEPTACLE	30 A	2	6240...	0 VA					--	--		26
27	--	--	--			0 VA	6240...			2	20 A	G23 208V RECEPTACLE	28
29	G21 208V RECEPTACLE	30 A	2					6240...	0 VA	--	--		30
31	--	--	--	0 VA	0 VA					1	20 A	G14 FUME HOOD	32
33	RECEPTS. - CYL. STOR G13	20 A	1			720 VA	600 VA			1	20 A	G20 FUME HOOD	34
35	RECEPTS. - CYL. CLO G0087	20 A	1					360 VA	0 VA	1	20 A	Power	36
37	G23 FUME HOOD	20 A	1	600 VA	0 VA					2	20 A	G14 208V RECEPTACLE	38
39	G20 FUME HOOD	20 A	1			600 VA	0 VA			--	--		40
41	G14 208V RECEPTACLE	20 A	2					0 VA	0 VA	1	20 A	Other	42
43		--	--	0 VA	600 VA					1	20 A	VAC PUMP CABINET - LAB G20	44
45	RECEPT. - FLEXIBLE G21 & PCR G19	20 A	1			180 VA	600 VA			1	20 A	VAC PUMP CABINET - LAB G20	46
47	VAC PUMP CABINET - LAB G20	20 A	1					600 VA	600 VA	1	20 A	VAC PUMP CABINET - CHEMISTRY G23	48
49	VAC PUMP CABINET - PCR G19	20 A	1	600 VA	540 VA					1	20 A	RECEPTS. - SHARED INST. SUPPORT ROOM...	50
51	VAC PUMP CABINET - LAB G20	20 A	1			600 VA	540 VA			1	20 A	RECEPTS. - SHARED INST. SUPPORT ROOM...	52
53	RECEPTS. - SHARED INST. SUPPORT ROOM...	20 A	1					540 VA	540 VA	1	20 A	RECEPTS. - SHARED INST. SUPPORT ROOM...	54
			Total Load:	24080 VA		21980 VA		22140 VA					
			Total Amps:	201 A		183 A		185 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 68200 VA
Power	10600 VA	100.00%	10600 VA	**Total Est. Demand:** 44400 VA
Receptacle	57600 VA	58.68%	33800 VA	**Total Conn. Current:** 189 A
				Total Est. Demand Current: 123 A

Notes:

Branch Panel: LNPL-31-1

Location: MOLECULAR PLANT-MICROB... | **Volts:** 120/208 Wye | **A.I.C. Rating:** 22kA
Supply From: | **Phases:** 3 | **Mains Type:** MLO
Mounting: Flush | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Indoor | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	10-E33	20 A	1	600 VA	720 VA					1	20 A	RECEPTS. - MOLECULAR PLANT 302	2
3	10-E30	20 A	1			600 VA	1440...			1	20 A	RECEPTS. - MOLECULAR PLANT 302	4
5	10-E36	20 A	1					600 VA	360 VA	1	20 A	RECEPTS. - MOLECULAR PLANT 302	6
7	RECEPTS. - MOLECULAR PLANT 302	20 A	1	1800...	1800...					1	20 A	RECEPTS. - MOLECULAR PLANT 302	8
9	RECEPTS. - CHEMISTRY 302C	20 A	1			540 VA							10
11	RECEPT. - AUTOCLAVE 304	20 A	1					180 VA					12
13	RECEPTS. - MOLECULAR PLANT 302	20 A	1	1440...									14
15	RECEPTS. - MOLECULAR PLANT 302	20 A	1			1800...	1440...			1	20 A	RECEPTS. - MOLECULAR PLANT 302	16
17								1800...	1	20 A	RECEPTS. - MOLECULAR PLANT 302	18
19													20
21													22
23	RECEPTS. - MOLECULAR PLANT 302	20 A	1					1440...	1440...	1	20 A	RECEPTS. - MOLECULAR PLANT 302	24
25				600 VA						1	20 A	302C FUME HOOD	26
27	304 FUME HOOD	20 A	1			600 VA	0 VA			1	20 A	Spare	28
29	302C FUME HOOD	20 A	1					600 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	6960 VA		6420 VA		6420 VA					
			Total Amps:	58 A		54 A		54 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 19800 VA
Power	3600 VA	100.00%	3600 VA	**Total Est. Demand:** 16700 VA
Receptacle	16200 VA	80.86%	13100 VA	**Total Conn. Current:** 55 A
				Total Est. Demand Current: 46 A

Notes:

Branch Panel: LNP-32

Location: T/D 325 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: LNP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - WRITE-UP SPACE 324	20 A	1	360 VA	720 VA					1	20 A	RECEPTS. - FACULTY OFFICE 332	2
3	RECEPTS. - MEETING ROOM 324A	20 A	1			540 VA	720 VA			1	20 A	RECEPTS. - FACULTY OFFICE 330	4
5	RECEPTS. - FACULTY OFFICE 334	20 A	1					720 VA	720 VA	1	20 A	RECEPTS. - FACULTY OFFICE 328	6
7	RECEPT. - FLEX LAB SUPPORT 326	20 A	1	360 VA	720 VA					1	20 A	RECEPTS. - FACULTY OFFICE 335	8
9	RECEPTS. - FACULTY OFFICE 339	20 A	1			720 VA	720 VA			1	20 A	RECEPTS. - FACULTY OFFICE 333	10
11	RECEPTS. - FACULTY OFFICE 337	20 A	1					720 VA	720 VA	1	20 A	RECEPTS. - FACULTY OFFICE 331	12
13	RECEPTS. - FACULTY OFFICE 329	20 A	1	540 VA	540 VA					1	20 A	RECEPTS. - WRITE-UP SPACE 311	14
15	RECEPTS. - TBD 327	20 A	1			540 VA	1080...			1	20 A	RECEPTS. - WRITE-UP SPACE 307 & TOILET	16
17	RECEPTS. - FACULTY OFFICE 313	20 A	1					720 VA	180 VA	1	20 A	WATER FOUNTAIN	18
19	WATER FOUNTAIN	20 A	1	180 VA	540 VA					1	20 A	RECEPTS. - COLLAB 305	20
21	RECEPTS. - WRITE-UP SPACE 324	20 A	1			180 VA	0 VA			1	20 A	RECEPTS. - WRITE-UP SPACE 324B	22
23	EVAV-3-12	20 A	1					0 VA	720 VA	1	20 A	RECEPTS. - PRINT/SUPPLY 315	24
25	RECEPTS. - WRITE-UP SPACE 311	20 A	1	0 VA	720 VA					1	20 A	RECEPTS. - CORRIDOR-EAST 30042	26
27	FLOOR BOX - LARGE MEETING ROOM 340	20 A	1			0 VA	540 VA			1	20 A	RECEPTS. - COLLAB. 323	28
29	FURNITURE POWER - WRITE-UP SPACE 307	20 A	1					0 VA	900 VA	1	20 A	RECEPTS. - CORRIDOR-NORTH 30041	30
31	RECEPT. - TID 325	20 A	1	180 VA	1080...					1	20 A	RECEPTS. - LARGE MEETING ROOM 340	32
33	RECEPT. - FLEX LAB SUPPORT 326	20 A	1			0 VA	180 VA			1	20 A	RECEPT. - GN TOILET ROOM 30023	34
35	RECEPTS. - WRITE-UP SPACE 324B	20 A	1					360 VA	720 VA	1	20 A	RECEPTS. - COLLAB. 323	36
37	RVAV-3-2	20 A	1	0 VA	0 VA					1	20 A	DOOR HARDWARE - CORRIDOR 30041	38
39	REFRIG. - COLLAB 305	20 A	1			180 VA							40
41													42
			Total Load:	5940 VA		5400 VA		6480 VA					
			Total Amps:	50 A		45 A		55 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	0 VA	0.00%	0 VA	**Total Conn. Load:** 17820 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:** 13910 VA
Receptacle	17820 VA	78.06%	13910 VA	**Total Conn. Current:** 49 A
				Total Est. Demand Current: 39 A

Notes:

Branch Panel: LNPL-21-1

Location: SYNTHETIC BIOLOGY LAB 202 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 22kA
Supply From: | **Phases:** 3 | **Mains Type:** MLO
Mounting: Flush | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Indoor | **MCB Rating:** 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	9-E11	20 A	1	0 VA	6240...					2	20 A	202F 208V RECEPTACLE	2
3	9-E11	20 A	1			0 VA	0 VA			--	--	--	4
5	202F RECEPTACLES & FUME HOOD	20 A	1					960 VA	1040...	2	20 A	9-E03	6
7	9-E13	20 A	1	600 VA	1040...					--	--	--	8
9	9-E14	20 A	1			600 VA	600 VA			1	20 A	9-E13	10
11	202E 208V RECEPTACLE	20 A	2					6240...	600 VA	1	20 A	9-E13	12
13		--	--	0 VA	960 VA					1	20 A

Branch Panel: LNPL-41-1

Location: BIODIVERSITY LAB 402 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 22kA
Supply From: | **Phases:** 3 | **Mains Type:** MLO
Mounting: Flush | **Wires:** 4 | **Mains Rating:** 225 A
Enclosure: Indoor | **MCB Rating:** N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTS. - BIODIVERSITY LAB 402	20 A	1	900 VA	1080...					1	20 A	RECEPTS. - BIODIVERSITY LAB 402	2
3	RECEPTS. - BIODIVERSITY LAB 402	20 A	1			1080...	1260...			1	20 A	RECEPTS. - BIODIVERSITY LAB 402	4
5	RECEPTS. - BIODIVERSITY LAB 402	20 A	1					1260...	1080...	1	20 A	RECEPTS. - BIODIVERSITY LAB 402	6
7	RECEPTS. - BIODIVERSITY LAB 402	20 A	1	1260...	600 VA					1	20 A	11-E24	8
9	RECEPTS. - BIODIVERSITY LAB 402	20 A	1			360 VA	600 VA			1	20 A	11-E25	10
11	11-E27	20 A	1					600 VA	600 VA	1	20 A	11-E23	12
13	11-E26	20 A	1	600 VA	600 VA					1	20 A	11-E10	14
15	11-E17	20 A	1			600 VA	600 VA			1	20 A	11-E11	16
17	11-E18	20 A	1					600 VA	600 VA	1	20 A	11-E13	18
19	11-E12	20 A	1	600 VA	600 VA					1	20 A	11-E15	20
21	11-E16	20 A	1			600 VA	600 VA			1	20 A	11-E22	22
23	11-E14	20 A	1					600 VA	600 VA	1	20 A	402C FUME HOOD	24
25	RECEPT. - PCR/CLEANROOM 402B	20 A	1	180 VA	360 VA					1	20 A	RECEPTS. - CHEMISTRY 402C	26
27	RECEPT. - CHEMISTRY 402C	20 A	1			360 VA	600 VA			1	20 A	VAC PUMP CABINET - CHEMISTRY 402C	28
29	RECEPTS. - CYL. CLO. 402E	20 A	1					720 VA	600 VA	1	20 A	VAC PUMP CABINET - LAB 402	30
31	VAC PUMP CABINET - LAB 402	20 A	1	600 VA	540 VA					1	20 A	RECEPTS. - CULTURE 402D	32
33	RECEPTS. - MICROSCOPY 402A	20 A	1			540 VA	540 VA			1	20 A	RECEPTS. - MICROSCOPY 402A	34
35	VAC PUMP CABINET - CULTURE 402D	20 A	1					600 VA	0 VA	2	20 A	402A 208V RECEPTACLE	36
37	RECEPT. - MICROSCOPY 402A	20 A	1	540 VA	0 VA					--	--	--	38
39	RECEPT. - MICROSCOPY 402A	20 A	1			540 VA							40
41	RECEPTS. - CHEMISTRY 402C	20 A	1					540 VA					42
43	RECEPT. - CHEMISTRY 402C	20 A	1	540 VA	0 VA					2	20 A	402B 208V RECEPTACLE	44
45	402C 208V RECEPTACLE	20 A	2			0 VA	0 VA			--	--	--	46
47	--	--	--					0 VA	540 VA	1	20 A	RECEPTS. - PCR / CLEANROOM 402B	48
49	RECEPTS. - PCR / CLEANROOM 402B	20 A	1	720 VA									50
51	RECEPTS. - PCR / CLEANROOM 402B	20 A	1			540 VA							52
53													54
			Total Load:	9720 VA		8820 VA		8940 VA					
			Total Amps:	81 A		74 A		75 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	27480 VA
Power	12000 VA	100.00%	12000 VA	**Total Est. Demand:**	24740 VA
Receptacle	15480 VA	82.30%	12740 VA	**Total Conn. Current:**	76 A
				Total Est. Demand Current:	69 A

Notes:

Branch Panel: HMP-DP

Location: ELEC 10064 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 22kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 300 A
Enclosure: 1 | **MCB Rating:** 300 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	HMP-12	100 A	3	0 VA	9600...					3	100 A	HMP-32	2
3	--	--	--			0 VA	9600...			--	--	--	4
5	--	--	--					0 VA	9600...	--	--	--	6
7	HMP-DP	20 A	3	0 VA	0 VA					1	20 A	Spare	8
9	--	--	--			0 VA	0 VA			1	20 A	Spare	10
11	--	--	--					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
			Total Load:	96000 VA		96000 VA		96000 VA					
			Total Amps:	347 A		347 A		347 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	288000 VA	100.00%	288000 VA	**Total Conn. Load:**	288000 VA
				Total Est. Demand:	288000 VA
				Total Conn. Current:	346 A
				Total Est. Demand Current:	346 A

Notes:

Branch Panel: LMP-32

Location: ELECTRICAL 30060 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CONDENSATE PUMP	20 A	1	0 VA	0 VA					1	20 A	CONDENSATE PUMP	2
3	CONDENSATE PUMP	20 A	1			0 VA	0 VA			1	20 A	CONDENSATE PUMP	4
5	CONDENSATE PUMP	20 A	1					0 VA	0 VA	1	20 A	CONDENSATE PUMP	6
7	CONDENSATE PUMP	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	RECEPTS. - ELECTRICAL 30060	20 A	1			540 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		540 VA		0 VA					
			Total Amps:	0 A		5 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	540 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	540 VA
Receptacle	540 VA	100.00%	540 VA	**Total Conn. Current:**	1 A
				Total Est. Demand Current:	1 A

Notes:

Branch Panel: HMP-12

Location: ELEC 10064 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HMP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EFTR-1	20 A	1	0 VA	0 VA					1	20 A	Spare	2
3	EFTR-1	20 A	1			0 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	6
7	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HMP-32

Location: ELECTRICAL 30060 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: HMP-DP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EF-8	70 A	3	0 VA	3360...					3	20 A	EF-9	2
3	--	--	--			0 VA	3360...			--	--	--	4
5	--	--	--					0 VA	3360...	--	--	--	6
7	EF-10	20 A	3	3360...	0 VA					1	20 A	EFTR-1	8
9	--	--	--			3360...	0 VA			3	20 A	RF-2	10
11	--	--	--					3360...	0 VA	--	--	--	12
13	Spare	20 A	1			0 VA				--	--	--	14
15	Spare	20 A	1					0 VA		3	20 A	EF-13	16
17	Spare	20 A	1						0 VA	--	--	--	18
19	AHU-2	20 A	3	2880...	0 VA					--	--	--	20
21	--	--	--			2880...	0 VA			1	20 A	Spare	22
23	--	--	--					2880...	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	96000 VA		96000 VA		96000 VA					
			Total Amps:	347 A		347 A		347 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	288000 VA	100.00%	288000 VA	**Total Conn. Load:**	288000 VA
				Total Est. Demand:	288000 VA
				Total Conn. Current:	346 A
				Total Est. Demand Current:	346 A

Notes:

Branch Panel: LMP-12

Location: ELEC 10064 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	FCU-G-18, 9, 20, 21, 22, 23	20 A	1	0 VA	0 VA					1	20 A	CONDENSATE PUMP	2
3	FCU-G-25, 26	20 A	1			0 VA	0 VA			1	20 A	CONDENSATE PUMP	4
5	FCU-G-24, 27, 28, 29	20 A	1					0 VA	0 VA	1	20 A	FCU-1-32, 39, 40	6
7	CONDENSATE PUMP	20 A	1	0 VA									8
9						0 VA				1	20 A	CONDENSATE PUMP	10
11	HC-G-9, 11	20 A	2					0 VA					12
13		--	--	0 VA									14
15	CONDENSATE PUMP	20 A	1			0 VA	0 VA			1	20 A	CONDENSATE PUMP	16
17	RECEPTS. - ELEC 10064	20 A	1					360 VA	0 VA	1	20 A	CONDENSATE PUMP	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		360 VA					
			Total Amps:	0 A		0 A		3 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	360 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	360 VA
Receptacle	360 VA	100.00%	360 VA	**Total Conn. Current:**	1 A
				Total Est. Demand Current:	1 A

Notes:

Branch Panel: LMP-22

Location: ELECTRICAL 20060 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CONDENSATE PUMP	20 A	1	0 VA	0 VA					1	20 A	Spare	2
3	CONDENSATE PUMP	20 A	1			0 VA	0 VA			1	20 A	Spare	4
5	Spare	20 A	1					0 VA		1	20 A	Spare	6
7	Other	20 A	1	540 VA	0 VA					1	20 A	Spare	8
9	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	540 VA		0 VA		0 VA					
			Total Amps:	5 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	540 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	540 VA
Receptacle	540 VA	100.00%	540 VA	**Total Conn. Current:**	1 A
				Total Est. Demand Current:	1 A

Notes:

Branch Panel: LMP-42

Location: MECHANICAL 40060 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: 1 | **MCB Rating:** 100 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CONDENSATE PUMP	20 A	1	0 VA						1	20 A		2
3						0 VA				1	20 A	FCU-P-1	4
5								0 VA		1	20 A	Spare	6
7				0 VA						1	20 A	Spare	8
9	UH-2	20 A	1			0 VA	0 VA			1	20 A	Spare	10
11	EF-14	20 A	1					0 VA	0 VA	1	20 A	Spare	12
13	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	14
15	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:

Branch Panel: HELP-LS-DP

Location: T/D 121 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 10kA
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 200 A
Enclosure: 1 | **MCB Rating:** 50 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EM. LIGHTING - CORRIDOR 10045	20 A	1	0 VA	0 VA					1	20 A	EM. LIGHTING - 113B, 113C, 113D, 113E, 113F...	2
3	EM. LIGHTING - CORRIDOR - NORTH WING...	20 A	1			0 VA	0 VA			1	20 A	EM. LIGHTING - FRUIT PRODUCTION LAB 113	4
5	EM. LIGHTING - ADMIN. SUITE 128	20 A	1					0 VA	0 VA	3	20 A	HELP-LS-22	6
7	HELP-LS-32	20 A	3	0 VA	0 VA					--	--	--	8
9	--	--	--			0 VA	0 VA			--	--	--	10
11	--	--	--					0 VA	0 VA	3	20 A	HELP-LS-42	12
13	Spare	20 A	1	0 VA	0 VA					--	--	--	14
15	Spare	20 A	1			0 VA	0 VA			--	--	--	16
17	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	18
19	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	20
21	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	22
23	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	24
25	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	26
27	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	28
29	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	30
31	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	32
33	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	34
35	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	36
37	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	38
39	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	40
41	Spare	20 A	1					0 VA	0 VA	1	20 A	Spare	42
			Total Load:	0 VA		0 VA		0 VA					
			Total Amps:	0 A		0 A		0 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
				Total Est. Demand:	0 VA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	0 A

Notes:
- PROVIDE PANEL WITH INTEGRAL TYPE 2 SPD.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave Yonkers, NY 10704, T 929 333-2339
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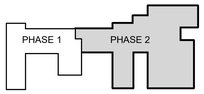
Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL SCHEDULES

STATE OF NEW YORK · DANIEL GARRIGANO · 122025 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

MECHANICAL EQUIPMENT CONNECTION SCHEDULE (PART 1 OF 3)

INDICATED BY ⊘ ON PLAN SHEETS

EQUIPMENT — SPECIFIC NOTES:

1. WHEN LOCATION IS NOT REFERENCED ON 'E' SHEETS, REFER TO 'M' SHEETS.
2. LOCATIONS SHOWN ARE GENERAL IN NATURE. COORDINATE WITH DIV. 23 PRIOR TO ROUGH-IN.

DISCONNECT/SAFETY SWITCH — TYPES:

A: NON-FUSED
B: FUSED
M: MOTOR RATED SWITCH
R: RECEPTACLE/CORD/PLUG
N: NOT REQUIRED
C: CKT BREAKER WITHIN SIGHT

SIZES:

AF: AMPERE FRAME
AT: FUSE SIZE (RKS, UON)

STARTER — TYPES:

VFD: VARIABLE FREQUENCY DRIVE W/ INTEGRAL DISC.
CMS: COMBINATION MOTOR STARTER
ECM: ELECTRICALLY COMMUTATED MOTOR
M: MOTOR RATED SWITCH - MANUAL STARTER
AQUA: LINE VOLTAGE AQUA STAT
N: NOT REQUIRED
P: PACKAGED CONTROLLER BY MANUFACTURER
LVT: LINE VOLT T-STAT ('R' INDICATES REVERSE TYPE)

EQUIPMENT			ELECTRICAL LOAD				POWER CONNECTION				DISCONNECT/SAFETY SWITCH		STARTER				REMARKS
EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION ON PLAN	FLA (MCA)	KVA (HP)	V	PH	HOMERUN TO	CKT BKR	CONDUCTORS & CONDUIT	CONNECTION BY DIVISION:	DISCONNECT TYPE/SIZE	NEMA ENCLOSURE TYPE	STARTER TYPE	NEMA ENCLOSURE TYPE	FURNISHED BY DIVISION	FINAL CONNECTION BY DIVISION:	
AHU-2	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#4 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	1
	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#4 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	1 2
	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#6 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	1
	AIR HANDLING UNIT FAN	ROOF	-	(40)	480	3	PANEL HMP-32	60/3	(3)#6 & #10G, 1-1/4"C	26	-	-	VFD	1	26	26	1
EF-8	EXHAUST FAN	ROOF	-	(50)	480	3	PANEL HESB-LR-G1	70/3	(3)#4 & #8, 1-1/4"C	26	A	3R	VFD	1	23	26	
EF-9	EXHAUST FAN	ROOF	-	(50)	480	3	PANEL HESB-LR-G1	70/3	(3)#4 & #8, 1-1/4"C	26	A	3R	VFD	1	23	26	
EF-10	EXHAUST FAN	ROOF	-	(50)	480	3	PANEL HESB-LR-G1	70/3	(3)#4 & #8, 1-1/4"C	26	A	3R	VFD	1	23	26	
RF-2	FAN	PENTHOUSE	-	(2)	480	3	PANEL HMP-32	20/3	(3)#12 & #12G, 3/4"C	26	A	3R	VFD	1	26	26	
P-2	PUMP	MECH. G0064	-	(10)	480	3	PANEL HMP-OS-G1	20/3	(3)#12 & #12G, 3/4"C	26	A	1	VFD	1	26	26	
P-2A	PUMP	MECH. G0064	-	(10)	480	3	PANEL HMP-OS-G1	20/3	(3)#12 & #12G, 3/4"C	26	A	1	VFD	1	26	26	
P-8	PUMP	AHU VEST.	-	(3)	480	3	PANEL HMP-OS-S2	20/3	(3)#12 & #12G, 3/4"C	26	A	1	VFD	1	26	26	
FCU-G-18	FAN COIL UNIT	FACULTY OFFICE G37	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-19	FAN COIL UNIT	FACULTY OFFICE G35	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-20	FAN COIL UNIT	FACULTY OFFICE G33	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-21	FAN COIL UNIT	FACULTY OFFICE G31	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-22	FAN COIL UNIT	FACULTY OFFICE G29	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-23	FAN COIL UNIT	FACULTY OFFICE G27	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-24	FAN COIL UNIT	TEL/DATA G25	-	(1/3)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-25	FAN COIL UNIT	SUSTAINABLE LAB G20	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-26	FAN COIL UNIT	SUSTAINABLE LAB G20	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-27	FAN COIL UNIT	INSTRUMENTATION LAB G14	-	(1/2)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-G-28	FAN COIL UNIT	WRITE UP SPACE G09	-	(1/3) QTY 2	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-18	FAN COIL UNIT	CLASSROOM 133	-	(1/3) QTY 2	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-19	FAN COIL UNIT	FACULTY OFFICE 129	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-20	FAN COIL UNIT	FACULTY OFFICE 127	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-21	FAN COIL UNIT	ADMIN PROF 125	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-22	FAN COIL UNIT	ADMIN PROF 123	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-23	FAN COIL UNIT	TEL/DATA 121	-	(1/3)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-24	FAN COIL UNIT	ADMIN 128	-	(1/3)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-25	FAN COIL UNIT	ADMIN 128A	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-26	FAN COIL UNIT	ADMIN 128B	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-27	FAN COIL UNIT	ADMIN 128C	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-28	FAN COIL UNIT	ADMIN 128D	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-29	FAN COIL UNIT	ADMIN 128E	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-30	FAN COIL UNIT	WRITE UP SPACE 116	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-31	FAN COIL UNIT	WRITE UP SPACE 116B	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-32	FAN COIL UNIT	MEETING ROOM 116A	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-33	FAN COIL UNIT	COLLAB 119	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-34	FAN COIL UNIT	FRUIT LAB 113	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-35	FAN COIL UNIT	FRUIT LAB 113	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-36	FAN COIL UNIT	PRINT SUPPLY 111	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-37	FAN COIL UNIT	ADMIN PROF 109	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-38	FAN COIL UNIT	ADMIN PROF 107	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-39	FAN COIL UNIT	ADMIN/CLERICAL 105	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-40	FAN COIL UNIT	BREAK ROOM 103	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-1-41	FAN COIL UNIT	ELEC 10064	-	(1/4)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-10	FAN COIL UNIT	FACULTY OFFICE 235	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-11	FAN COIL UNIT	FACULTY OFFICE 233	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-12	FAN COIL UNIT	FACULTY OFFICE 231	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-13	FAN COIL UNIT	FACULTY OFFICE 229	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-14	FAN COIL UNIT	FACULTY OFFICE 227	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-15	FAN COIL UNIT	MEETING 225	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-16	FAN COIL UNIT	COLLAB 221	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-17	FAN COIL UNIT	WRITE UP SPACE 224	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-18	FAN COIL UNIT	WRITE UP SPACE 224B	-	(1/3)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-19	FAN COIL UNIT	MEETING ROOM 224A	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-20	FAN COIL UNIT	TEL/DATA 223	-	(1/3)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-21	FAN COIL UNIT	PLANT LAB 219	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-22	FAN COIL UNIT	PLANT LAB 219	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-23	FAN COIL UNIT	OFFICE 211	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-24	FAN COIL UNIT	FACULTY OFFICE 209	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	
FCU-2-25	FAN COIL UNIT	FACULTY OFFICE 207	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12, 3/4"C	26	M	1	P	-	23	26	

GENERAL SCHEDULE NOTES:

1. CONTRACTOR TO INSTALL STARTER/DISCONNECT ADJACENT TO UNIT. INSTALLATION TO COMPLY WITH NEC ARTICLE 110.26.
2. EQUIPMENT FURNISHED BY OTHERS. COORDINATE WITH ASSOCIATED TRADE CONTRACTOR.
3. CONFIRM HP, VOLTAGE AND PHASE CONNECTIONS PRIOR TO ROUGH-IN OF EQUIPMENT. COORDINATION REQUIRED BETWEEN TRADES.
4. STARTERS SHALL BE NEMA STYLE AND SIZED BASED ON ELECTRICAL LOAD DATA LISTED ON SCHEDULE.
5. MOTOR RATED SWITCHES SHALL BE EQUIPPED WITH HEATERS, WHICH SHALL BE SIZED BASED ON NAMEPLATE DATA (TO BE OBTAINED IN FIELD), NOT ON ELECTRICAL LOAD DATA ON SCHEDULE
6. CIRCUIT BREAKERS INDICATED ON SCHEDULE ABOVE SHALL BE PROVIDED BY THE CONTRACTOR IN THE PROPOSED PANEL (THEY ARE NOT EXISTING BREAKERS, UNLESS INDICATED ON THE PANELBOARD SCHEDULE).
7. FOR THIS PROJECT, THE FOLLOWING HAS BEEN ASSUMED BY THE ENGINEER:
   - DIVISION 26: ELECTRICAL SUB
   - DIVISION 23: MECHANICAL SUB AND/OR CONTROLS SUB
   - DIVISION 22: PLUMBING SUB

REMARKS:

1. PROVIDE (2) DEDICATED 20A, 120V CIRCUITS FOR AIR HANDLING UNIT LIGHTING AND CONVENIENCE RECEPTACLES. COORDINATE ALL REQUIREMENTS WITH H-SHEETS PRIOR TO ROUGH-IN.
2. PROVIDE ADDITIONAL 120V, 20A CIRCUIT FOR AIR HANDLER LIGHT CIRCUIT. COORDINATE REQUIREMENTS WITH M-SHEETS PRIOR TO ROUGH-IN.

LIGHTING CONTROL SYSTEM SCHEDULE

SYMBOL	DESCRIPTION	FACEPLATE & DEVICE COLOR	BASIS OF DESIGN FACEPLATE	BASIS OF DESIGN SWITCH	REMARKS
RCL	20A POWER PACK WITH DIMMING	-	-	SENSORWORX SWX-900-AX	
APR	20A RATED POWER PACK (NON-DIMMING)	-	-	SENSORWORX SWX-900	
PLC	PLUG LOAD CONTROLLER	WHITE	-	SENSORWORX SWX-900	2
EPC	EMERGENCY POWER CONTROL DEVICE	-	-	SENSORWORX SWX-EPC-2-D	
RD1	RAISE/LOWER DIMMING WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-803-J10	
WS	WALL-MOUNTED TOUCH SCREEN	WHITE	THERMOPLASTIC NYLON	CRESTRON TSW-570-W-S	4
PC a	PHOTO CELL / DAYLIGHT SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-250-1-D	
PI a	PASSIVE INFRARED VACANCY SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-201-1	3
PI a	PASSIVE INFRARED OCCUPANCY SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-201-1-AR	3
PI a	PASSIVE INFRARED OCCUPANCY SENSOR	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-201-1	
VS	VACANCY SENSOR PIR WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-103	
OS	OCCUPANCY SENSOR PIR WALL SWITCH	WHITE	THERMOPLASTIC NYLON	WATTSTOPPER SWX-101-AR	
DV	VACANCY SENSOR DUAL TECH DIMMING (0-10V) WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-103	
DO	OCCUPANCY SENSOR DUAL TECH DIMMING (0-10V) WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-103	
LV	1-BUTTON LOW VOLTAGE MOMENTARY WALL SWITCH	WHITE	THERMOPLASTIC NYLON	SENSORWORX SWX-801	
	SINGLE POLE SWITCH	WHITE	THERMOPLASTIC NYLON	PASS & SEYMOUR PT20AC1	

GENERAL SCHEDULE NOTES:

1. NYLON FACEPLATE COLOR SHALL MATCH DEVICE COLOR
2. "a, b, c…" LOWER CASE LETTERING IS USED TO INDICATE FIXTURE SWITCHING CONFIGURATION

REMARKS:

1. COORDINATE DURING SUBMITTALS.
2. PLUG LOAD CONTROLLER IS TO BE USED TO INTEGRATE RECEPTACLE CONTROL INTO ROOM LIGHTING OCCUPANCY/VACANCY SENSORS. REFER TO DETAIL, SHEET E8.1, FOR ADDITIONAL INFORMATION.
3. COORDINATE BMS CONNECTION OF OCCUPANCY SENSORS WITH MECHANICAL/CONTROLS DRAWINGS.
4. TOUCH SCREEN TO INTEGRATE INTO ROOM LIGHTING POWER PACK/SENSORS. LIGHTING VENDOR TO PROVIDE ALL NECESSARY ACCESSORIES, PATCH PANELS, INTERFACE MODULES, ETC. TO PROVIDE NECESSARY INTERFACING. TOUCH SCREEN TO BE PROGRAMMED IN FIELD BY FIELD REPRESENTATIVE DURING COMMISSIONING.

RACEWAY SCHEDULE

AREA	CABLING/RACEWAY METHOD	REMARKS
FINAL CONNECTIONS TO EQUIPMENT. LIMIT LENGTH TO 6'-0" OR LESS.	FMC CABLE (DRY LOCATIONS) LTFMC (WET LOCATIONS)	SEE NOTES BELOW
PERMITTED ONLY WHERE PRIOR APPROVAL HAS BEEN GRANTED. GENERALLY - AREAS WHERE EMT CONDUIT USAGE IS NOT PRACTICAL.	MC CABLE	SEE NOTES BELOW
BRANCH CIRCUITS & FEEDERS CONCEALED DRY AREAS, PANELBOARD HOMERUNS, EXPOSED (NON FINISHED AREAS)	EMT	SEE NOTES BELOW
BELOW 10' IN MECH ROOMS, WET OR DAMP AREAS, OR AREAS SUBJECT TO PHYSICAL DAMAGE	GRS	SEE NOTES BELOW
USE WHERE DIRECTED ON DRAWINGS OR WHERE DEVICES (FIXTURES, ETC. ARE PROPOSED ON EXISTING NON-FISHABLE SURFACES (BLOCK/BRICK/MASONRY).	SURFACE METAL RACEWAY (WIREMOLD OR EQUAL)	SEE NOTES BELOW

GENERAL CONDUIT SCHEDULE NOTES:

1. FITTINGS:
   - EMT: SET SCREW TYPE WITH INSULATED BUSHINGS & THROAT.
   - GRS: THREADED STEEL WITH INSULATED BUSHINGS & THROAT.
   - MC: CLAMP STYLE WITH LOCKNUTS AND INSULATED BUSHING & THROAT
   - SURFACE RACEWAY/WIREMOLD: MANUFACTURER APPROVED FITTINGS NECESSARY, AS REQUIRED FOR COMPLETE INSTALLATION.
2. ALL CIRCUITS SHALL CONTAIN DEDICATED NEUTRALS (NO MULTI-WIRE CIRCUITS PERMITTED)
3. CONDUIT SHALL NOT BE UTILIZED FOR EFFECTIVE GROUND FAULT RETURN PATH. ALL CIRCUITS SHALL CONTAIN DEDICATED GREEN INSULATED CONDUCTOR SIZED PER DRAWINGS OR IN ACCORDANCE WITH APPLICABLE NEC CRITERIA.
4. ALL RACEWAY TYPES ARE AS DESCRIBED HERE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. ANY EMPTY RACEWAYS SHALL BE EQUIPPED WITH A PULL ROPE.
6. ALL CONDUITS SHALL BE LABELED WITH VOLTAGE, PANEL OR ORIGIN AND LOAD SERVED.

BRANCH CIRCUIT SCHEDULE

CIRCUIT BREAKER	PHASE CONDUCTORS AND/OR NEUTRAL CONDUCTORS	GROUND CONDUCTOR	CONDUIT
3-POLE CIRCUITS			
50/3	(3)#6	#10	1"C
40/3	(3)#8	#10	1"C
30/3	(3)#10	#10	3/4"C
20/3	(3)#12	#12	3/4"C
15/3	(3)#12	#12	3/4"C
2-POLE CIRCUITS			
50/2	(2)#6	#10	1"C
40/2	(2)#8	#10	3/4"C
30/2	(2)#10	#10	3/4"C
20/2	(2)#12	#12	3/4"C
15/2	(2)#12	#12	3/4"C
1-POLE CIRCUITS			
40/1	(2)#8	#10	3/4"C
30/1	(2)#10	#10	3/4"C
20/1	(2)#12	#12	3/4"C
15/1	(2)#12	#12	3/4"C

NOTES REGARDING USE OF THIS SCHEDULE:

1. USE THIS SCHEDULE AS FOLLOWS:
   - FOR ALL RECEPTACLE AND LIGHTING CIRCUITS.
   - WHERE SPECIFIC CONDUCTOR/CONDUIT SIZING IS NOT INDICATED ELSEWHERE ON THE DRAWING SET.
   - FOR ANY BRANCH CIRCUITS THAT ARE REQUIRED TO BE RELOCATED/EXTENDED, ETC.
2. DO NOT USE THIS SCHEDULE AS FOLLOWS:
   - FOR LARGE MECHANICAL LOADS. (REFER TO MECHANICAL EQUIPMENT SCHEDULE, THIS SHEET).
   - FOR SERVICE ENTRANCE CONDUCTORS.
   - WHERE SPECIFIC CONDUCTOR/CIRCUIT IS CALLED FOR ON THE DRAWINGS.
3. WHERE CIRCUIT LENGTH EXCEEDS 100', CONTRACTOR SHALL USE NEXT HIGHER PHASE/NEUTRAL CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP.

LIGHTING CONTROL STRATEGY

ROOM TYPE	OCCUPANCY SENSOR CONTROL	VACANCY SENSOR CONTROL	TIME OF DAY CONTROL	DAYLIGHTING CONTROL	LIGHTING CONTROL STRATEGY	REMARKS
CORRIDORS	NO	NO	YES	NO	TIMER CONTROLLED ON DURING OCCUPIED HOURS. OFF DURING UN-OCCUPIED HOURS. NIGHT LIGHT FIXTURES FOR MINIMUM ILLUMINATION AND EMERGENCY	
LOUNGE AREAS	NO	YES	NO	NO	TIMER CONTROLLED ON DURING OCCUPIED HOURS. OFF DURING UN-OCCUPIED HOURS. NIGHT LIGHT FIXTURES FOR MINIMUM ILLUMINATION AND EMERGENCY. MANUAL OVERRIDE SWITCH.	
SMALLER LABS	NO	YES	NO	NO	MANUAL ON. MANUAL RAISE/LOWER LIGHT LEVEL. AUTO OFF AFTER 30 MIN OF NO DETECTION	HIGHER TIMEOUT SETTING FOR SAFETY PURPOSES
LARGER LABS	NO	YES	NO	YES	MANUAL ON. MANUAL RAISE/LOWER LIGHT LEVEL VIA WALL-MOUNTED TOUCHSCREEN. AUTO OFF AFTER 30 MIN OF NO DETECTION	HIGHER TIMEOUT SETTING FOR SAFETY PURPOSES
STORAGE ROOMS	NO	YES	NO	NO	MANUAL ON. AUTO OFF AFTER 5 MIN OF NO DETECTION	
MECH OR ELEC ROOMS	NO	NO	NO	NO	MANUAL ON. MANUAL OFF	NO CONTROL FOR SAFETY REASONS
RESTROOMS	YES	NO	NO	NO	AUTO ON. AUTO OFF AFTER 10 MIN OF NO DETECTION	
OFFICE	NO	YES	NO	NO	MANUAL ON. MANUAL RAISE/LOWER LIGHT LEVEL. AUTO OFF AFTER 15 MIN OF NO DETECTION	
MEETING ROOMS	NO	YES	NO	NO	MANUAL ON. MANUAL RAISE/LOWER LIGHT LEVEL. AUTO OFF AFTER 15 MIN OF NO DETECTION	

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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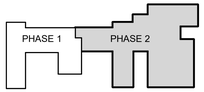
Notes:



Keyplan

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Revisions

ELECTRICAL SCHEDULES

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INDICATED BY ⬡ ON PLAN SHEETS

MECHANICAL EQUIPMENT CONNECTION SCHEDULE (CONTINUED PART 2 OF 3)

EQUIPMENT

SPECIFIC NOTES:

1. WHEN LOCATION IS NOT REFERENCED ON 'E' SHEETS, REFER TO 'M' SHEETS.
2. LOCATIONS SHOWN ARE GENERAL IN NATURE. COORDINATE WITH DIV. 23 PRIOR TO ROUGH-IN.

DISCONNECT/SAFETY SWITCH

TYPES:
A: NON-FUSED
B: FUSED
M: MOTOR RATED SWITCH
R: RECEPTACLE/CORD/PLUG
N: NOT REQUIRED
C: CKT BREAKER WITHIN SIGHT

SIZES:
AF: AMPERE FRAME
AT: FUSE SIZE (RK5, UON)

STARTER

TYPES:
VFD: VARIABLE FREQUENCY DRIVE W/ INTEGRAL DISC.
CMS: COMBINATION MOTOR STARTER
ECM: ELECTRICALLY COMMUTATED MOTOR
M: MOTOR RATED SWITCH - MANUAL STARTER
AQUA: LINE VOLTAGE AQUA STAT
N: NOT REQUIRED
P: PACKAGED CONTROLLER BY MANUFACTURER
LVT: LINE VOLT T-STAT ('R' INDICATES REVERSE TYPE)

EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION ON PLAN	ELECTRICAL LOAD: FLA (MCA)	KVA (HP)	V	PH	POWER CONNECTION: HOMERUN TO	CKT BKR	CONDUCTORS & CONDUIT	CONNECTION BY DIVISION	DISCONNECT/SAFETY SWITCH: DISCONNECT TYPE/SIZE	NEMA ENCLOSURE TYPE	STARTER: STARTER TYPE	NEMA ENCLOSURE TYPE	FURNISHED BY DIVISION	FINAL CONNECTION BY DIVISION	REMARKS
FCU-2-26	FAN COIL UNIT	FACULTY OFFICE 205	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-27	FAN COIL UNIT	WRITE UP SPACE 203	-	(1/2)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-28	FAN COIL UNIT	SYNTHETIC BIO LAB 202	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-29	FAN COIL UNIT	SYNTHETIC BIO LAB 202	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-2-30	FAN COIL UNIT	ELEVATOR CONTROLLER ROOM 2006A	-	(1/4)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-14	FAN COIL UNIT	LARGE MEETING ROOM 340	-	(1/3) QTY 2	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-15	FAN COIL UNIT	FACULTY OFFICE 334	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-16	FAN COIL UNIT	FACULTY OFFICE 332	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-17	FAN COIL UNIT	FACULTY OFFICE 330	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-18	FAN COIL UNIT	FACULTY OFFICE 328	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-19	FAN COIL UNIT	FACULTY OFFICE 339	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-20	FAN COIL UNIT	FACULTY OFFICE 337	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-21	FAN COIL UNIT	FACULTY OFFICE 335	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-22	FAN COIL UNIT	FACULTY OFFICE 333	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-23	FAN COIL UNIT	FACULTY OFFICE 331	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-24	FAN COIL UNIT	FACULTY OFFICE 329	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-25	FAN COIL UNIT	FACULTY OFFICE 325	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-26	FAN COIL UNIT	TEL/DATA 325	-	(1/3)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-27	FAN COIL UNIT	COLLAB 323	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-28	FAN COIL UNIT	WRITE UP SPACE 324	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-29	FAN COIL UNIT	WRITE UP SPACE 324B	-	(1/3)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-30	FAN COIL UNIT	MEETING ROOM 324A	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-31	FAN COIL UNIT	PLANT LAB 319	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-32	FAN COIL UNIT	PLANT LAB 319	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-33	FAN COIL UNIT	PRINT SUPPLY 315	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-34	FAN COIL UNIT	FACULTY OFFICE 313	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-35	FAN COIL UNIT	WRITE UP SPACE 311	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-36	FAN COIL UNIT	WRITE UP SPACE 307	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-37	FAN COIL UNIT	COLLAB 305	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-38	FAN COIL UNIT	PLANT LAB 302	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-3-39	FAN COIL UNIT	PLANT LAB 302	-	(1/4)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-20	FAN COIL UNIT	ACAD OFFICE 430	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-21	FAN COIL UNIT	ACAD OFFICE 428	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-22	FAN COIL UNIT	ACAD OFFICE 426	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-23	FAN COIL UNIT	ACAD OFFICE 420	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-24	FAN COIL UNIT	ACAD OFFICE 418	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-25	FAN COIL UNIT	TEAM ROOM 431B	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-26	FAN COIL UNIT	COMPUTATIONAL LAB 431	-	(1/3)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-27	FAN COIL UNIT	TEAM ROOM 431A	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-28	FAN COIL UNIT	COMPUTATIONAL LAB 416	-	(1/3) QTY 2	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-29	FAN COIL UNIT	TEL/DATA 417	-	(1/3)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-30	FAN COIL UNIT	COLLAB 404	-	(1/3) QTY 2	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-31	FAN COIL UNIT	WORKSPACE 404A	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-32	FAN COIL UNIT	BIODIVERSITY 402	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-33	FAN COIL UNIT	CORRIDOR 40040	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-4-34	FAN COIL UNIT	CORRIDOR 40040	-	(1/4)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
FCU-P-1	FAN COIL UNIT	EAST PENTHOUSE PH001	-	(1/3)	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
HC-G-5	HYDRONIC CASSETTE UNIT	LAB SUPPORT / EQUIPMENT G40	0.5	-	120	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-6	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT G38	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-7	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT G36	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-8	HYDRONIC CASSETTE UNIT	SUPPORT G34	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-9	HYDRONIC CASSETTE UNIT	FREEZER FARM G32	2.25	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-10	HYDRONIC CASSETTE UNIT	FREEZER FARM G26	2.25	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-11	HYDRONIC CASSETTE UNIT	EQUIPMENT G15	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-G-12	HYDRONIC CASSETTE UNIT	FLEXIBLE G21	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	

GENERAL SCHEDULE NOTES:
1. CONTRACTOR TO INSTALL STARTER/DISCONNECT ADJACENT TO UNIT. INSTALLATION TO COMPLY WITH NEC ARTICLE 110.26.
2. EQUIPMENT FURNISHED BY OTHERS. COORDINATE WITH ASSOCIATED TRADE CONTRACTOR.
3. CONFIRM HP, VOLTAGE AND PHASE CONNECTIONS PRIOR TO ROUGH-IN OF EQUIPMENT. COORDINATION REQUIRED BETWEEN TRADES.
4. STARTERS SHALL BE NEMA STYLE AND SIZED BASED ON ELECTRICAL LOAD DATA LISTED ON SCHEDULE.
5. MOTOR RATED SWITCHES SHALL BE EQUIPPED WITH HEATERS, WHICH SHALL BE SIZED BASED ON NAMEPLATE DATA (TO BE OBTAINED IN FIELD), NOT ON ELECTRICAL LOAD DATA ON SCHEDULE
6. CIRCUIT BREAKERS INDICATED ON SCHEDULE ABOVE SHALL BE PROVIDED BY THE CONTRACTOR IN THE PROPOSED PANEL (THEY ARE NOT EXISTING BREAKERS, UNLESS INDICATED ON THE PANELBOARD SCHEDULE).
7. FOR THIS PROJECT, THE FOLLOWING HAS BEEN ASSUMED BY THE ENGINEER:
   DIVISION 26: ELECTRICAL SUB
   DIVISION 23: MECHANICAL SUB AND/OR CONTROLS SUB
   DIVISION 22: PLUMBING SUB

REMARKS:
1. PROVIDE (2) DEDICATED 20A, 120V CIRCUITS FOR AIR HANDLING UNIT LIGHTING AND CONVENIENCE RECEPTACLES. COORDINATE ALL REQUIREMENTS WITH H-SHEETS PRIOR TO ROUGH-IN.

COPPER FEEDER SCHEDULE

FEEDER TAG DESIGNATION	NOMINAL AMPERE RATING	NUMBER OF SETS	PHASE & NEUTRAL CONDUCTOR: QTY OF COND.	COPPER SIZE AWG/KCMIL	GROUND CONDUCTOR: QTY OF COND.	COPPER SIZE AWG/KCMIL	CONDUIT SIZE (WHEN X=3,4,5): 3 WIRE & GND	4 WIRE & GND	5 WIRE & GND (= DOUBLE NEUTRAL)
(1020 X)	20	1	X	12	1	12	3/4"	3/4"	3/4"
(1030 X)	30	1	X	10	1	10	3/4"	3/4"	3/4"
(1040 X)	40	1	X	8	1	10	3/4"	1"	1"
(1045 X)	45	1	X	6	1	10	1"	1"	1-1/4"
(1050 X)	50	1	X	6	1	10	1"	1"	1-1/4"
(1060 X)	60	1	X	4	1	10	1-1/4"	1-1/4"	1-1/4"
(1070 X)	70	1	X	4	1	8	1-1/4"	1-1/4"	1-1/4"
(1080 X)	80	1	X	3	1	8	1-1/4"	1-1/4"	1-1/2"
(1090 X)	90	1	X	2	1	8	1-1/4"	1-1/2"	1-1/2"
(1100 X)	100	1	X	1	1	8	1-1/2"	2"	2"
(1110 X)	110	1	X	2	1	6	1-1/4"	1-1/2"	1-1/2"
(1125 X)	125	1	X	1	1	6	1-1/2"	2"	2"
(1150 X)	150	1	X	1/0	1	6	2"	2"	2"
(1175 X)	175	1	X	2/0	1	6	2"	2"	2-1/2"
(1200 X)	200	1	X	3/0	1	6	2"	2-1/2"	2-1/2"
(1225 X)	225	1	X	4/0	1	4	2-1/2"	2-1/2"	3"
(1250 X)	250	1	X	250	1	4	2-1/2"	3"	3"
(1300 X)	300	1	X	350	1	4	3"	3"	3-1/2"
(1350 X)	350	1	X	500	1	3	3-1/2"	3-1/2"	3-1/2"
(1400 X)	400	2	X	3/0	1	3	2"	2-1/2"	2-1/2"
(1450 X)	450	2	X	4/0	1	2	2-1/2"	2-1/2"	3"
(1500 X)	500	2	X	250	1	2	2-1/2"	3"	3"
(1600 X)	600	2	X	350	1	1	3"	3"	3-1/2"
(1700 X)	700	2	X	500	1	1/0	3-1/2"	3-1/2"	4"
(1800 X)	800	3	X	300	1	1/0	3"	3"	3-1/2"

DUCT BANK SCHEDULE

DESIGNATION (DB-01)	TYPE	ORIGIN	DESTINATION	CIRCUIT: CONDUCTORS/CONDUIT	ORIGIN	DESTINATION	REMARKS
DB-01	SAND-FILLED	PLANT SCIENCE BUILDING	EXTERIOR LIGHTING	(2)#12 & #12G, 3/4"C	HNSB-G1	EXTERIOR LIGHTING	1

GENERAL SCHEDULE NOTES:
1. VERIFY CIRCUIT REQUIREMENTS WITH APPLICABLE EQUIPMENT MANUFACTURERS. PROVIDE CONDUCTORS AND CONDUIT AS REQUIRED.
2. DUCT BANK SWEEPS SHALL NOT HAVE LESS THAN 20'-0" RADIUS UNLESS OTHERWISE NOTED.
3. COORDINATE DUCT BANK LOCATIONS AND INSTALLATIONS WITH EXISTING AND PROPOSED STRUCTURES, EQUIPMENT, AND PIPING SYSTEMS.

REMARKS:
1. PROVIDE AS SAND-FILLED DUCT BANK UNLESS OTHERWISE INDICATED. PROVIDE AS REINFORCED CONCRETE DUCT BANK WHERE BENEATH PAVED AREAS, SIDEWALKS, OR AREAS SUBJECT TO VEHICLE LOADING. COORDINATE REQUIREMENTS WITH THE OVERALL SITE PLANS AND WITH THE GENERAL CONTRACTOR.

WHERE # DENOTES FLOOR BOX TAG

FLOOR BOX SCHEDULE

POWER PACK TAG	DESCRIPTION	COLOR	BASIS OF DESIGN SWITCH	REMARKS
1	4-GANG FLOOR BOX	BLACK	LEGRAND RFBA4	
2	POWER/AV FLOOR BOX	BLACK	FSR FL-500	
3	8" POKE THRU	BLACK	LEGRAND EVOLUTION 8ATC2	
4	QUADRUPLEX POKE THRU	BLACK	LEGRAND RC4	
5	UNDERCARPET FLOOR HUB	BLACK	HERMAN MILLER LOGIC REACH HUB	

GENERAL SCHEDULE NOTES:
1. FACEPLATE COLOR SHALL MATCH DEVICE COLOR.
2. COORDINATE ALL FLOOR BOX INSTALLATION/CONFIGURATION REQUIREMENTS WITH TA-SHEETS.

TEXT ADJACENT TO SYMBOL REPRESENTS THE TAG

JUNCTION BOX SCHEDULE

ITEM TAG	EQUIPMENT	LOAD DATA: KVA	VOLTS	PHASE	SUPPLY DATA: PANEL	BKR	CIRCUIT	PROVIDE CONNECTION VIA: RECEPTACLE TYPE	HEIGHT	DIRECT CONNECT	REMARKS
FH	FUME HOOD	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C	-	-	YES	1
DH	DOOR HARDWARE	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C	-	-	YES	
A	BAS ANTENNA	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C	-	-	YES	
F	FURNITURE	-	120	1	AS INDICATED	20/1	(2)#12 & #12G, 3/4"C			YES	2

SPECIFIC NOTES:
1. COORDINATE INSTALLATION WITH FUME HOOD MANUFACTURER'S RECOMMENDATIONS.
2. COORDINATE INSTALLATION WITH FURNITURE MANUFACTURER'S RECOMMENDATIONS AND WITH A-SHEETS.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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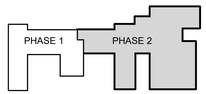

Keyplan

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Revisions

ELECTRICAL SCHEDULES

STATE OF NEW YORK · SEAN GARRAGHAN · 106086 · LICENSED PROFESSIONAL ENGINEER

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INDICATED BY ⬡ ON PLAN SHEETS

MECHANICAL EQUIPMENT CONNECTION SCHEDULE (CONTINUED PART 3 OF 3)

EQUIPMENT

SPECIFIC NOTES:

1. WHEN LOCATION IS NOT REFERENCED ON 'E' SHEETS, REFER TO 'M' SHEETS.
2. LOCATIONS SHOWN ARE GENERAL IN NATURE. COORDINATE WITH DIV. 23 PRIOR TO ROUGH-IN.

DISCONNECT/SAFETY SWITCH

TYPES:
A: NON-FUSED
B: FUSED
M: MOTOR RATED SWITCH
R: RECEPTACLE/CORD/PLUG
N: NOT REQUIRED
C: CKT BREAKER WITHIN SIGHT

SIZES:
AF: AMPERE FRAME
AT: FUSE SIZE (RK5, UON)

STARTER

TYPES:
VFD: VARIABLE FREQUENCY DRIVE W/ INTEGRAL DISC.
CMS: COMBINATION MOTOR STARTER
ECM: ELECTRICALLY COMMUTATED MOTOR
M: MOTOR RATED SWITCH - MANUAL STARTER
AQUA: LINE VOLTAGE AQUA STAT
N: NOT REQUIRED
P: PACKAGED CONTROLLER BY MANUFACTURER
LVT: LINE VOLT T-STAT (# INDICATES REVERSE TYPE)

EQUIPMENT TAG	EQUIPMENT TYPE	LOCATION ON PLAN	ELECTRICAL LOAD: FLA (MCA)	KVA (HP)	V	PH	POWER CONNECTION: HOMERUN TO	CKT BKR	CONDUCTORS & CONDUIT	CONNECTION BY DIVISION	DISCONNECT/SAFETY SWITCH: DISCONNECT TYPE/SIZE	NEMA ENCLOSURE TYPE	STARTER: STARTER TYPE	NEMA ENCLOSURE TYPE	FURNISHED BY DIVISION	FINAL CONNECTION BY DIVISION	REMARKS
HC-1-8	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT 118	0.65	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-1-9	HYDRONIC CASSETTE UNIT	EQUIPMENT 113D	0.5	-	208	1	PANEL LMP-12	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-2-3	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT 228	0.65	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-2-4	HYDRONIC CASSETTE UNIT	EQUIPMENT 1.219C	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-2-5	HYDRONIC CASSETTE UNIT	EQUIPMENT 2.219D	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-2-6	HYDRONIC CASSETTE UNIT	EQUIPMENT 202C	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-2-7	HYDRONIC CASSETTE UNIT	EQUIPMENT CORRIDOR 202E	1.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-2-8	HYDRONIC CASSETTE UNIT	FLEXIBLE 202F	0.5	-	208	1	PANEL LMP-22	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-3-3	HYDRONIC CASSETTE UNIT	FLEX LAB SUPPORT 326	0.65	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-3-4	HYDRONIC CASSETTE UNIT	FLEXIBLE 319B	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-3-5	HYDRONIC CASSETTE UNIT	EQUIPMENT 319D	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-3-6	HYDRONIC CASSETTE UNIT	EQUIPMENT 319E	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-3-7	HYDRONIC CASSETTE UNIT	EQUIPMENT CORRIDOR 302D	1.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-3-8	HYDRONIC CASSETTE UNIT	DIRTY/REGULATED FLEX 302E	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-3-9	HYDRONIC CASSETTE UNIT	AUTOCLAVE SERVICE 304A	0.5	-	208	1	PANEL LMP-32	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-4-1	HYDRONIC CASSETTE UNIT	BIO HUB 403	0.5	-	208	1	PANEL LMP-42	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
HC-4-2	HYDRONIC CASSETTE UNIT	BIO HUB 403	0.5	-	208	1	PANEL LMP-42	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
CUH-10	CABINET UNIT HEATER	STAIR G0003	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-11	CABINET UNIT HEATER	STAIR G0004	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
(E) CUH-5	CABINET UNIT HEATER	STAIR 237C	-	(1/10)	120	1	PANEL LEP-OS-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
(E) CUH-6	CABINET UNIT HEATER	STAIR 6 30008	-	(1/10)	120	1	PANEL LEP-OS-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-7	CABINET UNIT HEATER	VEST. 10043	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-8	CABINET UNIT HEATER	STAIR 2 50003	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
CUH-9	CABINET UNIT HEATER	STAIR 3 1005A	-	(1/10)	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	ECM	1	23	26	
UH-1	UNIT HEATER	MECH G0080	-	-	120	1	PANEL LEP-OS-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
UH-2	UNIT HEATER	MECH 40060	-	-	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
EUH-4	UNIT HEATER	AHU-2 VEST.	-	(1/6)	120	1	PANEL LEP-OS-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	LVT	1	23	26	
ESP-2	ELEVATOR SUMP PUMP	ELEV. PIT	-	-	120	1	PANEL EP	20/1	(2)#12 & #12G, 3/4"C	26	R	5-20R	P	1	23	26	2
EFTR-1	FIN TUBE RADIATOR	ELEC. ROOMS	4.5	-	277	1	PANEL HMP-#2	20/2	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	1
EF-13	EXHAUST FAN	ROOF	-	1	480	3	PANEL HMP-32	20/3	(2)#12 & #12G, 3/4"C	26	M	1	VFD	1	26	26	
EF-12	EXHAUST FAN	BDA CLOSET PH002	-	-	120	1	PANEL LMP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	26	26	
CP-#	CONDENSATE PUMP	REFER TO FLOOR PLANS	0.83	-	120	1	3	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	26	26	3
SVAV-#-#	VARIABLE AIR VOLUME UNIT	REFER TO FLOOR PLANS	-	-	120	1	4	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
EVAV-#-#	VARIABLE AIR VOLUME UNIT	REFER TO FLOOR PLANS	-	-	120	1	4	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
PVAV-G-1 & 2	VARIABLE AIR VOLUME UNITS	GROUND FLOOR	-	-	120	1	LMP-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
PVAV-1-1 & 2	VARIABLE AIR VOLUME UNITS	FIRST FLOOR	-	-	120	1	LMP-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
PVAV-2-1	VARIABLE AIR VOLUME UNIT	SECOND FLOOR	-	-	120	1	LMP-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
PVAV-3-1	VARIABLE AIR VOLUME UNIT	THIRD FLOOR	-	-	120	1	LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
RVAV-G-1	VARIABLE AIR VOLUME UNIT	GROUND FLOOR	-	-	120	1	LMP-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
RVAV-1-1 THRU 5	VARIABLE AIR VOLUME UNITS	FIRST FLOOR	-	-	120	1	LMP-12	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
RVAV-2-1 THRU 5	VARIABLE AIR VOLUME UNITS	SECOND FLOOR	-	-	120	1	LMP-22	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
RVAV-3-1 THRU 6	VARIABLE AIR VOLUME UNITS	THIRD FLOOR	-	-	120	1	LMP-32	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
RAV-4-1 THRU 6	VARIABLE AIR VOLUME UNITS	FOURTH FLOOR	-	-	120	1	PANEL LNP-42	20/1	(2)#12 & #12G, 3/4"C	26	M	1	M	1	23	26	
SF-1	AHU SUPPLY FAN	THIRD FLOOR	-	(10)	208	3	PANEL LEP-OS-32	40/3	(3)#8 & #10G, 3/4"C	26	N	-	VFD	1	23	26	4
P-9	COIL PUMP	SECOND FLOOR	-	(1)	208	1	PANEL LEP-OS-22	20/2	(2)#12 & #12G, 3/4"C	26	A	1	ECM	-	23	26	

GENERAL SCHEDULE NOTES:

1. CONTRACTOR TO INSTALL STARTER/DISCONNECT ADJACENT TO UNIT. INSTALLATION TO COMPLY WITH NEC ARTICLE 110.26.
2. EQUIPMENT FURNISHED BY OTHERS. COORDINATE WITH ASSOCIATED TRADE CONTRACTOR.
3. CONFIRM HP, VOLTAGE AND PHASE CONNECTIONS PRIOR TO ROUGH-IN OF EQUIPMENT. COORDINATION REQUIRED BETWEEN TRADES.
4. STARTERS SHALL BE NEMA STYLE AND SIZED BASED ON ELECTRICAL LOAD DATA LISTED ON SCHEDULE.
5. MOTOR RATED SWITCHES SHALL BE EQUIPPED WITH HEATERS, WHICH SHALL BE SIZED BASED ON NAMEPLATE DATA (TO BE OBTAINED IN FIELD), NOT ON ELECTRICAL LOAD DATA ON SCHEDULE
6. CIRCUIT BREAKERS INDICATED ON SCHEDULE ABOVE SHALL BE PROVIDED BY THE CONTRACTOR IN THE PROPOSED PANEL (THEY ARE NOT EXISTING BREAKERS, UNLESS INDICATED ON THE PANELBOARD SCHEDULE).
7. FOR THIS PROJECT, THE FOLLOWING HAS BEEN ASSUMED BY THE ENGINEER:
   DIVISION 26: ELECTRICAL SUB
   DIVISION 23: MECHANICAL SUB AND/OR CONTROLS SUB
   DIVISION 22: PLUMBING SUB

REMARKS:

1. REFER TO FLOOR PLANS AND M-SHEETS FOR EXACT QUANTITY OF FIN TUBE RADIATORS. COORDINATE CIRCUITING/INSTALLATION REQUIREMENTS ACCORDINGLY.
2. PROVIDE 20A, 1P CIRCUIT BREAKER WITHIN PANEL 'EP' FOR SUMP PUMP FEED. REFER TO ELECTRICAL SINGLE LINE DIAGRAM, SHEET E5.1 FOR ADDITIONAL INFORMATION.
3. REFER TO FLOOR PLANS AND M-SHEETS FOR EXACT QUANTITY OF CONDENSATE PUMPS. COORDINATE CIRCUITING/INSTALLATION REQUIREMENTS ACCORDINGLY. CIRCUIT TO NEAREST LMP PANEL.
4. UTILIZE EXISTING SPACE MADE AVAILABLE WITHIN PANEL PPS1, FOR REPLACEMENT AHU SF-1 FEED. COORDINATE ALL INSTALLATION REQUIREMENTS WITH M-SHEETS.

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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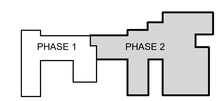

Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL SCHEDULES

STATE OF NEW YORK · SHANE GARRAGHAN · 106086 · LICENSED PROFESSIONAL ENGINEER

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LAB EQUIPMENT SCHEDULE (PART 1)

ITEM TAG	EQUIPMENT	LOAD DATA			SUPPLY DATA			PROVIDE CONNECTION VIA:			REMARKS
		FLA	VOLTS	PHASE	PANEL	BKR	CIRCUIT	RECEPTACLE TYPE	HEIGHT	DIRECT CONNECT	
5-E01	BIO-SAFETY CABINET	-	120	1	LNPL-01	20/1	(2)#12 & #12G, 3/4"C	5-20R, DUPLEX		N/A	3
5-E02	WATER PURIFIER		120	1	LNPL-01	20/1	(2)#12 & #12G, 3/4"C				3
5-E03	-80 FREEZER		208	1	LEPL-OS-01	20/2	(2)#12 & #12G, 3/4"C	N/A	N/A	YES	
5-E04	-20 FREEZER		208		LEPL-OS-01		(2)#12 & #12G, 3/4"C		18" AFF		
5-E05	3-DOOR COOLER	-	208	1	LEPL-OS-01	20/2	(2)#12 & #12G, 3/4"C	L14-20R	18" AFF.	NO	4
5-E06	SMALL FREEZER		120	1	LEPL-OS-01	20/1	(2)#12 & #12G, 3/4"C				3
5-E07	REAGENT SMALL REFRIGERATOR		120	1	LEPL-OS-01	20/1	(2)#12 & #12G, 3/4"C				3
5-E08	MICROBIAL INCUBATOR	12.5	120	1	LNPL-01	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF.	NO	
5-E09	BIO-SAFETY CABINET	-	120	1	LNPL-01	20/1	(2)#12 & #12G, 3/4"C	5-20R, DUPLEX		N/A	
5-E10	ROCHE MAGNA PURE 96 SYSTEM	-	208	1	LNPL-01	20/2	(2)#12 & #12G, 3/4"C			YES	
6-E01	DEIONIZED WATER DISPENSER		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				1
6-E02	DEIONIZED WATER DISPENSER		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				
6-E03	AUTOTITRATOR W/ COMPUTER SPACE		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E04	SONICATOR	2	120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C	5-15R			
6-E05	UV/VIS SPECTROPHOTOMETER		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E06	BUCHI CHILLER (QTY 2)		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E07	BUCHI VACUUM PUMP (QTY 2)		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E08	ROTOVAPOR (QTY 2)		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E09	CENTRIFUGE	8	120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E10	FLUORESCENT MICROSCOPE		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E11	RACKS W/ FLUORESCENT LIGHTS ATTACHED TO TIMERS		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E12	LAMINAR FLOW HOODS		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E13	REFRIGERATOR	-	120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF.	NO	
6-E14	ULTRALOW FREEZER (-80)		208	1	LNPL-11-1	20/2	(2)#12 & #12G, 3/4"C				
6-E15	ULTRALOW FREEZER		120	1	LEPL-OS-11	20/1	(2)#12 & #12G, 3/4"C				3
6-E16	COLD CABINET		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E17	REGULAR FREEZER		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF.	NO	
6-E18	ULTRALOW FREEZER		120	1	LEPL-OS-11	20/1	(2)#12 & #12G, 3/4"C				3
6-E19	BECKMAN CENTRIFUGE		208	1	LNPL-11-1	20/2	(2)#12 & #12G, 3/4"C				4
6-E20	REFRIGERATOR		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF.	NO	
6-E21	LAMINAR FLOW HOOD		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E22	GEL IMAGER		120	1	LEPL-OS-11	20/1	(2)#12 & #12G, 3/4"C				3
6-E23	REGULAR FREEZER		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF.	NO	
6-E24	HPLC		120		LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E25	GC/MS		120		LEPL-OS-11	20/1	(2)#12 & #12G, 3/4"C				3
6-E26	NANOPURE WATER SYSTEM	3	120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E27	AGILENT HPLC		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E29	LAB FRIDGE		120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C				3
6-E30	HPLC	2	120	1	LNPL-11-1	20/1	(2)#12 & #12G, 3/4"C	5-15R (2)			
6-E31	FREEZE DRYER	8	120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E32	SPEED VAP	6	120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E33	VAPOR TRAP		120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E34	PUMP		120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E35	GROWTH CHAMBER		120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E36	SMALL BLACK REFRIGERATOR	1.58	120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E37	OVEN		120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E38	CHEST FREEZERS	1	120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E39	CHEST FREEZERS	1	120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E40	OVEN		120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
6-E41	GROWTH CHAMBER		120	1	LNPL-11-2	20/1	(2)#12 & #12G, 3/4"C				3
7-E01	NANO WATER PURIFIER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E02	STIR PLATES		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E03	REFRIGERATOR -20 SMALL		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E04	4 DEGREE REFRIGERATOR		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E05	BENCH-TOP MICOCENTRIFUGE	2	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E06	PROTEIN GEL TRANSFER STATION		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E07	DNA/RNA GEL SYSTEM		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E08	UV/UF WATER PURIFICATION		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E09	WATERBATH		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E10	WATERBATH	7	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF.	NO	
7-E11	WATERBATH	1.9	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF.	NO	
7-E12	SHAKER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E13	MICROVOLUME SPECTROPHOTOMETER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				1
7-E14	CALIQ		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C	5-15R			
7-E15	MULTISPEQ		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E16	ELECTROPORATION SYSTEM		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E18	SEEDS CABINET		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				2
7-E20	STEREOMICROSCOPES		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E21	FLUORESCENT DISSECTING MICROSCOPE		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E22	UPRIGHT FLUORESCENT MICROSCOPE		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E23	INVERTED MICROSCOPE		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E24	PICTURE STATION		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E25A	INCUBATOR	6	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E25B	INCUBATOR	7	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E26	INCUBATOR	12.4	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E27	BEAD BEATER	5.75	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E29	PREPARATIVE ULTRACENTRIFUGE		208	1	LNPL-22	20/2	(2)#12 & #12G, 3/4"C				4
7-E30	CENTRIFUGE	24	208	1	LNPL-22	30/2	(2)#10 & #10G, 3/4"C				4
7-E31	BENCH-CENTRIFUGE	10.8	208	1	LNPL-22	20/2	(2)#10 & #10G, 3/4"C				4
7-E32	BENCH-TOP CENTRIFUGE	3.8	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E33	-80 FREEZER		120	1	LEPL-OS-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E34	-20 FREEZER		120	1	LEPL-OS-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E35	DELI COOLER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E36	CENTRIFUGE	24	208	1	LNPL-22	30/2	(2)#10 & #10G, 3/4"C				4
7-E37	SPECTROPHOTOMETER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E38	NANODROP		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E39	PLATE READER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3

TEXT ADJACENT TO SYMBOL REPRESENTS THE TAG

LAB EQUIPMENT SCHEDULE (PART 2)

ITEM TAG	EQUIPMENT	LOAD DATA			SUPPLY DATA			PROVIDE CONNECTION VIA:			REMARKS
		FLA	VOLTS	PHASE	PANEL	BKR	CIRCUIT	RECEPTACLE TYPE	HEIGHT	DIRECT CONNECT	
7-E40	CENTRIFUGE		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E41	SPECTROPHOTOMETER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E42	REFRIGERATOR -20		120	1	LEPL-OS-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E43	-80 FREEZER	7.7	208	1	LEPL-OS-22	20/2	(2)#12 & #12G, 3/4"C				3
7-E44	-80 FREEZER	16	120	1	LEPL-OS-22	30/1	(2)#10 & #10G, 3/4"C				3
7-E45	MICROCENTRIFUGE		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E46	THERMAL CYCLER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E47	SPECTROPHOTOMETER	2	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E48	COMPUTER SYSTEM		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E49	AKTAFPIC		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E50	ANALYTICAL HPLC		120		LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E51	THERMAL CYCLER		120		LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E52	PCR DETECTION SYSTEM		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E53	BIO-SAFETY CABINET	-	120	1	LNPL-01	20/1	(2)#12 & #12G, 3/4"C	5-20R, DUPLEX		N/A	
7-E55A	INCUBATOR	6	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E55B	INCUBATOR	6	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E56	FLOOR SHAKER	6.67	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E57	FREEZER -80	6.67	120	1	LEPL-OS-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E58	SHAKING INCUBATOR		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E59	LAMINAR FLOW HOOD	20	120	1	LNPL-22	30/1	(2)#10 & #10G, 3/4"C				3
7-E60	37 DEGREE INCUBATOR		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E61A	30 DEGREE INCUBATOR	3	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E61B	30 DEGREE INCUBATOR	3	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E62	80 DEGREE INCUBATOR		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E63	ELECTROPORATOR	10	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E64	GELDOCK	1.67	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E65	FREEZER		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
7-E66	REFRIGERATOR	10	120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
7-E67	REAL-TIME PCR		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E68	PCR MACHINE		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E69	PCR MACHINE		120	1	LNPL-22	20/1	(2)#12 & #12G, 3/4"C				3
7-E79	MICROCENTRIFUGE		120	1	LNPL-01	20/2	(2)#12 & #12G, 3/4"C				3
7-E80	MICROCENTRIFUGE		120	1	LNPL-01	20/2	(2)#12 & #12G, 3/4"C				3
7-E81	-80 FREEZERS		120	1	LEPL-OS-01	20/1	(2)#12 & #12G, 3/4"C				3
7-E82	-20 FREEZERS		120	1	LEPL-OS-01	20/1	(2)#12 & #12G, 3/4"C				3
7-E83	GROWTH CHAMBER	10	120	1	LNPL-01	20/1	(2)#12 & #12G, 3/4"C				3
8-E01	COMBINATION INCUBATOR	5	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E02	CENTRIFUGE	11	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E03	INCUBATOR SHAKER		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E04	CENTRIFUGE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E05	CENTRIFUGE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E06A	MICROSCOPE TABLE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E06B	MICROSCOPE TABLE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E06C	MICROSCOPE INTERFACE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E06D	MICROSCOPE INTERFACE	15	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E06E	MICROSCOPE		120	1	LNPL-32	20/2	(2)#12 & #12G, 3/4"C				3
8-E06F	MICROSCOPE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E07	FREEZER	5	120	1	LEPL-OS-32	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
8-E08	REFRIGERATOR	5	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
8-E09	-80 FREEZER	12.5	120	1	LEPL-OS-32	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
8-E10	-80 FREEZER	12.5	120	1	LEPL-OS-32	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
8-E11	FREEZER	5	120	1	LEPL-OS-32	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
8-E12	FREEZER	5	120	1	LEPL-OS-32	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		1
8-E13	2-DOOR DELI CASE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				1 3
8-E14	CENTRIFUGE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E15	ULTRACENTRIFUGE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E17	STACKED ISOTEMP INCUBATOR	3	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				1 3
8-E18	BIOSAFETY CABINET	13	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E19	BIOSAFETY CABINET	13	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E20	COMBINATION INCUBATOR	15	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				1 3
8-E21	3-DOOR DELI COOLER	13	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				1 3
8-E22	FREEZER	5	120	1	LEPL-OS-32	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
8-E23	WATER BATH		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E24	TRANSILLUMINATOR		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E25	BIORUPTOR		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E26	FUSE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E27	MICROSCOPE INTERFACE		120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
8-E28		3.1	120	1	LNPL-32	20/1	(2)#12 & #12G, 3/4"C				3
9-E01	-20 FREEZER		120	1	LEPL-OS-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E02	REFRIGERATOR		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E03	INCUBATOR		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E04	CENTRIFUGE		208	1	LNPL-21	20/2	(2)#12 & #12G, 3/4"C				3
9-E05	WATER PURIFIER		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E07	INCUBATOR SHAKER		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E08	BIOSAFETY CABINET		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E09	HPLC		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E10	ROTARY SHAKER		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E11	-80 FREEZER		120	1	LEPL-OS-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E12	-20 FREEZER		120	1	LEPL-OS-21	20/1	(2)#12 & #12G, 3/4"C				3
9-E13	REFRIGERATOR		120	1	LNPL-21	20/1	(2)#12 & #12G, 3/4"C				3
10-E01	BIORAD XRS		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
10-E02	BIORAD MINI		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
10-E03	MICROCENTRIFUGE	5	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E04	MINLON	5	120	1	LEPL-OS-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E05	SMALL MICROSCOPE		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C	5-15R	18" AFF		
10-E06	HEAT BLOCKS		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E07	MINI FREEZER		120	1	LEPL-OS-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E08	VORTEXES (QTY 12)		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E09	MICROCENTRIFUGES (QTY 12)		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3

TEXT ADJACENT TO SYMBOL REPRESENTS THE TAG

LAB EQUIPMENT SCHEDULE (PART 3)

ITEM TAG	EQUIPMENT	LOAD DATA			SUPPLY DATA			PROVIDE CONNECTION VIA:			REMARKS
		FLA	VOLTS	PHASE	PANEL	BKR	CIRCUIT	RECEPTACLE TYPE	HEIGHT	DIRECT CONNECT	
10-E12	MILLIQ WATER (QTY 2)		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E13	BIORAD CHEMIDOC		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E14	QRT-PCR		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E15	THERMAL CYCLER		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E16	MICROWAVES		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E17	NANODROP		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E18	-20 FREEZERS (QTY 5)	2.2	120	1	LEPL-OS-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E19	-80 FREEZER	12.5	120	1	LEPL-OS-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E22	BIOSAFETY CABINET	14	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E23	BIOSAFETY CABINETS (QTY 2)	12	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E24	SHAKING INCUBATORS (QTY 2)		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E26	SHORT INCUBATORS (QTY 2)	5	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E27	LYOPHILIZER		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E28	HPLC		120	1	LEPL-OS-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E29	DRYING OVENS (QTY 2)	11.8	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E30	-80 FREEZER (QTY 2)		120	1	LEPL-OS-31	20/1	(2)#12 & #12G, 3/4"C			YES	
10-E31	COMBINED FREEZER (QTY 2)		120	1	LEPL-OS-31	20/1	(2)#12 & #12G, 3/4"C			YES	
10-E32	4 DEGREE FRIDGE (QTY 3)	4	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				2 3
10-E33	DELI FRIDGE	8.8	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E34	LAMINAR HOOD	15.35	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E35	FLOOR FIXED CENTRIFUGE	30	208	1	LNPL-31	40/2	(2)#8 & #10G, 3/4"C				3
10-E36	LARGE SWING CENTRIFUGE		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E37	SONICATOR	7.7	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E38	GROWTH CHAMBER (QTY 2)	18	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C	5-20R (2 PER UNIT)	18" AFF		
10-E39	SHAKERS		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E40	PAINT SHAKER		120	1	LNP-32	20/1	(2)#12 & #12G, 3/4"C				3
10-E41	SPEED VAC		120	1	LNP-32	20/1	(2)#12 & #12G, 3/4"C				3
10-E42	THERMAL CYCLER		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E43	INCUBATOR		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E44	DRYING OVEN		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E45	FRIDGE		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E46	MICROCENTRIFUGE	3.2	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E47	SONICATOR		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E48	ELECTROPORATOR	2	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E49	SPECTRONIC 20		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E50	INCUBATOR		120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C				3
10-E51	-80 FREEZER	8.5	120	1	LNPL-31	20/1	(2)#12 & #12G, 3/4"C			

Lighting Fixture Schedule

Project: Cornell University, Renovated Plant Science Building Phase 2
Architect: Ellenzweig Architecture | Planning, Boston MA

Schuler Shook
240 W 40th St, 2nd Floor
New York, New York 10018
+1 212.439.5650

General Notes and Instructions:

1. Voltage for all luminaire types to be confirmed by Electrical Engineer and Contractor.
2. All controls are to be hardwired. Refer to Lighting Control Specifications for additional information.
3. All stem lengths, special mounting details, etc. to be confirmed by Contractor with Architect.
4. Provide specified luminaires or equal in all respects by alternate approved manufacturer as listed only.
5. Shop drawings submittals, including unit pricing, must be received within 21 days following award of bid for review and approval by Lighting Designer and Electrical Engineers.
6. All luminaire finishes to be confirmed by Architect.
7. All lumen outputs shown for LED luminaires are delivered lumens. Luminaires considered for alternates must have comparable delivered output.
8. Correlated Color Temperature (CCT) 3500 degrees Kelvin (unless requested otherwise). A minimum of Color Rendering index (CRI) of 80.

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AD01	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Volta 4 Series	IP44 Rated Emergency where required.	Throughout
AD01a	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF-WL Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Volta 4 Series	Same as AD01, except: Wet-Location Rated Emergency where required.	Showers
AD10	LED 24" Round Pendant	Ceiling, Suspended	Nominal Aperture: 24" Round Nominal Size: 4"H x 24"O.D. Optics: Diffuse Lens Suspension Style: Rigid Stem Internal Reflector: White Finish: White Housing: Diffuse acrylic Driver: Integral - Dimming, 0-10V Voltage: Univ 120-277V	Wattage: 22.4W Lumens Delivered: 3000 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: RUBO Model: 3G-PRU24-L30-S80-35K-UNV-DIM-WH-RSW-S_ Alt Mfr: Lumenwerx POP, Axis Helios, Prulite P4000	Contractor to confirm stem length prior to ordering. Emergency where required.	Stair 2
AF01	LED Troffer	Ceiling, Recessed	Nominal Aperture: N/A Nominal Size: 24" W x 48" L x 2 1/2" H Optics: Diffuse Lens, with Center Element Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Cold Rolled Steel Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Universal 120-277V	Wattage: 60W Lumens Delivered: 7800 lm Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Visioneering by Viscor Series: LRTH Series Model: LRTH2X4-LED835K078CUNV Alt Mfr: Mercury Lighting LR402 Series, Day-O-Lite Harmony Series, Axis Lighting Aura, Cooper Lighting Metalux Encounter 24EN	Emergency where required. Ultra Shallow Recess Luminaire Suitable for Damp Location	Support Lab Spaces, Flex Lab,

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AD02	LED 3" Round Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 22W Lumens Delivered: 2132 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33RF-22-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Volta 4 Series	Emergency where required.	Research Labs, Ground Flr Meeting Room
AD03	Type not used in Ph2						
AD04	LED 3" Square Downlight	Ceiling, Recessed	Nominal Aperture: 3.3" Nominal Size: 8.65"W x 12.8"L x 4.5"H Optics: Softening Lens, Regressed, 60 Degree Distribution Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 14W Lumens Delivered: 1408 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: 3.3" Round Fixed Downlight Model: 3G-DL33SF-15-S80-35K-60D-UNV-DIM-WT-WI-NCF-SF Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series, Lumenwerx Volta 4 Series	IP44 Rated Emergency where required.	Circulation Throughout
AD10a	LED 24" Square Pendant	Ceiling, Suspended	Nominal Aperture: 24" Square Nominal Size: 4"H x 24"O.D. Optics: Diffuse Lens Suspension Style: Rigid Stem Internal Reflector: White Finish: White Housing: Diffuse acrylic Driver: Integral - Dimming, 0-10V Voltage: Univ 120-277V	Wattage: 22.4W Lumens Delivered: 3000 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: 3G Lighting Series: RUBO Model: 3G-PRU24-L30-S80-35K-UNV-DIM-WH-RSW-S_ Alt Mfr: Lumenwerx POP, Axis Helios, Prulite P4000	Contractor to confirm stem length prior to ordering. Emergency where required.	Stair 2
AF02	LED Troffer - Wet Location	Ceiling, Recessed	Nominal Aperture: N/A Nominal Size: 24" W x 48" L x 3 15/16" H Optics: Diffuse Lens, Flush with Center Element Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Cold Rolled Steel Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Universal 120-277V	Wattage: 60W Lumens Delivered: 7800 lm Type: LED Board Color Temp: 3500K Min CRI: 81	Mfr: Visioneering by Viscor Series: LRTH Series Model: LRTH-C29-2X4-LED835K078CUNV Alt Mfr: Mercury Lighting LR402 Series, Day-O-Lite Harmony Series, Axis Lighting Aura, Cooper Lighting Metalux Encounter 24EN	Emergency where required. Ultra Shallow Recess Luminaire Suitable for Wet Location	Field Work Suite
AK01	LED Lab Bench Task Lighting	Lab Shelving				Note: Lab bench lighting to be supplied as of casework package. Refer to **12 55 53 Laboratory Casework** for additional information	Laboratory
AK03	LED Linear Light - Wall	Ceiling, Surface - Vertical & Horizontal Mount	Nominal Aperture: Nominal Size: 1.14"W x .6"H x 11'-0" Overall Length Optics: Diffuse Lens with Omni Directional Distribution Trim Style: Round Profile Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: (2x) 3W/ft Lumens Delivered: (2x) 233lm/ft Type: LED Tape Color Temp: 3500K Min CRI: 80	Mfr: Kius Housing: GIZA B5556-W-LC-35-1220/2-24-XX'-P-TBD-IP20 LED Tape: K-CR-1220-24V Provide Remote 0-10V Dimmable Driver Alt Mfr: Luminii Bara Series, Acolyte AT4 Series, Kius Giza Series	**Note:** Provide (2x) runs of LED tape for total output of ~450lm/ft. Provide 25' wire harness. Architect to coordinate mounting hardware. Luminaire is available with mounting clip and magnetic metal strip. Contractor to coordinate location of remote power supplies. Emergency where required.	1st Floor Corridor Connector/ Vestibule
AP01 - 04'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 4'-0"L Optics: Diffuse Lens, Regressed 18% Up / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-04-G-E1-M-03 Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Emergency where required. Ultra Shallow Recess Luminaire Suitable for Damp Location	Support Lab Spaces, Flex Lab,

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP01 - 08'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 8'-0"L Optics: Diffuse Lens, Regressed 18% Up / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-08-G-E1-M-03 Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin
AP01 - 10'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 10'-0"L Optics: Diffuse Lens, Regressed 18% Up / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-10'-G-E1-M-03 Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	4th Floor Write-Up, Admin
AP01 - 12'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 12'-0"L Optics: Diffuse Lens, Regressed 18% UP / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-12-G-E1-M-03-G Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. Luminaire provided with 6'-0" modules for 12ft row. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin
AP01 - 20'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 20'-0"L Optics: Diffuse Lens, Regressed 18% UP / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-20-G-E1-M-03-G Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. Luminaire provided with 6'-0" and 8'-0" modules for 20ft row. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Faculty Office, Write-Up, Admin

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP02 - 04'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 4'-0"L Optics: Diffuse Lens, Regressed 60% UP / 40% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile INDEP. UP/DN LED Model: PF3-B-B-D-35-W-04-D-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for independent up and down operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	1st Flr Heart Event Space
AP03 - 6'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 6'-0"L Optics: Diffuse Lens, Regressed 18% UP / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-06-G-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Classroom, Teaching Lab,
AP03 - 10'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 10'-0"L Optics: Diffuse Lens, Regressed 18% UP / 82% DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-10-G-E1-M-03-F Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire design for single circuit operation. DLC Certified luminaire. Emergency where required. Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Classroom, Teaching Lab,

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AP03 - 12'	LED Direct/Indirect Pendant	Ceiling, Suspended	Nominal Aperture: 3.25" Continuous Nominal Size: 3.25" W 3.1" H x 12'-0"L Optics: Diffuse Lens, Regressed 18%UP / 82%DN Distribution Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Remote - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 1100 lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Fluxwerx Series: Profile 20UP/80DN LED Model: PF1-B-D-D-35-W-12-G-E1-M-03-G Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Luminaire to be provide for 2 circuit operation - 8'-0" and 4'-0" section - 4'-0" section near window location to controlled by a daylight response protocol. Alt Mfr: Axis Lighting Zen, Lumenwerx Cava, Prulite Stream Square	Contractor to coordinate location of remote driver with Architect. Integrated grid clip provide by Manufacturer.	Various length - refer to drawings for location.	Research Labs
AS01- 04'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 4'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01- 06'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 6'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS01- 08'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 8'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01- 12'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 12'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout
AS01- 16'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 16'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Circulation Throughout

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS01a	LED Slotlight	Ceiling, Suspended	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x Length Optics: Diffuse Lens, Flush Suspension Style: Aircraft Cable Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-LIN-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-SC-UNV-CA48-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	Same as AS01, except suspended mounting. DLC Certified luminaire. Emergency where required.	Corridor 40040
AS02- 04'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5" W x 4"H x 4'-0"L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5W/ft Lumens Delivered: 500lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC(10°DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Ground, 1st, 2nd, 3rd Flr Lab Circulation
AS02- 08'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 4-1/32"W x 3-3/4"H x 8'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange - Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 7.25W/ft Lumens Delivered: 750lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC(10°DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	Ground Floor - Office

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AS03- 12'	LED Slotlight	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 4-1/32"W x 3-3/4"H x 12'-0" L Optics: Diffuse Lens, Flush Trim Style: Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 7.25W/ft Lumens Delivered: 750lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-PRO(G50)-XX'-TMW-SAL-LP-SC(10°DC)-UNV-X6-DM01 Alt Mfr: Axis Lighting Beam 4, Selux Lighting M100, Startek Lighting Beam, Lumenwerx Via4	DLC Certified luminaire. Emergency where required.	2nd Floor Teaching Lab
AW01	LED Perimeter Wallwasher	Ceiling, Recessed	Nominal Aperture: 3" Continuous Nominal Size: 3"W x 5"H x Various Length Optics: Diffuse Lens, Regressed Trim Style: Overlap Flange - Drywall Reflector: White Finish: W Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 640lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro3 Model: BPRO3-PER-REG1-LED35-MO-XX'-TMW-SAL-WTW-SC-UNV-X7-DM01 Alt Mfr: Axis Lighting Beam 4 Perimeter, Selux Lighting M100 Series, Lumenwerx Via3 Perimeter	Emergency where required. Various length - refer to drawings for location.	Circulation - Niche
AW01B	LED Perimeter Wallwasher	Ceiling, Recessed	Nominal Aperture: 3" Continuous Nominal Size: 3"W x 5"H x Various Length Optics: Diffuse Lens, Regressed Trim Style: Overlap Flange - Drywall Reflector: White Finish: W Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 640lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro3 Model: BPRO3-PER-REG1-LED35-MO-XX'-TMW-SAL-WTW-SC-UNV-X7-DM01 Alt Mfr: Axis Lighting Beam 4 Perimeter, Selux Lighting M100 Series, Lumenwerx Via3 Perimeter	Emergency where required. Various length - refer to drawings for location.	1st Floor Meeting Room and Breakroom

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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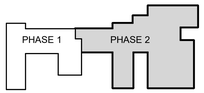

Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

ELECTRICAL SCHEDULES

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AW03	LED Linear Wallwasher	Ceiling, Recessed	Nominal Aperture: 4" Continuous Nominal Size: 5"W x 4" H x Various Length (4'-6'-8'-10'-12',14') Optics: Wall Wash Distribution with Diffuse Lens, Flush Trim Style: Overlap Flange- Grid Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 5.6W/ft Lumens Delivered: 710lm/ft Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Prudential Ltg Series: BionicPro4 Model: BPRO4-REC-FLSH-LED35-MO-XX-TMW-WWF-LP-3C-UNV-X1-DM01 Alt Mfr: Axis Lighting Wall Wash Perfekt, Selux Lighting M100 Series, Lumenwerx Via4	Emergency where required. Various length - refer to drawings for location.	1st, 2nd and 3rd Floor - Classroom and Teaching Lab
AX01	Not Used						
AX02	LED 7" Round Downlight	Ceiling, Surface	Nominal Aperture: 7" Nominal Size: 7 7/8"OD x 5/8"H Optics: Diffuse Lens Trim Style: Taper - Overlap Flange Reflector: White Finish: White Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V Voltage: 120V	Wattage: 14W Lumens Delivered: 1000 lm Type: LED Module Color Temp: 3500K Min CRI: 80	Mfr: Lightolier Series: SlimSurface Model: STR835K10WZ10U Alt Mfr: Lightheaded Lighting Camber/Taper Series, Lucifer Lighting Faxion Series, USA Illumination BevelLED 2.2 Series	IP44 Rated for Outdoor Canopies Emergency where required.	South Lab Exterior Entry - Canopy
AX03, AX04	Not Used						
AX05	LED Wallpack Sconce	Wall, Surface	Nominal Size: 5"H x 8"W x 12"D Optics: Textured Glass Finish: TBD by Architect Housing: Cast Aluminum Driver: Integral Voltage: 120V, Phase-dim	Wattage: 20W Lumens: 1,422 lm Type: LED Module Color Temp: 3000K Min CRI: 80	Mfr: KIM Lighting Series: Site Wallforms Model: SW1-18L3K-TG	Emergency where required.	Exterior

Type	Luminaire	Mounting	Description	Lamping	Manufacturer & Model	Remarks	Location
AZ01	LED Pendant 12'x8'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 40'- 0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 500lm/ft Direct and 600lm/ft Indirect Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC*White Oak*-DIM10 Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Luminaire to be suspended at 9'- 0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously. Emergency where required.	Ground, 1st, 2nd and 3rd floor - Collaboration
AZ05	LED Pendant 10'x20'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 60'- 0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 500lm/ft Direct and 600lm/ft Indirect Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC*White Oak*-DIM10 Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Luminaire to be suspended at 9'- 0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously. Architect to select wood pattern finish. Contractor to coordinate mounting hardware. Emergency where required.	Large Meeting Room 340
AZ06	LED Pendant 8'x8'	Ceiling, Suspended	Nominal Aperture: 2" Continuous Nominal Size: 2 3/4" W x 4 1/2" H x 32'- 0" L Optics: Direct - Diffuse Lens, Flush, Indirect Wide Spread Suspension Style: Aircraft Cable Reflector: White Finish: Custom Finish - Wood Pattern Housing: Extruded Aluminum Driver: Integral - Dimming, 0-10V, 100-1% Range Voltage: Univ 120-277V	Wattage: 9.5W/ft Lumens Delivered: 500lm/ft Direct and 600lm/ft Indirect Type: LED Board Color Temp: 3500K Min CRI: 80	Mfr: Day-o-Lite Series: Profile Series Model: PRFL-24-DI-FL/BW-35-LO-**X*R-AC-CC*White Oak*-DIM10 Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED, Lumenwerx Via4	Luminaire to be suspended at 9'- 0" AFF. Luminaire to be designed with 1 circuit to control direct and indirect distribution simultaneously. Architect to select wood pattern finish. Contractor to coordinate mounting hardware. Emergency where required.	North Wing
					Mfr: Lumenwerx Series: Via 2 - Pattern Pendant Direct/Indirect Model: VIA2PDIPAT-HLO-FH-WIO-LED-80-500-500-35-32"-0"-LEV-9040-UNV-D1-1-53WAC36-CUSTOM FINISH/ Wood Pattern TBD Alt Mfr: Axis Lighting, Coronet Lighting, Bartco Lighting Bodhi, Selux M100 LED		

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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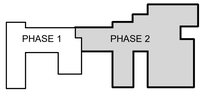
Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL SCHEDULES

BID DOCUMENTS
Scale:

E6.10

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SEQUENCE OF OPERATIONS — INTERIOR LIGHTING

RENOVATE PLANT SCIENCE BUILDING — PHASE 2 | NEW YORK STATE COLLEGE OF AGRICULTURE AND LIFE SCIENCES AT CORNELL UNIVERSITY | 236 TOWER ROAD, ITHACA, NY 14853
SUCF PROJECT NO. 161026-00 | REFERENCES: SPECIFICATION SECTION 26 09 23 — LIGHTING CONTROL DEVICES; DRAWINGS E2.0–E2.5, E6.5, E6.9/E6.10, E8.1 | LEED CERTIFIED BUILDING PROJECT

1. SYSTEM DESCRIPTION

1. INTERIOR LIGHTING IS CONTROLLED BY STAND-ALONE, ROOM-BASED LIGHTING CONTROLS (BASIS OF DESIGN: SENSORWORX). EACH CONTROLLED SPACE IS SERVED BY A SINGLE-ZONE DIMMING POWER PACK (RC1) OR ANALOG 20A POWER PACK (APP) THAT SWITCHES AND DIMS THE ROOM LIGHTING LOAD, WITH LOW-VOLTAGE PASSIVE INFRARED (PIR) OCCUPANCY/VACANCY SENSORS, PHOTOCELL/DAYLIGHT SENSORS, AND LOW-VOLTAGE MOMENTARY WALL CONTROLS CONNECTED TO THE ROOM CONTROLLER.
2. ALL DIMMED LUMINAIRES ARE LED WITH 0-10V DIMMING DRIVERS (100%-1% RANGE, TYPICAL, PER THE LIGHTING FIXTURE SCHEDULE).
3. OCCUPANCY SENSORS TURN LIGHTING ON AND OFF AUTOMATICALLY; VACANCY SENSORS REQUIRE MANUAL-ON OPERATION AND TURN LIGHTING OFF AUTOMATICALLY. TURN-OFF TIME DELAYS ARE FIELD-ADJUSTABLE (UP TO 30 MINUTES PER SECTION 26 09 23) AND SHALL INITIALLY BE SET TO THE VALUES LISTED IN THE SEQUENCE OF OPERATIONS SCHEDULE.
4. SUSTAINABILITY: THE LIGHTING CONTROL SEQUENCES ON THIS SHEET IMPLEMENT THE MANDATORY AUTOMATIC SHUTOFF, OCCUPANT (VACANCY) CONTROL, DAYLIGHT-RESPONSIVE CONTROL, AND AUTOMATIC RECEPTACLE CONTROL PROVISIONS OF ASHRAE/IES STANDARD 90.1 AS REFERENCED BY THE LEED ENERGY & ATMOSPHERE PREREQUISITE (MINIMUM ENERGY PERFORMANCE), AND SUPPORT EA OPTIMIZE ENERGY PERFORMANCE AND EQ INTERIOR LIGHTING CREDIT STRATEGIES.
5. NYLON FACEPLATE COLOR SHALL MATCH DEVICE COLOR (WHITE). LOWER-CASE LETTERS ("A, B, C...") ON THE PLANS INDICATE FIXTURE SWITCHING CONFIGURATION/ZONING WITHIN A ROOM. WHERE WIRED SENSORS ARE INDICATED, WIRELESS SENSORS ARE NOT PERMITTED.

1.1 CONTROL DEVICES

SYM.	DEVICE	BASIS OF DESIGN
RC1	20A RATED POWER PACK WITH 0-10V DIMMING	SENSORWORX SWX-900-AX
APP	ANALOG 20A RATED POWER PACK	SENSORWORX SWX-900
PLC	PLUG LOAD CONTROLLER	SENSORWORX SWX-900
EPC	EMERGENCY POWER CONTROL DEVICE (UL 924)	SENSORWORX SWX-EPC-2-D
RD1	RAISE/LOWER DIMMING WALL SWITCH	SENSORWORX SWX-803-J10
WS	WALL-MOUNTED TOUCH SCREEN	CRESTRON TSW-570-W-S
PC	PHOTOCELL / DAYLIGHT SENSOR	SENSORWORX SWX-250-1-D
VS	PASSIVE INFRARED VACANCY SENSOR (CEILING)	SENSORWORX SWX-201-1
OS	PASSIVE INFRARED OCCUPANCY SENSOR (CEILING)	SENSORWORX SWX-201-1-AR / SWX-201-1
VS	VACANCY SENSOR PIR WALL SWITCH	SENSORWORX SWX-103
OS	OCCUPANCY SENSOR PIR WALL SWITCH	WATTSTOPPER SWX-101-AR
DV	VACANCY SENSOR DUAL TECH DIMMING (0-10V) WALL SWITCH	SENSORWORX SWX-103
DO	OCCUPANCY SENSOR DUAL TECH DIMMING (0-10V) WALL SWITCH	SENSORWORX SWX-103
LV	1-BUTTON LOW VOLTAGE MOMENTARY WALL SWITCH	SENSORWORX SWX-801
S	SINGLE POLE SWITCH	PASS & SEYMOUR PT20AC1

2. SEQUENCE OF OPERATIONS BY SPACE TYPE

SPACE TYPE	SEQUENCE OF OPERATION	CONTROL BASIS / REMARKS
CORRIDORS	AUTOMATICALLY SWITCHED ON DURING SCHEDULED OCCUPIED HOURS AND OFF DURING UNOCCUPIED HOURS BY TIME-OF-DAY CONTROL. DESIGNATED NIGHT-LIGHT FIXTURES REMAIN ENERGIZED FOR MINIMUM ILLUMINATION AND FOR EMERGENCY EGRESS LIGHTING.	TIME-OF-DAY (SCHEDULED) CONTROL. NO OCCUPANCY, VACANCY, OR DAYLIGHTING CONTROL.
LOUNGE AREAS	AUTOMATICALLY SWITCHED ON DURING SCHEDULED OCCUPIED HOURS AND OFF DURING UNOCCUPIED HOURS BY TIME-OF-DAY CONTROL. DESIGNATED NIGHT-LIGHT FIXTURES REMAIN ENERGIZED FOR MINIMUM ILLUMINATION AND EMERGENCY. MANUAL OVERRIDE SWITCH PROVIDED FOR LOCAL CONTROL; LIGHTING REVERTS TO AUTOMATIC CONTROL VIA VACANCY SENSING.	VACANCY SENSOR CONTROL WITH MANUAL OVERRIDE.
SMALLER LABS	MANUAL ON AT LOCAL WALL CONTROL. MANUAL RAISE/LOWER DIMMING OF LIGHT LEVEL. AUTOMATIC OFF AFTER 30 MINUTES OF NO OCCUPANCY DETECTION (VACANCY OPERATION).	VACANCY SENSOR CONTROL. HIGHER (30 MIN) TIMEOUT SETTING FOR SAFETY PURPOSES.
LARGER LABS	MANUAL ON. MANUAL RAISE/LOWER OF LIGHT LEVEL VIA WALL-MOUNTED TOUCHSCREEN. DAYLIGHT-RESPONSIVE DIMMING OF FIXTURES WITHIN DESIGNATED DAYLIGHTING ZONES. AUTOMATIC OFF AFTER 30 MINUTES OF NO OCCUPANCY DETECTION (VACANCY OPERATION).	VACANCY SENSOR AND DAYLIGHTING CONTROL. HIGHER (30 MIN) TIMEOUT SETTING FOR SAFETY PURPOSES.
STORAGE ROOMS	MANUAL ON. AUTOMATIC OFF AFTER 5 MINUTES OF NO OCCUPANCY DETECTION (VACANCY OPERATION).	VACANCY SENSOR CONTROL.
MECHANICAL / ELECTRICAL ROOMS	MANUAL ON. MANUAL OFF.	NO AUTOMATIC CONTROL, FOR SAFETY REASONS.
RESTROOMS	AUTOMATIC ON UPON DETECTION OF OCCUPANCY. AUTOMATIC OFF AFTER 10 MINUTES OF NO OCCUPANCY DETECTION.	OCCUPANCY SENSOR CONTROL (AUTO-ON / AUTO-OFF).
OFFICES	MANUAL ON. MANUAL RAISE/LOWER DIMMING OF LIGHT LEVEL. AUTOMATIC OFF AFTER 15 MINUTES OF NO OCCUPANCY DETECTION (VACANCY OPERATION).	VACANCY SENSOR CONTROL.
MEETING ROOMS	MANUAL ON. MANUAL RAISE/LOWER DIMMING OF LIGHT LEVEL. AUTOMATIC OFF AFTER 15 MINUTES OF NO OCCUPANCY DETECTION (VACANCY OPERATION).	VACANCY SENSOR CONTROL.

TIME DELAYS NOTED ABOVE ARE INITIAL SETTINGS; ALL SENSOR TIME DELAYS, SENSITIVITIES, AND PHOTOCELL SETPOINTS ARE FIELD-ADJUSTABLE AND SHALL BE ADJUSTED DURING COMMISSIONING TO MINIMIZE UNDESIRED ACTIVATIONS WHILE OPTIMIZING ENERGY SAVINGS, AS DIRECTED BY THE ARCHITECT (SECTION 26 09 23, ARTICLE 3.4).

3. DETAILED CONTROL SEQUENCES

3.1 MANUAL-ON / VACANCY (MANUAL-ON, AUTO-OFF) SPACES — LABS, OFFICES, MEETING ROOMS, STORAGE

1. OCCUPANT PRESSES THE LOW-VOLTAGE MOMENTARY WALL SWITCH (LV) OR RAISE/LOWER DIMMING WALL SWITCH (RD1); THE ROOM CONTROLLER (RC1) ENERGIZES THE ROOM LIGHTING TO THE LAST DIMMED LEVEL (POWER-FAILURE PRESET MEMORY).
2. OCCUPANT MAY RAISE/LOWER THE LIGHTING LEVEL CONTINUOUSLY OVER THE FULL DIMMING RANGE AT THE WALL CONTROL (RD1), OR, IN LARGER LABS, AT THE WALL-MOUNTED TOUCHSCREEN (WS).
3. CEILING-MOUNTED PIR VACANCY SENSORS (VS) MONITOR THE SPACE. WHILE MOTION (MAJOR OR MINOR) IS DETECTED, LIGHTING REMAINS AT THE SELECTED LEVEL.
4. UPON NO DETECTION OF OCCUPANCY FOR THE DURATION OF THE TURN-OFF DELAY (30 MINUTES IN LABS; 15 MINUTES IN OFFICES AND MEETING ROOMS; 5 MINUTES IN STORAGE ROOMS), THE ROOM CONTROLLER AUTOMATICALLY SWITCHES THE LIGHTING OFF.
5. IF LIGHTING IS MANUALLY SWITCHED OFF WHILE THE SPACE IS OCCUPIED, THE CONTROL REVERTS TO AUTOMATIC (VACANCY) MODE AFTER THE SPACE IS VACATED FOR THE TURN-OFF DELAY INTERVAL.
6. LAB TURN-OFF DELAYS ARE INTENTIONALLY SET AT THE HIGHER 30-MINUTE VALUE FOR OCCUPANT SAFETY (LIGHTING CONTROL STRATEGY REMARK, E6.5).

3.2 OCCUPANCY (AUTO-ON / AUTO-OFF) SPACES — RESTROOMS

1. UPON DETECTION OF OCCUPANCY BY THE PIR OCCUPANCY SENSOR (OS), LIGHTING SWITCHES ON AUTOMATICALLY.
2. LIGHTING REMAINS ON WHILE OCCUPANCY IS DETECTED.
3. UPON NO DETECTION OF OCCUPANCY FOR 10 MINUTES, LIGHTING SWITCHES OFF AUTOMATICALLY.
4. WHERE AN INTEGRAL PHOTOCELL IS PROVIDED, AUTOMATIC TURN-ON IS INHIBITED WHEN AMBIENT LIGHT EXCEEDS THE FIELD-SELECTED LEVEL (SECTION 26 09 23, 2.2.B.8).

3.3 TIME-OF-DAY CONTROLLED SPACES — CORRIDORS AND LOUNGE AREAS

1. GENERAL CORRIDOR AND LOUNGE LIGHTING IS SWITCHED ON AUTOMATICALLY AT THE START OF SCHEDULED OCCUPIED HOURS AND OFF AT THE END OF SCHEDULED OCCUPIED HOURS BY TIME-OF-DAY CONTROL. SCHEDULES SHALL BE REVIEWED WITH THE OWNER AND SET DURING COMMISSIONING.
2. DESIGNATED NIGHT-LIGHT FIXTURES (IDENTIFIED "SN" ON THE LIGHTING PLANS) REMAIN ENERGIZED TO PROVIDE MINIMUM ILLUMINATION DURING UNOCCUPIED HOURS AND SERVE AS EMERGENCY EGRESS LIGHTING.
3. LOUNGE AREAS: A MANUAL OVERRIDE SWITCH PERMITS LOCAL ON CONTROL DURING UNOCCUPIED HOURS; VACANCY SENSING RETURNS THE LIGHTING TO THE SCHEDULED/OFF STATE AFTER THE SPACE IS VACATED FOR THE TURN-OFF DELAY INTERVAL.
4. CORRIDOR LIGHTING OPERATES INDEPENDENT OF OCCUPANCY SENSING AND DAYLIGHTING CONTROL.

3.4 DAYLIGHT-RESPONSIVE CONTROL — LARGER LABS AND DESIGNATED DAYLIGHTING ZONES

1. PHOTOCELL/DAYLIGHT SENSORS (PC) CONNECTED TO THE ROOM CONTROLLER CONTINUOUSLY MONITOR LIGHT LEVEL WITHIN THE DAYLIGHTING ZONES IDENTIFIED ON DRAWINGS E2.0-E2.4.
2. AS DAYLIGHT CONTRIBUTION INCREASES, THE ROOM CONTROLLER PROPORTIONALLY DIMS THE ELECTRIC LIGHTING IN THE DAYLIGHT ZONE (0-10V CONTINUOUS DIMMING); AS DAYLIGHT DECREASES, ELECTRIC LIGHTING IS RAISED, MAINTAINING THE DESIGN ILLUMINANCE AT THE TASK PLANE.
3. DAYLIGHT-RESPONSIVE CONTROL OPERATES SUBORDINATE TO THE MANUAL-ON/VACANCY SEQUENCE: IT MODULATES OUTPUT ONLY WHILE THE LIGHTING IS ON AND NEVER OVERRIDES AN OCCUPANT'S MANUAL OFF.
4. PHOTO SENSOR PLACEMENT SHALL FOLLOW SECTION 26 09 23, 3.2.N: CLOSED-LOOP SENSORS LOCATED TO MEASURE THE CONTROLLED TASK LOCATION; OPEN-LOOP SENSORS LOCATED TO MEASURE INCOMING DAYLIGHT, IN EACH CASE MINIMIZING DIRECT VIEW OF WINDOWS OR PENDANT LUMINAIRES. SETPOINTS AND DEADBANDS SHALL BE CALIBRATED DURING COMMISSIONING.

3.5 MECHANICAL AND ELECTRICAL ROOMS

1. LIGHTING IS CONTROLLED BY MANUAL SINGLE-POLE SWITCHES ONLY (MANUAL ON / MANUAL OFF).
2. NO AUTOMATIC SHUTOFF IS PROVIDED, FOR SAFETY REASONS (PERMITTED EXCEPTION UNDER ASHRAE 90.1 FOR SPACES WHERE AUTOMATIC SHUTOFF WOULD ENDANGER OCCUPANTS).

3.6 EMERGENCY LIGHTING OPERATION (UL 924)

1. IN SPACES CONTAINING EMERGENCY (LIFE-SAFETY) LUMINAIRES, AN EMERGENCY POWER CONTROL DEVICE (EPC; SENSORWORX SWX-EPC-2-D, UL 924 LISTED) IS PROVIDED PER DETAIL 4/E8.1. EMERGENCY LUMINAIRES ARE FED FROM THE EMERGENCY PANEL (HELP-SERIES); NORMAL LUMINAIRES FROM THE NORMAL PANEL (HNLP-SERIES).
2. NORMAL OPERATION: THE EPC ALLOWS THE EMERGENCY LUMINAIRES TO BE SWITCHED AND DIMMED TOGETHER WITH THE NORMAL LIGHTING IN THE SPACE, FOLLOWING THE SAME LOCAL SWITCH, SENSOR, AND DIMMING COMMANDS, SO EMERGENCY FIXTURES TRACK THE ROOM SCENE.
3. LOSS OF NORMAL POWER: UPON SENSING LOSS OF THE NORMAL BRANCH CIRCUIT, THE EPC BYPASSES ALL LOCAL CONTROL AND FORCES THE EMERGENCY LUMINAIRES ON TO FULL OUTPUT, REGARDLESS OF SWITCH, SENSOR, OR DIMMER POSITION.
4. RESTORATION OF NORMAL POWER: THE EPC AUTOMATICALLY RETURNS THE EMERGENCY LUMINAIRES TO LOCAL CONTROL.
5. NIGHT-LIGHT ("SN") FIXTURES IN CORRIDORS PROVIDE CONTINUOUS MINIMUM EGRESS ILLUMINATION AND OPERATE ON EMERGENCY POWER WHERE INDICATED.

3.7 AUTOMATIC RECEPTACLE (PLUG LOAD) CONTROL

1. WHERE PLUG LOAD CONTROLLERS (PLC) ARE INDICATED, CONTROLLED RECEPTACLES ARE INTEGRATED WITH THE ROOM LIGHTING OCCUPANCY/VACANCY SENSORS PER DETAIL 5/E8.1 AND REMARK 2 ON THE LIGHTING CONTROL SYSTEM SCHEDULE (E6.5).
2. UPON DETECTION OF OCCUPANCY (OR MANUAL-ON OF THE ROOM LIGHTING IN VACANCY-CONTROLLED SPACES), THE PLC ENERGIZES THE CONTROLLED (SWITCHED) RECEPTACLES IN THE SPACE.
3. UPON NO DETECTION OF OCCUPANCY FOR THE TURN-OFF DELAY INTERVAL, THE PLC DE-ENERGIZES THE CONTROLLED RECEPTACLES. UNCONTROLLED RECEPTACLES REMAIN ENERGIZED AT ALL TIMES.
4. THIS FUNCTION PROVIDES THE AUTOMATIC RECEPTACLE CONTROL REQUIRED BY ASHRAE 90.1 (SECTION 8.4.2) IN SUPPORT OF THE PROJECT'S LEED ENERGY PERFORMANCE REQUIREMENTS.

3.8 BMS INTERFACE

1. OCCUPANCY/VACANCY SENSORS ARE PROVIDED WITH ISOLATED RELAY (SPDT DRY CONTACT) OUTPUTS. OCCUPANCY STATUS IS CONVEYED TO THE BUILDING MANAGEMENT SYSTEM FOR HVAC OCCUPIED/STANDBY CONTROL OF TERMINAL UNITS SERVING THE SPACE.
2. BMS CABLING CONNECTIONS TO SENSOR AUXILIARY CONTACTS SHALL BE COORDINATED WITH THE MECHANICAL/CONTROLS DRAWINGS (REMARK 3, E6.5; DETAILS 1-3/E8.1).

4. DEVICE SETTINGS, ADJUSTMENT, AND FUNCTIONAL TESTING

- TURN-OFF DELAYS: FIELD-ADJUSTABLE UP TO 30 MINUTES; INITIAL SETTINGS PER THE SEQUENCE OF OPERATIONS SCHEDULE (30 MIN LABS / 15 MIN OFFICES AND MEETING ROOMS / 10 MIN RESTROOMS / 5 MIN STORAGE).
- ADAPTIVE TECHNOLOGY: SENSORS ARE FIELD-SELECTABLE TO SELF-ADJUST SENSITIVITY AND TIME DELAY TO SUIT SPACE CONDITIONS.
- PIR LENS FIELD OF VIEW: CUSTOMIZE WITH FACTORY MASKING MATERIAL OR INTEGRAL BLINDERS TO BLOCK DETECTION THROUGH DOORWAYS OR FROM ADJACENT CIRCULATION, AS DIRECTED.
- WALL SWITCH SENSORS: MOUNTED 48 INCHES AFF ON THE STRIKE SIDE OF THE DOOR, 3 INCHES FROM THE DOOR FRAME EDGE; 180-DEGREE FIELD OF VIEW; NO LEAKAGE CURRENT TO LOAD IN OFF MODE.
- CEILING SENSORS: 360-DEGREE COVERAGE, RATED 450 SQ FT (STANDARD RANGE) AT 9 FT MOUNTING; WALL SWITCH SENSORS RATED 900 SQ FT. PROVIDE POWER PACKS (PLENUM-RATED, 120/277V) IN QUANTITY AND CONFIGURATION REQUIRED FOR THE LOAD, INSTALLED ABOVE ACCESSIBLE CEILINGS NEAR THE SENSOR.
- FUNCTIONAL TESTING: TEST EACH OCCUPANCY/VACANCY SENSOR FOR COVERAGE, TIME DELAY, AND AMBIENT-LIGHT INHIBITION; TEST DAYLIGHTING SETPOINTS; VERIFY EPC FORCED-ON OPERATION ON LOSS OF NORMAL POWER; RECORD ALL RESULTS IN WRITTEN FIELD QUALITY CONTROL REPORTS INCLUDED WITH SUBMITTALS (SECTION 26 09 23, 3.3). FUNCTIONAL TESTING OF LIGHTING CONTROLS ALSO SATISFIES THE COMMISSIONING VERIFICATION EXPECTED FOR LEED FUNDAMENTAL/ENHANCED COMMISSIONING.
- RECORD DOCUMENTS: RECORD ACTUAL INSTALLED LOCATIONS AND FINAL SETTINGS OF ALL LIGHTING CONTROL DEVICES.
- CLOSEOUT: DEMONSTRATE OPERATION TO THE ARCHITECT AND TRAIN OWNER'S PERSONNEL ON OPERATION, ADJUSTMENT, PROGRAMMING, AND MAINTENANCE.

NOTE: EXTERIOR/SITE LIGHTING CONTROL (PHOTOCELL-BASED, PER DETAIL ON SHEET E8.2 AND SECTION 26 09 23, 2.3) IS EXCLUDED FROM THIS INTERIOR LIGHTING SEQUENCE. THIS SHEET IS DERIVED FROM THE BID DOCUMENTS REFERENCED ABOVE; WHERE CONFLICTS ARISE, THE CONTRACT DOCUMENTS GOVERN.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

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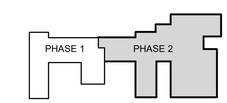
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 31909.00
Drawing By CCH
Checked By SAG
Filename
Date August 31, 2026

Revisions

INTERIOR LIGHTING SEQUENCE OF OPERATIONS

BID DOCUMENTS
Scale:

E6.11

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Branch Panel: HMP-OS-52

Location: EAST PENTHOUSE PH001
Supply From:
Mounting: Surface
Enclosure: Indoor

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22kA
Mains Type: MLO
Mains Rating: 400 A
MCB Rating: N/A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	P-8	20 A	3	0 VA	0 VA					3	40 A	AHU-1 SF 1	2
3	--	--	--			0 VA	0 VA			--	--	--	4
5	--	--	--					0 VA	0 VA	--	--	--	6
7	AHU-1 SF-2	40 A	3	2244...	2244...					3	40 A	AHU-1 SF-3	8
9	--	--	--			2244...	2244...			--	--	--	10
11	--	--	--					2244...	2244...	--	--	--	12
13	AHU-1 SF-4	40 A	3	2244...	1745...					3	30 A	Power	14
15	--	--	--			2244...	1745...			--	--	--	16
17	--	--	--					2244...	1745...	--	--	--	18
19	EF-2	30 A	3	1745...	1745...					3	30 A	EF-3	20
21	--	--	--			1745...	1745...			--	--	--	22
23	--	--	--					1745...	1745...	--	--	--	24
25	Spare	20 A	3	0 VA	0 VA					3	20 A	Spare	26
27	--	--	--			0 VA	0 VA			--	--	--	28
29	--	--	--					0 VA	0 VA	--	--	--	30
31	Spare	20 A	3	0 VA	0 VA					3	20 A	Spare	32
33	--	--	--			0 VA	0 VA			--	--	--	34
35	--	--	--					0 VA	0 VA	--	--	--	36
37	Spare	20 A	3	0 VA	0 VA					3	20 A	Spare	38
39	--	--	--			0 VA	0 VA			--	--	--	40
41	--	--	--					0 VA	0 VA	--	--	--	42
			Total Load:	119716 VA		119716 VA		119716 VA					
			Total Amps:	432 A		432 A		432 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	359148 VA	100.00%	359148 VA	**Total Conn. Load:**	359148 VA
				Total Est. Demand:	359148 VA
				Total Conn. Current:	432 A
				Total Est. Demand Current:	432 A

Notes:

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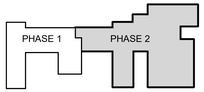

Keyplan

Job Number 31909.00
Drawing By CCH
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Date August 31, 2026

Revisions

ELECTRICAL SCHEDULES

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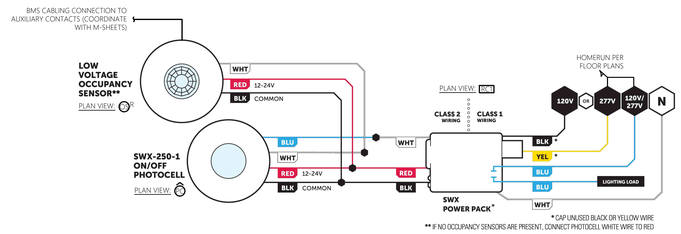
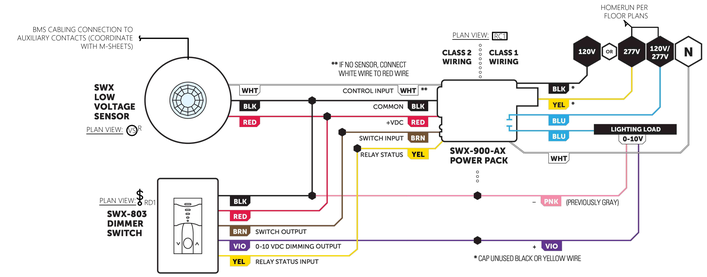
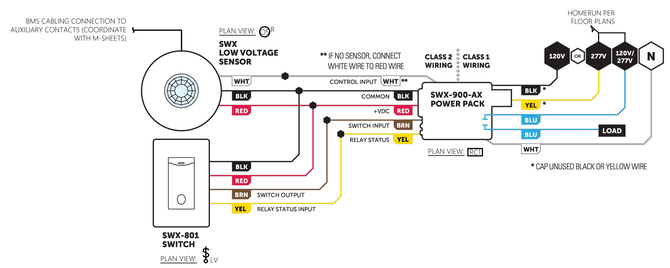


1 LOW VOLTAGE OCCUPANCY SENSOR WITH POWER PACK & LOW VOLTAGE ON/OFF PHOTOCELL
SCALE: NOT TO SCALE TYPICAL



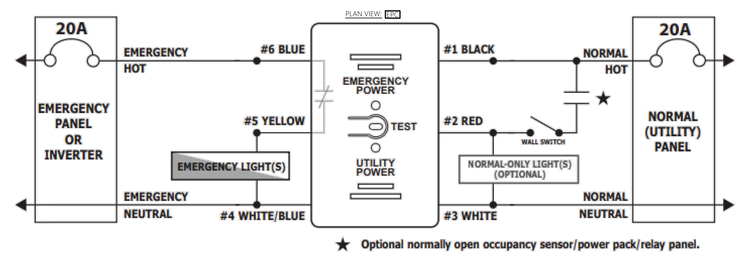
3 0-10V DIMMING SWITCH WITH VACANCY SENSOR CONTROL DETAIL
SCALE: NOT TO SCALE TYPICAL



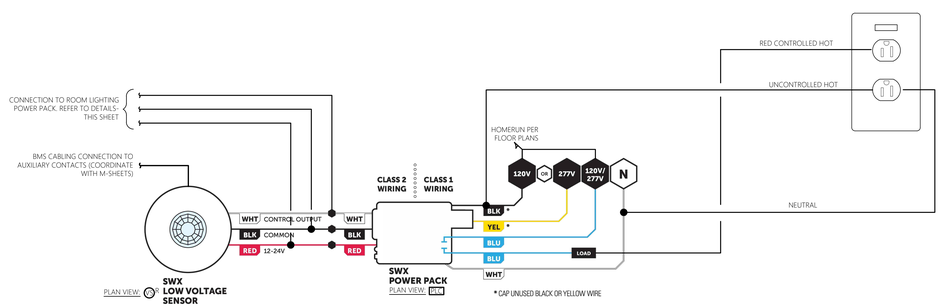
2 ANALOG OCCUPANCY SENSOR WITH POWER PACK & LOW VOLTAGE MOMENTARY SWITCH
SCALE: NOT TO SCALE TYPICAL

MODEL #: SWX-EPC-2 (Standard Configuration)

A common switch controls both normal and emergency lighting in a space. Upon loss of normal power, the emergency lighting comes on regardless of switch position.



4 EMERGENCY LIGHTING DETAIL
SCALE: NOT TO SCALE TYPICAL



5 PLUG LOAD ROOM CONTROLLER DETAIL
SCALE: NOT TO SCALE TYPICAL

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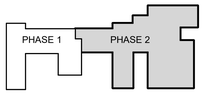

Keyplan

Job Number	31909.00
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Date	August 31, 2026

Revisions

ELECTRICAL DETAILS

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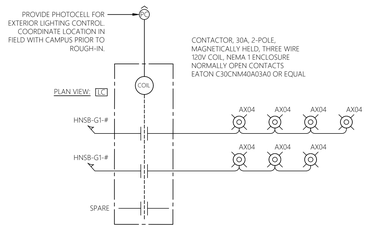
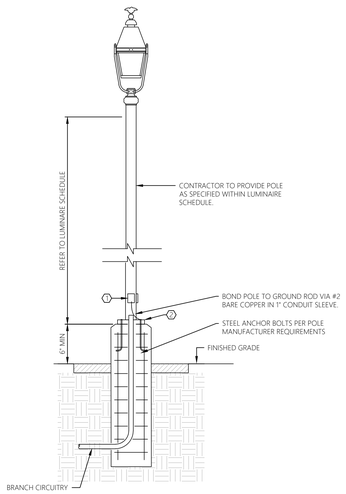


1 EXTERIOR LIGHTING CONTROL DETAIL

SCALE: NOT TO SCALE



GENERAL NOTES:

1. DETAIL IS TYPICAL FOR ALL PROPOSED POLE MOUNTED LUMINAIRES.
2. ARE/SITE LUMINAIRE FIXTURES TO BE DARK SKY COMPLIANT AND UL LISTED FOR WET LOCATION.
3. MOUNT AREA LIGHTS TO ALUMINUM POLE AT HEIGHT INDICATED ON LUMINAIRE SCHEDULE
4. REFER TO ELECTRICAL SITE PLAN FOR PROPOSED LOCATIONS.
5. CONTRACTOR TO ADJUST FINAL AIMING ANGLE OF FIXTURE TO LIGHT DESIRED AREA AND MINIMIZE LIGHT POLLUTION. COORDINATE WITH OWNER.
6. REFER TO LUMINAIRE SCHEDULE FOR SPECIFICATIONS REGARDING LIGHT POLE AND LIGHT FIXTURE.
7. PRECAST FOUNDATIONS MAY BE USED IF APPROVED BY THE ENGINEER.
8. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING CONCRETE FOOTING.

DETAIL KEY NOTES:

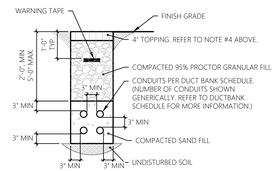
1. HAND HOLE PROVIDED IN POLE. ALL SPLICES SHALL BE IN HAND HOLE. UTILIZE WATERTIGHT SPLICING METHODS. COORDINATE WITH POLE MANUFACTURER TO PROVIDE HAND HOLE (PULL POINT) WITHIN BASE OF POLE AS SHOWN.
2. CONTRACTOR TO COORDINATE BOLT HOLE PATTERN IN FIELD PRIOR TO RELEASING ORDER. PROVIDE BASE PLATE AS REQUIRED FOR ANCHORING POLE TO CONCRETE BASE. CONTRACTOR TO FIELD VERIFY AND PROVIDE AS REQUIRED.

2 TYPICAL AREA/SITE LIGHTING INSTALLATION DETAIL

SCALE: NTS

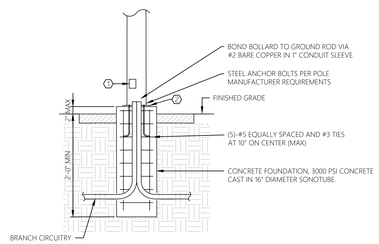
GENERAL NOTES:

1. COORDINATE DUCT BANK REQUIREMENTS (IF ANY) FOR NEW SERVICE WITH THE UTILITY.
2. POWER AND COMMUNICATION CONDUITS TO HAVE SEPARATION OF 12" MINIMUM.
3. DETAIL IS TYPICAL AND MAY REFLECT CONDUITS NOT REQUIRED FOR PROJECT.
4. FINISHED SURFACE TO MATCH SURFACE BEING DISTURBED.
   - IN AREA OF GRASS: USE 4" TOP SOIL & SEEDING.
   - IN ROADWAY OR NON-GRASS: USE COMPACTED 95% PROCTOR GRANULAR FILL.



4 TYPICAL ELECTRICAL BACKFILL DETAIL

SCALE: NTS



GENERAL NOTES:

1. DETAIL IS TYPICAL FOR ALL PROPOSED LIGHTED BOLLARDS.
2. BOLLARD FIXTURES TO BE DARK SKY COMPLIANT AND UL LISTED FOR WET LOCATION.
3. REFER TO ELECTRICAL SITE PLAN FOR PROPOSED LOCATIONS.
4. PRECAST FOUNDATIONS MAY BE USED IF APPROVED BY THE ENGINEER.
5. CONTRACTOR TO COORDINATE BOLT HOLE PATTERN IN FIELD PRIOR TO RELEASING ORDER. PROVIDE BASE PLATE AS REQUIRED FOR ANCHORING POLE TO CONCRETE BASE. CONTRACTOR TO FIELD VERIFY AND PROVIDE AS REQUIRED.

DETAIL KEY NOTES:

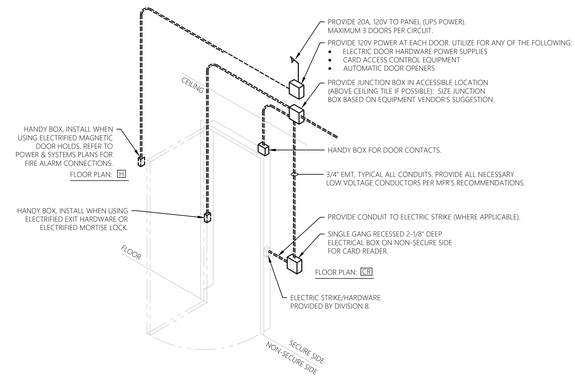
1. HAND HOLE PROVIDED IN POLE. ALL SPLICES SHALL BE IN HAND HOLE. UTILIZE WATERTIGHT SPLICING METHODS. COORDINATE WITH POLE MANUFACTURER TO PROVIDE HAND HOLE (PULL POINT) WITHIN BASE OF POLE AS SHOWN.
2. CONTRACTOR TO COORDINATE BOLT HOLE PATTERN IN FIELD PRIOR TO RELEASING ORDER. PROVIDE BASE PLATE AS REQUIRED FOR ANCHORING POLE TO CONCRETE BASE. CONTRACTOR TO FIELD VERIFY AND PROVIDE AS REQUIRED.

3 LIGHTED BOLLARD FOUNDATION DETAIL

SCALE: NTS

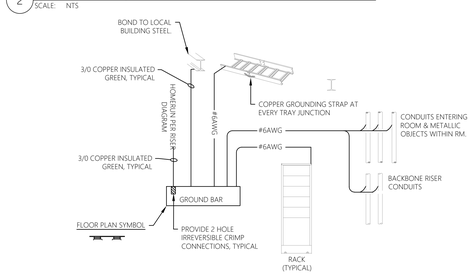
CARD ACCESS CONTROL PROJECT REQUIREMENTS:

1. GENERIC ROUGH-IN REQUIREMENTS ARE ILLUSTRATED IN THE ADJACENT DETAIL. CONTRACTOR SHALL COORDINATE WITH THE CAMPUS STANDARD HARDWARE SYSTEMS SUBMITTALS & PROVIDE ACTUAL ROUGH-IN REQUIRED FOR EACH SPECIFIC DOOR INSTALLATION. THIS DETAIL IS NOT INTENDED TO SHOW ALL CONDITIONS/INSTALLATION REQUIREMENTS.
2. WHERE INSTALLATION IS PROPOSED ON AN EXISTING BLOCK WALL - PROVIDE SURFACE RACEWAY/BOXES.

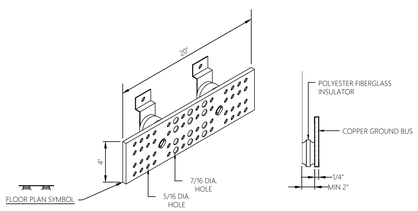


5 TYPICAL ACCESS CONTROL DOOR ROUGH-IN

SCALE: NOT TO SCALE



TYPICAL ROOM BONDING



REQUIREMENTS:

1. PROVIDE A GROUND BAR IN EACH PROPOSED DATA ROOM. CONNECT EACH GROUND BAR, AS DIRECTED ON GROUNDING DETAILS.
2. PROVIDE IRREVERSIBLE COMPRESSION CONNECTORS - TWO HOLE LUG TYPE.
3. GROUND BAR BASIS OF DESIGN - CHATSWORTH, PANDUIT OR HARGER

TYPICAL GROUND BAR

7 GROUNDING RISER DIAGRAM AND BONDING REQUIREMENTS

SCALE: NOT TO SCALE

BASIS OF DESIGN:
8" CORE
LEGRAND EVOLUTION SERIES BATC
DEVICES RECESSED 3-1/4"
COORDINATE FINAL SELECTION OF TRIM AND FINISH DURING SHOP DRAWINGS

6 POKE-THRU BASIS OF DESIGN & INSTALLATION DETAIL

SCALE: NOT TO SCALE

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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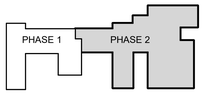
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909.00
Drawing By	CCH
Checked By	SAG
Filename	
Date	August 31, 2026

Revisions

ELECTRICAL DETAILS

STATE OF NEW YORK · SHANE GARGANAGH · 106586 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

E8.2

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FIRE DETECTION & ALARM SYSTEM

SYMBOL	DESCRIPTION
FACP	FIRE ALARM SYSTEM CONTROL PANEL
FARA	FIRE ALARM SYSTEM REMOTE ANNUNICATOR PANEL
F	BUILDING-STANDARD FIRE ALARM PULL STATION. MOUNTED AT 48" AFF.
H	BUILDING-STANDARD HEAT DETECTOR, CEILING MOUNTED
CO	BUILDING-STANDARD CARBON MONOXIDE DETECTOR, CEILING MOUNTED WITH SOUNDER BASE
S	BUILDING-STANDARD SMOKE DETECTOR, CEILING MOUNTED
FDS	FIRE ALARM SERVICE DISCONNECT SWITCH
FCO	FUSE CUT OUT PANEL
SCP	SMOKE CONTROL PANEL
M	ADDRESSABLE INPUT MODULE
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER
I/O	ADDRESSABLE INPUT/OUTPUT RELAY MODULE
R	RELAY MODULE
CM	CONTROL MODULE
DH	DOOR HOLDER
FSD	FIRE SMOKE DAMPER (PROVIDED BY MECHANICAL CONTRACTOR)
WF	SPRINKLER WATER FLOW SWITCH
TS	SPRINKLER VALVE TAMPER SWITCH
	SPEAKER/STROBE, WALL MOUNTED
	STROBE LIGHT, WALL MOUNTED
S D	DUCT MOUNTED SMOKE DETECTOR
S DTS	DUCT MOUNTED SMOKE DETECTOR WITH REMOTE ALARM/SUPERVISORY TEST SWITCH
S FS	FIRE SHUTTER SMOKE DETECTOR
F	PULL STATION MOUNTED AT 48" AFF, SPEAKER/STROBE MOUNTED AT 84" AFF
S	10" ALARM BELL MOUNTED AT 90" AFF
WS	2-WAY COMMUNICATION WARDEN PHONE
WSMP	2-WAY COMMUNICATION WARDEN MASTER PHONE

BDA SYSTEM SYMBOLS

BDA	BI-DIRECTIONAL AMPLIFIER SYSTEM CABINET
BBU	BDA SYSTEM BATTERY BACK UP CABINET
SSP	BDA EQUIPMENT SURGE SUPPRESSOR
D-ANT	BDA ROOFTOP DONOR ANTENNA
ANT	DAS SERVICE ANTENNA

BDA SYSTEM BASIS OF DESIGN AND ALTERNATES:

- HONEYWELL FIPLEX FLEX 2.0 (BASIS OF DESIGN)

ALTERNATE ACCEPTABLE VENDORS:
- ADRF
- COMBA
- WESTELL

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
DWG	DRAWING
(E)	EXISTING TO REMAIN
ER	EXISTING TO BE REMOVED
(ERR)	EXISTING TO BE REPLACED WITH NEW
WP	WEATHERPROOF
BDA	BI-DIRECTIONAL AMPLIFIER
DAS	DISTRIBUTED ANTENNA SYSTEM

FIRE ALARM NOTES:

1. FOR AN EXPLANATION OF THE SYMBOLS AND ABBREVIATIONS USED ON THESE DRAWINGS, REFER TO SYMBOLS LIST AND ABBREVIATION LIST ON THIS SHEET.
2. IN UNFINISHED PORTIONS OF THE BUILDING, SUCH AS BOILER ROOM, FAN ROOMS, PIPE SPACES, ETC., LOCATIONS OF CONDUIT AND OUTLETS ARE APPROXIMATE AND SHALL CLEAR PIPING AND ALL OTHER CONSTRUCTION. CONDUITS IN THESE PORTIONS OF THE BUILDING SHALL BE RUN EXPOSED BUT MAY BE RUN CONCEALED WITH THE UNDERSTANDING THAT ALL OUTLETS MUST BE EXTENDED AS DIRECTED TO CLEAR ANY INTERFERENCE WITH FIXTURES.
3. IN THE BOILER ROOM, SYSTEM CONDUITS, SUCH AS FOR LOW VOLTAGE, FIRE SIGNAL, ETC., SHALL NOT BE RUN OVER BOILERS.
4. NO CONDUIT SHALL BE ROUTED IN ANY FLOOR IN CONTACT WITH THE EARTH UNLESS OTHERWISE DIRECTED ON THE PLAN.
5. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED AREAS AND FLUSH TYPE IN FINISHED AREAS, UNLESS OTHERWISE NOTED. THE JUNCTION AND PULL BOXES SHALL BE LOCATED APPROXIMATELY WHERE INDICATED ON THE PLAN TO SUIT CONDUIT ENTRANCE, BUT SHALL IN ALL CASES, BE LOCATED TO AVOID INTERFERENCE WITH EQUIPMENT FROM OTHER TRADES AND SHALL BE LOCATED SO THAT COVERS ARE READILY ACCESSIBLE.
6. THIS CONTRACTOR SHALL PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS ON NORMAL AND EMERGENCY CIRCUITS.
7. ALL PENETRATIONS THROUGH RATED WALLS, CEILING AND FLOORS SHALL BE FIRESTOPPED.
8. RACEWAYS OR WIRING SHALL NOT PENETRATE THE TOP OF ANY NEMA 3R CONTROL EQUIPMENT OR ENCLOSURES.
9. ALL WORK SHALL CONFORM TO THE LATEST REQUIREMENTS OF NEW YORK STATE BUILDING CODE, BUREAU OF ELECTRICAL CONTROL, NFPA 72 CODE.
10. SURVEY FIELD CONDITIONS AND VERIFY THAT WORK IS FEASIBLE AS SHOWN. VERIFY LOCATION OF OUTLETS IN RELATION TO STRUCTURAL AND OTHER ELEMENTS AS REQUIRED. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.
11. ENGINEERING DRAWINGS DETERMINE LOCATION AND TYPE OF ALL OUTLETS AND TAKE PRECEDENCE OVER ALL OTHERS, U.O.I. ELECTRICAL ENGINEER'S POWER PLAN SHALL GOVERN THE WIRING LAYOUT AND INSTALLATION IN COMPLIANCE WITH ALL LAWS APPLICABLE AND ENFORCED BY GOVERNING AUTHORITIES.
12. ALL EXISTING AND NEW FLOOR OR WALL PENETRATIONS FOR CONDUITS SHALL BE FULLY PACKED AND SEALED IN ACCORDANCE WITH THE APPLICABLE BUILDING AND FIRE CODES.
13. COORDINATE NEW ELECTRICAL WITH EXISTING, WHERE OCCURS.
14. IN THE EVENT OF ACCIDENTAL DISCONNECTION AND/OR DAMAGE TO THE FIRE ALARM SYSTEM, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A "FIRE WATCH", IN COMPLIANCE WITH ALL APPLICABLE CODES, DURING ALL TIMES THE SYSTEM IS NON-OPERATIONAL, AND UNTIL THE FIRE ALARM SYSTEM OPERATION IS RESTORED, INSPECTED AND APPROVED BY EH&S.
15. CONTRACTOR SHALL REMOVE ALL EXISTING ACCESSIBLE FIRE ALARM CABLES THAT ARE ABANDONED AND NOT BEING USED.
16. CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY DEFECTS OR DAMAGES TO THE EXISTING FIRE ALARM SYSTEM DURING DEMOLITION OR REMOVAL OF FIRE ALARM PANEL, DEVICES, WIRING, ETC. WITHOUT COORDINATION AND SUPERVISION OF FIRE ALARM VENDOR.

FIRE ALARM DEMOLITION NOTES:

1. EXISTING FIRE ALARM SYSTEM SHALL REMAIN OPERATIONAL DURING CONSTRUCTION. PERFORM ALL REQUIRED DEMOLITION OF EXISTING FIRE ALARM DEVICES.
2. REMOVE EXISTING WIRING, RACEWAYS, CONDUITS, AND OTHER ELECTRICAL EQUIPMENT OR APPARATUS AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS. REFER TO PHASING NOTES IN THE DRAWINGS FOR ADDITIONAL INFORMATION.
3. INCLUDE THE FURNISHING OF ALL MATERIALS, CUTTING, EXTENSIONS, CONNECTIONS, REPAIRING, ADAPTING, AND OTHER WORK INCIDENTAL THERETO, TOGETHER WITH SUCH TEMPORARY CONNECTIONS AS MAY BE REQUIRED PENDING COMPLETION OF THE PERMANENT WORK.
4. INCLUDE THE REMOVAL OF MATERIALS WHICH MAY INTERFERE WITH THE INSTALLATIONS.
5. LEAVE WORK IN GOOD WORKING ORDER IN THE CONDITION EQUAL TO THE ADJACENT NEW OR EXISTING WORK.
6. THE WORK OF TAKING DOWN AND REMOVING ANY PART OF EXISTING EQUIPMENT, OF MAKING ALTERATIONS OR OF PREPARING FOR AND REPLACING NEW WORK THEREIN TO BE DONE ONLY AFTER PERMISSION HAS BEEN OBTAINED BY THE ENGINEER AND OWNER.
7. DISCONNECT, REMOVE, AND/OR RELOCATE ELECTRICAL MATERIAL, EQUIPMENT, DEVICES, COMPONENTS, AND OTHER WORK NOTED AND REQUIRED BY DEMOLITION OR ALTERATIONS IN EXISTING CONSTRUCTION.
8. INTERRUPT ALARM AND EMERGENCY SYSTEMS ONLY WITH WRITTEN CONSENT OF THE OWNER.
9. PROVIDE TEMPORARY POWER FOR LIFE SAFETY AND OTHER EQUIPMENT AS DIRECTED BY OWNER WHEN POWER IS TO BE INTERRUPTED. THIS CONTRACTOR SHALL ALSO RETURN AFTER DEMOLITION TO REMOVE TEMPORARY LIGHTING.
10. OWNER AND GENERAL CONTRACTOR TO COORDINATE ON ELECTRICAL SHUTDOWNS. ELECTRICAL CONTRACTOR TO MAKE ALLOWANCE FOR OVERTIME TO ACCOMPLISH SHUTDOWNS AND RECONNECTIONS DURING THIS PHASE OF THE WORK.

FIRE ALARM PHASING NOTES:

1. ALL NEW PHASE 2 DEVICES SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1 WORK, LOCATED IN MAIN ELECTRICAL ROOM (G01).
   ALL NEW PHASE 2 DEVICES MUST EXACTLY MATCH PHASE 1 DEVICES AND MUST BE COMPATIBLE WITH NEW FACP INSTALLED UNDER PHASE 1 WORK.
2. PROVIDE TEMPORARY HEAT DETECTORS AT 50' SPACING IN ALL CORRIDORS IN THE PHASE 2 AREA (WORK AREAS AND OCCUPIED AREAS), AND CONNECT ALL TEMPORARY HEAT DETECTORS TO THE NEW FACP INSTALLED UNDER PHASE 1.
3. CONTRACTOR SHALL CONFIRM ALL EXISTING DEVICES THROUGHOUT OCCUPIED AREAS ARE ACTIVE IN THE NEW FACP. EXISTING FA DEVICES AND TEMPOARY DETECTORS IN OCCUPIED AREAS WILL BE ACTIVE DURING THIS STAGE OF WORK.
4. THE EXISTING SIMPLEX FA PANEL IN THE LOADING DOCK WILL REMAIN ACTIVE UNTIL NEW DEVICES SERVING THE AREAS SERVED BY THE SIMPLEX FIRE ALARM PANEL ARE INSTALLED AND CONNECTED TO THE PHASE 1 FACP. UPON COMPLETION AND CONNECTION TO NEW FACP, THE EXISTING SIMPLEX PANEL AND DEVICES CAN BE REMOVED. ALL NEW DEVICES IN THE EXISTING LOADING DOCK AREAS SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1.
5. PROVIDE PHASE INSPECTION WITH AHJ AND OBTAIN TESTING AND COMMISSIONING PRIOR TO REMOVAL OF EXISTING FIRE ALARM DEVICES IN THE WORK AREA.
6. PROVIDE NEW FIRE ALARM DEVICES IN THE PHASE 2 WORK AREAS AND CONNECT TO THE PHASE 1 FACP, REFER TO FIRE ALARM DRAWINGS.
7. REMOVE ALL EXISTING FIRE ALARM DEVICES IN THE PHASE 2 WORK AREA. EXISTING SIMPLEX FIRE ALARM CONTROL PANEL WILL REMAIN ACTIVE UNTIL CONNECTION OF NEW DEVICES THROUGHOUT THE PHASE 2 OCCUPIED AREA TO THE PHASE 1 FACP IS COMPLETE.
8. AS PER CORNELL STANDARDS, NOTIFICATION APPLIANCE CIRCUITS SHALL BE OF THE CLASS A TYPE OR INSTALLED AS CLASS B ON ALTERNATING CIRCUITS IF APPROVED BY CU UFMO (EVERY OTHER DEVICE CONNECTED TO SAME CABLING) SUCH THAT THE LOSS OF ONE CIRCUIT SHALL NOT RESULT IN THE AREA LOSING COMPLETE AUDIBLE/VISUAL NOTIFICATION.
9. REMOVE ALL TEMPORARY HEAT DETECTORS FROM THE WORK AREA ALONG WITH WIRING AND CONDUITS. CONTRACTOR SHALL CONFIRM ALL NEW FA DEVICES ARE PROPERLY WORKING IN THE PHASE 2 WORK AREA PRIOR TO THE REMOVAL OF TEMPORARY HEAT DETECTORS.
10. UPON COMPLETION OF PHASE 2, ALL FA DEVICES IN PLANT SCIENCE BUILDING WILL BE ON THE NEW FACP.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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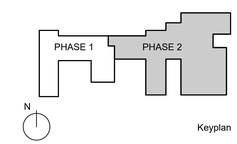
Notes:



Keyplan

Job Number
Drawing By
Checked By
Filename
Date August 31, 2026

Revisions

FIRE ALARM SYMBOLS, ABBREVIATIONS AND NOTES

STATE OF NEW YORK · RONALD DIAZ · 085359 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale:

FA0.1

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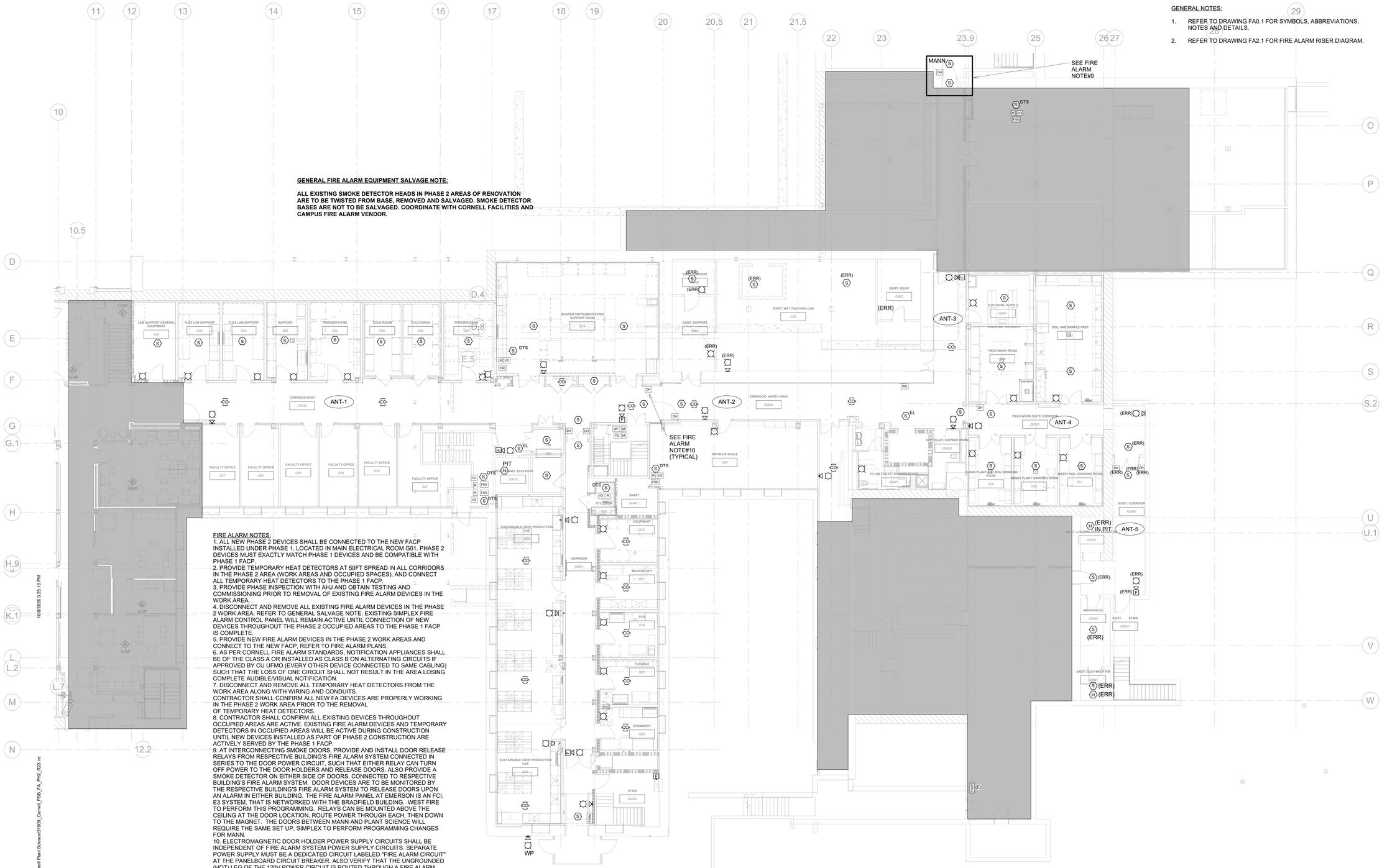
GENERAL NOTES:

1. REFER TO DRAWING FA0.1 FOR SYMBOLS, ABBREVIATIONS, NOTES AND DETAILS.
2. REFER TO DRAWING FA2.1 FOR FIRE ALARM RISER DIAGRAM.

GENERAL FIRE ALARM EQUIPMENT SALVAGE NOTE:

ALL EXISTING SMOKE DETECTOR HEADS IN PHASE 2 AREAS OF RENOVATION ARE TO BE TWISTED FROM BASE, REMOVED AND SALVAGED. SMOKE DETECTOR BASES ARE NOT TO BE SALVAGED. COORDINATE WITH CORNELL FACILITIES AND CAMPUS FIRE ALARM VENDOR.



FIRE ALARM NOTES:

1. ALL NEW PHASE 2 DEVICES SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1, LOCATED IN MAIN ELECTRICAL ROOM G01. PHASE 2 DEVICES MUST EXACTLY MATCH PHASE 1 DEVICES AND BE COMPATIBLE WITH PHASE 1 FACP.
2. PROVIDE TEMPORARY HEAT DETECTORS AT 50FT SPREAD IN ALL CORRIDORS IN THE PHASE 2 AREA (WORK AREAS AND OCCUPIED SPACES), AND CONNECT ALL TEMPORARY HEAT DETECTORS TO THE PHASE 1 FACP.
3. PROVIDE PHASE INSPECTION WITH AHJ AND OBTAIN TESTING AND COMMISSIONING PRIOR TO REMOVAL OF EXISTING FIRE ALARM DEVICES IN THE WORK AREA.
4. DISCONNECT AND REMOVE ALL EXISTING FIRE ALARM DEVICES IN THE PHASE 2 WORK AREA. REFER TO GENERAL SALVAGE NOTE. EXISTING SIMPLEX FIRE ALARM CONTROL PANEL WILL REMAIN ACTIVE UNTIL CONNECTION OF NEW DEVICES THROUGHOUT THE PHASE 2 OCCUPIED AREAS TO THE PHASE 1 FACP IS COMPLETE.
5. PROVIDE NEW FIRE ALARM DEVICES IN THE PHASE 2 WORK AREAS AND CONNECT TO THE NEW FACP, REFER TO FIRE ALARM PLANS.
6. AS PER CORNELL FIRE ALARM STANDARDS, NOTIFICATION APPLIANCES SHALL BE OF THE CLASS A OR INSTALLED AS CLASS B ON ALTERNATING CIRCUITS IF APPROVED BY CU UPMO (EVERY OTHER DEVICE CONNECTED TO SAME CABLING) SUCH THAT THE LOSS OF ONE CIRCUIT SHALL NOT RESULT IN THE AREA LOSING COMPLETE AUDIBLE/VISUAL NOTIFICATION.
7. DISCONNECT AND REMOVE ALL TEMPORARY HEAT DETECTORS FROM THE WORK AREA ALONG WITH WIRING AND CONDUITS. CONTRACTOR SHALL CONFIRM ALL NEW FA DEVICES ARE PROPERLY WORKING IN THE PHASE 2 WORK AREA PRIOR TO THE REMOVAL OF TEMPORARY HEAT DETECTORS.
8. CONTRACTOR SHALL CONFIRM ALL EXISTING DEVICES THROUGHOUT OCCUPIED AREAS ARE ACTIVE. EXISTING FIRE ALARM DEVICES AND TEMPORARY DETECTORS IN OCCUPIED AREAS WILL BE ACTIVE DURING CONSTRUCTION UNTIL NEW DEVICES INSTALLED AS PART OF PHASE 2 CONSTRUCTION ARE ACTIVELY SERVED BY THE PHASE 1 FACP.
9. AT INTERCONNECTING SMOKE DOORS, PROVIDE AND INSTALL DOOR RELEASE RELAYS FROM RESPECTIVE BUILDING'S FIRE ALARM SYSTEM CONNECTED IN SERIES TO THE DOOR POWER CIRCUIT, SUCH THAT EITHER RELAY CAN TURN OFF POWER TO THE DOOR HOLDERS AND RELEASE DOORS. ALSO PROVIDE A SMOKE DETECTOR ON EITHER SIDE OF DOORS, CONNECTED TO RESPECTIVE BUILDING'S FIRE ALARM SYSTEM. DOOR DEVICES ARE TO BE MONITORED BY THE RESPECTIVE BUILDING'S FIRE ALARM SYSTEM TO RELEASE DOORS UPON AN ALARM IN EITHER BUILDING. THE FIRE ALARM PANEL AT EMERSON IS AN FCI, E3 SYSTEM, THAT IS NETWORKED WITH THE BRADFIELD BUILDING. WEST FIRE TO PERFORM THIS PROGRAMMING. RELAYS CAN BE MOUNTED ABOVE THE CEILING AT THE DOOR LOCATION, ROUTE POWER THROUGH EACH, THEN DOWN TO THE MAGNET. THE DOORS BETWEEN MANN AND PLANT SCIENCE WILL REQUIRE THE SAME SET UP, SIMPLEX TO PERFORM PROGRAMMING CHANGES FOR MANN.
10. ELECTROMAGNETIC DOOR HOLDER POWER SUPPLY CIRCUITS SHALL BE INDEPENDENT OF FIRE ALARM SYSTEM POWER SUPPLY CIRCUITS. SEPARATE POWER SUPPLY MUST BE A DEDICATED CIRCUIT LABELED "FIRE ALARM CIRCUIT" AT THE PANELBOARD CIRCUIT BREAKER. ALSO VERIFY THAT THE UNGROUNDED (HOT) LEG OF THE 120V POWER CIRCUIT IS ROUTED THROUGH A FIRE ALARM RELAY SO THAT UPON FIRE ALARM ACTIVATION, LOCAL SMOKE DETECTOR TRIP, OR TOTAL LOSS OF PRIMARY BUILDING POWER, THE CIRCUIT IS IMMEDIATELY INTERRUPTED TO RELEASE THE FAIL-SAFE DOORS.

D 1 FA1.0 GROUND FLOOR
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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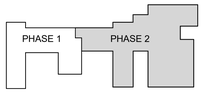
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

GROUND FLOOR PLAN - FIRE ALARM NEW WORK

STATE OF NEW YORK · RONALD DIAZ · 085359 · LICENSED PROFESSIONAL ENGINEER

BID DOCUMENTS
Scale: 1/8" = 1'-0"

FA1.0

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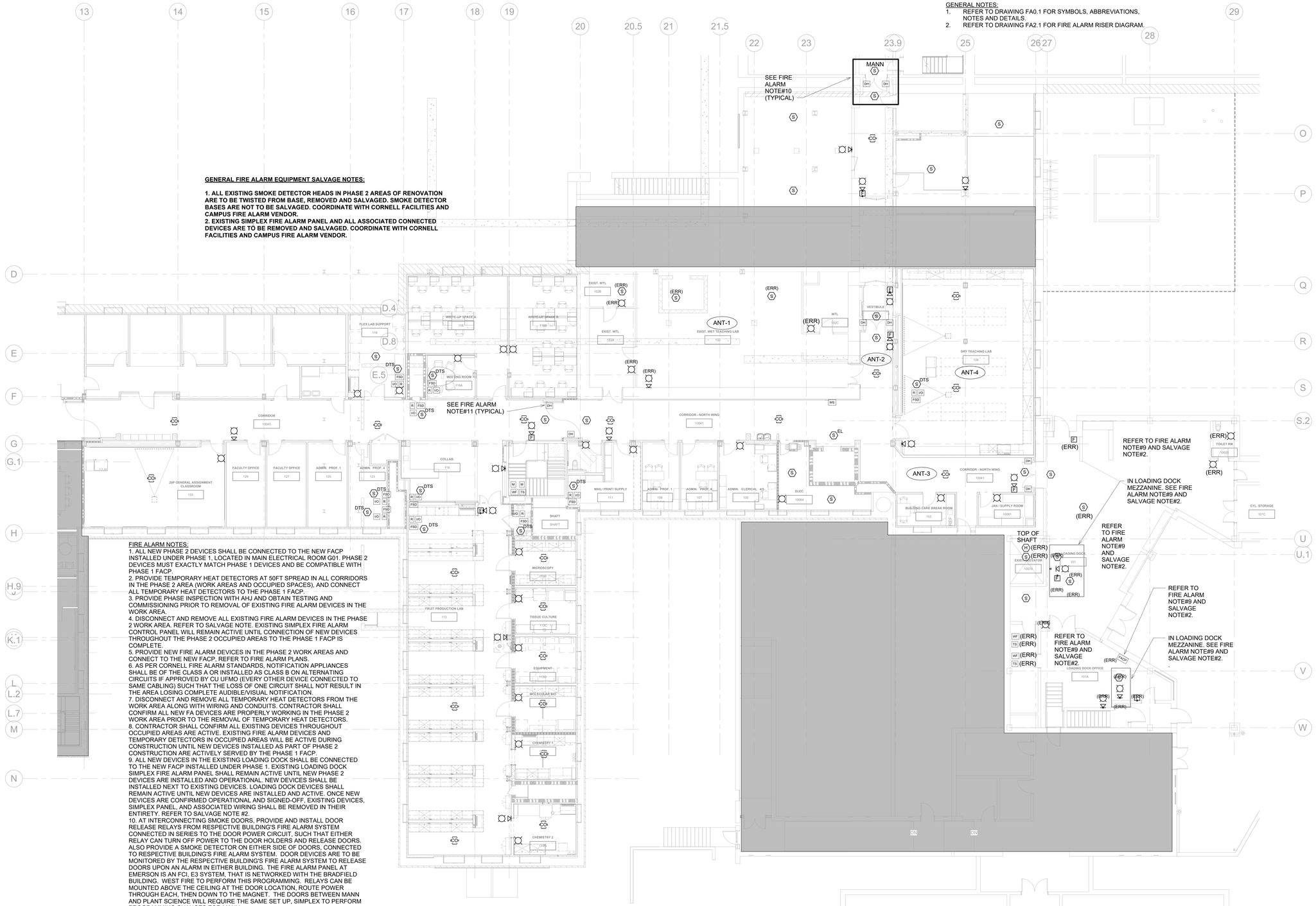
GENERAL NOTES:
1. REFER TO DRAWING FA0.1 FOR SYMBOLS, ABBREVIATIONS, NOTES AND DETAILS.
2. REFER TO DRAWING FA2.1 FOR FIRE ALARM RISER DIAGRAM.

GENERAL FIRE ALARM EQUIPMENT SALVAGE NOTES:

1. ALL EXISTING SMOKE DETECTOR HEADS IN PHASE 2 AREAS OF RENOVATION ARE TO BE TWISTED FROM BASE, REMOVED AND SALVAGED. SMOKE DETECTOR BASES ARE NOT TO BE SALVAGED. COORDINATE WITH CORNELL FACILITIES AND CAMPUS FIRE ALARM VENDOR.
2. EXISTING SIMPLEX FIRE ALARM PANEL AND ALL ASSOCIATED CONNECTED DEVICES ARE TO BE REMOVED AND SALVAGED. COORDINATE WITH CORNELL FACILITIES AND CAMPUS FIRE ALARM VENDOR.



FIRE ALARM NOTES:
1. ALL NEW PHASE 2 DEVICES SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1, LOCATED IN MAIN ELECTRICAL ROOM G01. PHASE 2 DEVICES MUST EXACTLY MATCH PHASE 1 DEVICES AND BE COMPATIBLE WITH PHASE 1 FACP.
2. PROVIDE TEMPORARY HEAT DETECTORS AT 50FT SPREAD IN ALL CORRIDORS IN THE PHASE 2 AREA (WORK AREAS AND OCCUPIED SPACES), AND CONNECT ALL TEMPORARY HEAT DETECTORS TO THE PHASE 1 FACP.
3. PROVIDE PHASE INSPECTION WITH AHJ AND OBTAIN TESTING AND COMMISSIONING PRIOR TO REMOVAL OF EXISTING FIRE ALARM DEVICES IN THE WORK AREA.
4. DISCONNECT AND REMOVE ALL EXISTING FIRE ALARM DEVICES IN THE PHASE 2 WORK AREA. REFER TO SALVAGE NOTE. EXISTING SIMPLEX FIRE ALARM CONTROL PANEL WILL REMAIN ACTIVE UNTIL CONNECTION OF NEW DEVICES THROUGHOUT THE PHASE 2 OCCUPIED AREAS TO THE PHASE 1 FACP IS COMPLETE.
5. PROVIDE NEW FIRE ALARM DEVICES IN THE PHASE 2 WORK AREAS AND CONNECT TO THE NEW FACP. REFER TO FIRE ALARM PLANS.
6. AS PER CORNELL FIRE ALARM STANDARDS, NOTIFICATION APPLIANCES SHALL BE OF THE CLASS A OR INSTALLED AS CLASS B ON ALTERNATING CIRCUITS IF APPROVED BY CU UFMO (EVERY OTHER DEVICE CONNECTED TO SAME CABLING) SUCH THAT THE LOSS OF ONE CIRCUIT SHALL NOT RESULT IN THE AREA LOSING COMPLETE AUDIBLE/VISUAL NOTIFICATION.
7. DISCONNECT AND REMOVE ALL TEMPORARY HEAT DETECTORS FROM THE WORK AREA ALONG WITH WIRING AND CONDUITS. CONTRACTOR SHALL CONFIRM ALL NEW FA DEVICES ARE PROPERLY WORKING IN THE PHASE 2 WORK AREA PRIOR TO THE REMOVAL OF TEMPORARY HEAT DETECTORS.
8. CONTRACTOR SHALL CONFIRM ALL EXISTING DEVICES THROUGHOUT OCCUPIED AREAS ARE ACTIVE. EXISTING FIRE ALARM DEVICES AND TEMPORARY DETECTORS IN OCCUPIED AREAS WILL BE ACTIVE DURING CONSTRUCTION UNTIL NEW DEVICES INSTALLED AS PART OF PHASE 2 CONSTRUCTION ARE ACTIVELY SERVED BY THE PHASE 1 FACP.
9. ALL NEW DEVICES IN THE EXISTING LOADING DOCK SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1. EXISTING LOADING DOCK SIMPLEX FIRE ALARM PANEL SHALL REMAIN ACTIVE UNTIL NEW PHASE 2 DEVICES ARE INSTALLED AND OPERATIONAL. NEW DEVICES SHALL BE INSTALLED NEXT TO EXISTING DEVICES. LOADING DOCK DEVICES SHALL REMAIN ACTIVE UNTIL NEW DEVICES ARE INSTALLED AND ACTIVE. ONCE NEW DEVICES ARE CONFIRMED OPERATIONAL AND SIGNED-OFF, EXISTING DEVICES, SIMPLEX PANEL, AND ASSOCIATED WIRING SHALL BE REMOVED IN THEIR ENTIRETY. REFER TO SALVAGE NOTE #2.
10. AT INTERCONNECTING SMOKE DOORS, PROVIDE AND INSTALL DOOR RELEASE RELAYS FROM RESPECTIVE BUILDING'S FIRE ALARM SYSTEM CONNECTED IN SERIES TO THE DOOR POWER CIRCUIT, SUCH THAT EITHER RELAY CAN TURN OFF POWER TO THE DOOR HOLDERS AND RELEASE DOORS. ALSO PROVIDE A SMOKE DETECTOR ON EITHER SIDE OF DOORS, CONNECTED TO RESPECTIVE BUILDING'S FIRE ALARM SYSTEM. DOOR DEVICES ARE TO BE MONITORED BY THE RESPECTIVE BUILDING'S FIRE ALARM SYSTEM TO RELEASE DOORS UPON AN ALARM IN EITHER BUILDING. THE FIRE ALARM PANEL AT EMERSON IS AN FCI, E3 SYSTEM, THAT IS NETWORKED WITH THE BRADFIELD BUILDING. WEST FIRE TO PERFORM THIS PROGRAMMING. RELAYS CAN BE MOUNTED ABOVE THE CEILING AT THE DOOR LOCATION, ROUTE POWER THROUGH EACH, THEN DOWN TO THE MAGNET. THE DOORS BETWEEN MANN AND PLANT SCIENCE WILL REQUIRE THE SAME SET UP, SIMPLEX TO PERFORM PROGRAMMING CHANGES FOR MANN.
11. ELECTROMAGNETIC DOOR HOLDER POWER SUPPLY CIRCUITS SHALL BE INDEPENDENT OF FIRE ALARM SYSTEM POWER SUPPLY CIRCUITS. SEPARATE POWER SUPPLY MUST BE A DEDICATED CIRCUIT LABELED "FIRE ALARM CIRCUIT" AT THE PANELBOARD CIRCUIT BREAKER. ALSO VERIFY THAT THE UNGROUNDED (HOT) LEG OF THE 120V POWER CIRCUIT IS ROUTED THROUGH A FIRE ALARM RELAY SO THAT UPON FIRE ALARM ACTIVATION, LOCAL SMOKE DETECTOR TRIP, OR TOTAL LOSS OF PRIMARY BUILDING POWER, THE CIRCUIT IS IMMEDIATELY INTERRUPTED TO RELEASE THE FAIL-SAFE DOORS.

D 1 FIRST FLOOR
FA1.1 SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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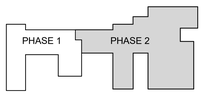

Keyplan

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Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

FIRST FLOOR PLAN - FIRE ALARM NEW WORK

BID DOCUMENTS
Scale: 1/8" = 1'-0"

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FA1.1

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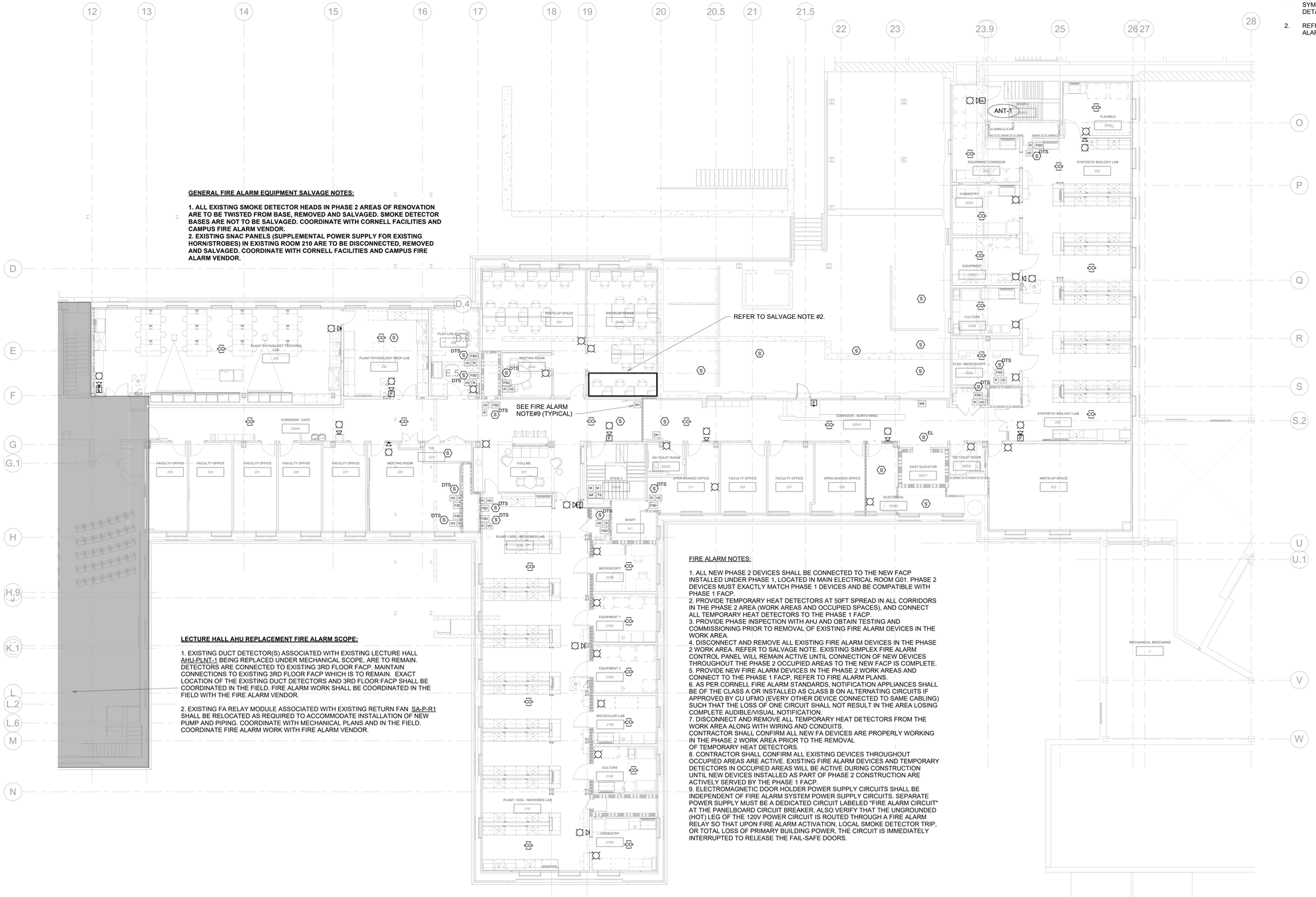
2. REFER TO DRAWING FA2.1 FOR FIRE ALARM RISER DIAGRAM.

GENERAL FIRE ALARM EQUIPMENT SALVAGE NOTES:

1. ALL EXISTING SMOKE DETECTOR HEADS IN PHASE 2 AREAS OF RENOVATION ARE TO BE TWISTED FROM BASE, REMOVED AND SALVAGED. SMOKE DETECTOR BASES ARE NOT TO BE SALVAGED. COORDINATE WITH CORNELL FACILITIES AND CAMPUS FIRE ALARM VENDOR.
2. EXISTING SNAC PANELS (SUPPLEMENTAL POWER SUPPLY FOR EXISTING HORN/STROBES) IN EXISTING ROOM 210 ARE TO BE DISCONNECTED, REMOVED AND SALVAGED. COORDINATE WITH CORNELL FACILITIES AND CAMPUS FIRE ALARM VENDOR.



LECTURE HALL AHU REPLACEMENT FIRE ALARM SCOPE:

1. EXISTING DUCT DETECTOR(S) ASSOCIATED WITH EXISTING LECTURE HALL AHU-PLNT-1 BEING REPLACED UNDER MECHANICAL SCOPE, ARE TO REMAIN. DETECTORS ARE CONNECTED TO EXISTING 3RD FLOOR FACP. MAINTAIN CONNECTIONS TO EXISTING 3RD FLOOR FACP WHICH IS TO REMAIN. EXACT LOCATION OF THE EXISTING DUCT DETECTORS AND 3RD FLOOR FACP SHALL BE COORDINATED IN THE FIELD. FIRE ALARM WORK SHALL BE COORDINATED IN THE FIELD WITH THE FIRE ALARM VENDOR.

2. EXISTING FA RELAY MODULE ASSOCIATED WITH EXISTING RETURN FAN SA-P-R1 SHALL BE RELOCATED AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW PUMP AND PIPING. COORDINATE WITH MECHANICAL PLANS AND IN THE FIELD. COORDINATE FIRE ALARM WORK WITH FIRE ALARM VENDOR.

FIRE ALARM NOTES:

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D 1 FA1.2 SECOND FLOOR
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

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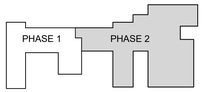
Notes:



Keyplan

Job Number	31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

SECOND FLOOR PLAN - FIRE ALARM NEW WORK

BID DOCUMENTS
Scale: 1/8" = 1'-0"

FA1.2

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GENERAL NOTES:

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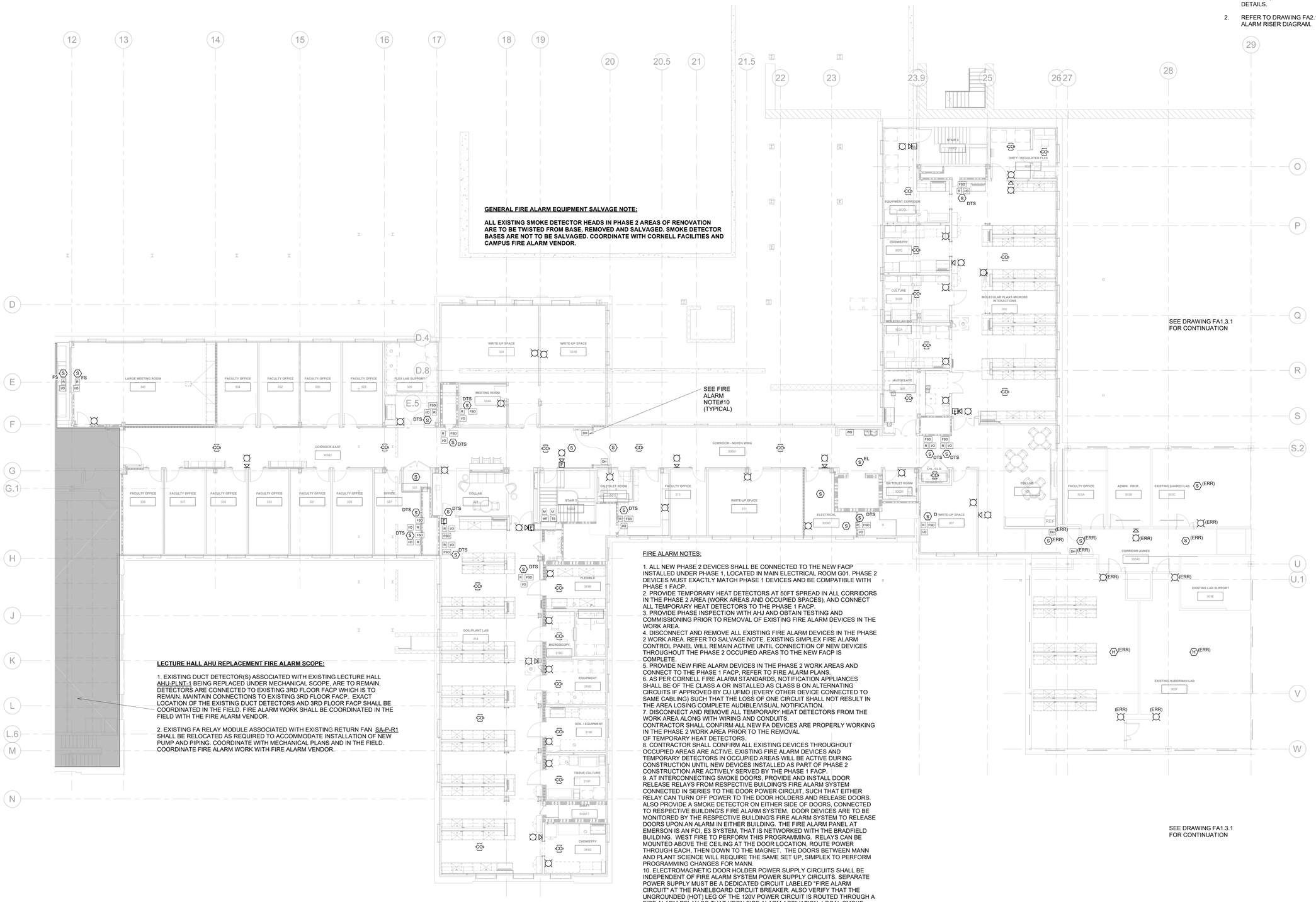

GENERAL FIRE ALARM EQUIPMENT SALVAGE NOTE:

ALL EXISTING SMOKE DETECTOR HEADS IN PHASE 2 AREAS OF RENOVATION ARE TO BE TWISTED FROM BASE, REMOVED AND SALVAGED. SMOKE DETECTOR BASES ARE NOT TO BE SALVAGED. COORDINATE WITH CORNELL FACILITIES AND CAMPUS FIRE ALARM VENDOR.

LECTURE HALL AHU REPLACEMENT FIRE ALARM SCOPE:

1. EXISTING DUCT DETECTOR(S) ASSOCIATED WITH EXISTING LECTURE HALL AHU-PLNT-1 BEING REPLACED UNDER MECHANICAL SCOPE, ARE TO REMAIN. DETECTORS ARE CONNECTED TO EXISTING 3RD FLOOR FACP WHICH IS TO REMAIN. MAINTAIN CONNECTIONS TO EXISTING 3RD FLOOR FACP. EXACT LOCATION OF THE EXISTING DUCT DETECTORS AND 3RD FLOOR FACP SHALL BE COORDINATED IN THE FIELD. FIRE ALARM WORK SHALL BE COORDINATED IN THE FIELD WITH THE FIRE ALARM VENDOR.

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FIRE ALARM NOTES:

1. ALL NEW PHASE 2 DEVICES SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1, LOCATED IN MAIN ELECTRICAL ROOM G01. PHASE 2 DEVICES MUST EXACTLY MATCH PHASE 1 DEVICES AND BE COMPATIBLE WITH PHASE 1 FACP.
2. PROVIDE TEMPORARY HEAT DETECTORS AT 50FT SPREAD IN ALL CORRIDORS IN THE PHASE 2 AREA (WORK AREAS AND OCCUPIED SPACES), AND CONNECT ALL TEMPORARY HEAT DETECTORS TO THE PHASE 1 FACP.
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D 1 THIRD FLOOR
FA1.3 SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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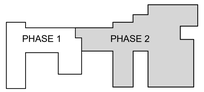

Keyplan

Job Number	31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

THIRD FLOOR PLAN - FIRE ALARM NEW WORK

BID DOCUMENTS
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FA1.3

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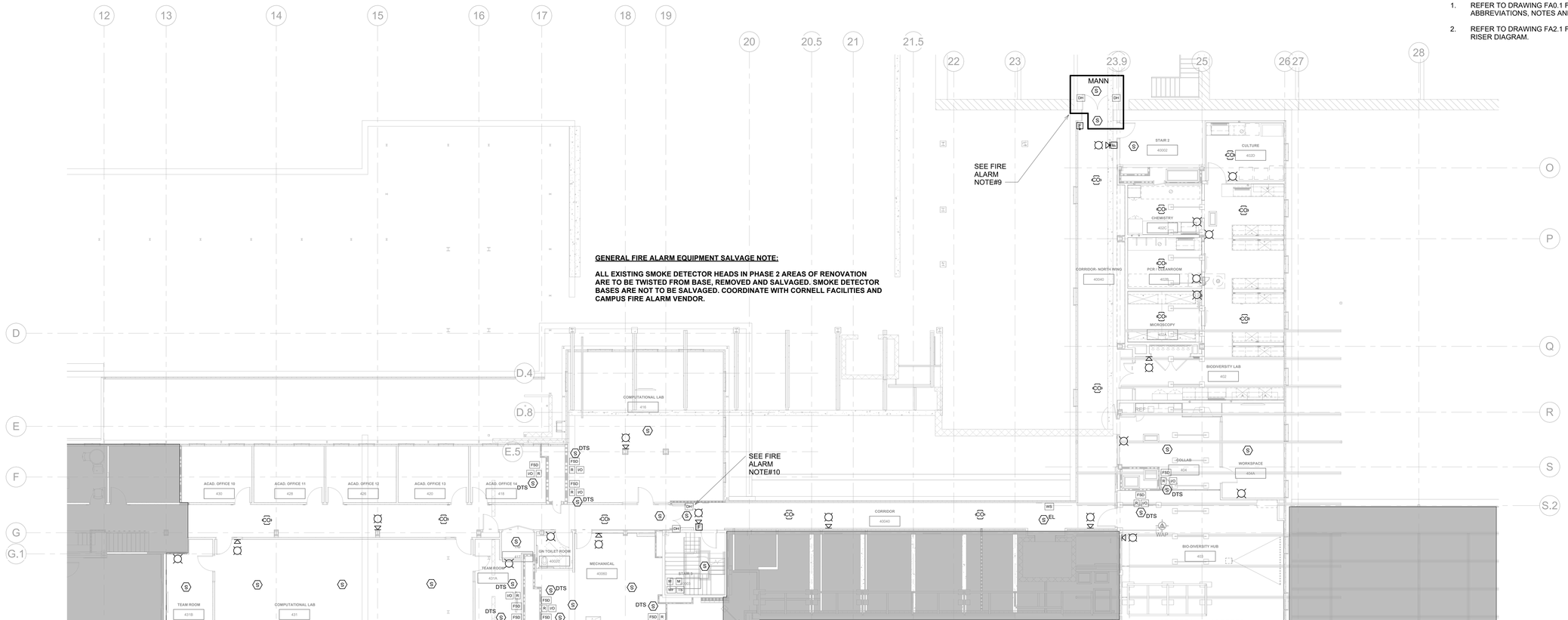

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FIRE ALARM NOTES:

1. ALL NEW PHASE 2 DEVICES SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1, LOCATED IN MAIN ELECTRICAL ROOM G01. PHASE 2 DEVICES MUST EXACTLY MATCH PHASE 1 DEVICES AND BE COMPATIBLE WITH PHASE 1 FACP.
2. PROVIDE TEMPORARY HEAT DETECTORS AT 50FT SPREAD IN ALL CORRIDORS IN THE PHASE 2 AREA (WORK AREAS AND OCCUPIED SPACES), AND CONNECT ALL TEMPORARY HEAT DETECTORS TO THE PHASE 1 FACP.
3. PROVIDE PHASE INSPECTION WITH AHJ AND OBTAIN TESTING AND COMMISSIONING PRIOR TO REMOVAL OF EXISTING FIRE ALARM DEVICES IN THE WORK AREA.
4. DISCONNECT AND REMOVE ALL EXISTING FIRE ALARM DEVICES IN THE PHASE 2 WORK AREA. REFER TO SALVAGE NOTE. EXISTING SIMPLEX FIRE ALARM CONTROL PANEL WILL REMAIN ACTIVE UNTIL CONNECTION OF NEW DEVICES THROUGHOUT THE PHASE 2 OCCUPIED AREAS TO THE NEW FACP IS COMPLETE.
5. PROVIDE NEW FIRE ALARM DEVICES IN THE PHASE 2 WORK AREAS AND CONNECT TO THE PHASE 1 FACP. REFER TO FIRE ALARM PLANS.
6. AS PER CORNELL FIRE ALARM STANDARDS, NOTIFICATION APPLIANCES SHALL BE OF THE CLASS A OR INSTALLED AS CLASS B ON ALTERNATING CIRCUITS IF APPROVED BY CU UFMO (EVERY OTHER DEVICE CONNECTED TO SAME CABLING) SUCH THAT THE LOSS OF ONE CIRCUIT SHALL NOT RESULT IN THE AREA LOSING COMPLETE AUDIBLE/VISUAL NOTIFICATION.
7. DISCONNECT AND REMOVE ALL TEMPORARY HEAT DETECTORS FROM THE WORK AREA ALONG WITH WIRING AND CONDUITS. CONTRACTOR SHALL CONFIRM ALL NEW FA DEVICES ARE PROPERLY WORKING IN THE PHASE 2 WORK AREA PRIOR TO THE REMOVAL OF TEMPORARY HEAT DETECTORS.
8. CONTRACTOR SHALL CONFIRM ALL EXISTING DEVICES THROUGHOUT OCCUPIED AREAS ARE ACTIVE. EXISTING FIRE ALARM DEVICES AND TEMPORARY DETECTORS IN OCCUPIED AREAS WILL BE ACTIVE DURING CONSTRUCTION UNTIL NEW DEVICES INSTALLED AS PART OF PHASE 2 CONSTRUCTION ARE ACTIVELY SERVED BY THE PHASE 1 FACP.
9. AT INTERCONNECTING SMOKE DOORS, PROVIDE AND INSTALL DOOR RELEASE RELAYS FROM RESPECTIVE BUILDING'S FIRE ALARM SYSTEM CONNECTED IN SERIES TO THE DOOR POWER CIRCUIT, SUCH THAT EITHER RELAY CAN TURN OFF POWER TO THE DOOR HOLDERS AND RELEASE DOORS. ALSO PROVIDE A SMOKE DETECTOR ON EITHER SIDE OF DOORS, CONNECTED TO RESPECTIVE BUILDING'S FIRE ALARM SYSTEM. DOOR DEVICES ARE TO BE MONITORED BY THE RESPECTIVE BUILDING'S FIRE ALARM SYSTEM TO RELEASE DOORS UPON AN ALARM IN EITHER BUILDING. THE FIRE ALARM PANEL AT EMERSON IS AN FCI, E3 SYSTEM, THAT IS NETWORKED WITH THE BRADFIELD BUILDING. WEST FIRE TO PERFORM THIS PROGRAMMING. RELAYS CAN BE MOUNTED ABOVE THE CEILING AT THE DOOR LOCATION, ROUTE POWER THROUGH EACH, THEN DOWN TO THE MAGNET. THE DOORS BETWEEN MANN AND PLANT SCIENCE WILL REQUIRE THE SAME SET UP, SIMPLEX TO PERFORM PROGRAMMING CHANGES FOR MANN.
10. ELECTROMAGNETIC DOOR HOLDER POWER SUPPLY CIRCUITS SHALL BE INDEPENDENT OF FIRE ALARM SYSTEM POWER SUPPLY CIRCUITS. SEPARATE POWER SUPPLY MUST BE A DEDICATED CIRCUIT LABELED "FIRE ALARM CIRCUIT" AT THE PANELBOARD CIRCUIT BREAKER. ALSO VERIFY THAT THE UNGROUNDED (HOT) LEG OF THE 120V POWER CIRCUIT IS ROUTED THROUGH A FIRE ALARM RELAY SO THAT UPON FIRE ALARM ACTIVATION, LOCAL SMOKE DETECTOR TRIP, OR TOTAL LOSS OF PRIMARY BUILDING POWER, THE CIRCUIT IS IMMEDIATELY INTERRUPTED TO RELEASE THE FAIL-SAFE DOORS.

D | 1 FOURTH FLOOR
FA1.4 SCALE: 1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

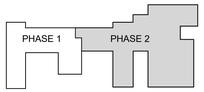
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

FOURTH FLOOR PLAN - FIRE ALARM NEW WORK

BID DOCUMENTS
Scale: 1/8" = 1'-0"

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FA1.4

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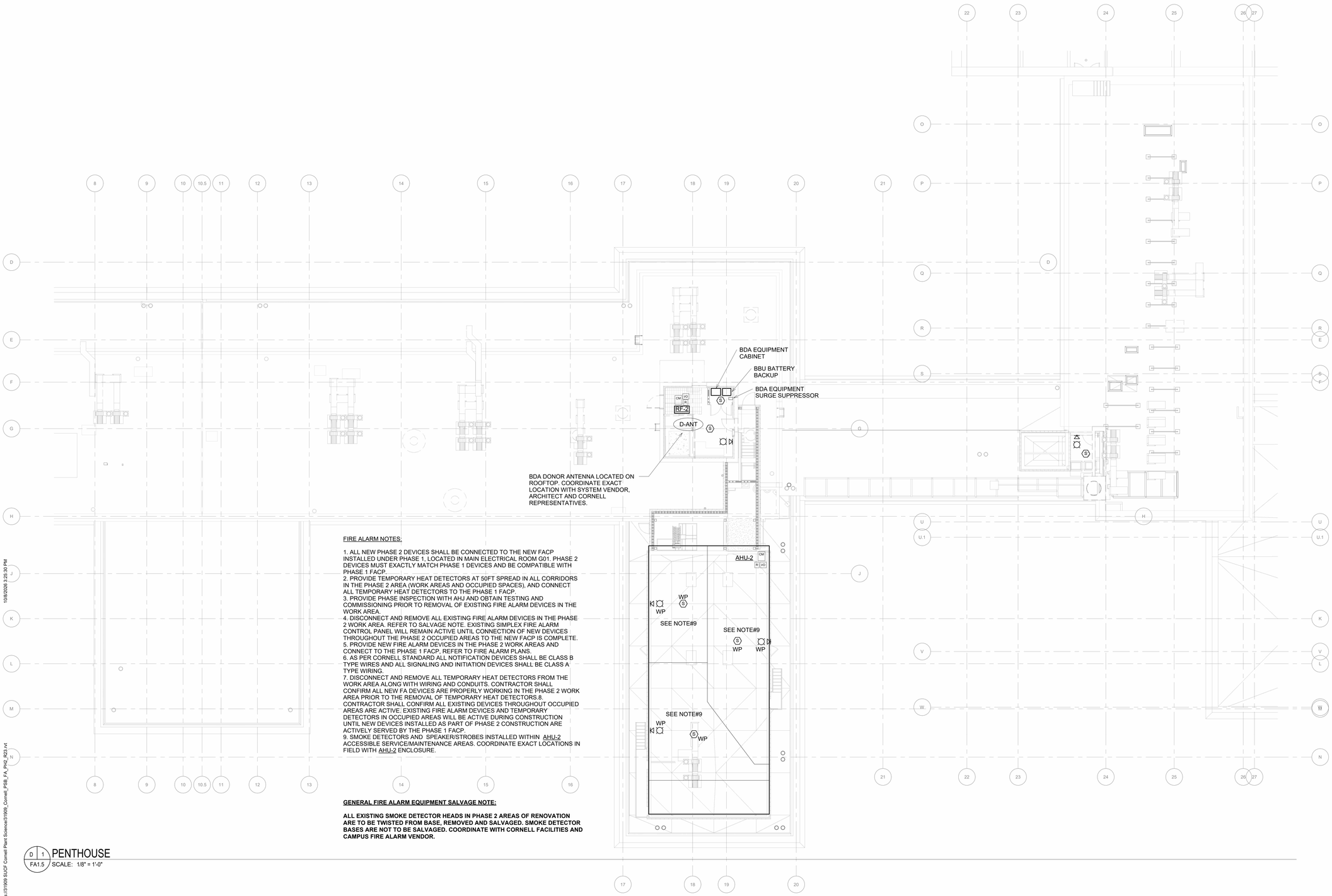

FIRE ALARM NOTES:

1. ALL NEW PHASE 2 DEVICES SHALL BE CONNECTED TO THE NEW FACP INSTALLED UNDER PHASE 1, LOCATED IN MAIN ELECTRICAL ROOM G01. PHASE 2 DEVICES MUST EXACTLY MATCH PHASE 1 DEVICES AND BE COMPATIBLE WITH PHASE 1 FACP.
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5. PROVIDE NEW FIRE ALARM DEVICES IN THE PHASE 2 WORK AREAS AND CONNECT TO THE PHASE 1 FACP, REFER TO FIRE ALARM PLANS.
6. AS PER CORNELL STANDARD ALL NOTIFICATION DEVICES SHALL BE CLASS B TYPE WIRES AND ALL SIGNALING AND INITIATION DEVICES SHALL BE CLASS A TYPE WIRING.
7. DISCONNECT AND REMOVE ALL TEMPORARY HEAT DETECTORS FROM THE WORK AREA ALONG WITH WIRING AND CONDUITS. CONTRACTOR SHALL CONFIRM ALL NEW FA DEVICES ARE PROPERLY WORKING IN THE PHASE 2 WORK AREA PRIOR TO THE REMOVAL OF TEMPORARY HEAT DETECTORS.8. CONTRACTOR SHALL CONFIRM ALL EXISTING DEVICES THROUGHOUT OCCUPIED AREAS ARE ACTIVE. EXISTING FIRE ALARM DEVICES AND TEMPORARY DETECTORS IN OCCUPIED AREAS WILL BE ACTIVE DURING CONSTRUCTION UNTIL NEW DEVICES INSTALLED AS PART OF PHASE 2 CONSTRUCTION ARE ACTIVELY SERVED BY THE PHASE 1 FACP.
9. SMOKE DETECTORS AND SPEAKER/STROBES INSTALLED WITHIN AHU-2 ACCESSIBLE SERVICE/MAINTENANCE AREAS. COORDINATE EXACT LOCATIONS IN FIELD WITH AHU-2 ENCLOSURE.

GENERAL FIRE ALARM EQUIPMENT SALVAGE NOTE:

ALL EXISTING SMOKE DETECTOR HEADS IN PHASE 2 AREAS OF RENOVATION ARE TO BE TWISTED FROM BASE, REMOVED AND SALVAGED. SMOKE DETECTOR BASES ARE NOT TO BE SALVAGED. COORDINATE WITH CORNELL FACILITIES AND CAMPUS FIRE ALARM VENDOR.

D 1 FA1.5 PENTHOUSE
SCALE: 1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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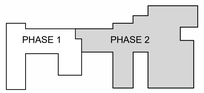

Keyplan

Job Number	31909
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Revisions

PENTHOUSE FLOOR PLAN - FIRE ALARM NEW WORK

BID DOCUMENTS
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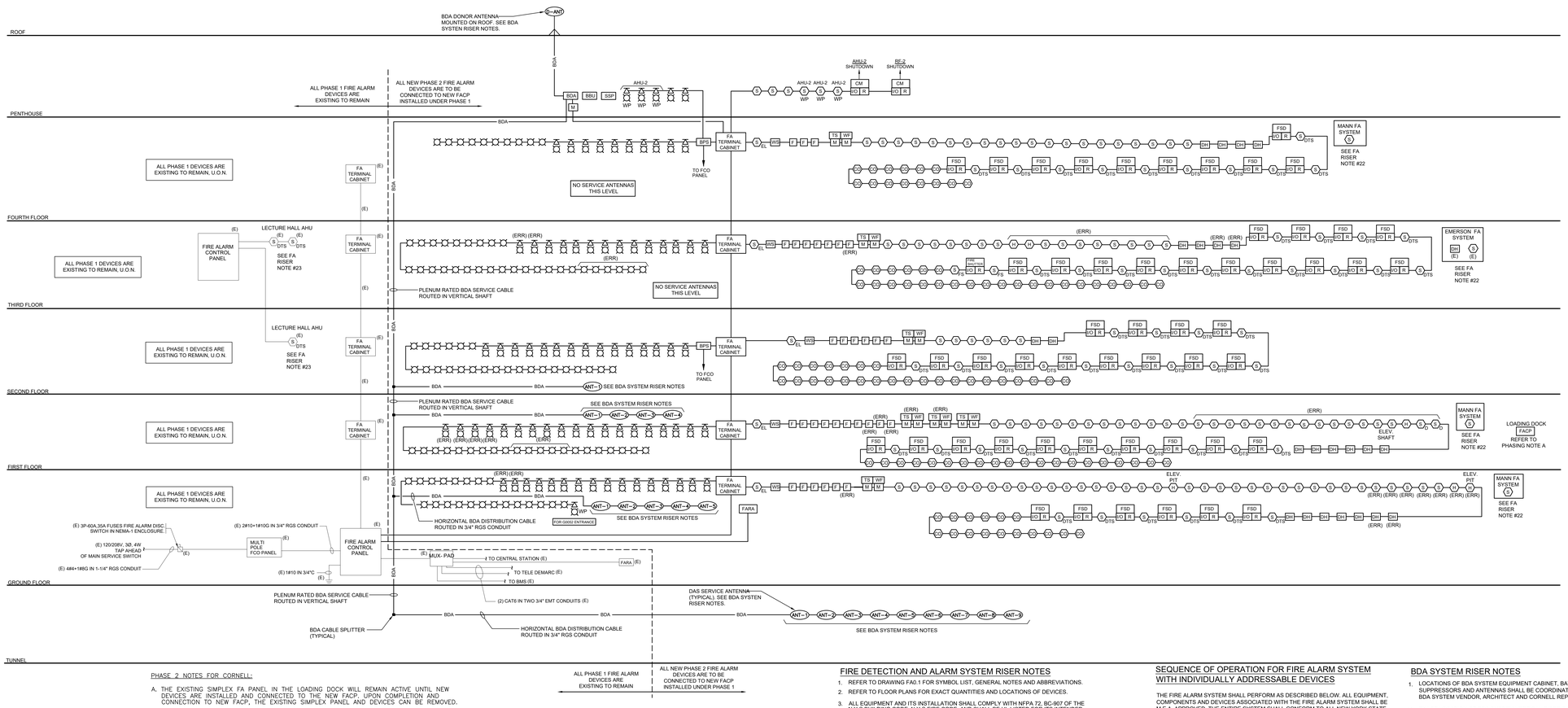


PHASE 2 NOTES FOR CORNELL:

A. THE EXISTING SIMPLEX FA PANEL IN THE LOADING DOCK WILL REMAIN ACTIVE UNTIL NEW DEVICES ARE INSTALLED AND CONNECTED TO THE NEW FACP. UPON COMPLETION AND CONNECTION TO NEW FACP, THE EXISTING SIMPLEX PANEL AND DEVICES CAN BE REMOVED.

B. NEW DEVICES IN PHASE–2 AND SUBSEQUENT PHASES SHALL BE CONNECTED TO THE NEW FACP. ALL NEW PHASE 2 DEVICES MUST EXACTLY MATCH PHASE 1 DEVICES AND MUST BE COMPATIBLE WITH NEW PHASE 1 FACP.

C. REMOVE EXISTING FA DEVICES AND TEMPORARY HEAT DETECTORS FROM THE PHASE–2 AND SUBSEQUENT PHASES. CONTRACTOR SHALL MAKE SURE ALL NEW FA DEVICES ARE OPERATIONAL PRIOR TO THE REMOVAL WORK.

D. UPON COMPLETION OF PHASE 2, ALL FA DEVICES IN PLANT SCIENCE BUILDING WILL BE ON THE NEW FACP.

ALL PHASE 1 FIRE ALARM DEVICES ARE EXISTING TO REMAIN | ALL NEW PHASE 2 FIRE ALARM DEVICES ARE TO BE CONNECTED TO NEW FACP INSTALLED UNDER PHASE 1

1 FIRE ALARM RISER DIAGRAM

SCALE: NONE

BDA SYSTEM SYMBOLS

BDA	BI–DIRECTIONAL AMPLIFIER SYSTEM CABINET
BBU	BDA SYSTEM BATTERY BACK UP CABINET
SSP	BDA EQUIPMENT SURGE SUPPRESSOR
D—ANT	BDA ROOFTOP DONOR ANTENNA
ANT	DAS SERVICE ANTENNA

BDA SYSTEM BASIS OF DESIGN AND ALTERNATES:

- HONEYWELL FIPLEX FLEX 2.0 (BASIS OF DESIGN)

ALTERNATE ACCEPTABLE VENDORS:
- ADRF
- COMBA
- WESTELL

SYSTEM OUTPUTS

| | CONTROL UNIT ANNUNCIATION | NOTIFICATION | | |

DRAWING LIST:

NUMBER	NAME
TT0.01	TELECOMMUNICATION COVER SHEET - PHASE 2
TT1.0	TELECOMMUNICATION GROUND FLOOR PLAN - PART C - PHASE 2
TT1.1	TELECOMMUNICATION FIRST FLOOR PLAN - PART C - PHASE 2
TT1.2	TELECOMMUNICATION SECOND FLOOR PLAN - PART C - PHASE 2
TT1.3	TELECOMMUNICATION THIRD FLOOR PLAN - PART C - PHASE 2
TT1.4	TELECOMMUNICATION FOURTH FLOOR PLAN - PART C - PHASE 2
TT2.0	TELECOMMUNICATION GROUND FLOOR RCP - PART C - PHASE 2
TT2.1	TELECOMMUNICATION FIRST FLOOR RCP - PART C - PHASE 2
TT2.2	TELECOMMUNICATION SECOND FLOOR RCP - PART C - PHASE 2
TT2.3	TELECOMMUNICATION THIRD FLOOR RCP - PART C - PHASE 2
TT2.4	TELECOMMUNICATION FOURTH FLOOR RCP - PART C - PHASE 2
TT3.10	TELECOMMUNICATION ENLARGED PLAN- IDF-G - PHASE 2
TT3.11	TELECOMMUNICATION ENLARGED PLAN- IDF-1 - PHASE 2
TT3.12	TELECOMMUNICATION ENLARGED PLAN- IDF-2 - PHASE 2
TT3.13	TELECOMMUNICATION ENLARGED PLAN- IDF-3 - PHASE 2
TT3.14	TELECOMMUNICATION ENLARGED PLAN- IDF-4 - PHASE 2
TT4.1	TELECOM RISER PATHWAY - PHASE 2
TT4.2	TELECOM RISER BACKBONE - PHASE 2
TT5.0	TELECOMMUNICATION DETAILS 1 - PHASE 2
TT5.1	TELECOMMUNICATION DETAILS 2 - PHASE 2
TT5.2	TELECOMMUNICATION DETAILS 3 - PHASE 2
TT5.3	TELECOMMUNICATION DETAILS 4 - PHASE 2

ABBREVIATIONS:

AFF	-	ABOVE FINISHED FLOOR
AV	-	AUDIOVISUAL
C	-	CONDUIT
CAT-3	-	TIA CATEGORY 3 RATED
CAT-5E	-	TIA CATEGORY 5e RATED
CAT-6	-	TIA CATEGORY 6 RATED
CAT-6A	-	TIA CATEGORY 6A RATED
CLG	-	CEILING
COAX	-	COAXIAL CABLE
CP	-	CONSOLIDATION POINT
FO	-	FIBER OPTIC
F/UTP	-	FOILED / UNSHIELDED TWISTED PAIR
GND	-	GROUND
IC	-	INTERMEDIATE CROSS-CONNECT
ID	-	INSIDE DIAMETER
IDF	-	INTERMEDIATE DISTRIBUTION FRAME
J-BOX	-	JUNCTION BOX
LAN	-	LOCAL AREA NETWORK
MC	-	MAIN CROSS-CONNECT
MDF	-	MAIN DISTRIBUTION FRAME
MH	-	MANHOLE
MM	-	MULTIMODE
MTER	-	MAIN TELECOMMUNICATIONS EQUIPMENT ROOM
NIC	-	NOT IN CONTRACT
NID	-	NETWORK INTERFACE DEVICE
NTS	-	NOT TO SCALE
OD	-	OUTSIDE DIAMETER
OFE	-	OWNER FURNISHED EQUIPMENT
OSP	-	OUTSIDE PLANT
PP	-	PATCH PANEL
PR	-	PAIR
PB	-	PULL BOX
PBX	-	PRIVATE BRANCH EXCHANGE
RW	-	RACEWAY
SM	-	SINGLE MODE
ST	-	STRAND
STP	-	SHIELDED TWISTED PAIR
TEMP	-	TEMPORARY
TGB	-	TELECOMMUNICATIONS GROUND BAR
TR	-	TELECOMMUNICATIONS ROOM
TSER	-	TELECOMMUNICATIONS SERVICE ENTRANCE ROOM
TYP	-	TYPICAL
UON	-	UNLESS OTHERWISE NOTED
UPS	-	UNINTERRUPTIBLE POWER SUPPLY
UTP	-	UNSHIELDED TWISTED PAIR
VOIP	-	VOICE OVER INTERNET PROTOCOL
WAN	-	WIDE AREA NETWORK
WAP	-	WIRELESS ACCESS POINT
WMO	-	WIRE MANAGEMENT
WP	-	WATERPROOF
WS	-	WORKSTATION
WW	-	WIREWAY

RESPONSIBILITY LEGEND:

Responsibility Legend	General Contractor	Owner	General Contractor	Owner	Specification Division Responsibility
IT Requirements	SUPPLIED BY:		INSTALLED BY:		
Communications Rack Mounted Power Protection	X		X		Division 27
Data Communications Switches		X		X	Division 27
Data Communications Wireless Access Points		X		X	Division 27
Voice Communications Telephone Sets		X		X	Division 27
Field Data Cable	X		X		Division 27
Field Data Outlet (Faceplate and Jack)		X	X		Division 27
Power & Power Receptacles	X		X		Division 26
Patch Panels		X	X		Division 27
Racks	X		X		Division 27 / 28 (or as noted)
Elevator Traveling Cable	X		X		Division 14
Cable Containment Including: Conduit with Measured Pullstrings, Cabletray, Laddertray, Wireways, Floorboxes, Junction Boxes, Pull Boxes, & Backboxes	X		X		Division 27
Equipment Patch Cables (Fiber Twisted Pair)		X		X	Division 27
Field Patch Cabling (Twisted Pair)		X		X	Division 27
Emergency 2-Way Communications Devices		X	X		BY OTHERS

ADDITIONAL RESPONSIBILITY NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ADEQUATE QUANTITIES OF OWNER-FURNISHED MATERIALS ("OFCI") THAT THE CONTRACTOR WILL INSTALL TO COMPLETE THE SCOPE INCLUDED IN THE DRAWINGS AND SPECIFICATIONS AND PROVIDE THIS QUANTITY INFORMATION TO THE OWNER. THE CONTRACTOR WILL RETURN ANY UN-USED MATERIALS TO THE OWNER.

GENERAL INFORMATION FOR ALL SYMBOLS:

4-PAIR HORIZONTAL COPPER CABLES SHALL BE CATEGORY 6A (REFER TO 27 15 13)

INDICATES THE QUANTITY OF HORIZONTAL COPPER CABLES.

TELECOM SYMBOL, VARIES

STANDARD SYMBOLS:

#	STANDARD INFORMATION OUTLET # = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
#	POKE-THRU OUTLET # = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
#	FLOOR BOX OUTLET # = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
W	WALL PHONE OUTLET (1) 4-PAIR HORIZONTAL COPPER CABLES
WAP	WIRELESS ACCESS POINT CEILING OUTLET (2) 4-PAIR HORIZONTAL COPPER CABLES
AV #	AUDIOVISUAL CEILING OUTLET # = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
SC	SECURITY SURVEILLANCE CAMERA CEILING OUTLET (1) 4-PAIR HORIZONTAL COPPER CABLES
AR	AUDIOVISUAL EQUIPMENT RACK OUTLET (6) = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
AV#	AUDIOVISUAL DATA OUTLET # = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
FP#	AUDIOVISUAL FLAT PANEL OUTLET # = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
RS	AUDIOVISUAL ROOM SCHEDULER OUTLET (1) = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
SC	SECURITY SURVEILLANCE CAMERA OUTLET (1) = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES
ACP	SECURITY ACCESS CONTROL PANEL OUTLET (2) = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES

SPECIALITY SYMBOLS:

F#	SYSTEMS FURNITURE MOUNTED INFORMATION OUTLET # = QUANTITY OF 4-PAIR CATEGORY 6A CABLES
EP	SECURITY EMERGENCY PHONE DATA OUTLET (1) 4-PAIR HORIZONTAL COPPER CABLES
R	RACEWAY MOUNTED DATA OUTLET (2) 4-PAIR HORIZONTAL COPPER CABLES
BMS	BUILDING MANAGMENT SYSTEM (BMS) OUTLET (2) = QUANTITY OF 4-PAIR HORIZONTAL COPPER CABLES

COORDINATION SYMBOLS:

FF	WALL MOUNTED FURNITURE FEED LOCATION - PROVIDE 2" CONDUIT TO NEAREST ACCESABLE CEILING OR CABLE TRAY FOR HORIZONTAL CABLING PATHWAYS
FF	FLOOR MOUNTED FURNITURE FEED LOCATION - PROVIDE 2" CONDUIT TO NEAREST ACCESABLE CEILING OR CABLE TRAY FOR HORIZONTAL CABLING PATHWAYS

ENLARGED PLAN SYMBOLS:

	2 POST STANDARD 19" IT EQUIPMENT RACK, 7' HIGH UON REFER TO 27 11 16
	4 POST STANDARD 19" IT EQUIPMENT RACK, 7' HIGH UON REFER TO 27 11 16
	DOUBLE SIDED VERTICAL CABLE MANAGEMENT PANEL, HEIGHT TO MATCH RACK HEIGHT UON REFER TO 27 11 23
	SINGLE SIDED VERTICAL CABLE MANAGEMENT PANEL, HEIGHT TO MATCH RACK HEIGHT UON REFER TO 27 11 23
****	WALL SPACE RESERVED FOR DESIGNATED EQUIPMENT WHERE **** REPRESENTS EQUIPMENT DESIGNATION
	VERTICAL CONDUIT DOWN SIZE AS NOTED REFER TO 27 05 28.33
	VERTICAL CONDUIT UP SIZE AS NOTED REFFER TO 27 05 28.33
	IT EQUIPMENT CABINET, REFER TO 27 11 16 CABINET DOOR, SINGLE LEAF INDICATES CABINET FRONT CABINET SIDE PANELS CABINET DOORS, SPLIT LEAF
PDU-*	RACK/CABINET MOUNTED POWER DISTRIBUTION UNIT * = LETTER DESIGNATING TYPE REFER TO 27 11 26
TGB	TELECOMMUNICATIONS GROUND BUS BAR REFER TO 27 05 26
TMGB	TELECOMMUNICATIONS MAIN GROUND BUS BAR REFER TO 27 05 26
	HORIZONTAL CABLE TRAY SIZE AND TYPE AS NOTED REFER TO 27 05 28.36
	VERTICAL CABLE TRAY REFER TO 27 05 28.36
	HORIZONTAL CONDUIT SIZE AS NOTED REFER TO 27 05 28.33
	HORIZONTAL PRE FAB FIRE RATED PATHWAY REFER TO 27 05 28
	VERTICAL PRE FAB FIRERATED PATHWAY REFER TO 27 05 28

IDENTIFICATION:

1. CABLE ADMINISTRATION:
   A. PROPERLY LABEL ALL CABLES, RECEPTACLES, CONNECTION BLOCKS, GROUNDING BARS, RACKS, CABINETS, OUTLETS AND PATCH PANELS. GROUNDING BUSBARS, RACKS, CABINETS.
   B. LABEL EACH CABLE THAT EXCEEDS 250 FT. (75m), THE CABLE SHALL BE CLEARLY MARKED WITH RED TAPE AT BOTH ENDS OF EACH CABLE INDICATING THE EXACT CABLE LENGTH AND NOTED IN THE REQUIRED AS-BUILT LABEL REPORT.
   C. PRIOR TO SYSTEM ACCEPTANCE, THE CONTRACTOR SHALL SUBMIT AN AS-BUILT LABEL REPORT PROVIDING THE ROOM NUMBERS AND CABLE LENGTHS FOR EACH OF THE INSTALLED CABLES.
2. LABEL REQUIREMENTS:
   A. PROVIDE WHITE LABEL WITH TYPEWRITTEN LEGIBLE CHARACTERS. PRINTED WITH NON-SMEAR TYPE INK. HANDWRITTEN LABELS ARE NOT PERMITTED.
   B. PROVIDE LABELS WITH A SELF ADHESIVE BACKING.
   C. PROVIDE LABELS FOR CABLES WITH PROTECTIVE WRAP-AROUND PLASTIC TRANSPARENT COVER WHICH WILL SERVE TO PROTECT THE INK FROM SMEARING AND SECURE THE LABEL TO THE CABLE.
   D. PROVIDE LABELS FOR CABLES WIDE ENOUGH FOR 23 CHARACTERS IN A SINGLE ROW.
   E. RISER AND TIE CABLES JACKETS SHALL BE LABELED WITHIN EACH TECHNOLOGY ROOM AND AT 50 FT. (15m) INTERVALS OUTSIDE TECHNOLOGY ROOMS ABOVE CEILINGS.

GENERAL NOTES:

1. DRAWINGS ARE FOR INTENT ONLY.
2. INSTALL FIRESTOP TO ALL SLAB AND WALL PENETRATIONS PROVIDED FOR THE INSTALLATION OF TELECOMMUNICATIONS CABLE AS REQUIRED TO MAINTAIN FIRE RATING OF SLAB OR WALL. REVIEW ARCHITECT'S PLANS FOR PARTITION TYPES.
3. CABLE TERMINATION HARDWARE INDICATED ON RACK ELEVATIONS MAY BE APPROXIMATE TO INDICATE TYPICAL ORGANIZATION OF TERMINATION HARDWARE. CONTRACTOR SHALL COMPARE THE RACK ELEVATIONS TO THE CABLING REQUIRED BY THE CONTRACT DOCUMENTS AND FURNISH AND INSTALL TERMINATION HARDWARE IN SUFFICIENT QUANTITIES TO TERMINATE CABLES.

CABLING NOTES:

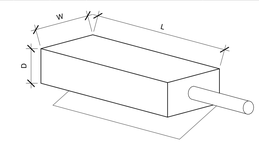
1. INSTALL TELECOMMUNICATIONS WIRING TO MAINTAIN A MINIMUM OF 5" SEPARATION FROM FLUORESCENT LIGHTING.
2. PROVIDE DESIGNATION LABELS FOR ALL TERMINATION BLOCKS, PATCH PANELS, AND WORKSTATION OUTLET FACEPLATES.
3. PROVIDE CABLE STRAPS NO GREATER THAN 5' APART TO SUPPORT CABLES WHERE NO CABLE TRAYS AND CONDUITS ARE PROVIDED.
4. INSTALL EACH CABLE SET INDICATED BY THE SYMBOLS LIST FROM THE OUTLET LOCATION TO THE RESPECTIVE SERVING TELECOM ROOM.
5. REPORT TO THE OWNER AND DESIGN TEAM ANY HORIZONTAL CABLE THAT EXCEEDS 250 FT. (75m)
6. DO NOT RUN LOW-VOLTAGE CABLE DIRECTLY PARALLEL TO ELECTRICAL OR GROUND WIRE-SHOULD THIS CONDITION ARISE, REPORT TO THE OWNER AND THE DESIGN TEAM. IF CABLES MUST CROSS, DO SO AT PERPENDICULAR ANGLES.

PATHWAY NOTES:

1. COORDINATE WALL BOX LOCATIONS AND DIMENSIONS WITH ARCHITECTURAL AND ELECTRICAL PLANS.
2. COORDINATE WITH ELECTRICAL DRAWINGS FOR LOCATION OF ALL TELECOMMUNICATIONS OUTLETS.
3. INSTALL CONDUIT AND LADDER RACK FOR TELECOMMUNICATIONS WIRING TO MAINTAIN A MINIMUM OF 5" SEPARATION FROM FLUORESCENT LIGHTING.
4. COORDINATE INSTALLATION OF CONDUITS AND CABLE TRAYS WITH OTHER COMPONENTS INSTALLED WITHIN CEILING. PREPARE SHOP DRAWINGS TO DEMONSTRATE AND ENSURE PROPER INSTALLATION OF ALL COMPONENTS.
5. IF CONFLICTS ARE FOUND BETWEEN THE TELECOMMUNICATIONS DRAWINGS AND ANY OTHER DRAWINGS ASSOCIATED WITH THE PROJECT, NOTIFY THE ARCHITECT AT ONCE AND HAVE LOCATION VERIFIED BEFORE OUTLETS ARE INSTALLED. ANY REASONABLE CHANGE IN LOCATION OF OUTLETS PRIOR TO ROUGHING SHALL NOT INVOLVE ADDITIONAL EXPENSE TO THE OWNER. THE TERM "REASONABLE" SHALL BE INTERPRETED AS MOVING OUTLET LOCATIONS A MAXIMUM OF 10' IN ANY DIRECTION FROM THE LOCATION INDICATED ON THE DRAWINGS.
6. MAINTAIN MINIMUM BEND RADIUS OF 10X O.D. FOR CONDUITS GREATER THAN 2" DIAMETER. MAINTAIN MINIMUM BEND RADIUS OF 6X O.D. FOR CONDUITS EQUAL TO OR LESS THAN 2" DIAMETER.
7. PROVIDE PULL BOXES (SIZE AS NOTED) AFTER EVERY 100 FT. (30m) OF RUN OR AFTER EVERY 180-DEGREES OF BEND.
8. DO NOT INSTALL PULL BOXES IN LIEU OF A BEND.

PULL BOX SIZING CHART

CONDUIT	PULL BOX DIMENSIONS			DIMENSION TO INCREASE PULL BOX WIDTH FOR EACH ADDITIONAL CONDUIT (in.)	DIMENSION TO INCREASE PULL BOX DEPTH FOR EACH ADDITIONAL TIER OF CONDUIT (in.)
TRADE SIZE (in.)	WIDTH (in.)	LENGTH (in.)	DEPTH (in.)		
1	4	16	3	2	3
1-1/4	6	20	3	3	3
1-1/2	8	27	4	4	4
2	8	36	5	5	4
2-1/2	10	42	6	6	5
3	12	48	6	6	5
3-1/2	12	54	6	6	6
4	12	60	8	8	8



9. REAM AND BUSH THE ENDS OF ALL CONDUITS.
10. PROVIDE AND LEAVE IN PLACE A PULL STRING IN EACH CONDUIT.
11. STUB UP CONDUIT SLEEVES THROUGH SLABS 3" ABOVE FINISHED FLOORS.
12. PROVIDE HANGERS, ANCHORS, MOUNTING HARDWARE, GROUND LUGS AND STRAPS AS REQUIRED TO ENSURE PROPER INSTALLATION OF PATHWAY COMPONENTS. INSTALL ALL COMPONENTS AS PER MANUFACTURERS RECOMMENDATIONS AND PER ALL APPLICABLE CODES.
13. GROUND ALL CONDUITS AND LADDER RACK AS PER MANUFACTURERS' RECOMMENDATIONS AND PER ALL APPLICABLE CODES.
14. PROVIDE AT ALL LADDER RACK AND CABLE TRAY LOCATIONS: RUNWAY DROPOFFS, SPLICE HARDWARE, GROUND STRAPS, THERMAL EXPANSION PLATES, TERMINATION KITS, END SUPPORT KITS AND CEILING SUPPORT HARDWARE.
15. PROVIDE FOR ALL BASKET TYPE CABLE TRAY LOCATIONS; CONNECTION HARDWARE, GROUND STRAPS, THERMAL EXPANSION PLATES, SUPPORT BRACKETS AND CEILING SUPPORT HARDWARE.
16. REFER TO DISTRIBUTION PLANS FOR REQUIREMENTS FOR JUNCTION BOX AND CONDUITS TO SUPPORT WORKSTATION OUTLETS.
17. WHERE CABLE IS RUN ABOVE NON-ACCESSIBLE (I.E. GYPSUM BOARD) CEILING CONSTRUCTION, CONDUIT AND PULL BOXES MUST BE INSTALLED TO PROPERLY ROUTE CABLE.
18. PROVIDE J-HOOKS AND CABLE STRAPS TO SUPPORT CABLE ABOVE ACCESSIBLE CEILING CONSTRUCTION, EXCEPT IN AREAS WHERE CABLE TRAY OR CONDUIT IS INDICATED.
19. PROVIDE WOVEN FIBER RACEWAY COMPLETE WITH DRAG LINE FOR ALL 2", 3", AND 4" CONDUITS PER SPECIFICATIONS AND DRAWING DETAILS, UON.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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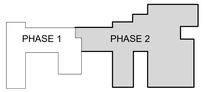

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TELECOMMUNICATION COVER SHEET - PHASE 2

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1 TELECOMMUNICATION OVERALL PLAN - GROUND FLOOR PART C - PHASE 2
1/8" = 1'-0"

SHEET NOTES:

1. PROVIDE 2 PORT DATA OUTLET AT ALL SECURITY HEAD END TERMINATION LOCATIONS. MOUNT OUTLET OUTSIDE AND ADJACENT TO SECURITY PANEL.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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236 Tower Road
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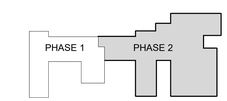

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TELECOMMUNICATION GROUND FLOOR PLAN - PART C - PHASE 2

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GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
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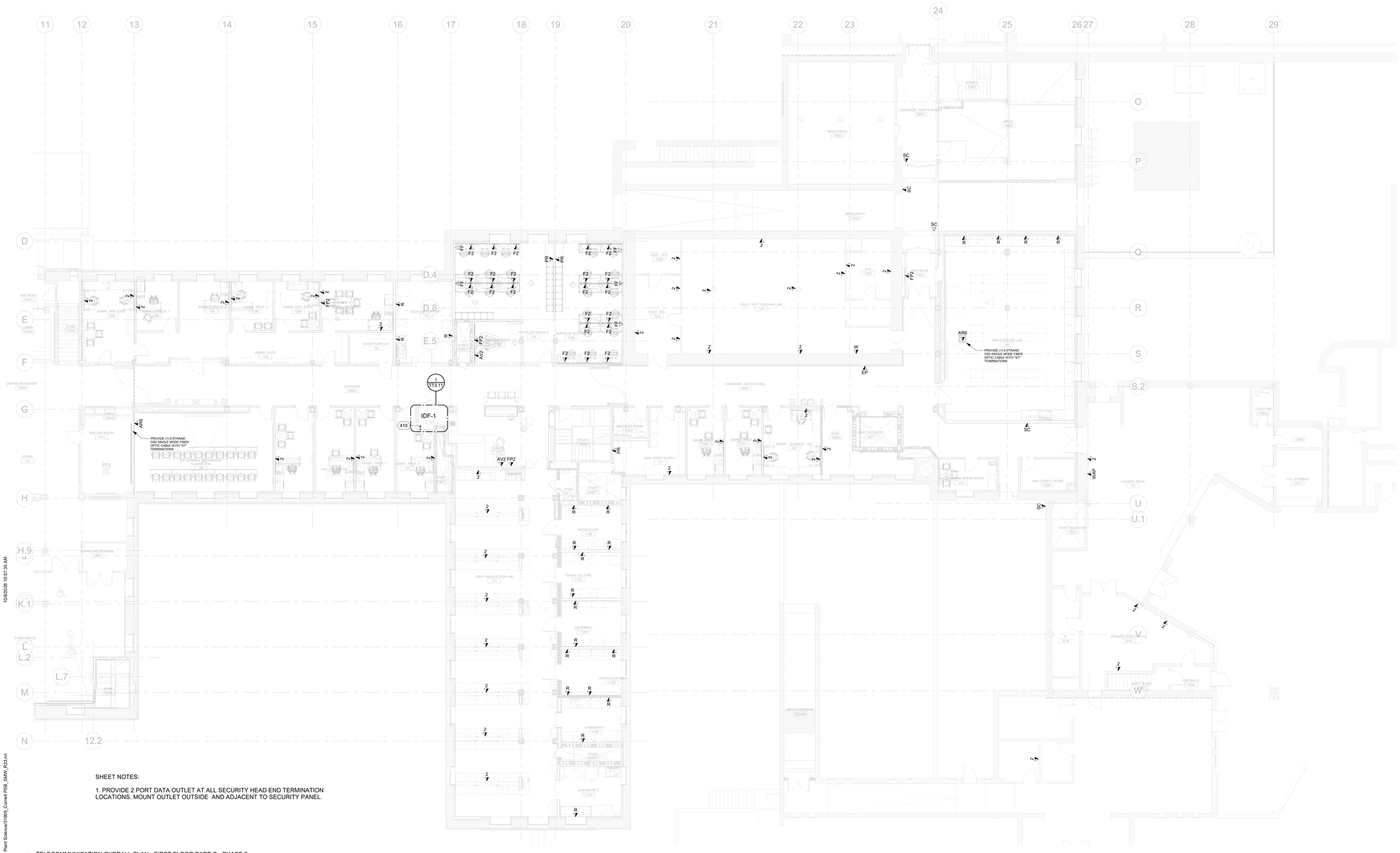

SHEET NOTES:

1. PROVIDE 2 PORT DATA OUTLET AT ALL SECURITY HEAD END TERMINATION LOCATIONS. MOUNT OUTLET OUTSIDE AND ADJACENT TO SECURITY PANEL.

1 TELECOMMUNICATION OVERALL PLAN - FIRST FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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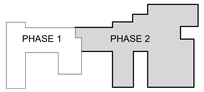

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Date	August 31, 2026

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TELECOMMUNICATION FIRST FLOOR PLAN - PART C - PHASE 2

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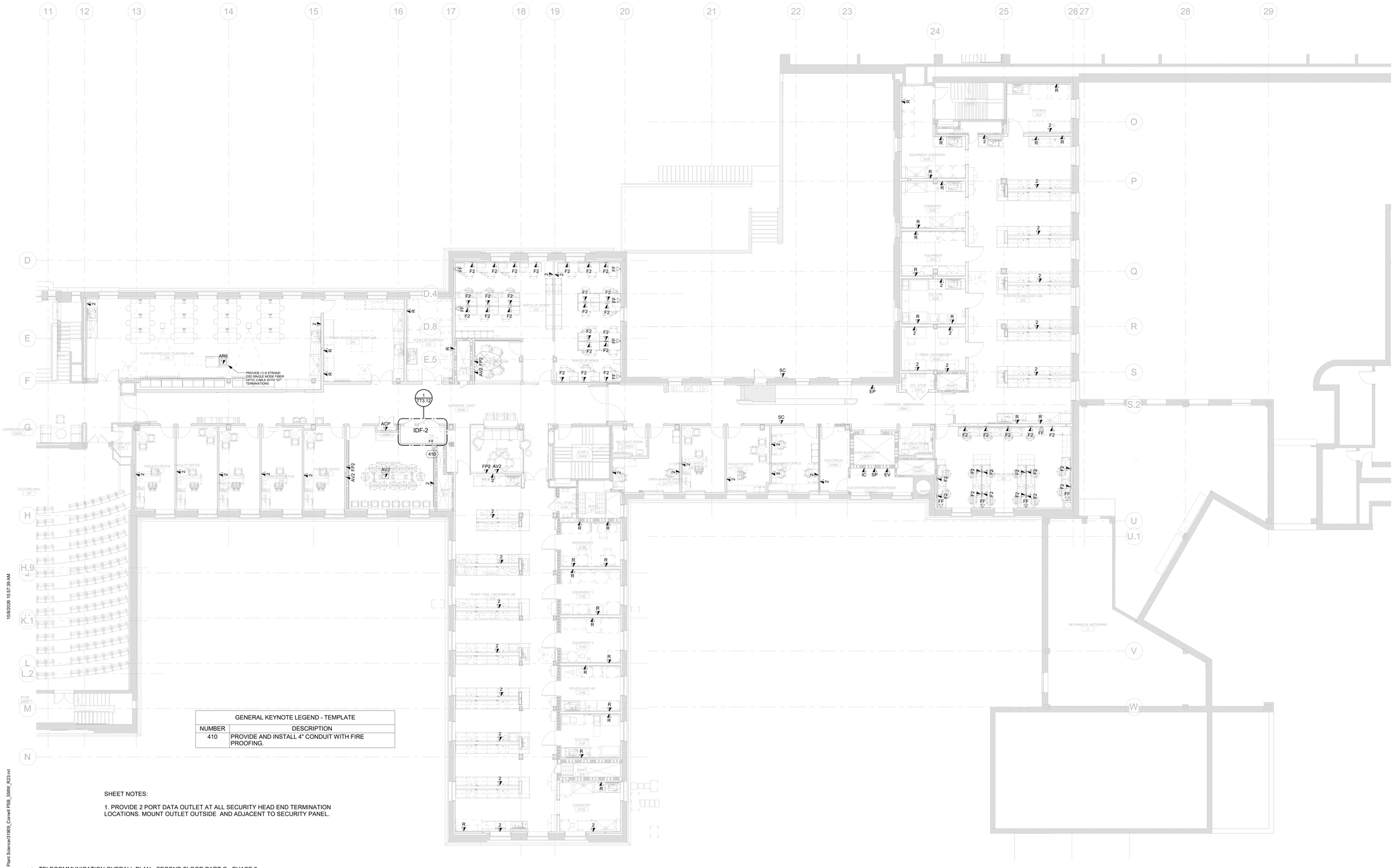

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.

SHEET NOTES:

1. PROVIDE 2 PORT DATA OUTLET AT ALL SECURITY HEAD END TERMINATION LOCATIONS. MOUNT OUTLET OUTSIDE AND ADJACENT TO SECURITY PANEL.

1 TELECOMMUNICATION OVERALL PLAN - SECOND FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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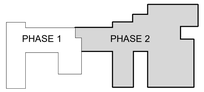

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TELECOMMUNICATION SECOND FLOOR PLAN - PART C - PHASE 2

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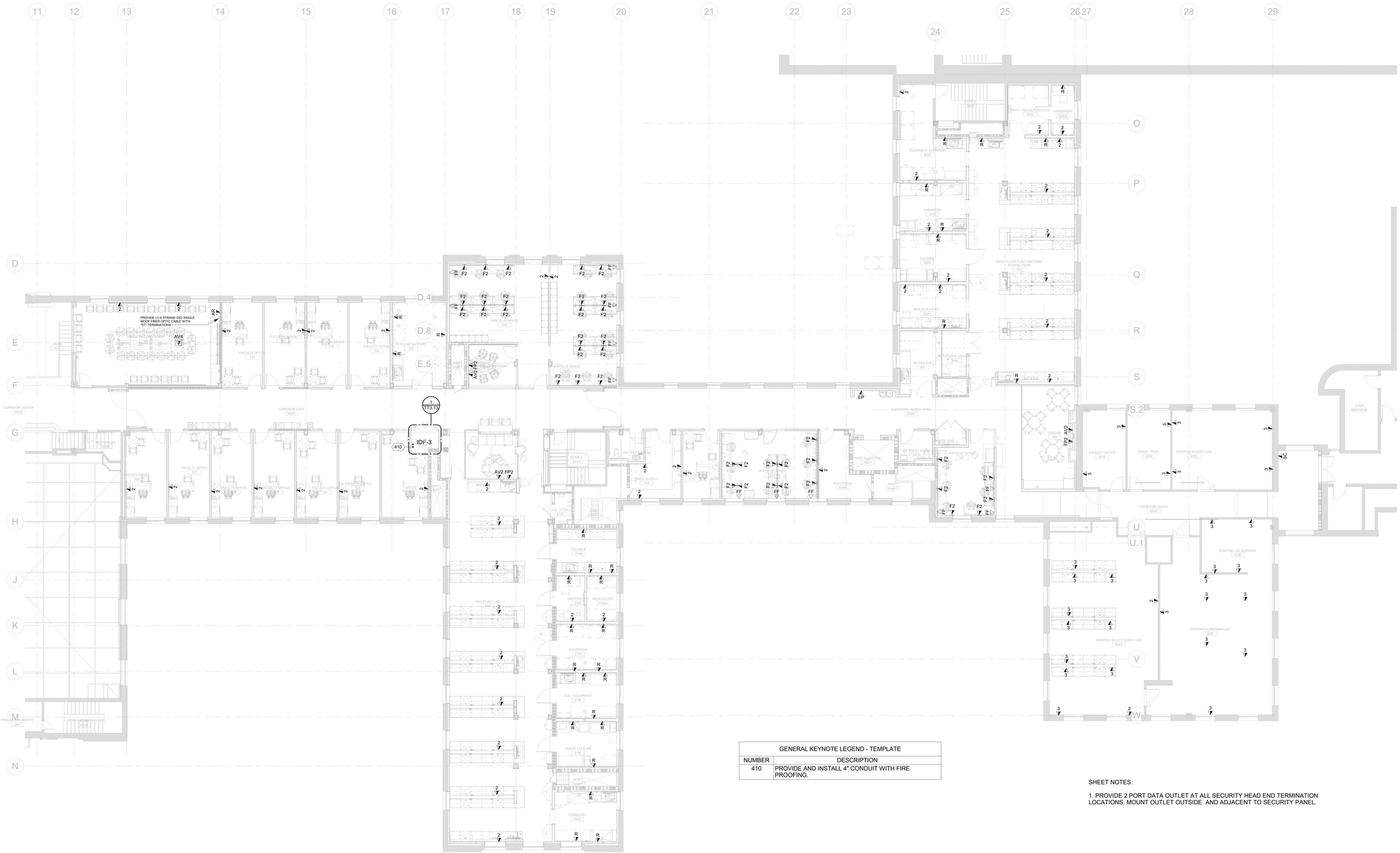

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.

SHEET NOTES:

1. PROVIDE 2 PORT DATA OUTLET AT ALL SECURITY HEAD END TERMINATION LOCATIONS. MOUNT OUTLET OUTSIDE AND ADJACENT TO SECURITY PANEL.

1 TELECOMMUNICATION OVERALL PLAN - THIRD FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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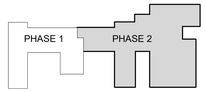

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TELECOMMUNICATION THIRD FLOOR PLAN - PART C - PHASE 2

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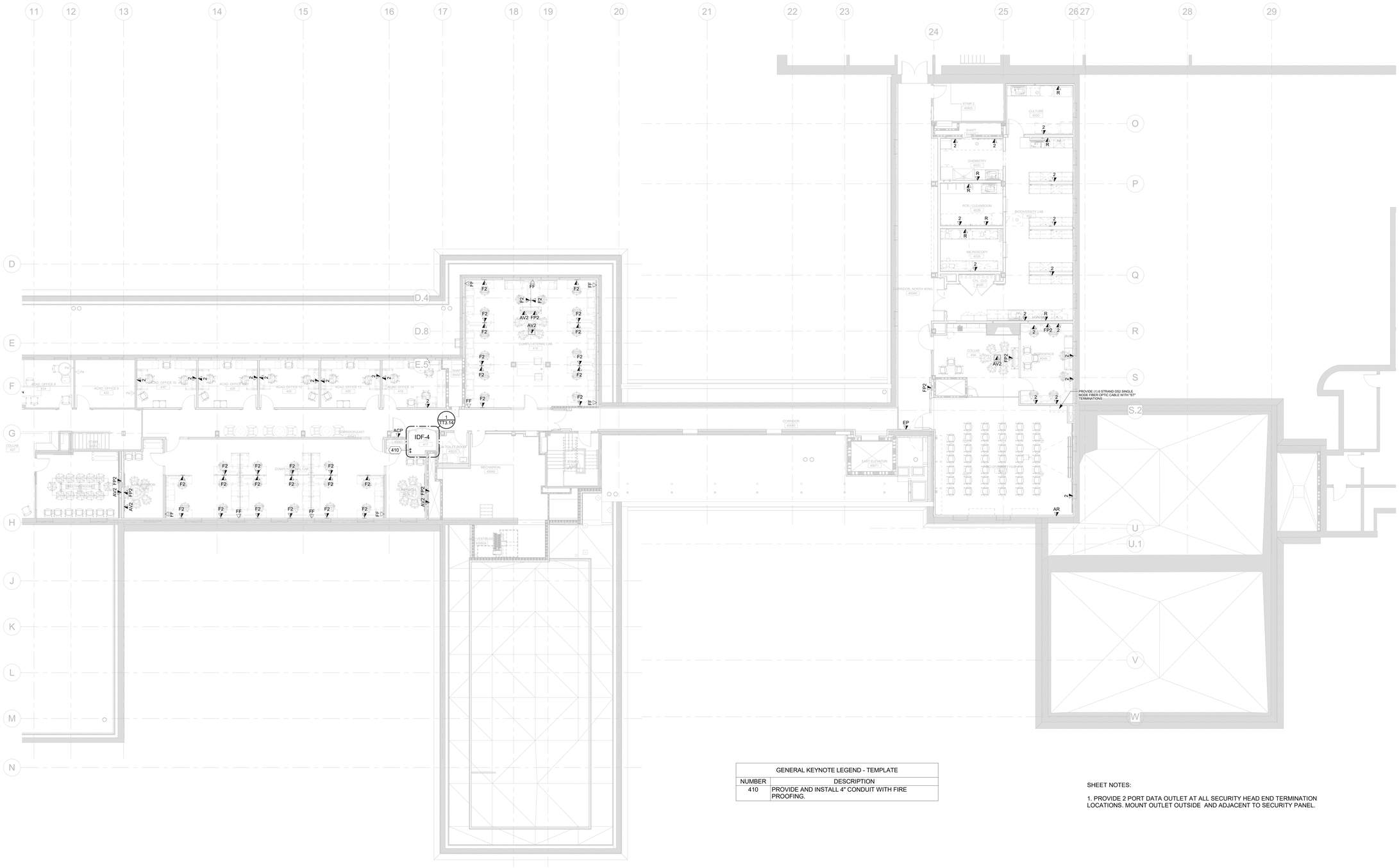

1 TELECOMMUNICATION OVERALL PLAN - FOURTH FLOOR PART C - PHASE 2
1/8" = 1'-0"

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.

SHEET NOTES:

1. PROVIDE 2 PORT DATA OUTLET AT ALL SECURITY HEAD END TERMINATION LOCATIONS. MOUNT OUTLET OUTSIDE AND ADJACENT TO SECURITY PANEL.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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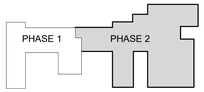

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TELECOMMUNICATION FOURTH FLOOR PLAN - PART C - PHASE 2

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1 TELECOMMUNICATION OVERALL CEILING PLAN - GROUND FLOOR PART C - PHASE 2
1/8" = 1'-0"

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
100	CONTRACTOR SHALL PROVIDE AND INSTALL 12" WIRE MESH BASKET TRAY ABOVE ACCESSIBLE CEILING.
408	PROVIDE AND INSTALL HILTI FIRE RATED DEVICE FOR HORIZONAL CABLE PATHWAY
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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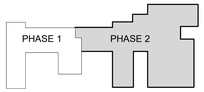

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TELECOMMUNICATION GROUND FLOOR RCP - PART C - PHASE 2

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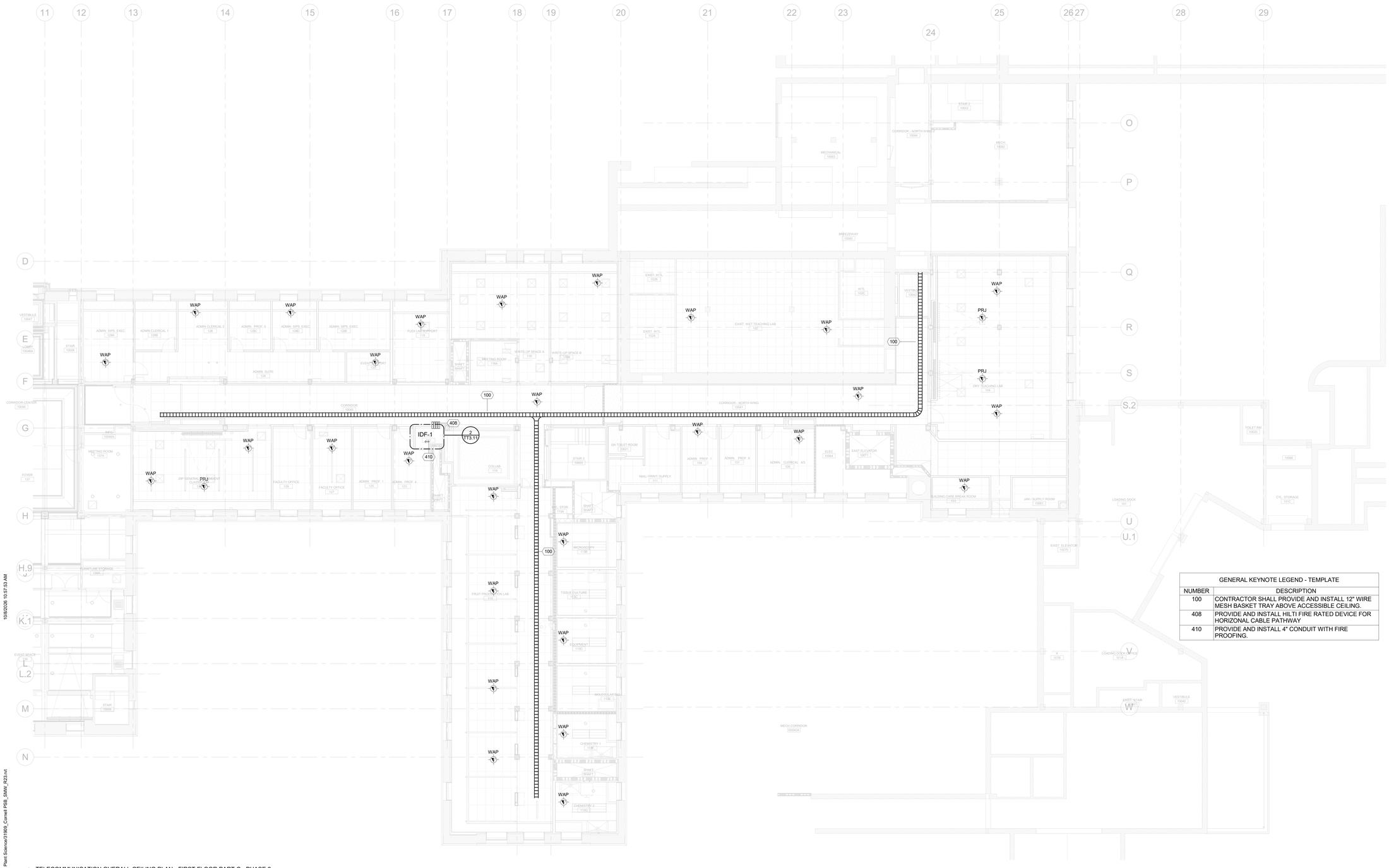


1 TELECOMMUNICATION OVERALL CEILING PLAN - FIRST FLOOR PART C - PHASE 2
1/8" = 1'-0"

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
100	CONTRACTOR SHALL PROVIDE AND INSTALL 12" WIRE MESH BASKET TRAY ABOVE ACCESSIBLE CEILING.
408	PROVIDE AND INSTALL HILTI FIRE RATED DEVICE FOR HORIZONAL CABLE PATHWAY
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

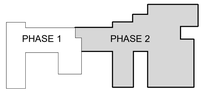
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

TELECOMMUNICATION FIRST FLOOR RCP - PART C - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

TT2.1

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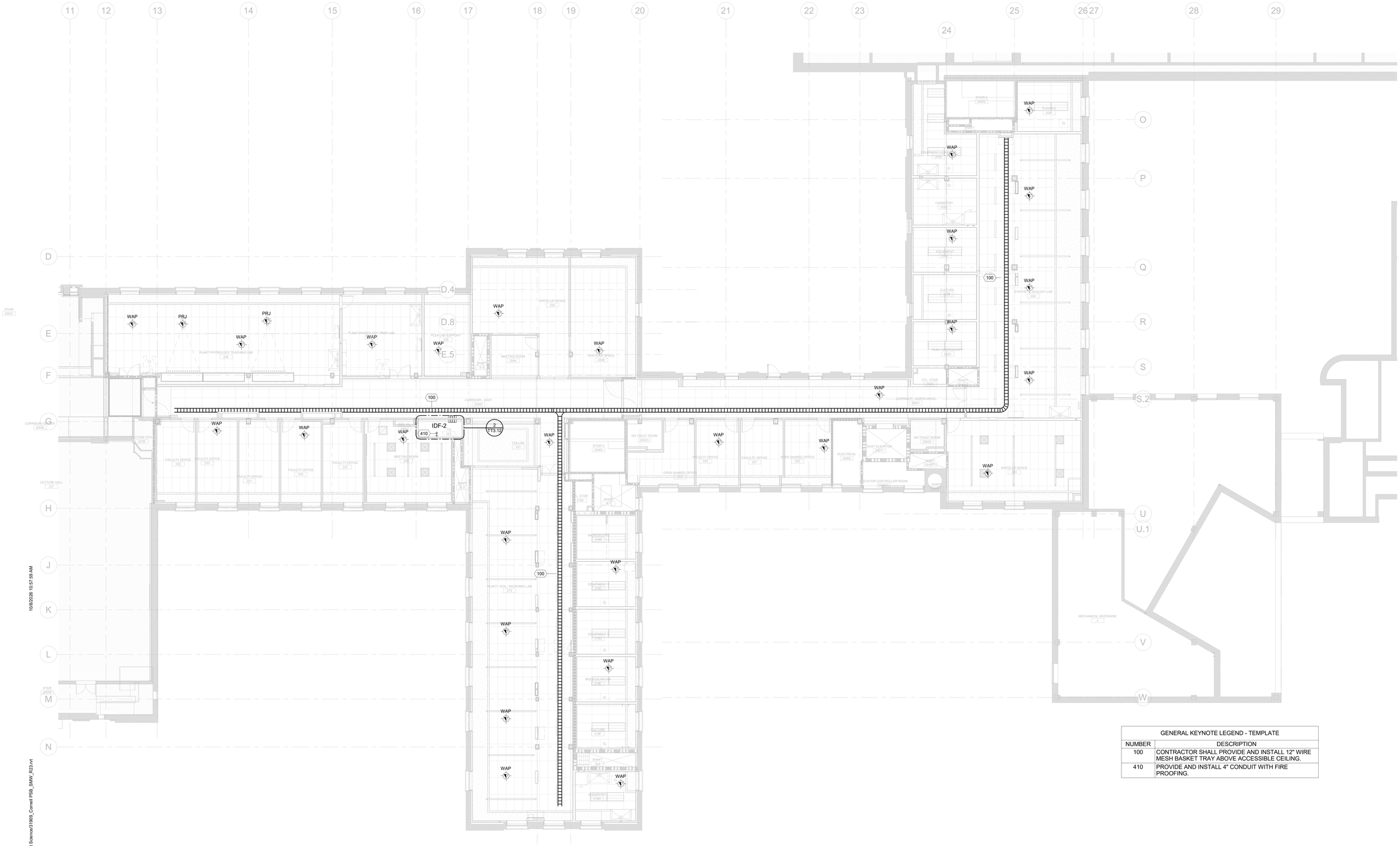

1 TELECOMMUNICATION OVERALL CEILING PLAN - SECOND FLOOR PART C - PHASE 2
1/8" = 1'-0"

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
100	CONTRACTOR SHALL PROVIDE AND INSTALL 12" WIRE MESH BASKET TRAY ABOVE ACCESSIBLE CEILING.
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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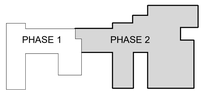
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
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Date August 31, 2026

Revisions

TELECOMMUNICATION SECOND FLOOR RCP - PART C - PHASE 2

BID DOCUMENTS
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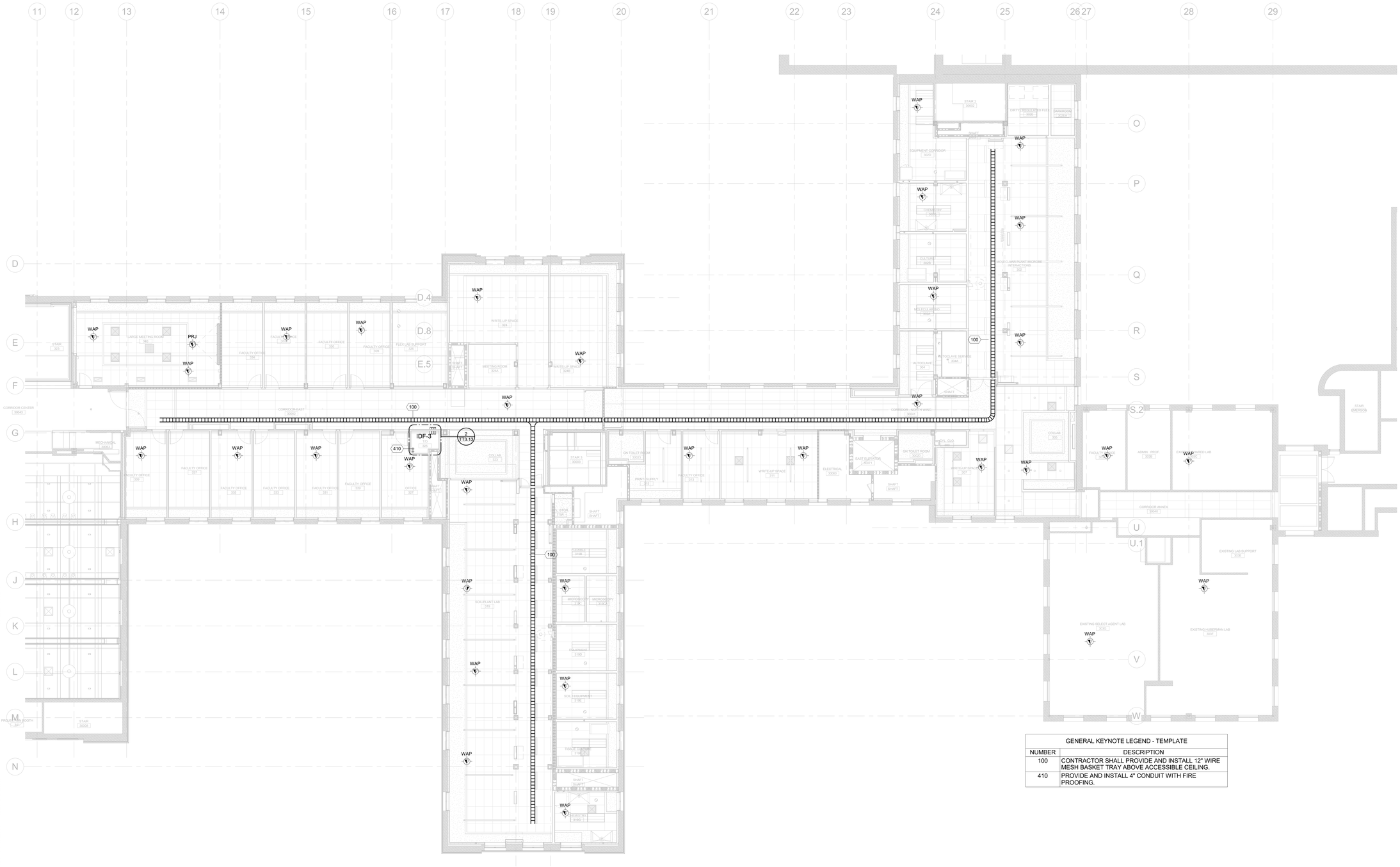

1 TELECOMMUNICATION OVERALL CEILING PLAN - THIRD FLOOR PART C - PHASE 2
1/8" = 1'-0"

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
100	CONTRACTOR SHALL PROVIDE AND INSTALL 12" WIRE MESH BASKET TRAY ABOVE ACCESSIBLE CEILING.
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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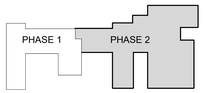
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
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Date August 31, 2026

Revisions

TELECOMMUNICATION THIRD FLOOR RCP - PART C - PHASE 2

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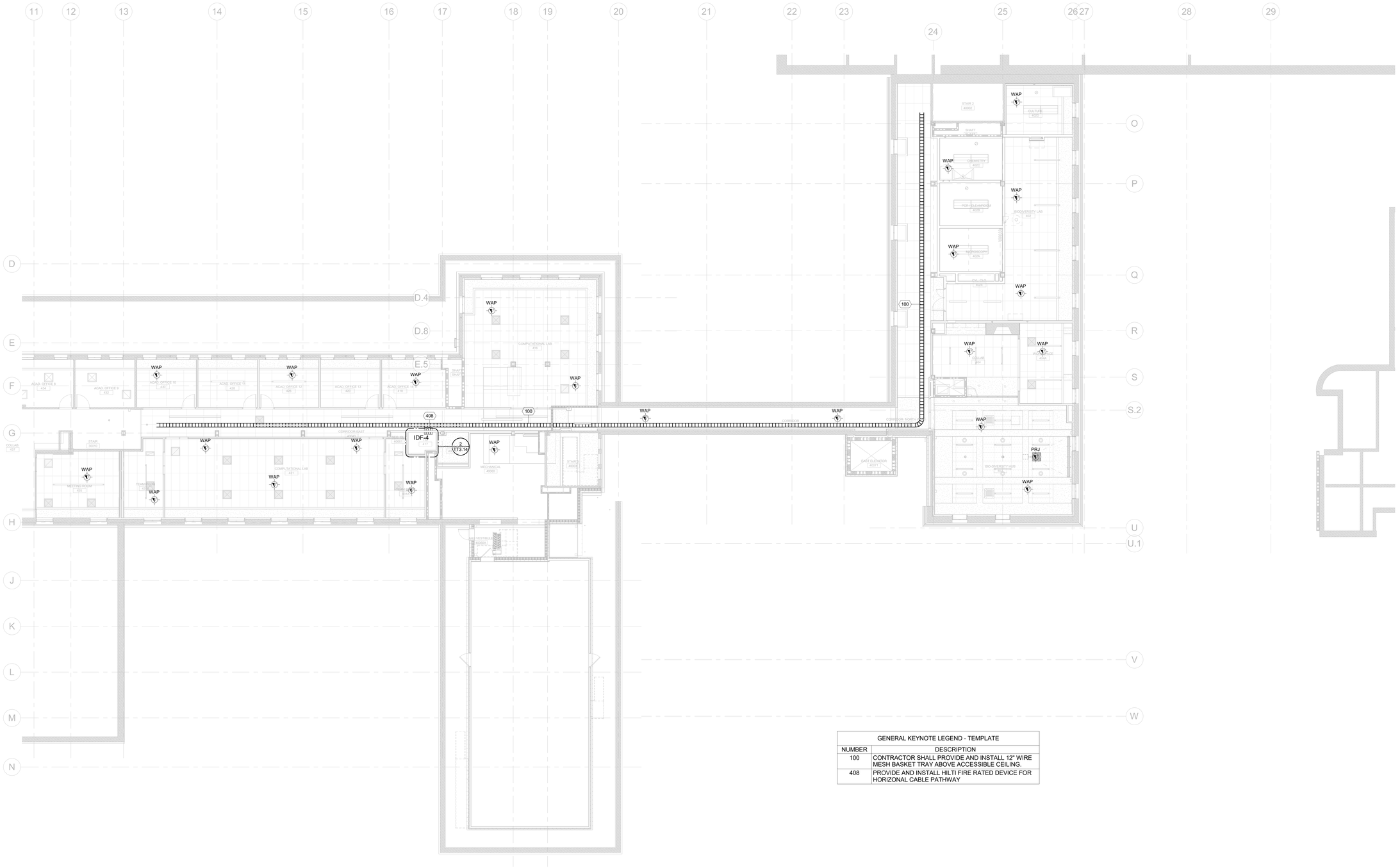

1 TELECOMMUNICATION OVERALL CEILING PLAN - FOURTH FLOOR PART C - PHASE 2
1/8" = 1'-0"

GENERAL KEYNOTE LEGEND - TEMPLATE	
NUMBER	DESCRIPTION
100	CONTRACTOR SHALL PROVIDE AND INSTALL 12" WIRE MESH BASKET TRAY ABOVE ACCESSIBLE CEILING.
408	PROVIDE AND INSTALL HILTI FIRE RATED DEVICE FOR HORIZONAL CABLE PATHWAY

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
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Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
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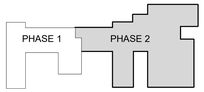
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
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Filename	
Date	August 31, 2026

Revisions

TELECOMMUNICATION FOURTH FLOOR RCP - PART C - PHASE 2

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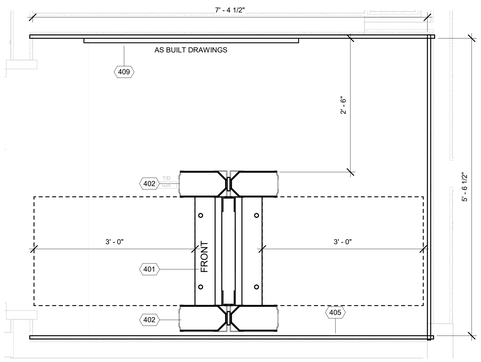
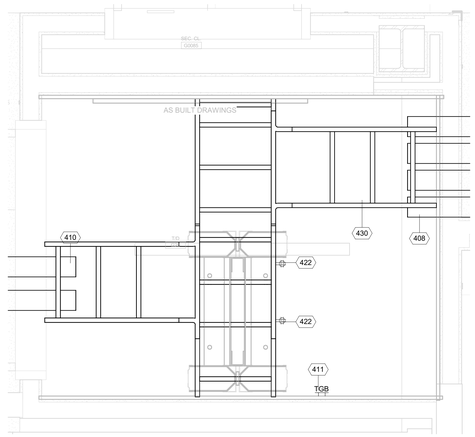


1 TELECOMMUNICATION OVERALL PLAN - GROUND FLOOR PART C - PHASE 2 - IDF-G
1" = 1'-0"



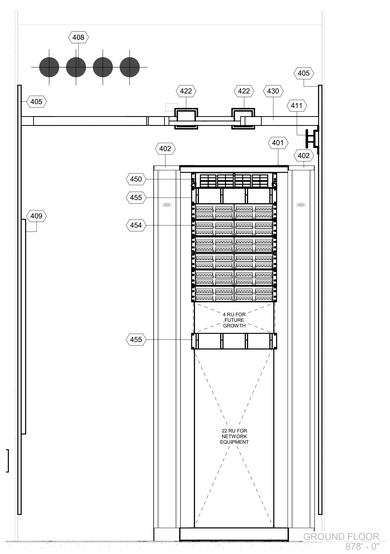
2 TELECOMMUNICATION OVERALL CEILING PLAN - GROUND FLOOR PART C - PHASE 2 - IDF-G
1" = 1'-0"

SHEET NOTES:

1. ALL IT RACKS TO BE PROVIDED WITH (2) VERTICAL PDU'S. DEVICES TO BE PROVIDED BY CORNELL IT TEAM.
2. ALL IT RACKS TO BE PROVIDED WITH (1) UPS MOUNTED AT THE BASE OF THE RACK. UPS TO BE EATON 9X UPS. DEVICES TO BE PROVIDED BY CORNELL IT TEAM.
3. CONTRACTOR TO PROVIDE AND INSTALL REUSABLE FIRE RATED SLEEVES PER TT4.1
4. CONTRACTOR TO COORDINATE WITH OTHER TRADES AND ENSURE TT DRAWING LAYOUTS ARE USED FOR FINAL ROOM LAYOUT AND COORDINATION OF DEVICES.

GENERAL KEYNOTE LEGEND - TEMPLATE

NUMBER	DESCRIPTION
401	PROVIDE AND INSTALL 7'H X 19"W 2-POST RACK. CONTRACTOR TO PROVIDE AND INSTALL ISOLATION PAD BETWEEN RACK BASE AND FLOOR. EACH RACK TO BE GROUNDED TO PROVIDED BUS BAR.
402	PROVIDE AND INSTALL 6"W FRONT VERTICAL WIRE MANAGER.
405	PROVIDE AND INSTALL 3/4" THICK FIRE RETARDENT PLYWOOD ON ALL WALLS. 8'X 4'SHEETS WALL MOUNTED WITH BOTTOM OF PLYWOOD AT 8" A.F.F.
408	PROVIDE AND INSTALL HILTI FIRE RATED DEVICE FOR HORIZONAL CABLE PATHWAY
409	PROVIDE WALL MOUNTED E SIZE AS-BUILT DRAWINGS WITH OUTLET LABELS AND RACK ELEVATIONS BEHIND PLEXIGLASS SURFACE.
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.
411	PROVIDE AND INSTALL TELECOMMUNICATIONS GROUNDING BUS BAR.
422	ELECTRICAL CONTRACTOR TO PROVIDE (1) QUAD 20 AMP 5-20R POWER RECEPTACLES. MOUNT POWER J-BOXES TO INDEPENDENT SUPORT ADJACENT TO CABLE TRAY.
430	PROVIDE AND INSTALL 18"W HORIZONTAL SUSPENDED LADDER RACK MOUNTED 6" ABOVE RACKS. CABLES SHALL BE LOOSELY BUNDLED IN QUANTITIES OF 24 WITH VELCRO. (TYP)
450	PROVIDE AND INSTALL 2RU FIBER OPTIC PATCH PANEL FOR CAMPUS BACKBONE CONNECTIONS
454	PROVIDE AND INSTALL 2RU 48 PORT PATCH PANEL FOR HORIZONTAL CABLING TERMINATIONS (TYP)
455	PROVIDE AND INSTALL 2RU HORIZONTAL WIRE MANAGER (TYP)



3 TELECOM ELEVATION - FRONT OF RACK - IDF-G
1" = 1'-0"

TELECOMMUNICATION ZONE SCHEDULE - PHASE 2 IDF-G

Type	Label	Cables Per Device	Count	Total Cables	Zone ID	Zone To Room
CEILING - STANDARD (2) POSITION OUTLET - WIRELESS ACCESS POINT	WAP	2	23	46	LEVEL-GROUND	IDF-G
FURNITURE FED - STANDARD (2) POSITION DATA OUTLET FOR CUBICLE WORK STATIONS	F2	2	17	34	LEVEL-GROUND	IDF-G
RACEWAY - STANDARD (2) POSITION OUTLET	R	2	30	60	LEVEL-GROUND	IDF-G
WALL - STANDARD (1) POSITION DATA OUTLET - SECURITY CAMERA	SC	1	4	4	LEVEL-GROUND	IDF-G
WALL - STANDARD (1) POSITION DATA OUTLET - SECURITY EMERGENCY PHONE	EP	1	1	1	LEVEL-GROUND	IDF-G
WALL - STANDARD (1) POSITION DATA OUTLET - WALL PHONE	W	1	1	1	LEVEL-GROUND	IDF-G
WALL - STANDARD (2) POSITION DATA OUTLET	2	2	7	14	LEVEL-GROUND	IDF-G
WALL - STANDARD (2) POSITION DATA OUTLET - BMS PANEL	BMS	2	1	2	LEVEL-GROUND	IDF-G
WALL - STANDARD (2) POSITION OUTLET	2	2	43	86	LEVEL-GROUND	IDF-G
WALL - STANDARD (2) POSITION OUTLET - SECURITY PANEL	ACP	2	1	2	LEVEL-GROUND	IDF-G
WALL - STANDARD (3) POSITION DATA OUTLET - ELEVATOR	EV	3	2	6	LEVEL-GROUND	IDF-G
130			130	256		
			130	256		

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575

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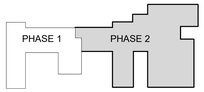
Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
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Filename
Date August 31, 2026

Revisions

TELECOMMUNICATION ENLARGED PLAN- IDF-G - PHASE 2

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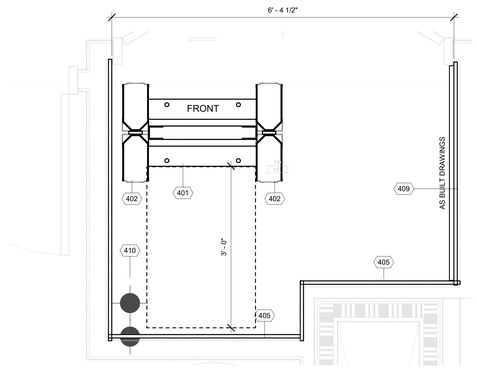
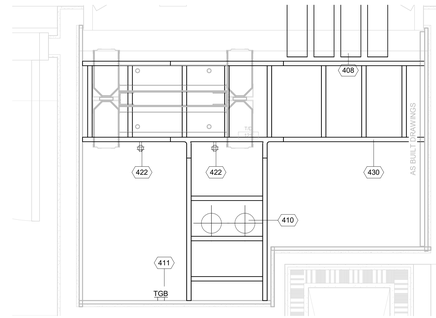


1 TELECOMMUNICATION OVERALL PLAN - FIRST FLOOR PART C - PHASE 2 - IDF-1
1" = 1'-0"



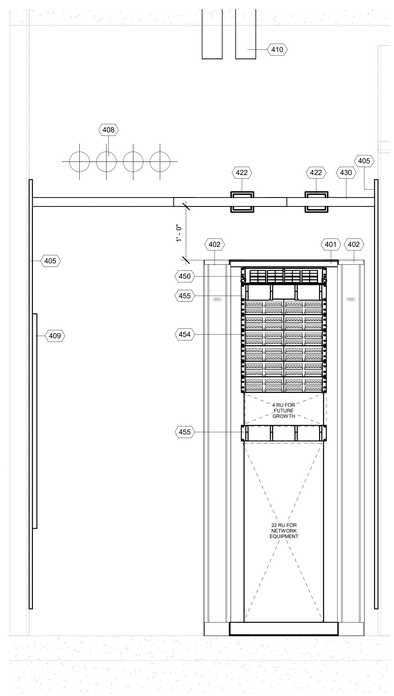
2 TELECOMMUNICATION OVERALL CEILING PLAN - FIRST FLOOR PART C - PHASE 2 - IDF-1
1" = 1'-0"

SHEET NOTES:

1. ALL IT RACKS TO BE PROVIDED WITH (2) VERTICAL PDU'S. DEVICES TO BE PROVIDED BY CORNELL IT TEAM.
2. ALL IT RACKS TO BE PROVIDED WITH (1) UPS MOUNTED AT THE BASE OF THE RACK. UPS TO BE EATON 9X UPS. DEVICES TO BE PROVIDED BY CORNELL IT TEAM.
3. CONTRACTOR TO PROVIDE AND INSTALL REUSABLE FIRE RATED SLEEVES PER TT4.1
4. CONTRACTOR TO COORDINATE WITH OTHER TRADES AND ENSURE TT DRAWING LAYOUTS ARE USED FOR FINAL ROOM LAYOUT AND COORDINATION OF DEVICES.

GENERAL KEYNOTE LEGEND - TEMPLATE

NUMBER	DESCRIPTION
401	PROVIDE AND INSTALL 7'H X 19"W 2-POST RACK. CONTRACTOR TO PROVIDE AND INSTALL ISOLATION PAD BETWEEN RACK BASE AND FLOOR. EACH RACK TO BE GROUNDED TO PROVIDED BUS BAR.
402	PROVIDE AND INSTALL 6"W FRONT VERTICAL WIRE MANAGER.
405	PROVIDE AND INSTALL 3/4" THICK FIRE RETARDENT PLYWOOD ON ALL WALLS. 8'X 4'SHEETS WALL MOUNTED WITH BOTTOM OF PLYWOOD AT 8" A.F.F.
408	PROVIDE AND INSTALL HILTI FIRE RATED DEVICE FOR HORIZONAL CABLE PATHWAY
409	PROVIDE WALL MOUNTED E SIZE AS-BUILT DRAWINGS WITH OUTLET LABELS AND RACK ELEVATIONS BEHIND PLEXIGLASS SURFACE.
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.
411	PROVIDE AND INSTALL TELECOMMUNICATIONS GROUNDING BUS BAR.
422	ELECTRICAL CONTRACTOR TO PROVIDE (1) QUAD 20 AMP 5-20R POWER RECEPTACLES. MOUNT POWER J-BOXES TO INDEPENDENT SUPORT ADJACENT TO CABLE TRAY.
430	PROVIDE AND INSTALL 18"W HORIZONTAL SUSPENDED LADDER RACK MOUNTED 6" ABOVE RACKS. CABLES SHALL BE LOOSELY BUNDLED IN QUANTITIES OF 24 WITH VELCRO. (TYP)
450	PROVIDE AND INSTALL 2RU FIBER OPTIC PATCH PANEL FOR CAMPUS BACKBONE CONNECTIONS
454	PROVIDE AND INSTALL 2RU 48 PORT PATCH PANEL FOR HORIZONTAL CABLING TERMINATIONS (TYP)
455	PROVIDE AND INSTALL 2RU HORIZONTAL WIRE MANAGER (TYP)



3 TELECOM ELEVATION - FRONT OF RACK - IDF-1
1" = 1'-0"

TELECOMMUNICATION ZONE SCHEDULE - PHASE 2 IDF-1

Type	Label	Cables Per Device	Count	Total Cables	Zone ID	Zone To Room
CEILING - STANDARD (2) POSITION OUTLET - PROJECTOR	PRJ	2	3	6	LEVEL-01	IDF-1
CEILING - STANDARD (2) POSITION OUTLET - WIRELESS ACCESS POINT	WAP	2	29	58	LEVEL-01	IDF-1
FLOOR - STANDARD (6) POSITION OUTLET - AV RACK	AR6	6	1	6	LEVEL-01	IDF-1
FURNITURE FED - STANDARD (2) POSITION DATA OUTLET FOR CUBICLE WORK STATIONS	F2	2	22	44	LEVEL-01	IDF-1
RACEWAY - STANDARD (2) POSITION OUTLET	R	2	22	44	LEVEL-01	IDF-1
WALL - STANDARD (1) POSITION DATA OUTLET - SECURITY EMERGENCY PHONE	EP	1	1	1	LEVEL-01	IDF-1
WALL - STANDARD (1) POSITION DATA OUTLET - WALL PHONE	W	1	1	1	LEVEL-01	IDF-1
WALL - STANDARD (1) POSITION OUTLET - SECURITY CAMERA	SC	1	4	4	LEVEL-01	IDF-1
WALL - STANDARD (2) POSITION DATA OUTLET	2	2	44	88	LEVEL-01	IDF-1
WALL - STANDARD (2) POSITION DATA OUTLET - AV	AV2	2	2	4	LEVEL-01	IDF-1
WALL - STANDARD (2) POSITION DATA OUTLET - AV DISPLAY	FP2	2	4	8	LEVEL-01	IDF-1
WALL - STANDARD (2) POSITION DATA OUTLET - PRINTER & FAX	PR	2	3	6	LEVEL-01	IDF-1
WALL - STANDARD (2) POSITION DATA OUTLET - WIRELESS ACCESS POINT	WAP	1	1	1	LEVEL-01	IDF-1
WALL - STANDARD (6) POSITION OUTLET - AV RACK	AR6	6	1	6	LEVEL-01	IDF-1
138			138	277		
			138	277		

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig
Architecture | Planning
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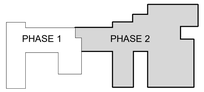
Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

TELECOMMUNICATION ENLARGED PLAN- IDF-1 - PHASE 2

BID DOCUMENTS
Scale: 1" = 1'-0"

TT3.11

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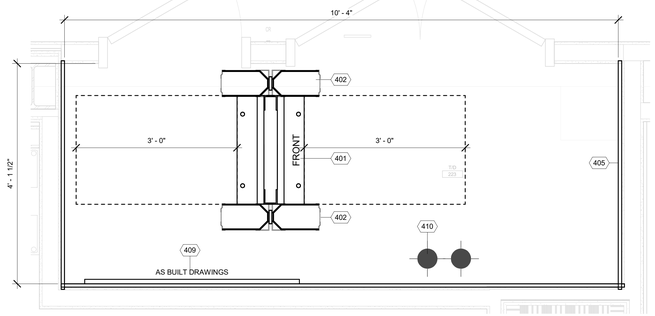
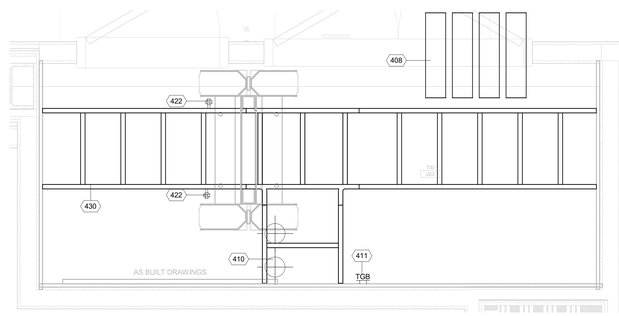


1 TELECOMMUNICATION OVERALL PLAN - SECOND FLOOR PART C - PHASE 2 - IDF-2
1" = 1'-0"



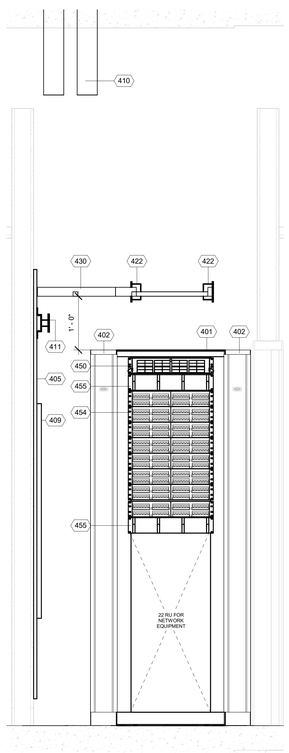
2 TELECOMMUNICATION OVERALL CEILING PLAN - SECOND FLOOR PART C - PHASE 2 - IDF-2
1" = 1'-0"

SHEET NOTES:

1. ALL IT RACKS TO BE PROVIDED WITH (2) VERTICAL PDU'S. DEVICES TO BE PROVIDED BY CORNELL IT TEAM.
2. ALL IT RACKS TO BE PROVIDED WITH (1) UPS MOUNTED AT THE BASE OF THE RACK. UPS TO BE EATON 9X UPS. DEVICES TO BE PROVIDED BY CORNELL IT TEAM.
3. CONTRACTOR TO PROVIDE AND INSTALL REUSABLE FIRE RATED SLEEVES PER TT4.1
4. CONTRACTOR TO COORDINATE WITH OTHER TRADES AND ENSURE TT DRAWING LAYOUTS ARE USED FOR FINAL ROOM LAYOUT AND COORDINATION OF DEVICES.

GENERAL KEYNOTE LEGEND - TEMPLATE

NUMBER	DESCRIPTION
401	PROVIDE AND INSTALL 7'H X 19"W 2-POST RACK. CONTRACTOR TO PROVIDE AND INSTALL ISOLATION PAD BETWEEN RACK BASE AND FLOOR. EACH RACK TO BE GROUNDED TO PROVIDED BUS BAR.
402	PROVIDE AND INSTALL 6"W FRONT VERTICAL WIRE MANAGER.
405	PROVIDE AND INSTALL 3/4" THICK FIRE RETARDENT PLYWOOD ON ALL WALLS. 8'X 4'SHEETS WALL MOUNTED WITH BOTTOM OF PLYWOOD AT 8" A.F.F.
408	PROVIDE AND INSTALL HILTI FIRE RATED DEVICE FOR HORIZONAL CABLE PATHWAY
409	PROVIDE WALL MOUNTED E SIZE AS-BUILT DRAWINGS WITH OUTLET LABELS AND RACK ELEVATIONS BEHIND PLEXIGLASS SURFACE.
410	PROVIDE AND INSTALL 4" CONDUIT WITH FIRE PROOFING.
411	PROVIDE AND INSTALL TELECOMMUNICATIONS GROUNDING BUS BAR.
422	ELECTRICAL CONTRACTOR TO PROVIDE (1) QUAD 20 AMP 5-20R POWER RECEPTACLES. MOUNT POWER J-BOXES TO INDEPENDENT SUPORT ADJACENT TO CABLE TRAY.
430	PROVIDE AND INSTALL 18"W HORIZONTAL SUSPENDED LADDER RACK MOUNTED 6" ABOVE RACKS. CABLES SHALL BE LOOSELY BUNDLED IN QUANTITIES OF 24 WITH VELCRO. (TYP)
450	PROVIDE AND INSTALL 2RU FIBER OPTIC PATCH PANEL FOR CAMPUS BACKBONE CONNECTIONS
454	PROVIDE AND INSTALL 2RU 48 PORT PATCH PANEL FOR HORIZONTAL CABLING TERMINATIONS (TYP)
455	PROVIDE AND INSTALL 2RU HORIZONTAL WIRE MANAGER (TYP)



3 TELECOM ELEVATION - FRONT OF RACK - IDF-2
1" = 1'-0"

TELECOMMUNICATION ZONE SCHEDULE - PHASE 2 IDF-2

Type	Label	Cables Per Device	Count	Total Cables	Zone ID	Zone To Room
CEILING - STANDARD (2) POSITION OUTLET - PROJECTOR	PRJ	2	2	4	LEVEL-02	IDF-2
CEILING - STANDARD (2) POSITION OUTLET - WIRELESS ACCESS POINT	WAP	2	28	56	LEVEL-02	IDF-2
FLOOR - STANDARD (2) POSITION DATA OUTLET IN FLOOR BOX - AV	AV2	2	1	2	LEVEL-02	IDF-2
FLOOR - STANDARD (6) POSITION OUTLET - AV RACK	AR6	6	1	6	LEVEL-02	IDF-2
FURNITURE FED - STANDARD (2) POSITION DATA OUTLET FOR CUBICLE WORK STATIONS	F2	2	41	82	LEVEL-02	IDF-2
RACEWAY - STANDARD (2) POSITION OUTLET	R	2	32	64	LEVEL-02	IDF-2
WALL - STANDARD (1) POSITION DATA OUTLET - SECURITY EMERGENCY PHONE	EP	1	1	1	LEVEL-02	IDF-2
WALL - STANDARD (1) POSITION DATA OUTLET - SECURITY INTERCOM	IC	1	1	1	LEVEL-02	IDF-2
WALL - STANDARD (1) POSITION OUTLET - SECURITY CAMERA	SC	1	2	2	LEVEL-02	IDF-2
WALL - STANDARD (2) POSITION DATA OUTLET	2	2	40	80	LEVEL-02	IDF-2
WALL - STANDARD (2) POSITION DATA OUTLET - AV	AV2	2	3	6	LEVEL-02	IDF-2
WALL - STANDARD (2) POSITION DATA OUTLET - AV DISPLAY	FP2	2	3	6	LEVEL-02	IDF-2
WALL - STANDARD (2) POSITION DATA OUTLET - SECURITY PANEL	SP	1	1	1	LEVEL-02	IDF-2
WALL - STANDARD (2) POSITION OUTLET - SECURITY PANEL	ACP	2	1	2	LEVEL-02	IDF-2
WALL - STANDARD (3) POSITION DATA OUTLET - ELEVATOR	EV	3	1	3	LEVEL-02	IDF-2
158			158	316		
			158	316		

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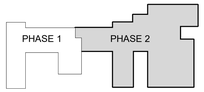

Keyplan

Job Number 161026-00 / 31909
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Date August 31, 2026

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TELECOMMUNICATION ENLARGED PLAN- IDF-2 - PHASE 2

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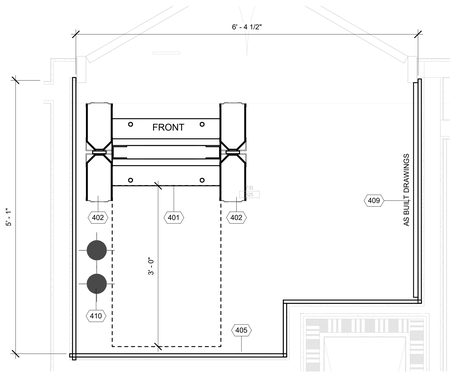
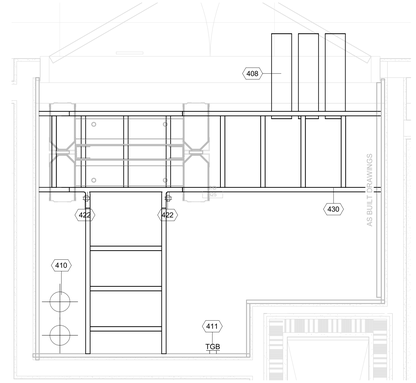


1 TELECOMMUNICATION OVERALL PLAN - THIRD FLOOR PART C - PHASE 2 - IDF-3
1" = 1'-0"



2 TELECOMMUNICATION OVERALL CEILING PLAN - THIRD FLOOR PART C - PHASE 2 - IDF-3
1" = 1'-0"

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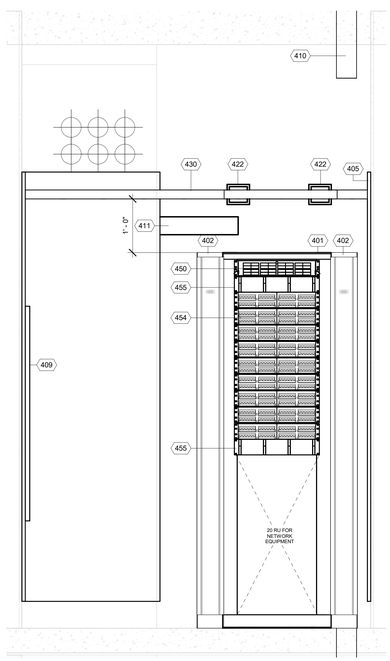

3 TELECOM ELEVATION - FRONT OF RACK - IDF-3
1" = 1'-0"

TELECOMMUNICATION ZONE SCHEDULE - PHASE 2 IDF-3

Type	Label	Cables Per Device	Count	Total Cables	Zone ID	Zone To Room
CEILING - STANDARD (2) POSITION OUTLET - PROJECTOR	PRJ	2	1	2	LEVEL-03	IDF-3
CEILING - STANDARD (2) POSITION OUTLET - WIRELESS ACCESS POINT	WAP	2	33	66	LEVEL-03	IDF-3
FLOOR - STANDARD (4) POSITION DATA OUTLET IN FLOOR BOX - AV	AV4	4	1	4	LEVEL-03	IDF-3
FURNITURE FED - STANDARD (2) POSITION DATA OUTLET FOR CUBICLE WORK STATIONS	F2	2	39	78	LEVEL-03	IDF-3
RACEWAY - STANDARD (2) POSITION OUTLET	R	2	30	60	LEVEL-03	IDF-3
WALL - STANDARD (1) POSITION DATA OUTLET - SECURITY EMERGENCY PHONE	EP	1	1	1	LEVEL-03	IDF-3
WALL - STANDARD (1) POSITION OUTLET - SECURITY CAMERA	SC	1	1	1	LEVEL-03	IDF-3
WALL - STANDARD (2) POSITION DATA OUTLET	2	2	47	94	LEVEL-03	IDF-3
WALL - STANDARD (2) POSITION DATA OUTLET - AV	AV2	2	3	6	LEVEL-03	IDF-3
WALL - STANDARD (2) POSITION DATA OUTLET - AV DISPLAY	FP2	2	3	6	LEVEL-03	IDF-3
WALL - STANDARD (3) POSITION OUTLET	3	3	29	87	LEVEL-03	IDF-3
WALL - STANDARD (6) POSITION DATA OUTLET - AV RACK	AR	6	1	6	LEVEL-03	IDF-3
189			189	411		
			189	411		

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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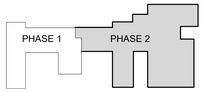
Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

TELECOMMUNICATION ENLARGED PLAN- IDF-3 - PHASE 2

BID DOCUMENTS
Scale: 1" = 1'-0"

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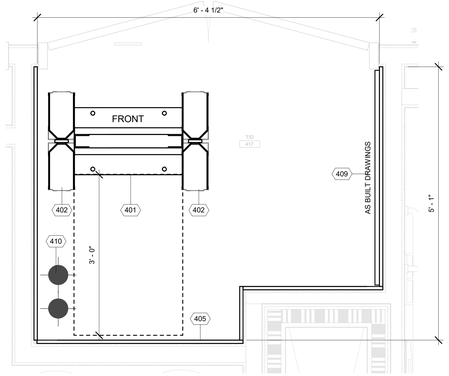
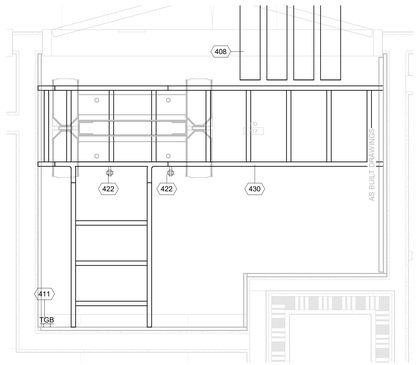
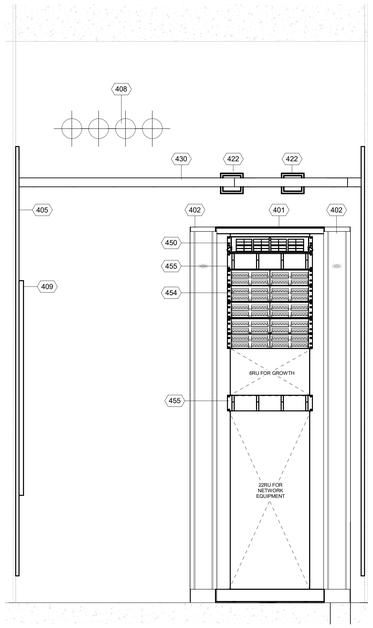


1 TELECOMMUNICATION OVERALL PLAN - FOURTH FLOOR PART C - PHASE 2 - IDF-4
1" = 1'-0"



2 TELECOMMUNICATION OVERALL CEILING PLAN - FOURTH FLOOR PART C - PHASE 2 - IDF-4
1" = 1'-0"



3 TELECOM ELEVATION - FRONT OF RACK - IDF-4
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454	PROVIDE AND INSTALL 2RU 48 PORT PATCH PANEL FOR HORIZONTAL CABLING TERMINATIONS (TYP)
455	PROVIDE AND INSTALL 2RU HORIZONTAL WIRE MANAGER (TYP)

TELECOMMUNICATION ZONE SCHEDULE - PHASE 2 IDF-4

Type	Label	Cables Per Device	Count	Total Cables	Zone ID	Zone To Room
CEILING - STANDARD (2) POSITION OUTLET - PROJECTOR	PRJ	2	1	2	LEVEL-04	IDF-4
CEILING - STANDARD (2) POSITION OUTLET - WIRELESS ACCESS POINT	WAP	2	23	46	LEVEL-04	IDF-4
FLOOR - STANDARD (2) POSITION DATA OUTLET IN FLOOR BOX - AV	AV2	2	1	2	LEVEL-04	IDF-4
FURNITURE FED - STANDARD (2) POSITION DATA OUTLET FOR CUBICLE WORK STATIONS	F2	2	30	60	LEVEL-04	IDF-4
RACEWAY - STANDARD (2) POSITION OUTLET	R	2	7	14	LEVEL-04	IDF-4
WALL - STANDARD (1) POSITION DATA OUTLET - SECURITY EMERGENCY PHONE	EP	1	1	1	LEVEL-04	IDF-4
WALL - STANDARD (2) POSITION DATA OUTLET	2	2	27	54	LEVEL-04	IDF-4
WALL - STANDARD (2) POSITION DATA OUTLET - AV	AV2	2	4	8	LEVEL-04	IDF-4
WALL - STANDARD (2) POSITION DATA OUTLET - AV DISPLAY	FP2	2	7	14	LEVEL-04	IDF-4
WALL - STANDARD (2) POSITION OUTLET - SECURITY PANEL	ACP	2	1	2	LEVEL-04	IDF-4
WALL - STANDARD (6) POSITION DATA OUTLET - AV RACK	AR	6	1	6	LEVEL-04	IDF-4
103			103	209		
			103	209		

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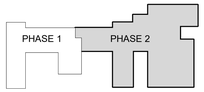
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue New York, NY 10016, T 212 725-6800

Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300 Buffalo, NY 14203, T 716 206-5122

Hastings Consulting Building Code — 142 Hanlon Rd Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801 New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

TELECOMMUNICATION ENLARGED PLAN- IDF-4 - PHASE 2

BID DOCUMENTS
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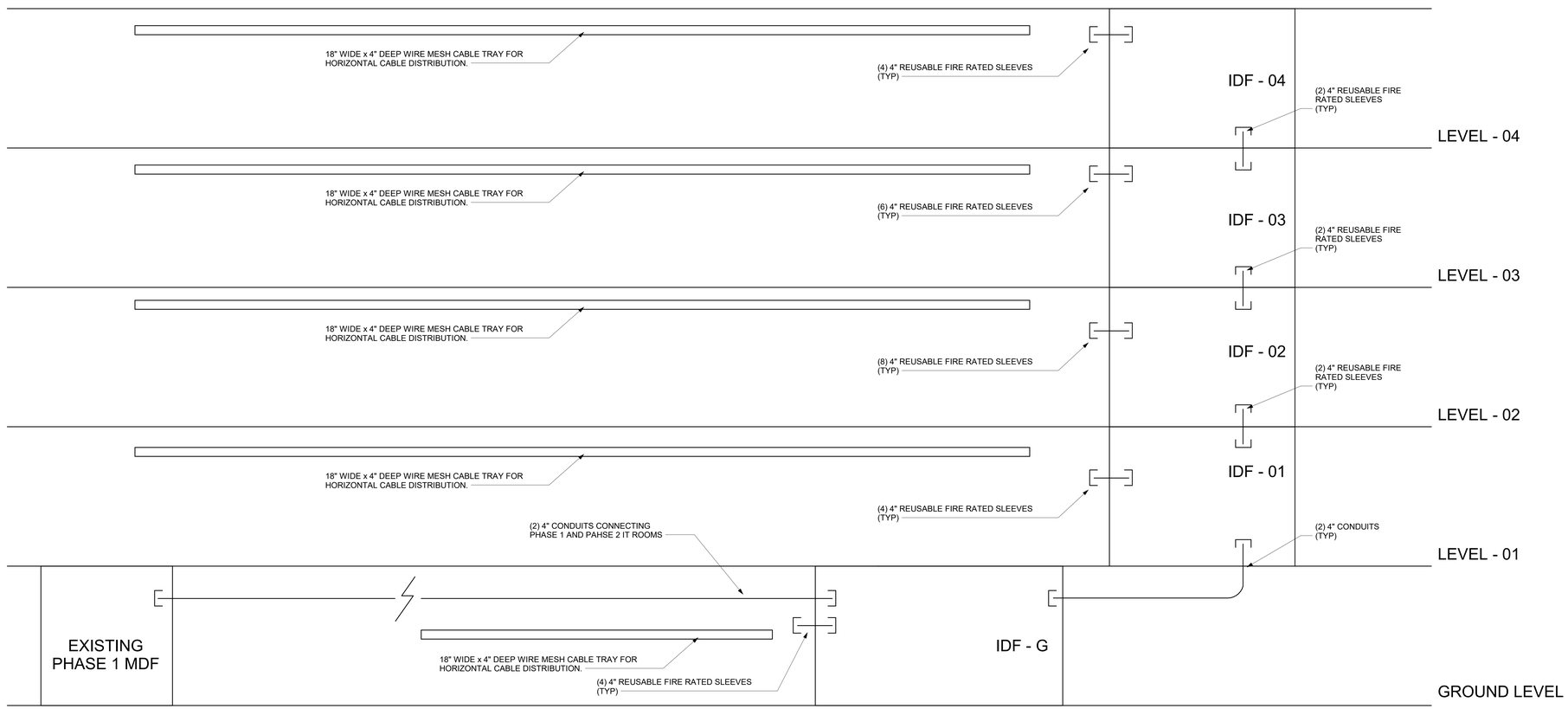
SHEET NOTES:
1. DRAWINGS ARE DIAGRAMMATIC ONLY.

2. COORDINATE EXACT ROUTING WITH FIELD CONDITIONS, OTHER TRADES, AND CONTRACTORS.

3. VERTICAL CONDUITS/ SLEEVES TO BE DEDICATED FOR HORIZONTAL DISTRIBUTION PATHWAYS.

4. REFER TO DIV 27 SPECIFICATIONS AND TELECOM DETAILS FOR FURTHER PATHWAY REQUIREMENTS AND CLARIFICATIONS



1 TELECOM PHASE 2- PATHWAYS RISER
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
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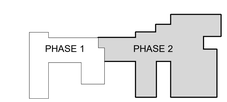
Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
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Revisions

TELECOM RISER PATHWAY - PHASE 2

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SHEET NOTES:
1. ALL FIBER OPTIC TERMINATIONS SHALL BE "LC" STYLE.

2. ALL FIBER OPTIC TERMINATIONS SHALL BE FUSION STYLE TERMINATIONS.

3. PROVIDE INDIVIDUAL FUSION CONNECTORS OR "PIGTAIL" STYLE FIBER TERMINATIONS.

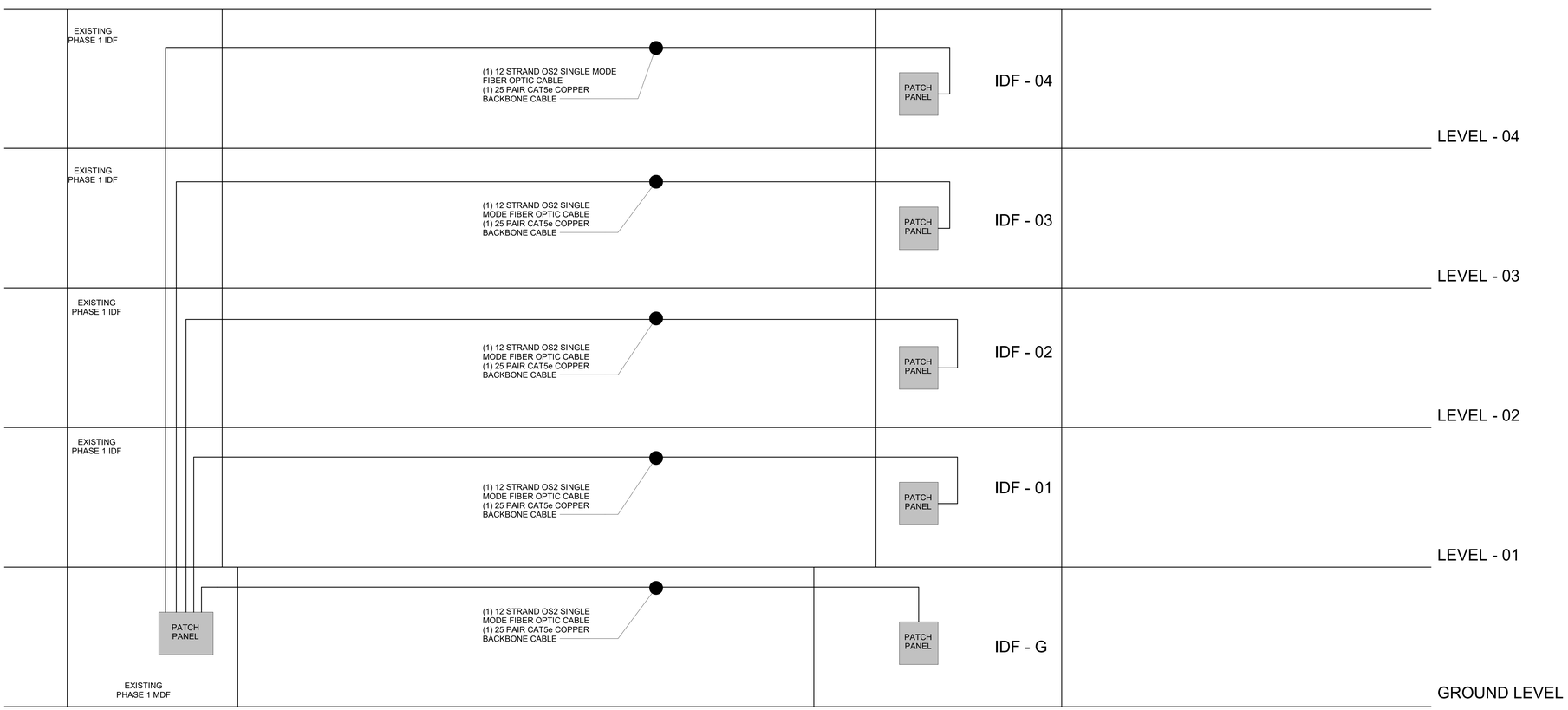
4. PROVIDE 10FT SERVICE COIL AT EACH TERMINATION POINT.

5. PROVIDE 3FT SLACK COIL IN FIBER OPTIC TERMINATION SHELF.

6.ALL FIBER OPTIC CABLE TO BE ARMORED.

7. DRAWINGS ARE DIAGRAMMATIC ONLY.

8. BACKBONE FIBER TO ROUTE THROUGH PHASE 1 EXISTING PATHWAYS TO AVOID LOBBY CEILING ROUTING.



1 TELECOM PHASE 2- BACKBONE RISER
1" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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SUNY State University Construction Fund

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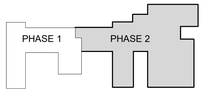
Notes:



Keyplan

Job Number	161026-00 / 31909
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Revisions

TELECOM RISER BACKBONE - PHASE 2

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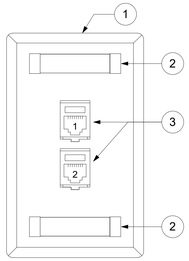


DETAIL KEY NOTES:

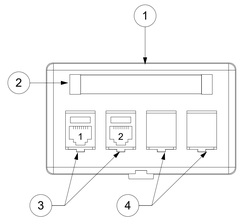
1. 2-PORT SINGLE GANG FACEPLATE.
   - COORDINATE WITH ELECTRICAL CONTRACTOR.
   - COLORS AND FINISHES TO BE VERIFIED THROUGH SHOP DRAWINGS AND SUBMITTALS.
2. OUTLET LABELING WINDOW
   - LABEL OUTLET USING MACHINE-PRINTED LABELS COMPATABLE WITH FACE PLATE.
   - LABELING TO MATCH PORT DESIGNATIONS AT PATCH PANEL. ALL OUTLETS SHALL HAVE UNIQUE LABELING.
3. TERMINATE CABLE ON 8P8C JACK.
   - TERMINATION SCHEME IS TIA 568-B UON.
   - JACK COLOR TO MATCH CABLE COLOR UON.
   - LABEL CABLE TO MATCH PORT DESIGNATION IN PATCH PANEL USING MACHINE-PRINTED SELF ADHESIVE LABEL. ALL CABLES ARE TO HAVE A UNIQUE LABELING.

SYMBOL:	CONDUIT STUB:	BACK BOX:
FP 2	MINIMUM 1" CONDUIT FROM BACK BOX TO ACCESSIBLE CEILING	MINIMUM 4" SQUARE METAL BACK BOX WITH SINGLE GANG DEVICE RING

CABLE DETAILS:

QUANTITY:	CABLE TYPE:	CABLE COLOR:
2	4-PAIR CATEGORY 6 U/UTP	BLUE

1 WALL-MOUNTED 2-PORT OUTLET
NTS



DETAIL KEY NOTES:

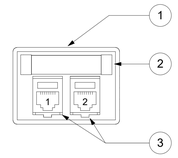
1. FURNITURE-MOUNT FACE PLATE. COMPATIBLE WITH FURNITURE SYSTEM. REFER TO FURNITURE PLANS. COLOR AND FINISH TO BE VERIFIED THROUGH SHOP DRAWINGS AND SUBMITTALS.
2. OUTLET LABELING WINDOW
   - LABEL OUTLET USING MACHINE-PRINTED LABELS COMPATIBLE WITH FACE PLATE.
   - LABELING TO MATCH PORT DESIGNATIONS AT PATCH PANEL. ALL OUTLETS SHALL HAVE UNIQUE LABELING.
3. TERMINATE CABLE ON 8P8C JACK.
   - TERMINATION SCHEME IS TIA 568-B UON.
   - JACK COLOR TO MATCH CABLE COLOR UON.
   - LABEL CABLE TO MATCH PORT DESIGNATION IN PATCH PANEL USING MACHINE-PRINTED SELF ADHESIVE LABEL. ALL CABLES ARE TO HAVE A UNIQUE LABELING.
4. PROVIDE BLANK PORT COVERS FOR ALL UNUSED PORTS.

SYMBOL:	CONDUIT STUB:	BACK BOX:
FZ	NA. CABLE IS ROUTED THROUGH FURNITURE'S INTEGRATED CABLE PATHWAY	NA / INTEGRATED INTO FURNITURE

CABLE DETAILS:

QUANTITY:	CABLE TYPE:	CABLE COLOR:
2	4-PAIR CATEGORY 6A U/UTP	REFER TO LEGEND ON TT-000

2 FURNITURE-MOUNTED 2-PORT OUTLET
NTS



DETAIL KEY NOTES:

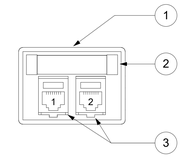
1. 2-PORT SURFACE-MOUNT OUTLET BOX.
   - OUTLET BOX IS TO BE LISTED FOR THE ENVIRONMENT THAT IT IS TO BE INSTALLED IN.
   - COLORS AND FINISHES TO BE VERIFIED THROUGH SHOP DRAWINGS AND SUBMITTALS.
2. OUTLET LABELING WINDOW
   - LABEL OUTLET USING MACHINE-PRINTED LABELS COMPATABLE WITH FACE PLATE.
   - LABELING TO MATCH PORT DESIGNATIONS AT PATCH PANEL. ALL OUTLETS SHALL HAVE UNIQUE LABELING.
3. TERMINATE CABLE ON 8P8C JACK.
   -TERMINATION SCHEME IS TIA 568-B UON.
   - JACK COLOR TO MATCH CABLE COLOR UON.
   - LABEL CABLE TO MATCH PORT DESIGNATION IN PATCH PANEL USING MACHINE-PRINTED SELF AHDESIVE LABEL. ALL CABLES ARE TO HAVE A UNIQUE LABELING.

SYMBOL:	CONDUIT STUB:	BACK BOX:
AP	NONE	NONE

CABLE DETAILS:

QUANTITY:	CABLE TYPE:	CABLE COLOR:
2	4-PAIR CATEGORY 6A U/UTP	GREEN

3 CEILING-MOUNTED WIFI ACCESS POINT OUTLET
NTS



DETAIL KEY NOTES:

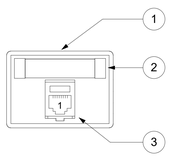
1. 2-PORT SURFACE-MOUNT OUTLET BOX.
   - OUTLET BOX IS TO BE LISTED FOR THE ENVIRONMENT THAT IT IS TO BE INSTALLED IN.
   - COLORS AND FINISHES TO BE VERIFIED THROUGH SHOP DRAWINGS AND SUBMITTALS.
2. OUTLET LABELING WINDOW
   - LABEL OUTLET USING MACHINE-PRINTED LABELS COMPATABLE WITH FACE PLATE.
   - LABELING TO MATCH PORT DESIGNATIONS AT PATCH PANEL. ALL OUTLETS SHALL HAVE UNIQUE LABELING.
3. TERMINATE CABLE ON 8P8C JACK.
   -TERMINATION SCHEME IS TIA 568-B UON.
   - JACK COLOR TO MATCH CABLE COLOR UON.
   - LABEL CABLE TO MATCH PORT DESIGNATION IN PATCH PANEL USING MACHINE-PRINTED SELF AHDESIVE LABEL. ALL CABLES ARE TO HAVE A UNIQUE LABELING.

SYMBOL:	CONDUIT STUB:	BACK BOX:
PJ	NONE	NONE

CABLE DETAILS:

QUANTITY:	CABLE TYPE:	CABLE COLOR:
2	4-PAIR CATEGORY 6 U/UTP	BLUE

4 CEILING-MOUNTED PROJECTOR OUTLET
NTS



DETAIL KEY NOTES:

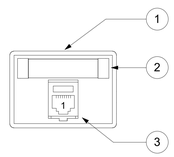
1. 1-PORT SURFACE-MOUNT OUTLET BOX.
   - OUTLET BOX IS TO BE LISTED FOR THE ENVIRONMENT THAT IT IS TO BE INSTALLED IN.
   - COLORS AND FINISHES TO BE VERIFIED THROUGH SHOP DRAWINGS AND SUBMITTALS.
2. OUTLET LABELING WINDOW
   - LABEL OUTLET USING MACHINE-PRINTED LABELS COMPATABLE WITH FACE PLATE.
   - LABELING TO MATCH PORT DESIGNATIONS AT PATCH PANEL. ALL OUTLETS SHALL HAVE UNIQUE LABELING.
3. TERMINATE CABLE ON 8P8C JACK.
   -TERMINATION SCHEME IS TIA 568-B UON.
   - JACK COLOR TO MATCH CABLE COLOR UON.
   - LABEL CABLE TO MATCH PORT DESIGNATION IN PATCH PANEL USING MACHINE-PRINTED SELF AHDESIVE LABEL. ALL CABLES ARE TO HAVE A UNIQUE LABELING.

SYMBOL:	CONDUIT STUB:	BACK BOX:
SC	NONE	NONE

CABLE DETAILS:

QUANTITY:	CABLE TYPE:	CABLE COLOR:
1	4-PAIR CATEGORY 6 U/UTP	BLUE

5 CEILING-MOUNTED SECURITY CAMERA OUTLET
NTS



DETAIL KEY NOTES:

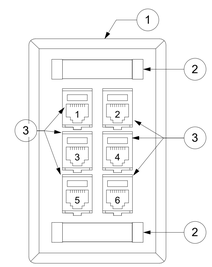
1. 1-PORT SURFACE-MOUNT OUTLET BOX.
   - OUTLET BOX IS TO BE LISTED FOR THE ENVIRONMENT THAT IT IS TO BE INSTALLED IN.
   - COLORS AND FINISHES TO BE VERIFIED THROUGH SHOP DRAWINGS AND SUBMITTALS.
2. OUTLET LABELING WINDOW
   - LABEL OUTLET USING MACHINE-PRINTED LABELS COMPATIBLE WITH FACE PLATE.
   - LABELING TO MATCH PORT DESIGNATIONS AT PATCH PANEL. ALL OUTLETS SHALL HAVE UNIQUE LABELING.
3. TERMINATE CABLE ON 8P8C JACK.
   -TERMINATION SCHEME IS TIA 568-B UON.
   - JACK COLOR TO MATCH CABLE COLOR UON.
   - LABEL CABLE TO MATCH PORT DESIGNATION IN PATCH PANEL USING MACHINE-PRINTED SELF ADHESIVE LABEL. ALL CABLES ARE TO HAVE A UNIQUE LABELING.
4. ENSURE THAT A PATCH CABLE IS EXTENDED FROM THE OUTLET BOX LOCATED IN AN ACCESSIBLE LOCATION TO THE END POINT DEVICE.

SYMBOL:	CONDUIT STUB:	BACK BOX:
SC RS	NONE	NONE

CABLE DETAILS:

QUANTITY:	CABLE TYPE:	CABLE COLOR:
1	4-PAIR CATEGORY 6 U/UTP	REFER TO BLUE

6 STANDARD CEILING MOUNTED DATA OUTLET
NTS



DETAIL KEY NOTES:

1. 4-PORT SINGLE GANG FACEPLATE.
   - COORDINATE WITH ELECTRICAL CONTRACTOR.
   - COLORS AND FINISHES TO BE VERIFIED THROUGH SHOP DRAWINGS AND SUBMITTALS.
2. OUTLET LABELING WINDOW
   - LABEL OUTLET USING MACHINE-PRINTED LABELS COMPATABLE WITH FACE PLATE.
   - LABELING TO MATCH PORT DESIGNATIONS AT PATCH PANEL. ALL OUTLETS SHALL HAVE UNIQUE LABELING.
3. TERMINATE CABLE ON 8P8C JACK.
   -TERMINATION SCHEME IS TIA 568-B UON.
   - JACK COLOR TO MATCH CABLE COLOR UON.
   - LABEL CABLE TO MATCH PORT DESIGNATION IN PATCH PANEL USING MACHINE-PRINTED SELF AHDESIVE LABEL. ALL CABLES ARE TO HAVE A UNIQUE LABELING.

SYMBOL:	CONDUIT STUB:	BACK BOX:
AR	MINIMUM 1 1/2" CONDUIT FROM BACK BOX TO ACCESSIBLE CEILING	MINIMUM 4" SQUARE METAL BACK BOX WITH SINGLE GANG DEVICE RING

CABLE DETAILS:

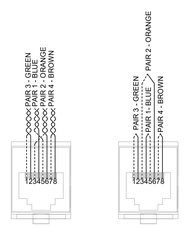
QUANTITY:	CABLE TYPE:	CABLE COLOR:
6	4-PAIR CATEGORY 6 U/UTP	BLUE

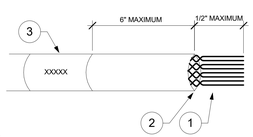
7 WALL-MOUNTED 4-PORT OUTLET
NTS

TIA 568-A WIRING PINOUT

PAIR 1 - BLUE: PINS 5, 4
PAIR 2 - ORANGE: PINS 3, 6
PAIR 3 - GREEN: PINS 1, 2
PAIR 4 - BROWN: PINS 7, 8

PIN 1: GREEN-WHITE
PIN 2: GREEN
PIN 3: BLUE-WHITE
PIN 4: ORANGE
PIN 5: ORANGE-WHITE
PIN 6: BLUE
PIN 7: BROWN-WHITE
PIN 8: BROWN





8 CATEGORY 6 && 6A U/UTP CABLING TERMINATION
NTS

DETAIL KEY NOTES:

1. INDIVIDUAL PAIRS SHALL NOT BE UNTWISTED MORE THAN 1/2 INCH.
   -UTP CONNECTING HARDWARE SHALL BE INSTALLED TO PROVIDE MINIMAL SIGNAL IMAIRMENT BY PRESERVING WIRE PAIR TWISTS AS CLOSELY AS POSSIBLE TO THE POINT OF MECHANICAL TERMINATION.
2. CLEANLY REMOVE MINIMUM AMOUNT OF CABLE JACKET.
   - DO NOT REMOVE INSULATION FROM INNER CONDUCTORS. IF AN INNER CONDUCTOR'S INSULLATION IS DAMAGED DURING REMOVAL OF THE OUTER JACKET THEN CUT OFF THE DAMAGED SECTION OF CABLE AND REMOVE THE OUTER JACKET FURTHER DOWN.
3. THE CABLE SHALL BE PERMANENTLY LABELED WITH MACHINE-PRINTED SELF ADHERING LABELS AT BOTH ENDS.
   - EACH CABLE SHALL HAVE A UNIQUE IDENTIFIER.
   - LABELS SHALL BE LOCATED WITHIN 6 INCHES OF THE CABLE END.
   - HANDWRITEN LABELS AND MARKINGS ARE NOT ACCEPTABLE. ALL LABLING SHALL BE MACHINE PRINTED.

BOTH ENDS OF THE CABLE ARE TO BE TERMINATED AS FOLLOWS:

- ALL WIRING SHALL BE TIA-568A UON.
- TERMINATE ALL WIRING ON INSULATION DISPLACEMENT CONNECTION (IDC) TERMINATION AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- EXCESS WIRE SHALL BE REMOVED. DO NOT LEAVE "TAILS" HANGING OFF OF THE IDC TERMINATION.
- AN INDUSTRY ACCEPTED PUNCHDOWN/TERMINATION IMPACT TOOL SHALL BE USED FOR ALL CABLE TERMINATIONS. STUFFER CAPS SHALL NOT BE USED IN LIEU OF A PUNCHDOWN / TERMINATION IMPACT TOOL.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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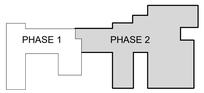

Keyplan

Job Number	161026-00 / 31909
Drawing By	OA
Checked By	RH
Filename	
Date	August 31, 2026

Revisions

TELECOMMUNICATION DETAILS 1 - PHASE 2

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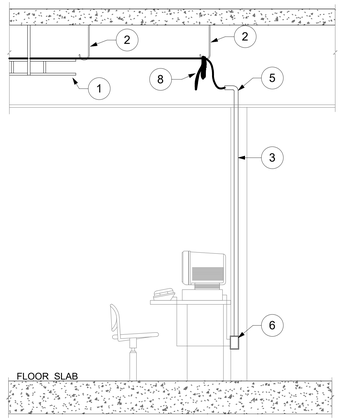
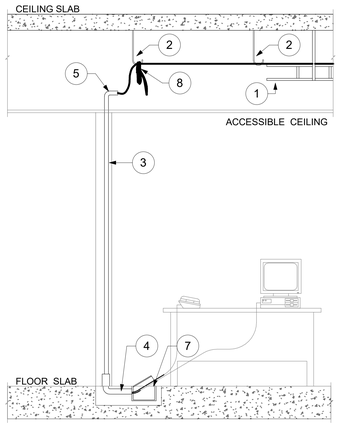
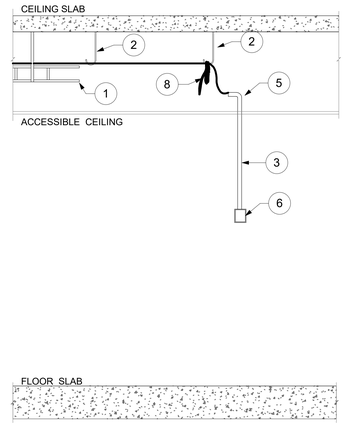


WALL OUTLET CABLING DETAIL

1 OUTLET CONDUIT ROUTING
NTS



FLOOR BOX CABLING DETAIL



WALL MOUNTED DEVICE CABLING DETAIL

OUTLET CONDUIT AND BACKBOX NOTES

1. INSTALL CABLE IN HORIZONTAL CABLE TRAYS AND ROUTE AS PER DRAWINGS WITHIN THIS SET.

2. PROVIDE J-HOOKS SECURED INDEPENDENTLY TO BUILDING STRUCTURE.
   - DO NOT SUPPORT J-HOOKS ON ANY BUILDING SYSTEMS SUCH AS HVAC DUCTS, PLUMBING PIPING, SPRINKLER PIPING, ETC.
   -J-HOOK MAXIMUM SPACING IS TO BE 5 FEET ON CENTER.
   -MAXIMUM DISTANCE FROM CABLE TRAY TO J-HOOK OR FROM CONDUIT STUB UP TO J-HOOK IS 6 INCHES.

3. INSTALL CONDUIT WITHIN WALL. MINIMUM SIZE IS 3/4", REFER TO OUTLET TYPES FOR SIZING.

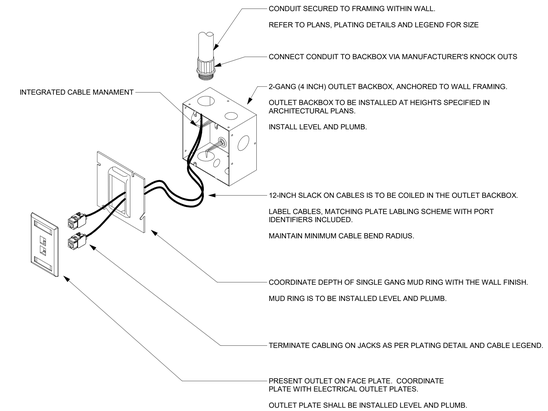
4. CONDUIT TRENCHED IN SLAB, WITH TURN UP AND STUB UP INTO WALL.

5. PROVIDE BEND TAKING CONDUIT FROM VERTICAL TO HORIZONTAL.
   - BEND RADIUS SHALL BE 6-TIMES THE CONDUIT'S INTERIOR DIAMETER FOR CONDUITS 2 INCHES AND SMALLER, AND 10-TIMES THE CONDUIT'S INTERIOR DIAMETER FOR CONDUITS 2 1/2 INCHES AND LARGER.
   - PROVIDE NON-METALLIC BUSHING. INSTALL BUSHING PRIOR TO THE INSTALLATION OF THE CABLE.

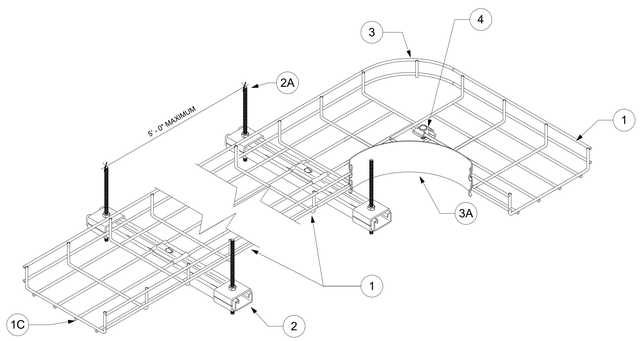
6. 2-GANG (4-INCH) OUTLET BACKBOX WITH INTEGRAL CABLE MANAGEMENT, AND MUD RING. COORDINATE WITH GENERAL CONTRACTOR FOR MUD RING DEPTH.
   - PROVIDE 12 INCHES OF SLACK ON CABLES INSTALLED WITHIN BACK BOX.

7. 2-GANG (4-INCH) OUTLET FLOOR BOX WITH INTEGRAL CABLE MANAGEMENT.
   - PROVIDE 12 INCHES OF SLACK ON CABLES INSTALLED WITHIN BACK BOX.

8. PROVIDE 6-FOOT SERVICE LOOP, COILED IN A 12-INCH DIAMETER CIRCLE. SECURE TO CLOSEST J-HOOK TO THE CONDUIT STUB UP. SERVICE LOOP SHALL BE FASTENED WITH RESEALABLE HOOK-AND-LOOP CABLE FASTENERS (PLASTIC AND METAL ZIP TIES ARE NOT PERMITTED).



2 TYPICAL BACK BOX & PATHWA
NTS



3 CABLE TRAY INSTALLATIO
NTS

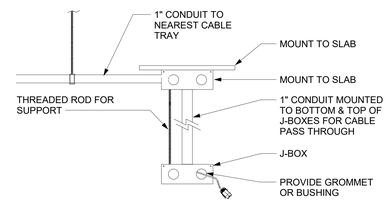
CABLE TRAY INSTALLATION KEYNOTES

1. INSTALL CABLE TRAY IN STRAIGHT SECTIONS LEVEL AND PARALLEL OR PERPENDICULAR TO BUILDING LINES (COLUMNS, WALLS, ETC).
   A. INSTALL CABLE TRAY LEVEL WITH 12" CLEAR ABOVE AND 7' - 6" CLEAR AFF FROM THE BOTTOM OF THE CABLE TRAY AND ALL SUPPORTS.
   B. NOTE: WIRE MESH CABLE TRAY IS SHOWN, HOWEVER THIS DETAIL APPLIES TO SOLID BOTTOM AND VENTILATED BOTTOM TROUGH CABLE TRAYS.
   C. WHEN CUTTING STRAIGHT SECTIONS:
      a. MAKE ALL CUTS STRAIGHT WITH NO JAGGED EDGES
      b. FOR WIRE MESH CABLE TRAYS, TRIM AND DEBUR THE CUT SECTION OF THE CABLE TRAY SUCH THAT NO WIRE SEGMENTS HANG OVER THE CUT EDGE.

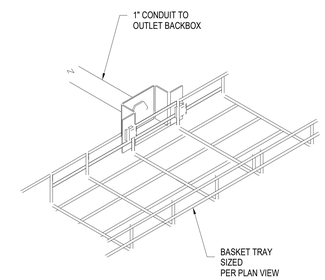
2. CABLE TRAY IS TO BE SUPPORTED BY TRAPEZE HANGERS OR PAIRS OF INTEGRATED SUPPORTS, AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
   A. ANCHOR SUPPORTS DIRECTLY TO BUILDING STRUCTURE (STRUCTURAL SLAB OR STRUCTURAL BEAM) AND SUPPORT WITH MINIMUM 3/8" ALL THREAD ROD.
   B. DO NOT SUPPORT CABLE TRAY BY MOUNTING TO OTHER BUILDING SYSTEMS (HVAC DUCTS, PLUMBING OR FIRE PROTECTION PIPING, ETC) OR SUPPORTS FOR THOSE SYSTEMS.
   C. SPACE SUPPORTS ALONG THE LENGTH OF THE CABLE TRAY AT 5' - 0", MAXIMUM DISTANCE AND SUCH THAT EACH SECTION OF CABLE TRAY IS SUPPORTED BY AT LEAST ONE (1) TRAPEZE OR PAIR OF INTEGRATED SUPPORTS.

3. BENDS IN CABLE TRAY ARE TO BE FACTORY MANUFACTURED 30, 45, 60, OR 90 -DEGREE BENDS
   A. FIELD-FABRICATED BENDS MADE FROM STRAIGHT SECTIONS OF WIRE MESH CABLE TRAY ARE PERMITTED. WHEN FIELD-FABRICATING BENDS, ADD SUPPORTS TO MAINTAIN CABLE BEND RADIUS REQUIREMENTS.

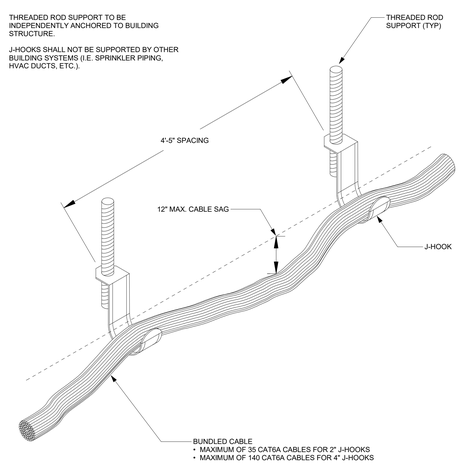
4. SPLICE CABLE TRAY SECTIONS TOGETHER USING MANUFACTURER SPECIFIED SPLICE PLATES OR SPLICE CLAMPS. SPLICES MUST BE MADE SUCH THAT THE CABLE TRAY MAINTAINS IT'S ELECTRICAL CONDUCTIVITY. SPLICES MUST EITHER BE MADE WITH PAINT-PIERCING WASHERS OR BY REMOVAL OF FINISH/PAINT AT SPLICE LOCATION. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.



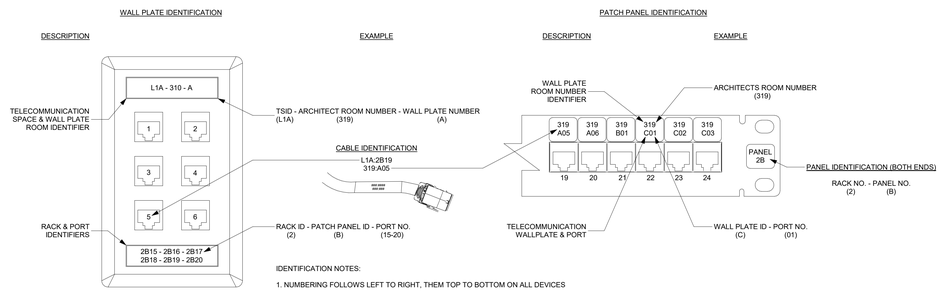
Standard Ceiling Mounted Armature for Open Area Devices
4 NTS



CONDUIT CONNECTIONS TO CABLE TRAY FOR CEILING MOUNTED END POINT DEVICES
5 NTS



6 J-HOOK CABLE SUPPORT
NTS



IDENTIFICATION NOTES:

1. NUMBERING FOLLOWS LEFT TO RIGHT, THEM TOP TO BOTTOM ON ALL DEVICES
2. LABEL SHALL CONFORM TO SPECIFICATION 27 05 53 COMMUNICATION IDENTIFICATION
3. TELECOMMUNICATION SPACE ID (TSID) NUMBERS ARE FOUND ON RISER DIAGRAM AND FLOOR PLANS
4. CABLES SHALL BE TERMINATED SEQUENTIALLY ON PATCH PANELS, IN THE FOLLOWING, ROOM ####(#), WALL PLATE ##, PORT##
5. CABLE LABELS SHALL COMBINE BOTH WALL PLATE AND PATCH PANEL ID AT BOTH ENDS OF THE CABLE WITHIN 6 INCHES OF TERMINATION

7 PROPOSED IDENTIFICATION SCHEME
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

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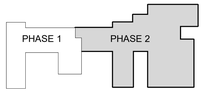
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

TELECOMMUNICATION DETAILS 2 - PHASE 2

BID DOCUMENTS
Scale: As indicated

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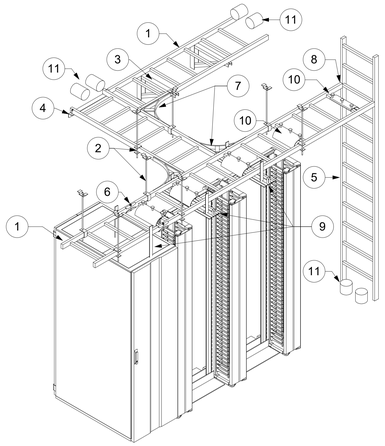
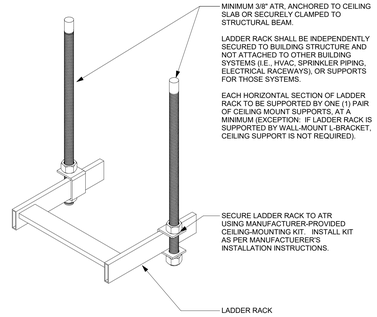


LADDER RACK KEYNOTES

1. HORIZONTAL LADDER RACK. REFER TO CONSTRACTION PLANS FOR SIZIES AND ELEVATIONS.
2. SECURE LADDER RACK TO CEILING VIA MANUFACTUER'S CEILING MOUNT SUPPORT KIT. SUPPORTS ARE TO BE INSTALLED AT 5 FOOT INTERVALS, MAXIMUM, ALONG THE LENGTH OF THE LADDER RACK. REFER TO LADDER RACK CEILING SUPPORT DETAIL ON THIS SHEET.
3. SECURE LADDER RACK INSTALLED PARALLEL TO WALL VIA MANUFACTUER'S WALL MOUNT L-BRAKET KIT. SUPPORTS ARE TO BE INSTALLED AT 5 FOOT INTERVALS, MAXIMUM, ALONG THE LENGTH OF THE LADDER RACK. REFER TO LADDER RACK WALL MOUNT DETAIL ON THIS SHEET.
4. SECURE LADDER RACK INSTALLED PERPENDICULAR TO WALL VIA MANUFACTUER'S WALL ANGLE KIT. REFER TO LADDER RACK WALL MOUNT DETAIL ON THIS SHEET.
5. VERTICAL LADDER RACK SECURED TO THE WALL. REFER TO LADDER RACK VERTICAL INSTALLATION DETAIL ON THIS SHEET.
6. JOIN LADDER RACKS END-TO-END VIA MANUFACTURER'S BUTT SPLICE KIT. REFER TO LADDER RACK BUTT SPLICE DETAIL ON THIS SHEET.
7. JOIN LADDER RACKS MEETING PERPENDICULARLY VIA MANUFACTURER'S CORNER SPLICE KIT. REFER TO LADDER RACK JUNCTION DETAIL ON THIS SHEET.
8. JOIN LADDER RACKS MAKING A HORIZONTAL-VERTICAL TRANSITION, OR ANY CHANGE-OF-PLANE TRANSITION VIA MANUFACTURER'S CHANGE-OF-PLANE OR SWIVEL SPLICE KIT. REFER TO LADDER RACK CHANGE OF PLANE JUNCTION DETAIL ON THIS SHEET.
9. SECURE LADDER RACKS INSTALLED OVER DATA RACKS OR CABINETS VIA MANUFACTURER'S RACK BRACING KIT. REFER TO LADDER RACK RACK BRACING DETAIL ON THIS SHEET.
10. PROVIDE RADIUS DROP OR "WATERFALL" DROPS WHERE CABLES ARE TO ENTER RACKS OR CABINETS, OR WHERE CABLES TRANSITION FROM HORIZONTAL TO VERTICAL. REFER TO LADDER RACK RADIUS DROP DETAIL ON THIS SHEET.
11. PLACE LADDER RACK TO SUPPORT CABLES ENTERING ROOM VIA CONDUITS OR SLEEVES THROUGH ALL WALLS, FLOORS, AND CEILINGS. MAXIMUM UNSUPPORTED RUN IS TO BE 9 INCHES. SUPPORT ALL CABLE TO LADDER RACK BY REUSABLE HOOK-AND-LOOP CABLE STRAPS EVERY 3 FEET (PLASTIC ZIP TIES AND METAL STRAPS ARE NOT PERMITTED).

1 LADDER RACK SYSTEM INSTALLATION
NTS



2 LADDER RACK CEILING SUPPORT
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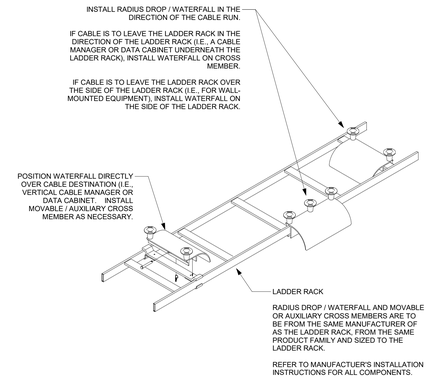

3 LADDER RACK SYSTEM RADIUS DROP
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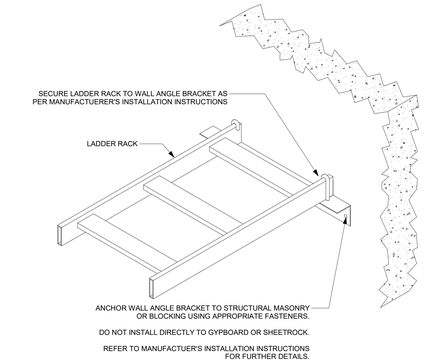

4 LADDER RACK WALL ANGLE
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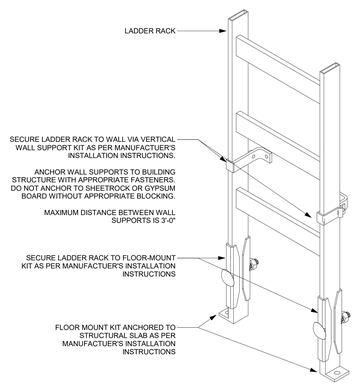

5 LADDER RACK VERTICAL INSTALLATION
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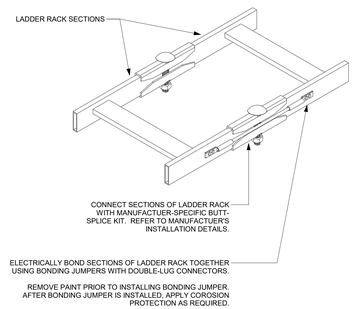

6 LADDER RACK BUTT SPLICE
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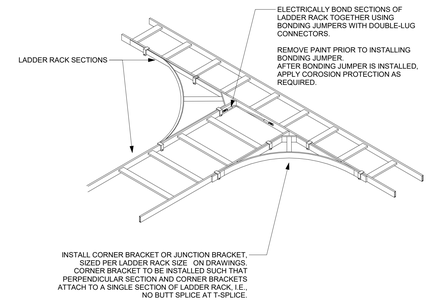

7 LADDER RACK JUNCTION
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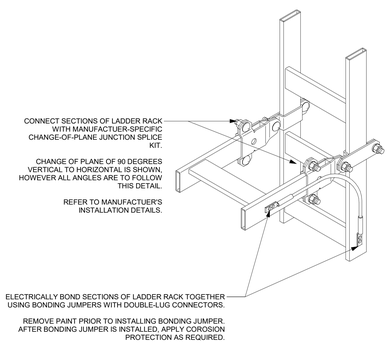

8 LADDER RACK CHANGE OF PLANE
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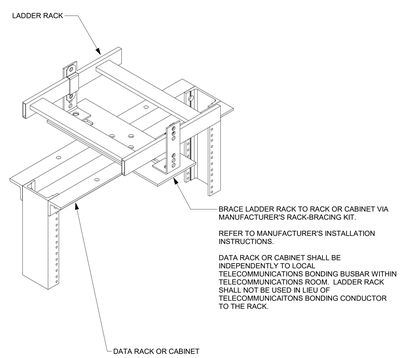
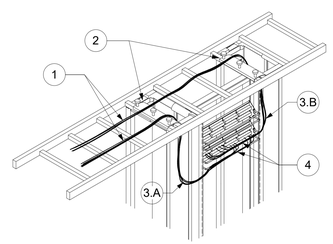


9 LADDER RACK TO RACK BRACING
NTS



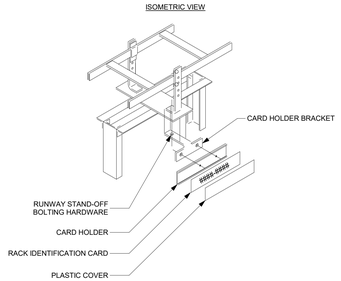
DETAIL KEY NOTES:

1. BUNDLE CABLES IN GROUPS OF TWENTY FOUR (24), MAXIMUM. SECURE TO LADDER RACK USING RESEALABLE HOOK-AND-LOOP CABLE STRAPS. PLASTIC AND METAL ZIP TIES ARE NOT ACCEPTABLE.
2. ROUTE CABLES FROM LADDER RACK TO RACK OR VERTICAL CABLE MANAGERS VIA CABLE WATERFALLS. WATERFALLS ARE TO BE INSTALLED IN THE DIRECTION OF THE CABLE DROP.
3. ROUTE CABLES ACCROSS REAR OF RACK TO PATCH PANEL:
   A. PORTS 1-12 & 25-36 ARE TO ENTER THE RACK ON THE LEFT (WHEN FACING THE REAR OF THE RACK)
   B. PORTS 13-24 & 37-48 ARE TO ENTER THE RACK ON THE RIGHT (WHEN FACING THE REAR OF THE RACK)
4. SECURE CABLES TO STRAIN RELIEF BARS ON PATCH PANELS:
   - BUNDLE NO MORE THAN TWENTY-FOUR (24) CABLES PER STRAIN RELIEF BAR
   - FASTEN TO STRAIN RELIEF BAR USING RESEALABLE HOOK-AND-LOOP FASTENERS. PLASTIC AND METAL ZIP TIES ARE NOT ACCEPTABLE.

NOTE: ONLY PARTIAL CABLING IS SHOWN FOR ILLISTRATIVE PURPOSES.

10 PATCH PANEL CABLE DRESSING
NTS

ISOMETRIC VIEW



11 TYPICAL RACK LABELING
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
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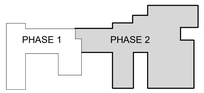
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	OA
Checked By	RH
Filename	
Date	August 31, 2026

Revisions

TELECOMMUNICATION DETAILS 3 - PHASE 2

BID DOCUMENTS
Scale: As indicated

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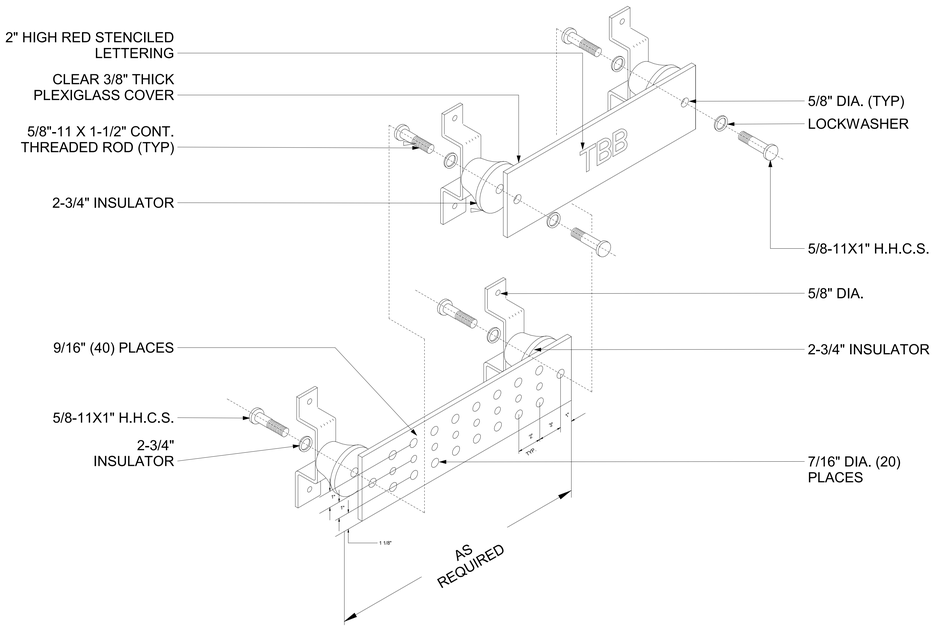
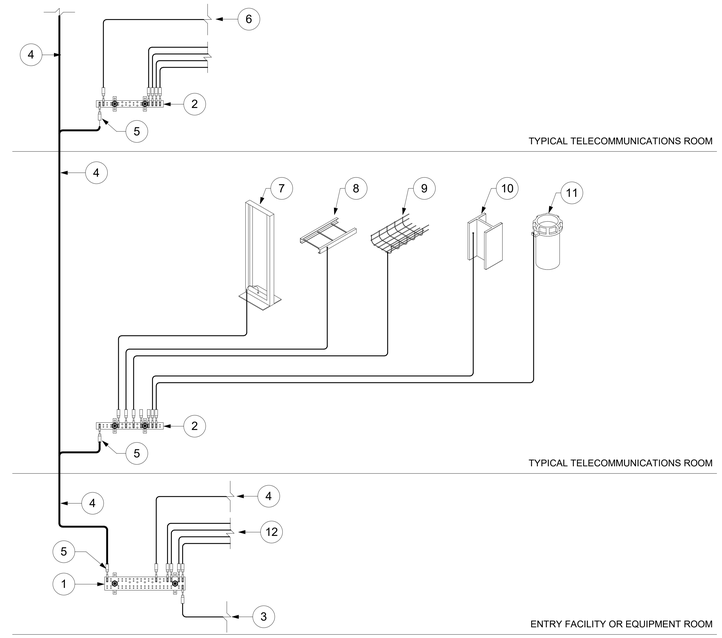


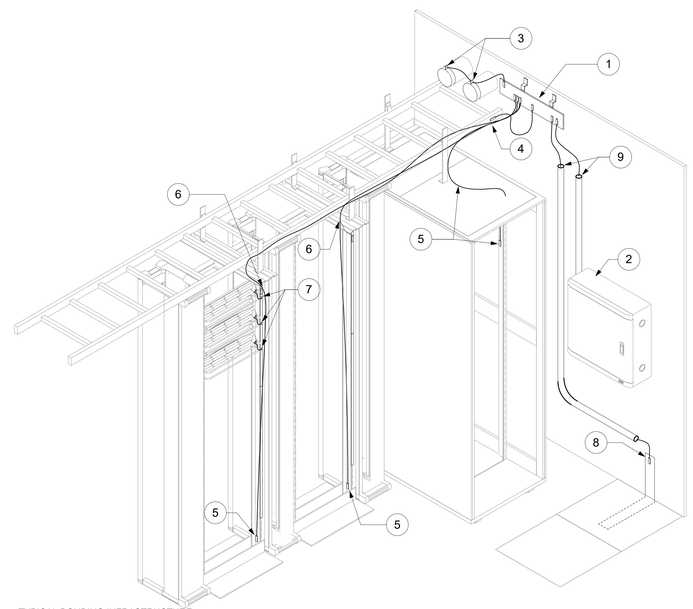
3 TYPICAL GROUNDING BUS BAR
NTS



1 TYPICAL BONDING INFRASTRUCTURE SCHEMATIC
NTS

BONDING INFRASTRUCTURE KEYNOTES

1. PRIMARY BONDING BUSBAR (PBB): 4 INCH x 20 INCH x 1/4 INCH (HEIGHT x LENGTH x THICK) WALL-MOUNTED RECTANGULAR COPPER BUSBAR, PREDRILLED FOR TWO-HOLE LUG CONNECTIONS AND LISTED FOR THE INTENDED USE. MOUNT BUSBAR WITH 4 INCH STANDOFFS TO PROVIDE CLEARANCE.
2. SECONDARY BONDING BUSBAR (SBB): 2 INCH x 20 INCH x 1/4 INCH (HEIGHT x LENGTH x THICK) WALL-MOUNTED RECTANGULAR COPPER BUSBAR, PREDRILLED FOR TWO-HOLE LUG CONNECTIONS AND LISTED FOR THE INTENDED USE. MOUNT BUSBAR WITH 4 INCH STANDOFFS TO PROVIDE CLEARANCE.
3. TELECOMMUNICATIONS BONDING CONDUCTOR (TBC). INSTALL TBC BETWEEN THE PBB AND THE GROUNDING ELECTRODE AT THE BUILDING'S ELECTRICAL ENTRY FACILITY. TBC SHALL BE A #3/0 AWG CONDUCTOR INSTALLED IN A DIRECT PATH WITH THE SHORTEST LENGTH PRACTICAL; MAXIMUM LENTH IS 30 FEET.
4. TELECOMMUNICATIONS BONDING BACKBONE (TBB). INSTALL TBB TO EACH TELECOMMUNICATIONS RISER (STACKED TELECOMMUNICATIONS ROOMS),OR TO ANY STAND-ALONE TELECOMMUNICATIONS ROOM.
5. BOND ALL BUSBARS (PBB AND SBB'S) TO TBB. USE DOUBLE-LUG CONNECTORS AT THE BUSBAR, AND EXOTHERMIC WELDS AT THE TBB. DO NOT DOUBLE-LOAD CONNECTIONS AT BUSBAR.
6. BONDING BACKBONE CONNECTOR (BBC): INSTALL BBC BETWEEN ALL TELECOMMUNICATIONS ROOMS ON THE TOP FLOOR AND EVERY THREE (3) FLOORS BELOW.
7. BOND ALL RACKS, CABINETS, EQUIPMENT FRAMES, ETC TO BONDING BUSBAR AS PER MANUFACTURER'S INSTRUCTIONS. USE #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS AT THE BUSBAR. DO NOT USE LUG HOLES TO BOND MULTIPLE UNITS TO THE BONDING BUSBAR. ALL RACKS, CABINETS, EQUIPMENT FRAMES, ETC ARE TO BE INDEPENDENTLY BONDED TO THE BONDING BUSBAR.
8. BOND ALL LADDER RACKS AS A SINGLE SYSTEM TO THE BONDING BUSBAR AS PER THEIR MANUFACTURER'S INSTRUCTIONS. USE #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS AT THE BUSBAR. LADDER RACKS ARE TO BE BONDED DIRECTLY TO THE BONDING BUSBAR AND ARE NOT TO BE USED AS A BONDING CONDUCTOR FOR ANY OTHER SYSTEM.
9. BOND ALL CABLE TRAYS AS A SINGLE SYSTEM TO THE BONDING BUSBAR AS PER THEIR MANUFACTURER'S INSTRUCTIONS. USE #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS AT THE BUSBAR. USE #6AWG CONDUCTORS WITH MANUFACTUER'S BONDING CLAMPS/CONNECTORS TO BOND NON-CONTINUOUS SEGMENTS OF CABLE TRAY. CABLE TRAYS ARE TO BE BONDED DIRECTLY TO THE BONDING BUSBAR AND ARE NOT TO BE USED AS A BONDING CONDUCTOR FOR ANY OTHER SYSTEM.
10. BOND THE BUSBAR TO BUILDING STRUCTURAL STEEL USING A #6 AWG CONDUCTOR WITH TWO-LUG CONNECTORS.
11. BOND ALL METALLIC CONDUITS AND SLEEVES ENTERING THE TELECOMMUNICATIONS SPACE TO THE BONDING BUSBAR USING #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS.
12. BOND ALL TYPICAL ITEMS OUTLINED IN KEYNOTES 7 - 11 TO THE BONDING BUSBAR.



2 TYPICAL BONDING INFRASTRUCTURE DETAIL
NTS

BONDING KEYNOTES

1. TELECOMMUNICATIONS BONDING BUSBAR (PBB OR SBB) BONDED TO GROUND AND THE TELECOMMUNICATIONS BONDING BACKBONE (TBB) AND TO BUILDING STEEL. CONNECTIONS NOT SHOWN.
2. BOND THE AC ELECTRICAL GROUND (ACEG) IN EACH ELECTRICAL PANEL SERVING THE ROOM TO THE BONDING BUSBAR. ALL CONNECTIONS WITHIN THE ELECTRICAL DISTRIBUTION PANEL ARE TO BE MADE BY A LICENSED ELECTRICIAN. CONNECT TO BUSBAR WITH #6 AWG CONDUCTORS WITH TWO-LUG CONNECTORS.
3. BOND ALL METALLIC CONDUITS AND SLEEVES ENTERING THE TELECOMMUNICATIONS SPACE TO THE BONDING BUSBAR USING #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS. FOR CONDUITS, PROVIDE GROUNDING BUSHINGS. ALL CONDUITS IN A GROUP MAY BE BONDED TOGETHER WITH ONE (1) CONDUCTOR TO THE BUSBAR.
4. BOND ALL LADDER RACKS AS A SINGLE SYSTEM TO THE BONDING BUSBAR AS PER THEIR MANUFACTURER'S INSTRUCTIONS. USE #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS AT THE BUSBAR. LADDER RACKS ARE TO BE BONDED DIRECTLY TO THE BONDING BUSBAR AND ARE NOT TO BE USED AS A BONDING CONDUCTOR FOR ANY OTHER SYSTEM.
   BOND ALL RACKS, CABINETS, EQUIPMENT FRAMES, ETC TO BONDING BUSBAR AS PER MANUFACTURER'S INSTRUCTIONS. USE #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS AT THE BUSBAR. DO NOT USE LUG HOLES TO BOND MULTIPLE UNITS TO THE BONDING BUSBAR. ALL RACKS, CABINETS, EQUIPMENT FRAMES, ETC ARE TO BE INDEPENDENTLY BONDED TO THE BONDING BUSBAR.
5. BOND ALL LADDER RACKS AS A SINGLE SYSTEM TO THE BONDING BUSBAR AS PER THEIR MANUFACTURER'S INSTRUCTIONS. USE #6 AWG CONDUCTORS WITH DOUBLE-LUG CONNECTORS AT THE BUSBAR. LADDER RACKS ARE TO BE BONDED DIRECTLY TO THE BONDING BUSBAR AND ARE NOT TO BE USED AS A BONDING CONDUCTOR FOR ANY OTHER SYSTEM.
6. BOND RACK BONDING BUSBAR (RBB) TO THE CONDUCTOR BONDING THE RACK TO THE BONDING BUSBAR. USE EXOTHERMIC WELD OR IRREVERSIBLE CRIMP.
7. BOND COPPER PATCH PANELS, FIBER ENCLOSURES, PDU AND UPS UNITS, AND ALL INSTALLED RACK-MOUNT EQUIPMENT TO RACK BONDING BUSBAR AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
8. BOND STATIC DISSIPATIVE FLOOR TILE TO BONDING BUSBAR. INSTALL 18 INCH x 2 INCH MINIMUM (LENGTH x WIDTH) COPPER BONDING STRIP OVER CONCRETE SLAB AND EXTEND ON WALL AS SHOWN.
9. ROUTE BONDING CONDUCTORS WITHIN CONDUIT MOUNTED TO WALL FOR ANY VERTICAL TRANSITION GREATER THAN 6 INCHES.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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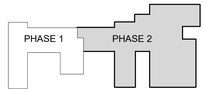
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	OA
Checked By	RH
Filename	
Date	August 31, 2026

Revisions

TELECOMMUNICATION DETAILS 4 - PHASE 2

BID DOCUMENTS
Scale: As indicated

TT5.3

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DRAWING LIST:

NUMBER	NAME
TY0.0	SECURITY COVER SHEET - PHASE 2
TY1.0	SECURITY GROUND FLOOR PLAN - PART C - PHASE 2
TY1.1	SECURITY FIRST FLOOR PLAN - PART C - PHASE 2
TY1.2	SECURITY SECOND FLOOR PLAN - PART C - PHASE 2
TY1.3	SECURITY THIRD FLOOR PLAN - PART C - PHASE 2
TY1.4	SECURITY FOURTH FLOOR PLAN - PART C - PHASE 2
TY3.0	SECURITY ENLARGED PLAN - PHASE 2
TY4.0	RISER DIAGRAM - PHASE 2
TY4.1	SECURITY DETAILS - PHASE 2
TY4.2	SECURITY DETAILS - PHASE 2
TY5.0	SECURITY DEVICE SCHEDULE - PHASE 2
TY5.1	SECURITY DEVICE SCHEDULE - PHASE 2
TY5.2	SECURITY VIDEO SURVEILLANCE CAMER SCHEDULE - PHASE 2

ABBREVIATIONS:

A - AMPERES
AC - ABOVE COUNTER
AFF - ABOVE FINISHED FLOOR
AWG - AMERICAN WIRE GAUGE
C - CONDUIT
CAT - CATALOG
CB - CIRCUIT BREAKER
CCTV - CLOSED CIRCUIT TELEVISION
CKT - CIRCUIT
CL - CENTER LINE
CLG - CEILING
COND - CONDUCTOR
CU - COPPER
DVR - DIGITAL VIDEO RECORDER
DWG - DRAWING
EC - EMPTY CONDUIT
EM - EMERGENCY
EX - EXISTING
FA - FIRE ALARM
FACP - FIRE ALARM CONTROL PANEL
G - GROUND
HC - HUNG CEILING
HZ - HERTZ
IDF - INTERMEDIATE DISTRIBUTION FRAME
JB - JUNCTION BOX
LV - LOW VOLTAGE
MAX - MAXIMUM
MDF - MAIN DISTRIBUTION FRAME
MER - MECHANICAL EQUIPMENT ROOM
MIN - MINIMUM
MTD - MOUNTED
MTG - MOUNTING
MTS - MANUAL TRANSFER SWITCH
N - NEUTRAL
NC - NORMALLY CLOSED
NIC - NOT IN CONTRACT
NO - NORMALLY OPEN
No. - NUMBER
NTS - NOT TO SCALE
PA - PUBLIC ADDRESS
PNL - PANEL
POE - POWER OVER ETHERNET
PTZ - PAN/TILT/ZOOM
RM - ROOM MTG - MOUNTING
MTS - MANUAL TRANSFER SWITCH
N - NEUTRAL
NC - NORMALLY CLOSED
NIC - NOT IN CONTRACT
NO - NORMALLY OPEN
No. - NUMBER
NTS - NOT TO SCALE
PA - PUBLIC ADDRESS
PNL - PANEL
POE - POWER OVER ETHERNET
PTZ - PAN/TILT/ZOOM
RM - ROOM
STP - SHIELDED TWISTED PAIR
XFRM - TRANSFORMER
TEL - TELECOMMUNICATIONS
TLR - TIME LAPSE RECORDER
TS - TAMPER SWITCH
TTB - TELECOM TERMINAL BOARD
TTC - TELECOM TERMINAL CABINET
TV - TELEVISION
TYP - TYPICAL
UON - UNLESS OTHERWISE NOTED
UPS - UNINTERRUPTIBLE POWER SUPPLY
UTP - UNSHIELDED TWISTED PAIR
V - VOLTS
VA - VOLT-AMPERES
VM - VOLTMETER
VP - VAPOR PROOF
W - WATTS
WP - WATERPROOF
WT - WATERTIGHT

SECURITY ELECTRICAL NOTES:

01	RISER POWER (EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR TO PROVIDE A HARD WIRED CONNECTION TO A 120VAC 20A EMERGENCY CIRCUIT DEDICATED TO SECURITY IN EACH RISER LOCATION WITHIN A 4" X 4" BOX SURFACE MOUNTED 18" A.F.F. WITH WIRE ENDS TERMINATED AND INSULATED WITH WIRE NUTS
03	RISER POWER (NON-EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR TO PROVIDE A HARD WIRED CONNECTION TO A 120VAC 20A NON-EMERGENCY CIRCUIT DEDICATED TO SECURITY IN EACH RISER LOCATION WITHIN A 4" X 4" BOX SURFACE MOUNTED 18" A.F.F. WITH WIRE ENDS TERMINATED AND INSULATED WITH WIRE NUTS.
04	SECURITY CONTROL/EQUIPMENT ROOM POWER (EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR TO PROVIDE A HARD WIRED CONNECTION TO A 120VAC 20A UNINTERRUPTIBLE POWER CIRCUIT DEDICATED TO SECURITY WITHIN A 4" X 4" BOX SURFACE MOUNTED BEHIND THE CONSOLE/RACK AT 18" AFF WITH WIRE ENDS TERMINATED AND INSULATED WITH WIRE NUTS.
08	ELEVATOR SECURITY EQUIPMENT POWER (NON-EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR SHALL PROVIDE A HARD WIRED CONNECTIONS TO A 120VAC 20A NON-EMERGENCY CIRCUIT DEDICATED TO SECURITY IN THE ELEVATOR MACHINE ROOM(S) AS INDICATED ON THE DRAWINGS. TYPICAL LOAD FOR EACH CIRCUIT SHALL BE 10A. PROVIDE CONNECTION IN A SURFACE MOUNTED BOX MOUNTED AT 8' A.F.F. WITH WIRE ENDS TERMINATED AND INSULATED WITH WIRE NUTS
09	ELECTRIC EXIT DEVICE POWER (EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR SHALL PROVIDE A HARD WIRED CONNECTION TO A 120VAC 20A EMERGENCY CIRCUIT DEDICATED TO SECURITY AT DOORS UTILIZING ELECTRIC EXIT DEVICES PROVIDED WITHIN A 4" X 4" BOX MOUNTED ABOVE ACCESSIBLE CEILING ADJACENT TO THE DOOR OR AS SHOWN ON DRAWINGS WITH WIRE ENDS TERMINATED AND INSULATED WITH WIRE NUTS. MULTIPLE CONNECTIONS CAN BE BRANCHED OFF THIS CIRCUIT FOR ADDITIONAL ELECTRIC EXIT DEVICES BUT SHALL NOT EXCEED 10 CONNECTIONS TOTAL. EACH DEVICE'S ACTUAL LOAD SHALL BE 1.5A AT 120VAC.
11	SITE POWER (NON-EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR SHALL PROVIDE AN UN-SWITCHED DUPLEX OUTLET TO A 120VAC 20A NON-EMERGENCY CIRCUIT DEDICATED TO SECURITY. THE OUTLET SHALL BE WALL MOUNTED 12" AAF.
12	UPS POWER (EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR SHALL PROVIDE A HARD WIRED CONNECTION TO A 240VAC 65A EMERGENCY CIRCUIT DEDICATED TO SECURITY AS INDICATED ON THE DRAWINGS. THE CONNECTION SHALL BE PROVIDED WITHIN A 4" X 4" BOX SURFACE MOUNTED IN THE BACK OF THE SECURITY EQUIPMENT RACK, 18" A.F.F. AND SHALL HAVE WIRE ENDS TERMINATED AND INSULATED WITH WIRE NUTS.
13	SECURITY EMERGENCY CALL STATION POWER (EMERGENCY CIRCUIT) HARD WIRE TO 120VAC 20A CIRCUIT EMERGENCY CIRCUIT DEDICATED FOR EMERGENCY CALL STATIONS. MOUNTING HT OF CALL BOX TO BE 36" AFF TO BOTTOM OF UNIT. POWER TO BE BROUGHT DOWN IN COLUMN TO 4" X 4" BOX TO ALIGN WITH 3/4" KO ON BACK OF UNIT. 5 UNITS CAN BE POWERED FROM SAME CIRCUIT.
15	ELECTRIC EXIT DEVICE POWER (NON-EMERGENCY CIRCUIT) ELECTRICAL CONTRACTOR SHALL PROVIDE A HARD WIRED CONNECTION TO A 120VAC 20A UN-SWITCHED CIRCUIT DEDICATED TO SECURITY AT DOORS UTILIZING ELECTRIC EXIT DEVICES PROVIDED WITHIN A 4" X 4" BOX MOUNTED ABOVE ACCESSIBLE CEILING ADJACENT TO THE DOOR OR AS SHOWN ON DRAWINGS WITH WIRE ENDS TERMINATED AND INSULATED WITH WIRE NUTS. MULTIPLE CONNECTIONS CAN BE BRANCHED OFF THIS CIRCUIT FOR ADDITIONAL ELECTRIC EXIT DEVICES BUT SHALL NOT EXCEED 10 CONNECTIONS TOTAL. EACH DEVICE'S ACTUAL LOAD SHALL BE 1.5A AT 120VAC.
J	PROVIDE 4" X 4" X 2-1/4" DEEP BOX SURFACE MOUNTED ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
J1	PROVIDE 6" X 6" X 4" DEEP BOX SURFACE MOUNTED ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
J2	PROVIDE 10" X 10" X 4" DEEP BOX SURFACE MOUNTED ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
J3	PROVIDE 12" X 12" X 6" DEEP BOX SURFACE MOUNTED ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
J4	PROVIDE 16" X 16" X 8" DEEP BOX SURFACE MOUNTED ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
J5	PROVIDE 20" X 20" X 8" DEEP BOX SURFACE MOUNTED ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.

SYMBOLS:

AC- X	ACCESS CONTROL READER
ACP	ACCESS CONTROL PANEL
ACS	ACCESS CONTROL SERVER
AP	ALARM PANEL
DVR	DIGITAL VIDEO RECORDER
ECS	EMERGENCY CALL STATION
GB- X	GLASS BREAK SENSOR
IC- X	INTERCOM
K	FIRE RELAY (FOR LOCK RELEASE)
LA	LOCAL ALARM
MC- X	MAGNETIC CONTACT
MD- X	MOTION DETECTOR
MON	VIDEO SURVEILLANCE
NVR	NETWORK VIDEO RECORDER
PB- X	PUSH BUTTON
RE- X	REQUEST TO EXIT
SR	SECURITY RISER LOCATION
SI	SIREN/SOUNDER
WS	WORKSTATION
AC-EX	ACCESS CONTROL READER - EXISTING
C-X	CCTV CAMERA - FIXED
C-X	CCTV CAMERA - PTZ
	CCTV CAMERA - CEILING MOUNT
	CCTV CAMERA - WALL MOUNT
	CCTV CAMERA - CORNER MOUNT
	CCTV CAMERA - CORNER MOUNT

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE USED FOR ARCHITECTURAL OR ENGINEERING PURPOSES. THE SECURITY DRAWINGS SHOULD ONLY BE USED FOR SECURITY SYSTEMS INSTALLATION AND COORDINATION.

2. ALL MOUNTING SPECIFICS SHALL BE AS INDICATED IN THE LEGEND UNLESS OTHERWISE NOTED IN THE SECURITY DRAWINGS. MOUNTING CONDITIONS IDENTIFIED ON THE SECURITY DRAWINGS SHALL TAKE PRECEDENCE OVER THE LEGEND DESACIPTIONS.

3. VERIFY AND COORDINATE THE EXACT MOUNTING LOCATION OF ALL DEVICES PRIOR TO INSTALLATION. COORDINATE WITH G-SERIES AND A-SERIES DRAWINGS, AND WITH OWNER AND ARCHITECT.

4. THE MOUNTING HEIGHTS ARE TO THE CENTERLINE OF THE DEVICE UNLESS OTHERWISE NOTED.

5. THE SECURITY CONTRACTOR SHALL RESTORE CEILINGS AND WALLS AND ANY OTHER SURFACES AFFECTED BY HIS WORK WITH LIKE MATERIALS TO MATCH EXISTING CONSTRUCTION UPON COMPLETION OF HIS WORK.

6. FIRE STOPPING OF ALL PENETRATIONS SHALL BE PROVIDED BY THE SECURITY CONTRACTOR AS REQUIRED BY CODE. ALL SLABS ARE 2-HR RATED. COORDINATE WITH G-SERIES.

7. ALL DEVICES, WIRING, TERMINATIONS, AND OTHER REQUIRED ROUGH-INS ARE TO BE PROVIDED BY THE SECURITY CONTRACTOR.

8. COORDINATE ALL EXTERIOR CAMERA LOCATIONS WITH THE LANDSCAPE TO ENSURE THAT CAMERA VIEW ARE NOT OBSTRUCTED.

SECURITY CONDUIT AND WIRING NOTES:

1. ALL CONDUIT AND BACKBOXES SHALL CONFORM TO BUILDING STANDARD ELECTRICAL SPECIFICATIONS. ALL CABLES SHALL BE PLENUM RATED WHERE REQUIRED.

2. ALL CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED.

3. ALL CONDUIT USED IN POTENTIALLY DAMP OR WET LOCATIONS, EXPOSED OUTDOORS, OR IN HAZARDOUS AREAS SHALL BE INTERMEDIATE STEEL CONDUIT (IMC). ALL EXTERIOR CONDUIT IN SLAB SHALL BE PVC. ALL CONDUIT OTHER THAN SPECIFIED TO BE IMC OR PVC SHALL BE ELECTRICAL METALLIC TUBING (EMT).

4. ALL CONDUIT SHALL BE ROUTED ABOVE CEILINGS, BELOW FLOORS, OR WITHIN WALLS. NO CONDUIT SHALL BE EXPOSED UNLESS APPROVED BY THE ARCHITECT.

5. PROVIDE PULL STRINGS IN ALL CONDUIT AND PULLBOXES AS REQUIRED. ALL CONDUITS SHALL HAVE PLASTIC BUSHINGS INSTALLED AT OPEN ENDS PRIOR TO PULLING WIRE.

6. ALL BACKBOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED.

7. ALL BACKBOXES MOUNTED WITHIN FIRE RATED PARTITIONS SHALL MEET THE FIRE RATING OF THE PARTITION AS REQUIRED BY CODE.

8. COORDINATE THE EXACT LOCATION OF ALL PULL AND BACKBOXES WITH ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS.

9. ALL JUNCTION AND PULLBOXES SHALL BE PROVIDED WITH ACCOMPANYING BLANK COVER PLATE.

10. JUNCTION BOXES LOCATED ABOVE DOORS WITH NO ACCESSIBLE CEILING SHALL BE SECURED WITH TAMPER PROOF SCREWS.

11. PROVIDE WATERTIGHT SEALING ASSEMBLIES WITH PRESSURE BUSHING AS REQUIRED FOR EXTERIOR PENETRATIONS.

12. JUNCTION AND PULLBOXES IN EXTERIOR LOCATIONS SHALL BE WATERPROOF.

13. ALL CABLE RUNS IN CEILING AREAS WHERE CONDUIT OR CABLE TRAY IS NOT SPECIFIED SHALL BE SUPPORTED WITH SIMILAR SUPPORT OR WITH THE USE OF J-HOOKS AT 5' INTERVALS ABOVE CEILING TILES.

14. COORDINATE WITH ELECTRICAL CONTRACTOR FOR SECURITY DEVICE AND CONTROL PANEL POWER REQUIREMENTS.

15. WIRE SHEATH SHALL BE MAINTAINED TO FINAL TERMINATION. ALL TERMINATIONS SHALL MAINTAIN TWIST OF INDIVIDUAL PAIRS TO WITHIN 0.5" OR LESS OF FINAL TERMINATION. ALL WIRES SHALL BE LABELED WITHIN 6.5" OF FINAL TERMINATION. ALL LABELS SHALL BE MACHINE PRINTED OR STENCILED. NO HAND LETTERED LABELS SHALL BE USED.

16. ANY CONDUIT ROUTING SHOWN IS SCHEMATIC AND IS NOT INTENDED TO REPRESENT INSTALLED PATHS OR DISTANCES. ACTUAL ROUTING AND BOX LOCATIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH OTHER DISCIPLINES BY THE INSTALLING CONTRACTOR.

SECURITY DEVICE NOTES:

1. ALL DEVICES, WIRING, TERMINATION AND OTHER REQUIRED ROUGH-IN, ARE TO BE PROVIDED BY THE SECURITY CONTRACTOR.

2. ALL SECURITY DEVICES ARE TO BE PROVIDED BY THE SECURITY CONTRACTORS UNLESS OTHERWISE NOTED ON RESPONSIBILITY MATRIX.

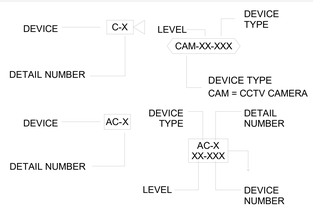
3. PROVIDE 4" X 4" X 2-1/4" DEEP BOX WITH SINGLE GANG DEVICE RING JB FLUSH MOUNTED 48" A.F.F WITH 3 /4" CONDUIT STUBUP TO J1 BY ELECTRICAL CONTRACTOR.

4. STUB 3/4" CONDUIT OR GREENFIELD DOWN DOOR FRAME ON THE HINGE SIDE OF THE DOOR BACK BOX EL TO JUNCTION BOX J1 LOCATED ABOVE ACCESSIBLE CEILING, BY ELECTRICAL CONTRACTOR.

5. STUB 3/4" CONDUIT OR GREENFIELD DOWN DOOR FRAME ON THE STRIKE SIDE OF THE DOOR ES TO JUNCTION BOX J1 LOCATED ABOVE ACCESSIBLE CEILING, BY ELECTRICAL CONTRACTOR.

6. GC TO COORDINATE WORK FOR ALL TRADES.

EQUIPMENT SYMBOL & TAG DEFINITIONS:



RESPONSIBILITY MATRIX

	General Contractor (ECC)	Electrical Trade Bid (ECC)	Security Intergrator (FP&E)	Tel/Data Installer (ECC)	Owner	NA	General Contractor (ECC)	Electrical Trade Bid (ECC)	Security Intergrator (FP&E)	Tel/Data Installer (ECC)	Owner	NA	Specification Division Responsibility
Security Requirments	SUPPLIED BY:						INSTALLED BY:						
Hardwired Locks / Integrated Locks	X						X						Division 08
Balance of Door Hardware (hinges/operators, etc)	X						X						Division 08
Security Low Voltage Cable			X						X				Division 28
Patch Cables (Fiber, Network)			X						X				Division 28
Fiber Cable for Analog Cameras			X						X				Division 28
Fiber Patch Panel			X						X				Division 28
Security Data Cable (IP)				X						X			Division 27
Security Data Outlets (IP)				X						X			Division 27
Cameras and Associated Video Surveillance Devices					X				X				Division 28
Access Control Card Readers and Associated Devices			X						X				Division 28
Conduit and Back Boxes		X						X					Division 16
Power & Power Receptacles		X						X					Division 16
Network Video Recorders					X						X		Owner
Network Switches					X						X		Owner
Security Low Voltage Power Supplies			X						X				Division 28
Door Contacts	X						X						Division 08

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
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Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
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Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434 Apalachin, NY 13732, T 607 223-4334
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Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill East Greenbush, NY 12061, T 518 729-2967
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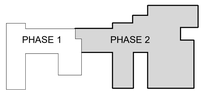
Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

SECURITY COVER SHEET - PHASE 2

BID DOCUMENTS
Scale: 12" = 1'-0"

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1 SECURITY OVERALL PLAN - GROUND FLOOR PART C - PHASE 2
1/8" = 1'-0"

CONDUIT NOTES

1. ALL SECURITY DEVICES SHALL BE HOME RUN IN 1" CONDUIT FROM DEVICE LOCATION/J1 TO DESIGNATED CLOSET LOCATION. THIS APPLIES TO SECURITY DEVICES ONLY. PLEASE REFER TO TT DRAWINGS FOR CAMERA DATA REQUIREMENTS.
2. ALL SECURITY DEVICE CONDUIT IN THIS AREA SHALL TERMINATE AT (TBD).
3. ALL CAMERAS SHALL BE FURNISHED AND PROGRAMMED BY CUPD. CAMERAS SHALL BE TURNED OVER TO THE CONTRACTOR FOR INSTALLATION. COORDINATE CAMERA TURNOVER AND INSTALLATION SCHEDULE WITH CUPD.

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SUNY State University Construction Fund

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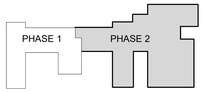
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
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Revisions

SECURITY GROUND FLOOR PLAN - PART C - PHASE 2

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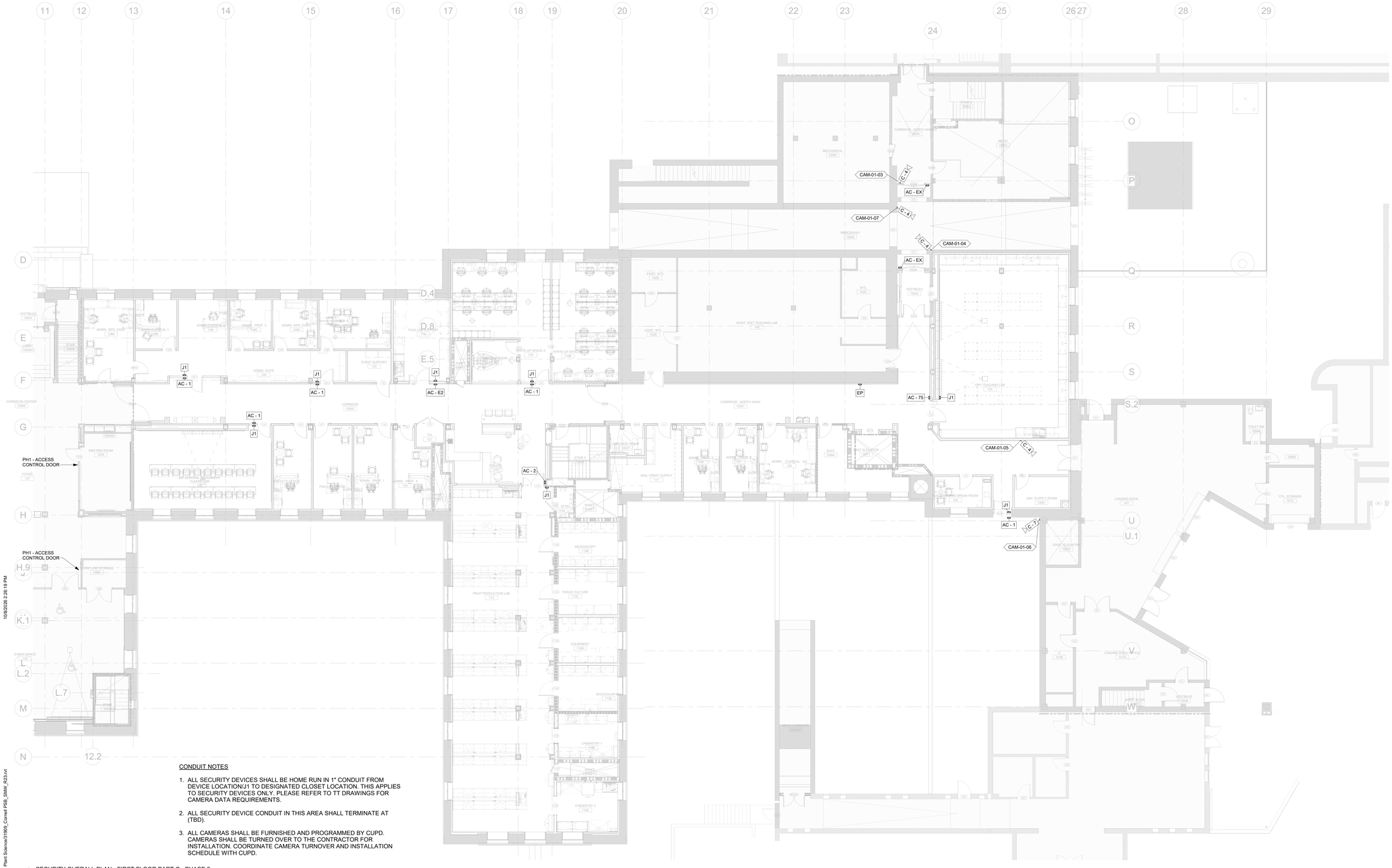

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1 SECURITY OVERALL PLAN - FIRST FLOOR PART C - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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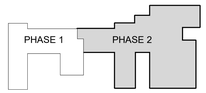

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SECURITY FIRST FLOOR PLAN - PART C - PHASE 2

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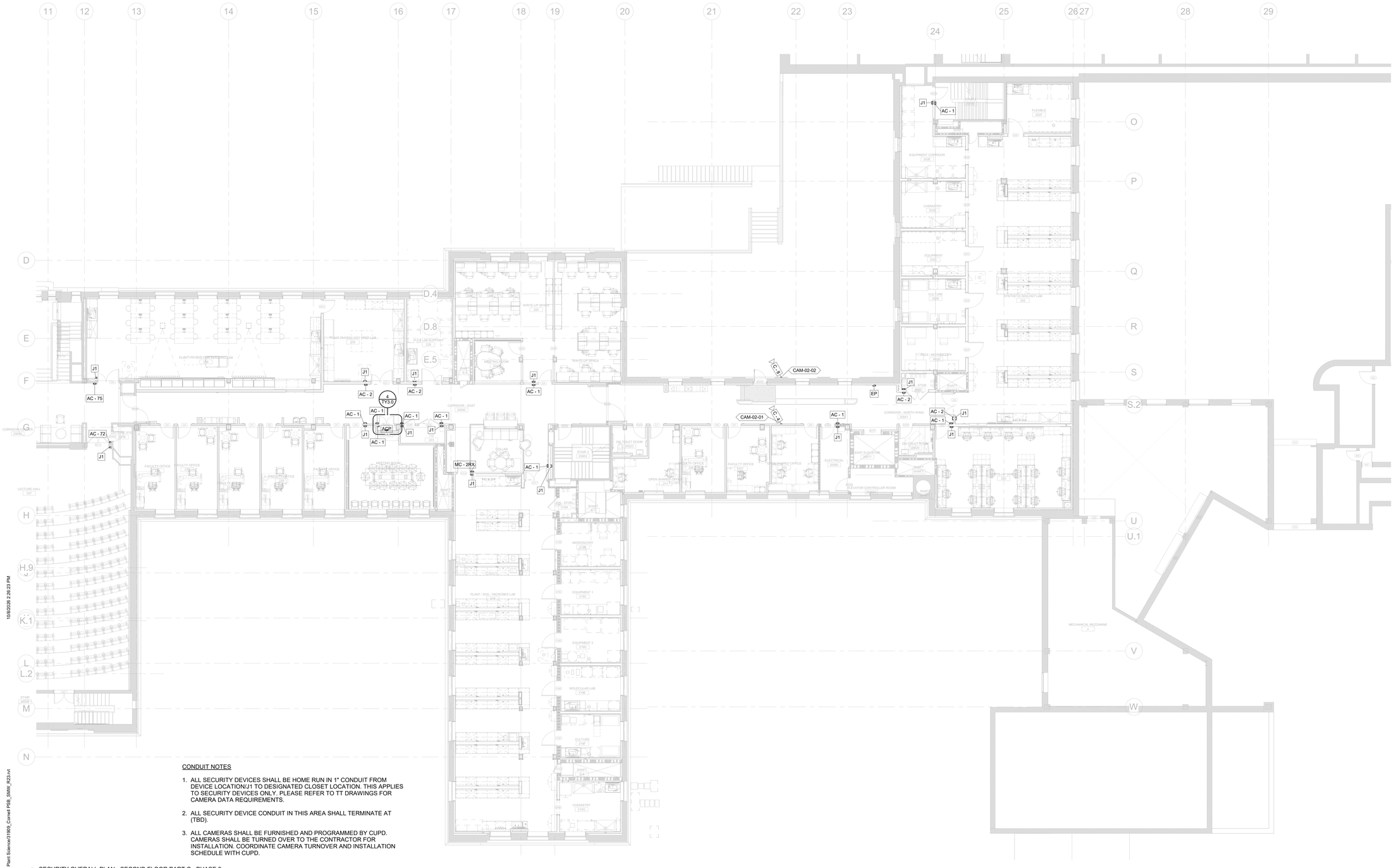

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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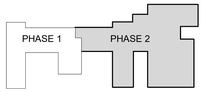

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SECURITY SECOND FLOOR PLAN - PART C - PHASE 2

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1 SECURITY OVERALL PLAN - THIRD FLOOR PART C - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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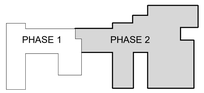

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SECURITY THIRD FLOOR PLAN - PART C - PHASE 2

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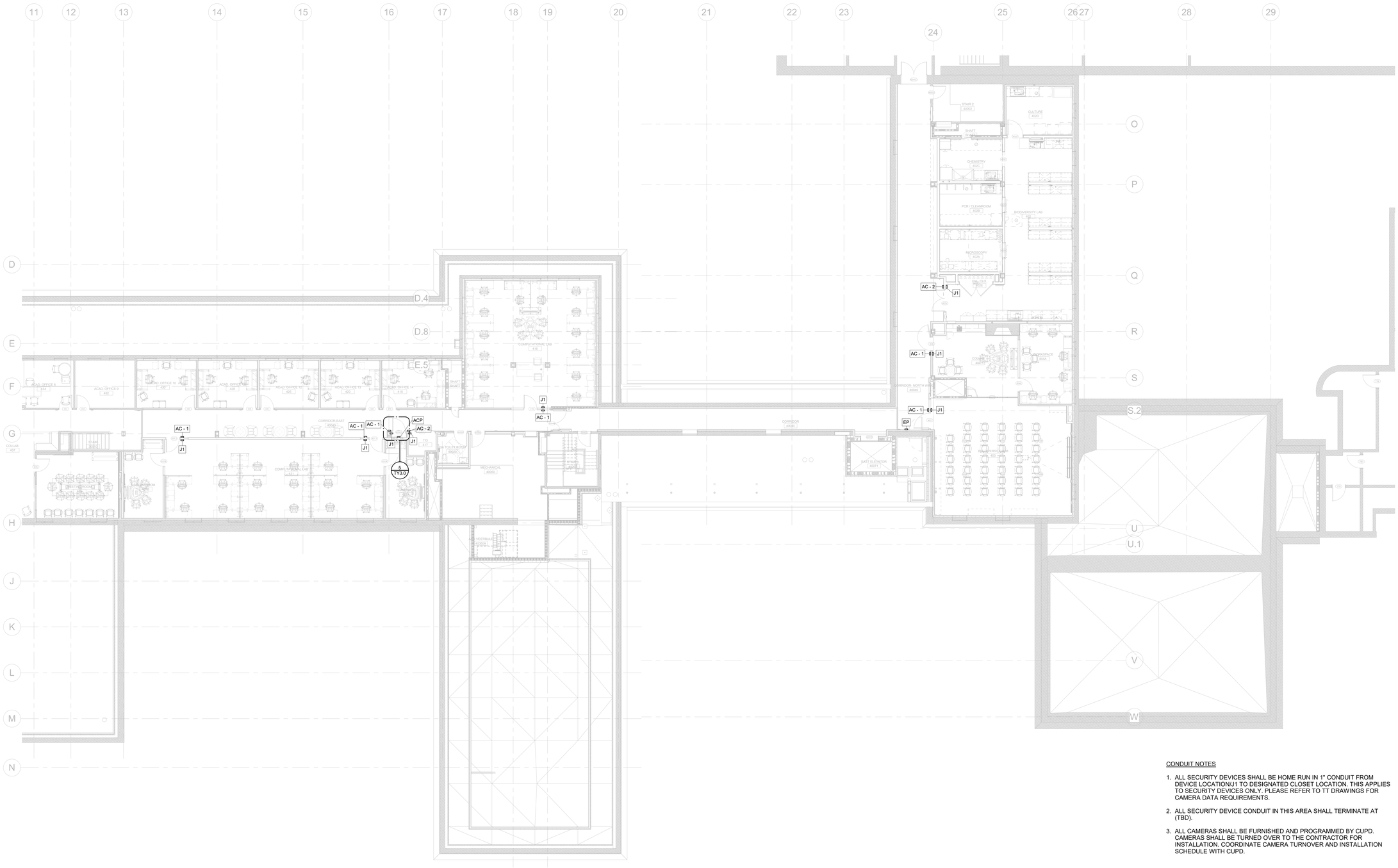

1 SECURITY OVERALL PLAN - FOURTH FLOOR PART C - PHASE 2
1/8" = 1'-0"

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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236 Tower Road
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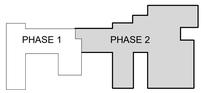

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SECURITY FOURTH FLOOR PLAN - PART C - PHASE 2

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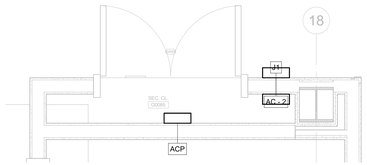
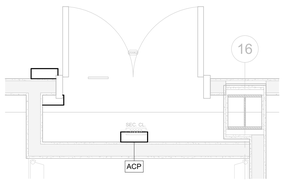
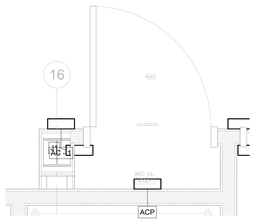


3 SECURITY ENLARGED PLAN - GROUND FLOOR PART C - PHASE 2 - SEC. CL. G0085
3/4" = 1'-0"



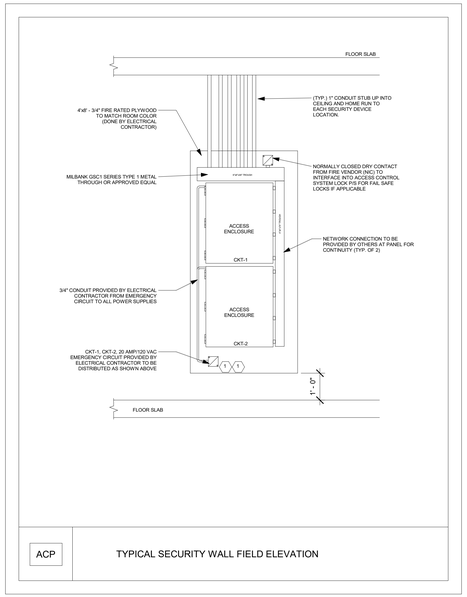
4 SECURITY ENLARGED PLAN - SECOND FLOOR PART C - PHASE 2 - SEC. CL. 20062
3/4" = 1'-0"



5 SECURITY ENLARGED PLAN - FOURTH FLOOR PART C - PHASE 2 - SEC. CL. 40061
3/4" = 1'-0"

WALLFIELD NOTES

1. DO NOT ENTER BOTTOM KNOCKOUT OF ANY SECURITY ENCLOSURE AS THIS INTERFERES WITH THE PLACEMENT OF THE BATTERIES.
2. PROVIDE A 4" METAL TROUGH WITH COVER, MOUNTED VERTICALLY, CENTERED ON THE PLYWOOD, FROM 12" AFF TO CEILING LINE. PROVIDE KNOCKOUTS AND COUPLERS TO MATCH THE LAYOUT AS SHOWN.
3. BRING CAT 6 CABLE (OR LONG ENOUGH PATCH CORD IF INSIDE AN IDF) AND MOUNT AN RJ-45 BISCUIT INSIDE OR NEAR THE ACCESS CONTROL PANEL. COORDINATE THIS TERMINATION WITH NETWORK VENDOR.
4. COORDINATE AND PROVIDE ONE SET OF NORMALLY CLOSED DRY CONTACT FROM THE SITE'S FIRE ALARM SYSTEM, TO OPEN ON GENERAL ALARM ACTIVATION. (PROVIDED BY FIRE VENDOR). MORE THAN ONE SET OF FIRE OUTPUT MAYBE REQUIRED PER CLOSET.
5. THE CONNECTIONS BETWEEN ALL PANELS AND THROUGHS SHOULD BE CHASE NIPPLES AND RIGID COUPLINGS WITH PLASTIC BUSHINGS.
6. INSTALL TAMPER SWITCHES AND WIRE PANELS IN SERIES TO DESIGNATED INPUTS SHOWN ON POINT TO POINT TERMINATION TABLES.
7. ALL CONDUITS AND CONNECTIONS AS IT RELATES TO 120VAC SHALL BE INSTALLED TO REQUIRED PANELS AS NEEDED PER CIRCUIT INDICATED AND PROVIDED.



ACP TYPICAL SECURITY WALL FIELD ELEVATION

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
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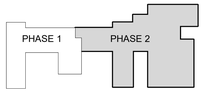

Keyplan

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SECURITY ENLARGED PLAN - PHASE 2

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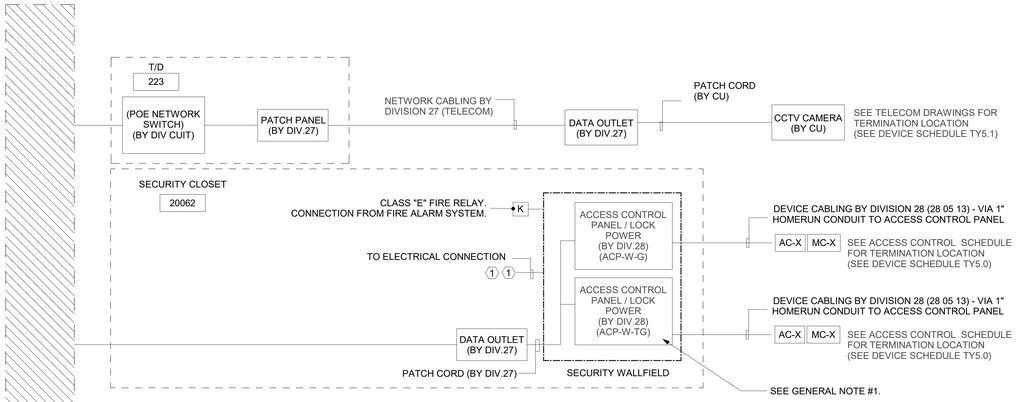
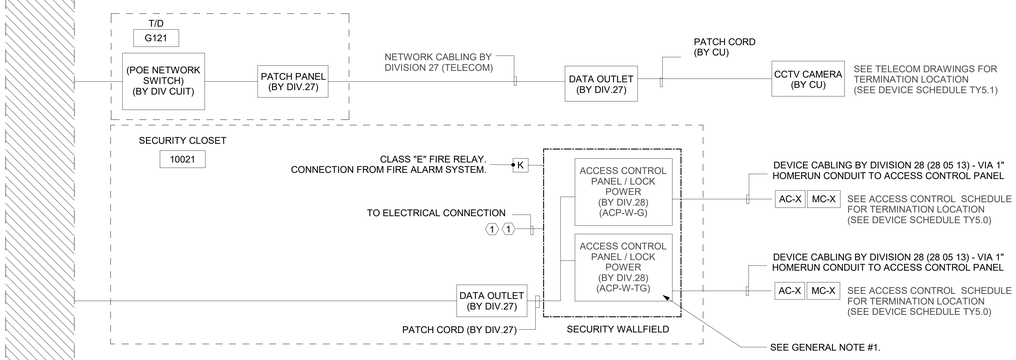
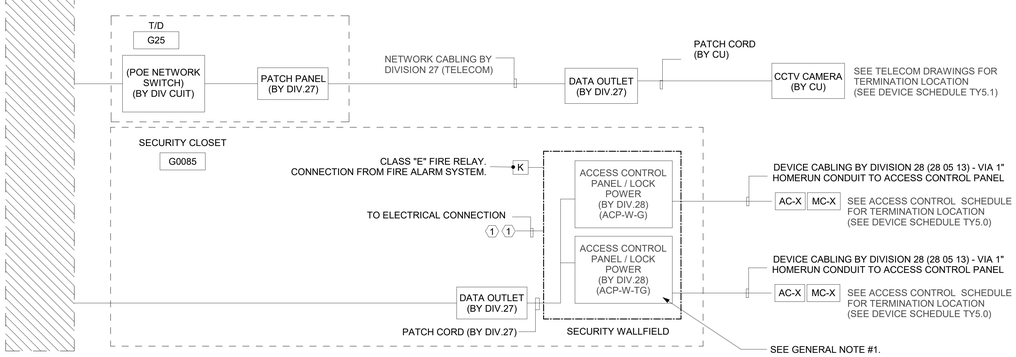


SECOND FLOOR

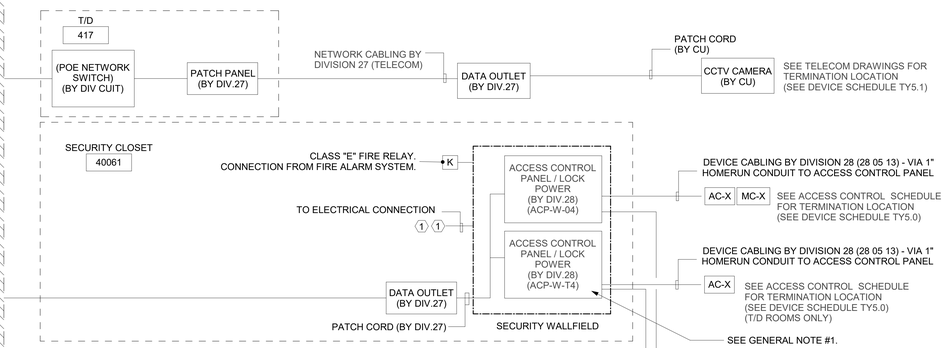


FIRST FLOOR



SECURITY VLAN (BY CUIT)

GROUND FLOOR



FOURTH FLOOR

SECURITY VLAN (BY CUIT)

THIRD FLOOR

GENERAL NOTE:

1. THESE ACCESS CONTROL PANELS ARE DEDICATED TO CUIT TELECOM ROOM ACCESS CONTROL DOORS. ONLY THESE DOORS ARE TO BE CONNECTED TO THIS DEDICATED CONTROLLER. THESE ARE ON A SEPARATE LENEL SYSTEM AND IS MANAGED BY CUIT.

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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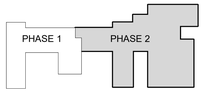

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RISER DIAGRAM - PHASE 2

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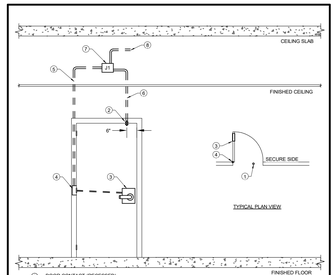
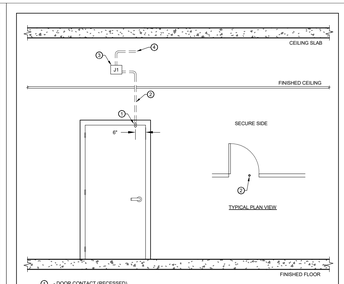


1. - DOOR CONTACT (RECESSED)
2. - ELECTRIFIED MORTISE LOCK, FREE EGRESS (INTERGRATED REQUEST TO EXIT)
3. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
4. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
5. - STUB 3/4" CONDUIT WITH DRAG LINE
6. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING
7. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

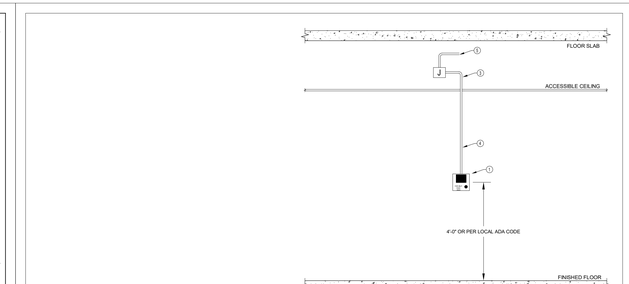
MC-1RX MAGNETIC CONTACT - SINGLE DOOR - FLUSH MOUNTED (WITH REQUEST-TO-EXIT)



1. - DOOR CONTACT (RECESSED)
2. - STUB 3/4" CONDUIT WITH DRAG LINE.
3. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8" x 8" x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING.
4. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

MC-1 MAGNETIC CONTACT - SINGLE DOOR - FLUSH MOUNTED



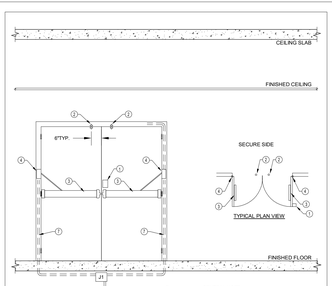
EMERGENCY PHONES

A. EMERGENCY PHONES ARE DESIGNED TO PERFORM THE SAME FUNCTION AS A BLUE LIGHT PHONE, BUT ARE LOCATED INSIDE BUILDING.
B. THESE PHONES RING DIRECTLY TO THE UNIVERSITY POLICE DEPARTMENT.
C. THESE INSTRUMENTS WILL BE LOCATED TO MEET ADA REQUIREMENTS FOR HEIGHT AND CLEARANCE.
D. FINAL LOCATIONS SHALL BE REVIEWED BY CUPD CRIME PREVENTION UNIT.
E. SURFACE MOUNT EMERGENCY PHONES SHALL BE YELLOW IN COLOR FOR HIGHER VISIBILITY AND DO NOT HAVE A KEYPAD FOR DIALING PURPOSES. THE V9KNS E-1600-45 WILL BE USED.
F. SIGNAGE WILL BE REQUIRED PER THE CUPD.

1. - EMERGENCY PHONE
2. - 3/4" CONDUIT WITH DRAG LINE TO NEAREST ACCESSIBLE CEILING TO CABLE TRAY.
3. - REFER TO TELECOM DRAWINGS FOR PHONE CABLING REQUIREMENTS
4. - 3/4" CONDUIT WITH DRAG LINE TO NEAREST ACCESSIBLE CEILING TO CABLE TRAY.

NOTE:
REVIEW ALL MOUNTING LOCATIONS WITH ARCHITECT, UNIVERSITY PRIOR TO INSTALLATION.

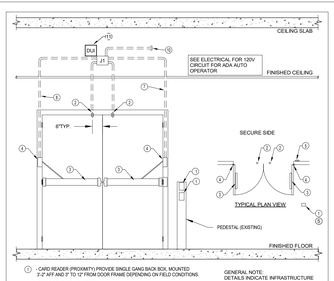
EP EMERGENCY PHONE- WALL MOUNTED - INTERIOR



1. - CARD READER (PROXIMITY) MOUNTED ON DOOR
2. - DOOR CONTACT (RECESSED)
3. - FIRE EXIT HARDWARE (W/REQUEST TO EXIT)
4. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
5. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
6. - STUB 3/4" CONDUIT WITH DRAG LINE.
7. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING.
8. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY, REFER TO SPECIFICATION 087100 FOR HARDWARE.

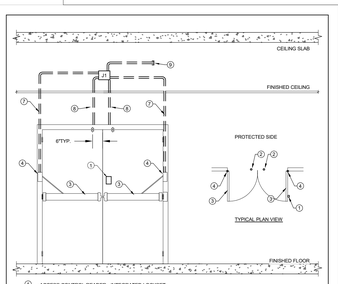
AC-76 ACCESS CONTROL - DOUBLE DOOR - CARD READER, ELECTRIFIED EXIT DEVICE, DOOR POSITION SWITCH



1. - CARD READER (PROXIMITY) PROVIDE SINGLE GANG BACK BOX, MOUNTED 3'-2" AFF AND 2" TO 12" FROM DOOR FRAME DEPENDING ON FIELD CONDITIONS.
2. - DOOR CONTACT (RECESSED)
3. - FIRE EXIT HARDWARE (W/REQUEST TO EXIT)
4. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
5. - ADA PUSH BUTTON (SEE DOOR HARDWARE SPECIFICATION)
6. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
7. - STUB 3/4" CONDUIT WITH DRAG LINE.
8. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING.
9. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION
10. - DU - ACCESS CONTROL INSTALLER TO INTERFACE WITH AUTOMATIC OPENER

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY, REFER TO SPECIFICATION 087100 FOR HARDWARE.

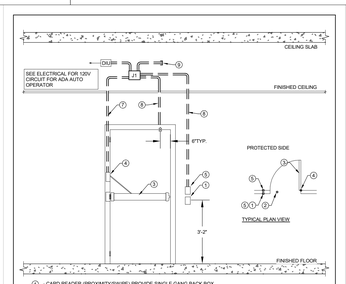
AC-74A ACCESS CONTROL - DOUBLE DOOR - CARD READER, ELECTRIFIED EXIT DEVICE, DOOR POSITION SWITCH WITH AUTOMATIC OPERATOR



1. - ACCESS CONTROL READER - INTEGRATED LOCKSET
2. - DOOR CONTACT (RECESSED)
3. - FIRE EXIT HARDWARE (W/REQUEST TO EXIT)
4. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
5. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
6. - STUB 3/4" CONDUIT WITH DRAG LINE.
7. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

AC-72 ACCESS CONTROL - DOUBLE DOOR - CARD READER, ELECTRIFIED EXIT DEVICE, DOOR POSITION SWITCH

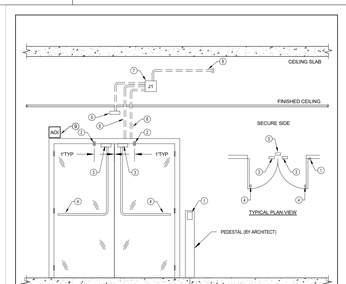


1. - CARD READER (PROXIMITY/SWIPE) PROVIDE SINGLE GANG BACK BOX, MOUNTED 3'-2" AFF AND 3" TO 12" FROM DOOR FRAME DEPENDING ON FIELD CONDITIONS
2. - DOOR CONTACT (RECESSED)
3. - FIRE EXIT HARDWARE (W/REQUEST TO EXIT)
4. - EXIT DEVICE (W/REQUEST TO EXIT)
5. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
6. - ADA PUSH BUTTON (SEE DOOR HARDWARE SPECIFICATION)
7. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
8. - STUB 3/4" CONDUIT WITH DRAG LINE.
9. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

DU - DOOR INTERFACE UNIT FOR ADA AUTO OPERATOR

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

AC-71A ACCESS CONTROL - SINGLE DOOR - CARD READER, ELECTRIFIED EXIT DEVICE, DOOR POSITION SWITCH WITH AUTOMATIC OPENER INTERFACE



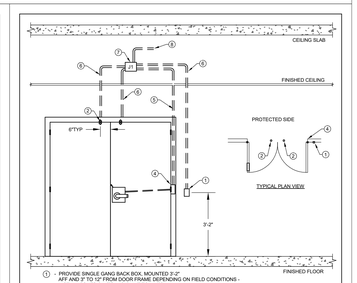
1. - VIDEO INTERCOM & ACCESS CONTROL READER - MOUNTED TO PEDESTAL SEE ARCHITECTUAL DRAWINGS FOR PEDESTAL INFORMATION
2. - DOOR CONTACT (RECESSED)
3. - ELECTRIC STRIKE
4. - EXIT DEVICE
5. - REQUEST TO EXIT, MOTION DETECTOR
6. - STUB 3/4" CONDUIT WITH DRAG LINE.
7. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING.
8. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

3/4" CONDUIT, SHALL BE ROUTED TO J1 - LOCATED ABOVE DOOR FOR ACCESS CONTROL AND INTERCOM DATA CABLE

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY, REFER TO SPECIFICATION 087100 FOR HARDWARE.

AO - ACCESS CONTROL INSTALLER TO INTERFACE WITH AUTOMATIC OPENER

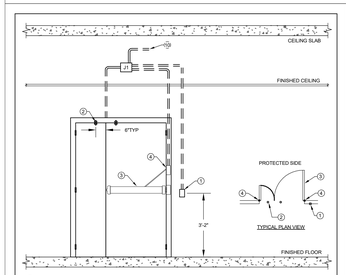
AC-36P ACCESS CONTROL - DOUBLE DOOR - CARD READER, ELECTRIC EXIT DEVICE, AUTOMATIC OPENER - PEDESTAL



1. - PROVIDE SINGLE GANG BACK BOX, MOUNTED 3'-2" AFF AND 3" TO 12" FROM DOOR FRAME DEPENDING ON FIELD CONDITIONS - INSTALL COVER PLATE AND PAINT TO MATCH WALL
2. - DOOR CONTACT (PREP)
4. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
5. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX - IF NO CEPT IS INSTALLED, DEAD END CONDUIT TO TOP OF DOOR FRAME.
6. - STUB 3/4" CONDUIT WITH DRAG LINE.
7. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING.
8. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

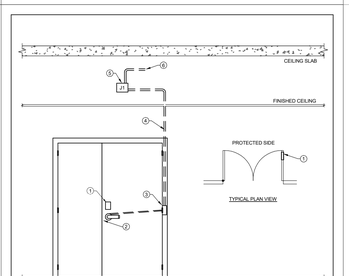
GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

AC-2F ACCESS CONTROL - DOUBLE DOOR - FUTURE INFRASTRUCTURE



1. - CARD READER (PROXIMITY/SWIPE) PROVIDE SINGLE GANG BACK BOX, MOUNTED 3'-2" AFF AND 3" TO 12" FROM DOOR FRAME DEPENDING ON FIELD CONDITIONS
2. - DOOR CONTACT (RECESSED)
3. - FIRE EXIT HARDWARE (W/REQUEST TO EXIT)
4. - WIRE TRANSFER HINGE (EPT 10)
5. - REQUEST TO EXIT, PUSH BUTTON
6. - BREAK GLASS UNIT
7. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
8. - STUB 3/4" CONDUIT WITH DRAG LINE.
9. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING.
10. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION.

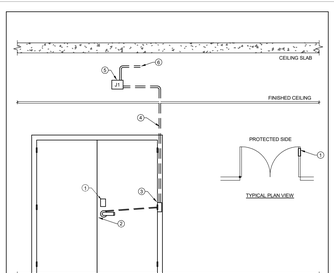
AC-75 ACCESS CONTROL - DOUBLE DOOR (UNEVEN PAIR) CARD READER, ELECTRIFIED EXIT DEVICE & DOOR CONTACT



1. - ACCESS CONTROL READER - INTEGRATED LOCKSET (SN200)
2. - INTEGRATED DOOR POSITION SWITCH
3. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
4. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
5. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING
6. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

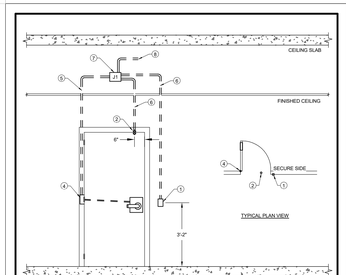
AC-2E ACCESS CONTROL - DOUBLE DOOR - CARD READER, ELECTRIFIED MORTISE LOCK, DOOR POSITION SWITCH



1. - ACCESS CONTROL READER - INTEGRATED LOCKSET (SN200)
2. - INTEGRATED DOOR POSITION SWITCH
3. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
4. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
5. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING
6. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

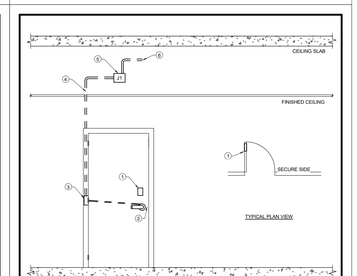
AC-2 ACCESS CONTROL - DOUBLE DOOR - CARD READER, ELECTRIFIED MORTISE LOCK, DOOR POSITION SWITCH



1. - PROVIDE SINGLE GANG BACK BOX, MOUNTED 3'-2" AFF AND 3" TO 12" FROM DOOR FRAME DEPENDING ON FIELD CONDITIONS - INSTALL COVER PLATE AND PAINT TO MATCH WALL
2. - DOOR CONTACT (PREP)
3. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
4. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
5. - STUB 3/4" CONDUIT WITH DRAG LINE.
6. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING
7. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION
8. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

AC-1F ACCESS CONTROL - SINGLE DOOR - FUTURE INFRASTRUCTURE



1. - ACCESS CONTROL READER - INTEGRATED LOCKSET (SN200)
2. - INTEGRATED DOOR POSITION SWITCH
3. - CONCEALED ELECTRICAL POWER TRANSFER HINGE (CEPT)
4. - STUB 3/4" CONDUIT OR GREENFIELD WITH DRAG LINE DOWN DOOR FRAME ON HINGE SIDE OF THE DOOR, BACK BOX TO JUNCTION BOX
5. - PROVIDE 4" x 4" x 2 1/8" DEEP JUNCTION BOX OR 8"x 8"x 4" DEEP BOX MOUNTED ABOVE DOOR, ABOVE ACCESSIBLE CEILING
6. - 1" CONDUIT, THIS SHALL BE HOME RUN TO SECURITY CLOSET/PANEL LOCATION

GENERAL NOTE:
DETAILS INDICATE INFRASTRUCTURE REQUIREMENTS ONLY,
REFER TO SPECIFICATION 087100 FOR HARDWARE.

AC-1 ACCESS CONTROL - SINGLE DOOR - CARD READER, ELECTRIFIED MORTISE LOCK, DOOR POSITION SWITCH

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

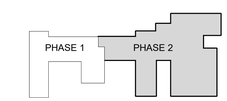
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

SECURITY DETAILS - PHASE 2

BID DOCUMENTS
Scale: 3/8" = 1'-0"

TY4.1

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RENOVATE PLANT SCIENCE
BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

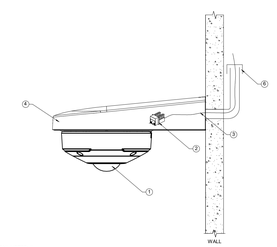
Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:

VIDEO SURVEILLANCE - FIXED CAMERA - PENDANT WALL MOUNTED



DETAIL NOTES: #

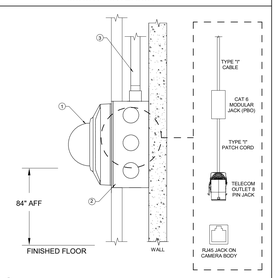
1. FIXED CAMERA
2. TELECOM OUTLET 8 PIN JACK
3. HORIZONTAL 4-PAIR UTP CABLE
4. PENDANT WALL MOUNT
5. PROTECTIVE WEATHERSHIELD
6. 3/4" EMT CONDUIT TO NEAREST ACCESSIBLE CEILING OR CABLE TRAY (BY ELECTRICAL CONTRACTOR)

C-8P — DEVICE SYMBOL: C-8P

SHEET NOTES

1. CAMERAS SHOWN ARE FOR INFRASTRUCTURE ONLY, ALL CAMERAS TO BE PROVIDED BY CORNELL CUPD.

VIDEO SURVEILLANCE - FIXED IP DOME - WALL MOUNT - INTERIOR

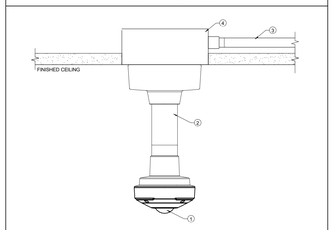


DETAIL NOTES: #

1. FIXED POE DOME CAMERA
2. BACK BOX (JR), BACK BOX TO BE SECURED TO STRUCTURE.
3. 3/4" CONDUIT WITH DRAG LINE TO NEAREST ACCESSIBLE CEILING TO CABLE TRAY OR LOW VOLTAGE J-HOOK CABLE PATH TO TERMINATING TELECOM CLOSET.

C-4 — DEVICE SYMBOL: C-4

VIDEO SURVEILLANCE - FIXED IP DOME - CEILING PENDANT MOUNTED



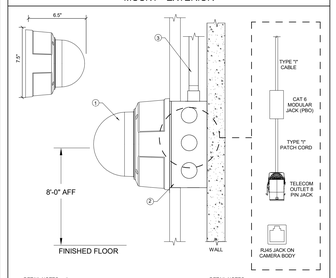
CEILING PENDANT MOUNTED

DETAIL NOTES: #

1. FIXED CAMERA
2. PENDANT CEILING MOUNT TO CEILING (MAX 1' LENGTH)
3. 3/4" CONDUIT WITH DRAG LINE TO NEAREST ACCESSIBLE CEILING TO CABLE TRAY OR LOW VOLTAGE J-HOOK CABLE PATH TO TERMINATING TELECOM CLOSET.
4. BACK BOX (JR), BACK BOX TO BE SECURED TO STRUCTURE.

C-1P — DEVICE SYMBOL: C-1P

VIDEO SURVEILLANCE - FIXED IP DOME - WALL MOUNT - EXTERIOR



DETAIL NOTES: #

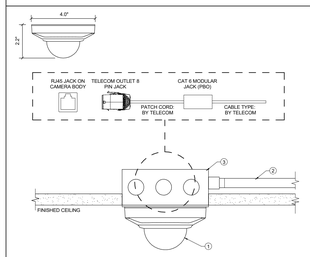
1. FIXED POE DOME CAMERA
2. BACK BOX (JR), BACK BOX TO BE SECURED TO STRUCTURE.
3. 3/4" EMT CONDUIT

DETAIL NOTES:

1. REFER TO SPECIFICATION 28 23 29 FOR CAMERA MODEL REQUIREMENTS.
2. REFER TO CONTRACTOR RESPONSIBILITY LEGEND ON TY-000.
3. REFER TO XXXXX FOR CAMERA VIEW TYPE (RECOGNITION/IDENTIFICATION/DETECTION)
4. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.

C-8 — DEVICE SYMBOL: C-8

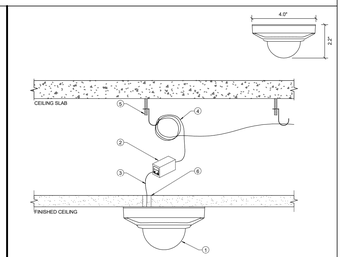
VIDEO SURVEILLANCE - FIXED IP DOME - FLUSH OR SURFACE - INTERIOR



INACCESSIBLE CEILING MOUNTED - INTERIOR

DETAIL NOTES: ⓐ

1. FIXED POE DOME CAMERA
2. 3/4" EMT CONDUIT
3. BACK BOX (JR), BACK BOX TO BE SECURED TO STRUCTURE



ACCESSIBLE CEILING MOUNTED - INTERIOR

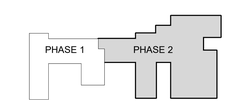
DETAIL NOTES: ⓐ

1. FIXED POE DOME CAMERA
2. TELECOM OUTLET 8 PIN JACK INSIDE PLENUM RATED GEM BOX
3. CAMERA PATCH CORD
4. HORIZONTAL 4-PAIR UTP CABLE WITH 10' SLACK
5. J-HOOK
6. 1"DIAMETER HOLE

DETAIL NOTES:

1. REFER TO SPECIFICATION 28 23 29 FOR CAMERA MODEL REQUIREMENTS.
2. REFER TO CONTRACTOR RESPONSIBILITY LEGEND ON TY-000.
3. REFER TO XXXXX FOR CAMERA VIEW TYPE (RECOGNITION/IDENTIFICATION/DETECTION)
4. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.

C-1 — DEVICE SYMBOL: C-1



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

SECURITY DETAILS - PHASE 2

BID DOCUMENTS
Scale: 3/8" = 1'-0"

TY4.2

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SECURITY DEVICE SCHEDULE 1 - PHASE 2

Floor	Door Number	Room Name	Room Number	Device Symbol/ Detail	Hardware Set	Termination Location	Security Device: Access Control Prox/Swipe	Security Device: Magnetic Contact Conceal	Lock: Electrified Exit Device	Lock: Electric Mortise	Lock: Latch Monitor	Lock: X-fer Hinge	Lock: Request-to-Exit: In Lock	Lock: Request-to-Exit: Motion	Notes
TUNNEL	B01	STAIR	B0004	AC-1	NA		1	1		1		1	1	1	
TUNNEL	B01	HEADHOUSE	B01	J1											J1
GROUND FLOOR	G0042.2	CORRIDOR	G0042	AC-1	4	ACP-E-G	1	1		1		1	1	1	
GROUND FLOOR	XG004	STAIR	G0004	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G40	LAB SUPPORT GENERAL EQUIPMENT	G40	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G32	FREEZER FARM	G32	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G26	FREEZER FARM	G26	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G25	T/D	G25	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G09	WRITE-UP SPACE	G09	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G0041	FIELD WORK SUITE CORRIDOR	G0041	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G38	FLEX LAB SUPPORT	G38	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G36	FLEX LAB SUPPORT	G36	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G34	SUPPORT	G34	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G0042A.5	CYC. STOR	G13	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G17	MICROSCOPY	G17	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G19	PCR	G19	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G21	OFFICE	G15F	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G23	CHEMISTRY	G23	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G0052S	SHAFT	SHAFT	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G15	EQUIPMENT	G15	AC-1			1	1		1		1	1	1	
GROUND FLOOR	G0051	CORRIDOR	G0051	AC-2			1	2		1		1	1		
GROUND FLOOR	G0087	CYL. CLO	G0087	AC-2			1	2		1		1	1		
GROUND FLOOR	G0085	SEC. CL.	G0085	AC-2			1	2		1		1	1		
GROUND FLOOR	G0052	CORRIDOR	G0051	AC-2			1	2		1		1	1		
GROUND FLOOR	G14.1	SHARED INSTRUMENTATION SUPPORT ROOM	G14	AC-75			1	2	1			1	1		
GROUND FLOOR	G20.1	SUSTAINABLE CROP PRODUCTION LAB	G20	AC-E2			1	1		1		1		1	
GROUND FLOOR	G20.2	SUSTAINABLE CROP PRODUCTION LAB	G20	AC-E2			1	1		1		1		1	
GROUND FLOOR	G04	FIELD WORK ROOM	G04	AC-E2			1	1		1		1		1	
GROUND FLOOR	G05	CLEAN PLANT AND SOIL GRINDING	G05	AC-E2			1	1		1		1		1	
GROUND FLOOR	G03	MESSY PLANT GRINDING ROOM	G03	AC-E2			1	1		1		1		1	
GROUND FLOOR	G01	MESSY PLANT GRINDING ROOM	G01	AC-E2			1	1		1		1		1	
GROUND FLOOR	G02	SOIL AND SAMPLE PREP	G02	AC-E2			1	1		1		1		1	
GROUND FLOOR	1278	EXIST. SUPPORT	G08A	AC-EX			1	1		1		1	1	1	
GROUND FLOOR	-	CORRIDOR - NORTH WING	G0042	AC-EX			1	1		1		1	1	1	
GROUND FLOOR	G30	COLD ROOM	G30	AC-EX			1	1		1		1	1	1	
GROUND FLOOR	G28	COLD ROOM	G28	AC-EX			1	1		1		1	1	1	
GROUND FLOOR	-	VESTIBULE	G0052	AC-X			1	1		1		1		1	
GROUND FLOOR	G0085	SEC. CL.	G0085	ACP											
GROUND FLOOR	-	CORRIDOR - NORTH WING	G0042	EP										1	
GROUND FLOOR	G40	CORRIDOR - CENTER	G0044	J1											
GROUND FLOOR	G32	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G26	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G14.1	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G25	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G0051	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	30066.8	EXTERIOR	-	J1											
GROUND FLOOR	XG004	EXTERIOR	-	J1											
GROUND FLOOR	G14.2	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G09	CORRIDOR - NORTH WING	G0042	J1											
GROUND FLOOR	G0041	CORRIDOR- NORTH WING	G0042	J1											
GROUND FLOOR	G0042.2	EXTERIOR	-	J1											
GROUND FLOOR	G38	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G36	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G34	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G0087	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G0085	CORRIDOR-EAST	G0043	J1											
GROUND FLOOR	G00TA	CORRIDOR	G0051	J1											
GROUND FLOOR	G17	CORRIDOR	G0051	J1											
GROUND FLOOR	G20.1	CORRIDOR	G20	J1											
GROUND FLOOR	G19	CORRIDOR	G0051	J1											
GROUND FLOOR	G21	FLEXIBLE	G21	J1											
GROUND FLOOR	G23	CORRIDOR	G0051	J1											
GROUND FLOOR	G20.2	CORRIDOR	G0051	J1											
GROUND FLOOR	G0052S	VESTIBULE	G0052	J1											
GROUND FLOOR	G04	FIELD WORK SUITE CORRIDOR	G0041	J1											
GROUND FLOOR	G05	FIELD WORK SUITE CORRIDOR	G0041	J1											
GROUND FLOOR	G03	FIELD WORK SUITE CORRIDOR	G0041	J1											
GROUND FLOOR	616	FIELD WORK SUITE CORRIDOR	G0041	J1											
GROUND FLOOR	G02	FIELD WORK SUITE CORRIDOR	G0041	J1											
GROUND FLOOR	G15	CORRIDOR	G0051	J1											
GROUND FLOOR	G14.2	SHARED INSTRUMENTATION SUPPORT ROOM	G14	MC-2RX				1					1		
FIRST FLOOR	128.1	ADMIN. SUITE	128	AC-1			1	1		1		1	1	1	
FIRST FLOOR	133	20P GENERAL ROOM ASSIGNMENT CLASSROOM	133	AC-1			1	1		1		1	1	1	
FIRST FLOOR	128.2	ADMIN. SUITE	128	AC-1			1	1		1		1	1	1	
FIRST FLOOR	116	WRITE-UP SPACE A	116	AC-1			1	1		1		1	1	1	
FIRST FLOOR	X10041	CORRIDOR - NORTH WING	10041	AC-1			1	1		1		1	1	1	
FIRST FLOOR	113	FRUIT PRODUCTION LAB	113	AC-2			1	2		1		1	1		
FIRST FLOOR	104	DRY TEACHING LAB	104	AC-75			1	2	1			1	1		
FIRST FLOOR	118	FLEX LAB SUPPORT	118	AC-E2			1	1		1		1		1	
FIRST FLOOR	X10044	CORRIDOR- NORTH WING	10044	AC-EX	24	ACP-E-01	1	1		1		1	1	1	
FIRST FLOOR	X10042	VESTIBULE	10042	AC-EX	24	ACP-E-01	1	1		1		1	1	1	
FIRST FLOOR	-	CORRIDOR - NORTH WING	10041	EP										1	
FIRST FLOOR	128.1	CORRIDOR	10045	J1											
FIRST FLOOR	133	CORRIDOR	10045	J1											
FIRST FLOOR	128.2	CORRIDOR	10045	J1											
FIRST FLOOR	116	CORRIDOR	10045	J1											
FIRST FLOOR	113	CORRIDOR	10045	J1											
FIRST FLOOR	104	CORRIDOR - NORTH WING	10041	J1											
FIRST FLOOR	1264	EXTERIOR	-	J1											
FIRST FLOOR	118	CORRIDOR	10045	J1											

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Structural Engineers
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Clifton Park, NY 12065
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Salas O'Brien Consulting & Engineering Group of NY, Inc.
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Plumbing
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DM Engineers
Fire Protection Engineers
1007 Yonkers Ave
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T 929 333-2339

Bell & Spina
Building Envelope
215 Wyoming Street S
Syracuse, NY 13204
T 315 488-0377

Environ. Design & Research
Historic Preservation, Landscape, Civil Engineering
217 Montgomery St, Suite 1000
Syracuse, NY 13202
T 315 471-0688

Schuler Shook
Lighting Design
240 W 40th Street, 2nd Floor
New York, NY 10018
T 212 439-5650

D2D Green Design
Sustainability PH2
10 Hallenbeck Hill
East Greenbush, NY 12061
T 518 729-2967

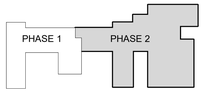
Shen Milsom & Wilke
Acoustics, IT, AV, Security
417 Fifth Avenue
New York, NY 10016
T 212 725-6800

Watts Architects & Engineers
Asbestos, Haz Mat
95 Perry Street, Suite 300
Buffalo, NY 14203
T 716 206-5122

Hastings Consulting
Building Code
142 Hanlon Rd
Holliston, MA 01746
T 508 397-8417

Ellana
Cost Consulting
32 Broadway, Suite 801
New York, NY 10004
T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

SECURITY DEVICE SCHEDULE - PHASE 2

BID DOCUMENTS
Scale:

TY5.0

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SECURITY DEVICE SCHEDULE 2 - PHASE 2

Floor	Door Number	Room Name	Room Number	Device Symbol/ Detail	Hardware Set	Termination Location	Security Device: Access Control Prox/Swipe	Security Device: Magnetic Contact Conceal	Lock: Electrified Exit Device	Lock: Electric Mortise	Lock: Latch Monitor	Lock: X-fer Hinge	Lock: Request-to-Exit In Lock	Lock: Request-to-Exit Motion	Notes
SECOND FLOOR	225	MEETING ROOM	225	AC-1			1	1		1		1	1	1	
SECOND FLOOR	203B	T/D	223	AC-1			1	1		1		1	1	1	
SECOND FLOOR	223A	T/D	223	AC-1			1	1		1		1	1	1	
SECOND FLOOR	224	WRITE-UP SPACE	224	AC-1			1	1		1		1	1	1	
SECOND FLOOR	219.1	COLLAB.	221	AC-1			1	1		1		1	1	1	
SECOND FLOOR	20002	EQUIPMENT STORAGE	202E	AC-1			1	1		1		1	1	1	
SECOND FLOOR	20060	ELECTRICAL	20060	AC-1			1	1		1		1	1	1	
SECOND FLOOR	203	WRITE-UP SPACE	203	AC-1			1	1		1		1	1	1	
SECOND FLOOR	20062	SEC. CL.	20062	AC-1			1	1		1		1	1	1	
SECOND FLOOR	20062	CORRIDOR-EAST	20040	AC-1			1	1		1		1	1	1	
SECOND FLOOR	230.1	PLANT PHYSIOLOGY PREP LAB	230	AC-2			1	2		1		1	1		
SECOND FLOOR	228	FELX LAB SUPPORT	228	AC-2			1	2		1		1	1		
SECOND FLOOR	203	SYNTHETIC BIOLOGY LAB	202	AC-2			1	2		1		1	1		
SECOND FLOOR	202G	CORRIDOR - ANNEX	841	AC-2			1	2		1		1	1		
SECOND FLOOR	237.2	LECTURE HALL	233	AC-72			1	1		1		1	1	1	
SECOND FLOOR	236	PLANT PHYSIOLOGY TEACHING LAB	236	AC-75			1	2	1			1	1		
SECOND FLOOR	20062	RES. LAB	227	ACP											
SECOND FLOOR	-	CORRIDOR - NORTH WING	20041	EP										1	
SECOND FLOOR	230.1	CORRIDOR-EAST	20040	J1											
SECOND FLOOR	228	CORRIDOR-EAST	20040	J1											
SECOND FLOOR	223B	CORRIDOR-EAST	20040	J1											
SECOND FLOOR	225	CORRIDOR-EAST	20040	J1											
SECOND FLOOR	224	CORRIDOR - ANNEX	841	J1											
SECOND FLOOR	219.2	COLLAB.	221	J1											
SECOND FLOOR	219.1	COLLAB.	221	J1											
SECOND FLOOR	202	CORRIDOR - NORTH WING	20041	J1											
SECOND FLOOR	20002	STAIR 2	20002	J1											
SECOND FLOOR	20002	CORRIDOR - ANNEX	841	J1											
SECOND FLOOR	236	CORRIDOR-CENTER	20042	J1											
SECOND FLOOR	237.2	CORRIDOR-CENTER	20042	J1											
SECOND FLOOR	20060	CORRIDOR - NORTH WING	20041	J1											
SECOND FLOOR	202G	CORRIDOR - NORTH WING	20041	J1											
SECOND FLOOR	203	CORRIDOR - NORTH WING	20041	J1											
SECOND FLOOR	223A	CORRIDOR-EAST	20040	J1											
SECOND FLOOR	219.1	PLANT/SOIL/MICROBES LAB	219	MC-2RX				1					1		
THIRD FLOOR	324	WRITE-UP SPACE	324	AC-1			1	1		1		1	1	1	
THIRD FLOOR	311	WRITE-UP SPACE	311	AC-1			1	1		1		1	1	1	
THIRD FLOOR	307	WRITE-UP SPACE	307	AC-1			1	1		1		1	1	1	
THIRD FLOOR	30002	EQUIPMENT CORRIDOR	302D	AC-1			1	1		1		1	1	1	
THIRD FLOOR	30060	ELECTRICAL	30060	AC-1			1	1		1		1	1	1	
THIRD FLOOR	325	T/D	325	AC-2			1	2		1		1	1		
THIRD FLOOR	302	MOLECULAR PLANT-MIVROBE INTERACTIONS	302	AC-2			1	2		1		1	1		
THIRD FLOOR	309	CYL. CLO	309	AC-2			1	2		1		1	1		
THIRD FLOOR	30040	CORRIDOR - ANNEX	30040	AC-75			1	2	1			1	1		
THIRD FLOOR	319.1	SOIL/PLANT LAB	319	AC-E2			1	1		1		1		1	
THIRD FLOOR	326	FLEX LAB SUPPORT	326	AC-E2			1	1		1		1		1	
THIRD FLOOR	400	CORRIDOR - NORTH WING	30041	AC-E2			1	1		1		1		1	
THIRD FLOOR	-	CORRIDOR - NORTH WING	30041	EP										1	
THIRD FLOOR	386	CORRIDOR-EAST	30042	J1											
THIRD FLOOR	319.1	COLLAB.	323	J1											
THIRD FLOOR	394	CORRIDOR-EAST	30042	J1											
THIRD FLOOR	419	CORRIDOR - NORTH WING	30041	J1											
THIRD FLOOR	307	CORRIDOR - NORTH WING	30041	J1											
THIRD FLOOR	302	CORRIDOR - NORTH WING	30041	J1											
THIRD FLOOR	30002	STAIR 2	30002	J1											
THIRD FLOOR	30040	CORRIDOR-ANNEX-2	300CG	J1											
THIRD FLOOR	385	CORRIDOR-EAST	30042	J1											
THIRD FLOOR	420	CORRIDOR - NORTH WING	30060	J1											
THIRD FLOOR	400	CORRIDOR - NORTH WING	300CF	J1											
THIRD FLOOR	309	CORRIDOR - NORTH WING	30041	J1											
THIRD FLOOR	319.2	LUNCH ROOM	325	MC-1				1							
FOURTH FLOOR	261	COMPUTATIONAL LAB	431	AC-1			1	1		1		1	1	1	
FOURTH FLOOR	431.2	COMPUTATIONAL LAB	431	AC-1			1	1		1		1	1	1	
FOURTH FLOOR	G08	COMPUTATIONAL LAB	416	AC-1			1	1		1		1	1	1	
FOURTH FLOOR	456	BIO-DIVERSITY HUB	404	AC-1			1	1		1		1	1	1	
FOURTH FLOOR	40061	SEC CL.	40061	AC-1			1	1		1		1	1	1	
FOURTH FLOOR	404	COLLAB.	404	AC-1			1	1		1		1	1	1	
FOURTH FLOOR	262	T/D	417	AC-2			1	2		1		1	1		
FOURTH FLOOR	1829	BIOLOGY LAB	402	AC-2			1	2		1		1	1		
FOURTH FLOOR	262	TEAM ROOM	431A	ACP											
FOURTH FLOOR	-	-	-	EP										1	
FOURTH FLOOR	431.2	CORRIDOR-EAST	40043	J1											
FOURTH FLOOR	431.1	CORRIDOR-EAST	40043	J1											
FOURTH FLOOR	262	CORRIDOR-EAST	40043	J1											
FOURTH FLOOR	G08	CORRIDOR-EAST	40043	J1											
FOURTH FLOOR	456	CORRIDOR - NORTH WING	40040	J1											
FOURTH FLOOR	402V	CORRIDOR - NORTH WING	40040	J1											
FOURTH FLOOR	40061	CORRIDOR-EAST	40043	J1											
FOURTH FLOOR	404	CORRIDOR - NORTH WING	40040	J1											

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RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Yonkers, NY 10704
T 929 333-2339

Bell & Spina
Building Envelope
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Environ. Design & Research
Historic Preservation, Landscape, Civil Engineering
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Syracuse, NY 13202
T 315 471-0688

Schuler Shook
Lighting Design
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New York, NY 10018
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D2D Green Design
Sustainability PH2
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Holliston, MA 01746
T 508 397-8417

Ellana
Cost Consulting
32 Broadway, Suite 801
New York, NY 10004
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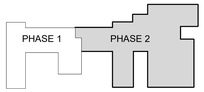
Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

SECURITY DEVICE SCHEDULE - PHASE 2

BID DOCUMENTS
Scale:

TY5.1

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SECURITY VIDEO SURVEILLANCE CAMERA SCHEDULE - PHASE 2

Floor	Device Symbol/Detail	Camera ID#	Camera: Type: Fix	Camera: Type: PTZ	Camera: Housing: Dome	Camera: Housing: Enviro	Camera: Housing: Vandal	Location: Placement: Wall	Location: Placement: Ceiling	Location: Placement: Soffit	Location: Placement: Corner	Location: Placement: Pole	Location: Placement: Outdoor	Location: Mount Type: Flush	Location: Mount Type: Surface	Location: Mount Type: Pend/Wall	Location: Mount Type: Parapet Goose Neck	Connectivity: Data	Connectivity: 24V	Termination Point	Security Drawing	Notes	Phase
GROUND FLOOR	C-4	CAM-G-07	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
GROUND FLOOR	C-4	CAM-G-08	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
GROUND FLOOR	C-4	CAM-G-09	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
GROUND FLOOR	C-4	CAM-G-10	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
FIRST FLOOR	C-4	CAM-01-03	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
FIRST FLOOR	C-4	CAM-01-04	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
FIRST FLOOR	C-4	CAM-01-05	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
FIRST FLOOR	C-7	CAM-01-06	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
FIRST FLOOR	C-4	CAM-01-07	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
SECOND FLOOR	C-4	CAM-02-01	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
SECOND FLOOR	C-8	CAM-02-02	1		1			1					1		1			1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	
THIRD FLOOR	C-4	CAM-03-01	1		1			1					1	1				1		SEE TELECOM DRAWINGS		CAMERA TO BE FURNISHED AND PROGRAMMED BY CUPD. INSTALLATION BY CONTRACTOR.	

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417

Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

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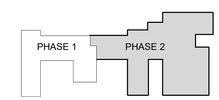

Keyplan

Job Number 161026-00 / 31909
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Revisions

SECURITY VIDEO SURVEILLANCE CAMERA SCHEDULE - PHASE 2

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DRAWING LIST:

NUMBER	NAME
TA0.1	AUDIOVISUAL COVER SHEET - PHASE 2
TA1.0	AUDIOVISUAL GROUND FLOOR PLAN - PART C - PHASE 2
TA1.1	AUDIOVISUAL FIRST FLOOR PLAN - PART C - PHASE 2
TA1.2	AUDIOVISUAL SECOND FLOOR PLAN - PART C - PHASE 2
TA1.3	AUDIOVISUAL THIRD FLOOR PLAN - PART C - PHASE 2
TA1.4	AUDIOVISUAL FOURTH FLOOR PLAN - PART C - PHASE 2
TA3.0	AUDIOVISUAL ENLARGED PLANS - PHASE 2
TA3.1	AUDIOVISUAL ENLARGED PLANS - PHASE 2
TA3.2	AUDIOVISUAL ENLARGED PLANS - PHASE 2
TA3.3	AUDIOVISUAL ENLARGED PLANS - PHASE 2
TA4.0	AUDIOVISUAL ELEVATIONS - PHASE 2
TA5.0	AUDIOVISUAL RISER DIAGRAMS - PHASE 2
TA5.1	AUDIOVISUAL RISER DIAGRAMS - PHASE 2
TA6.0	AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2
TA6.1	AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2
TA6.2	AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2
TA6.3	AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2
TA6.4	AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2
TA7.0	AUDIOVISUAL DETAILS - PHASE 2
TA7.1	AUDIOVISUAL DETAILS - PHASE 2

ABBREVIATIONS:

A AMPERES
AC ABOVE COUNTER
AFC AT FINISHED CEILING
AFF ABOVE FINISHED FLOOR
AFP ABOVE FINISHED PLATFORM OR RAISED FLOOR
AS ABOVE SLAB
ATS ABOVE TABLE SURFACE
AV AUDIOVISUAL
AWG AMERICAN WIRE GAGE

C CONDUIT
CAT-3 TIA/EIA CATEGORY 3 RATED
CAT-5E TIA/EIA CATEGORY 5E RATED
CAT-6A TIA/EIA CATEGORY 6A RATED
CAT-6E TIA/EIA CATEGORY 6E RATED
CB CEILING BOX
CCTV CLOSED CIRCUIT TELEVISION
CKT CIRCUIT
COAX COAXIAL CABLE
CL CENTER LINE
COND CONDUCTOR
CLG CEILING
CP CONSOLIDATION POINT
CU COPPER

DVR DIGITAL VIDEO RECORDER
DWG DRAWING

EC CONDUCTOR
EM EMERGENCY
EMT ELECTRICAL METALLIC TUBING (W/ PULL STRING
EC EMPTY CONDUIT
EX EXISTING

F/UTP FOILED/UNSHIELDED TWISTED PAIR
FA FIRE ALARM
FACP FIRE ALARM CONTROL PANEL
FB FLOOR BOX
FO FIBER OPTIC
FP FLAT PANEL

GND GROUND

HC HUNG CEILING
HZ HERTZ

ID INSIDE DIAMETER
IDF INTERMEDIATE DISTRIBUTION FRAME

LAN LOCAL AREA NETWORK
LV LOW VOLTAGE

MAX MAXIMUM
MER MECHANICAL EQUIPMENT ROOM
MC MAIN CROSS CONNECT
MIC MICROPHONE
MDF MAIN DISTRIBUTION FRAME
MH MANHOLE
MIN MINIMUM
MM MULTIMODE
MTD MOUNTED
MTER MAIN TELECOMMUNICATIONS EQUIPMENT ROOM

N NEUTRAL
NC NORMALLY CLOSED
NIC NOT IN CONTRACT
NID NETWORK INTERFACE DEVICE
NTS NOT TO SCALE
NO NORMALLY OPEN
NO. NUMBER

OD OUTSIDE DIAMETER
OFE OWNER FURNISHED EQUIPMENT
OSP OUTSIDE PLANT

PA PUBLIC ADDRESS
PP PATCH PANEL
PB PULLBOX
PR PAIR
PBX PRIVATE BRANCH EXCHANGE
PNL PANEL
POE POWER OVER ETHERNET
PRJ PROJECTOR
PTZ PAN/TILT/ZOOM

RM ROOM
RW RACEWAY

SC SCREW COVER BOX
SB SPEAKER BACK BOX
SM SINGLE MODE
SP SPEAKER
ST STRAND
STP SHIELDED TWISTED PAIR

TBD TO BE DETERMINED
TEMP TEMPORARY
TGB TELECOMMUNICATIONS GROUND BAR
TR TELECOMMUNICATIONS ROOM
TS TAMPER SWITCH
TSER TELECOMMUNICATIONS SERVICE ENTRANCE ROOM
TV TELEVISION
TYP TYPICAL

UON UNLESS OTHERWISE NOTED
UPS UNINTERRUPTIBLE POWER SUPPLY
UTP UNSHIELDED TWISTED PAIR

VA VOLT/AMPERES
VIF VERIFY IN FIELD
VM VOLTMETER
VOIP VOICE OVER INTERNET PROTOCOL
VP VAPOR PROOF

W WATTS
WAN WIDE AREA NETWORK
WAP WIRELESS ACCESS POINT
WM WIRE MANAGEMENT
WP WATERPROOF
WS WORKSTATION
WT WATER TIGHT
WW WIREWAY

XFRM TRANSFORMER

GENERAL NOTES:

1. DRAWINGS AND ASSOCIATED SPECIFICATIONS ARE INTENDED TO REPRESENT OVERALL DESIGN INTENT.

2. POWER AND DATA REQUIREMENTS SHOWN FOR REFERENCE ONLY AND ARE NOT FOR CONSTRUCTION. COORDINATE WITH ELECTRICAL ENGINEER, ARCHITECT AND TELECOM DESIGNER DRAWINGS FOR LOCATION OF ALL OUTLETS IN THIS DRAWING SET.

3. WHERE POWER CIRCUITS ARE SHOWN TERMINATING IN JUNCTION BOXES WITHOUT RECEPTACLES, THE WIRES SHALL BE TAPED AND THE BOXES COVERED. THESE CIRCUITS WILL BE CONNECTED BY OTHERS DURING INSTALLATION OF THE AV SYSTEMS EQUIPMENT.

4. EMPTY CONDUIT RUNS ON THESE DRAWINGS SHOW ONLY INTERCONNECTION BETWEEN TERMINATION POINTS. THE EXACT PATH OF CONDUIT IS TO BE DETERMINED BY THE COORDINATE PATHWAYS FOR ALL AV RELATED DEVICES WITH ARCHITECTURAL AND ELECTRICAL PLANS.

5. HIGH LEVEL/HIGH CURRENT FEEDS (SUCH AS FOR POWER DISTRIBUTION PANELS, LIGHTING, AND BRANCH CIRCUITS,) ARE NOT TO BE RUN PARALLEL WITH AUDIO/VIDEO CONDUITS OR CABLING. IF HIGH LEVEL/HIGH CURRENT FEEDS MUST RUN PARALLEL TO AUDIO/VIDEO CONDUITS OR CABLING, MINIMUM SEPARATION MUST BE MAINTAINED ACCORDING TO THE FOLLOWING TABLE. THE "NA" INDICATES THAT THE USE SHOULD BE AVOIDED. SPACINGS ASSUME THAT POWER CONDUCTORS WILL NOT BE TWISTED PAIRS. CLOSER SPACINGS CAN BE USED IF POWER CONDUCTORS ARE TWISTED PAIRS.

MINIMUM ACCEPTABLE DISTANCE BETWEEN PARALLEL AV AND POWER CONDUITS						
AV CONDUIT	POWER CONDUIT	COMBINED AMPACITY OF ALL PHASE CONDUCTORS IN POWER CONDUIT				
		UNDER 60A	60A	120A	240A	400A
EMT	EMT	2 FT.	3 FT.	4 FT.	NA	NA
EMT	RIGID STEEL	4 IN.	8 IN.	1 FT.	2 FT.	4 FT.
RIGID STEEL	RIGID STEEL	1 IN.	2 IN.	4 IN.	8 IN.	16 IN.

6. NO LARGE POWER TRANSFORMERS OR MOTORS SHOULD BE LOCATED WITHIN 50 FEET OF AV EQUIPMENT SPACES.

7. ALL AV CABLING THAT IS RUN OPEN-WIRE SHALL BE SUPPORTED FROM J-HOOKS NO GREATER THAN 3 FEET APART. NO CABLE IS TO BE UNSUPPORTED OR LAID OVER CEILING TILES, BLACK IRON, OR OTHER CEILING MEMBERS.

8. THE METHOD OF INSTALLATION OF BOXES IN WALLS, AND THE METHOD OF PASSAGE OF CONDUITS AND WIREWAYS THROUGH ACOUSTICALLY SENSITIVE WALLS SHALL BE COORDINATED WITH THE ACOUSTICAL CONSULTANT.

9. INSTALL FIRESTOP TO ALL SLAB AND WALL PENETRATIONS PROVIDED FOR THE INSTALLATION OF CABLE AND CONDUIT AS REQUIRED TO MAINTAIN FIRE RATING OF SLAB OR WALL. REVIEW ARCHITECT'S PLANS FOR PARTITION TYPES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FIRE RATING OF ALL WALLS AND FLOORS HAVING CABLING PENETRATIONS, COORDINATE SEALANT INSTALLATION WITH WORK OF OTHER TRADES. REFER TO ELECTRICAL SPECIFICATIONS FOR MATERIAL AND INSTALLATION PARAMETERS.

10. ALL POWER, WIREWAYS, AND JUNCTION BOXES ARE TO BE REVIEWED BY ELECTRICAL ENGINEER FOR CODE AND SAFETY COMPLIANCE.

11. ALL OVERHEAD RIGGING REQUIREMENTS ARE TO BE REVIEWED AND STAMPED FOR APPROVAL BY LICENSED STRUCTURAL ENGINEER FOR CODE AND SAFETY COMPLIANCE.

12. POWER BREAKER AND DISTRIBUTION PANELS ARE SIZED AND SPECIFIED BY THE ELECTRICAL ENGINEER.

13. ALL CABLE TRAY THAT IS SURFACE-MOUNTED ON SLAB BELOW RAISED FLOOR OR ABOVE EQUIPMENT RACKS SHALL BE SECURELY FASTENED AND LEFT OPEN FOR CABLE ACCESS.

14. POWER FOR AV AND RELATED SYSTEMS SHALL USE AN EIA/TIA 607 COMPLIANT GROUNDING SYSTEM, DESIGNED BY THE ELECTRICAL ENGINEER. REFER TO AV DETAIL SHEETS FOR ADDITIONAL GROUNDING REQUIREMENTS IF APPLICABLE.

15. ALL AV-RELATED EMPTY CONDUIT SHALL BE REAMED, CLEANED, CAPPED (WHERE APPROPRIATE), TAGGED, AND FURNISHED WITH PULL WIRES.

16. WHERE EXACT DIMENSIONS ARE NOT INDICATED, THE SCALE OF THIS DRAWING IS NOT SUFFICIENTLY ACCURATE FOR DETERMINING THE LOCATION OF EQUIPMENT, JUNCTION BOXES, OUTLET BOXES, WIREWAYS, PANELS, ETC. WHERE EXACT DIMENSIONS ARE INDICATED, THE REFERENCE SURFACE SHALL BE THE FINAL FINISHED SURFACE INCLUDING ANY ACOUSTICAL TREATMENT. ROOM DIMENSIONS ON THE DRAWINGS HAVE BEEN TAKEN FROM PRELIMINARY ARCHITECTURAL DRAWINGS. ALL DIMENSIONS MUST BE VERIFIED AND ANY DEVIATIONS CAUSING CHANGES MUST BE COORDINATED WITH SHEN MILSOM & WILKE, LLC.

17. NOTIFY OWNER'S REPRESENTATIVES OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE AV DRAWINGS. OBTAIN CLARIFICATION BEFORE PROCEEDING WITH WORK.

18. ALL AV DEVICES SHALL BE SECURELY MOUNTED PLUMB AND STRAIGHT TO WALLS, FLOORS, OR RACKS PER THE MANUFACTURER'S RECOMMENDED MOUNTING PRACTICE.

19. THERE SHALL BE A MINIMUM OF ONE PULL BOX FOR EVERY 100' OF STRAIGHT EMPTY AV-RELATED CONDUIT AND ONE PULL BOX WHERE THERE ARE MORE THAN TWO 90° BENDS OR LESSER BENDS TOTALING 180° IN A CONDUIT RUN.

20. MAINTAIN MINIMUM BEND RADIUS OF 10X OD FOR ALL AV-RELATED CONDUITS.

21. LIGHTING DESIGNER TO PROVIDE LIGHTING ON A SEPARATE DIMMING ZONE AT THE SCREEN/DISPLAY DEVICE TO ENSURE GOOD CONTRAST AND IMAGE SHARPNESS.

22. AV CONTRACTOR SHALL RESTORE CEILINGS, WALLS AND ANY OTHER SURFACES AFFECTED BY THEIR WORK PRIOR TO COMPLETION OF WORK WITH LIKE MATERIALS TO MATCH EXISTING CONSTRUCTION.

23. REFER TO AV ELECTRICAL PLANS AND/OR RISER DIAGRAMS FOR EMPTY CONDUIT SIZING.

24. ALL POWER CIRCUITS INDICATED IN THIS DRAWING SET TO BE PROVIDED BY DEDICATED BREAKER PANEL(S). NO NON-AV CIRCUITS TO BE FED FROM DEDICATED AV BREAKER PANEL(S).

25. POWER FOR ALL AV SERVICES IN EACH DESIGNATED SPACE SHALL BE ON THE SAME ELECTRICAL PHASE, AND THIS PHASE SHALL NOT INCLUDE MOTORS, APPLIANCES, OR ANY OTHER SOURCE THAT CAN CAUSE SIGNAL INTERFERENCE.

26. GROUNDING: GROUND COMMUNICATIONS SYSTEMS AND EQUIPMENT IN ACCORDANCE WITH ANSI/TIA/EIA-607 GROUNDING STANDARDS AND APPLICABLE NEC REQUIREMENTS EXCEPT WHERE DRAWINGS OR SPECIFICATIONS EXCEED NEC REQUIREMENTS. ALL RACKS, METALLIC BACKBOARDS, CABLE SHEATHS, CABLE TRAYS, ETC. ENTERING OR RESIDING IN TECHNICAL EQUIPMENT SPACES SHALL BE GROUNDED TO THEIR RESPECTIVE GROUND SYSTEM USING A MINIMUM OF #6 AWG STRANDED COPPER BONDING CONDUCTOR AND COMPRESSOR CONNECTORS. ALL WIRES USED FOR TECHNICAL POWER SYSTEMS GROUNDING PURPOSES SHALL BE IDENTIFIED WITH GREEN INSULATION OR IDENTIFIED AT EACH TERMINATION POINT WITH A WRAP OF GREEN TAPE. ALL CABLES AND BUS BARS SHALL BE IDENTIFIED AND LABELED "TECHNICAL POWER SYSTEM GROUND". CONDUIT STUBS: PROVIDE NYLON BUSHING ON ALL CONDUIT STUBS AND NON-TERMINATING CONDUIT ENDS TO PROTECT WIRE PULLS.

27. JUNCTION BOX COVERS: UNLESS OTHERWISE NOTED, ALL JUNCTION BOXES MUST BE PROVIDED WITH A COVER. WHERE RAISED DEVICE COVERS ARE SPECIFIED, MATCH COVER DEPTH TO WALL THICKNESS. WHERE JUNCTION BOXES ARE MOUNTED AT OR ABOVE FINISHED CEILING HEIGHT, INSTALL JUNCTION BOXES WITH OPEN SIDE FACING DOWN.

28. POWER RECEPTACLES: TECHNICAL POWER RECEPTACLES, INCLUDING THOSE WITHIN FLOOR BOXES, WALL BOXES, OR CEILING BOXES, SHALL BE PROVIDED BY THE BUILDING CONTRACTOR AND APPEAR ON THE ELECTRICAL DRAWINGS. TECHNICAL POWER RECEPTACLES IN RELATION TO TECHNOLOGY INFRASTRUCTURE IS CRITICAL. REFER TO THE ELECTRICAL DRAWINGS FOR COMPLETE POWER LAYOUTS AND CIRCUITING DETAILS.

29. NETWORK OUTLETS FOR AUDIOVISUAL SYSTEMS: ALL NETWORK OUTLETS SHALL APPEAR ON THE NETWORK DRAWINGS. NETWORK SERVICES APPEARING ON THE AUDIOVISUAL DRAWINGS ARE REPRESENTATIVE OF NETWORK CONNECTIVITY REQUIREMENTS IN SUPPORT OF AUDIOVISUAL SYSTEMS, AS THE LOCATION OF NETWORK SERVICES IN RELATION TO TECHNOLOGY INFRASTRUCTURE IS CRITICAL. REFER TO THE STRUCTURED CABLING SYSTEM SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL INFORMATION.

ROOM READY:

PLEASE FIND THE BELOW GUIDE TO REVIEW THE CONDITION OF THE AV CONFERENCE ROOMS PRIOR TO DELIVERY AND INSTALLATION OF THE MULTIMEDIA SYSTEMS. THE MULTIMEDIA SYSTEMS ARE DELIVERED AFTER THE ROOMS ARE 'READY' TO ENSURE A PROPER AND SECURE INSTALLATION OF THE MULTIMEDIA EQUIPMENT.

1. ALL CONSTRUCTION IN THE CONFERENCE ROOM IS COMPLETE, INCLUDING:
   A. ALL ASSOCIATED ROOMS ARE FREE OF DEBRIS AND IS CLEAN
   B. ALL WALLS ARE COMPLETE WITH ANY BLOCKING, FABRIC WALL COVERINGS OR PAINT AS REQUIRED
   C. CEILINGS ARE COMPLETE AND CLOSED
   D. FLOOR FINISHES/CARPET IS INSTALLED
   E. ALL DOORS ARE INSTALLED AND KEYS/LOCKS PROVIDED
   F. ALL LIGHTING IS INSTALLED AND PROGRAMMED, IF CONTROLLABLE

2. ALL ELECTRICAL WORK RELATED TO THE AV SYSTEM IS COMPLETE, INCLUDING:
   A. INSTALLATION OF ALL CONDUIT, FLOOR BOXES, PULL BOXES, WIRE WAYS, ETC.
   B. INSTALLATION OF ALL 120V CIRCUITS IS COMPLETE
   C. INSTALLATION OF ALL TABLE AND FURNITURE RELATED POWER AND PULL BOXES ARE COMPLETE

3. ALL WINDOW TREATMENTS ARE INSTALLED AND PROGRAMMED, IF CONTROLLABLE

4. ALL PHONE, BRI, LAN CONNECTIONS ARE LIVE AND CHANNEL TESTED
   A. ALL CABLES AND BOXES MUST BE LABELED AND MATCH MULTIMEDIA TELECOM SHEET
   B. ALL LAN CONNECTIONS MUST BE TESTED AND CONFIGURED PER THE MULTIMEDIA TELECOM SHEET

5. THE CONFERENCE ROOM TABLE AND CREDENZA ARE INSTALLED AND CUTOUTS FOR VENTILATION CONFIRMED

SCOPE OF WORK BETWEEN TRADES:

SCOPE OF WORK	FURNISH	INSTALL
IN-WALL BLOCKING SUPPORT FOR AV MOUNTS	**GC**	**GC**
WALL AND CEILING SPEAKER CUTOUTS	**GC**	**GC**
FURNITURE CUTOUTS FOR AV EQUIPMENT (UNLESS PROVIDED BY FURNITURE PROVIDER)	**GC**	**GC**
KINDORF AND/OR BLACK IRON AS REQUIRED FOR CEILING MOUNTED AV DEVICES	**GC**	**GC**
CABLE CONTAINMENT INCLUDING:	**EC**	**EC**
- CONDUIT WITH MEASURED PULLSTRINGS	**EC**	**EC**
- CABLETRAY, LADDERTRAY, AND WIREWAYS	**EC**	**EC**
- FLOORBOXES	**EC**	**EC**
- JUNCTION BOXES, PULL BOXES, AND BACKBOXES	**EC**	**EC**
POWER OUTLETS	**EC**	**EC**
DEDICATED DISTRIBUTION PANELS, LOAD CENTERS, AND POWER ISOLATION TRANSFORMERS	**EC**	**EC**
AV CABLING (LOW VOLTAGE)	**AV**	**AV**
AV TERMINATIONS	**AV**	**AV**
CUSTOM ENGRAVED AV COVER PLATES	**AV**	**AV**
J-HOOKS AND OTHER SUPPORTS REQUIRED FOR OPEN-RUN AV CABLING	**AV**	**AV**
AV DEVICE WALL MOUNTS	**AV**	**AV**
AV DEVICES (AS DESCRIBED IN THE AV BID DOCS)	**AV**	**AV**
VOICE/DATA NETWORK CABLING (FIBER AND TWISTED PAIR)	**ST**	**ST**
VOICE/DATA COVER PLATES	**ST**	**ST**
CATV CABLING	**ST**	**ST**
LIGHTING & SHADE CONTROL INTERFACE	**EC**	**EC**

REFER TO AV DETAIL SHEETS FOR ADDITIONAL SCOPE DELINEATION AND INFORMATION

DEFINITION OF TERMS

FURNISH - TO PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS, OR ENCUMBRANCES.

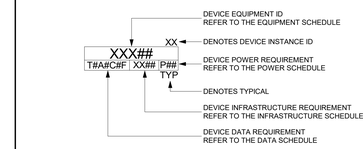
INSTALL - TO UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE WORK.

PROVIDE - TO FURNISH AND INSTALL

LEGEND FOR SCOPE OF WORK BETWEEN TRADES:

GC = GENERAL CONTRACTOR
EC = ELECTRICAL CONTRACTOR
AV = AUDIOVISUAL CONTRACTOR
O = OWNER
ST = STRUCTURED CABLING, OR TELECOMMUNICATIONS CONTRACTOR

SYMBOL LEGEND:



NETWORK SYMBOL KEY:

LETTER	DESCRIPTION	DESTINATION	CABLE TYPE
T	CLIENT NETWORK DATA	REFER TO TT DRAWINGS	REFER TO TT DRAWINGS
A	AV NETWORK DATA	NEAREST AV RACK ROOM	REFER TO NETWORK SCHEDULE
C	CABLE TV DROP	REFER TO TT DRAWINGS	CATV, REFER TO TT DRAWINGS
F	CLIENT NETWORK FIBER	REFER TO TT DRAWINGS	REFER TO TT DRAWINGS

AUDIOVISUAL EQUIPMENT SCHEDULE - PHASE 2

DEVICE ID	TYPE
AST01	ASSISTIVE LISTENING IR EMITTER
AVP02	AV WALL PLATE
CAM01	PTZ VIDEO CAMERA
FBR-BOX	FIBER SPOOL BOX
FD01	AV FLOOR DEVICE
FD02	AV FLOOR DEVICE
FPD03	<varies>
FPD03-DS	FLAT PANEL DISPLAY - 55", MOUNTED ON FREE STANDING DISPLAY STAND
FPD03-P	FLAT PANEL DISPLAY - 55"
FPD04	FLAT PANEL DISPLAY - 65"
LEC-RL	ADA RAISE/LOWER LECTERN
MIC03	CEILING MICROPHONE ARRAY - SQUARE
PRJ-01	POLE MOUNTED PROJECTOR
PS01	MOTORIZED PROJECTION SCREEN
RCK02	SMALL AUDIOVISUAL EQUIPMENT RACK
RCK03	SMALL EQUIPMENT RACK
SCRSW	PROJECTION SCREEN SWITCH(BY OTHERS)
SPK01	RECESSED CEILING SPEAKER
SPK03	INTEGRATED VIDEO CAMERA BAR
TAVP01	AV TABLE HATCH

INFRASTRUCTURE SCHEDULE - PHASE 2

TAG #	TYPE
FURN	FURNITURE PROVIDED/MOUNTED RACEWAYS/JUNCTION BOXES
J01	1-GANG
J01	2-GANG
J02	2-GANG
PK01	8" POKETHRU DEVICE FOR LOW VOLTAGE
PK04	POKETHRU DEVICE FOR POWER
PRJCB	PROJECTOR CEILING BOX
SC01	SCREW COVER BOX
SFD1	SURFACE MOUNTED SYSTEM DEVICE TAP
SFD2	SURFACE MOUNTED SYSTEM DEVICE HUB
SFTK	SURFACE MOUNTED SYSTEM UNDER-CARPET TRACK
WB2	IN-WALL BACKBOX

NETWORK SCHEDULE - PHASE 2

TAG #	# OF DROPS	TYPE
F1	1	6-STRAND SINGLE MODE FIBER
T2	<varies>	<varies>
T6	6	CATEGORY 6

POWER SCHEDULE - PHASE 2

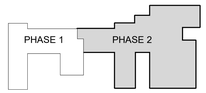
TAG #	TYPE
P1	<varies>
P4	120V/20A QUAD RECEPTACLE, 5-20R
P5	HARDWIRED
PB4	120V/20A DUPLEX RECEPTACLE, 5-20R

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences
SUNY State University Construction Fund

Ellenzweig Architecture | Planning — 230 Congress Street, Boston, MA 02110, T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers — 257 Ushers Road, Clifton Park, NY 12065, T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers — 300 Trolley Blvd. Rochester, NY 14606, T 585 288-5590
Jade Stone Engineering Electrical Engineers — 444 Vanduzee St. Watertown, NY 13601, T 315 836 4062
Watson Engineering Plumbing — 4500 State Route 434, Apalachin, NY 13732, T 607 223-4334
DM Engineers Fire Protection Engineers — 1007 Yonkers Ave, Yonkers, NY 10704, T 929 333-2339
Bell & Spina Building Envelope — 215 Wyoming Street S, Syracuse, NY 13204, T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering — 217 Montgomery St, Suite 1000, Syracuse, NY 13202, T 315 471-0688
Schuler Shook Lighting Design — 240 W 40th Street, 2nd Floor, New York, NY 10018, T 212 439-5650
D2D Green Design Sustainability PH2 — 10 Hallenbeck Hill, East Greenbush, NY 12061, T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security — 417 Fifth Avenue, New York, NY 10016, T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat — 95 Perry Street, Suite 300, Buffalo, NY 14203, T 716 206-5122
Hastings Consulting Building Code — 142 Hanlon Rd, Holliston, MA 01746, T 508 397-8417
Ellana Cost Consulting — 32 Broadway, Suite 801, New York, NY 10004, T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
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Filename
Date August 31, 2026

Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL COVER SHEET - PHASE 2

BID DOCUMENTS
Scale: 12" = 1'-0"

TA0.1

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1 AUDIOVISUAL OVERALL PLAN - GROUND FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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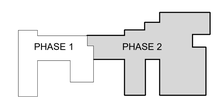
Notes:



Keyplan

Job Number	161026-00 / 31909
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Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL GROUND FLOOR PLAN - PART C - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

TA1.0

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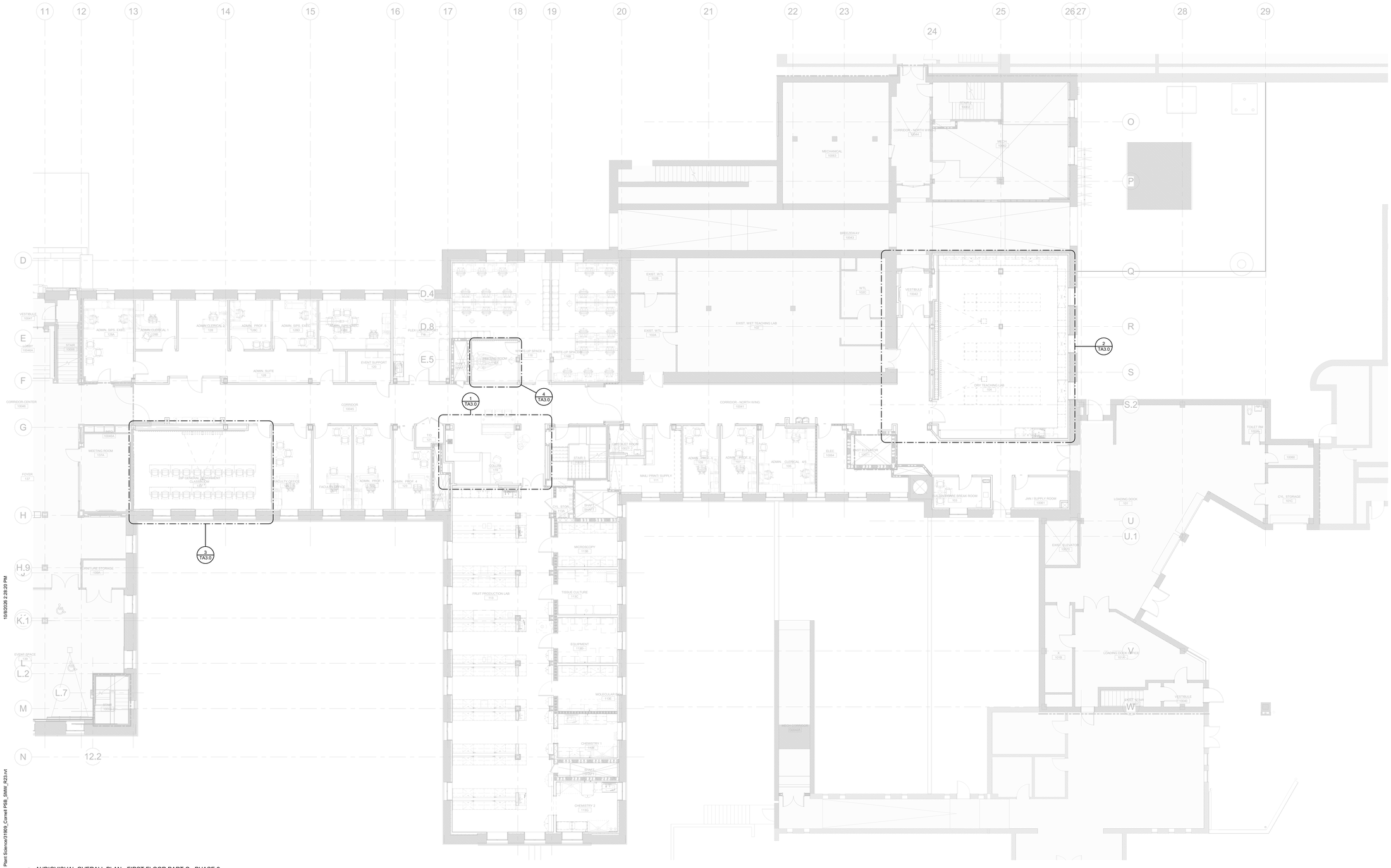

1 AUDIOVISUAL OVERALL PLAN - FIRST FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

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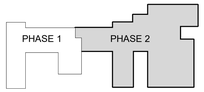
Notes:



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DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL FIRST FLOOR PLAN - PART C - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

TA1.1

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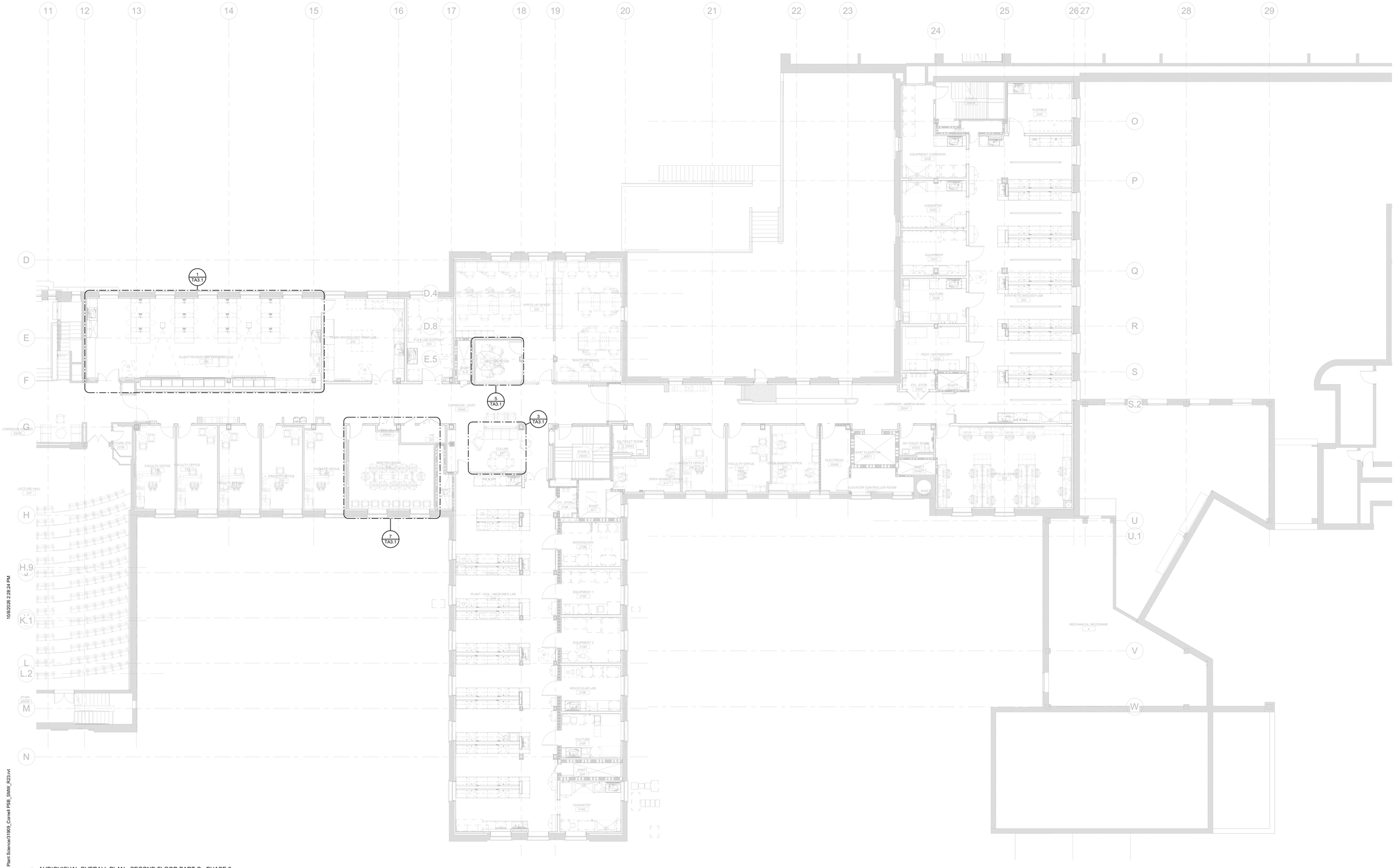

1 AUDIOVISUAL OVERALL PLAN - SECOND FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
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Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

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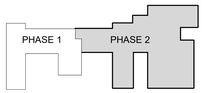

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DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL SECOND FLOOR PLAN - PART C - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

TA1.2

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1 AUDIOVISUAL OVERALL PLAN - THIRD FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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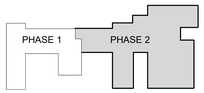

Keyplan

Job Number	161026-00 / 31909
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Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL THIRD FLOOR PLAN - PART C - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

TA1.3

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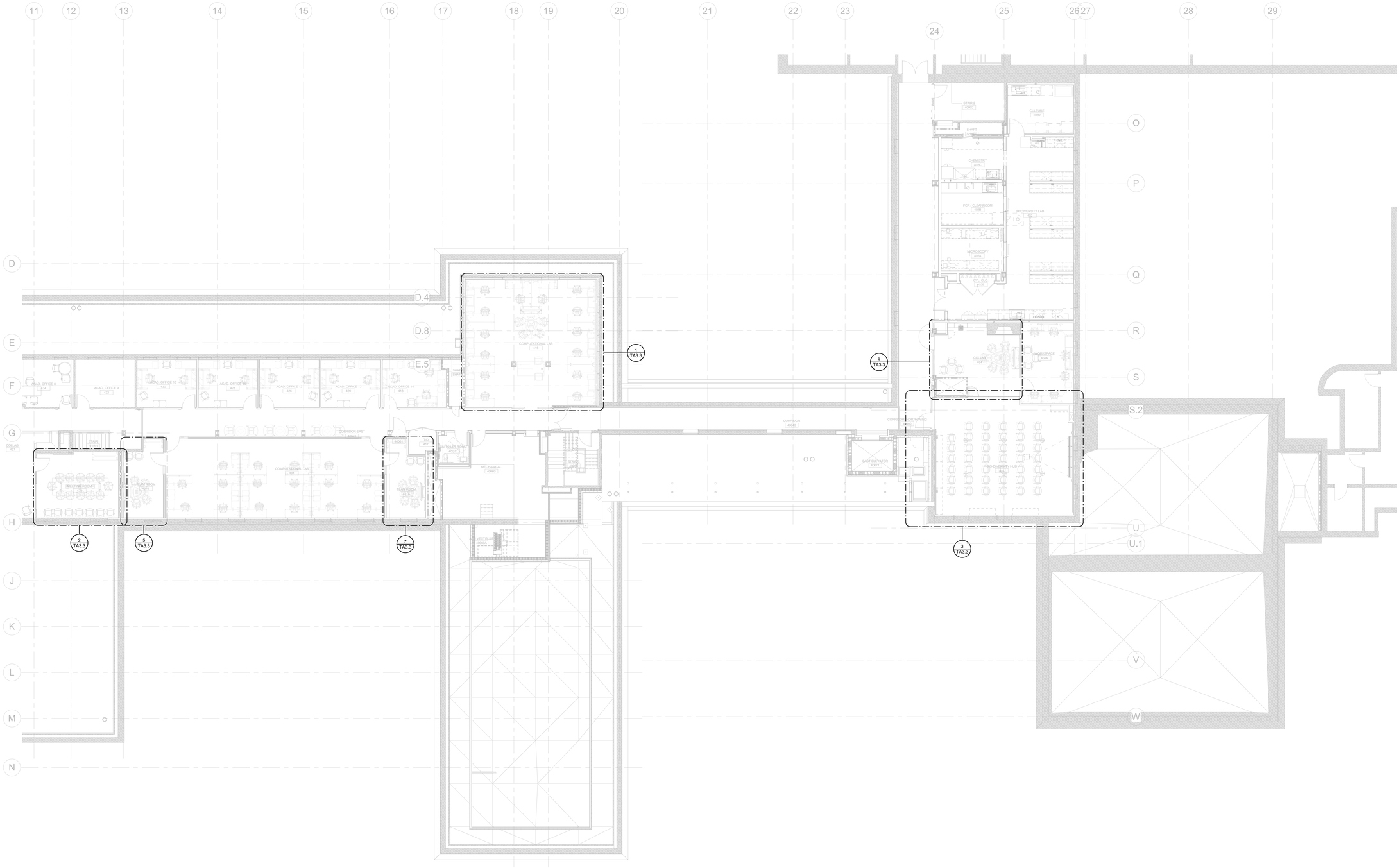

1 AUDIOVISUAL OVERALL PLAN - FOURTH FLOOR PART C - PHASE 2
1/8" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

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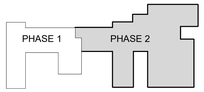

Keyplan

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Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL FOURTH FLOOR PLAN - PART C - PHASE 2

BID DOCUMENTS
Scale: 1/8" = 1'-0"

TA1.4

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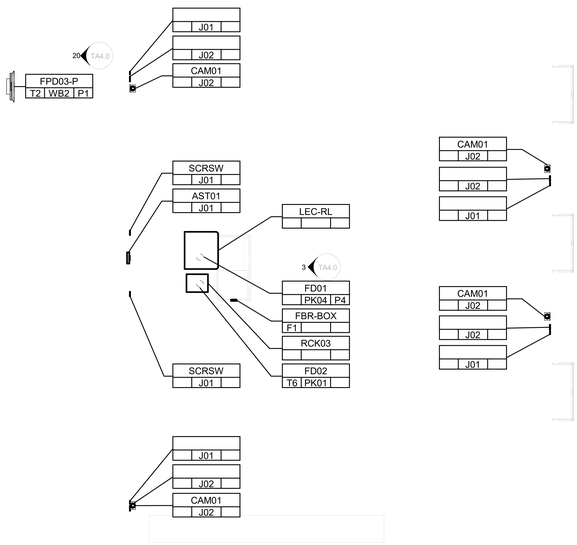
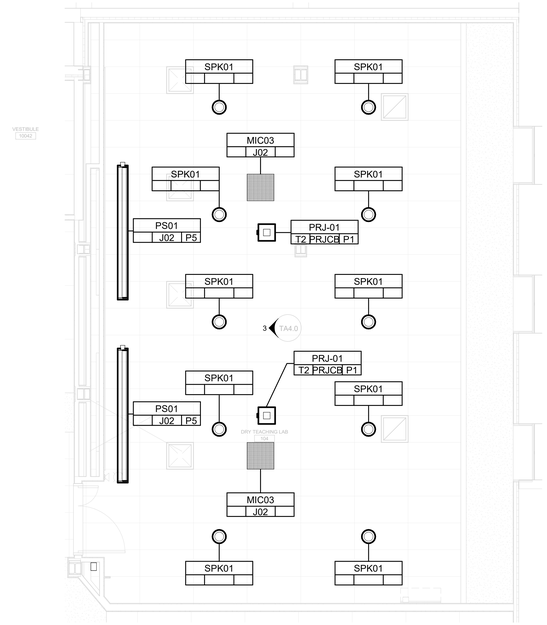
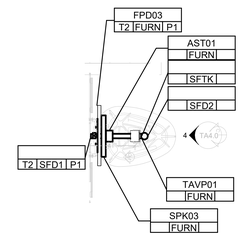


2 AUDIOVISUAL ENLARGED PLAN - FIRST FLOOR PART C - DRY TEACHING LAB 104
1/4" = 1'-0"



6 AUDIOVISUAL ENLARGED RCP - FIRST FLOOR PART C - DRY TEACHING LAB 104
1/4" = 1'-0"



4 AUDIOVISUAL ENLARGED PLAN - FIRST FLOOR PART C - MEETING ROOM 116A
1/4" = 1'-0"

AUDIOVISUAL EQUIPMENT SCHEDULE - PHASE 2	
DEVICE ID	TYPE
AST01	ASSISTIVE LISTENING IR EMITTER
AVP02	AV WALL PLATE
CAM01	PTZ VIDEO CAMERA
FBR-BOX	FIBER SPOOL BOX
FD01	AV FLOOR DEVICE
FD02	AV FLOOR DEVICE
FPD03	<varies>
FPD03-DS	FLAT PANEL DISPLAY - 55", MOUNTED ON FREE STANDING DISPLAY STAND
FPD03-P	FLAT PANEL DISPLAY - 55"
FPD04	FLAT PANEL DISPLAY - 65"
LEC-RL	ADA RAISE/LOWER LECTERN
MIC03	CEILING MICROPHONE ARRAY - SQUARE
PRJ-01	POLE MOUNTED PROJECTOR
PS01	MOTORIZED PROJECTION SCREEN
RCK02	SMALL AUDIOVISUAL EQUIPMENT RACK
RCK03	SMALL EQUIPMENT RACK
SCRSW	PROJECTION SCREEN SWITCH(BY OTHERS)
SPK01	RECESSED CEILING SPEAKER
SPK03	INTEGRATED VIDEO CAMERA BAR
TAVP01	AV TABLE HATCH

INFRASTRUCTURE SCHEDULE - PHASE 2	
TAG #	TYPE
FURN	FURNITURE PROVIDED/MOUNTED RACEWAYS/JUNCTION BOXES
J01	1-GANG
J01	2-GANG
J02	2-GANG
PK01	8" POKETHRU DEVICE FOR LOW VOLTAGE
PK04	POKETHRU DEVICE FOR POWER
PRJCB	PROJECTOR CEILING BOX
SC01	SCREW COVER BOX
SFD1	SURFACE MOUNTED SYSTEM DEVICE TAP
SFD2	SURFACE MOUNTED SYSTEM DEVICE HUB
SFTK	SURFACE MOUNTED SYSTEM UNDER-CARPET TRACK
WB2	IN-WALL BACKBOX

NETWORK SCHEDULE - PHASE 2		
TAG #	# OF DROPS	TYPE
F1	1	6-STRAND SINGLE MODE FIBER
T2	<varies>	<varies>
T6	6	CATEGORY 6

POWER SCHEDULE - PHASE 2	
TAG #	TYPE
P1	<varies>
P4	120V/20A QUAD RECEPTACLE, 5-20R
P5	HARDWIRED
PB4	120V/20A DUPLEX RECEPTACLE, 5-20R

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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Mechanical Engineers
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Rochester, NY 14606
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Jade Stone Engineering
Electrical Engineers
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Watertown, NY 13601
T 315 836 4062

Watson Engineering
Plumbing
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Apalachin, NY 13732
T 607 223-4334

DM Engineers
Fire Protection Engineers
1007 Yonkers Ave
Yonkers, NY 10704
T 929 333-2339

Bell & Spina
Building Envelope
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Syracuse, NY 13204
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Syracuse, NY 13202
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Schuler Shook
Lighting Design
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New York, NY 10018
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D2D Green Design
Sustainability PH2
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East Greenbush, NY 12061
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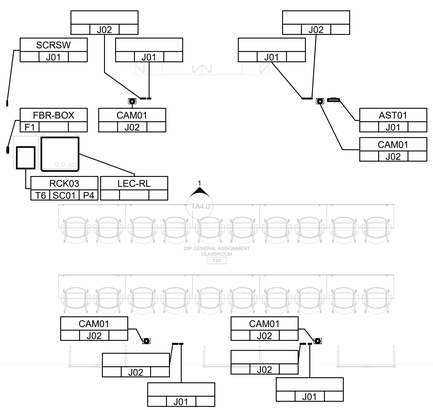
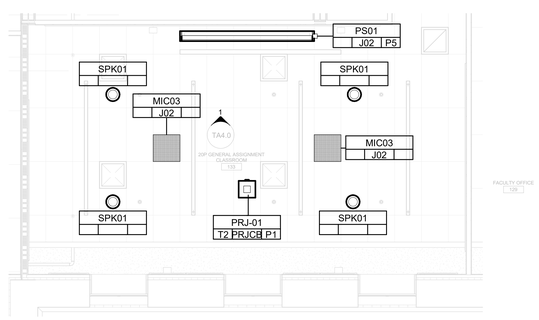
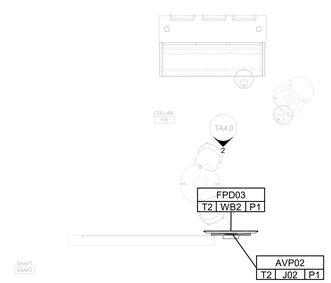


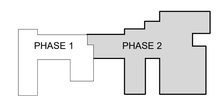
3 AUDIOVISUAL ENLARGED PLAN - FIRST FLOOR PART C - GENERAL ASSIGNMENT CLASSROOM 133
1/4" = 1'-0"



7 AUDIOVISUAL ENLARGED RCP - FIRST FLOOR PART C - GENERAL ASSIGNMENT CLASSROOM 133
1/4" = 1'-0"



1 AUDIOVISUAL ENLARGED PLAN - FIRST FLOOR PART C - COLLAB 119
1/4" = 1'-0"



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL ENLARGED PLANS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

TA3.0

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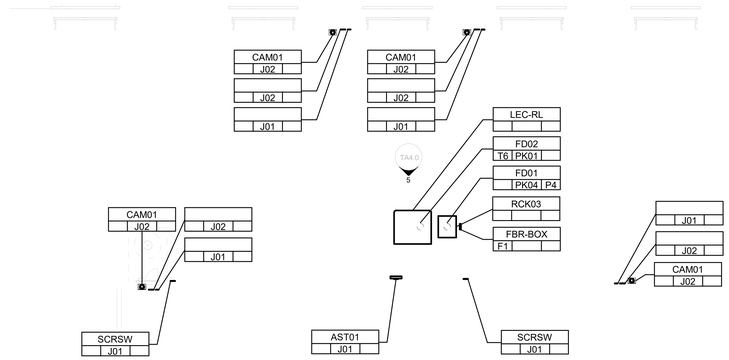
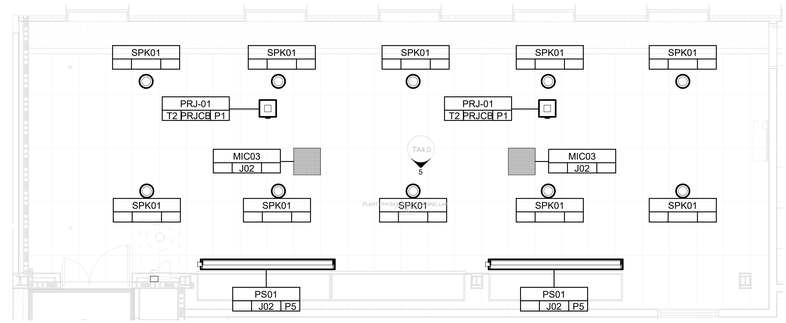
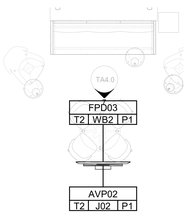


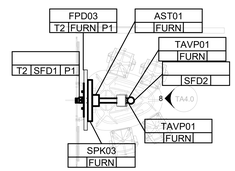
1 AUDIOVISUAL ENLARGED PLAN - SECOND FLOOR PART C - PLANT PHYSIOLOGY TEACHING LAB 236
1/4" = 1'-0"



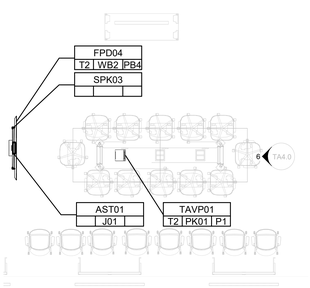
2 AUDIOVISUAL ENLARGED RCP - SECOND FLOOR PART C - PLANT PHYSIOLOGY TEACHING LAB 236
1/4" = 1'-0"



3 AUDIOVISUAL ENLARGED PLAN - SECOND FLOOR PART C - COLLAB 221
1/4" = 1'-0"



5 AUDIOVISUAL ENLARGED PLAN - SECOND FLOOR PART C - MEETING ROOM 224A
1/4" = 1'-0"



7 AUDIOVISUAL ENLARGED PLAN - SECOND FLOOR PART C - MEETING ROOM 225
1/4" = 1'-0"

AUDIOVISUAL EQUIPMENT SCHEDULE - PHASE 2	
DEVICE ID	TYPE
AST01	ASSISTIVE LISTENING IR EMITTER
AVP02	AV WALL PLATE
CAM01	PTZ VIDEO CAMERA
FBR-BOX	FIBER SPOOL BOX
FD01	AV FLOOR DEVICE
FD02	AV FLOOR DEVICE
FPD03	<varies>
FPD03-DS	FLAT PANEL DISPLAY - 55", MOUNTED ON FREE STANDING DISPLAY STAND
FPD03-P	FLAT PANEL DISPLAY - 55"
FPD04	FLAT PANEL DISPLAY - 65"
LEC-RL	ADA RAISE/LOWER LECTERN
MIC03	CEILING MICROPHONE ARRAY - SQUARE
PRJ-01	POLE MOUNTED PROJECTOR
PS01	MOTORIZED PROJECTION SCREEN
RCK02	SMALL AUDIOVISUAL EQUIPMENT RACK
RCK03	SMALL EQUIPMENT RACK
SCRSW	PROJECTION SCREEN SWITCH(BY OTHERS)
SPK01	RECESSED CEILING SPEAKER
SPK03	INTEGRATED VIDEO CAMERA BAR
TAVP01	AV TABLE HATCH

INFRASTRUCTURE SCHEDULE - PHASE 2	
TAG #	TYPE
FURN	FURNITURE PROVIDED/MOUNTED RACEWAYS/JUNCTION BOXES
J01	1-GANG
J01	2-GANG
J02	2-GANG
PK01	8" POKETHRU DEVICE FOR LOW VOLTAGE
PK04	POKETHRU DEVICE FOR POWER
PRJCB	PROJECTOR CEILING BOX
SC01	SCREW COVER BOX
SFD1	SURFACE MOUNTED SYSTEM DEVICE TAP
SFD2	SURFACE MOUNTED SYSTEM DEVICE HUB
SFTK	SURFACE MOUNTED SYSTEM UNDER-CARPET TRACK
WB2	IN-WALL BACKBOX

NETWORK SCHEDULE - PHASE 2		
TAG #	# OF DROPS	TYPE
F1	1	6-STRAND SINGLE MODE FIBER
T2	<varies>	<varies>
T6	6	CATEGORY 6

POWER SCHEDULE - PHASE 2	
TAG #	TYPE
P1	<varies>
P4	120V/20A QUAD RECEPTACLE, 5-20R
P5	HARDWIRED
PB4	120V/20A DUPLEX RECEPTACLE, 5-20R

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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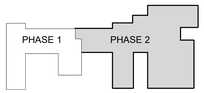
New York, NY 10004
T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
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Filename
Date August 31, 2026

Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL ENLARGED PLANS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

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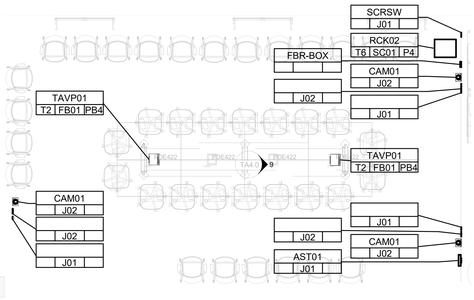
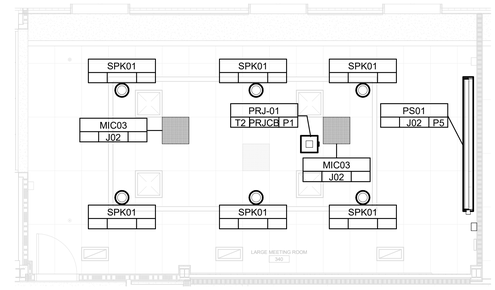
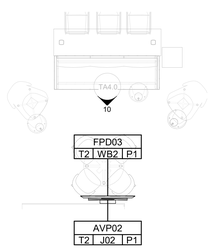


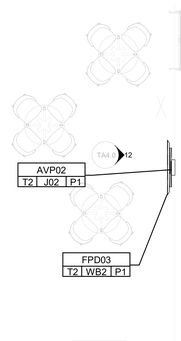
1 AUDIOVISUAL ENLARGED PLAN - THIRD FLOOR PART C - LARGE MEETING ROOM 340
1/4" = 1'-0"



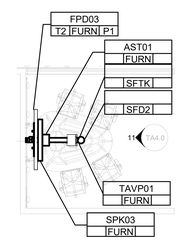
2 AUDIOVISUAL ENLARGED RCP - THIRD FLOOR PART C - LARGE MEETING ROOM 340
1/4" = 1'-0"



3 AUDIOVISUAL ENLARGED PLAN - THIRD FLOOR PART C - COLLAB 323
1/4" = 1'-0"



5 AUDIOVISUAL ENLARGED PLAN - THIRD FLOOR PART C - COLLAB 305
1/4" = 1'-0"



7 AUDIOVISUAL ENLARGED PLAN - THIRD FLOOR PART C - MEETING ROOM 324A
1/4" = 1'-0"

AUDIOVISUAL EQUIPMENT SCHEDULE - PHASE 2	
DEVICE ID	TYPE
AST01	ASSISTIVE LISTENING IR EMITTER
AVP02	AV WALL PLATE
CAM01	PTZ VIDEO CAMERA
FBR-BOX	FIBER SPOOL BOX
FD01	AV FLOOR DEVICE
FD02	AV FLOOR DEVICE
FPD03	<varies>
FPD03-DS	FLAT PANEL DISPLAY - 55", MOUNTED ON FREE STANDING DISPLAY STAND
FPD03-P	FLAT PANEL DISPLAY - 55"
FPD04	FLAT PANEL DISPLAY - 65"
LEC-RL	ADA RAISE/LOWER LECTERN
MIC03	CEILING MICROPHONE ARRAY - SQUARE
PRJ-01	POLE MOUNTED PROJECTOR
PS01	MOTORIZED PROJECTION SCREEN
RCK02	SMALL AUDIOVISUAL EQUIPMENT RACK
RCK03	SMALL EQUIPMENT RACK
SCRSW	PROJECTION SCREEN SWITCH(BY OTHERS)
SPK01	RECESSED CEILING SPEAKER
SPK03	INTEGRATED VIDEO CAMERA BAR
TAVP01	AV TABLE HATCH

INFRASTRUCTURE SCHEDULE - PHASE 2	
TAG #	TYPE
FURN	FURNITURE PROVIDED/MOUNTED RACEWAYS/JUNCTION BOXES
J01	1-GANG
J01	2-GANG
J02	2-GANG
PK01	8" POKETHRU DEVICE FOR LOW VOLTAGE
PK04	POKETHRU DEVICE FOR POWER
PRJCB	PROJECTOR CEILING BOX
SC01	SCREW COVER BOX
SFD1	SURFACE MOUNTED SYSTEM DEVICE TAP
SFD2	SURFACE MOUNTED SYSTEM DEVICE HUB
SFTK	SURFACE MOUNTED SYSTEM UNDER-CARPET TRACK
WB2	IN-WALL BACKBOX

NETWORK SCHEDULE - PHASE 2		
TAG #	# OF DROPS	TYPE
F1	1	6-STRAND SINGLE MODE FIBER
T2	<varies>	<varies>
T6	6	CATEGORY 6

POWER SCHEDULE - PHASE 2	
TAG #	TYPE
P1	<varies>
P4	120V/20A QUAD RECEPTACLE, 5-20R
P5	HARDWIRED
PB4	120V/20A DUPLEX RECEPTACLE, 5-20R

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

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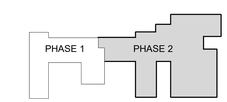
Notes:



Keyplan

Job Number 161026-00 / 31909
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Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL ENLARGED PLANS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

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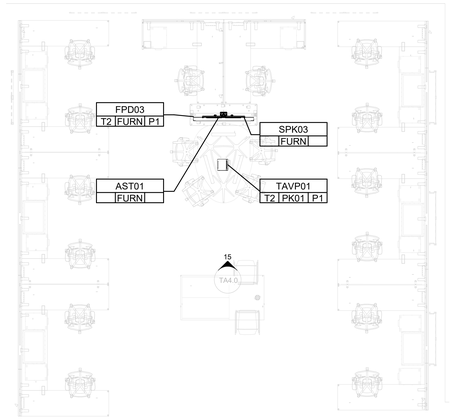
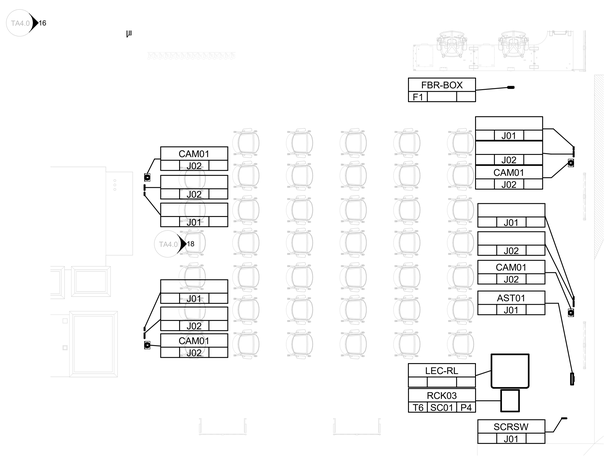
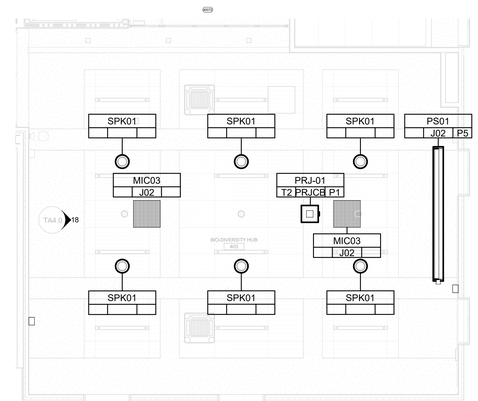


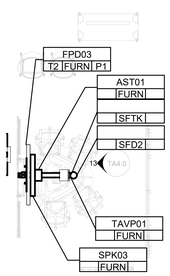
1 AUDIOVISUAL ENLARGED PLAN - FOURTH FLOOR PART C - COMPUTATIONAL LAB 416
1/4" = 1'-0"



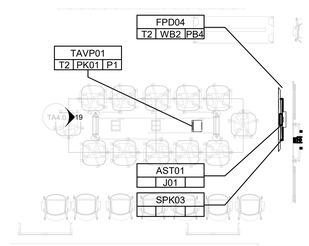
3 AUDIOVISUAL ENLARGED PLAN - FOURTH FLOOR PART C - BIO-DIVERSITY HUB 403
1/4" = 1'-0"



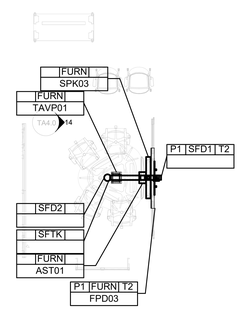
4 AUDIOVISUAL ENLARGED RCP - FOURTH FLOOR PART C - BIO-DIVERSITY HUB 403
1/4" = 1'-0"



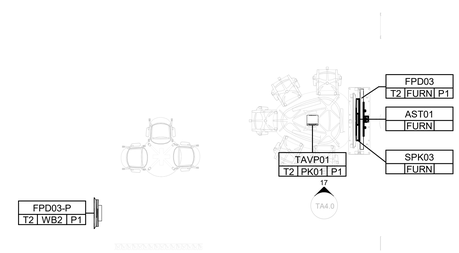
5 AUDIOVISUAL ENLARGED PLAN - FOURTH FLOOR PART C - TEAM ROOM 431B
1/4" = 1'-0"



2 AUDIOVISUAL ENLARGED PLAN - FOURTH FLOOR PART C - TEAM ROOM 435
1/4" = 1'-0"



7 AUDIOVISUAL ENLARGED PLAN - FOURTH FLOOR PART C - TEAM ROOM 431A
1/4" = 1'-0"



9 AUDIOVISUAL ENLARGED PLAN - FOURTH FLOOR PART C - LOUNGE 404
1/4" = 1'-0"

AUDIOVISUAL EQUIPMENT SCHEDULE - PHASE 2	
DEVICE ID	TYPE
AST01	ASSISTIVE LISTENING IR EMITTER
AVP02	AV WALL PLATE
CAM01	PTZ VIDEO CAMERA
FBR-BOX	FIBER SPOOL BOX
FD01	AV FLOOR DEVICE
FD02	AV FLOOR DEVICE
FPD03	<varies>
FPD03-DS	FLAT PANEL DISPLAY - 55", MOUNTED ON FREE STANDING DISPLAY STAND
FPD03-P	FLAT PANEL DISPLAY - 55"
FPD04	FLAT PANEL DISPLAY - 65"
LEC-RL	ADA RAISE/LOWER LECTERN
MIC03	CEILING MICROPHONE ARRAY - SQUARE
PRJ-01	POLE MOUNTED PROJECTOR
PS01	MOTORIZED PROJECTION SCREEN
RCK02	SMALL AUDIOVISUAL EQUIPMENT RACK
RCK03	SMALL EQUIPMENT RACK
SCRSW	PROJECTION SCREEN SWITCH(BY OTHERS)
SPK01	RECESSED CEILING SPEAKER
SPK03	INTEGRATED VIDEO CAMERA BAR
TAVP01	AV TABLE HATCH

INFRASTRUCTURE SCHEDULE - PHASE 2	
TAG #	TYPE
FURN	FURNITURE PROVIDED/MOUNTED RACEWAYS/JUNCTION BOXES
J01	1-GANG
J01	2-GANG
J02	2-GANG
PK01	8" POKETHRU DEVICE FOR LOW VOLTAGE
PK04	POKETHRU DEVICE FOR POWER
PRJCB	PROJECTOR CEILING BOX
SC01	SCREW COVER BOX
SFD1	SURFACE MOUNTED SYSTEM DEVICE TAP
SFD2	SURFACE MOUNTED SYSTEM DEVICE HUB
SFTK	SURFACE MOUNTED SYSTEM UNDER-CARPET TRACK
WB2	IN-WALL BACKBOX

NETWORK SCHEDULE - PHASE 2		
TAG #	# OF DROPS	TYPE
F1	1	6-STRAND SINGLE MODE FIBER
T2	<varies>	<varies>
T6	6	CATEGORY 6

POWER SCHEDULE - PHASE 2	
TAG #	TYPE
P1	<varies>
P4	120V/20A QUAD RECEPTACLE, 5-20R
P5	HARDWIRED
PB4	120V/20A DUPLEX RECEPTACLE, 5-20R

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

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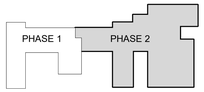
Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL ENLARGED PLANS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

TA3.3

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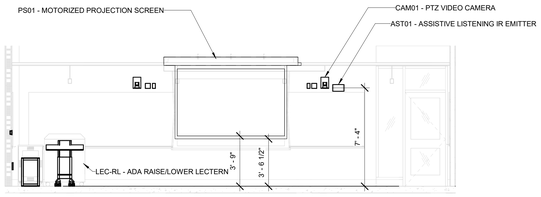
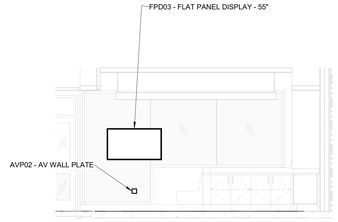
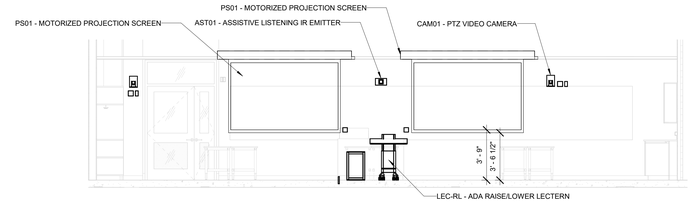


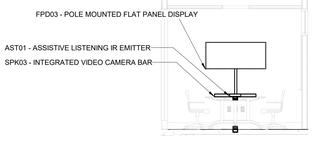
1 AUDIOVISUAL ELEVATION - GENERAL ASSIGNMENT CLASSROOM 133 - NORTH
1/4" = 1'-0"



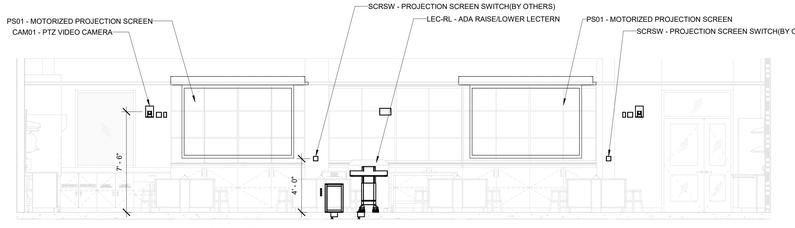
2 AUDIOVISUAL ELEVATION - COLLAB 119 - SOUTH
1/4" = 1'-0"



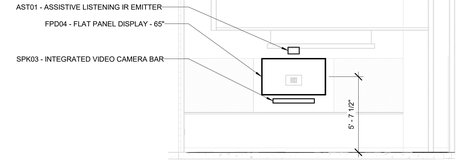
3 AUDIOVISUAL ELEVATION - DRY TEACHING LAB 104 - WEST
1/4" = 1'-0"



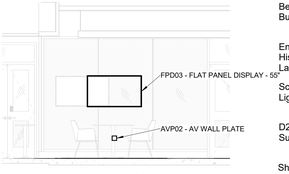
4 AUDIOVISUAL ELEVATION - MEETING ROOM 116A - WEST
1/4" = 1'-0"



5 AUDIOVISUAL ELEVATION - PLANT PHYSIOLOGY TEACHING LAB 236 - SOUTH
1/4" = 1'-0"

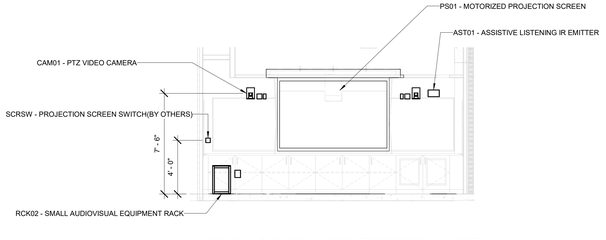


6 AUDIOVISUAL ELEVATION - MEETING ROOM 223 - WEST
1/4" = 1'-0"

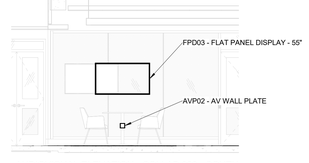


7 AUDIOVISUAL ELEVATION - COLLAB 221 - SOUTH
1/4" = 1'-0"

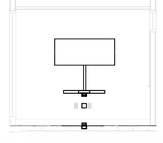
8 AUDIOVISUAL ELEVATION - MEETING ROOM 224A - WEST
1/4" = 1'-0"



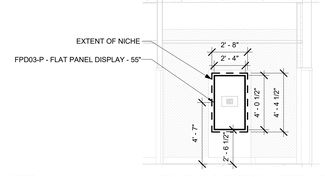
9 AUDIOVISUAL ELEVATION - LARGE MEETING ROOM 340 - EAST
1/4" = 1'-0"



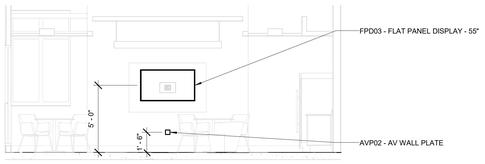
10 AUDIOVISUAL ELEVATION - COLLAB 323 - SOUTH
1/4" = 1'-0"



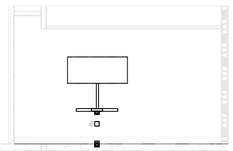
11 AUDIOVISUAL ELEVATION - MEETING ROOM 324A - WEST
1/4" = 1'-0"



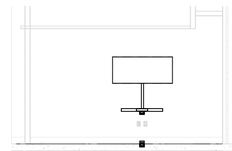
20 AUDIOVISUAL ELEVATION - VESTIBULE 10042
1/4" = 1'-0"



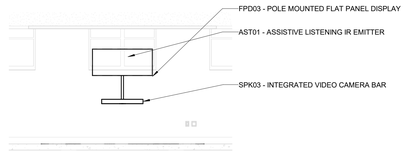
12 AUDIOVISUAL ELEVATION - COLLAB 305 - EAST
1/4" = 1'-0"



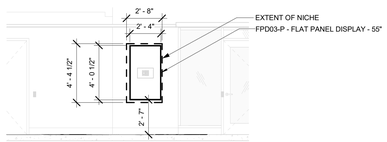
13 AUDIOVISUAL ELEVATION - TEAM ROOM 431B - WEST
1/4" = 1'-0"



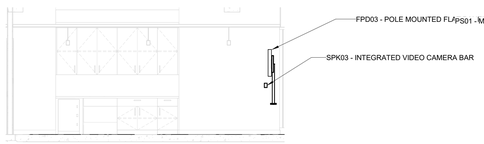
14 AUDIOVISUAL ELEVATION - TEAM ROOM 431A - EAST
1/4" = 1'-0"



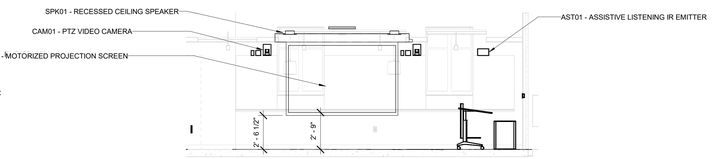
15 AUDIOVISUAL ELEVATION - COMPUTATIONAL LAB 416 - NORTH
1/4" = 1'-0"



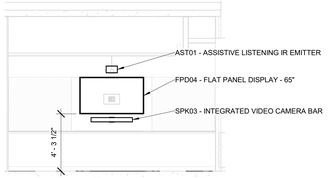
16 AUDIOVISUAL ELEVATION - CORRIDOR-ANNEX-1 40040 - EAST
1/4" = 1'-0"



17 AUDIOVISUAL ELEVATION - LOUNGE 404 - NORTH
1/4" = 1'-0"



18 AUDIOVISUAL ELEVATION - BIO-DIVERSITY HUB 403 - EAST
1/4" = 1'-0"



19 AUDIOVISUAL ELEVATION - 435
1/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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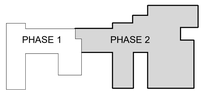
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL ELEVATIONS - PHASE 2

BID DOCUMENTS
Scale: 1/4" = 1'-0"

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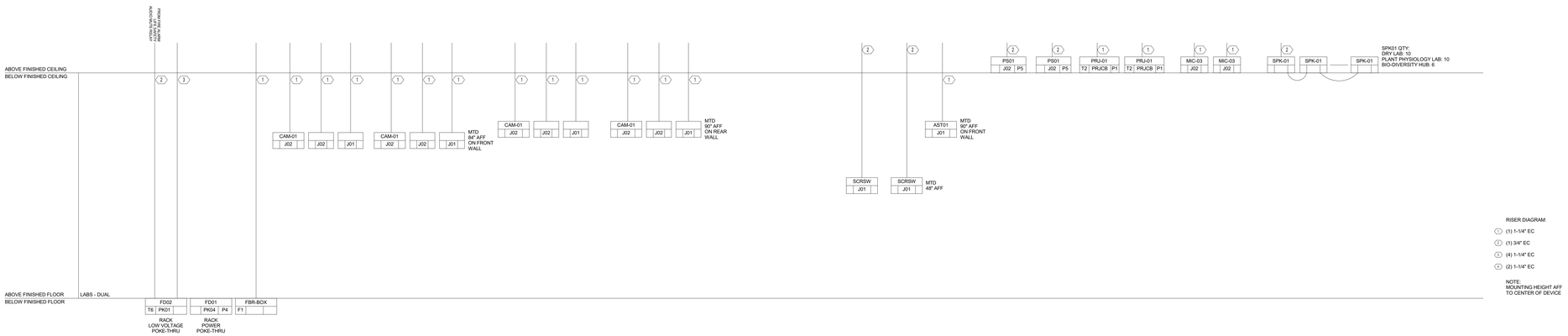
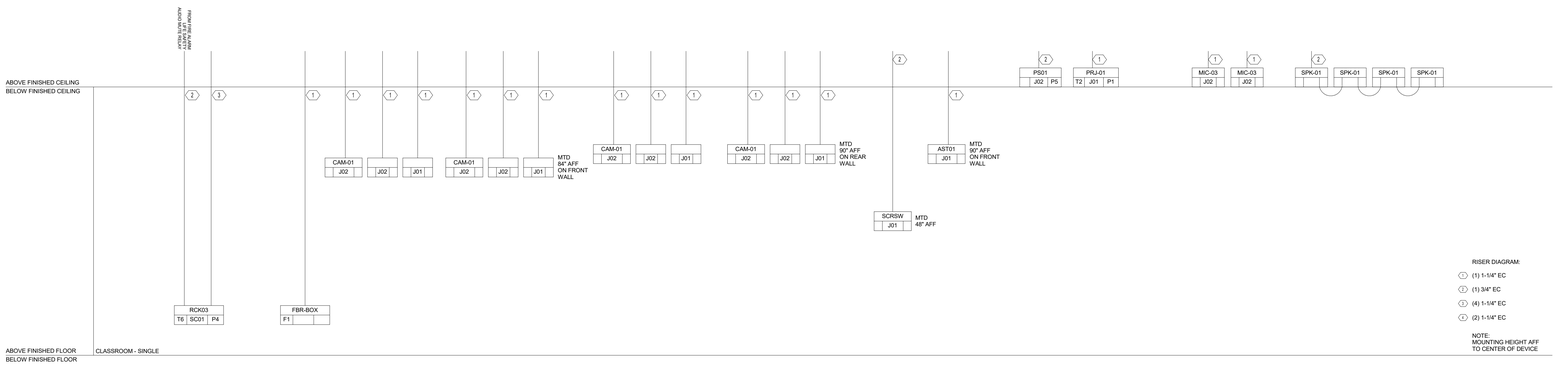
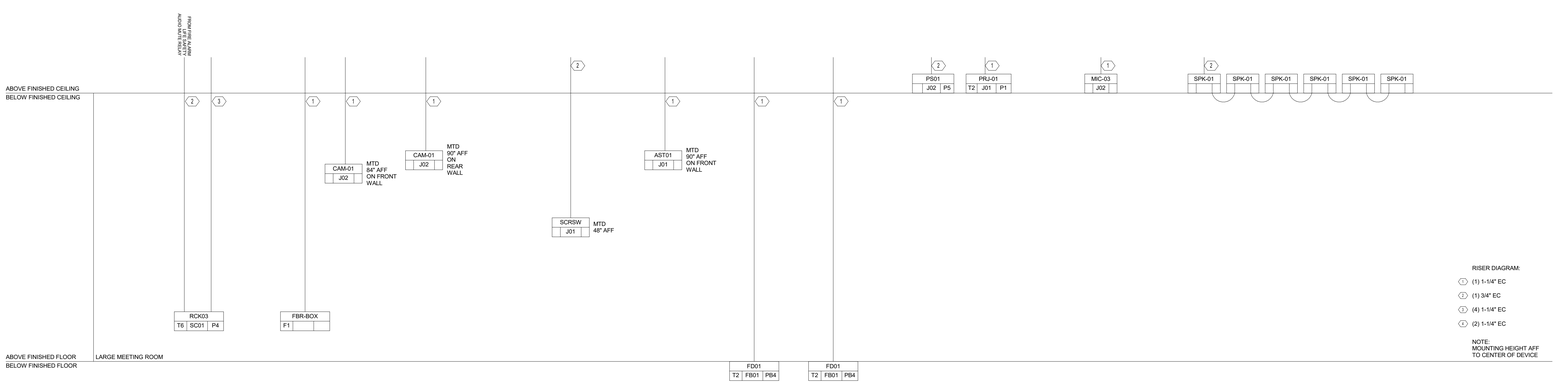


1 AUDIOVISUAL RISER - DRY TEACHING LAB (104) + PLANT PHYSIOLOGY (236) + BIODIVERSITY HUB (403)
NTS



2 AUDIOVISUAL RISER - 20 PERSON CLASSROOM
NTS



3 AUDIOVISUAL RISER - LARGE MEETING ROOM (340)
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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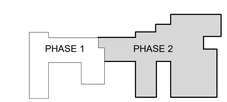
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

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Revisions

AUDIOVISUAL RISER DIAGRAMS - PHASE 2

BID DOCUMENTS
Scale: 1/2" = 1'-0"

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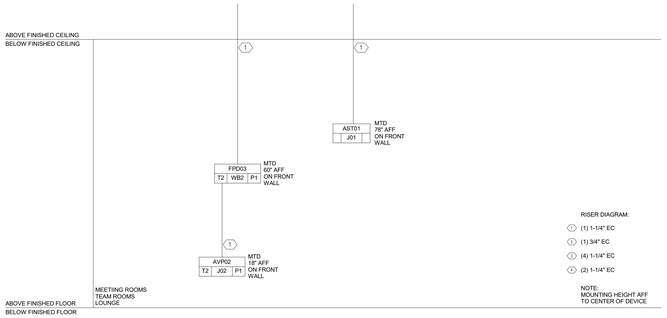
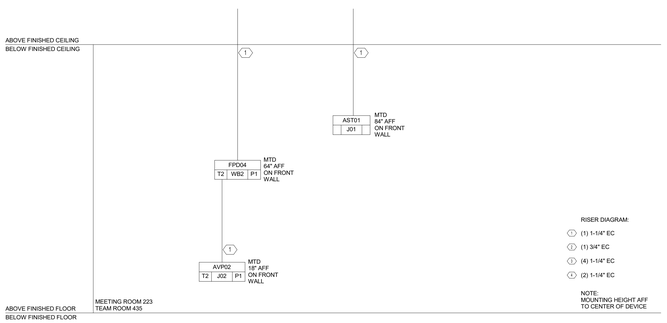
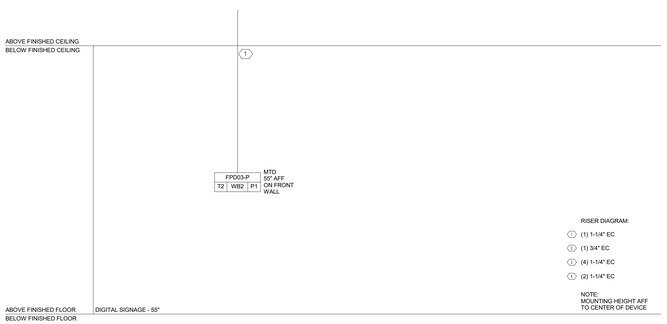


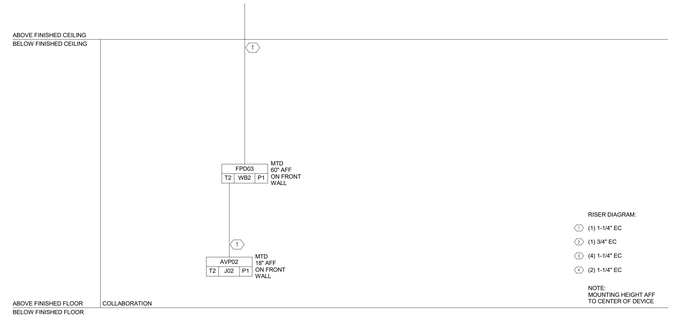
1 AUDIOVISUAL RISER - MEETING ROOM (116A) + MEETING ROOM (224A) + COMPUTATIONAL LAB (416) + TEAM ROOM (431B) + TEAM ROOM (431A) + LOUNGE (404) + MEETING ROOM (324A)
NTS



2 AUDIOVISUAL RISER - MEETING ROOM (223) + TEAM ROOM (435)
NTS



3 AUDIOVISUAL RISER - VESTIBULE (10042) + CORRIDOR-NORTH WING (40040)
NTS



4 AUDIOVISUAL RISER - COLLAB (119) + COLLAB (221) + COLLAB (323) + COLLAB (305)
NTS

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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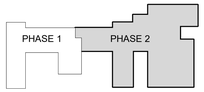

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AUDIOVISUAL RISER DIAGRAMS - PHASE 2

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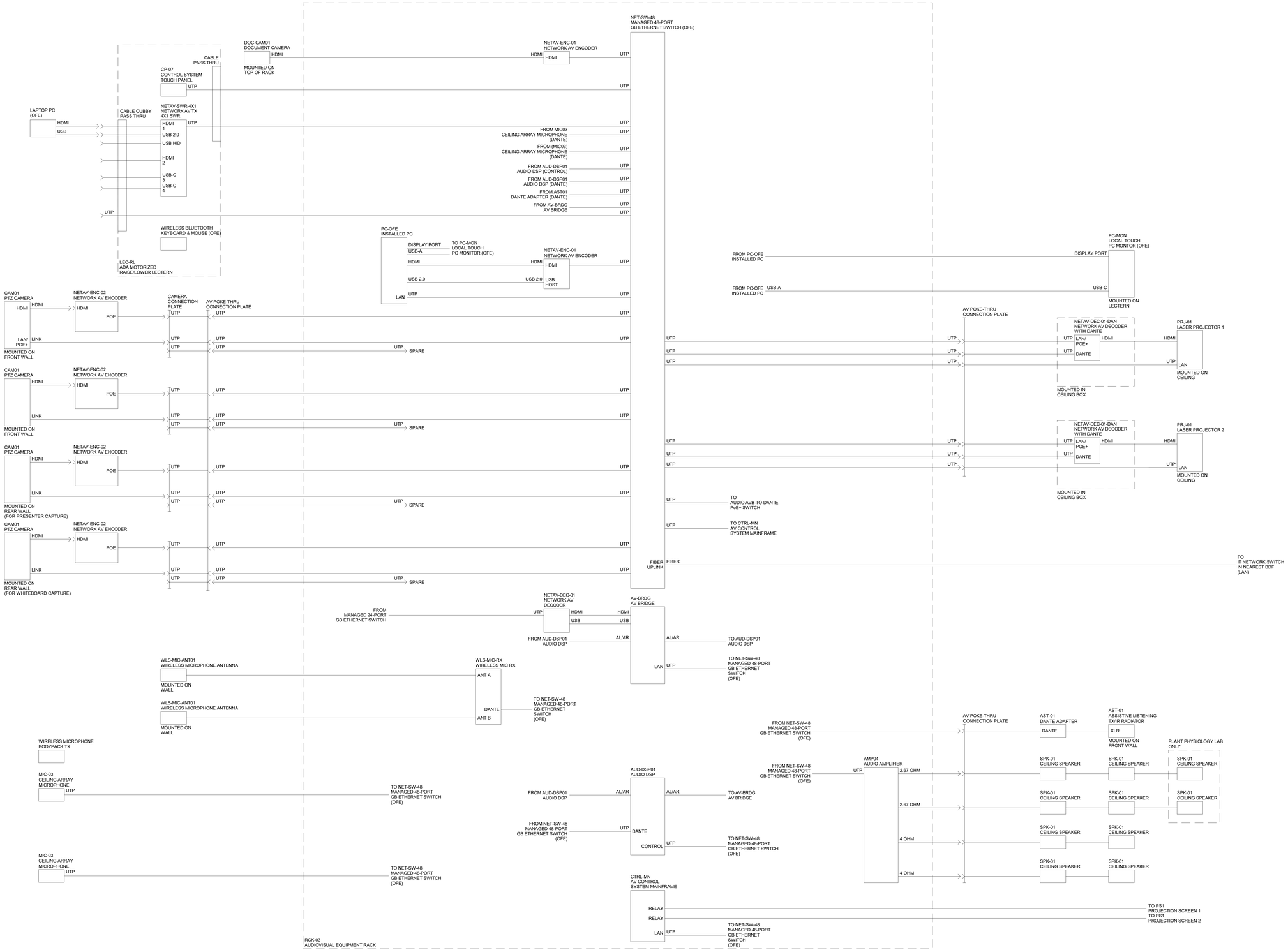

1 AUDIOVISUAL SYSTEMS LINE DIAGRAM - DRY LAB/PLANT PHYSIOLOGY LAB
12" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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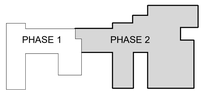

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DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2

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Scale: 12" = 1'-0"

TA6.0

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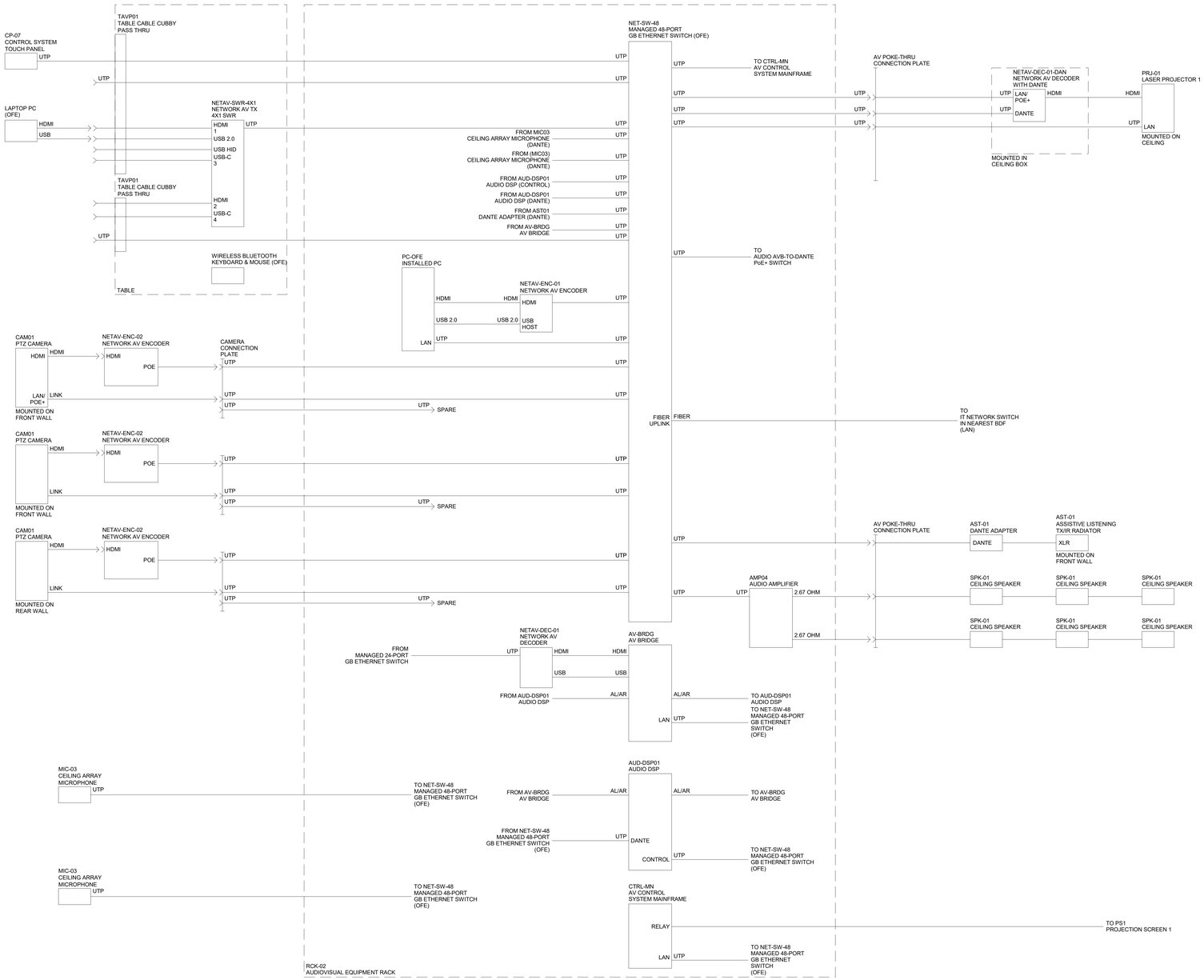

1 AUDIOVISUAL SYSTEMS LINE DIAGRAM - LARGE MEETING
12" = 1'-0"

RENOVATE PLANT SCIENCE
BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
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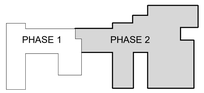
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number 161026-00 / 31909
Drawing By Author
Checked By Checker
Filename
Date August 31, 2026

Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2

BID DOCUMENTS
Scale: 12" = 1'-0"

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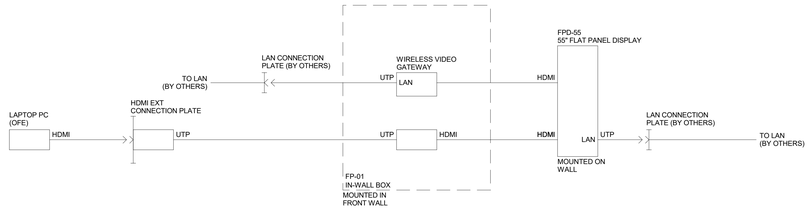
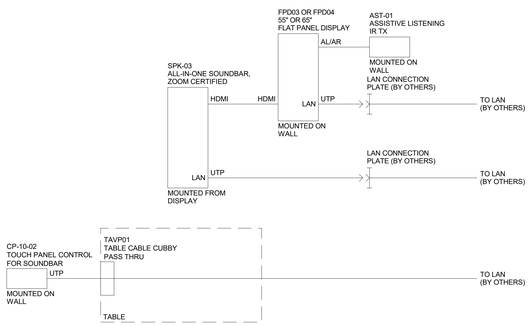


2 AUDIOVISUAL SYSTEMS LINE DIAGRAM - COLLABORATION
12" = 1'-0"



3 AUDIOVISUAL SYSTEMS LINE DIAGRAM - MEETING & TEAM ROOMS, LOUNGE
12" = 1'-0"

RENOVATE PLANT SCIENCE
BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
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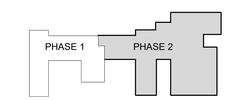

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AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2

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Scale: 12" = 1'-0"

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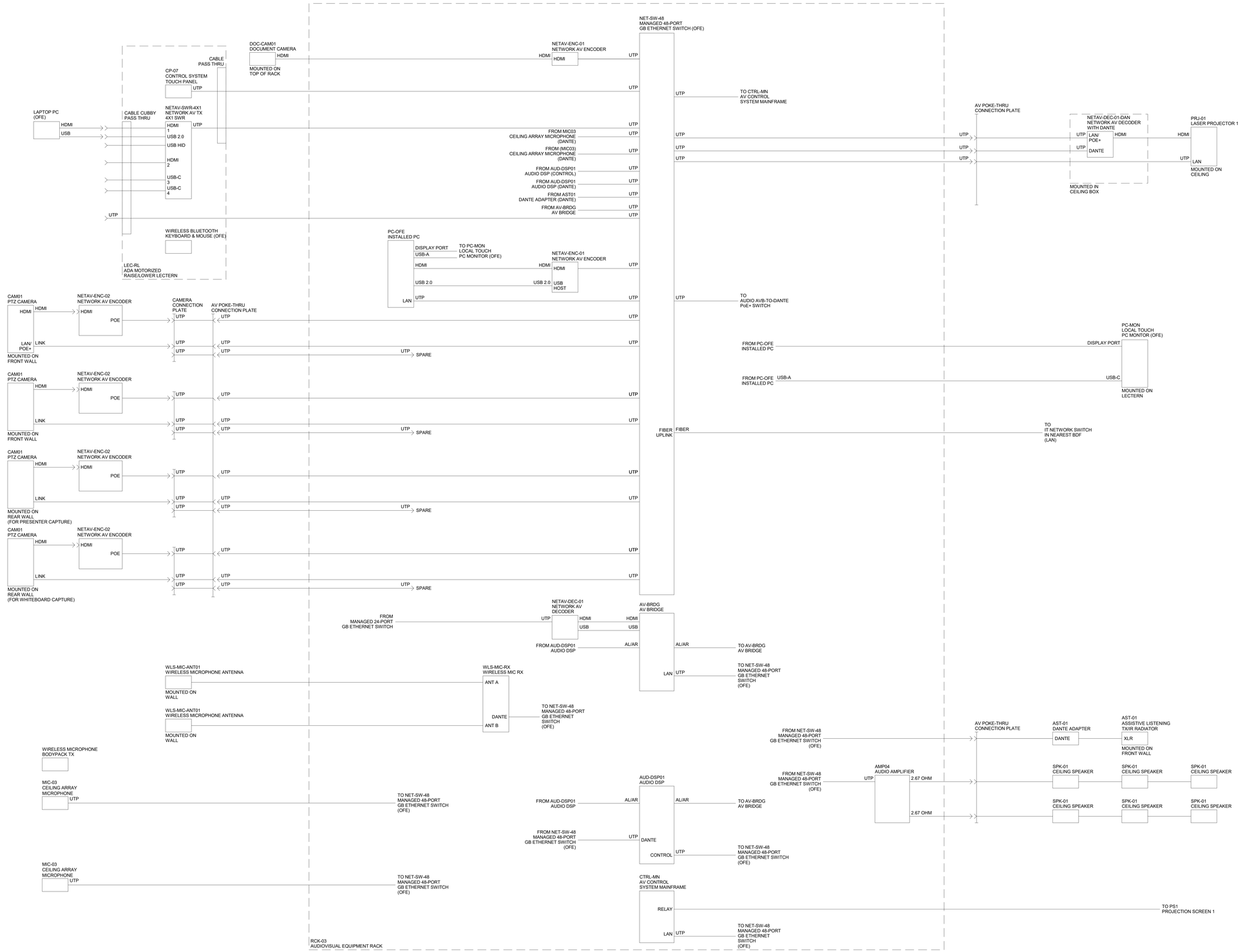

1 AUDIOVISUAL SYSTEMS LINE DIAGRAM - BIO-DIV HUB
12" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

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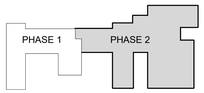

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PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2

BID DOCUMENTS
Scale: 12" = 1'-0"

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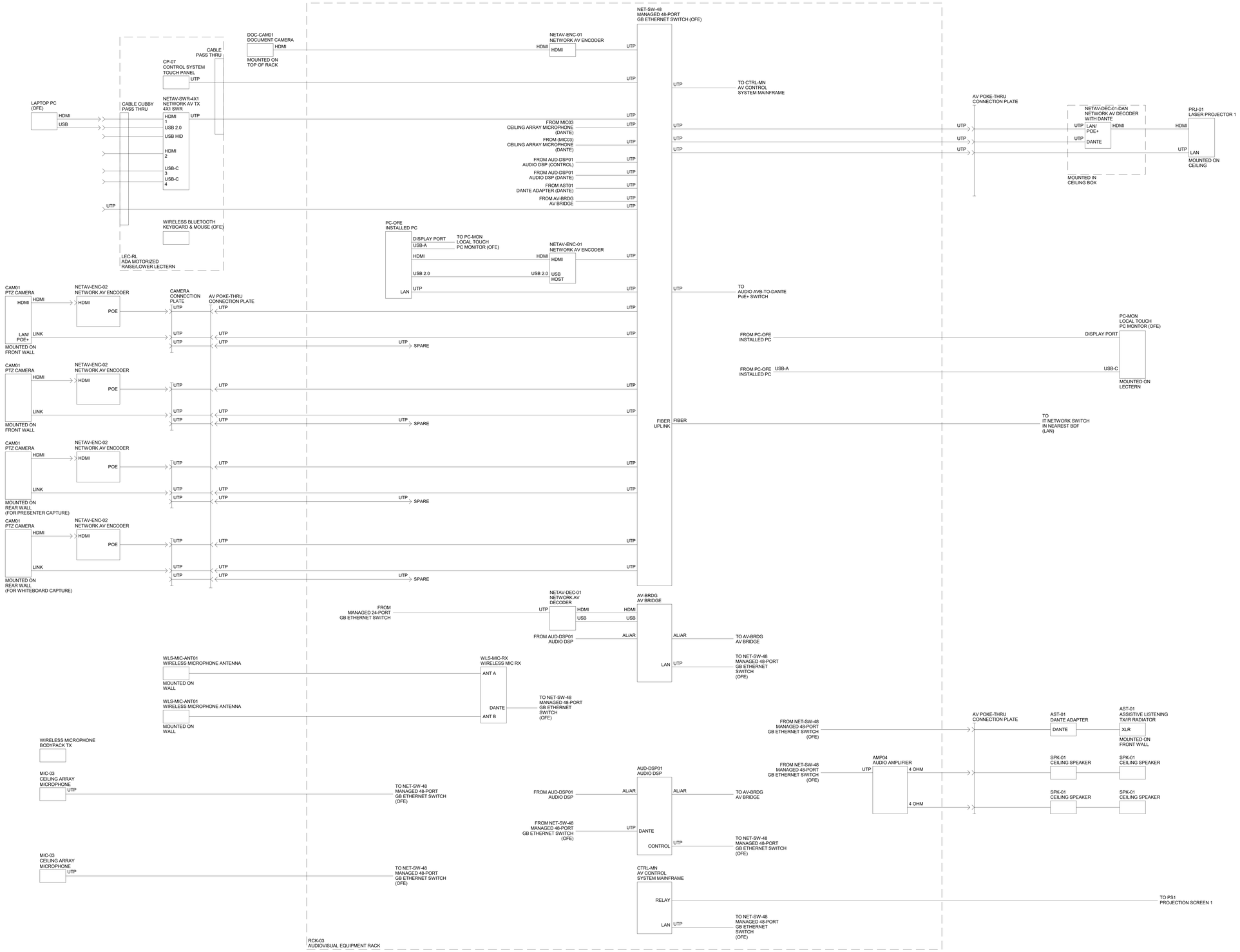

1 AUDIOVISUAL SYSTEMS LINE DIAGRAM - 20P CLASSRM
12" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

SUCF Project No. 161026-00

236 Tower Road
Ithaca, NY 14853

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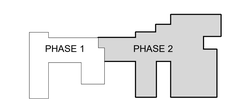

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AUDIOVISUAL SYSTEMS LINE DIAGRAM - PHASE 2

BID DOCUMENTS
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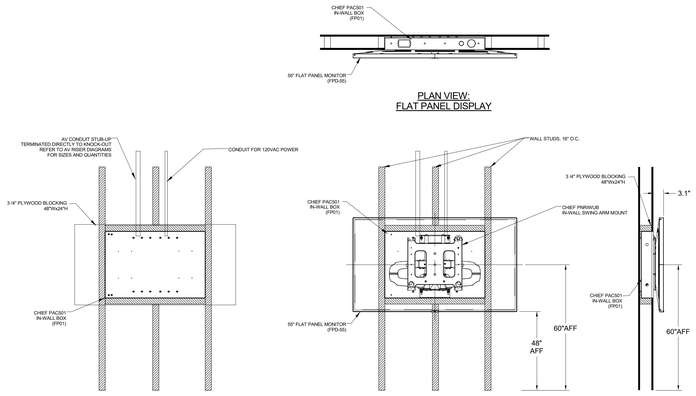
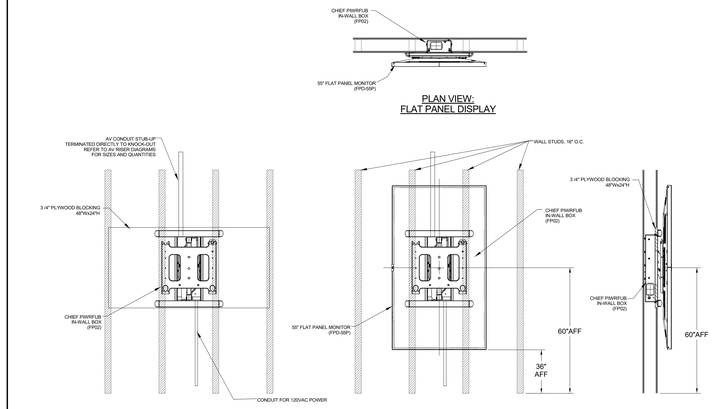
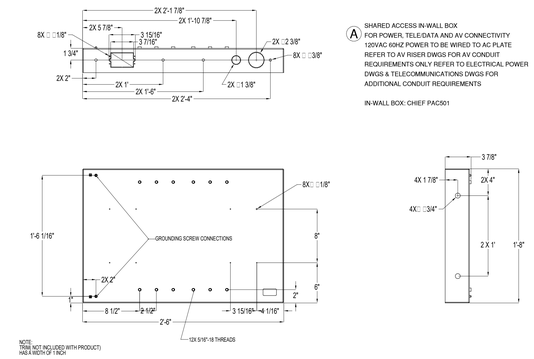


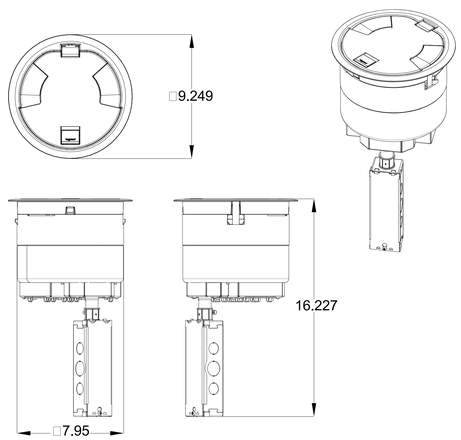
1 AUDIOVISUAL DETAILS - 55" FLAT PANEL DISPLAY (FPD03)-PH. 2
3/4" = 1'-0"



2 AUDIOVISUAL DETAILS - 55" FLAT PANEL DISPLAY (PORTRAIT) (FPD03-P)-PH. 2
3/4" = 1'-0"

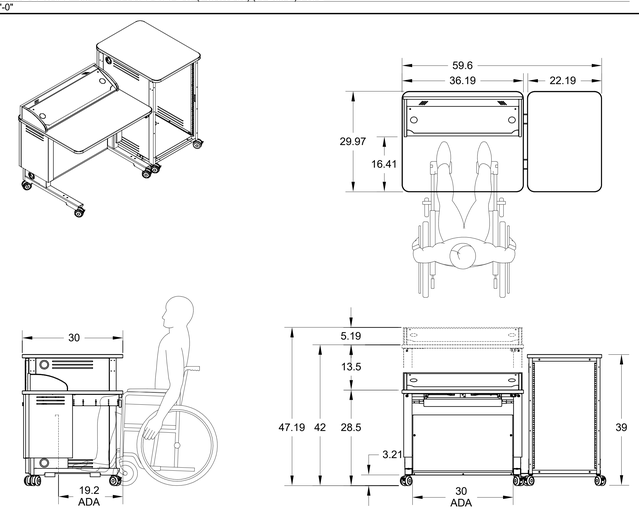


3 AUDIOVISUAL DETAILS - IN-WALL BOX (FP01)-PH. 2
1 1/2" = 1'-0"

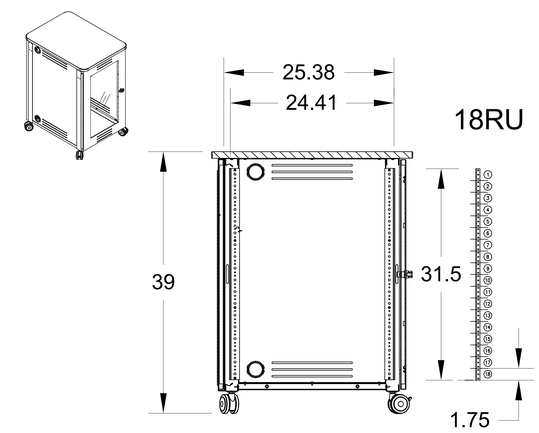


8" POKE-THRU DEVICE (PK-01)
LEGRAND EVOLUTION SERIES 8ATC2

4 AUDIOVISUAL DETAILS - 8" POKE-THRU (FD02 / PK01) - PH. 2
3" = 1'-0"



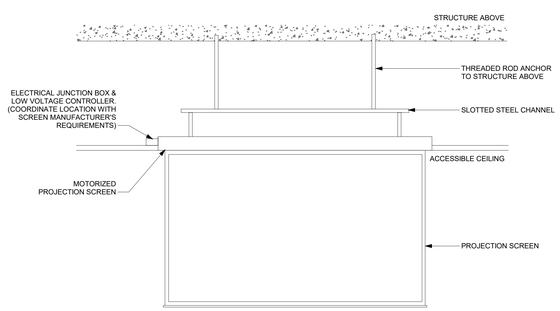
5 AUDIOVISUAL DETAILS - ADA/RAISE/LOWER LECTERN (LEC-RL)-PH. 2
3/4" = 1'-0"



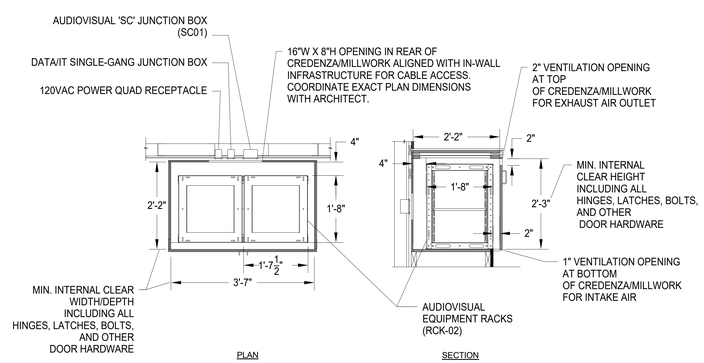
6 AUDIOVISUAL DETAILS - SMALL AV EQUIPMENT RACK (RCK-03)-PH. 2
1 1/2" = 1'-0"

GENERAL NOTES:

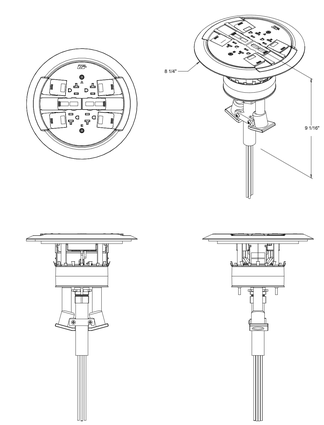
A. DETAIL IS DIAGRAMMATIC. REFER TO MANUFACTURERS INSTALLATION MANUALS FOR DIMENSIONS AND INSTALLATION REQUIREMENTS.
B. REFER TO AV PLANS/RISER DIAGRAM FOR JUNCTION BOX AND CONDUIT REQUIREMENTS.
C. REFER TO AV SCHEDULES AND WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
D. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF LOW-VOLTAGE MANUAL OVERRIDE SWITCH.



9 AUDIOVISUAL DETAILS - MOTORIZED PROJECTION SCREEN - PH. 2
3" = 1'-0"



7 AUDIOVISUAL DETAILS - AUDIOVISUAL EQUIPMENT RACK (CREDENZA) (RCK-02)-PH. 2
3/4" = 1'-0"



8 AUDIOVISUAL DETAILS - POWER POKE-THRU (FD01 / PK04) P H. 2
3" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2

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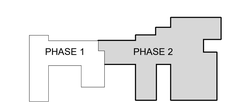

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AUDIOVISUAL DETAILS - PHASE 2

BID DOCUMENTS
Scale: As indicated

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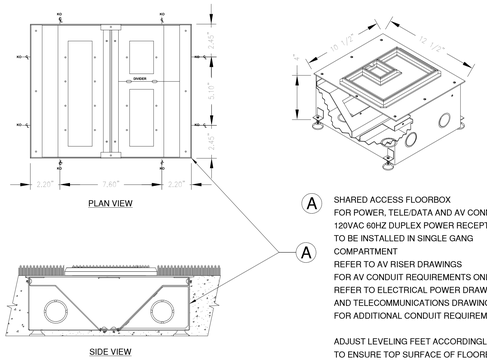
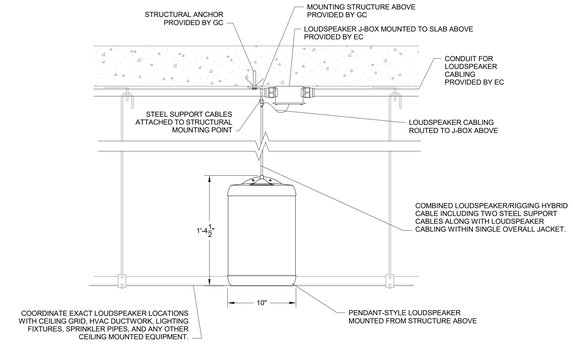


A SHARED ACCESS FLOORBOX
FOR POWER, TELE/DATA AND AV CONNECTIVITY
120VAC 60HZ DUPLEX POWER RECEPTACLE
TO BE INSTALLED IN SINGLE GANG
COMPARTMENT
REFER TO AV RISER DRAWINGS
FOR AV CONDUIT REQUIREMENTS ONLY
REFER TO ELECTRICAL POWER DRAWINGS
AND TELECOMMUNICATIONS DRAWINGS
FOR ADDITIONAL CONDUIT REQUIREMENTS.

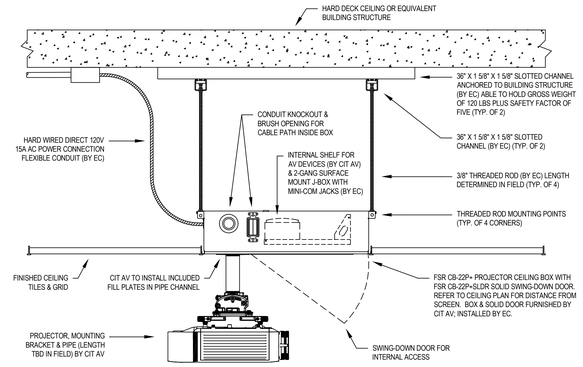
ADJUST LEVELING FEET ACCORDINGLY
TO ENSURE TOP SURFACE OF FLOORBOX
REMAINS FLUSH WITH FINISHED FLOOR.
REFER TO ARCHITECTURAL DRAWINGS
FOR EXACT LOCATIONS.

FLOORBOX: FSR FL-500P-4 (FB01)

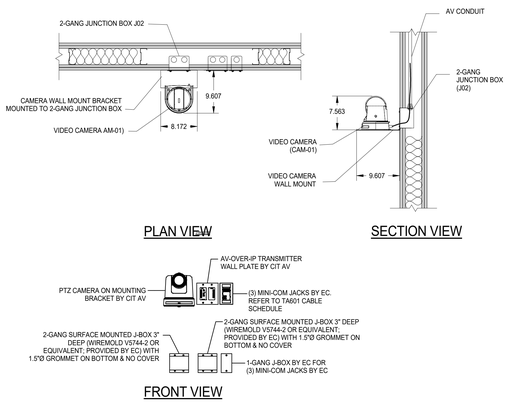
1 AUDIOVISUAL DETAILS - FLOORBOX (FB01)-PH. 2
3/4" = 1'-0"



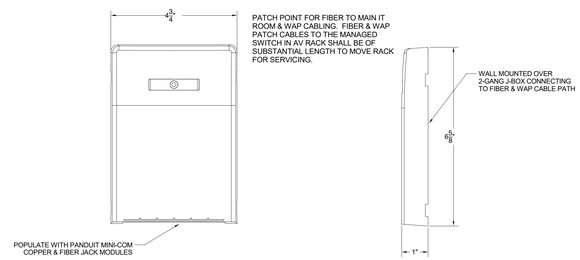
2 AUDIOVISUAL DETAILS - CEILING PENDANT SPEAKER (SPK02) - PH. 2
1 1/2" = 1'-0"



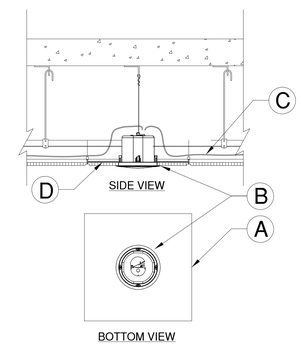
3 AUDIOVISUAL DETAILS - VIDEO PROJECTOR (PRJ-01)-PH- 2
1" = 1'-0"

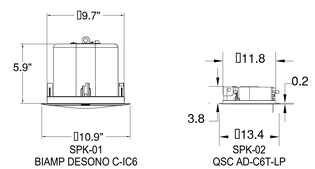


4 AUDIOVISUAL DETAILS - VTC CAMERA (CAM-01)-PH- 2
1" = 1'-0"



5 AUDIOVISUAL DETAILS - FIBER BOX (FBR-01)-PH. 2
6" = 1'-0"





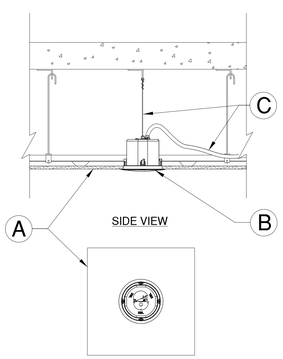
A ACOUSTIC CEILING TILE AND PREPARATION
(SPK-01 9.75" DIA. CUTOUT)
(SPK-02 11.8" DIA. CUTOUT)

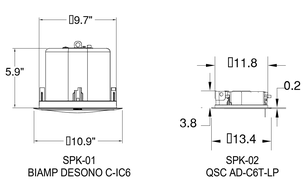
B BLIND MOUNT LOUDSPEAKER, GRILLE & TRANSFORMER

C PLENUM RATED 70V SPEAKER CABLE

D LOUDSPEAKER TILE BRIDGE

6 AUDIOVISUAL DETAILS - CEILING SPEAKER (ACT) (SPK-01)-PH. 2
1" = 1'-0"



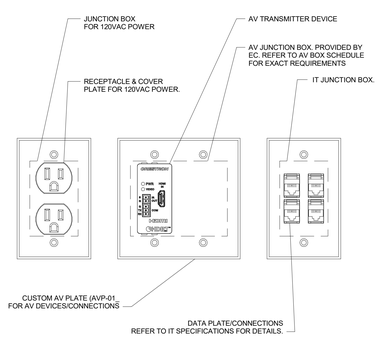


A GYPSUM BOARD CEILING AND PREPARATION
(SPK-01 9.75" DIA. CUTOUT)
(SPK-02 11.8" DIA. CUTOUT)

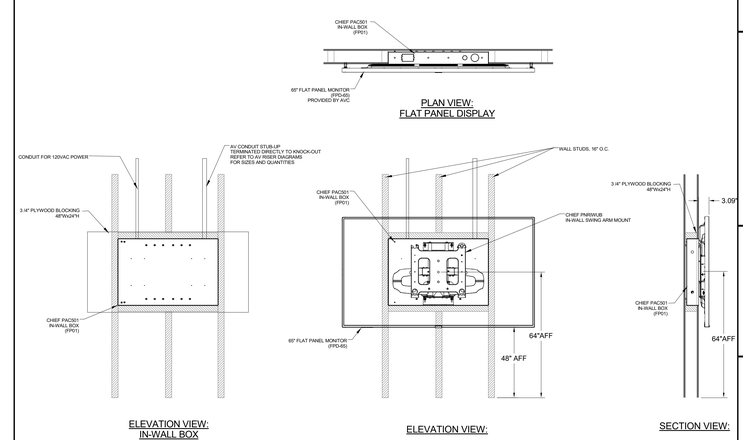
B CEILING LOUDSPEAKER ASSEMBLY

C FLEXIBLE CONDUIT AND SPEAKER ASSEMBLY ANCHORED TO SLAB

7 AUDIOVISUAL DETAILS - CEILING SPEAKER (GYP.) (SPK-01)-PH. 2
1" = 1'-0"



8 AUDIOVISUAL DETAILS - AV WALL PLATE (AVP-01)-PH. 2
6" = 1'-0"



9 AUDIOVISUAL DETAILS - 65" FLAT PANEL DISPLAY (FPD-65)-PH. 2
3/4" = 1'-0"

RENOVATE PLANT SCIENCE BUILDING - PHASE 2
SUCF Project No. 161026-00

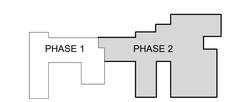
236 Tower Road
Ithaca, NY 14853

Cornell CALS College of Agriculture and Life Sciences

SUNY State University Construction Fund

Ellenzweig Architecture | Planning	230 Congress Street Boston, MA 02110 T 617 491-5575
Ryan Biggs Clark Davis Structural Engineers	257 Ushers Road Clifton Park, NY 12065 T 518 406-5506
Salas O'Brien Consulting & Engineering Group of NY, Inc. Mechanical Engineers	300 Trolley Blvd. Rochester, NY 14606 T 585 288-5590
Jade Stone Engineering Electrical Engineers	444 Vanduzee St. Watertown, NY 13601 T 315 836 4062
Watson Engineering Plumbing	4500 State Route 434 Apalachin, NY 13732 T 607 223-4334
DM Engineers Fire Protection Engineers	1007 Yonkers Ave Yonkers, NY 10704 T 929 333-2339
Bell & Spina Building Envelope	215 Wyoming Street S Syracuse, NY 13204 T 315 488-0377
Environ. Design & Research Historic Preservation, Landscape, Civil Engineering	217 Montgomery St, Suite 1000 Syracuse, NY 13202 T 315 471-0688
Schuler Shook Lighting Design	240 W 40th Street, 2nd Floor New York, NY 10018 T 212 439-5650
D2D Green Design Sustainability PH2	10 Hallenbeck Hill East Greenbush, NY 12061 T 518 729-2967
Shen Milsom & Wilke Acoustics, IT, AV, Security	417 Fifth Avenue New York, NY 10016 T 212 725-6800
Watts Architects & Engineers Asbestos, Haz Mat	95 Perry Street, Suite 300 Buffalo, NY 14203 T 716 206-5122
Hastings Consulting Building Code	142 Hanlon Rd Holliston, MA 01746 T 508 397-8417
Ellana Cost Consulting	32 Broadway, Suite 801 New York, NY 10004 T 212971-0936

Notes:



Keyplan

Job Number	161026-00 / 31909
Drawing By	Author
Checked By	Checker
Filename	
Date	August 31, 2026

Revisions

DRAFT PRE-BID PRICING SET	07/09/2025
PRE-BID PRICING SET	08/14/2025

AUDIOVISUAL DETAILS - PHASE 2

BID DOCUMENTS
Scale: As indicated

TA7.1

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