

Architect of Record

HANBURY

www.hanbury.design
310 S West Street, Suite 100
Raleigh, NC 27603
+1 919 301 0202

Owner

NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
651 Main Campus Dr
RALEIGH, NC 27606

Consultants

Mechanical Engineer

MCKIM & CREED CONTACT: Tommy Norby
4300 EDWARDS MILL ROAD, SUITE 200
RALEIGH, NC 27612
919.233.8091 www.mckimcreed.com

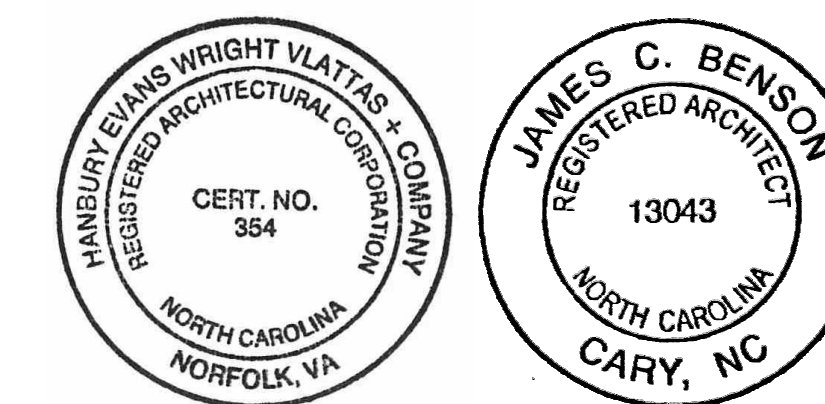
Electrical Engineer

MCKIM & CREED CONTACT: Tommy Norby
4300 EDWARDS MILL ROAD
RALEIGH, NC 27612
919.233.8091 www.mckimcreed.com

Plumbing Engineer

MCKIM & CREED CONTACT: Tommy Norby
4300 EDWARDS MILL ROAD
RALEIGH, NC 27612
919.233.8091 www.mckimcreed.com

Vicinity Map



Document
Issue Date

CONSTRUCTION DOCUMENTS
12/20/2024

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

NCSU PARTNERS III RENOVATION

RALEIGH, NORTH CAROLINA

COPYRIGHT © 2024
HANBURY EVANS WRIGHT VLATTAS + COMPANY

Table with 2 columns: SHEET NUMBER, SHEET NAME. Includes rows for G001 COVER SHEET, G002 PROJECT DATA AND DRAWING INDEX, G003 GENERAL NOTES & ABBREVIATIONS, G110 LIFE SAFETY LEGEND & PLANS.

Table with 2 columns: DEMOLITION, DEMOLITION PLAN LEVEL 01. Includes row for D001 DEMOLITION PLAN LEVEL 01.

Table with 2 columns: ARCHITECTURE, ELECTIONAL. Includes rows for A101 FLOOR PLAN LEVEL 01, A121 REFLECTED CEILING PLAN LEVEL 01, Q001 LAB NOTES, DETAILS, AND SCHEDULES, Q400 LABORATORY FLOOR PLANS, E001 ELECTRICAL LEGEND SHEET, E002 ELECTRICAL NOTES & ABBREVIATIONS SHEET, E100 ELECTRICAL DEMOLITION, E101 ELECTRICAL NEW WORK PLAN - POWER & SPECIAL SYSTEMS, E102 ELECTRICAL NEW WORK PLAN - LIGHTING, E300 ELECTRICAL PANEL SCHEDULES, E500 ELECTRICAL DETAILS.

Table with 2 columns: PLUMBING. Includes rows for P001 PLUMBING DATA SHEET, P100 PLUMBING WORK.

Table with 2 columns: FIRE PROTECTION. Includes rows for FP001 FIRE PROTECTION DATA SHEET, FP201 FIRE PROTECTION PLAN.

Table with 2 columns: MECHANICAL. Includes rows for M001 MECHANICAL DATA SHEET, M100 MECHANICAL DEMOLITION, M200 MECHANICAL NEW WORK, M300 MECHANICAL DETAILS, M801 AIRFLOW DIAGRAM.

PROJECT SCOPE
NCSU Partners III 1F Reno
AREAS: THE SCOPE OF WORK FOR THE EXISTING BUILDING IS LIMITED TO ROOMS 169, 169A, AND 167 WITH THE ADDITION OF ROOM 169B TAKING A PORTION OF 167'S SQUARE FOOTAGE.

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
PROJECT DATA AND DRAWING INDEX

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202345062
SCO # 24-28212-91A

Sheet Number:

G002

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (ELECTRICAL DESIGN). Includes sections for ELECTRICAL SYSTEM AND EQUIPMENT, Lighting schedule, and Additional Efficiency Package Options.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (ENERGY DESIGN). Includes sections for ENERGY REQUIREMENTS, THERMAL ENVELOPE, Roofing/ceiling Assembly, Exterior Walls, Walls below grade, Floors over unconditioned space, and Floors slab on grade.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (STRUCTURAL DESIGN). Includes sections for DESIGN LOADS, SEISMIC DESIGN CATEGORY, and LATERAL DESIGN CONTROL.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (MECHANICAL DESIGN). Includes sections for MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT, Thermal Zone, Interior design conditions, Building heating load, Building cooling load, and Mechanical Spacing Conditioning System.

FIRE PROTECTION REQUIREMENTS table with columns: BUILDING ELEMENT, FIRE SEPARATION DISTANCE (FEET), RATIO PROVIDED (W/REDUCTION), DETAIL # FOR RATED SHEET #, DESIGN # FOR RATED ASSEMBLY, DESIGN # FOR RATED PENETRATION, DESIGN # FOR RATED JOINTS.

PERCENTAGE OF WALL OPENING CALCULATIONS table with columns: FIRE SEPARATION DISTANCE (FEET FROM PERPETRY LINES), DEGREES OF OPENINGS PROTECTION (TABLE 705.6), ALLOWABLE AREA (%), ACTUAL SHOWN ON PLANS (%).

LIFE SAFETY SYSTEM REQUIREMENTS table with columns: Emergency Lighting, Exit Signs, Fire Alarm, Smoke Detection Systems, Carbon Monoxide Detection.

LIFE SAFETY PLAN REQUIREMENTS table with columns: Section/Table/Note, Title. Includes various fire and life safety requirements.

ACCESSIBLE DWELLING UNITS (SECTION 1107) table with columns: TOTAL UNITS, ACCESSIBLE UNITS REQUIRED, ACCESSIBLE UNITS PROVIDED, TYPE A UNITS REQUIRED, TYPE A UNITS PROVIDED, TYPE B UNITS REQUIRED, TYPE B UNITS PROVIDED, TOTAL ACCESSIBLE UNITS PROVIDED.

ACCESSIBLE PARKING (SECTION 1108) table with columns: LOT OR PARKING AREA, TOTAL # OF PARKING SPACES REQUIRED, # OF ACCESSIBLE SPACES PROVIDED (REGULAR WITH 5' ACCESS AISLE, VAN SPACES WITH 13' ACCESS AISLE, 8' ACCESS AISLE), TOTAL # ACCESSIBLE PROVIDED.

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1) table with columns: USE, WATER CLOSETS, URINALS, LAVATORIES, SHOWERS/TUBS, DRINKING FOUNTAINS, ACCESSIBLE.

SPECIAL APPROVALS table with columns: USE, MALE, FEMALE, UNISEX, MALE, FEMALE, UNISEX, REGULAR, ACCESSIBLE.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (GENERAL INFORMATION). Includes project name, address, owner, and contact information.

CONTACT table with columns: DESIGNER, FIRM, LICENSE #, TELEPHONE #, E-MAIL. Lists James Benson, Hanbury, and other project contacts.

2018 NC CODE FOR: New Construction, Addition, Renovation, 1st Time Interior Completion, Shell/Core, Phased Construction - Shell/Core.

2018 NC EXISTING BUILDING CODE: Prescriptive, Repair, Chapter 14, Level I, Level II, Historic Property, Change of Use.

BASIC BUILDING DATA: Construction Type, Sprinklers, Standpipes, Fire District, Special Inspections Required.

Table with 5 columns: FLOOR, EXISTING (SQ FT), NEW (SQ FT), RENOVALTER (SQ FT), SUB-TOTAL. Lists floors from 6th to Basement.

ALLOWABLE AREA: Primary Occupancy Classification, Assembly, Business, Educational, Factory, Hazardous, Institutional, Mercantile, Residential, Storage, Utility and Miscellaneous.

Actual Area of Occupancy A + Actual Area of Occupancy B / Allowable Area of Occupancy A ≤ 1

Table with 5 columns: STORY NO., DESCRIPTION AND USE, (A) BLDG AREA PER STORY (ACTUAL), (B) TABLE 506.2 AREA, (C) AREA FOR FRONTAGE INCREASE, (D) ALLOWABLE AREA PER STORY OR UNLIMITED.

1. Frontage area increases from Section 506.3 are computed thus: a. Perimeter which fronts a public way or open space having 20-foot minimum width = (F) b. Total Building Perimeter = (P) c. Ratio (F/P) = (F/P) d. W = Minimum width of public way = (W) e. Percent of frontage increase if = 100 [(F/P - 0.25) x W/30 = (%)]

ALLOWABLE HEIGHT table with columns: ALLOWABLE (TABLE 504.3), SHOWN ON PLANS, CODE REFERENCE. Includes Building Height in Feet and Building Height in Stories.

1. Provide code reference if the "Show on Plans" quantity is not based on Table 504.3 or 504.4.
2. The maximum height of traffic control towers must comply with Table 412.3.1
3. The maximum height of open parking garages must comply with Table 406.5.4

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC 27612

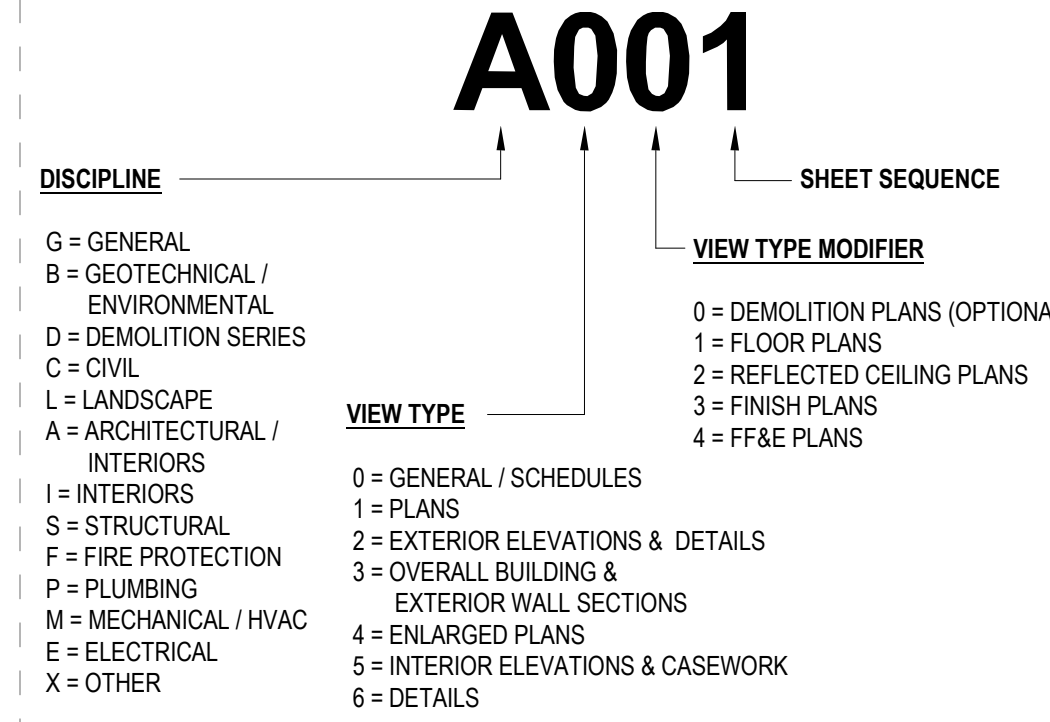
Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com

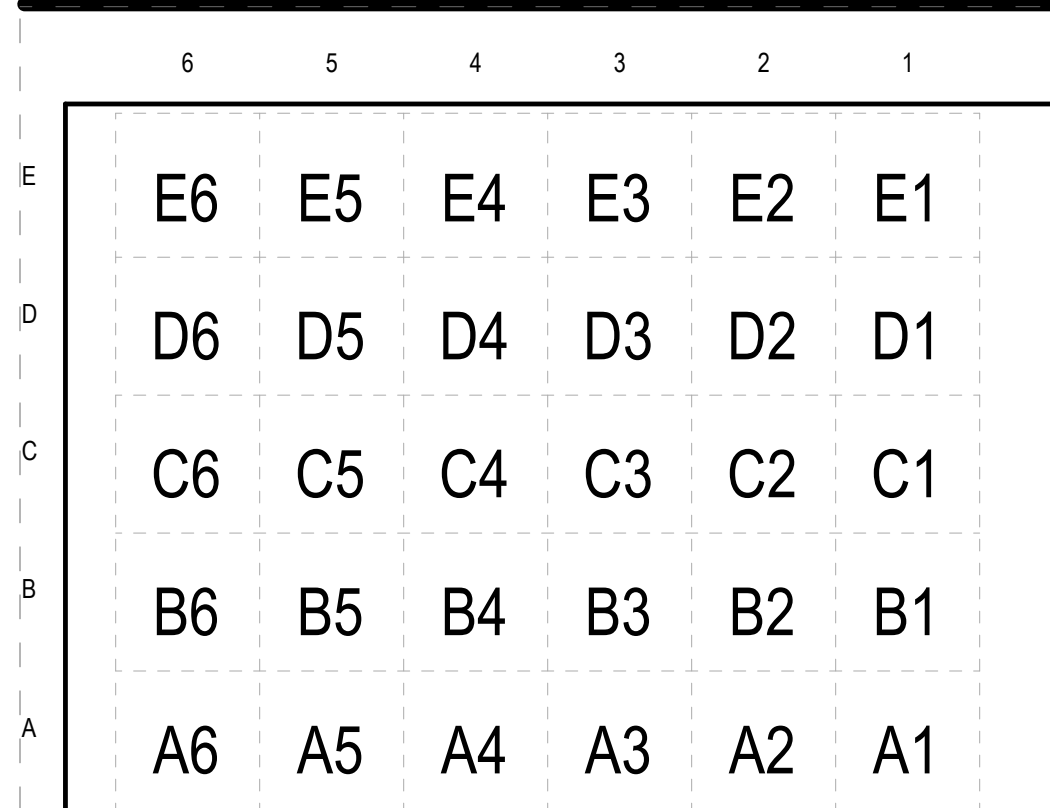
GENERAL NOTES

- DEFINITION:** THE TERM "DESIGN PROFESSIONAL" MEANS "ARCHITECT," "PROFESSIONAL ENGINEER," "INTERIOR DESIGNER" OR OTHER PARTY RESPONSIBLE FOR PROVIDING DESIGN SERVICES AS APPROPRIATE.
- ALL WORK TO CONFORM TO LOCAL CODES, ORDINANCES, AND REGULATIONS.
 - VERIFY ALL EXISTING CONDITIONS.
 - VERTICAL DIMENSIONS ARE FROM "FLOOR LINE" UNLESS OTHERWISE NOTED. REFER TO ELEVATIONS FOR "FLOOR LINE" DATUMS.
 - EXTERIOR DIMENSIONS ARE TO FACE OF BRICK VENEER, BRICK VENEER MASONRY OPENING, OR COLUMN CENTERLINE UNLESS NOTED OTHERWISE. INTERIOR HORIZONTAL DIMENSIONS FOR NEW CONSTRUCTION ARE FROM FACE OF STUD OR BLOCK UNLESS OTHERWISE NOTED. HORIZONTAL DIMENSIONS FOR EXISTING CONSTRUCTION ARE FROM FACE OF EXISTING FINISHED SURFACE.
 - DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY DESIGN PROFESSIONAL OF ALL DISCREPANCIES AND OBTAIN CLARIFICATION BEFORE CONTINUING WITH CONSTRUCTION.
 - THE GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND COORDINATING WITH ALL TRADES. THE SIZE AND QUANTITY OF ALL OPENINGS FOR MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT, EQUIPMENT PADS OR BASES, AS WELL AS POWER, WATER, AND DRAIN INSTALLATIONS, COORDINATION DRAWINGS FOR ALL TRADES WORK SHALL BE SUBMITTED BY THE GENERAL CONTRACTOR BEFORE COMMENCING WITH WORK. ALL CONCERNS, SPATIAL LIMITATIONS, OR STRUCTURAL CONFLICTS SHALL BE IMMEDIATELY SUBMITTED TO THE DESIGN PROFESSIONAL FOR RESOLUTION PRIOR TO COMMENCING WITH ANY RELATED WORK.
 - IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL ELECTRICAL, DATA, AND PHONE OUTLETS, SWITCHES, ETC. TO AVOID CONFLICTS WITH CASEWORK, DOORS, AND OTHER TRADES.
 - ALIGN NEW FLOOR FINISHES WITH EXISTING ADJACENT FLOOR FINISHES UNLESS OTHERWISE INDICATED. WHERE NEW AND EXISTING FINISHED SURFACES ARE INDICATED TO BE ALIGNED, INSTALL SO FINISHED SURFACES ARE FLUSH (FEATHER MAXIMUM 1/8" PER FOUR FEET).
 - IT IS UNDERSTOOD AND AGREED THAT DRAWING REFINEMENTS, ADDITIONAL DETAILING AND CLARIFICATIONS WILL BE ISSUED DURING THE CONSTRUCTION SCHEDULE AND NO ADJUSTMENT WILL BE MADE TO CONTRACTORS PRICE UNLESS SUCH REFINEMENT, DETAILING OR CLARIFICATIONS RESULT IN CHANGES TO THE SCOPE, QUALITY, FUNCTION AND OR INTENT OF THE DRAWINGS AND THE PROJECT MANUAL NOT REASONABLY INFERRABLE BY A CONTRACTOR OR SUB-CONTRACTOR EXPERIENCED IN THIS TYPE OF WORK.
 - ALL CONTRACTORS AND SUB-CONTRACTORS MUST QUOTE ON COMPLETED, FULLY OPERABLE SYSTEMS BASED ON THE DESIGN INTENT OF THE CONTRACT DOCUMENTS, AND ALL MATERIAL AND LABOR IMPLIED THEREFROM.
 - UNLESS OTHERWISE REQUIRED BY THE OWNER, CONSTRUCTION ADMINISTRATION SERVICES WILL BE COMPLETED USING NEWFORMA PROJECT CENTER. REFERENCE DIVISION 1 OF THE SPECIFICATIONS FOR THE PROCEDURES FOR REQUESTS FOR INFORMATION AND SUBMITTALS.
 - ALL WOOD BLOCKING IN EXTERIOR WALLS SHALL BE PRESERVATIVE PRESURE TREATED IN ACCORDANCE WITH THE SPECIFICATIONS. ALL WOOD BLOCKING IN INTERIOR WALLS SHALL BE FIRE RETARDANT TREATED IN ACCORDANCE WITH THE SPECIFICATIONS.
 - INSTALL SEALANT AT THE EXTERIOR SIDE OF ALL JOINTS, SEAMS, CONNECTIONS, OR OPENINGS THAT WOULD ALLOW AIR OR WATER INFILTRATION UNLESS NOTED OTHERWISE. SEALANT COLOR MUST RECEIVE DESIGN PROFESSIONAL'S APPROVAL AND MATCH THEIR SAMPLE.
 - THE LOCATIONS OF EXISTING UTILITIES ARE BASED ON DOCUMENTS PROVIDED BY THE OWNER AND MAY NOT REPRESENT THE ACTUAL FIELD CONDITIONS. REVIEW ALL OWNER DOCUMENTS AND BECOME FAMILIAR WITH ALL EXISTING UTILITIES. VERIFY LOCATIONS IN THE FIELD BY EMPLOYING LOCATING SERVICES BEFORE CONSTRUCTION STARTS, AND COORDINATE ALL NEW UTILITY LOCATIONS, CONNECTIONS AND PENETRATIONS.

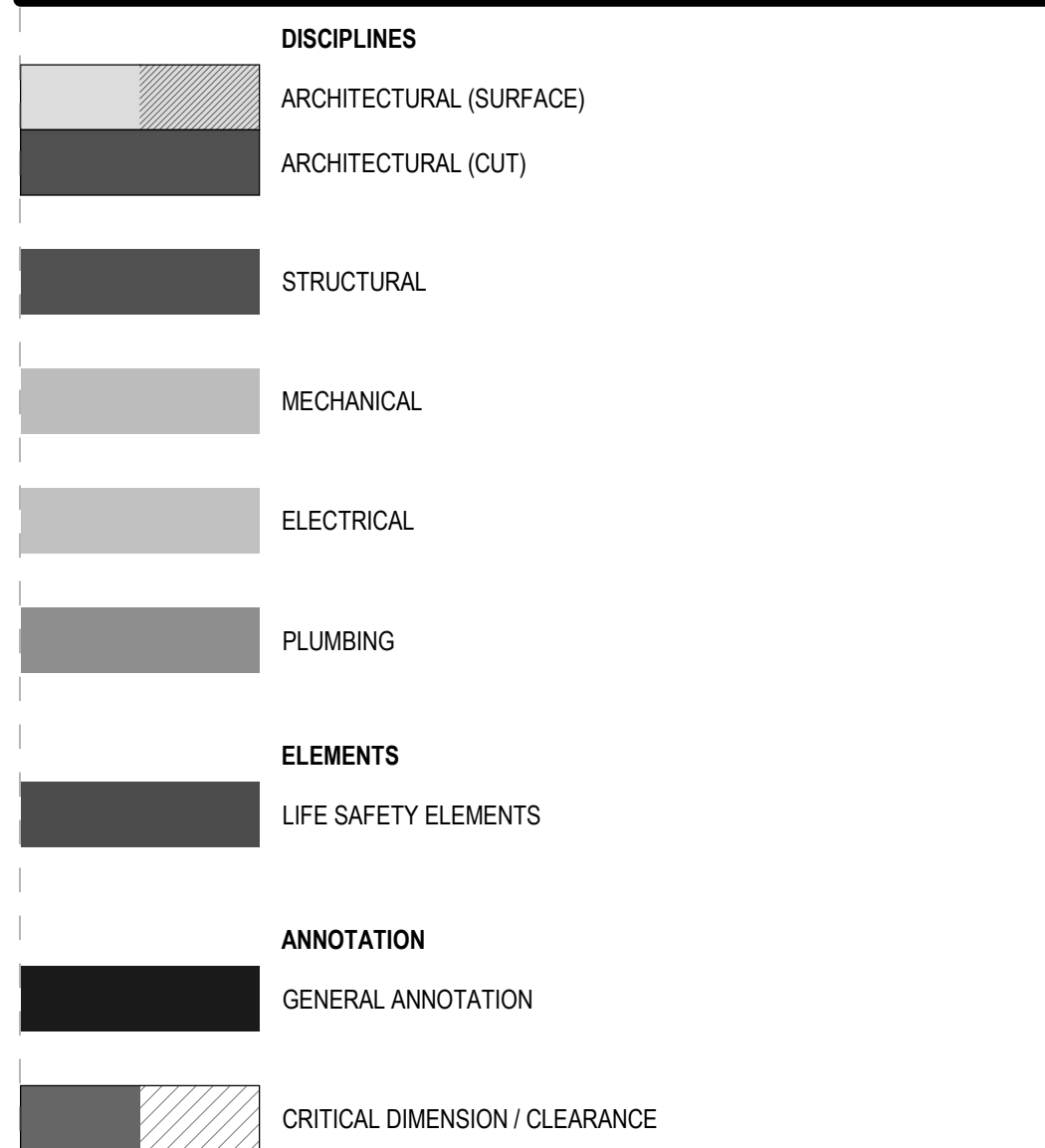
SHEET NUMBERS



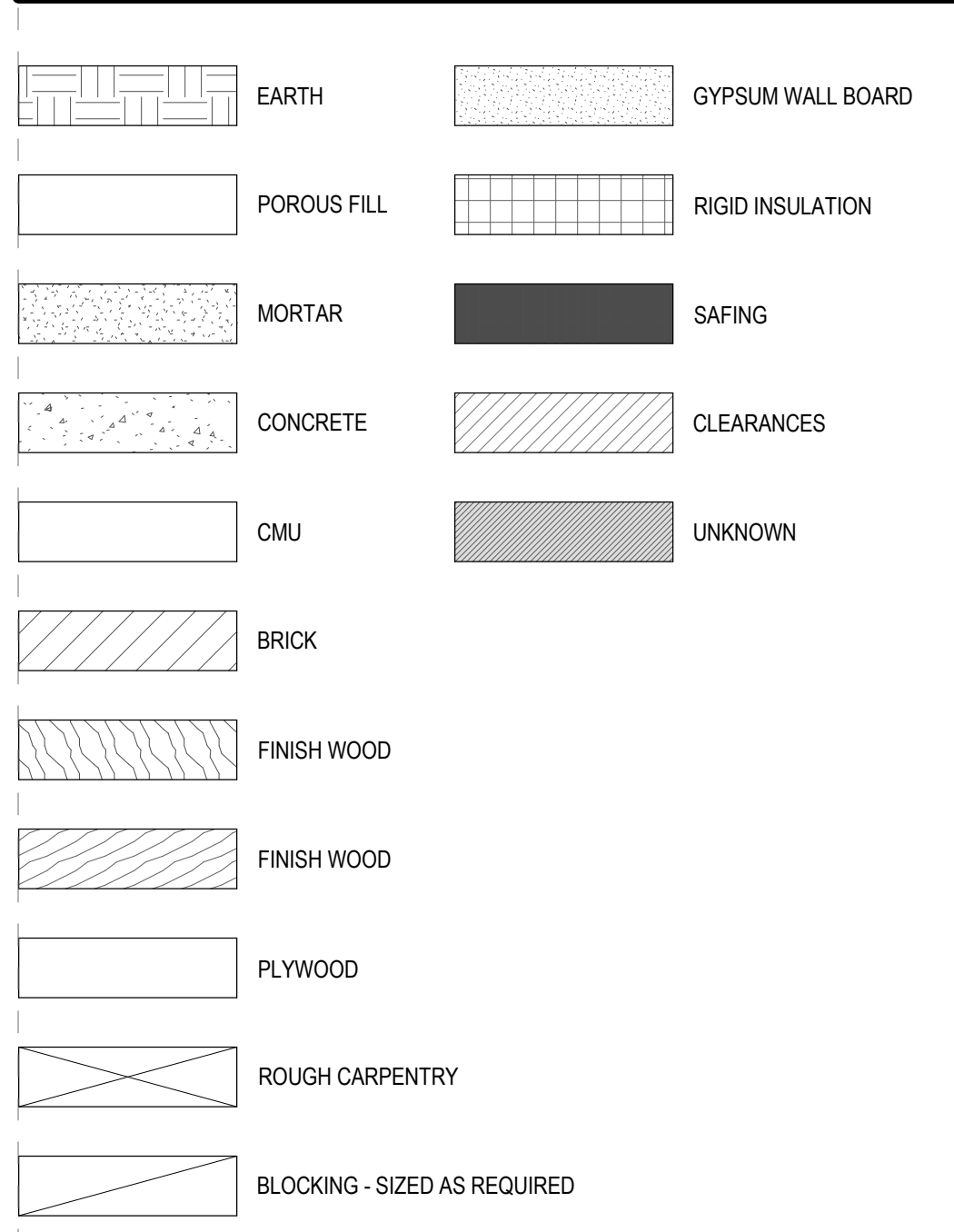
SHEET LAYOUT



COLOR CODING



MATERIALS



FIREPROOFING NOTES

- FIRE STOP ALL FLOORS, WALLS, & CEILINGS AS REQUIRED BY APPLICABLE CODES.
- ALL FIREPROOFING DESIGNS SHOULD BE CONSIDERED THERMALLY UNRESTRAINED. HOLES CUT THROUGH EXISTING OR NEW FIRE RATED CONSTRUCTION FOR INSTALLATION OF PIPING, DUCTWORK, OR OTHER PENETRATIONS SHALL BE KEPT TO A MINIMUM NUMBER AND HELD TO A MINIMUM SIZE. FILL VOIDS BETWEEN PIPES, DUCTS, OTHER PENETRATING ITEMS AND RATED CONSTRUCTION WITH FIRE RETARDANT SEALANT SYSTEM LISTED IN THE UL FIRE RESISTANCE DIRECTORY WITH FIRE (F) AND TEMPERATURE (T) RATINGS EQUAL TO OR GREATER THAN THE FIRE RESISTANCE RATING OF THE ASSEMBLY BEING SEALED.
- SPRAYED FIREPROOFING FOR STRUCTURAL MEMBERS WITH WID OR AP RATIOS OTHER THAN THE SPECIFIED UL DESIGN, WILL BE ADJUSTED IN ACCORDANCE WITH THE ADJUSTMENT OF SPRAYED MATERIAL THICKNESS FOR UNRESTRAINED RATINGS FOR VARIOUS BEAM AND COLUMN SIZES AS FOUND IN THE MOST CURRENT EDITION OF THE UL FIRE RESISTANCE DIRECTORY.
- ALL BEAMS AND COLUMNS SHALL BE ADJUSTED USING WID OR AP RATIOS TO DETERMINE THE CORRECT FIREPROOFING THICKNESS.

DESIGN RESPONSIBILITY NOTES

- THESE DRAWINGS AND ASSOCIATED SPECIFICATIONS ARE LIMITED TO THE DESIGN SERVICES CONVEYED WITHIN THE CONTRACT DOCUMENTS. THESE DESIGN SERVICES ARE LIMITED TO:
 - ARCHITECTURAL DESIGN
 - MECHANICAL ENGINEERING DESIGN
 - ELECTRICAL ENGINEERING DESIGN
 - PLUMBING ENGINEERING DESIGN
 - STRUCTURAL ENGINEERING DESIGN
 - FIRE PROTECTION ENGINEERING
 - COST ESTIMATION
- EXCLUDED SERVICES ARE, BUT NOT LIMITED TO, THE FOLLOWING:
 - GEOTECHNICAL ENGINEERING
 - CIVIL ENGINEERING
 - LANDSCAPE DESIGN
 - INTERIOR DESIGN

REFERENCE THE OWNER ARCHITECT AGREEMENT FOR ALL EXCLUDED SERVICES.

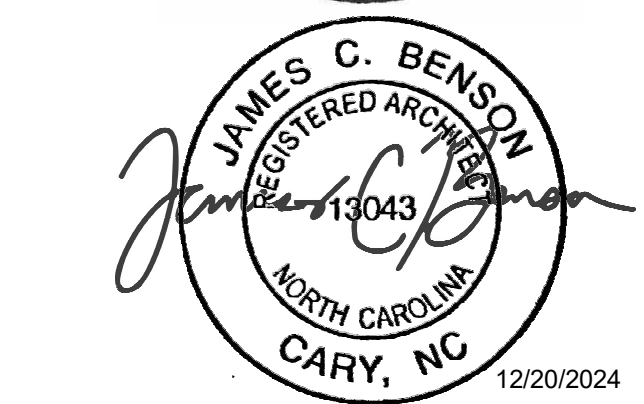
- THE PROJECT SPECIFICATIONS INDICATE SEVERAL AREAS OF DELEGATED DESIGN WHERE A SUBCONTRACTOR TO PROVIDE DESIGN SERVICES AND/OR SHOP DRAWINGS. THESE MAY INCLUDE, BUT ARE NOT LIMITED TO:
 - COLD-FORMED METAL FRAMING
 - METAL FABRICATIONS
 - STAIRS AND RAILINGS
 - WOOD OR LIGHT GAUGE METAL TRUSSES
 - ALUMINUM FRAMED ENTRANCES AND STOREFRONTS
 - GLAZING
 - LOUVERS
 - SUSPENDED CEILING SYSTEMS
 - SIGNAGE
 - FIRE SUPPRESSION & FIRE SPRINKLER SYSTEMS
 - PIPE HANGERS & EQUIPMENT SUPPORTS
 - LIGHTING POLES & SPECIALTY LIGHTING DESIGN
 - FIRE ALARM SYSTEMS
 - IRRIGATION SYSTEMS.

REFERENCE SPECIFICATIONS FOR ALL REQUIREMENTS RELATED TO DELEGATED DESIGN ALONG WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA.

ABATEMENT NOTES

ABATEMENT OF HAZARDOUS MATERIALS IS OUTSIDE THE SCOPE OF THESE DOCUMENTS AND WILL BE PERFORMED UNDER A SEPARATE CONTRACT.

DUE TO THE ORIGINAL CONSTRUCTION DATE AND AGE OF THE STRUCTURE DESCRIBED WITHIN THIS RENOVATION PROJECT'S SCOPE OF WORK, A HAZARDOUS MATERIAL SURVEY BY A QUALIFIED LICENSED PROFESSIONAL FOLLOWING THE EPA, AHERA, AND ASTM METHODOLOGIES AND STANDARDS SHALL BE CONDUCTED BY THE OWNER / GC. COORDINATION BETWEEN THE LICENSED INSPECTING PROFESSIONAL AND THE LOCAL AHJ IS REQUIRED TO ENSURE ALL LOCAL REQUIREMENTS OF TESTING, REPORTING, AND RECOMMENDED ABATEMENT PROCEDURES ARE IDENTIFIED AND MET, AND ALL RELATED DOCUMENTATION IS TO BE SUBMITTED AS PER THE LOCAL AHJ'S CRITERIA.



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: GENERAL NOTES & ABBREVIATIONS

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III Building No. 713 NC State Project ID Number: 202435062 SCO # 24-28212-01A

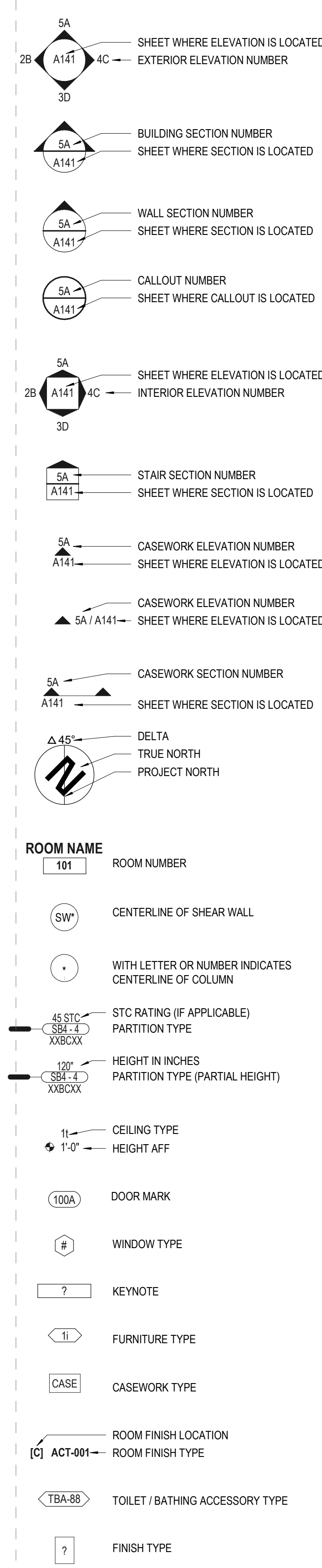
Sheet Number:

GO03

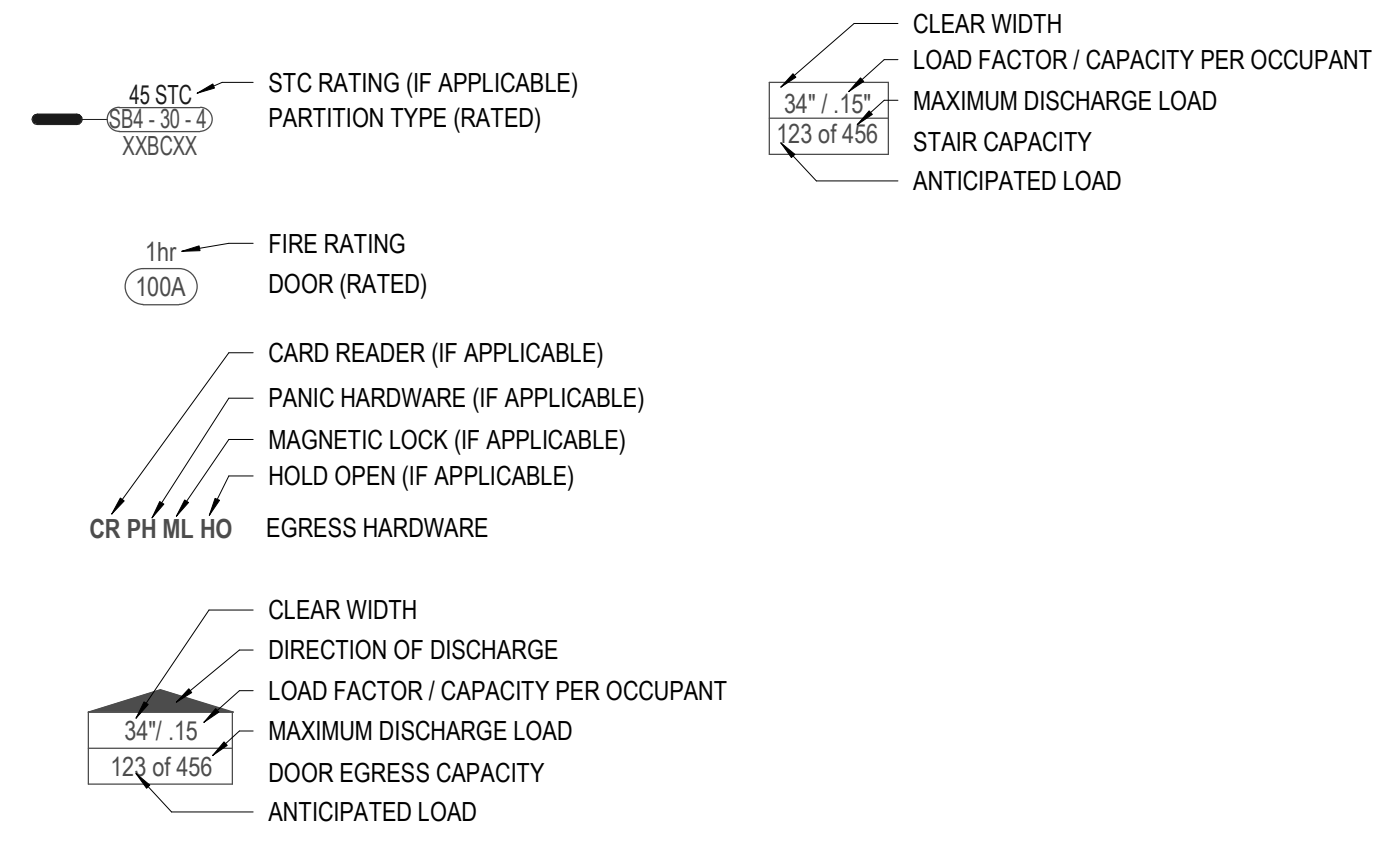
ABBREVIATIONS

ABBREVIATION	WORD / PHRASE
ACC	ACCESSIBLE
ACP	ACOUSTIC CEILING PANEL
ACT	ACOUSTIC CEILING TILE
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
B	BASE
BEES	BUILDING EXPANSION JOINT
BLDG	BUILDING
BLKG	BLOCKING
C	CEILING
CAB	CABINET
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMD	CORRUGATED METAL DECK
CMP	COMPOSITE METAL PANEL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
CPT	CLEAR
CSMU	CALCIUM SILICATE MASONRY UNIT
DBL	DOUBLE
DEMO	DEMOLISH / DEMOLITION
DIA	DIAMETER
DIAG	CORRUGATED METAL DECK
DIM	DIMENSION
DN	DOWN
DP	DECORATIVE PANEL
DR	DOOR
DTL	DETAIL
DWG	DRAWING
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATION OR ELEVATOR
EQ	EQUAL
EPDM	ETHYLENE PROPYLENE DIENE TERPOLYMER
ERTS	EMERGENCY RESPONSE TELEPHONE SYSTEM
EXT	EXTERIOR
F	FLOOR
FAB	FABRIC
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FLR	FLOOR
FRP	FIBER REINFORCED PANEL
FRT	FIRE RETARDANT TREATED
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLASS / GLAZING
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM WALL BOARD
HC	HOLLOW CORE
HEWV	HANBURY, EVANS, WRIGHT, VLATTAS
HR	HEARING IMPAIRED ROOM
HORIZ	HORIZONTAL
HPDL	HIGH PRESSURE DECORATIVE LAMINATE
HR	HOURS
HT	HEIGHT
IMP	INSULATED METAL PANEL
INSUL	INSULATED / INSULATION
INT	INTERIOR
LP	LEATHER PANEL
LVT	LUXURY VINYL TILE
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MIN	MINUTES
MR	MIRROR
MTL	METAL
NC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
OA	OVERALL
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OH	OVERHANG
OPP	OPPOSITE / OPPOSITE HAND
PART	PARTIAL
PJ	PANEL JOINT
PL	PLASTIC LAMINATE
PLY	PLYWOOD
PNT	PAINT
PT	PORCELAIN TILE
PT	PRESSURE TREATED
RBR	RUBBER
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REQD	REQUIRED
RF	RESILIENT FLOORING
RM	ROOM
RO	ROUGH OPENING
SC	SOLID CORE
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SEP	SEPARATION
SIM	SIMILAR
SPEC	SPECIFICATION
SPK	SPRINKLER
SS	SOLID SURFACE
SSTL	STAINLESS STEEL
ST	STONE
STC	SOUND TRANSMISSION COEFFICIENT
STRUC	STRUCTURE / STRUCTURAL
T	TRIM
T&G	TONGUE & GROOVE
TEL / TELE	TELECOMMUNICATIONS / TELEPHONE
TLT	TOILET
TO	TOP OF
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VF	VERIFY IN FIELD
W	WALL
W	WITH
WC	WALL COVERING
WD	WOOD
WDM	WALK OFF MAT
WT	WINDOW TREATMENT
WW	WOOD VENEER
YALL	YOU ALL

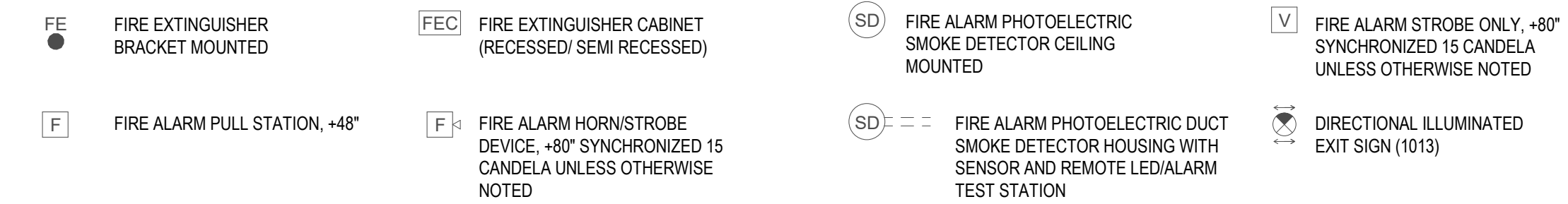
SYMBOLS



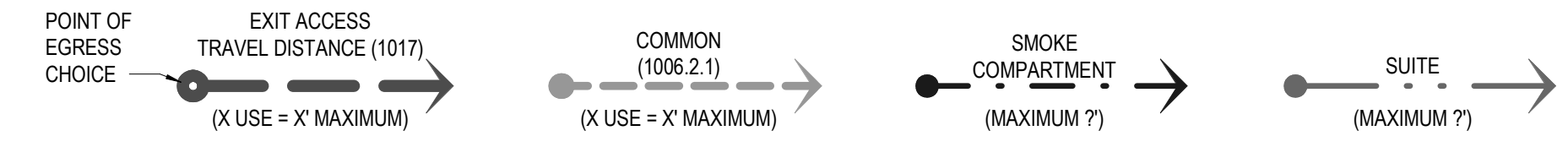
6 5 4 3 2 1
LIFE SAFETY SYMBOLS



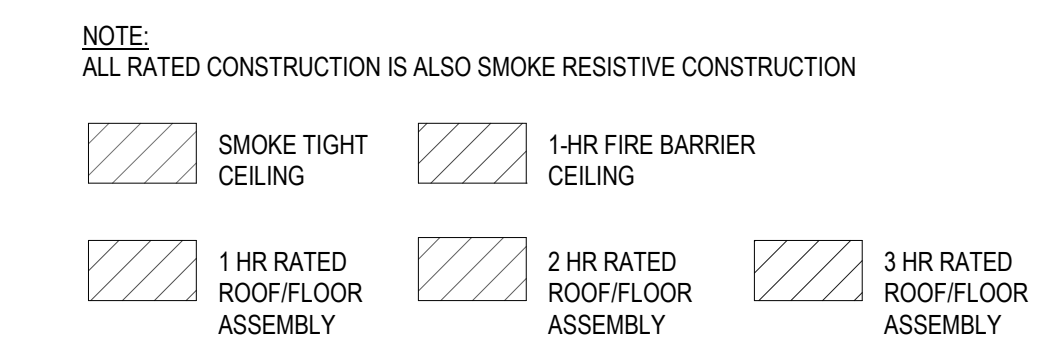
FIRE PROTECTION & ALARM DEVICES (IBC 906 -908)



TRAVEL DISTANCE LIMITATIONS (IBC 1017)



HORIZONTAL ASSEMBLIES (IBC 711)



EGRESS PATH DISTANCES

EXIT PATH 'A'	TYPE	PATH OF EGRESS
COMMON PATH OF EGRESS TRAVEL		28'-10"
EXIT ACCESS TRAVEL DISTANCE		84'-8"
		113'-6"

LIFE SAFETY GENERAL NOTES

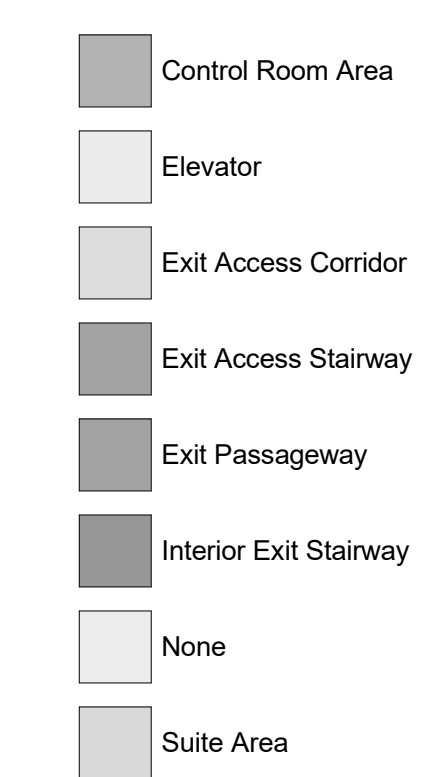
- FIRE EXTINGUISHER CABINETS SHALL BE LOCATED SO THAT THE MAXIMUM TRAVEL DISTANCE SHALL NOT EXCEED 75'-0" (908.3).
- MINIMUM EGRESS WIDTH PER OCCUPANT AT STAIRS = 0.3' PER OCCUPANT (1005.3.1).
- MINIMUM EGRESS WIDTH PER OCCUPANT AT OTHER EGRESS COMPONENTS = 0.2' PER OCCUPANT (1005.3.2).
- A FIRE RATED ASSEMBLY AND SMOKE BARRIER ASSEMBLY SHALL BE STENCILED WITH THE RELEVANT DESIGNATION AS FOLLOWS (703.7):
 - 3-INCH TALL LETTERS IN RED INK OR PAINT.
 - APPLIED AT ALL CONCEALED LOCATIONS (EG. ABOVE CEILING AND INSIDE ELEVATOR SHAFTS) @ 5'-0" OC MAX.

HANBURY

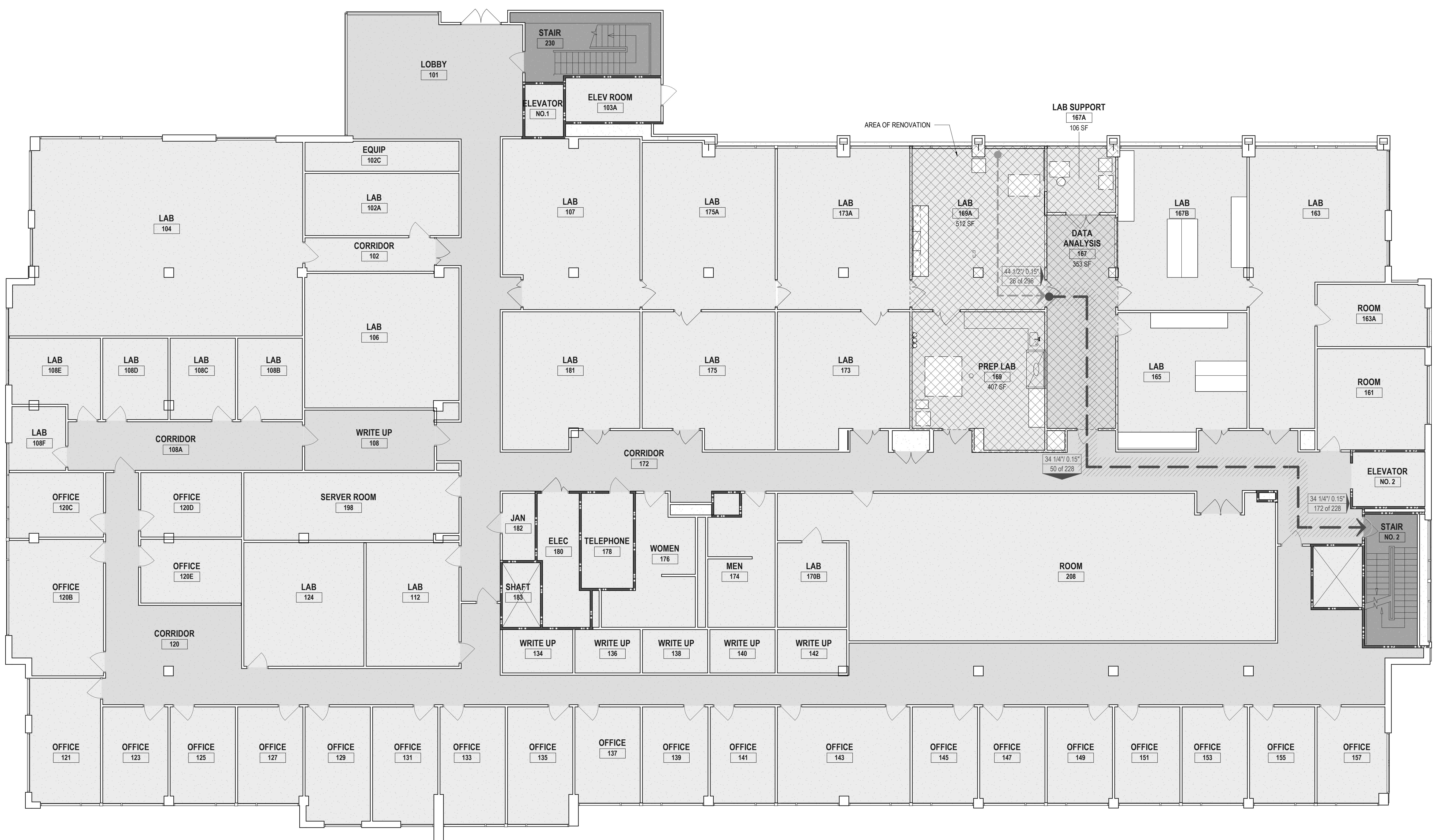
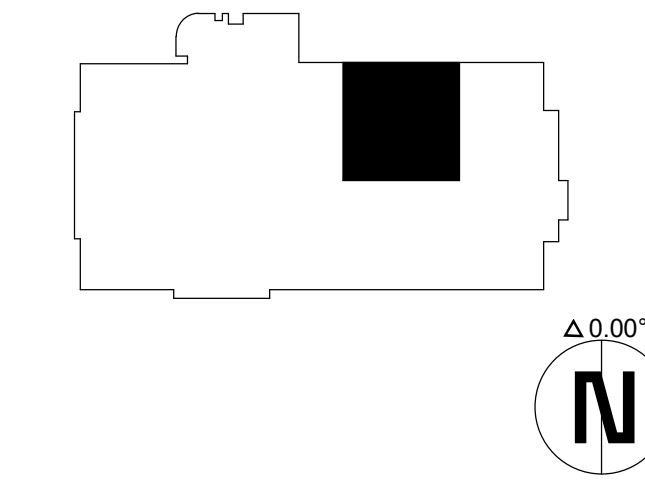
www.hanbury.design
 310 S West Street, Suite 100
 Raleigh, NC 27601
 +1 919 301 0202

Client
 North Carolina State University
 851 Main Campus Drive
 Raleigh, NC, 27612

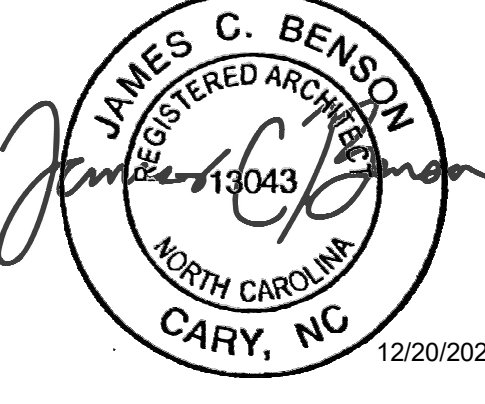
Consultants
 McKim & Creed
 4300 Edwards Mill Road, Suite 200
 Raleigh, NC 27612
 919.233.8891
 www.mckimcreed.com



Keyplan



12/16/24 IFC SET



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
 Status & Date: 12/20/2024

Sheet Title: LIFE SAFETY LEGEND & PLANS

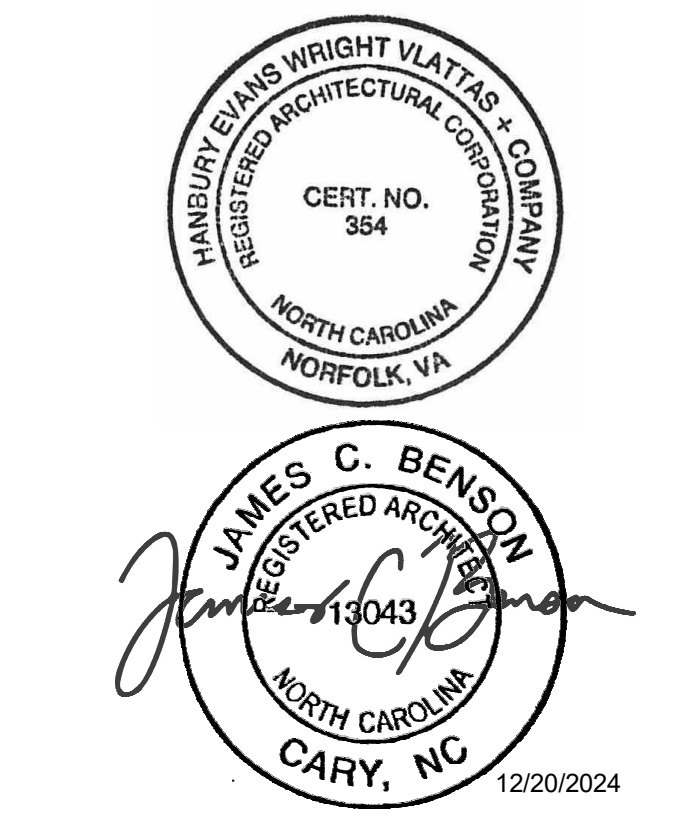
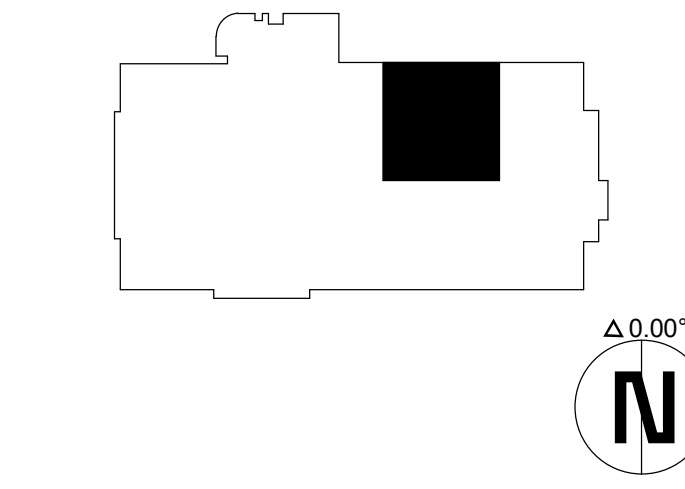
Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
 Building No: 713
 NC State Project ID Number: 202435062
 SCO # 24-28212-01A

Sheet Number:

G110

A6 LEVEL 01 - LIFE SAFETY PLAN

PRINTED: 11/15/2025 4:05:02 PM



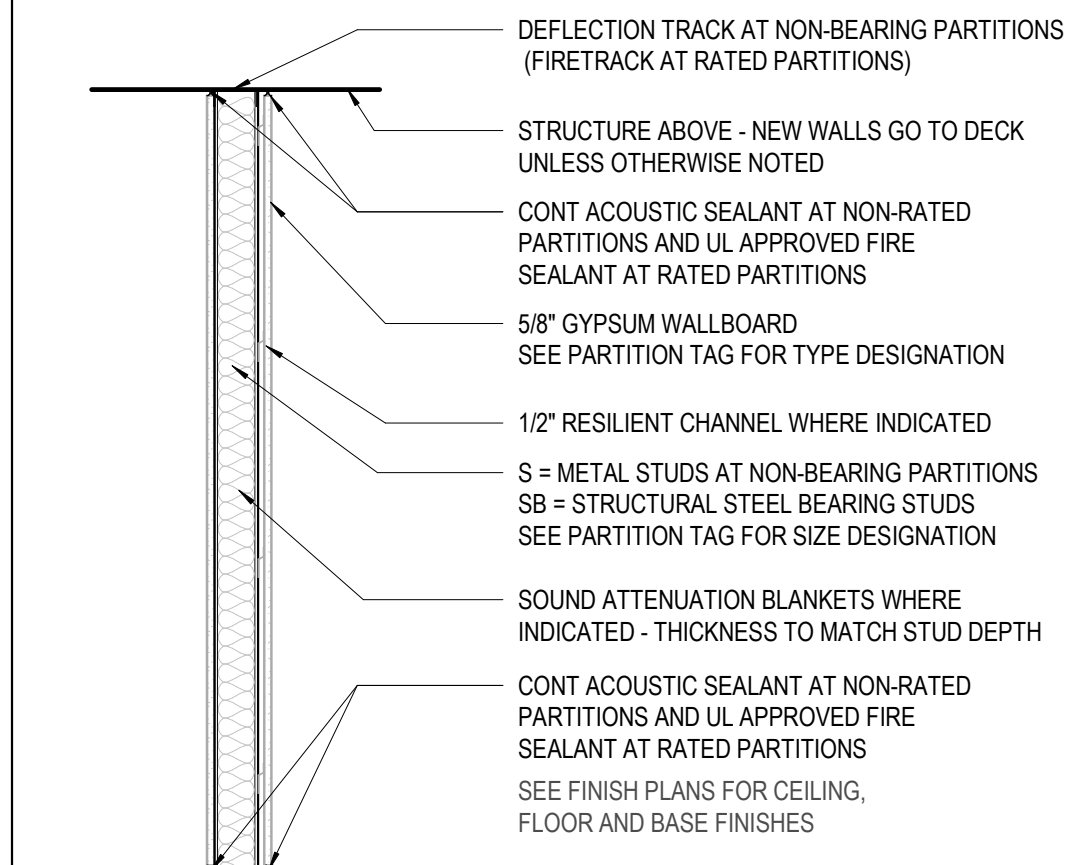
KEYNOTE LEGEND

KEY VALUE	KEYNOTE
A1	PATCH AND REPAIR PARTITION AND FLOORING WHERE CASEWORK HAS BEEN REMOVED.
A2	INFILL STOREFRONT FRAME WITH DRYWALL. CREATE PIPING PASSTHROUGH. REFER TO A2/A101

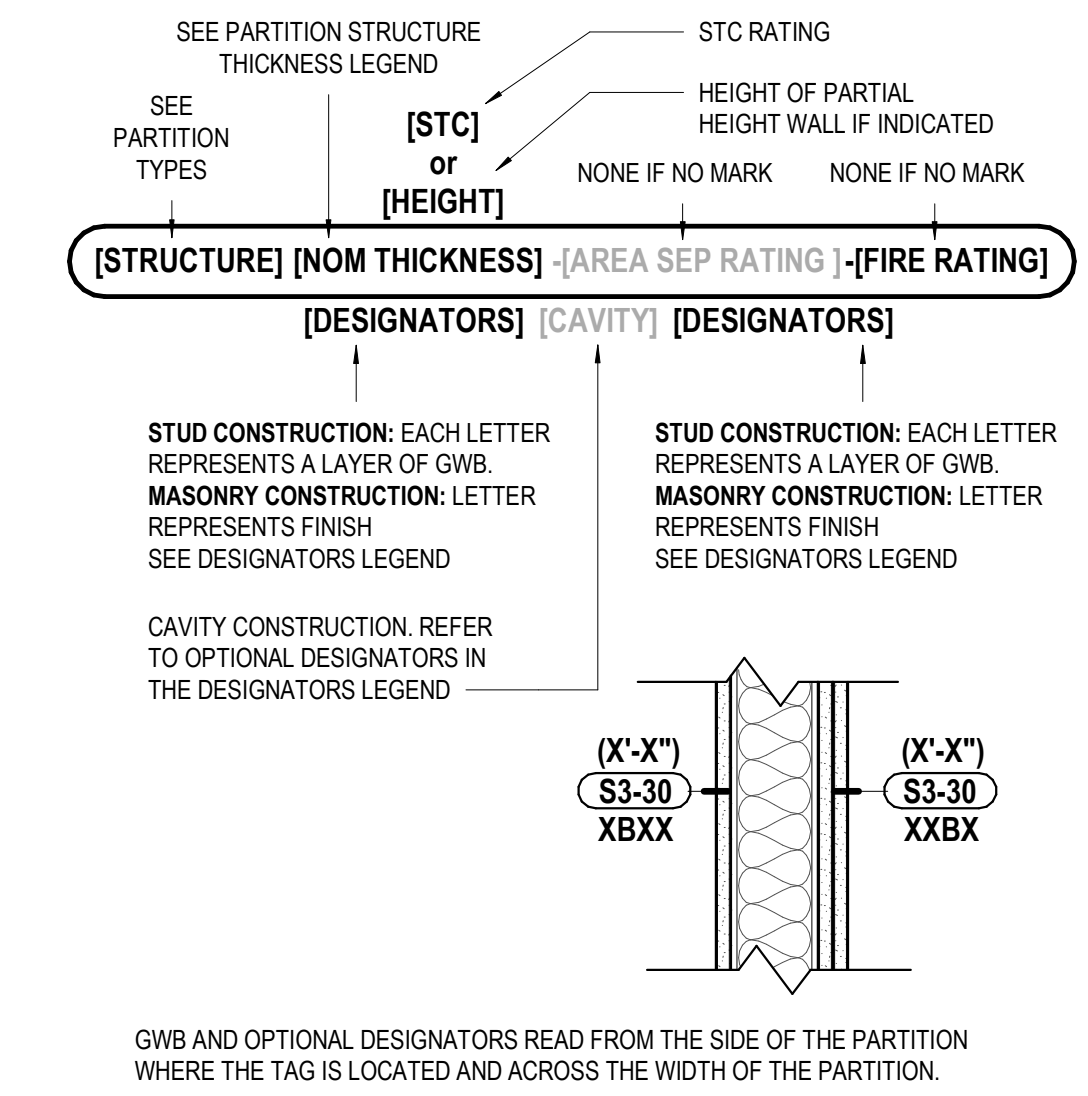
2 1

PARTITION SCHEDULE

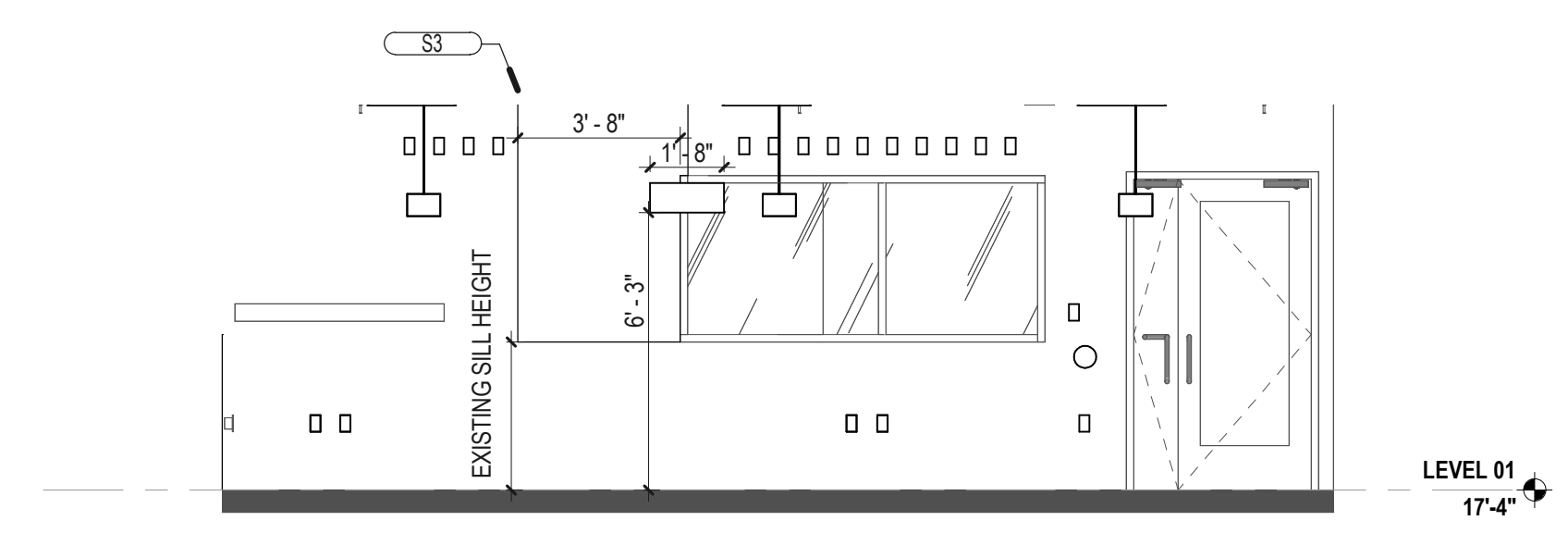
TYPE MARK	CONSTRUCTION DATA		FIRE		UL ASSEMBLY	STC RATING	DESCRIPTION
	FRAMING / CORE SIZE	WIDTH	RATING	UL			
S3 XBX	3'-8"	4'-15/16"	0 MIN				(1) LAYER TYPE "X" GWB, MTL. STUD W/ BATT INSULATION, (1) LAYER TYPE "X" GWB



PARTITION TYPE S / SB - STEEL STUD



PARTITION TAG



A2 ELEVATION - INFILL AT STOREFRONT

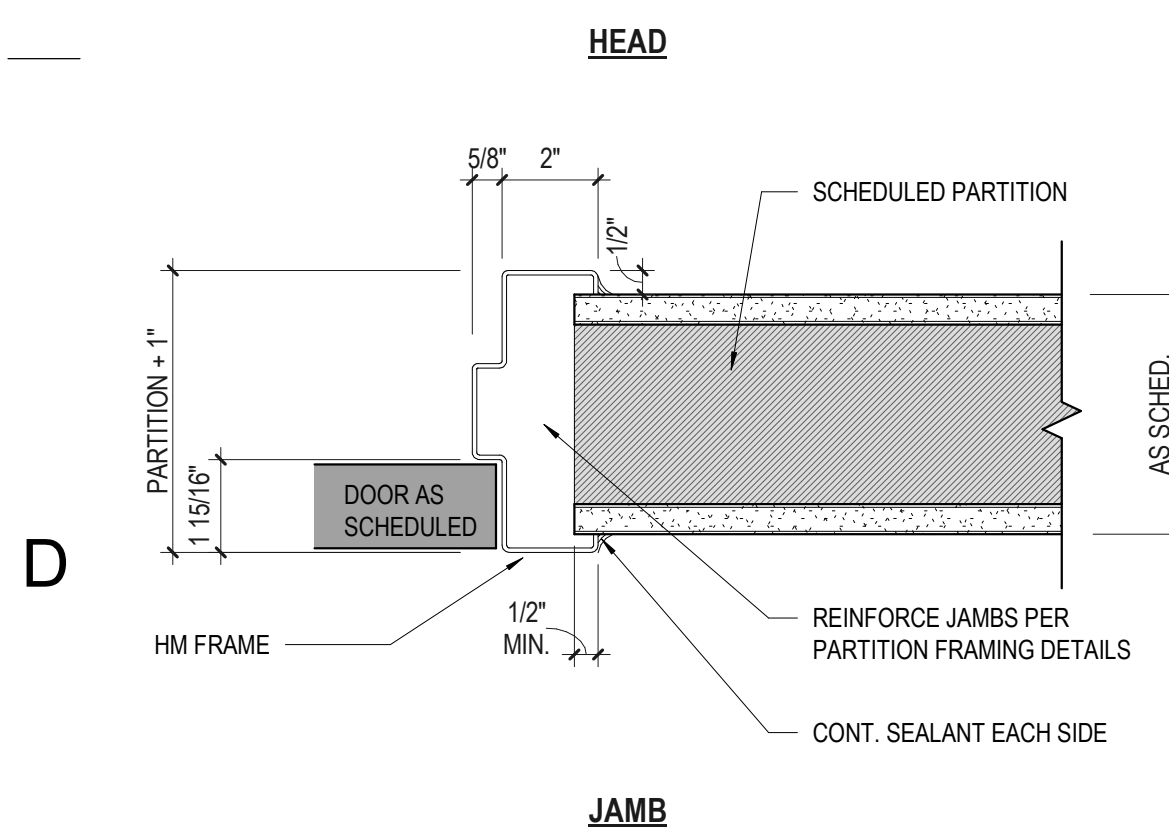
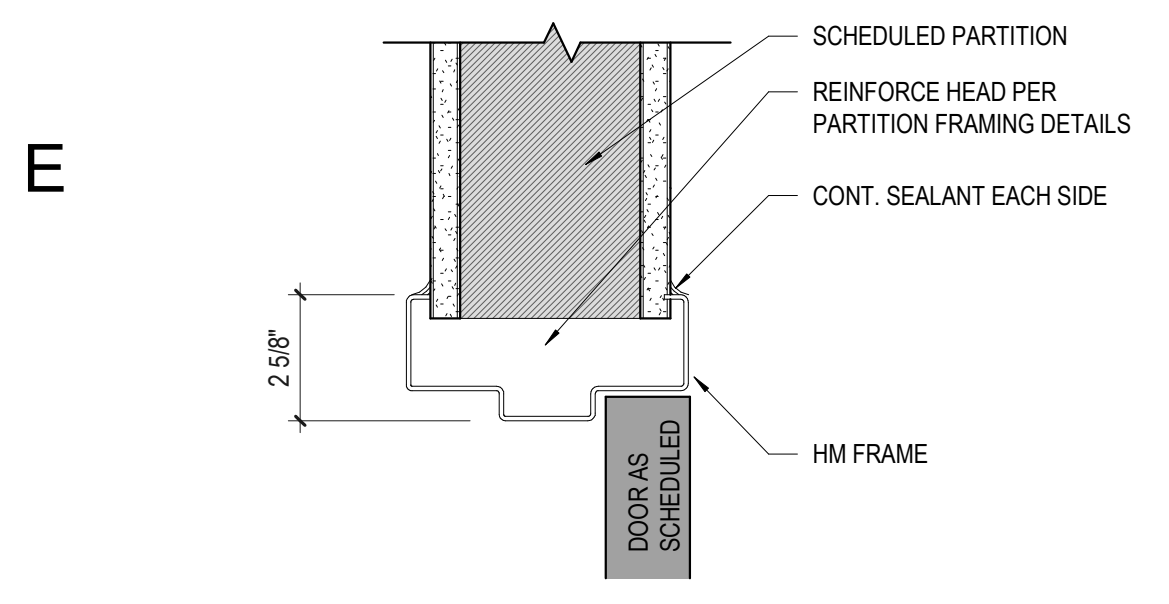
2 1

DOOR FINISH SCHEDULE

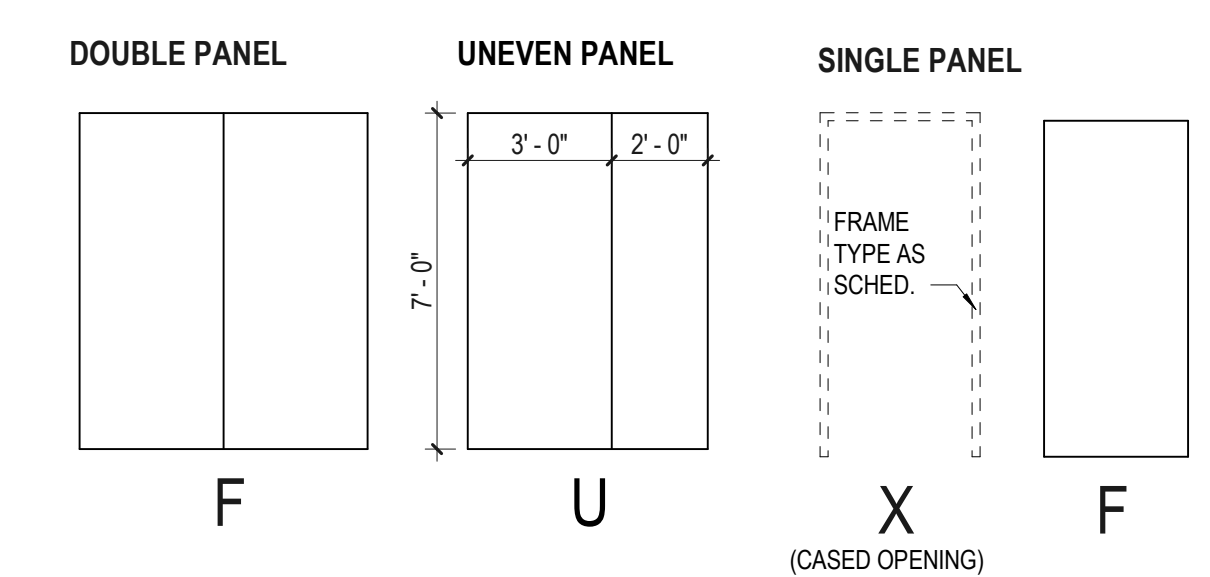
FINISH PACKAGE	FRAME	PANEL			HARDWARE				ACCESSORIES		
		MATERIAL	BODY	GLAZING	INTERIOR	EXTERIOR	PANIC BAR	CLOSER	DOOR GUARD	KICK PLATE	DOOR VIEWER
1	PNT-00X	WD	WD-001	NONE	REFER TO HARDWARE SET HW-1				REFER TO HARDWARE SET HW-1		

DOOR FRAME SCHEDULE

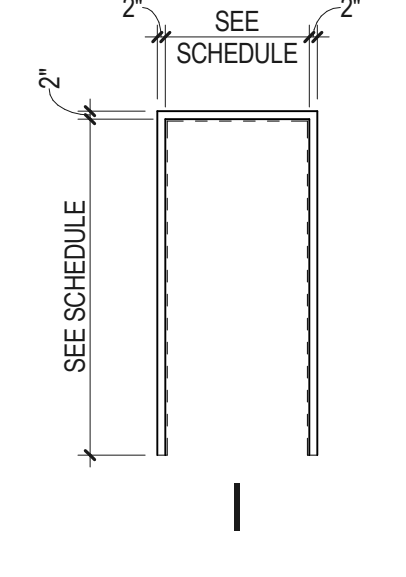
FRAME TYPE	DETAILS			MATERIAL	DESCRIPTION
	HEAD	JAMB	SILL		
I	X/A603	X/A603	X/A603	HM	2" HM FRAME



HM FRAME @ GYP BD



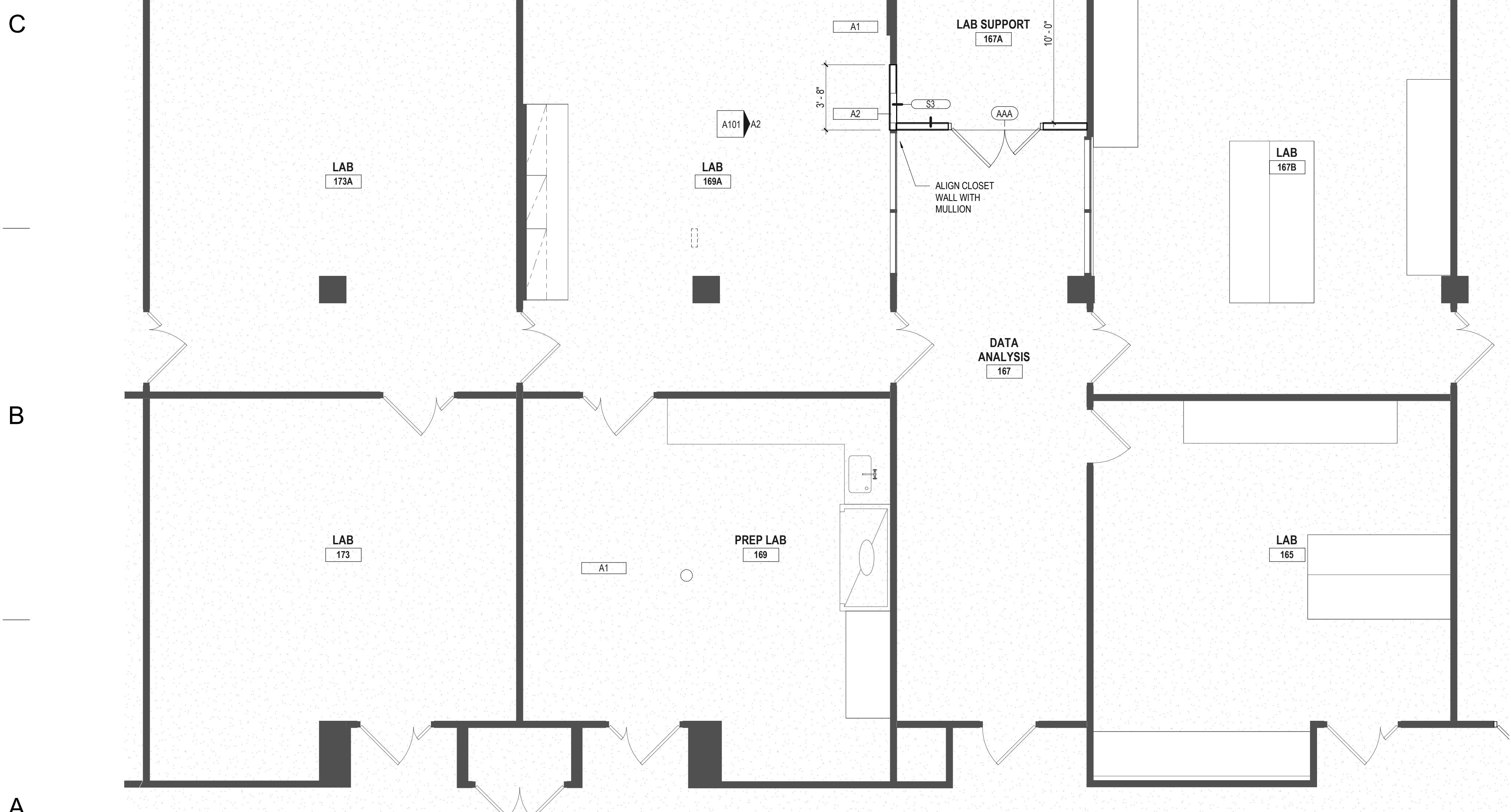
PANEL TYPES



FRAME TYPES

QTY	DESCRIPTION	CATALOGUE NUMBER	FINISH	MFR
6 EA	HINGE	9581 4 S X 4.5 NRP	626	IVE
1 EA	MANUAL FLUSH BOLT	FM455	626	IVE
1 EA	DUST PROOF STRIKE	DP2	626	IVE
1 EA	STOREROOM LOCK	L9080BD 17A	626	SCH
1 EA	SPIC CORE	80736	626	SCH
2 EA	OH STOP	905	630	GLY
1 EA	SURFACE CLOSER	4111 EDA	689	LCN
2 EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1 EA	GASKETING	4855IK PSA	6K	ZER
1 EA	DOOR BOTTOM	3694A	AA	ZER

HARDWARE SET HW-1



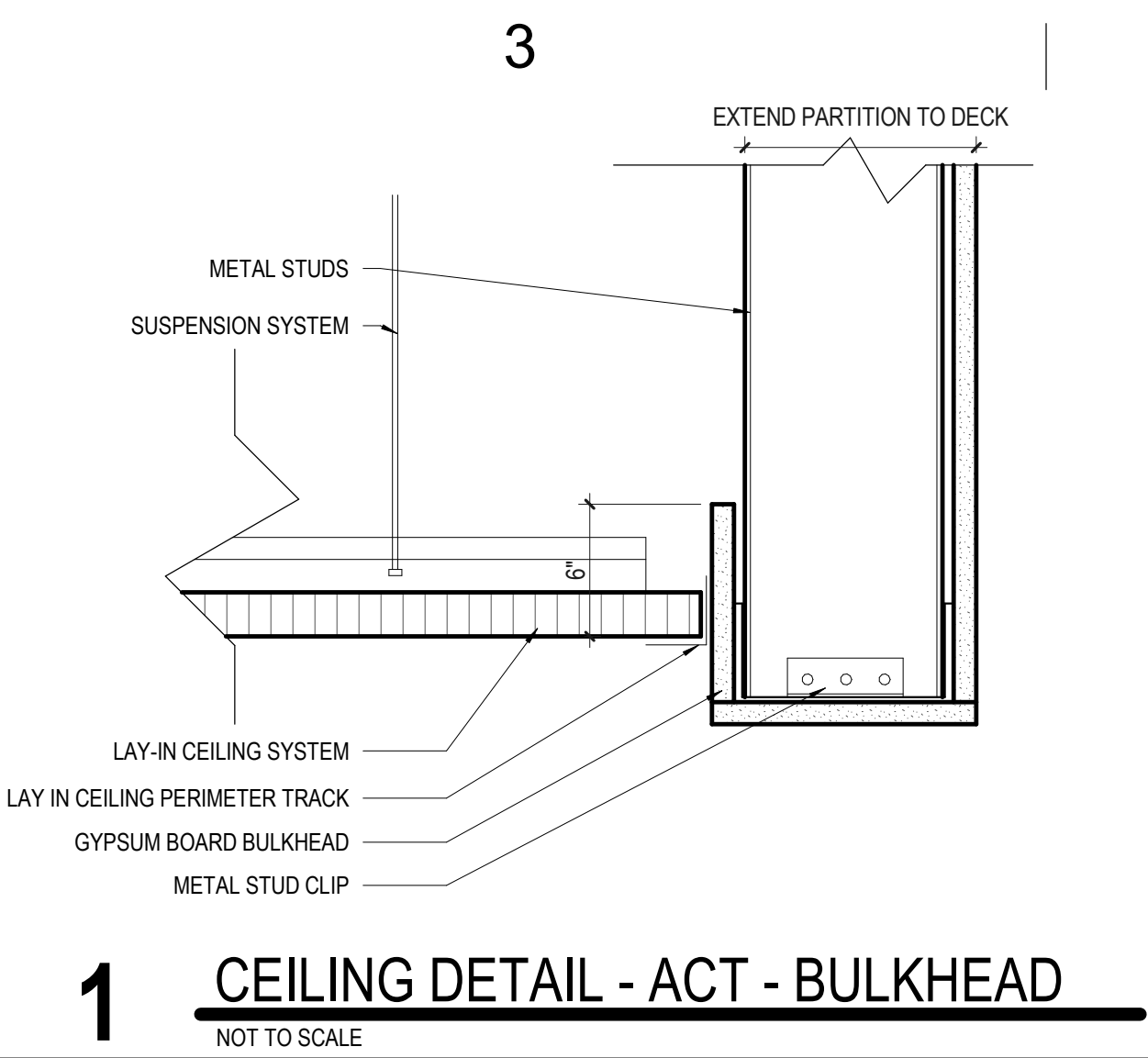
A6 FLOOR PLAN - LEVEL 01

1/4" = 1'-0" DRAWING REF: A2 / A101

PRINTED: 11/15/2025 4:04:48 PM

6 5 4 3

RCP LEGEND					
	SPRINKLER HEAD		EXIT SIGNAGE		WALL WASHING LIGHT FIXTURE
	SMOKE DETECTOR		LAY-IN FLUORESCENT LIGHT FIXTURE		2' x 2' ACCESS PANEL
	SPEAKER		PENDANT LIGHT FIXTURE		HVAC DIFFUSER / PERFORATED GRILLE, SUPPLY AIR - SEE MECHANICAL DRAWINGS FOR MORE INFORMATION
	OCCUPANCY SENSOR		LAY-IN FLUORESCENT LIGHT FIXTURE		HVAC DIFFUSER / PERFORATED GRILLE, RETURN AIR - SEE MECHANICAL DRAWINGS FOR MORE INFORMATION
	CEILING MOUNTED PROJECTOR LOCATION		RECESSED/FLUSH-MOUNTED LIGHT FIXTURE		HVAC LINEAR DIFFUSER - SEE MECHANICAL FOR MORE INFORMATION
	MICROPHONE		WALL-MOUNTED LIGHT FIXTURE		RECESSED CIRCULAR HVAC SUPPLY DIFFUSER - SEE MECHANICAL FOR MORE INFORMATION
	CAMERA LOCATION - CEILING OR WALL-MOUNTED		DOWN LIGHT FIXTURE		
			SEMI-RECESSED DECORATIVE LIGHT FIXTURE		



KEYNOTE LEGEND	
KEY VALUE	KEYNOTE
AC1	NEW LIGHTING PER ELECTRICAL DRAWINGS.
AC3	EXISTING CEILING TO REMAIN. REPLACE TILES AS REQUIRED FOR NEW LIGHTING.

- GENERAL RCP NOTES**
- SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURE TYPE - SEE MECHANICAL DRAWINGS FOR DIFFUSER AND GRILLE TYPES.
 - CENTER CEILING FIXTURES IN ROOM OR SPACE IF NOT OTHERWISE LOCATED BY DIMENSIONS OR GRAPHIC REPRESENTATION.
 - CENTER CEILING FIXTURES IN SUSPENDED ACOUSTICAL CEILING TILE PANELS.
 - ALL DIMENSIONS ON REFLECTED CEILING PLANS ARE CLEAR DIMENSIONS UNLESS OTHERWISE NOTED.
 - REFER TO INTERIOR ELEVATIONS AND BUILDING ELEVATIONS FOR MOUNTING HEIGHT OF WALL MOUNTED LIGHTS.

HANBURY

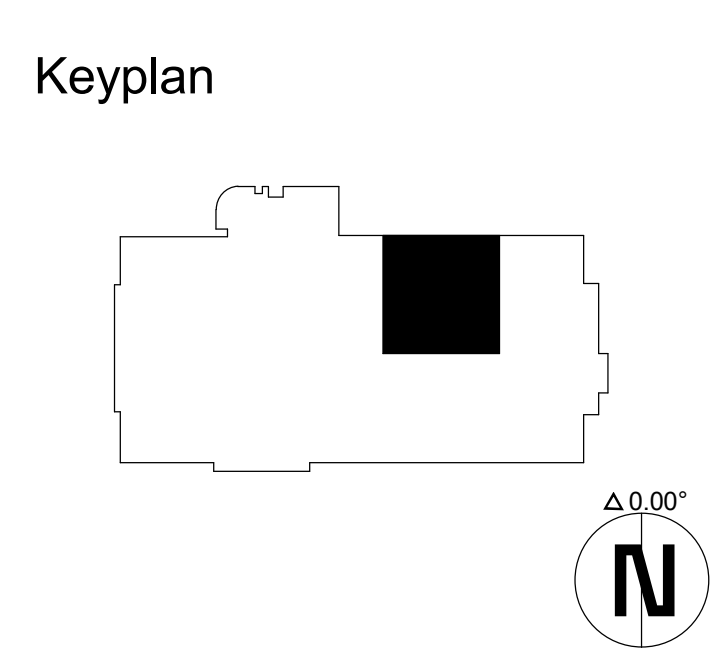
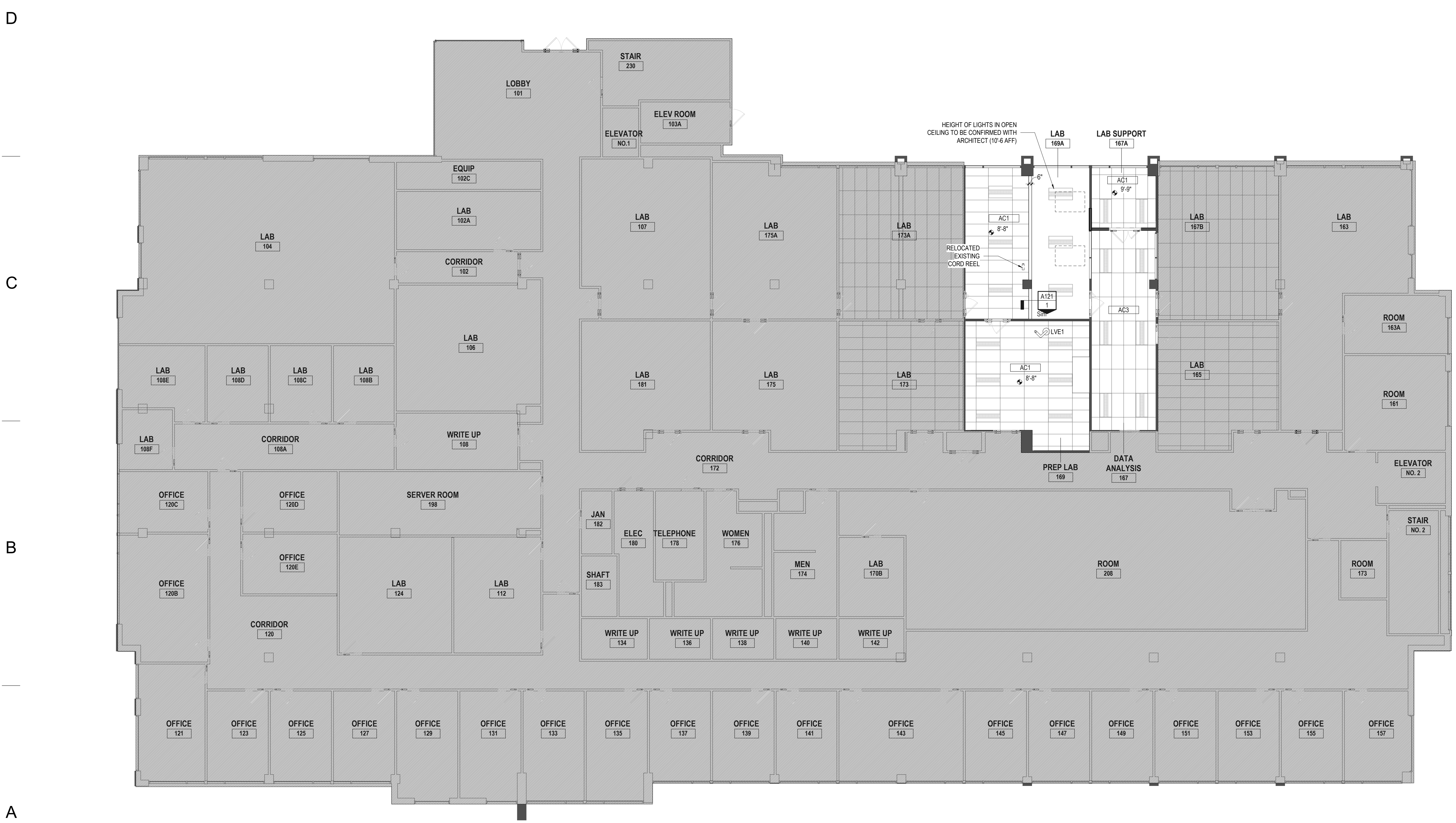
www.hanbury.design
 310 S West Street, Suite 100
 Raleigh, NC 27601
 +1 919 301 0202

Client

North Carolina State University
 851 Main Campus Drive
 Raleigh, NC, 27612

Consultants

McKim & Creed
 4300 Edwards Mill Road, Suite 200
 Raleigh, NC 27612
 919.233.8991
 www.mckimcreed.com



12/16/24 IFC SET

NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
 Status & Date: 12/20/2024

Sheet Title:
A REFLECTED CEILING PLAN LEVEL 01

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
 Building No: 713
 NC State Project ID Number: 202435062
 SCO # 24-28212-01A

Sheet Number:
A121

FINISH LEGEND

DESCRIPTION	MANUFACTURER	MODEL NO	MODEL NAME	DIMENSION	COMMENTS
ACOUSTIC CEILING PANEL (ACT-1) RESILIENT BASE	ARMSTRONG TARKETT	3353 MATCH EXISTING	OPTIMA N/A	GRID: SQUARE LAY- IN 15/16 PANEL; 24" X 48"	INFORMATION PROVIDED AS A BASIS OF DESIGN.

FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	BASE PRIMARY	CEILING PRIMARY	COMMENTS
167	DATA ANALYSIS	RB-1	ACT-1	
167A	LAB SUPPORT		ACT-1	
169	PREP LAB		ACT-1	
169A	LAB		ACT-1	

LAB FURNISHINGS

CHEMICAL FUME HOOD

LAB SINK

FIXED BENCH MODULE UNDER WORK SURFACE

WALL SHELVING (MOUNTED ON WALL RAILS)

FLOOR MOUNTED WIRE SHELVING UNIT

DRYING RACK (PEGBOARD)

EMERGENCY SHOWER AND/OR EYEWASH STATION (REQUIRED CLEARANCE SHOWN)

101-001

OWNER FURNISHED. OWNER INSTALLED EQUIPMENT WITH EQUIPMENT NUMBER TAG. SHOWN FOR COORDINATION PURPOSES ONLY.

CONTRACTOR INSTALLED EQUIPMENT WITH EQUIPMENT NUMBER TAG.

LAB ABBREVIATIONS

MARK	DESCRIPTION	MARK	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	HW	HOT WATER
AIR	HOUSE COMPRESSED AIR	LF	LAB FURNISHINGS
CFH	CHEMICAL FUME HOOD	LFC	LAB FURNISHINGS CONTRACTOR
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	M.C.	MECHANICAL CONTRACTOR
CM	CONSTRUCTION MANAGER	NIC	NOT IN CONTRACT
CSP	CEILING SERVICE PANEL	OFOI	OWNER FURNISHED, OWNER INSTALLED
CV	CONSTANT VOLUME	P.C.	PLUMBING CONTRACTOR
CW	COLD WATER	TW	TEPID (TEMPERED) WATER
RO	REVERSE OSMOSIS WATER	SK	SINK, SINK CABINET
E.C.	ELECTRICAL CONTRACTOR	SS	STAINLESS STEEL
EP	EMERGENCY POWER	VAC	VACUUM
EQ	EQUAL	VAV	VARIABLE AIR VOLUME
ES	EMERGENCY SHOWER	UNO	UNLESS NOTED OTHERWISE
EW	EYEWASH	W/	WITH
FE	FIRE EXTINGUISHER	W/O	WITHOUT
FEC	FIRE EXTINGUISHER CABINET	WSU	WIRE SHELVING UNIT
FP	FILLER PANEL		

HANBURY

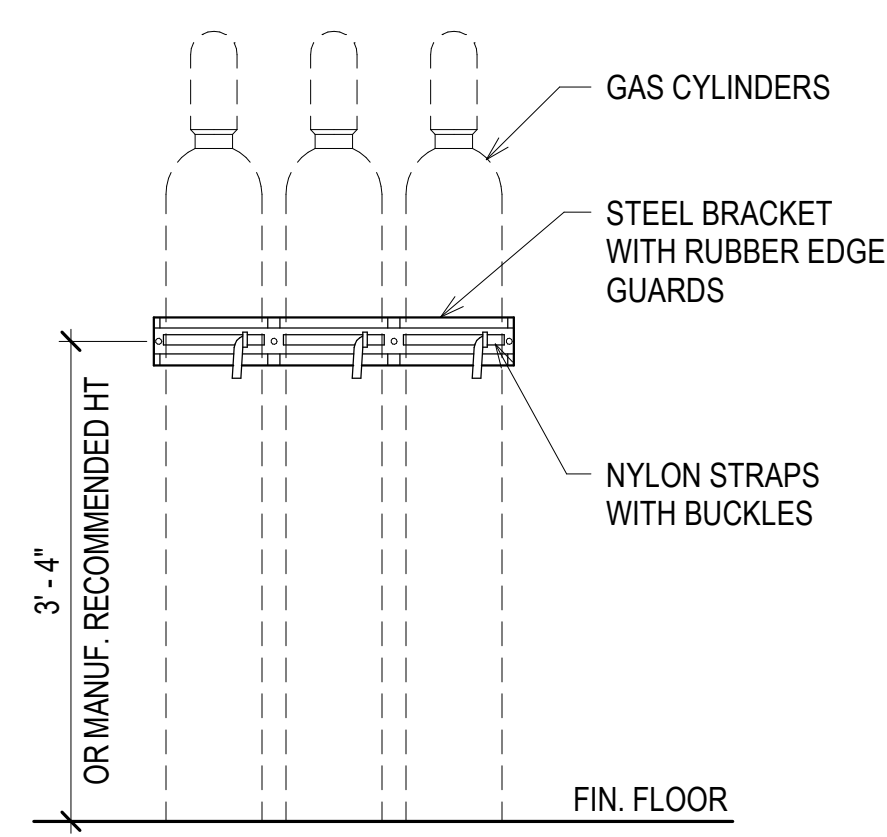
www.hanbury.design
310 S West Street, Suite 100
Raleigh, NC 27601
+1 919 301 0202

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919 233 8691
www.mckimcreed.com



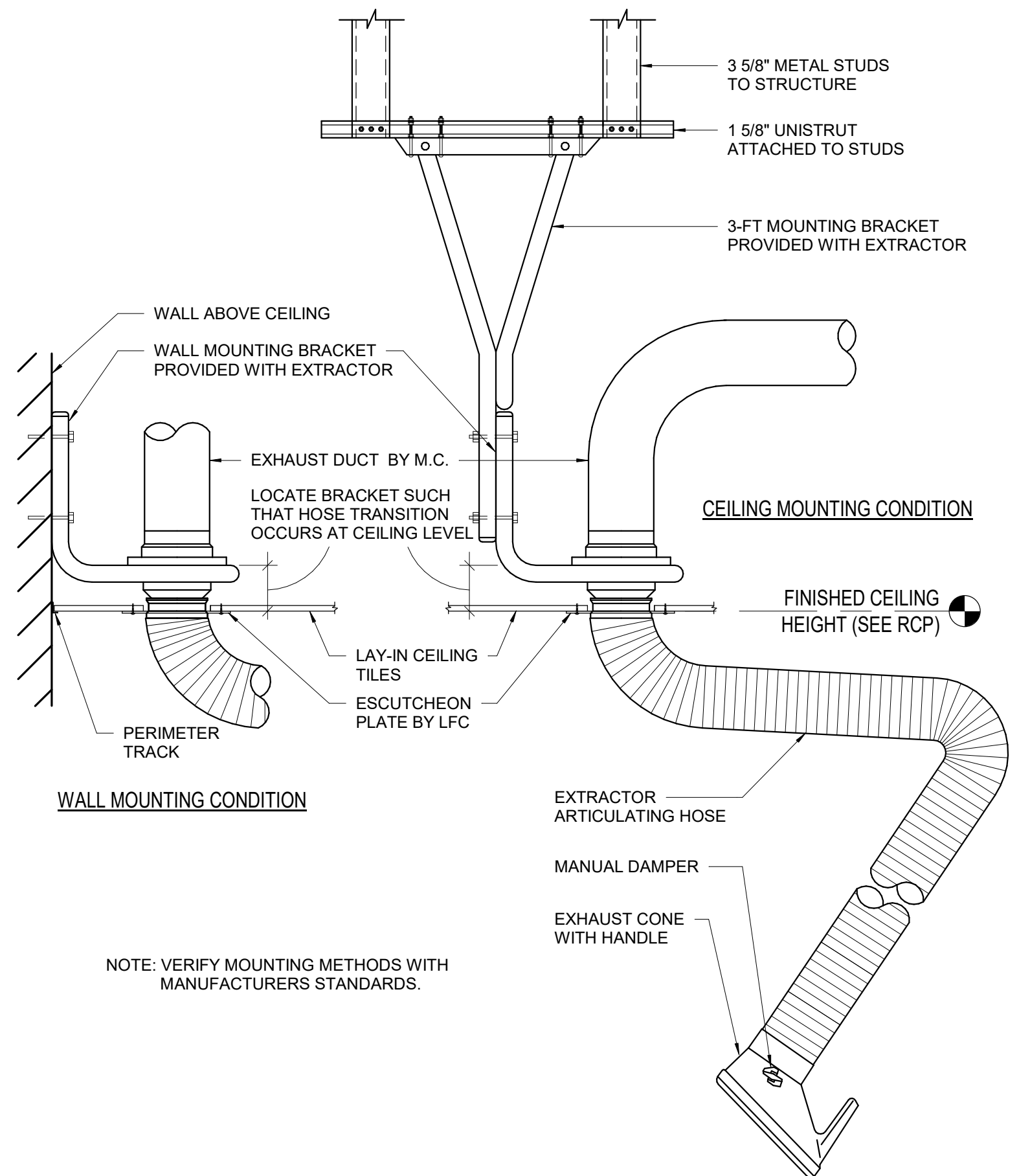
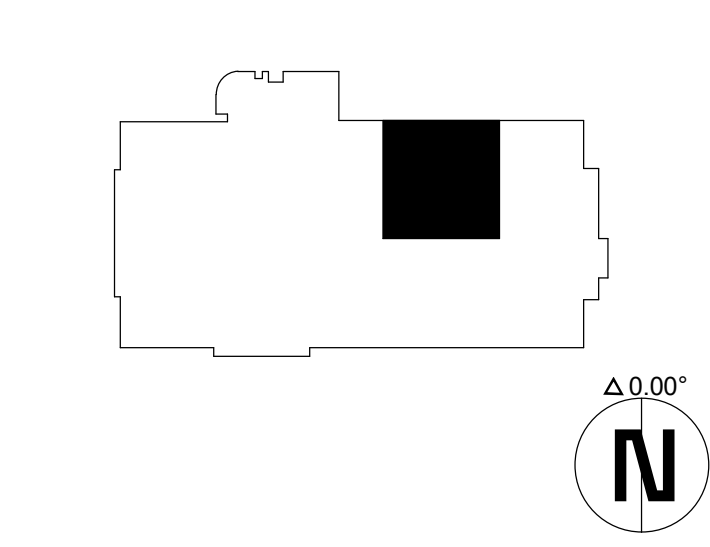
D6 WALL-MOUNTED CYLINDER BRACKET

3/4" = 1'-0"

ACCESSORIES SCHEDULE					
MARK	DESCRIPTION	TYPE	MANUFACTURER	MODEL	REMARKS
CB3	CYLINDER BRACKET	3 CYLINDER	USS SAFETY	GB300FS	WALL-MOUNTED STEEL BRACKET WITH NYLON STRAPS AND TENSION LOCKS

NOTES:
1. ALL MANUFACTURERS AND MODEL NUMBERS LISTED ARE PROVIDED AS A BASIS OF DESIGN.

Keyplan



A6 LOCAL EXTRACTOR (SNORKEL)

1" = 1'-0"

EXHAUST SCHEDULE						
MARK	CONFIG. (L x W x D)	MATERIAL	MANUFACTURER	MODEL	EXHAUST	REMARKS
LVE1	SNORKEL	N/A	FUME EXTRACTOR	FX-HA-0610	350 CFM	

NOTES:
1. ALL MANUFACTURERS AND MODEL NUMBERS LISTED ARE PROVIDED AS A BASIS OF DESIGN.

NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: LAB NOTES, DETAILS, AND SCHEDULES

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202436062
SCO # 24-28212-01A

Sheet Number:

QLOO1

COPYRIGHT ©
HANBURY EVANS WRIGHT VLATTAS + COMPANY

PRINTED: 1/15/2025 4:04:53 PM

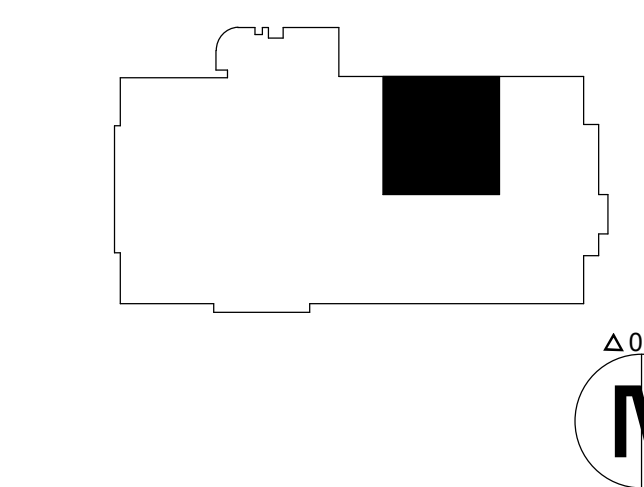
Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

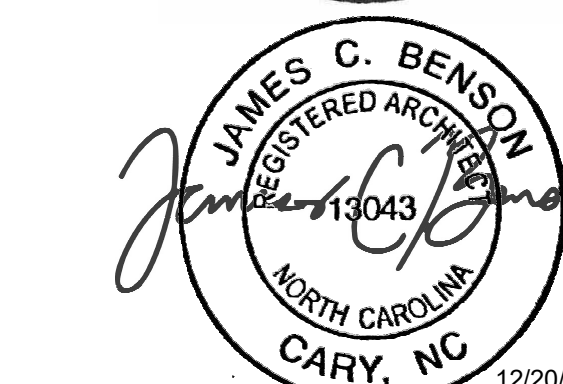
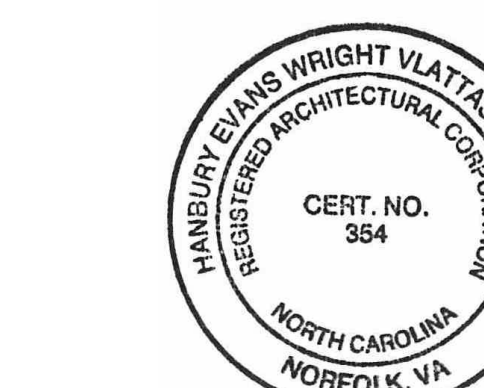
Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com

Keyplan



12/16/24 IFC SET



**NCSU PARTNERS
III RENOVATION
RALEIGH, NORTH
CAROLINA**

Project Number: 22057.03
Status & Date: 12/20/2024

**Sheet Title:
LABORATORY FLOOR
PLANS**

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

Sheet Number:

QL400

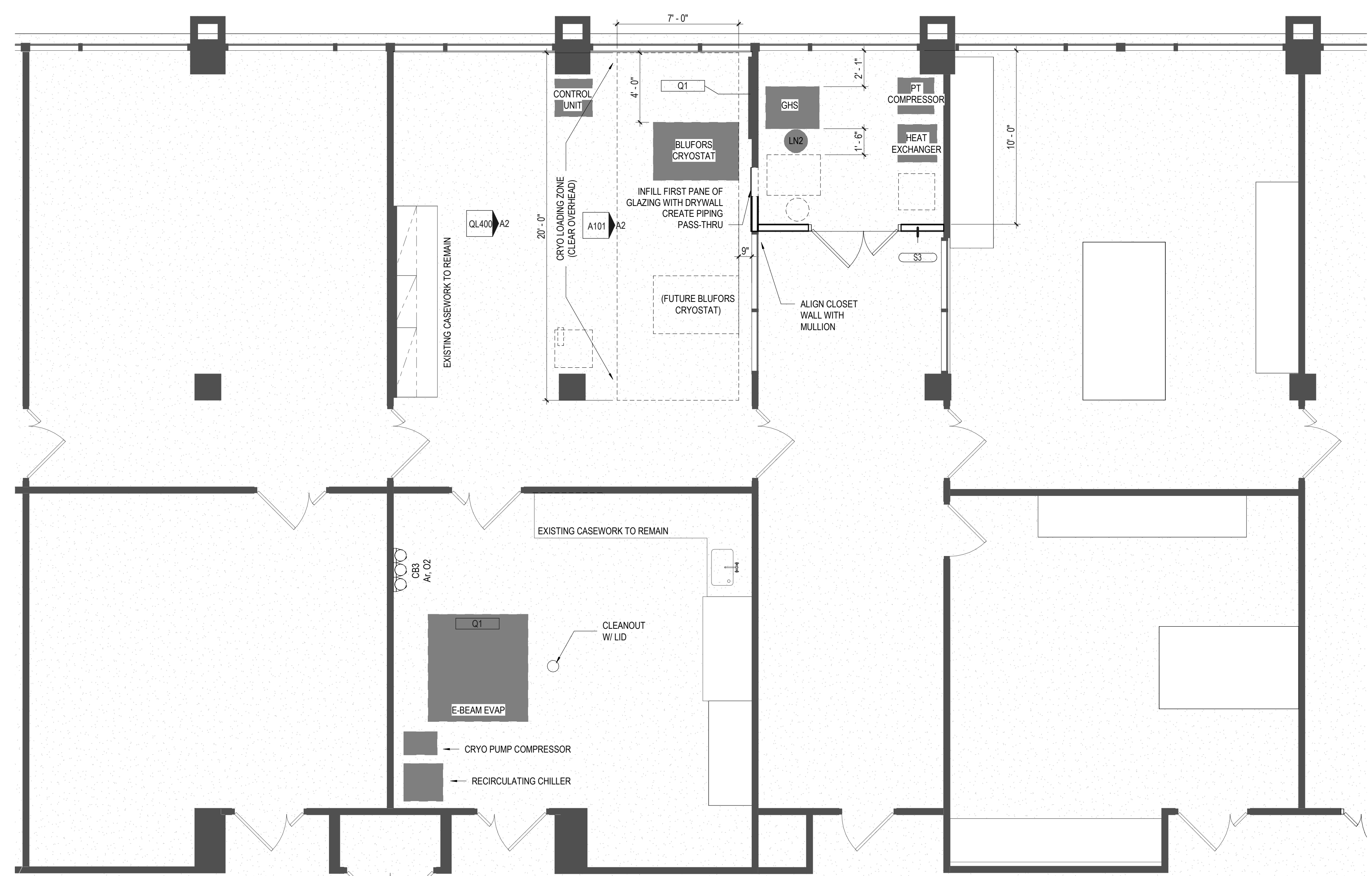
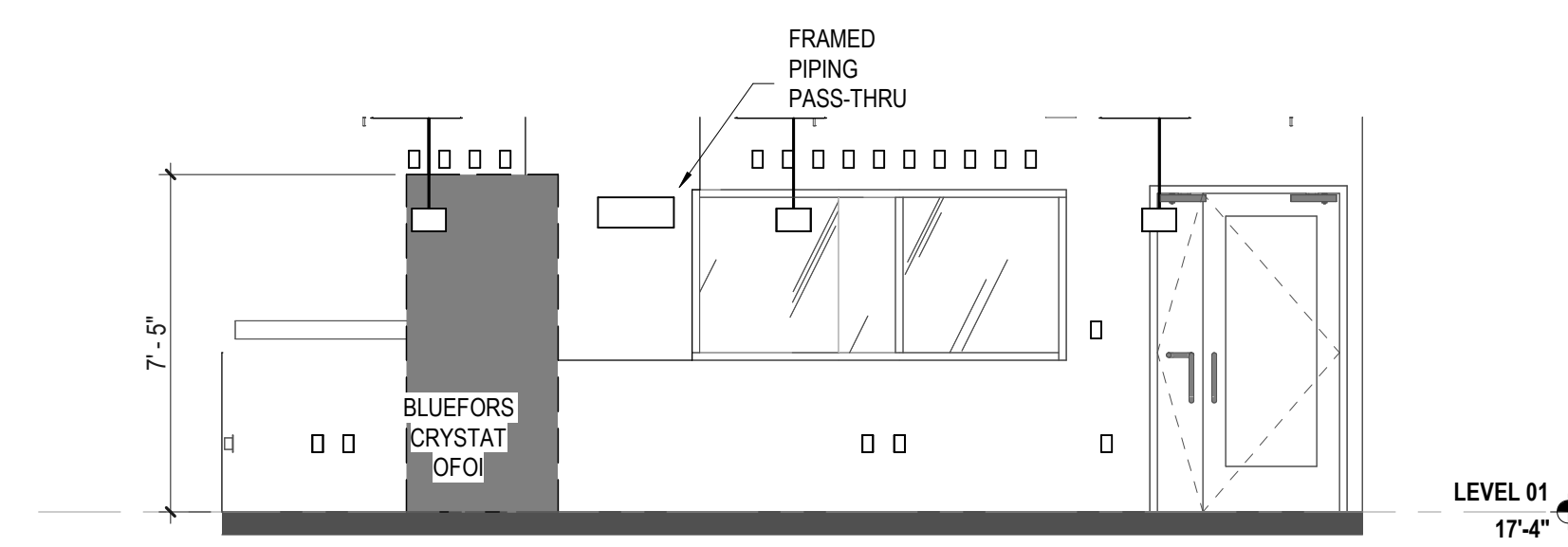
GENERAL NOTES LABORATORY

- DEFINITION: THE TERM "DESIGN PROFESSIONAL" MEANS "ARCHITECT," "PROFESSIONAL ENGINEER," "INTERIOR DESIGNER" OR OTHER PARTY RESPONSIBLE FOR PROVIDING DESIGN SERVICES AS APPROPRIATE.
- LAB FURNISHINGS CONTRACTOR(S) SHALL CAREFULLY EXAMINE THE LABORATORY FURNISHINGS DRAWINGS, SPECIFICATIONS AND ALL OTHER DRAWINGS/SPECIFICATIONS TO PROPERLY DETERMINE CONTRACTUAL RESPONSIBILITIES.
 - FOR ACTUAL ROOM DIMENSIONS, REFER TO THE ARCHITECTURAL PLANS.
 - LAB FURNISHINGS CONTRACTOR(S) SHALL FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION.
 - OVERALL LENGTH OF WORK SURFACES SHALL BE DETERMINED BY THE CASEWORK AND/OR DIMENSIONS AS INDICATED ON PLANS. LENGTHS SHALL REMAIN CONSTANT REGARDLESS OF SUCCESSFUL BIDDER'S STANDARDS. WORK SURFACES SHALL OVERHANG 1" AT EACH END AND 1" FROM FRONT OF BASE CABINET. WHEN OVERALL DIMENSIONS ARE GIVEN, 1" OVERHANG IS INCLUDED.
 - ON WALL-TO-WALL CASEWORK ASSEMBLIES, THE "OPEN" SPACE DIMENSION SHALL BE DETERMINED IN THE FIELD. IF THERE IS MORE THAN ONE "OPEN" SPACE INDICATED, SPACE AVAILABLE FOR "OPEN" SPACE SHALL BE EVENLY DISTRIBUTED UNLESS OTHERWISE NOTED.
 - WORK SURFACE MATERIAL TO BE 1" THICK EPOXY RESIN CONSTRUCTION UNLESS OTHERWISE NOTED. SEE LAB PLANS AND WORK SURFACE MATERIAL SCHEDULE FOR TYPE OF WORK SURFACE. DIMENSIONS FOR WORK SURFACE HEIGHTS ARE NOMINAL WITHIN 3/4" OF THE REQUIRED HEIGHT.
 - FILLER PANELS SHALL BE USED BETWEEN BACK OF CABINETS OR FUME HOODS AND WALLS (AT EXPOSED ENDS AND WHEN BASE CABINETS AND/OR FUME HOODS ARE SET BACK-TO-BACK). FILLER PANELS SHALL ALSO BE USED AT THE ENDS OF BENCHES, ALL KNEE SPACES AND AT ALL EXPOSED CORE AREAS.
 - ALL EXPOSED-TO-VIEW WORK SURFACE EDGES, BACKS OF SPLASHES, BACKS OF WORK SURFACES AND SPLASHES SHALL BE CAULKED, FILLED, SEALED AND FINISHED.
 - ARCHITECT WILL SELECT COLORS FOR ALL LAB FURNISHING COMPONENTS OF PROJECT (WHERE APPLICABLE) FROM THE MANUFACTURER'S FULL RANGE OF COLORS.
 - ALL PENETRATIONS THROUGH WORK SURFACES SHALL BE CAULKED BY THE LAB FURNISHINGS CONTRACTOR(S) WITH APPROVED ACID-RESISTANT SEALANT.
 - LOCATION OF EQUIPMENT, SUCH AS CEILING SERVICE PANELS, FUME HOODS, UTILITY CHASES OR ANY OTHER ITEMS THAT MAY INTERFERE WITH LIGHTING, STRUCTURAL OR MECHANICAL SYSTEMS SHALL BE CAREFULLY COORDINATED BY THE LAB FURNISHINGS CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY.
 - UTILITY CHASES SHALL BE CENTERED WITHIN INDIVIDUAL BASE CABINET MODULES UNLESS OTHERWISE NOTED.
 - ANY TYPE OF UNISUIT OR SLOTTED STANDARD FRAME SUPPORTS (USED FOR RACKS, SHELVING, ETC.) SHALL BE SPACED AND POSITIONED TO CLEAR FITTINGS, SINKS AND CUPSINKS.
 - FOR LAB SERVICE FITTINGS, TYPES, LOCATION AND ORDER, SEE ENLARGED LAB PLANS. THESE FITTINGS SHALL BE FURNISHED AND DELIVERED BY THE LAB FURNISHINGS CONTRACTOR AND INSTALLED BY THE PLUMBING OR MECHANICAL PIPING CONTRACTOR. CASEWORK SINKS SHALL BE FURNISHED AND INSTALLED BY THE LAB FURNISHINGS CONTRACTOR.
 - ALL PLUMBING/MECHANICAL PIPING SYSTEM SUPPORTS SHALL BE FURNISHED AND INSTALLED BY THE PLUMBING/MECH PIPING CONTRACTOR. THE SPACING HANGERS AND FASTENERS SHALL BE AS PER PIPE MANUFACTURER'S RECOMMENDATIONS.
 - ELECTRICAL CONTRACTOR SHALL PROVIDE POWER/DATA DEVICES IN CEILING SERVICE PANELS AND WALL-MOUNTED RACEWAYS.
 - WALL SHELVING AND WALL CABINETS SHALL BE ALIGNED WITH BASE CABINETS UNLESS OTHERWISE NOTED. WALL-TO-WALL SHELVING OR CABINETS SHALL BE CENTERED ON WALL AS A SINGLE STRING.
 - GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL BLOCKING FOR CASEWORK AND SHELVES. LAB FURNISHINGS CONTRACTOR IS REQUIRED TO COORDINATE WITH GENERAL CONTRACTOR FOR LOCATION AND SIZE OF BLOCKING.

KEYNOTE LEGEND

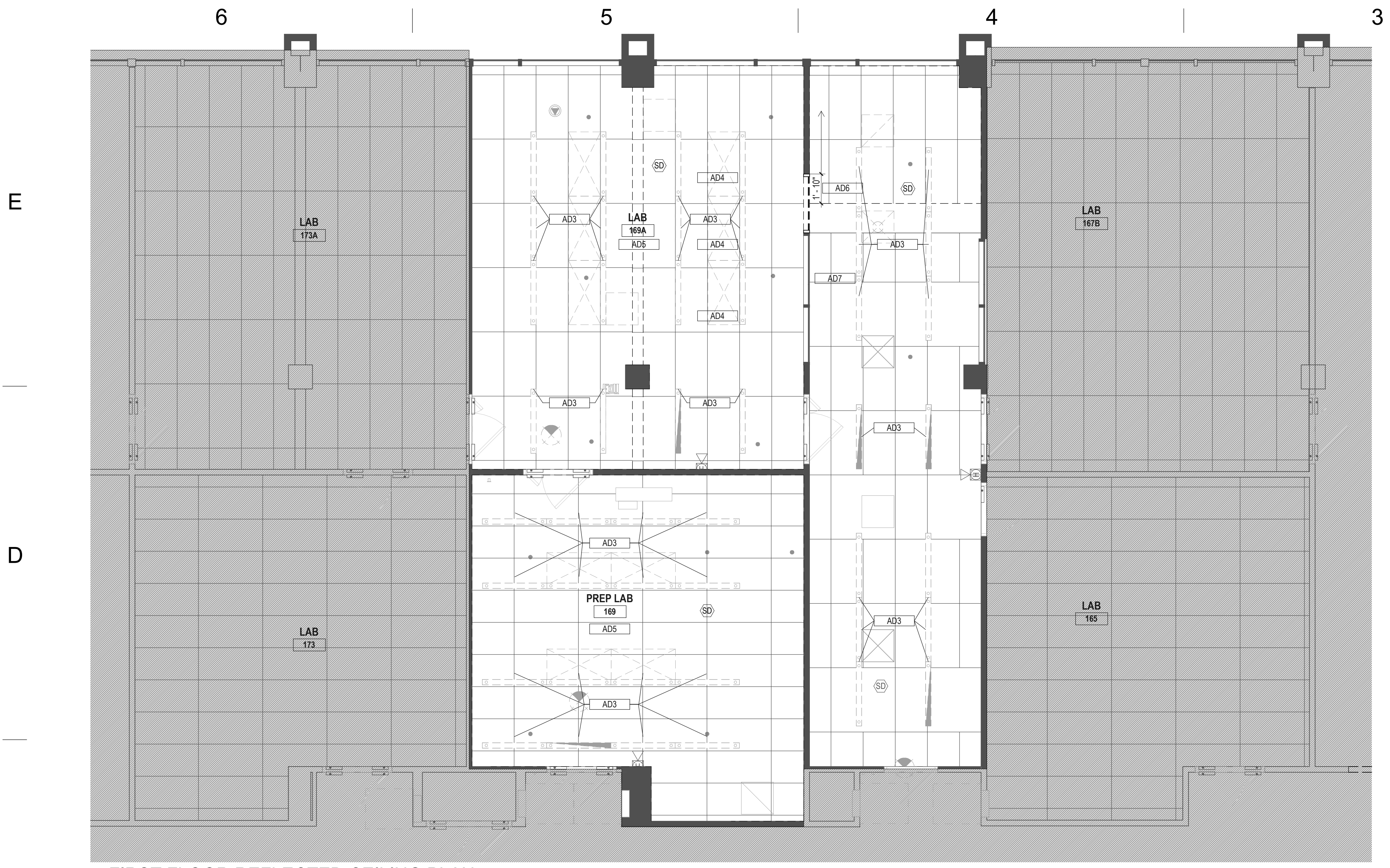
KEY VALUE	KEYNOTE
Q1	PATCH AND REPAIR PARTITION AND FLOORING WHERE CASEWORK HAS BEEN REMOVED.

A2 ELEVATION - EQUIPMENT AT LAB 169A

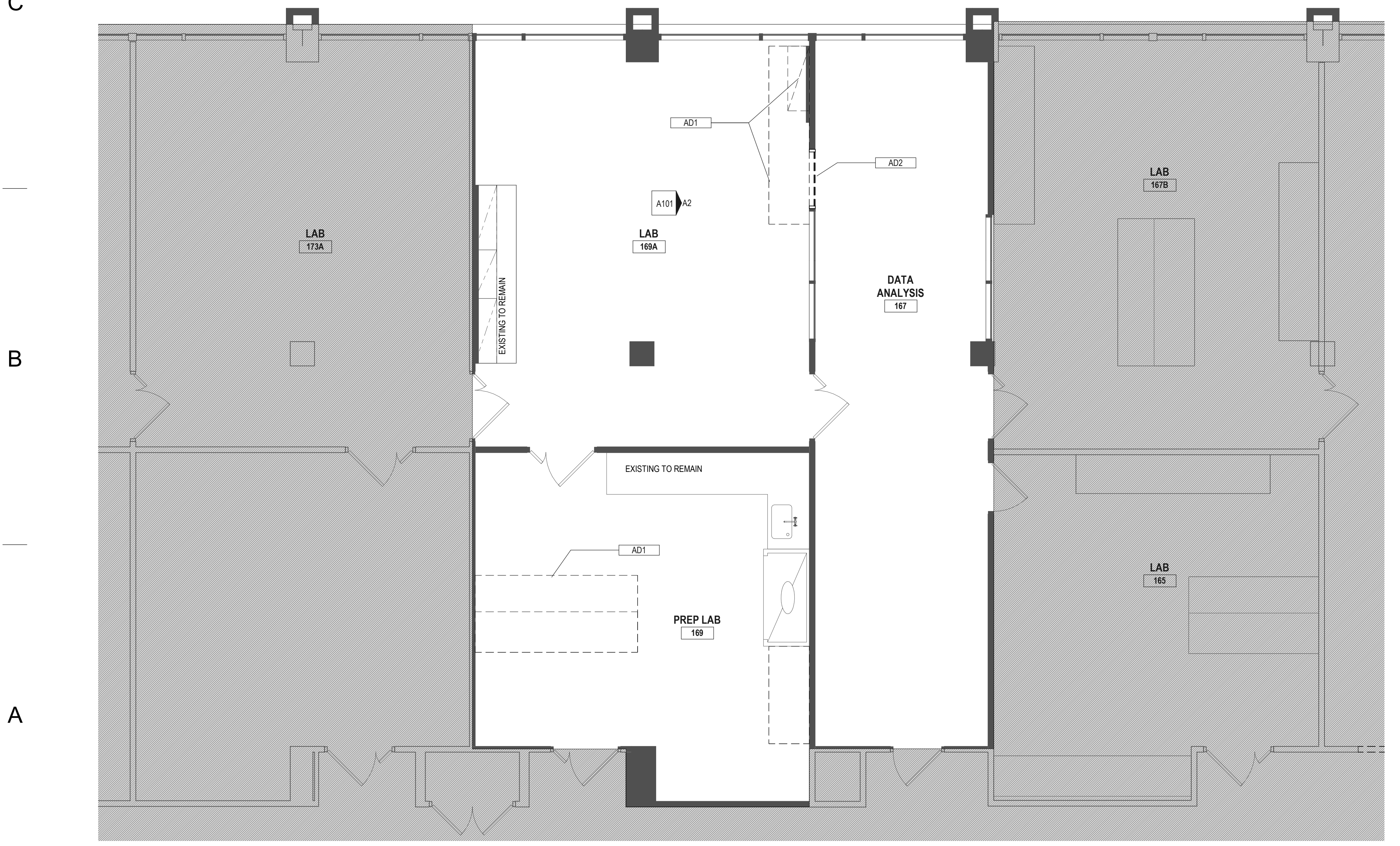


NOTE:
DIMENSIONS OF E-BEAM EVAPORATOR HAVE NOT BEEN PROVIDED
THE DESIGN TEAM HAS DRAWN THE INSTRUMENTATION TO BE REPRESENTATIVE OF THE POSSIBLE SIZE OF A UNIT. (THE PURCHASER MUST PROVIDE DRAWINGS OF UNIT AS PURCHASED FOR DRAWINGS TO BE VERIFIED.)
THE BLUEFORS SYSTEM REQUIRES A MIN. OF 18" CLEARANCE ON TWO ON THE BACK AND SIDE FOR ACCESS. THE DESIGN TEAM HAS PROVIDED 2' FOR CLEAR CONNECTION ACCESS. THE DESIGN TEAM HAS CREATED A SMALLER CLOSET WITHIN 167, AN ADDITIONAL COMPRESSOR WITHIN THIS ROOM WILL STILL ALLOW FOR LESS THAN THE 12M MAX. RUN FOR PIPING TO AN ADDITIONAL BLUEFORS SYSTEM. IF THERE IS A DESIRE TO INCREASE THE SIZE OF THIS CLOSET, THIS WILL NOT IMPACT PRICING.

A6 PRELIMINARY LAB LAYOUT



C6 FIRST FLOOR REFLECTED CEILING PLAN
 1/4" = 1'-0" DRAWING REF: A2 / A101 FOR RCP SYMBOL LEGEND REFER TO SHEET A121



A6 LEVEL 01 DEMOLITION PLAN
 1/4" = 1'-0" DRAWING REF: A2 / A101

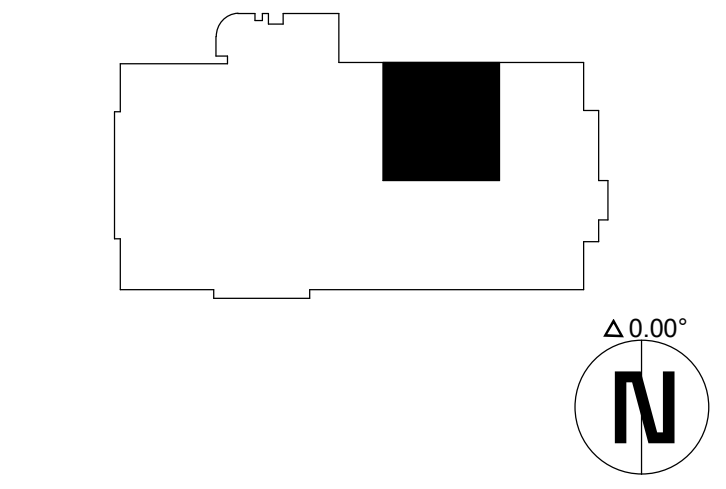
KEYNOTE LEGEND

KEY VALUE	KEYNOTE
AD1	REMOVE EXISTING CASEWORK IN ITS ENTIRETY.
AD2	REMOVE GLAZING FROM STOREFRONT FRAME.
AD3	REMOVE EXISTING PENDANT LIGHTING FIXTURE IN ITS ENTIRETY. REFER TO ELECTRICAL DRAWINGS.
AD4	REMOVE EXISTING DIFFUSER. REFER TO MECHANICAL DRAWINGS.
AD5	REMOVE CEILING GRID IN THIS ROOM IN ITS ENTIRETY.
AD6	REMOVE CEILING GRID WITHIN THE SPECIFIED DIMENSIONS.
AD7	EXISTING CEILING GRID TO REMAIN.

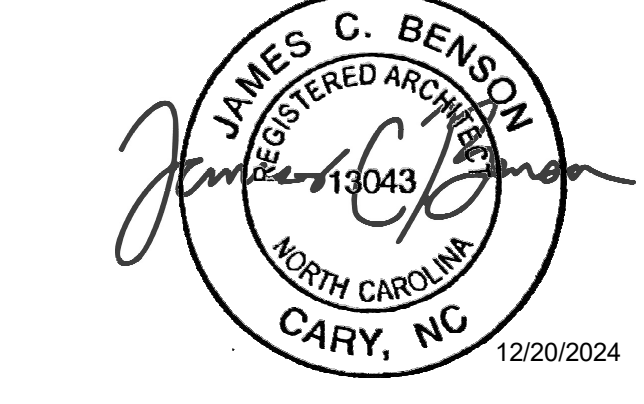
GENERAL DEMOLITION NOTES

- PRIOR TO PROCEEDING WITH ANY WORK UNDER THIS CONTRACT, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL NECESSARY SAFEGUARDS TO MAINTAIN ALL PARTS OF THE EXISTING SITE AND BUILDINGS IN A SAFE CONDITION THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL PROTECT THE EXISTING BUILDING, ITS CONTENTS AND ALL BUILDING MECHANICAL, ELECTRICAL, FIRE PROTECTION, TELECOMMUNICATIONS AND ALL OTHER MISCELLANEOUS SYSTEMS FROM DAMAGE AT ALL TIMES. ALL DAMAGES RESULTING DIRECTLY OR INDIRECTLY FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO A LIKE NEW CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ANY ADDITIONAL COST TO THE OWNER.
- IF ASBESTOS CONTAINING MATERIAL IS DISCOVERED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND OPERATIONS IN THE AFFECTED AREA AND NOTIFY THE OWNER'S PROJECT REPRESENTATIVE. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT HIS PERSONAL, SUBCONTRACTORS AND ALL SITE VISITORS FROM EXPOSURE TO THE ASBESTOS CONTAINING MATERIAL.
- CONFIRM EXISTING PAINT HAS BEEN TESTED AND DETERMINED TO CONTAIN LEAD ABOVE THE MINIMUM DETECTION LIMIT. ALL EXISTING MATERIALS SHALL BE ASSUMED TO BE PAINTED UNLESS INDICATED OTHERWISE. PERFORM ALL WORK ON EXISTING PAINTED MATERIALS IN ACCORDANCE WITH CONTRACTORS LEAD PAINT COMPLIANCE PLAN.
- UNLESS LIGHT BALLASTS ARE CLEARLY LABELED 'PCB FREE' AND LIGHT FIXTURE BULBS ARE IDENTIFIED AS 'LOW MERCURY' AND HAVE DOCUMENTATION INDICATING THAT THE LAMPS PASS TOXIC CHARACTERISTIC LEACHING PROCEDURE (TCLP) TESTING, REMOVE ALL EXISTING LIGHT BALLASTS AND LAMPS AS PCB AND MERCURY CONTAMINATED MATERIALS AND DISPOSE OF ACCORDANCE WITH EPA, FEDERAL AND STATE REGULATIONS REGARDING DISPOSAL OF HAZARDOUS MATERIALS.
- DEMOLITION NOTES IN THIS SECTION DO NOT INDICATE LOCATIONS OF HAZARDOUS MATERIALS OR REQUIREMENTS FOR HAZARDOUS MATERIAL REMOVAL. SEE OWNER'S INDEPENDENT HAZARDOUS MATERIAL SURVEY FOR TYPES AND LOCATIONS OF SUSPECTED HAZARDOUS MATERIALS.
- MATERIALS AND CONSTRUCTION SHOWN ON THE DRAWINGS REPRESENTS BOTH EXISTING AND NEW MATERIALS. THE DRAWINGS, OTHER THAN THE DEMOLITION PLANS AND PHOTOGRAPHS, SHOW THE DESIRED FINISHED CONSTRUCTION. IN GENERAL, ONLY NEW WORK ITEMS ARE SPECIFICALLY CALLED OUT ON THE DRAWINGS. EXISTING ITEMS THAT ARE INTEGRAL TO THE CONSTRUCTION ARE IDENTIFIED AS 'TO REMAIN'. NEW MATERIAL MAY BE IMPLIED AND THEREFORE, NOT SPECIFICALLY CALLED OUT ON THE DRAWINGS. THESE ITEMS ARE DISCERNIBLE FROM OTHER DETAILS AND INFORMATION SHOWN ON THE DRAWINGS. DRAWINGS HAVE BEEN PREPARED FROM A COMBINATION OF EXISTING DRAWING INFORMATION AND FIELD MEASUREMENT. DIMENSIONAL DISCREPANCIES WILL BE ENCOUNTERED AND SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. DIMENSIONS ON THE WORK PLANS WITH AN INDICATION OF +/- ARE AREAS THAT CAN BE REVISED DIMENSIONALLY TO COMPENSATE FOR DIMENSIONAL DISCREPANCIES BETWEEN THE EXISTING STRUCTURE AND THE WORK PLANS. ALL DIMENSIONAL REVISIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. THE CONTRACTOR SHALL BECOME TOTALLY FAMILIAR WITH AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS THAT AFFECT THE CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIMENSIONS, ELEVATIONS, AND SEQUENCES OF WORK NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF PORTIONS OF THE PROJECT THAT INTERFACE WITH EXISTING CONDITIONS TO REMAIN. THE CONTRACTOR SHALL MAKE ALL MEASUREMENTS NECESSARY FOR THE PROPER EXECUTION, FABRICATION AND ERECTION OF ALL WORK ASSOCIATED WITH THIS CONTRACT.
- THE CONTRACTOR SHALL PROTECT THE EXISTING FACILITIES AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. ALL DAMAGES CAUSED AS A RESULT OF HIS ACTIVITIES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. IN GENERAL, PATCH, REPAIR, REMODELING AND RENOVATION WORK IS INTENDED TO MATCH, COMPLIMENT AND ALIGN WITH EXISTING CONDITIONS.
- PLAN DIMENSIONS ARE FROM FACE OF EXISTING FINISH TO REMAIN, FACE OF NEW CMU WALL, FACE OF STUD OR CENTERLINES AS INDICATED, UNLESS OTHERWISE NOTED.
- COORDINATE LOCATION OF CONTRACTORS LAY DOWN AREA, PROJECT ACCESS POINTS AND LIMITS OF PERIMETER FENCING WITH OWNER'S PROJECT REPRESENTATIVE.
- ALL MATERIALS AND EQUIPMENT NOT SPECIFICALLY IDENTIFIED TO REMAIN AND FOR SALVAGE SHALL BE DEMOLISHED WITH THE INTERIOR FINISH DEMOLITION MISCELLANEOUS SURFACE MOUNTED, RECESSED, BUILT-IN AND FREESTANDING MATERIAL AND EQUIPMENT SHALL BE DEMOLISHED AS IF THEY WERE INTEGRAL WITH THE FLOOR, WALL AND CEILING CONSTRUCTION IDENTIFIED TO BE DEMOLISHED. SEE CIVIL, MECHANICAL AND ELECTRICAL DEMOLITION DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
- PATCH ALL EXISTING FLOOR PENETRATIONS FROM REMOVED PIPING, CONDUIT AND OTHER MISCELLANEOUS PENETRATIONS WITH NON-SHRINK GROUT LEVEL WITH ADJACENT FLOOR PENETRATIONS THAT WILL REQUIRE INFILL. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL FLOOR PENETRATIONS. ALL EXISTING ABANDONED FLOOR PENETRATIONS SHALL BE FILLED FULL DEPTH WITH CONCRETE FILL MATERIAL. AT EXISTING FLOOR PENETRATIONS WHERE THE PENETRATING ELEMENT REMAINS, PROVIDE UL APPROVED RATED FLOOR PENETRATION ASSEMBLY AS APPROPRIATE TO THE SLAB TYPE AND PENETRANT. ALL NEW SLAB PENETRATIONS SHALL BE PROVIDED WITH UL APPROVED RATED FLOOR PENETRATION ASSEMBLY AS APPROPRIATE TO THE SLAB TYPE AND PENETRANT.
- PATCH AND REPAIR EXISTING FLOOR SUBSTRATE TO RECEIVE NEW FINISH MATERIAL AS REQUIRED.
- CAP AND SEAL EXISTING MEP CONNECTIONS AS REQUIRED. SEE MEP SHEETS FOR ADDITIONAL INFORMATION.
- PROVIDE DUST AND VIBRATION PROTECTION THROUGHOUT THE CONSTRUCTION PROCESS AS REQUIRED TO MEET THE OWNER'S REQUIREMENTS AND FOR THE PROTECTION OF OCCUPANTS AND EXISTING EQUIPMENT.

Keyplan



12/16/24 IFC SET



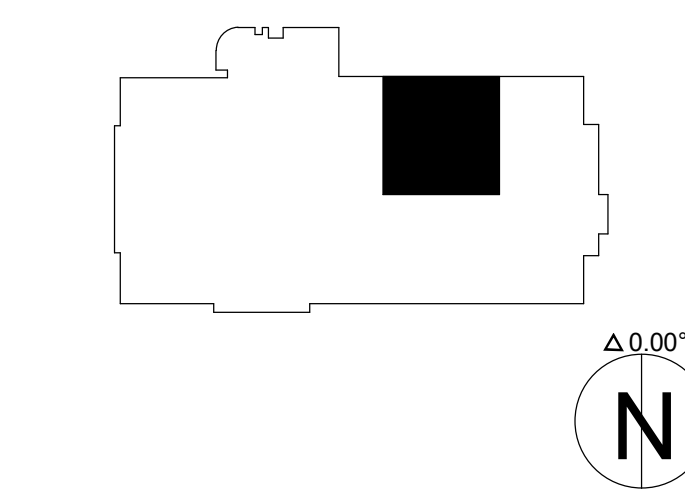
**NCSU PARTNERS
 III RENOVATION
 RALEIGH, NORTH
 CAROLINA**

Project Number: 22057.03
 Status & Date: 12/20/2024

**Sheet Title:
 A DEMOLITION PLAN LEVEL
 01**

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
 Building No: 713
 NC State Project ID Number: 202435062
 SCO # 24-28212-01A

**Sheet Number:
 D001**



Blank table for notes or additional information.



FIRE ALARM table containing symbols and descriptions for various fire alarm components such as horns, strobes, pull stations, detectors, and control panels.

MOUNTING HEIGHT SCHEDULE table detailing the required mounting heights for fire alarm devices relative to the finished ceiling and floor.

ELECTRICAL SHEET INDEX table listing the sheet numbers and titles for the electrical system components.

POWER DEVICES table listing symbols and descriptions for electrical devices like duplex receptacles, emergency lights, and junction boxes.

- FIRE ALARM GENERAL NOTES: A list of 5 notes providing specific instructions and requirements for the fire alarm system installation.

POWER EQUIPMENT table listing symbols and descriptions for power-related equipment such as panelboards, breakers, and transformers.

WIRING, RACEWAY, & GROUNDING table listing symbols and descriptions for various types of conduits, raceways, and grounding methods.

LIGHTING CONTROLS table listing symbols and descriptions for lighting control devices like occupancy sensors, daylight sensors, and dimmers.

DATA / COMMUNICATION - PATHWAYS & BOXES table listing symbols and descriptions for data and communication infrastructure components.

ACCESS CONTROL - PATHWAY & BOXES table listing symbols and descriptions for access control system components like card readers and door releases.

GENERAL table listing symbols and descriptions for general construction and electrical notes.

LIGHTING FIXTURES table listing symbols and descriptions for various types of lighting fixtures including recessed, surface, and track lighting.



Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

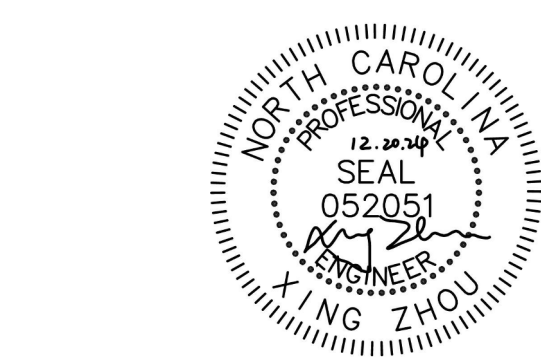
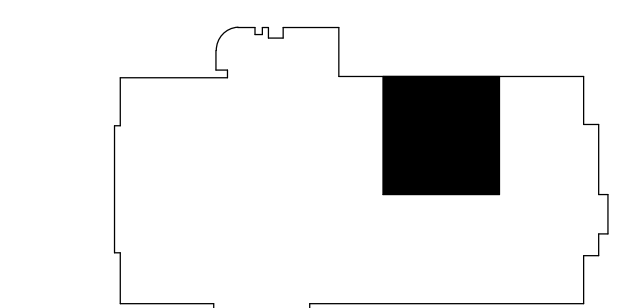
Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS III RENOVATION
RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: ELECTRICAL NOTES & ABBREVIATIONS SHEET

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

E002

GENERAL NOTES

- 1. ALL ELECTRICAL WORK SHALL BE IN ACCORD WITH ALL APPLICABLE ORDINANCES, CODES AND REGULATIONS OF ALL AUTHORITIES WITHIN THE JURISDICTION. ALL ELECTRICAL WORK SHALL BE INSPECTED AND APPROVED BY THE LOCAL ELECTRICAL INSPECTION AGENCY. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY FEES AND PERMITS, INCLUDING THE CERTIFICATE OF ELECTRICAL INSPECTION.
2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION SAFETY. ARCHITECT AND/OR ENGINEER SHALL ASSUME NO RESPONSIBILITY FOR WORKMANS, OR PEDESTRIANS SAFETY. NOTHING IN THE CONTRACT DOCUMENTS SHALL BE CONSTRUED TO INSTRUCT PROCEDURES OR COMPONENTS FOR PROJECT SAFETY.
3. WHERE A CONFLICT ARISES BETWEEN PLANS, SPECIFICATIONS, DETAILS, SCHEDULES, APPLICABLE CODES OR REGULATIONS, THE MOST STRINGENT SHALL APPLY.
4. NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL BE CONSTRUED TO CONFLICT WITH ANY NATIONAL, STATE, MUNICIPAL OR LOCAL LAWS OR REGULATIONS GOVERNING THE WORK INDICATED OR SPECIFIED. THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER SHALL SATISFY ALL SUCH REQUIREMENTS.
5. THE CONTRACT DOCUMENTS ARE COMPRISED OF DRAWINGS AND SPECIFICATIONS. EXAM ELECTRICAL BIDDER SHALL VISIT SITE TO DETERMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID PROPOSAL. BIDS SHALL BE BASED ON THE COMPLETE EXAMINATION OF THE DRAWINGS, SPECIFICATIONS AND EXISTING CONDITIONS. NO CONSIDERATION WILL BE GIVEN ANY CONTRACTOR WHO FAILS TO DO SO.
6. THE WORK UNDER THIS CONTRACT SHALL INCLUDE THE FURNISHING OF ALL NECESSARY MATERIALS, TOOLS, AND LABOR FOR A COMPLETE AND WORKING INSTALLATION AS DEFINED BY THE PLANS AND SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL WARRANT THE WORK INDICATED AND SPECIFIED FOR A PERIOD OF ONE YEAR. THE WORK SHALL FUNCTION AS INTENDED, BE COMPLETE IN ALL DETAILS, AND SHALL INCLUDE ALL INDICATED, SPECIFIED, OR REQUIRED ACCESSORIES FOR A FUNCTIONING SYSTEM.
7. THE ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY LIGHT AND POWER AS REQUIRED BY THE GENERAL CONDITIONS OF THE SPECIFICATION.
8. THE ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES. ALL DEVICES PROVIDED BY OTHERS THAT REQUIRE LINE VOLTAGE ELECTRICAL POWER SHALL BE CONNECTED BY THE ELECTRICAL CONTRACTOR. POWER, PHONE, DATA, TV, AND SIMILAR DEVICE OUTLET LOCATIONS SHALL BE COORDINATED WITH THE ARCHITECTURAL INTERIOR LAYOUTS, THE GENERAL CONTRACTOR, AND THE OWNER.
9. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER'S PROJECT MANAGER PRIOR TO AND FOR SCHEDULING ANY INTERRUPTION OF ANY BUILDING UTILITY.
10. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE LOCAL UTILITIES AND ARRANGE FOR THE FOLLOWING SERVICES: ELECTRICAL POWER, CABLE TV, AND TELEPHONE SERVICE. THE ELECTRICAL CONTRACTOR SHALL MEET WITH THE REPRESENTATIVES OF THE ELECTRICAL UTILITY & TELECOMM UTILITY TO CONFIRM DETAILS ON THE SERVICE AND METERING. THE ELECTRICAL CONTRACTOR SHALL PAY ALL NECESSARY COSTS, FEES, AND PERMITS INVOLVED IN BRINGING SERVICE TO THE BUILDING.

- 11. THE ELECTRICAL CONTRACTOR AT THE SITE SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PERTAINING TO THE INSTALLATION OF THE ELECTRICAL SYSTEMS. WHERE A CONTRACTOR UNCOVERS CONDITIONS NOT INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, THEY SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH ANY WORK. FAILURE TO NOTIFY THE ARCHITECT WILL MAKE THE CONTRACTOR RESPONSIBLE FOR ALL COSTS AND CONSEQUENCES OF SUCH FAILURE.
12. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE DESIGN/ABOUT INTENT ONLY. THE ELECTRICAL CONTRACTOR SHALL DETERMINE CIRCUITING, ROUTING, WIRING ETC., AS REQUIRED BY THE SITE CONDITIONS, AND ALL APPLICABLE CODES.
13. ALL WIRING SHALL BE CONCEALED IN FINISHED AREAS AS SPECIFIED. WHERE PERMITTED IN THE SPECIFICATIONS, USE OF MC CABLE IN CONCEALED AREAS SHALL BE PER N.E.C. LOCAL CODES, AND INSPECTION AGENCY APPROVAL. OTHERWISE, USE EMT CONDUIT, MINIMUM 3/4" UNLESS NOTED OR SPECIFIED OTHERWISE.
14. THE FOLLOWING CONDUCTORS SHALL BE RUN IN HEAVY WALL CONDUIT:
14.1 ALL FEEDERS RUN IN SLAB - MAY BY SCHEDULE 40 PVC.
14.2 WHERE REQUIRED BY THE N.E.C.
14.3 EXPOSED WIRING ON A ROOF - SEAL PROPERLY.
14.4 EXTERIOR, ABOVE-GRADE WIRING.
15. FOLLOWING FEEDERS SHALL BE IN EMT:
15.1 BRANCH FEEDERS TO PANELS
15.2 BRANCH RACEWAY RUN EXPOSED.
16. TRENCHING AND BACKFILL FOR UNDERGROUND CONDUITS SHALL BE BY THE ELECTRICAL CONTRACTOR.
17. UPON THE COMPLETION OF WORK THE E.C. SHALL PROVIDE ALL PANELBOARDS WITH TYPED PANEL SCHEDULES TO CLEARLY DEFINE THE EQUIPMENT SERVED.
18. UPON THE COMPLETION OF WORK THE E.C. SHALL PROVIDE ALL DISTRIBUTION EQUIPMENT WITH TYPED NAMEPLATES TO CLEARLY DEFINE THE EQUIPMENT SERVED AND RECEPTACLE PLATES WITH CIRCUITS SERVING EACH.
19. CHANNELING OF THE FLOORS SHALL BE MINIMIZED.
20. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR THE COORDINATED PLACEMENT OF LIGHTS, DIFFUSERS, SPRINKLERS, AND RETURN AIR GRILLES.
21. E.C. SHALL COORDINATE ALL RECEPTACLE AND LIGHT FIXTURES LOCATIONS WITH CASEWORK PLAN WHICH WILL BE DIMENSIONED.
22. ALL HOMERUNS WITH MORE THAN SIX (6) TOTAL CONDUCTORS SHALL BE A MINIMUM OF NO. 10 THW WIRE UNLESS SPECIFICALLY SIZED OTHERWISE.
23. ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
24. CONTRACTOR SHALL REMOVE DEMOLITION DEBRIS COMPLETELY. CONTRACTOR SHALL SCHEDULE WITH THE OWNER THE TIME, LOCATION, ELEVATOR AND HALLING ROUTE.
25. CONTRACTOR SHALL CLEAN UP ALL DEBRIS AT THE END OF EACH WORK DAY.

Table with 4 columns: ABBREVIATION, DESCRIPTION, ABBREVIATION, DESCRIPTION. Lists various electrical symbols and their meanings, such as AMP, AFCI, AFF, AFG, AHJ, AL, ANSI, ASA, AMER. SOCIETY OF TESTING MATERIALS, etc.

SYSTEM NO. WL-1001
JUNE 15, 2005
F RATINGS - 1, 2, 3 AND 4 HR (SEE ITEMS 2 AND 3)
T RATINGS - 0, 1, 2, 3 AND 4 HR (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM PER SQ. FT.
L RATING AT 400° F - LESS THAN 1 CFM PER SQ. FT.
SECTION A-A
1. WALL ASSEMBLY - 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALL BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 H FIRE RATED ASSEMBLY) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM OC) WITH NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3/8 IN. (9.5 MM) WIDE BY 1/38 IN. (35 MM) DEEP CHANNELS SPACED MAX 24 IN. (610 MM) OC.
B. GYPSUM BOARD - NOM 1/2 OR 5/8 IN. (13 OR 16 MM) THICK, 4 FT. (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENERS TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 26 IN. (660 MM).
2. THROUGH-PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. (0 MM), (POINT CONTACT) TO MAX 2 IN. (51 MM) PIPE, CONDUIT OR TUBING TO BE PROPERLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
A. STEEL PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.
C. CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
D. COPPER TUBING - NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
E. COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
F. THROUGH PENETRATING PRODUCT - FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:
1. NOM 2 IN. (51 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING, PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
2. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING, PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
3. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING, PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
WARD MFG INC
TITERLEX CORP A BUNDY CO
3. FILL VOID OR CAVITY MATERIAL - CALK OR SEALANT - MIN 5/8, 1-1/4, 1-7/8 AND 2-1/2 IN. (16, 32, 48 AND 64 MM) THICKNESS OF CALK FOR 1, 2, 3 AND 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN 1/4 IN. (6 MM) DIAM BEAD OF CALK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:
MAX PIPE OR CONDUIT DIAM IN (MM) F RATING HR T RATING HR
1 (25) 1 OR 2 0+ 1 OR 2
1 (25) 3 OR 4 3 OR 4
4 (102) 1 OR 2 0
6 (152) 3 OR 4 0
12 (305) 1 OR 2 0
* WHEN COPPER PIPE IS USED, T RATING IS 0 H
3M COMPANY - CP 25WB+ or FB-3000 WT.
* BEARING THE UL CLASSIFICATION MARK.

SYSTEM NO. CAJ-5001
MAY 19, 2005
F RATINGS - 1, 1/2, 2 AND 3 HR (SEE ITEM 4)
T RATINGS - 0, 1/2, 3/4 AND 1 HR (SEE ITEMS 1A AND 4)
L RATING AT AMBIENT - 2 CFM PER SQ. FT.
L RATING AT 400° F - LESS THAN 1 CFM PER SQ. FT.
SECTION A-A
1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. (64 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS - MAX DIAM OF OPENING IS 18 IN. (457 MM).
SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 10 IN. (254 MM) (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUDED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. (51 MM) ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL. AS AN ALTERNATE, NOM 10 IN. (254 MM) DIAM (OR SMALLER) SLEEVE FABRICATED FROM NOM 0.019 IN. (0.48 MM) THICK GALV STEEL CAST OR GROUDED INTO FLOOR OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACES. T RATING IS 0 HR WHEN SLEEVE IS USED.
2. THROUGH PENETRANT - NOM 4 IN. (102 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.
3. PIPE COVERING - NOM 1/2 TO 2 IN. (13 TO 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. CONJUNCTIONAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.
SEE PIPE AND EQUIPMENT COVERING - MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
A. PACKING MATERIAL - MIN 1 IN. (25 MM) THICKNESS OF FIRMLY PACKED MINERAL WOOL BATT INSULATION USED AS PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CALK/FILL MATERIAL (ITEM B).
B. FILL VOID OR CAVITY MATERIAL - CALK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SLEEVE OR FLUSH WITH BOTH SURFACES OF WALL WHEN NOM PIPE COVERING THICKNESS IS 2 IN. (51 MM), MIN THICKNESS OF CALK/FILL MATERIAL IS 2 IN. (51 MM). WHEN NOM PIPE COVERING THICKNESS IS 1-1/2 IN. (38 MM) OR LESS, MIN THICKNESS OF CALK/FILL MATERIAL IS 1 IN. (25 MM). THE HOURLY F AND T RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE THICKNESS OF THE FLOOR OR WALL, THE SIZE OF PIPE, THE THICKNESS OF PIPE COVERING MATERIAL AND THE SIZE OF THE ANNULAR SPACE (BETWEEN THE PIPE COVERING MATERIAL AND THE EDGE OF THE CIRCULAR THROUGH OPENING) AS SHOWN IN THE FOLLOWING TABLE:
MIN FLOOR OR WALL THKNS. IN. (MM) MAX PIPE DIAM. IN. (MM) NOM PIPE COVERING THKNS. IN. (MM) ANNULAR SPACE IN. (MM) F RATING HR. T RATING HR.
2-1/2 (64) 4 (102) 1 or 1-1/2 (25 or 38) 1/2 to 2-3/8 (13 to 60) 2 1
4-1/2 (114) 4 (102) 2 (51) 1/4 to 3-5/8 (6 to 92) 2 1-1/2
2-1/2 (64) 12 (305) 1 (25) 1/2 to 1-1/2 (13 to 38) 2 1/2
4-1/2 (114) 12 (305) 1 (25) 1/2 to 2-3/8 (13 to 60) 3 1
2-1/2 (64) 12 (305) 1/2 (13) 1/2 to 2-3/8 (13 to 60) 2 0
3M COMPANY - CP 25WB+ or FB-3000 WT.
* BEARING THE UL CLASSIFICATION MARK.
REPRINTED FROM THE UL ONLINE CERTIFICATIONS DIRECTORY FROM UNDERWRITERS LABORATORIES INC.
FILENAME = SHEZ CA-501
http://database.ul.com/cgi-bin/XYV/template1/ISEXT1/FRAME?file=ul_electrical/pipe/ul-ca-501 In UL FILE NUMBER BOX, CLICK SEARCH.
COPYRIGHT ©2016 UNDERWRITERS LABORATORIES INC.

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

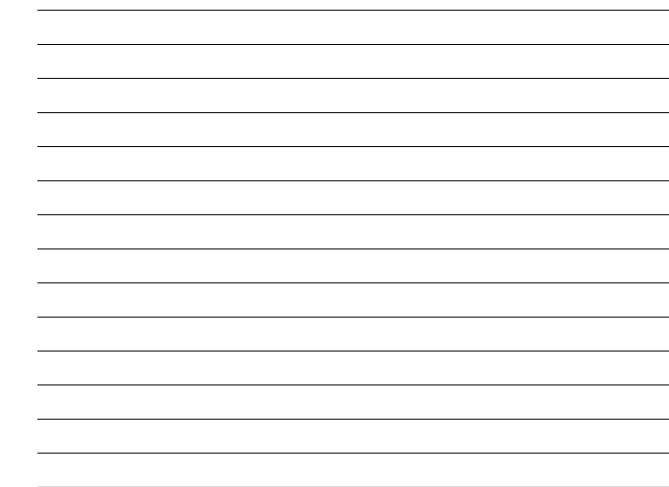
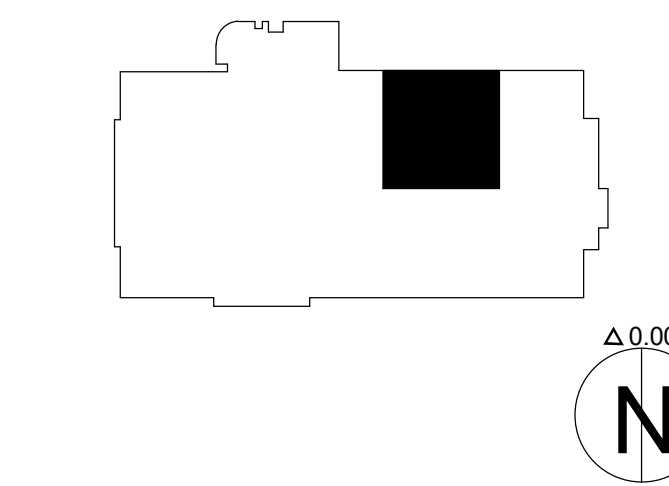
McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS
III RENOVATION
RALEIGH, NORTH
CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
ELECTRICAL DEMOLITION

Project Name: RENOVATION TO LAB 167, 169 &
169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

E100

6

5

4

3

2

1

E

D

C

B

A

E

D

C

B

A

DEMOLITION GENERAL NOTES

- NOT ALL DEVICES ARE LABELED WITH CIRCUIT NUMBERS IN THE FIELD, THEREFORE THE LABELING ON THE FLOOR PLANS SHALL BE CONFIRMED BY EC. CONTRACTOR SHALL TRACE CIRCUITS UTILIZING CIRCUIT TRACERS FOR CIRCUITS AFFECTED BY PROJECT SCOPE IN THE AREA OF WORK WHEN NEEDED. CONTRACTOR SHALL DOCUMENT EXISTING CIRCUITING IN PREPARATION FOR DEMOLITION WORK AND TO FACILITATE NEW WORK INCLUDING UPDATED LABELING AS REQUIRED PER THE SPECIFICATIONS.
- ALL PENETRATIONS OF EXISTING FLOORS AND FIRE RATED WALL OR SMOKE PARTITIONS SHALL BE PATCHED & REPAIRED AS REQUIRED TO MAINTAIN THE EXISTING FIRE RATING OR SMOKE INFILTRATION INTEGRITY OF THE WALL. ALL SLEEVES, WIREWAYS, CABLE TRAYS, PIPES, DUCTWORK, ETC. SHALL BE FIRE SEALED TIGHT TO THE WALL OR FLOOR PENETRATIONS TO MAINTAIN THE REQUIRED CODE COMPLIANT FIRE RATING.
- ELECTRICAL CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL EXISTING CONDITIONS, LOCATIONS, AND CIRCUITING OF ALL EXISTING ELECTRICAL EQUIPMENT LOCATED IN THE AREAS OF CONSTRUCTION INCLUDING EQUIPMENT LOCATED IN ADJACENT AREAS SERVED BY THE CIRCUITING LOCATED IN THESE SPACES.
- DEMOLITION WORK SHALL BE COMPLETED IN FULL. ALL CONDUIT AND WIRING SHALL BE DEMOLISHED BACK TO SOURCE UNLESS OTHERWISE NOTED. PANELS SCHEDULES SHALL BE UPDATED WHERE APPLICABLE. NO RACEWAY SHALL BE ABANDONED IN PLACE UNLESS SPECIFICALLY NOTED ON DRAWINGS.
- IN AREAS OF REMOVAL OF WALL AND CEILING MOUNTED DEVICES, CONTRACTOR SHALL REPAIR, PATCH AND CLEAN WALLS, WALL BASES, AND CEILING AS REQUIRED TO MATCH EXISTING FINISHES.
- CONTRACTOR SHALL MAINTAIN ALL CIRCUITS RUNNING THROUGH THE AREA OF DEMOLITION AND THE AREA OF NEW CONSTRUCTION.
- EXISTING ELECTRICAL PANELBOARDS SHALL REMAIN. PANELBOARDS AND ASSOCIATED CIRCUITS SHALL BE MODIFIED AS NOTES IN THE DRAWINGS.

DEMOLITION KEY NOTES

- DEMOLISH EXISTING LUMINAIRES AND ASSOCIATED CONTROLS AND SUPPORTS. EXISTING LINESIDE CIRCUITING SHALL REMAIN AND BE MADE READY FOR RE-CONNECTION. FLUORESCENT LAMPS SHALL BE DISPOSED OF IN ACCORDANCE WITH NC GENERAL STATUTES FS 130A-310.60. COORDINATE WITH OWNER. TYPICAL.
- DEMOLISH EXISTING RECEPTACLES (HATCHED) AND ASSOCIATED WIRING, RACEWAY, BOXES, AND SUPPORTS BACK TO JUNCTION BOX(ES) ABOVE CEILING TO REMAIN. WHERE CEILING IS REMOVED, CONTRACTOR SHALL BRING BACK JUNCTION BOXES AND CONDUIT BACK TO NEW CEILING AREA. EXISTING CIRCUITING SHALL BE MADE READY TO SERVE NEW LOADS IN THE SPACE. EXTEND CONDUIT AND WIRING AS NECESSARY. TYPICAL.
- DEMOLISH EXISTING FIRE ALARM DEVICES, AND ASSOCIATED CABLING, RACEWAYS, AND SUPPORT ETC. BACK TO JUNCTION BOX TO REMAIN ABOVE CEILING. NOTE: FIRE ALARM SYSTEM FOR THE ADJACENT AREAS SHALL REMAIN IN SERVICE AT ALL TIMES. THEREFORE, CONTRACTOR SHALL PROVIDE NECESSARY CABLING TO ASSURE CONTINUED OPERATION.
- DEMOLISH EXISTING VOICE AND DATA OUTLETS, RACEWAY, CONDUIT, BOXES, SUPPORTS, ETC. COMPLETELY BACK TO CLOSEST WIREWAY FOR FUTURE USE. PROVIDE NO SEALS AS NECESSARY. DATA CABLING SHALL BE REMOVED BY NCSU COMTECH. TYPICAL.
- EXISTING CORD REEL AND ASSOCIATED JUNCTION BOX ABOVE CEILING TO BE RELOCATED.



1 FIRST FLOOR ELECTRICAL PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"

6

5

4

3

2

1

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

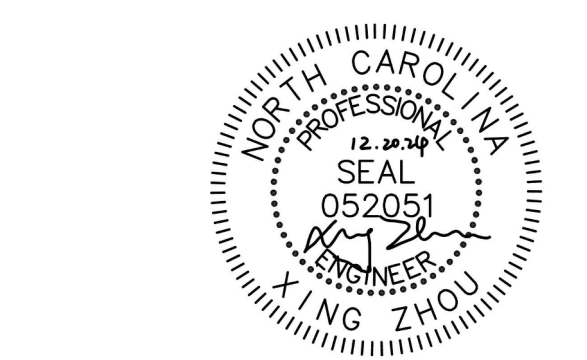
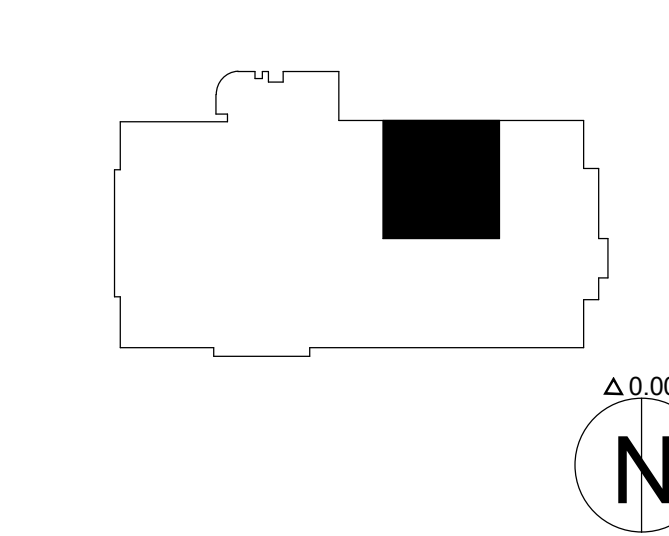
Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: ELECTRICAL NEW WORK PLAN - POWER & SPECIAL SYSTEMS

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

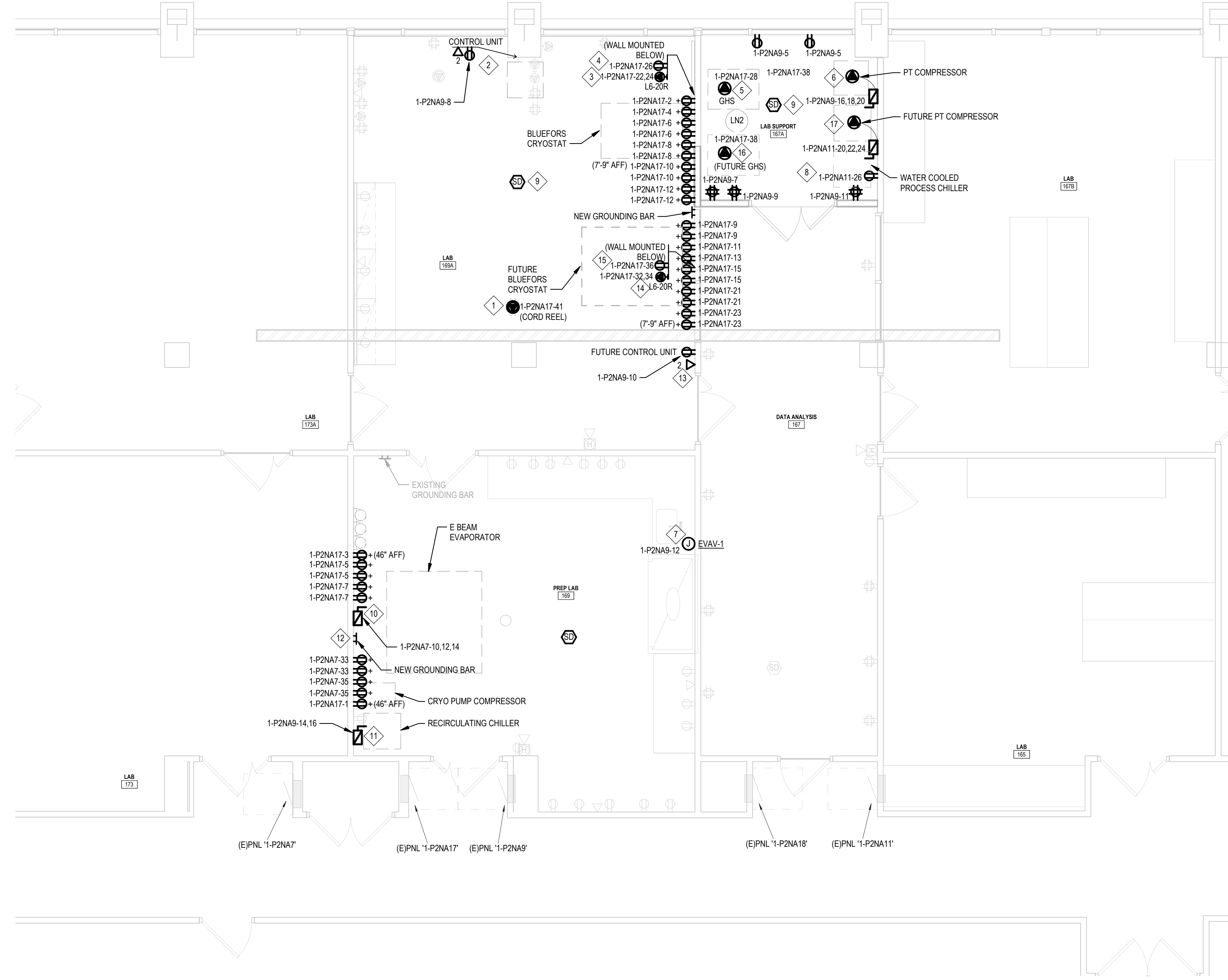
E101

NEW WORK GENERAL NOTES

- EXISTING CIRCUIT NUMBERING IN FIELD IS INCONSISTENT BETWEEN DEVICE LABELING, SCHEDULE IN PANEL DOOR, AND RECORD DRAWINGS THEREFORE THE LABELING ON THE FLOOR PLANS SHALL BE CONFIRMED BY EC. CONTRACTOR SHALL TRACE CIRCUITS UTILIZING CIRCUIT TRACERS FOR ALL CIRCUITS IN THE AREA OF WORK. CONTRACTOR SHALL DOCUMENT EXISTING CIRCUITING IN PREPARATION FOR DEMOLITION WORK AND TO FACILITATE NEW WORK INCLUDING UPDATED LABELING AS REQUIRED PER THE SPECIFICATIONS.
- ELECTRICAL CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL EXISTING CONDITIONS, LOCATIONS, AND CIRCUITING OF ALL EXISTING ELECTRICAL (POWER, LIGHTING, SPECIAL SYSTEMS, ETC) EQUIPMENT LOCATED IN AREAS OF DEMOLITION/CONSTRUCTION INCLUDING EQUIPMENT LOCATED IN ADJACENT AREAS SERVED BY CIRCUITING LOCATED IN THESE SPACES. THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO BID AND ANY WORK.
- EXISTING ELECTRICAL PANELBOARDS SHALL REMAIN. PANELBOARDS AND ASSOCIATED CIRCUITS SHALL BE MODIFIED AS NOTED IN THE DRAWINGS.
- IN AREAS OF REMOVAL OF WALL AND CEILING MOUNTED DEVICES, CONTRACTOR SHALL REPAIR, PATCH AND CLEAN WALLS, WALL BASES, AND CEILING AS REQUIRED TO MATCH EXISTING FINISHES.
- REFER TO DRAWING E001 AND E002 FOR GENERAL PROJECT NOTES, SYMBOLS & ABBREVIATIONS.
- REFER TO DRAWING E500 FOR ELECTRICAL DETAILS.

NEW WORK POWER KEY NOTES

- NEW LOCATION OF EXISTING CORD REEL AND ASSOCIATED JUNCTION BOX ABOVE CEILING. EXTEND CONDUIT AND CONDUCTORS AS NECESSARY.
- PROVIDE NEW CONNECTION FOR POWER AND DATA REQUIRED FOR BLUEFORS CONTROL UNIT. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD. EC SHALL COORDINATE WITH MANUFACTURER AND INSTALLATION MANUAL PRIOR TO CONSTRUCTION FOR SPECIFIED PLUG TYPE AS NECESSARY.
- PROVIDE NEMA L6-20R RECEPTACLE TO POWER BLUEFORS MAGNET PSU. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD. EC SHALL COORDINATE WITH MANUFACTURER AND INSTALLATION MANUAL PRIOR TO CONSTRUCTION FOR SPECIFIED PLUG TYPE AS NECESSARY.
- PROVIDE DEDICATED SINGLE PHASE 120V 20A RECEPTACLE TO POWER BLUEFORS MAGNET CONTROLLER. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD. EC SHALL COORDINATE WITH MANUFACTURER AND INSTALLATION MANUAL PRIOR TO CONSTRUCTION FOR SPECIFIED PLUG TYPE AS NECESSARY.
- PROVIDE SINGLE PHASE 120V POWER WITH 2 NEUTRAL TO SERVE BLUEFORS GAS HANDLING SYSTEM PER INSTALLATION MANUAL. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD.
- PROVIDE LINESIDE CIRCUITING FOR OWNER PROVIDED BLUEFORS PT COMPRESSOR (INSTALLED BY OTHERS). PROVIDE 3 PHASE 60V 60A FRAME NEMA 1 50A FUSED DISCONNECT SWITCH (OR APPROVED EQUIVALENT BY EATON OR ABB). DISCONNECT SHALL BE UL LISTED. COORDINATE DISCONNECT LOCATION WITH FINAL COMPRESSOR LOCATION IN THE FIELD. CONDUIT BETWEEN DISCONNECT AND EQUIPMENT SHALL BE LFMC. COORDINATE COMPLETE INSTALLATION WITH LAB EQUIPMENT PROVIDED BY OWNER.
- PROVIDE SINGLE PHASE 120V CONNECTION TO VAV STEP DOWN TRANSFORMER/CONTROLS, VAV, STEP DOWN TRANSFORMER, AND DISCONNECTING MEANS TO BE PROVIDED BY MECHANICAL CONTRACTOR.
- PROVIDE DEDICATED 120V RECEPTACLE TO SERVE WATER COOLED CHILLER.
- PROVIDE NEW FIRE ALARM DETECTION DEVICES, CABLING, RACEWAY ETC. AS REQUIRED PER DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL PROVIDE CALCULATIONS TO CONFIRM EXISTING POWER SUPPLIES/CIRCUITS WILL ACCOMMODATE MODIFICATIONS OR PROVIDE ADDITIONAL POWER SUPPLY(IES) AS REQUIRED.
- PROVIDE THREE PHASE 208V CONNECTION TO POWER E BEAM EVAPORATOR. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO PURCHASE.
- PROVIDE SINGLE PHASE 208V CONNECTION TO POWER RECIRCULATING CHILLER. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO PURCHASE.
- EC SHALL PROVIDE GROUNDING BAR AT 18" AFF AND CONNECT IT TO BUILDING GROUNDING SYSTEM. EC SHALL COORDINATE EXACT LOCATION WITH OWNER FOR EACH ROOM. #4 AWG CONDUCTOR BETWEEN SYSTEM AND GROUNDING BAR. COORDINATE WITH OWNER PRIOR TO PURCHASE. COORDINATE WITH EXISTING GROUNDING BAR IN THE ROOM.
- PROVIDE NEW CONNECTION FOR POWER AND DATA REQUIRED FOR BLUEFORS CONTROL UNIT. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD. EC SHALL COORDINATE WITH MANUFACTURER AND INSTALLATION MANUAL PRIOR TO CONSTRUCTION FOR SPECIFIED PLUG TYPE AS NECESSARY.
- PROVIDE NEMA L6-20R RECEPTACLE TO POWER FUTURE BLUEFORS MAGNET PSU. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD. EC SHALL COORDINATE WITH MANUFACTURER AND INSTALLATION MANUAL PRIOR TO CONSTRUCTION FOR SPECIFIED PLUG TYPE AS NECESSARY.
- PROVIDE DEDICATED SINGLE PHASE 120V 20A RECEPTACLE TO POWER FUTURE BLUEFORS MAGNET CONTROLLER. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD. EC SHALL COORDINATE WITH MANUFACTURER AND INSTALLATION MANUAL PRIOR TO CONSTRUCTION FOR SPECIFIED PLUG TYPE AS NECESSARY.
- PROVIDE SINGLE PHASE 120V POWER WITH 2 NEUTRAL TO SERVE FUTURE BLUEFORS GAS HANDLING SYSTEM PER INSTALLATION MANUAL. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT LAYOUT IN THE FIELD.
- PROVIDE LINESIDE CIRCUITING FOR OWNER PROVIDED BLUEFORS PT COMPRESSOR (INSTALLED BY OTHERS). PROVIDE 3 PHASE 60V 60A FRAME NEMA 1 50A FUSED DISCONNECT SWITCH (OR APPROVED EQUIVALENT BY EATON OR ABB). DISCONNECT SHALL BE UL LISTED. COORDINATE DISCONNECT LOCATION WITH FINAL COMPRESSOR LOCATION IN THE FIELD. CONDUIT BETWEEN DISCONNECT AND EQUIPMENT SHALL BE LFMC. COORDINATE COMPLETE INSTALLATION WITH LAB EQUIPMENT PROVIDED BY OWNER.



1 FIRST FLOOR POWER AND SYSTEMS PLAN - NEW WORK
SCALE: 1/4" = 1'-0"

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

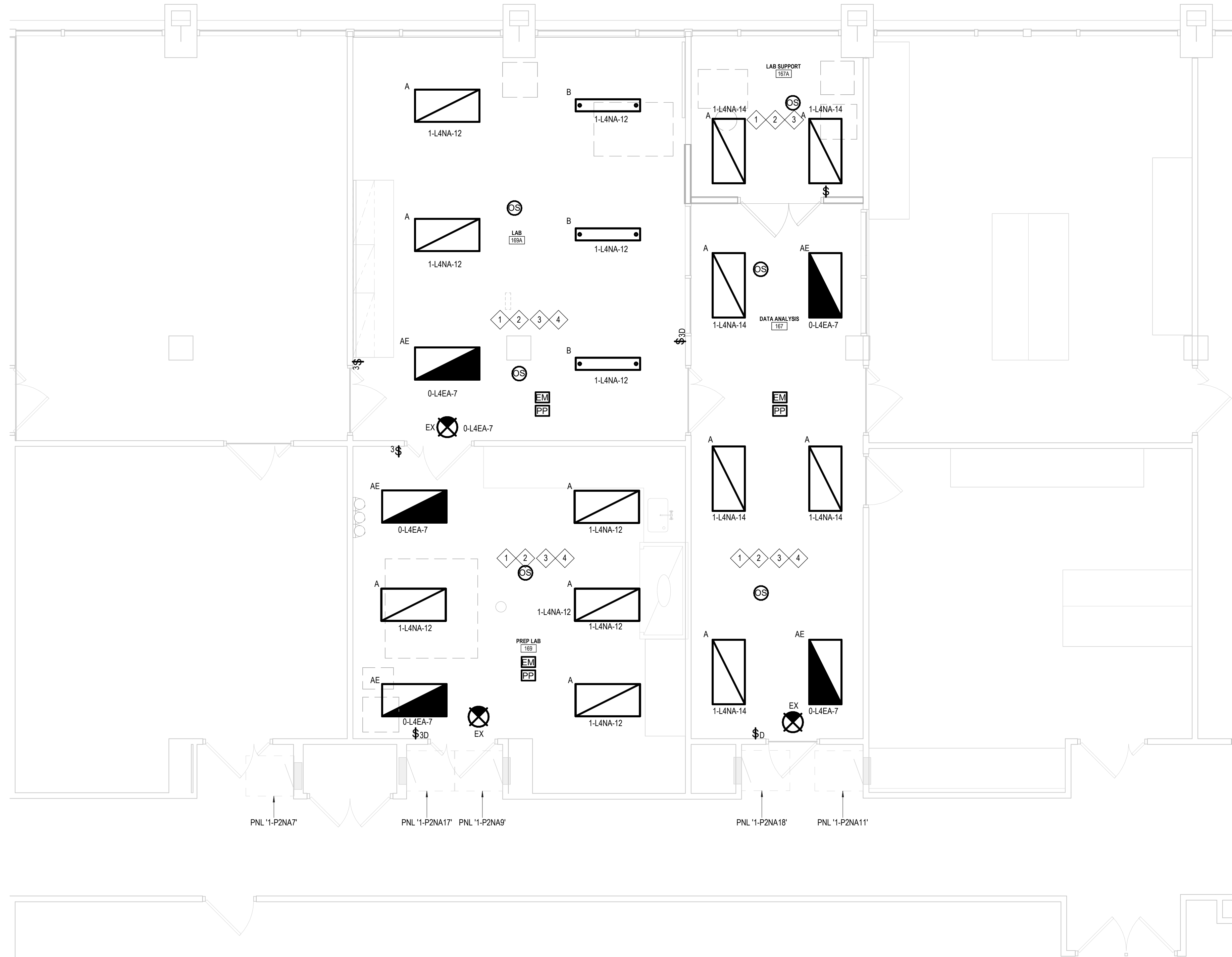
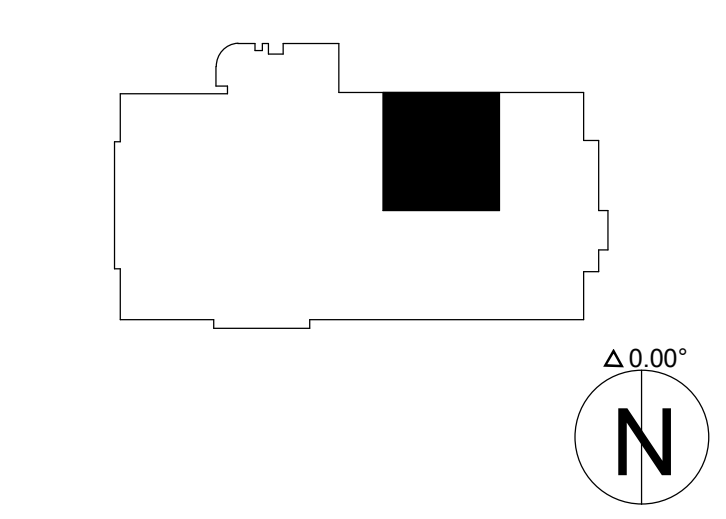
Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

Keyplan



NEW WORK GENERAL NOTES

- EXISTING CIRCUIT NUMBERING IN FIELD IS INCONSISTENT BETWEEN DEVICE LABELING, SCHEDULE IN PANEL DOOR, AND RECORD DRAWINGS THEREFORE THE LABELING ON THE FLOOR PLANS SHALL BE CONFIRMED BY EC. CONTRACTOR SHALL TRACE CIRCUITS UTILIZING CIRCUIT TRACERS FOR ALL CIRCUITS IN THE AREA OF WORK. CONTRACTOR SHALL DOCUMENT EXISTING CIRCUITING IN PREPARATION FOR DEMOLITION WORK AND TO FACILITATE NEW WORK INCLUDING UPDATED LABELING AS REQUIRED PER THE SPECIFICATIONS.
- ELECTRICAL CONTRACTOR SHALL FIELD VERIFY AND COORDINATE ALL EXISTING CONDITIONS, LOCATIONS, AND CIRCUITING OF ALL EXISTING ELECTRICAL (POWER, LIGHTING, SPECIAL SYSTEMS, ETC.) EQUIPMENT LOCATED IN AREAS OF DEMOLITION/CONSTRUCTION INCLUDING EQUIPMENT LOCATED IN ADJACENT AREAS SERVED BY CIRCUITING LOCATED IN THESE SPACES. THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO BID AND ANY WORK.
- EXISTING ELECTRICAL PANELBOARDS SHALL REMAIN. PANELBOARDS AND ASSOCIATED CIRCUITS SHALL BE MODIFIED AS NOTED IN THE DRAWINGS.
- IN AREAS OF REMOVAL OF WALL AND CEILING MOUNTED DEVICES, CONTRACTOR SHALL REPAIR, PATCH AND CLEAN WALLS, WALL BASES, AND CEILING AS REQUIRED TO MATCH EXISTING FINISHES.
- REFER TO DRAWING E001 AND E002 FOR GENERAL PROJECT NOTES, SYMBOLS & ABBREVIATIONS.
- REFER TO DRAWING E500 FOR ELECTRICAL DETAILS.

NEW WORK LIGHTING KEY NOTES

- LIGHTING CIRCUIT(S) SHALL BE #12 PHASE, #12N, AND #12G IN 3/4" CONDUIT UNLESS NOTED OTHERWISE. FOR CIRCUIT(S) EXCEEDING THE LENGTHS NOTED IN THE PLANS AND SPECS, UPSIZE ACCORDINGLY. (TYPICAL FOR ALL SPACES). EC SHALL REUSE EXISTING CIRCUITING IN THE ROOM TO SERVE NEW LIGHTING. PROVIDE SUPPORT AND MOUNT TO AVOID EXISTING DUCTWORK AND BLUEFOR EQUIPMENT.
- LIGHTING CONTROL INSTALLATION SHALL INCLUDE CONTROLS, DATA CABLING, AND 0-10V DIMMING WIRING, ETC. AS NECESSARY FOR COMPLETE AND FUNCTIONAL INSTALLATION. (TYPICAL FOR ALL SPACES). ALL LIGHTING SHALL BE CONTROLLED (NORMAL AND EMERGENCY).
- LIGHTING CONTROL BASIS OF DESIGN: POWER PACK FOR NORMAL POWER LUMINARIES SHALL BE ACUTY #LIGHT #P180 EFP; POWER PACK FOR EMERGENCY POWER LUMINARIES SHALL BE ACUTY #LIGHT #P180 ER EFP; OCCUPANCY SENSORS SHALL BE ACUTY #LIGHT #COM P01 10; SUB SWITCHES SHALL BE ACUTY #LIGHT #P00MA DX WH. EQUIVALENT PRODUCTS BY HUBBELL IS ACCEPTABLE. (TYPICAL FOR ALL SPACES)
- ALL EMERGENCY LIGHTING FIXTURES SHALL BE CIRCUITED TO THE NEAREST HALLWAY EMERGENCY LIGHTS CIRCUITED TO PANEL 0-L4EA LOCATED IN THE BASEMENT. EC TO FIELD VERIFY EMERGENCY LIGHTING CIRCUIT NUMBER AND CONNECT NEW LIGHTS TO THIS CIRCUIT.

1 FIRST FLOOR LIGHTING PLAN - NEW WORK
SCALE: 1/4" = 1'-0"

2018 NORTH CAROLINA BUILDING CODE - ENERGY CONSERVATION LIGHTING COMPLIANCE

METHOD OF COMPLIANCE:
 PRESCRIPTIVE PERFORMANCE ENERGY COST BUDGET

LIGHTING SCHEDULE
 LAMP TYPE REQUIRED IN FIXTURE _____ SEE LIGHTING SCHEDULE _____
 NUMBER OF LAMPS IN FIXTURE _____ SEE LIGHTING SCHEDULE _____
 BALLAST TYPE USED IN THE FIXTURE _____ SEE LIGHTING SCHEDULE _____
 NUMBER OF BALLASTS IN FIXTURE _____ SEE LIGHTING SCHEDULE _____
 TOTAL WATTAGE PER FIXTURE _____ SEE LIGHTING SCHEDULE _____
 TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED _____ 962W SPECIFIED/2,359W ALLOWED
 TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED _____ N/A

ADDITIONAL PRESCRIPTIVE ENERGY CONSERVATION MEASURES
 REDUCED LIGHTING POWER DENSITY OPTION _____ YES
 WATTAGE SPECIFIED IS LESS THAN 90% OF THE WATTAGE ALLOWED _____ YES

ELECTRICAL DESIGNER STATEMENT
 TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, VOLUME X-ENERGY.
 NAME: XING ZHOU
 TITLE: ELECTRICAL ENGINEER

TYPE	DESCRIPTION	MANUFACTURER	ALTERNATE MANUFACTURERS	CATALOG NUMBER	MOUNTING	VOLTAGE	WATTS	LAMP TYPE	COLOR TEMP	LLUMENS	MINIMUM C.R.I.	REMARKS
A	RECESSED 2x4 LAY-IN LED PANEL	LITHONIA	CURRENT, COOPER LIGHTING	STAK 2x4 600LM 80CRI 40K CCL MVOLT	Recessed	277 V	50 W	LED	4000	6000	85	DIMMABLE
AE	RECESSED 2x4 LAY-IN LED PANEL WITH ON GENERATOR	LITHONIA	CURRENT, COOPER LIGHTING	STAK 2x4 600LM 80CRI 40K CCL MVOLT	Recessed	277 V	50 W	LED	4000	6000	85	DIMMABLE
B	4" LINEAR LED PENDANT	LITHONIA	CURRENT, COOPER LIGHTING	GRD-LSL-4MSL4-80CRI-40K-D150ULMF-80/20/MINI-Z T277	PENDANT	277 V	36 W	LED	4000K	6000	80	DIMMABLE
EX	LED EXIT SIGN - SINGLE FACE	LITHONIA	CURRENT, COOPER LIGHTING	EDG-1-G-EL	CEILING	277 V	3 W	LED	NA	NA	NA	NA

ROOM #	ROOM NAME	AVG. (FC)	IES RECOMMENDED AGV. (FC)
169A	LAB	50.1	50-75
169	PREP LAB	64.4	50-75
167	DATA ANALYSIS	64.8	50-75
169B	LAB SUPPORT	43.9	30-50

SPACE NAME	AREA(SQFT)	WATTS/SQFT	TOTAL WATTS ALLOWED(W)
LAB 169A	512.21	1.81	927.1
PREP LAB 169	406.3	1.81	735.4
DATA ANALYSIS 167	353.25	1.43	505.1
LAB SUPPORT 169B	105.94	1.81	191.8
			2359.4

LUMINAIRE TYPE	WATTS(W)	QTY	TOTAL WATTS(W)
A	50.2	12	603
AE	50.2	5	251
B	36	3	108
			962

Note (*): 0.9 IS PER NCECC 406.3.2 REDUCE LIGHTING POWER DENSITY BASED ON AREA BEING RENOVATED.
 SPACE BY SPACE ALLOWANCE



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

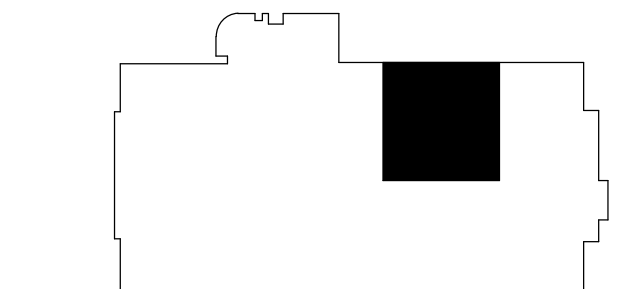
Project Number: 22057.03
 Status & Date: 12/20/2024

Sheet Title: ELECTRICAL NEW WORK PLAN - LIGHTING

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
 Building No: 713
 NC State Project ID Number: 202435062
 SCO # 24-28212-01A

PRINT IN COLOR
 Sheet Number:

E102



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: ELECTRICAL PANEL SCHEDULES

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

E300

EXISTING PANELBOARD 1-P2NA7. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

EXISTING PANELBOARD 1-P2NA9. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

EXISTING PANELBOARD 1-P2NA11. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

MODIFIED PANELBOARD 1-P2NA7. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

MODIFIED PANELBOARD 1-P2NA9. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

MODIFIED PANELBOARD 1-P2NA11. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

EXISTING PANELBOARD 1-P2NA17. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

MODIFIED PANELBOARD 1-P2NA17. Table with columns for CIR. NO., LOAD DESCRIPTION, LTG, H/C, MOT, KIT, REC, MISC, PHASE, G, CND, BRKR, RTG, SIZE, IN, LGT, H/C, MOT, KIT, REC, MISC, LOAD (KVA), LOAD (KW), DESCRIPTION, CIR. NO. Includes notes and load summary.

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

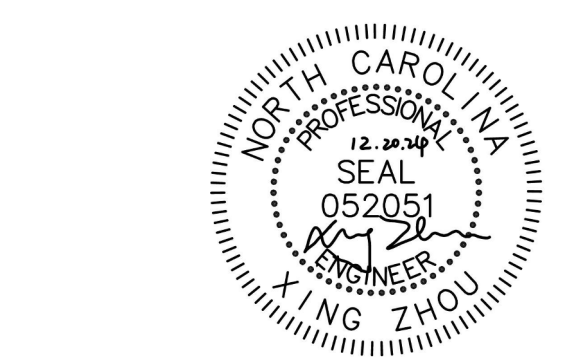
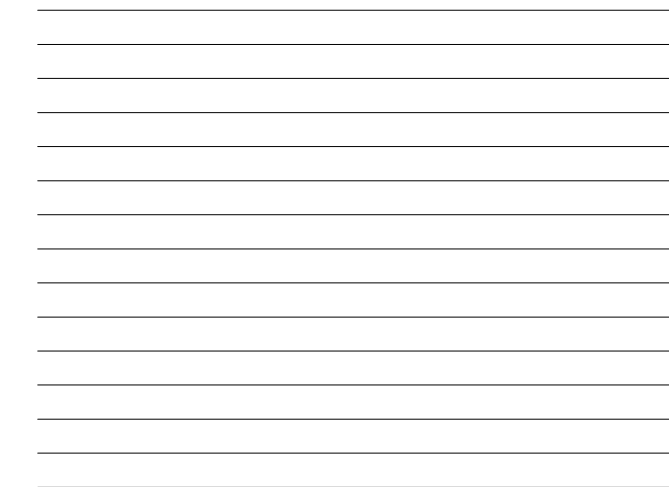
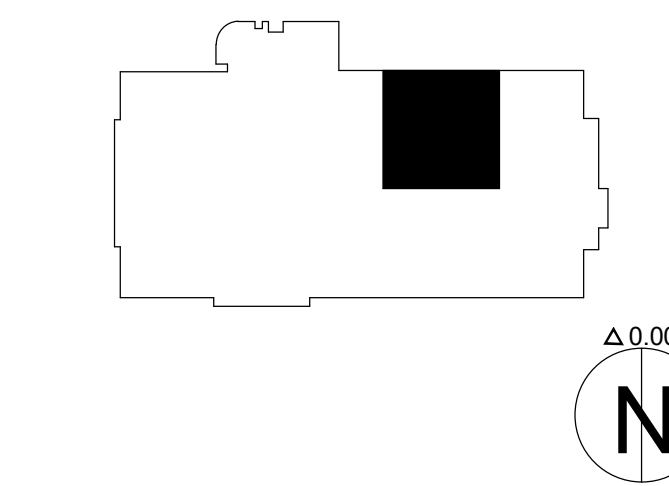
McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

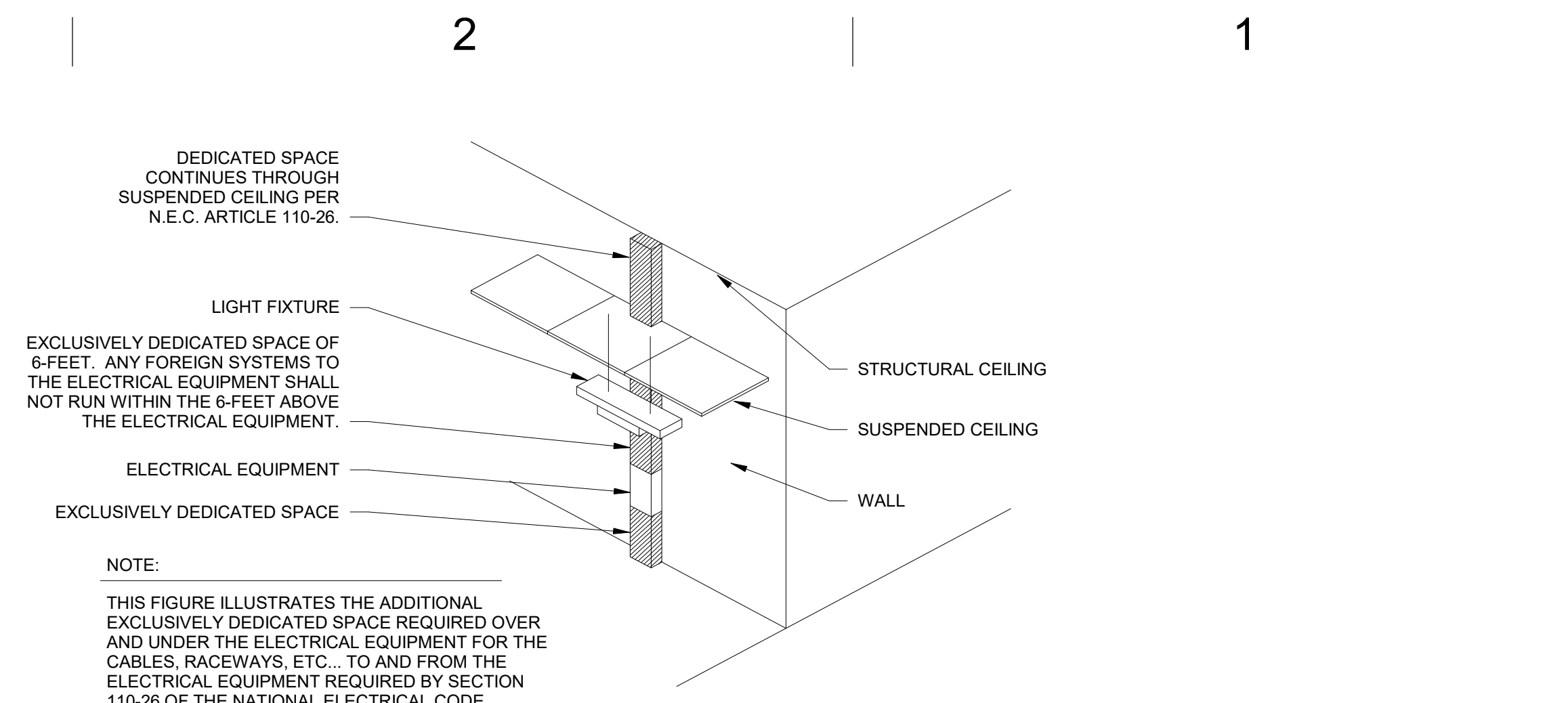
Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: ELECTRICAL DETAILS

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

E500



4 ELECTRICAL EQUIPMENT DEDICATED SPACE
SCALE: NTS

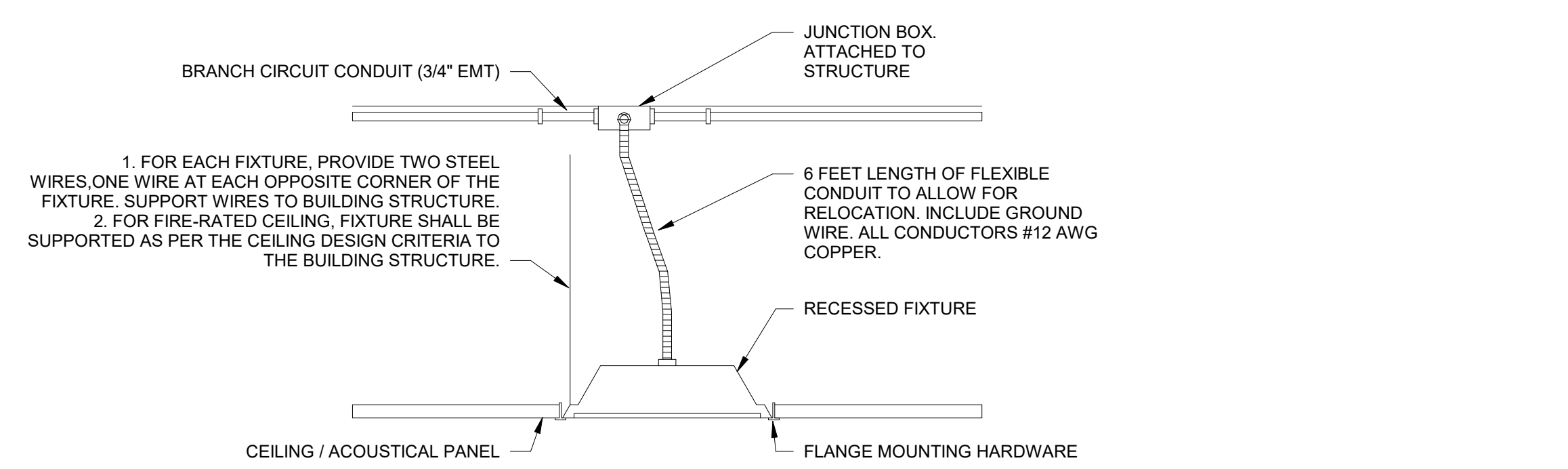
VOLTAGE TO GROUND NOMINAL	MINIMUM CLEAR DISTANCE (INCHES)		
	CONDITION: 1	2	3
0 - 150	36	36	36
151 - 600	36	42	48

WHERE THE "CONDITIONS" ARE AS FOLLOWS:

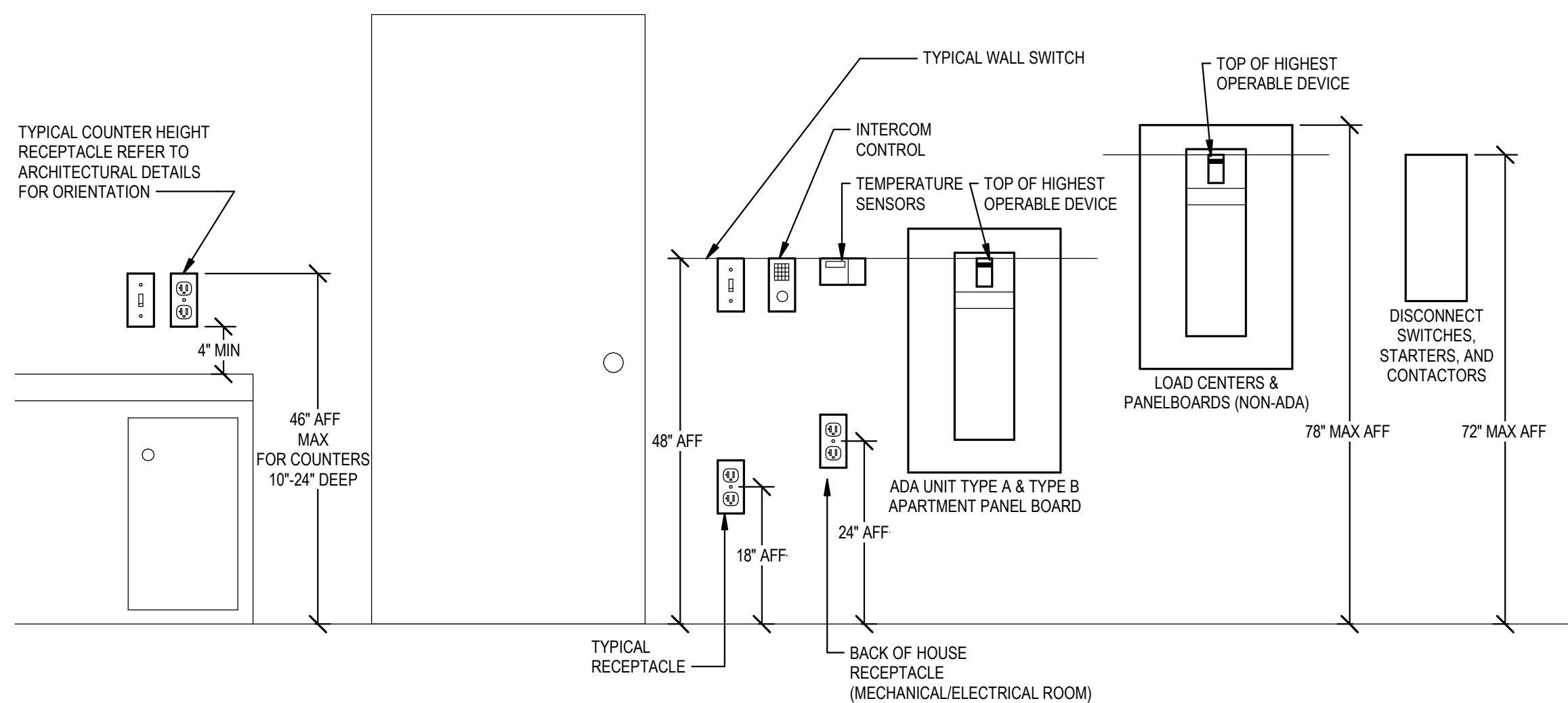
- EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
- EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
- EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

NOTE:
THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110-26 OF THE NATIONAL ELECTRICAL CODE.

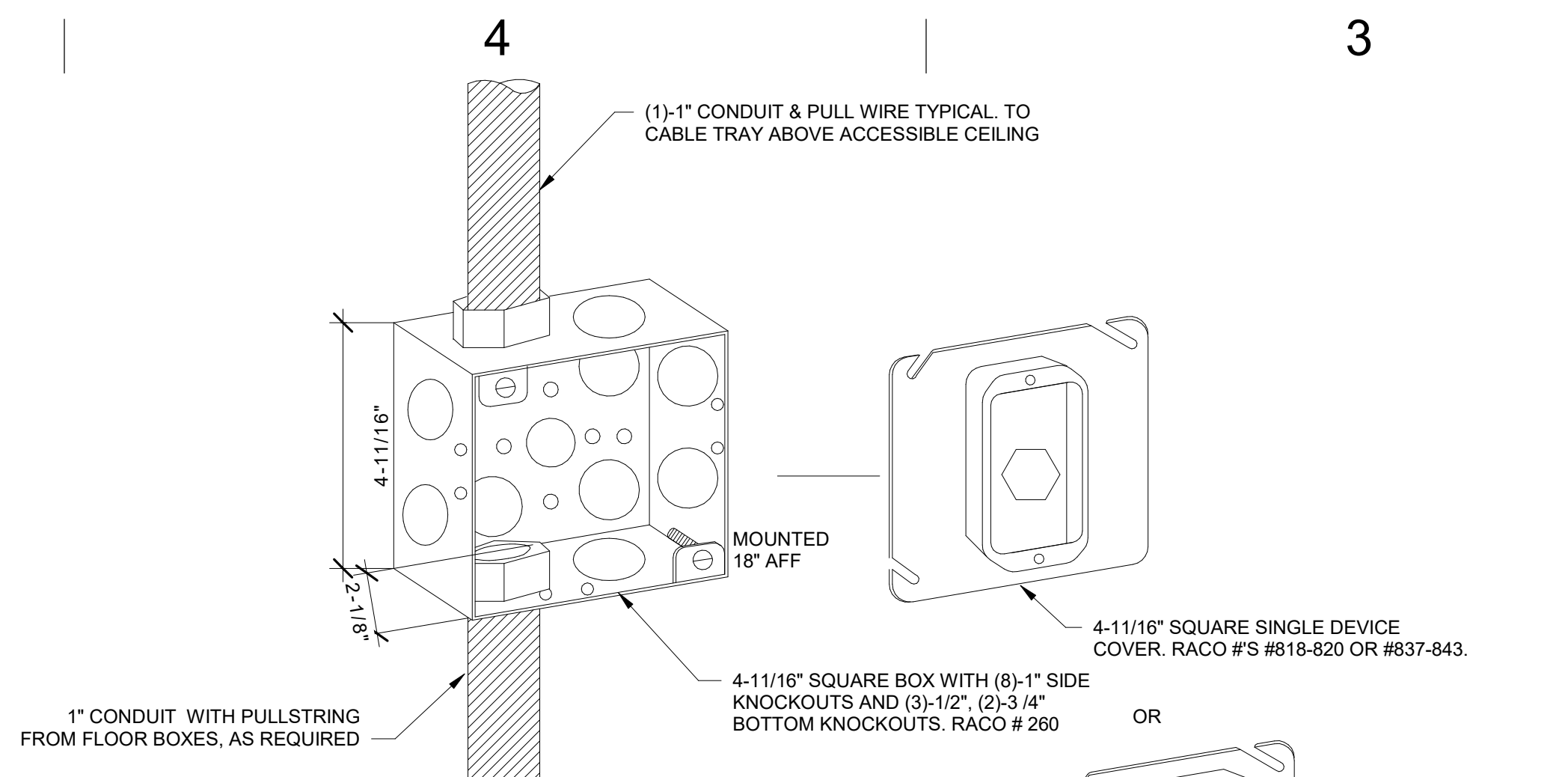
5 ELECTRICAL EQUIPMENT WORKING CLEARANCE
SCALE: NTS



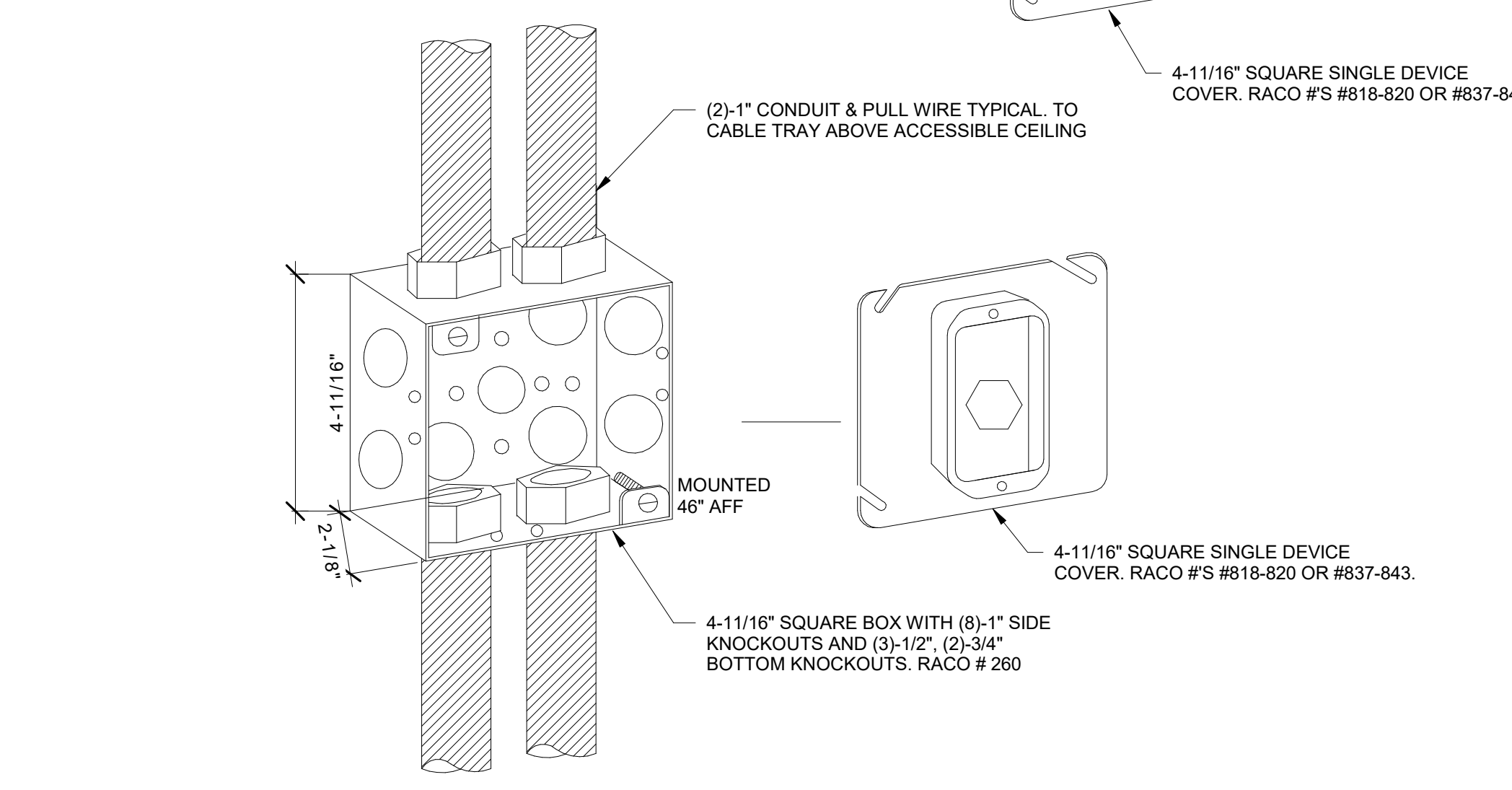
6 LIGHT FIXTURE CEILING MOUNTING DETAIL
SCALE: NTS



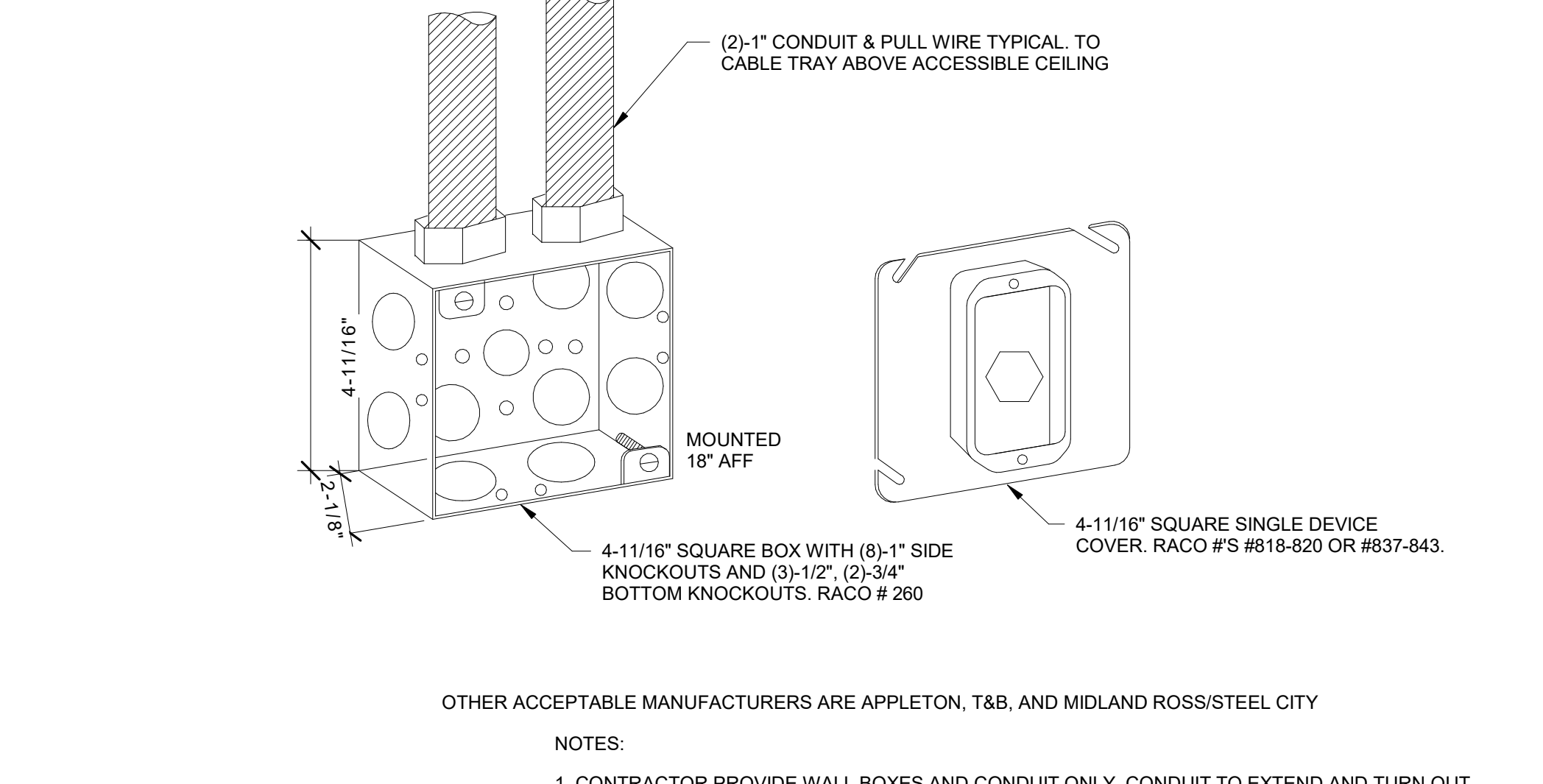
7 DEVICE MOUNTING HEIGHT DETAIL
SCALE: NTS



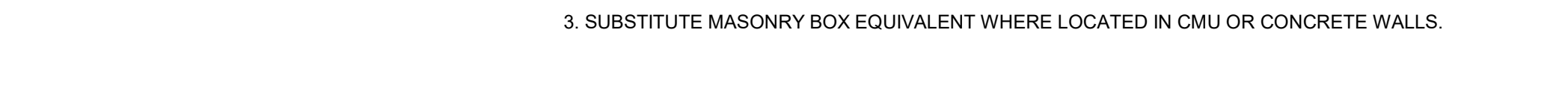
3 TELE/DATA OUTLET BOX DETAIL
SCALE: NTS



4 FIRE ALARM DEVICE MOUNTING HEIGHT DETAIL
SCALE: NTS



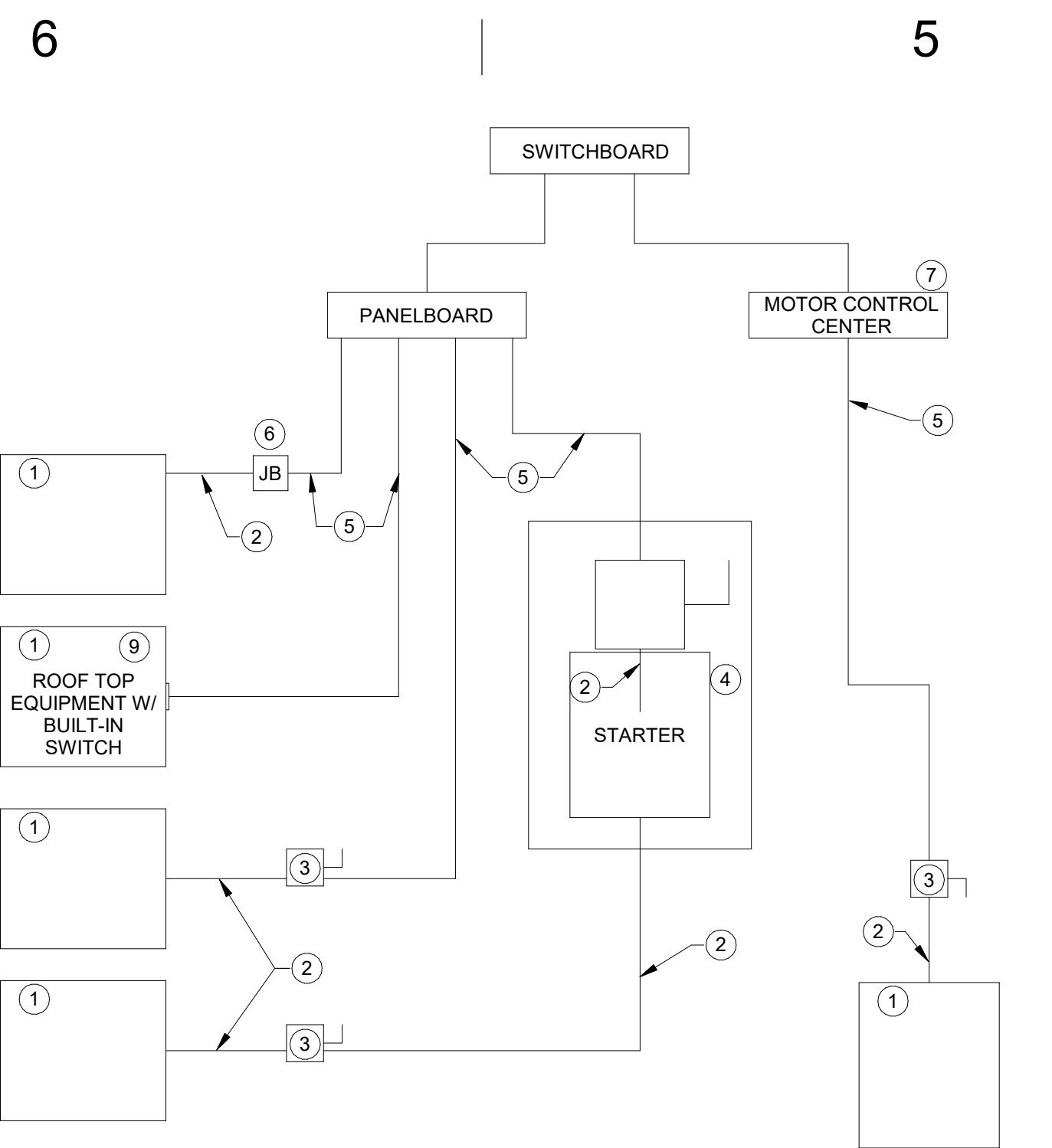
5 NC SCO ELECTRICAL CONNECTION COORDINATION DIAGRAM
SCALE: NTS



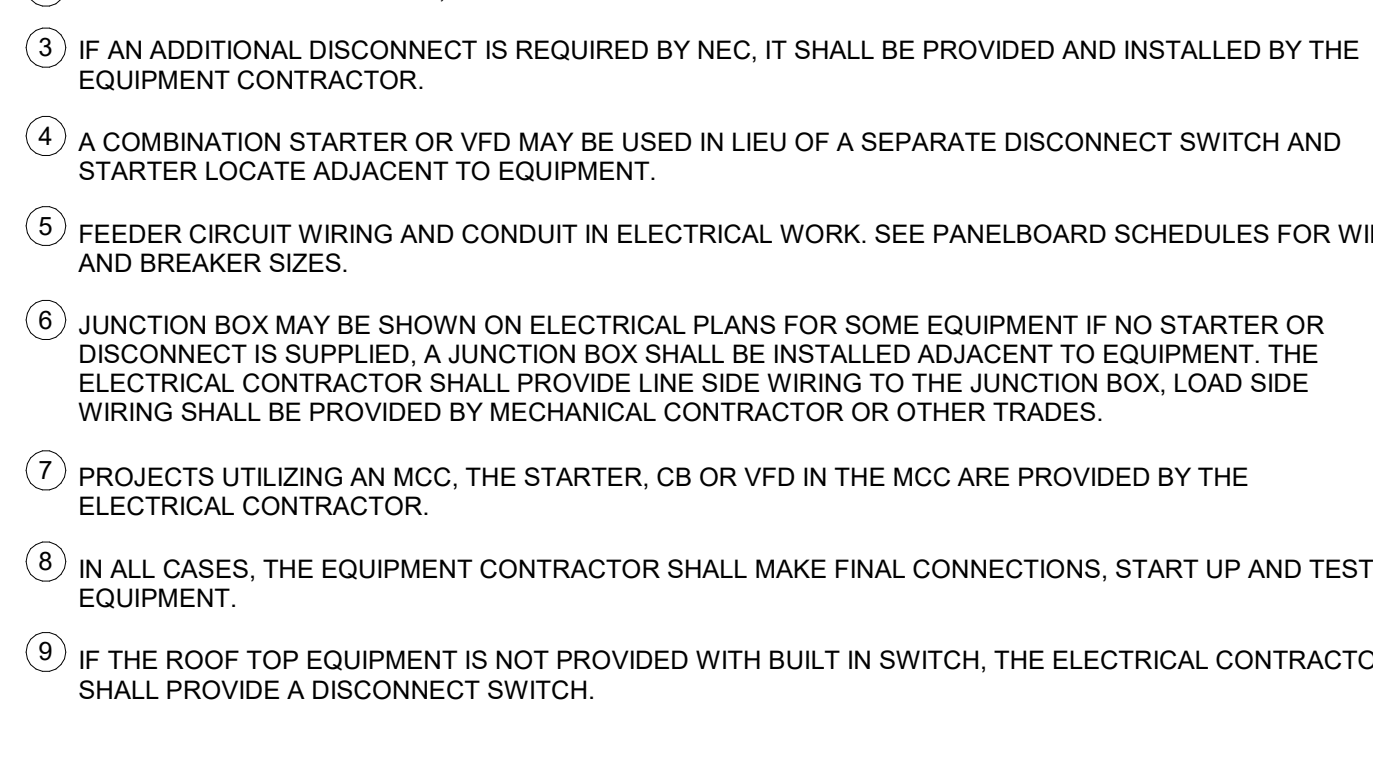
6 FIRE ALARM DEVICE MOUNTING HEIGHT DETAIL
SCALE: NTS



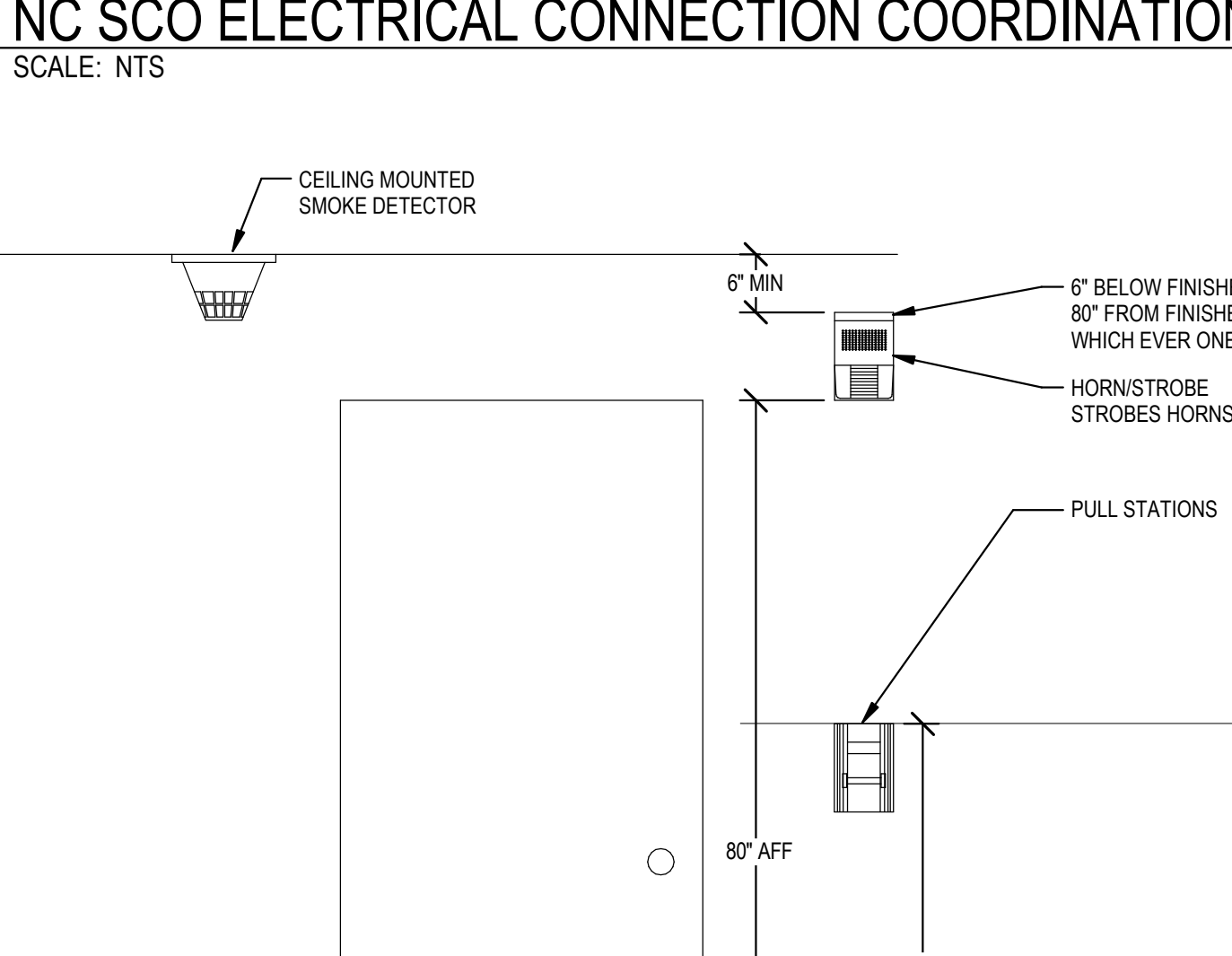
7 TELE/DATA OUTLET BOX DETAIL
SCALE: NTS



8 FIRE ALARM DEVICE MOUNTING HEIGHT DETAIL
SCALE: NTS



9 TELE/DATA OUTLET BOX DETAIL
SCALE: NTS



10 NC SCO ELECTRICAL CONNECTION COORDINATION DIAGRAM
SCALE: NTS



11 FIRE ALARM DEVICE MOUNTING HEIGHT DETAIL
SCALE: NTS



12 TELE/DATA OUTLET BOX DETAIL
SCALE: NTS

ELECTRICAL NOTES:

- EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
- CONDUIT & WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
- IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
- A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER LOCATE ADJACENT TO EQUIPMENT.
- FEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
- JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT IF NO STARTER OR DISCONNECT IS SUPPLIED. A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING SHALL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
- PROJECTS UTILIZING AN MCC, THE STARTER, CB OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- IN ALL CASES, THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP AND TEST EQUIPMENT.
- IF THE ROOF TOP EQUIPMENT IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

Keyplan

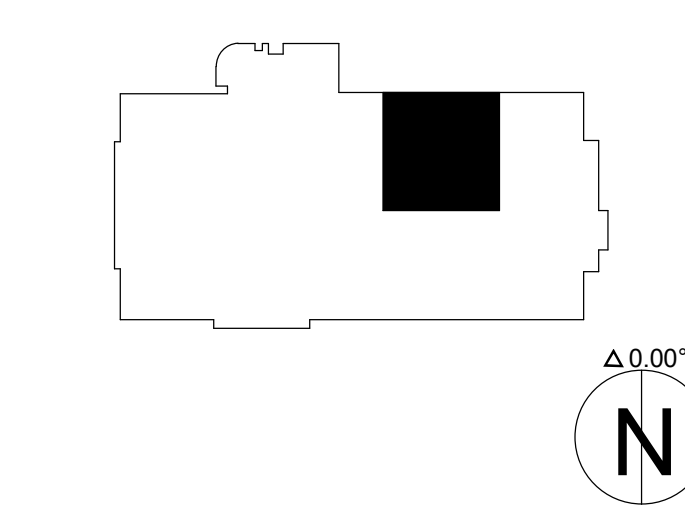


Table with 2 columns: Description, Notes. Contains notes for various plumbing fixtures and systems.



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: PLUMBING DATA SHEET

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

P001

PLUMBING SYMBOLS table with columns for symbol, description, and symbol, description. Lists various plumbing components like pipes, valves, drains, and vents.

PLUMBING SYSTEM NOTES table with columns for note letter and text. Contains detailed instructions for installation, coordination, and safety.

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

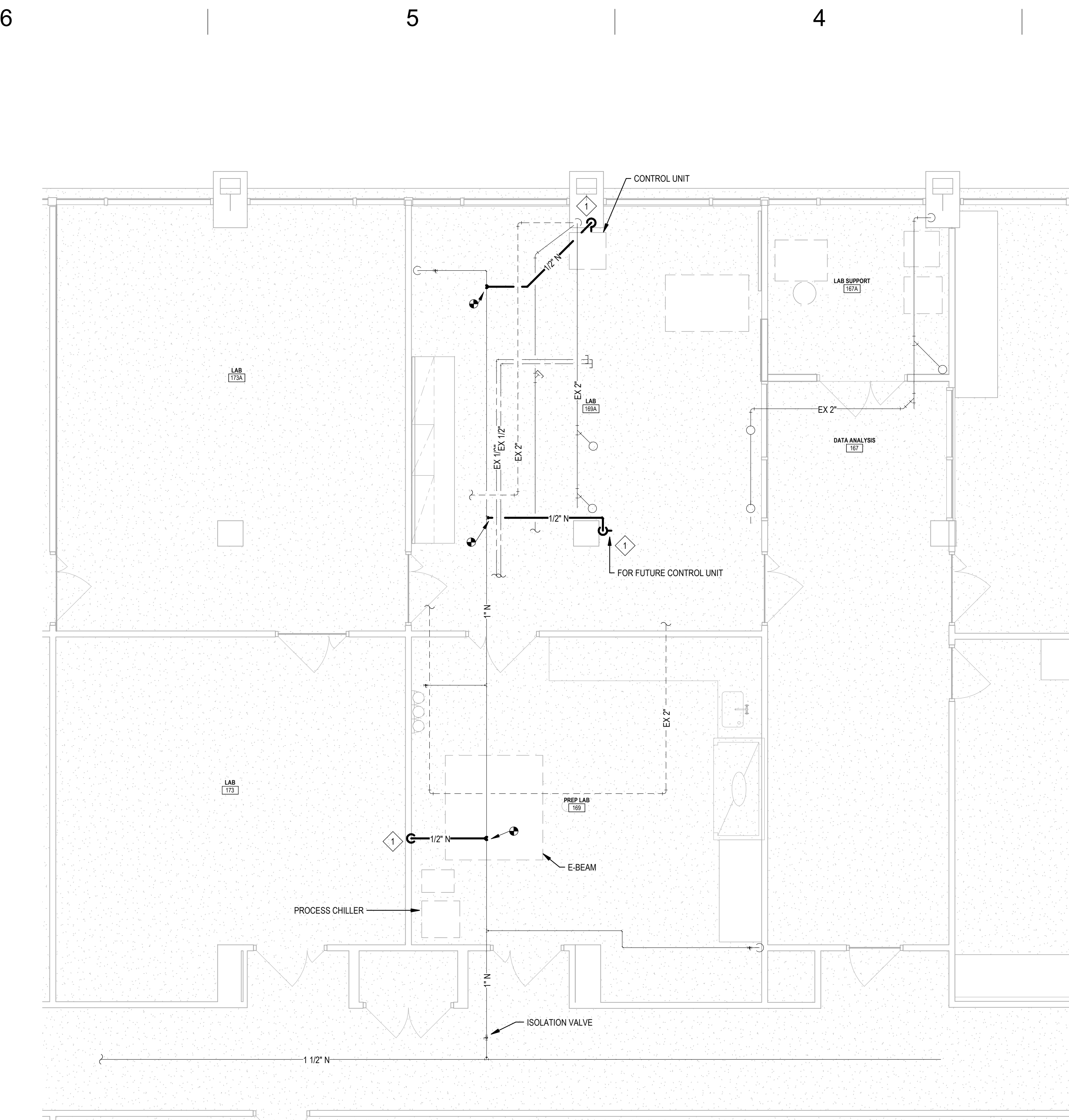
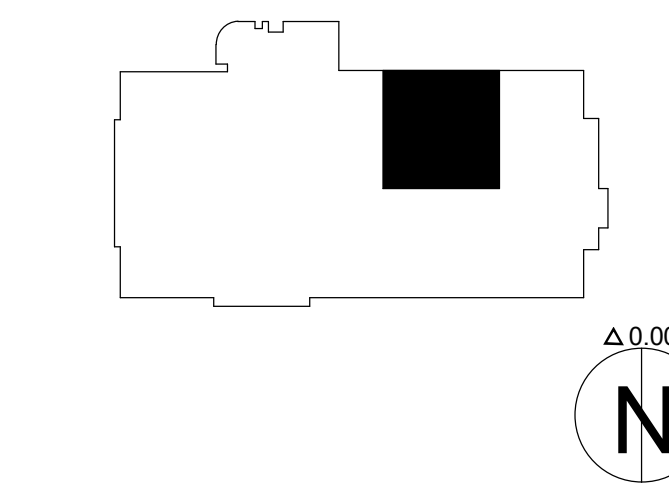
McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919 233 8091
www.mckimcreed.com



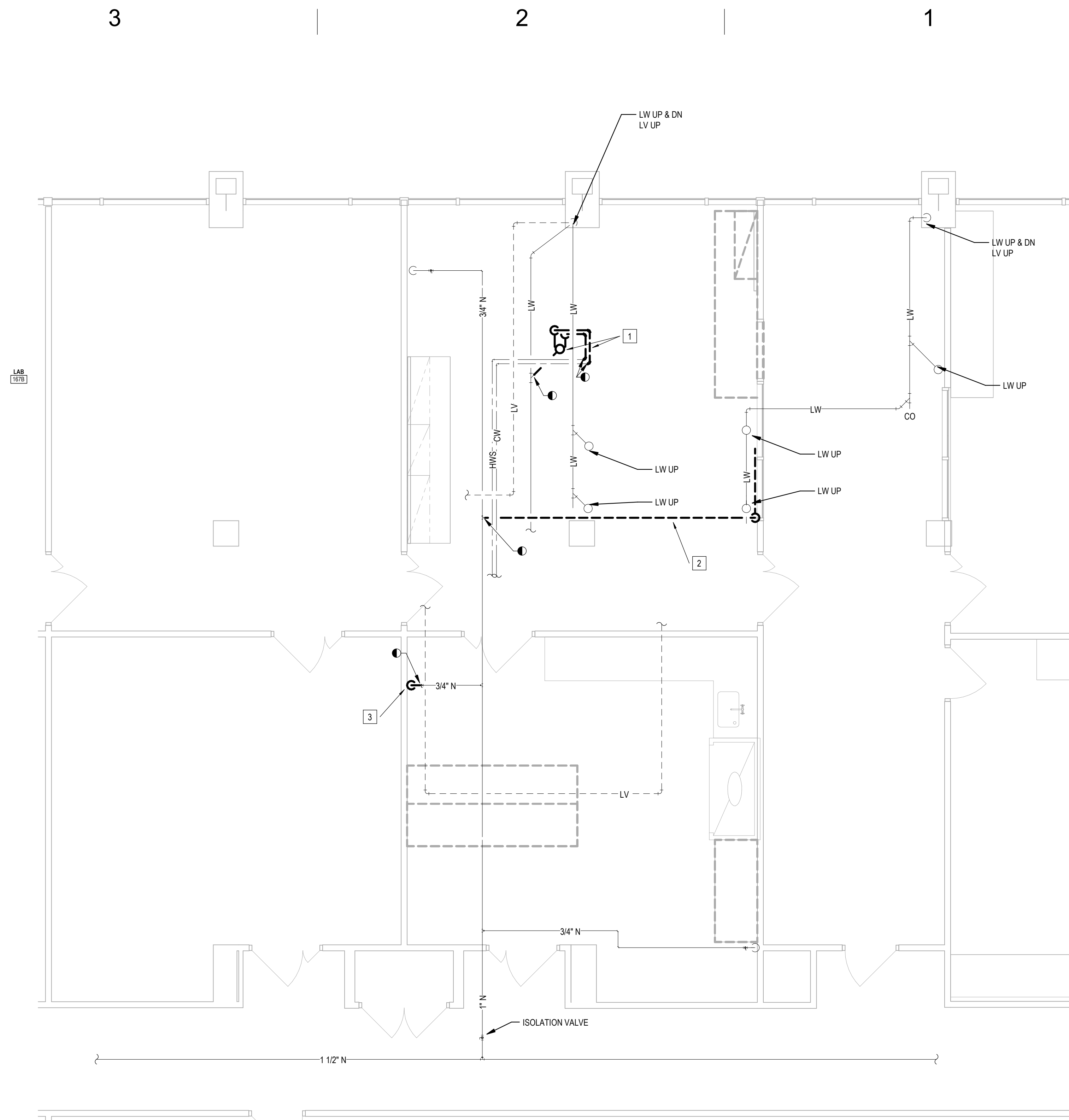
4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

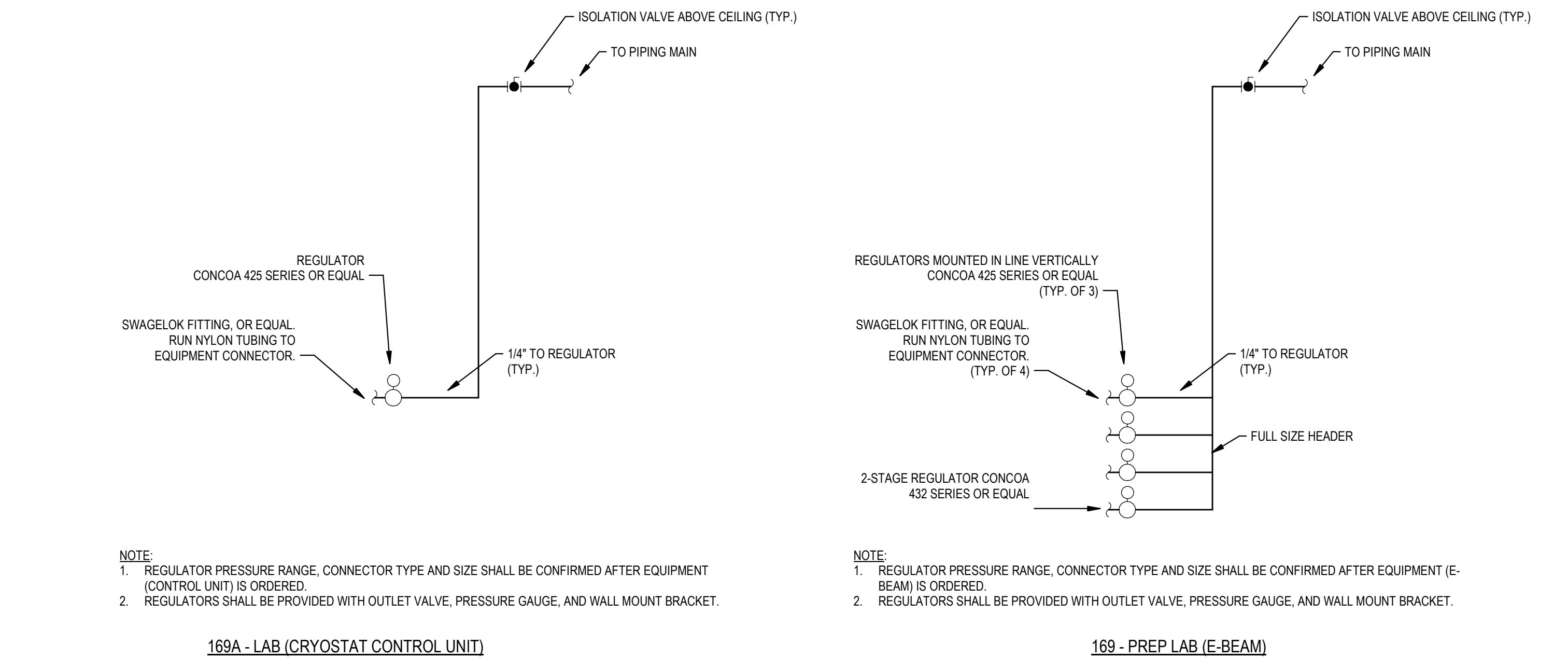
Keyplan



2 FIRST FLOOR PLUMBING PLAN - NEW WORK
SCALE: 1/4" = 1'-0"



1 FIRST FLOOR PLUMBING PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"



3 NITROGEN CONNECTION DETAIL
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

- EXISTING SYSTEMS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY EXACT POINT OF CONNECTION FOR NEW SYSTEMS IN FIELD.
- CONTRACTOR SHALL COORDINATE ALL SHUTDOWNS WITH OWNER A MINIMUM OF 2 WEEKS PRIOR TO WORK.

DEMO WORK NOTES:

- REMOVE ABANDONED PIPING BACK TO MAIN.
- REMOVE EXISTING 3/4" BRANCH BACK TO MAIN.
- REMOVE EXISTING 3/4" BRANCH BACK TO ISOLATION VALVE ABOVE CEILING.

NEW WORK NOTES:

- PROVIDE ISOLATION VALVE ABOVE CEILING. ROUTE PIPING DOWN WALL EXPOSED. TERMINATE WITH REGULATORS AND CONNECTORS. SEE DETAIL.



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: PLUMBING WORK

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

P100

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

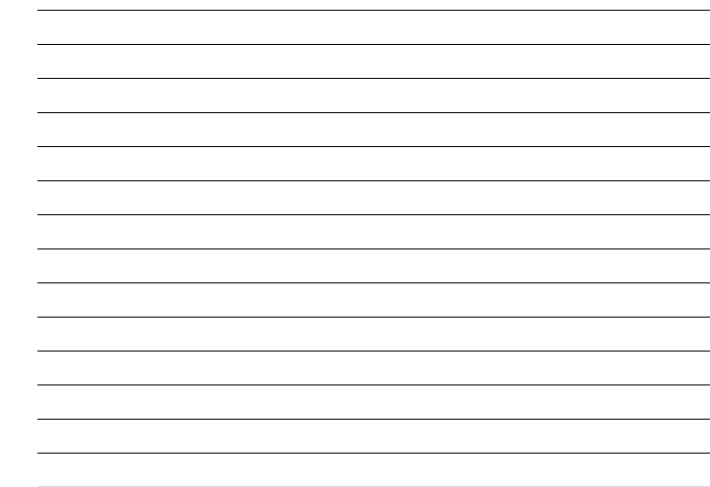
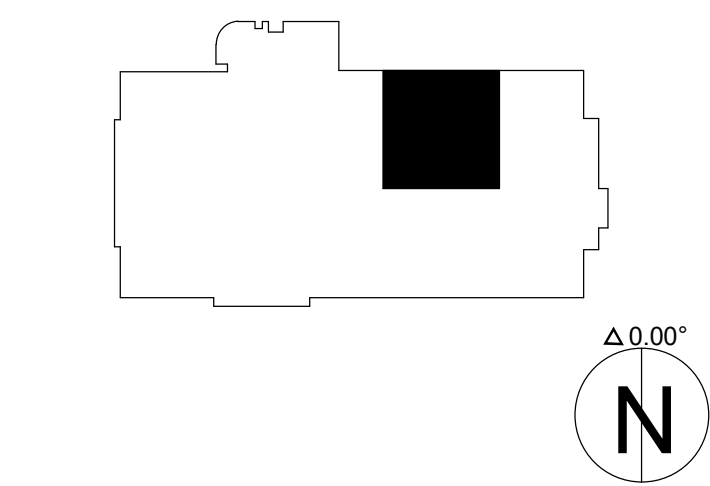
McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS
III RENOVATION
RALEIGH, NORTH
CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
A FIRE PROTECTION DATA
SHEET

Project Name: RENOVATION TO LAB 167, 169 &
169A - PARTNERS BUILDING III
Building No. 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

FP001

6 FIRE PROTECTION GENERAL NOTES:
1. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE FIRE PROTECTION SYSTEM FOR THE PROPOSED PROJECT. THE SYSTEMS PROVIDED SHALL CONFORM TO THE DETAILS STATED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS. ITEMS OR WORK NOT SHOWN OR SPECIFIED, BUT REQUIRED FOR A COMPLETE FIRE PROTECTION SYSTEM, SHALL BE PROVIDED AND SHALL CONFORM TO ACCEPTED TRADE PRACTICES, LOCAL CODES, AND GOVERNING AUTHORITIES.
2. DO NOT SCALE DRAWINGS. BECAUSE OF THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE OFFSETS, FITTINGS, VALVES OR SIMILAR ITEMS WHICH MAY BE REQUIRED TO MAKE A COMPLETE OPERATING SYSTEM. CAREFULLY INVESTIGATE CONDITIONS AFFECTING WORK. INSTALL WORK IN SUCH A MANNER THE INTERFERENCES BETWEEN PIPING, CONDUIT, DUCTS, EQUIPMENT ARCHITECTURAL AND STRUCTURAL FEATURES ARE AVOIDED. PROVIDE ITEMS THAT MAY BE REQUIRED TO MEET THE CONDITIONS AT THE BUILDING, WITHOUT ADDITIONAL COSTS TO THE OWNER.
3. SPRINKLER CONTRACTORS SHALL HAVE SUFFICIENT EXPERTISE (MINIMUM OF 5 YEARS) IN THE TYPE OF CONSTRUCTION TO REALIZE THE EXTENT OF THE WORK REQUIRED. THEREFORE, IT SHOULD BE OBVIOUS TO ANY PRUDENT FIRM WITH EXPERIENCE IN THIS FIELD THAT THESE DOCUMENTS MAY NOT EXPLICITLY DISCLOSE FINAL DETAILS. HOWEVER, CONTRACTORS SHALL HAVE THE EXPERTISE NECESSARY TO INCLUDE NECESSARY ADJUSTMENTS.
4. FIRE PROTECTION BRANCH LINES SHALL BE SLOPED TO DRAIN BACK TO CROSS MAINS. THE CROSS MAINS SHALL BE SLOPED TO DRAIN BACK TO BULK MAINS OR MAIN RISER. INSTALL AUXILIARY DRAINS WHERE TRAPPED PIPING RUNS ARE UNAVOIDABLE. THE SPRINKLER SYSTEM SHALL BE FULLY DRAINABLE.
5. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF FLOOR SLAB WITH SPACE FOR INSULATION AND HANGERS AS REQUIRED.
6. INSTALL PIPING SO THAT VALVES ARE ACCESSIBLE. VALVE STEMS SHALL BE VERTICAL, POINTING UP. ADJUST VALVES FOR SMOOTH AND EASY OPERATION.
7. COORDINATE ALL WORK WITH WORK OF OTHER TRADES SHOWN ON OTHER DRAWINGS.
8. PROVIDE APPROVED FIRESAFING AT ALL FLOOR AND WALL PENETRATIONS.
9. NO PIPING SHALL BE LOCATED IN ANY ELECTRICAL ROOMS, CLOSETS OR TELECOMMUNICATION ROOMS UNLESS THOSE PIPES SERVE ONLY THAT SPACE AND ARE INDICATED ON DRAWINGS UNLESS INDICATED OTHERWISE.
10. ALL VALVES AND EQUIPMENT IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI STANDARD IDENTIFICATION SYSTEM. CONTRACTORS ARE RESPONSIBLE FOR ANY REQUIRED CROSS REFERENCE BETWEEN THESE DRAWINGS AND SPECIFICATIONS AND OTHER DISCIPLINES.
11. COORDINATE THE EXACT LOCATION OF ALL FIRE PROTECTION EQUIPMENT AND DEVICES WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN AND INSTALLATION.
12. REFER TO FIRE PROTECTION DRAWINGS FOR LOCATION OF EQUIPMENT AND SPRINKLER HEADS. THE SPRINKLER CONTRACTOR SHALL COORDINATE EXACT PLACEMENT OF SPRINKLER HEADS WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS.
13. NEW HEADS SHALL BE CONNECTED TO EXISTING BRANCHES AND MAINS IN THE VICINITY. VERIFY EXACT LOCATION IN FIELD.
14. FOLLOW THE FIRE PROTECTION INSTALLATION REQUIREMENTS BASED UPON THE 2002 EDITION OF NFPA 13, NFPA 14, NFPA 20, AND 2003 INTERNATIONAL BUILDING CODES.
15. CONTRACTOR SHALL HYDRAULICALLY DESIGN THE SPRINKLER SYSTEM BASED ON THE WATER FLOW AND HYDRAULIC PRESSURE PROJECTED FOR SCOPE OF WORK. FINAL SPACING AND LOCATIONS FOR THE SPRINKLER HEADS, PIPE SIZING, AND PIPE ROUTING WILL BE BY THE SPRINKLER CONTRACTOR AND VERIFIED BY HYDRAULIC CALCULATIONS.
16. DESIGN STANDARDS: CURRENT EDITION OF IBC, INTERNATIONAL BUILDING CODE 2009. STATE OF PENNSYLVANIA FIRE CODE, NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, NFPA 14 STANDARD FOR THE INSTALLATION OF STANDPIPES AND HOSE SYSTEMS, LOCAL AUTHORITY HAVING JURISDICTION, AND CURRENT INSURANCE CARRIER STANDARDS AND RECOMMENDATIONS.
17. INSURANCE CARRIER: THE SPRINKLER CONTRACTOR SHALL VERIFY PROVIDER WITH THE GENERAL CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
18. DESIGN: ORDINARY HAZARD GROUP 1 DENSITY AREA FOR LABORATORY SPACES: 0.15 GPM PER SQ. FT. OVER 1500 SQ. FT. (PER NFPA 13). HEADS SHALL HAVE 15'0" MAXIMUM HEAD SPACING, AND A MAXIMUM COVERAGE AREA OF 130 SQ. FT. PER HEAD BASED UPON HYDRAULIC CALCULATION AREA REDUCTION PER NFPA 13 SECTION 11.2.3.2.3.1.
19. ALL SYSTEM COMPONENTS SHALL BE UL LISTED.
20. THE SPRINKLER CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF DRAWINGS AND CALCULATIONS TO THE INSURANCE CARRIER AND LOCAL AUTHORITY OF JURISDICTION FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
21. THE FIRE PROTECTION DRAWINGS SHOW THE GENERAL INTENT OF THE FIRE SUPPRESSION SYSTEM. THE SPRINKLER CONTRACTOR SHALL HYDRAULICALLY CALCULATE AND PROVIDE A FULLY SPRINKLED BUILDING AND SHALL MAKE THE APPROPRIATE ADJUSTMENTS TO THE PIPE RUNS AND SPRINKLER HEAD LOCATIONS INDICATED ON THE DRAWINGS TO COORDINATE WITH ALL TRADES WHILE MEETING ALL STATE OF OHIO CODE REQUIREMENTS.
22. THE SPRINKLER CONTRACTOR SHALL RETAIN NICET LEVEL III CERTIFIED DESIGN TO CREATE ALL FINAL SPRINKLER SHOP DRAWINGS. DRAWINGS SHALL REFERENCE NICET CERTIFICATION NUMBER AND DESIGN SIGNATURE.
23. THE SPRINKLER CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO ORDERING OR PURCHASING ANY FIRE PROTECTION EQUIPMENT. SUBMITTALS SHALL CONTAIN SPRINKLER DRAWINGS, CALCULATIONS, MATERIALS AND ACCESSORIES. DRAWINGS SHALL BE STAMPED WITH A REGISTERED PROFESSIONAL ENGINEER'S SEAL. DRAWINGS SHALL BE 1/4" SCALE MINIMUM.
24. THE SPRINKLER CONTRACTOR SHALL COORDINATE SPACE REQUIREMENTS WITH ALL TRADES PRIOR TO COMMENCEMENT OF WORK.
25. ALL SPRINKLER PIPING SHALL BE SUPPORTED BY THE BUILDING STRUCTURE. PIPES SHALL NOT SUPPORT FROM CEILING TILES, CEILING SUPPORT STRUCTURES, OR OTHER PIPES.
26. FIRE PROTECTION BRACH LINES SHALL BE SLOPED BACK TO THE MAIN OR LOW POINT FOR POSITIVE DRAINAGE. INSTALL AUXILIARY DRAINS WHERE NECESSARY WHERE PIPING MAY BE TRAPPED WITHOUT RESOLUTION. THE SPRINKLER SYSTEM SHALL BE FULLY DRAINABLE.
27. THE SPRINKLER CONTRACTOR SHALL COORDINATE EXACT PLACEMENT OF SPRINKLER HEADS WITH THE ARCHITECTURAL DRAWINGS AND ELECTRICAL DRAWINGS.
28. NO SPRINKLER PIPING SHALL BE LOCATED IN ELECTRICAL ROOMS.
29. FIRE PROTECTION PIPING IS TO BE ABOVE THE CEILING UNLESS NOTED OTHERWISE. PROVIDE HANGERS ACCORDING TO NFPA SPACING CRITERIA. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL SUPPLEMENTAL STEEL REQUIRED TO ACCOMMODATE HANGER SPACING DISTANCES.
30. THE SPRINKLER CONTRACTOR SHALL PROVIDE ANY NECESSARY FIRE STOPPING MATERIALS I.E., SEALANTS OR CAULKING AS REQUIRED IN THE DESIGN FOR THE SYSTEM.
31. ALL PIPING AND SPRINKLER HEADS SHOWN ARE FOR BIDDING PURPOSES ONLY. FINAL SPACING OF THE SPRINKLER HEADS WILL BE LOCATED BY THE CONTRACTOR AND VERIFIED BY HYDRAULIC CALCULATIONS. FINAL PIPE SIZING AND ROUTING WILL BE DETERMINED BY THE CONTRACTOR AND VERIFIED BY HYDRAULIC CALCULATIONS.
32. THE SPRINKLER SYSTEM SHALL BE TESTED UPON COMPLETION TO THE REQUIREMENTS OF NFPA-13 AND TO ANY OTHER AUTHORITY HAVING JURISDICTION (THE MOST STRINGENT SHALL BE APPLICABLE).

5 FIRE PROTECTION SPECIFICATION - GENERAL 4
1. HYDRAULIC CALCULATIONS SHALL BE PREPARED IN ACCORDANCE WITH NFPA 13, CHAPTER 23, AND SCO WATER BASED FIRE PROTECTION SYSTEMS GUIDELINES AND POLICIES.
2. PROVIDE SAFETY FACTOR OF 1 PSI STATIC PRESSURE, 10 PSI RESIDUAL PRESSURE, AND 10% RESIDUAL FLOW.
3. SPRINKLERS SHALL BE FM APPROVED AND SHALL NOT INCLUDE "O-RING" SEALS.
4. SPRINKLER HEADS LOCATED IN AREAS OF IMPACT SHALL BE PROVIDED WITH PROTECTIVE WIRE GUARDS LISTED FOR USE WITH THE MODEL OF SPRINKLER, WHERE NOTED ON DRAWINGS.
5. PIPING FOR WET SYSTEMS 2 INCHES AND UNDER SHALL BE: SCHEDULE 40 PIPING, BLACK STEEL, SEAMLESS, ASTM 53A, GRADE B, WITH THREADED OR VICTAULIC ENDS.
6. FITTINGS: MALLEABLE IRON OR CAST IRON SCREWED, ASTM-A-47 AND ASME B-16.3
7. PIPING 2-1/2 INCHES AND ABOVE: SCHEDULE 10 PIPING, SEAMLESS, BLACK STEEL, ROLL GROOVED, ASTM-A-135, WITH GROOVED MECHANICAL JOINTS AND FITTING FROM THE SAME MANUFACTURER, UL LISTED AND FM APPROVED FOR FIRE SERVICE.
8. ALL EXPOSED SPRINKLER PIPING SHALL BE PAINTED 'RED' UNLESS OTHERWISE PROHIBITED BY CODE OR AHJ.

HANGER INSTALLATION REQUIREMENTS

MAXIMUM DISTANCE BETWEEN HANGERS									
NOMINAL PIPE SIZE	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
SCH. 40 GALV. STEEL	5' 6"	6' 0"	6' 6"	7' 0"	8' 0"	9' 0"	10' 0"	N/A	N/A
THREADABLE LIGHTWALL	N/A	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	12' 0"	N/A	N/A
STEEL PIPE (10' 40)	N/A	12' 0"	12' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"

THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1 1/4" PIPE AND 60" FOR 1 1/2" PIPE OR LARGER.

TRAPEZE INSTALLATION REQUIREMENTS

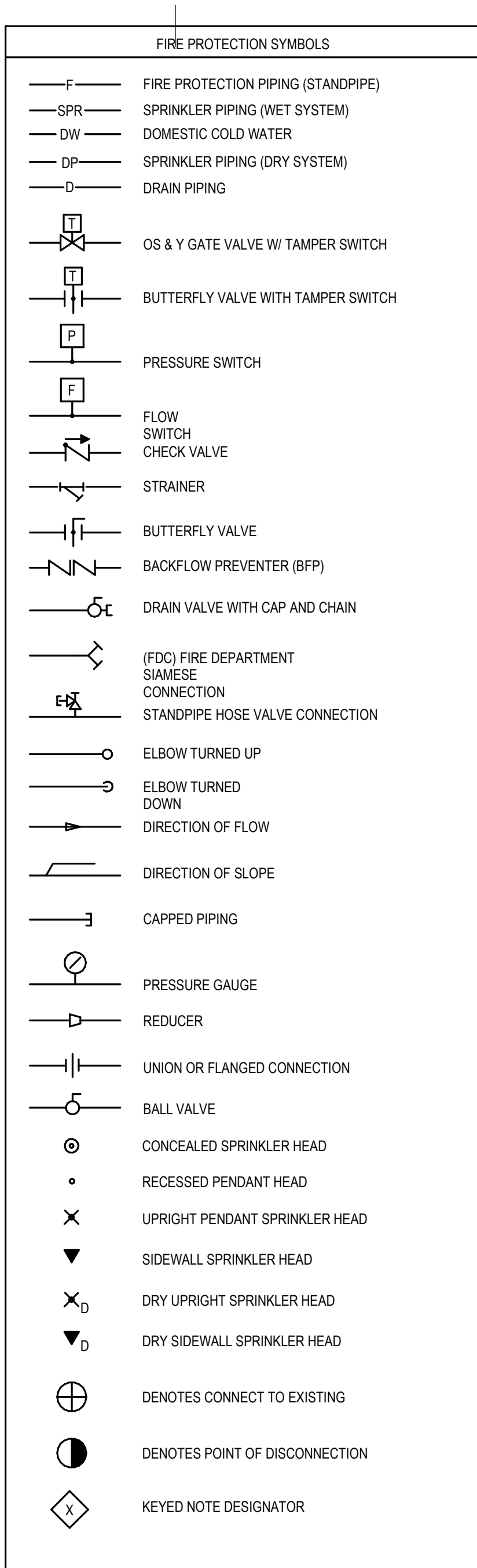
SPAN OF TRAPEZE (Schedule 10)	NOMINAL PIPE SIZE SUPPORTED							
	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
1 FT. 6 IN.	1"	1"	1"	1"	1"	1"	1-1/4"	1-1/4"
2 FT. 0 IN.	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"
2 FT. 6 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	2"
3 FT. 0 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"
4 FT. 0 IN.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"
5 FT. 0 IN.	2"	2"	2"	2"	2"	2"	2-1/2"	2-1/2"
6 FT. 0 IN.	2"	2"	2"	2"	2"	2-1/2"	2-1/2"	3"
7 FT. 0 IN.	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"
8 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"
9 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	4"
10 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	4"

HYDRANT FLOW TEST DATA

DATE OF TEST: JUNE 20, 2024

TEST PERFORMED BY: NCSU UTILITIES & ENGINEERING SERVICES

	FLOW HYDRANT	PRESSURE HYDRANT
	HYDRANT 842	HYDRANT 742
LOCATION	SOUTHEAST OF BUILDING	SOUTHWEST OF BUILDING
STATIC PRESSURE (PSI)		88 PSI
RESIDUAL PRESSURE (PSI)		80 PSI
FLOW OBSERVED (GPM)	1300 GPM	



E

D

C

B

A

E

D

C

B

A

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

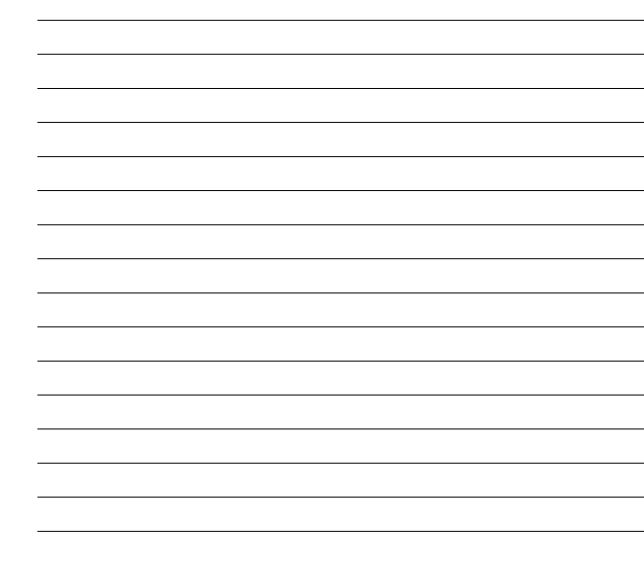
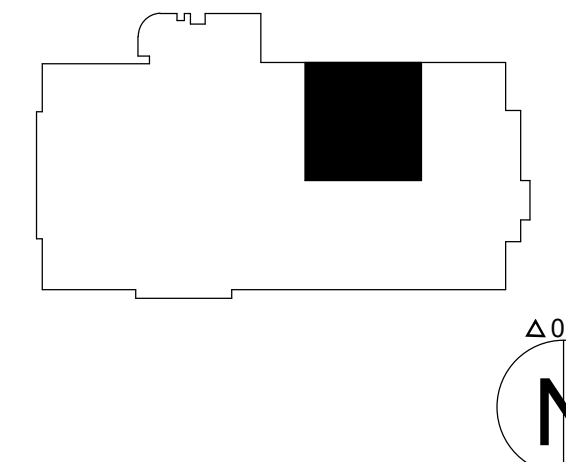
Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS III RENOVATION
RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
A FIRE PROTECTION PLAN

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

FP201

6

5

4

3

2

1

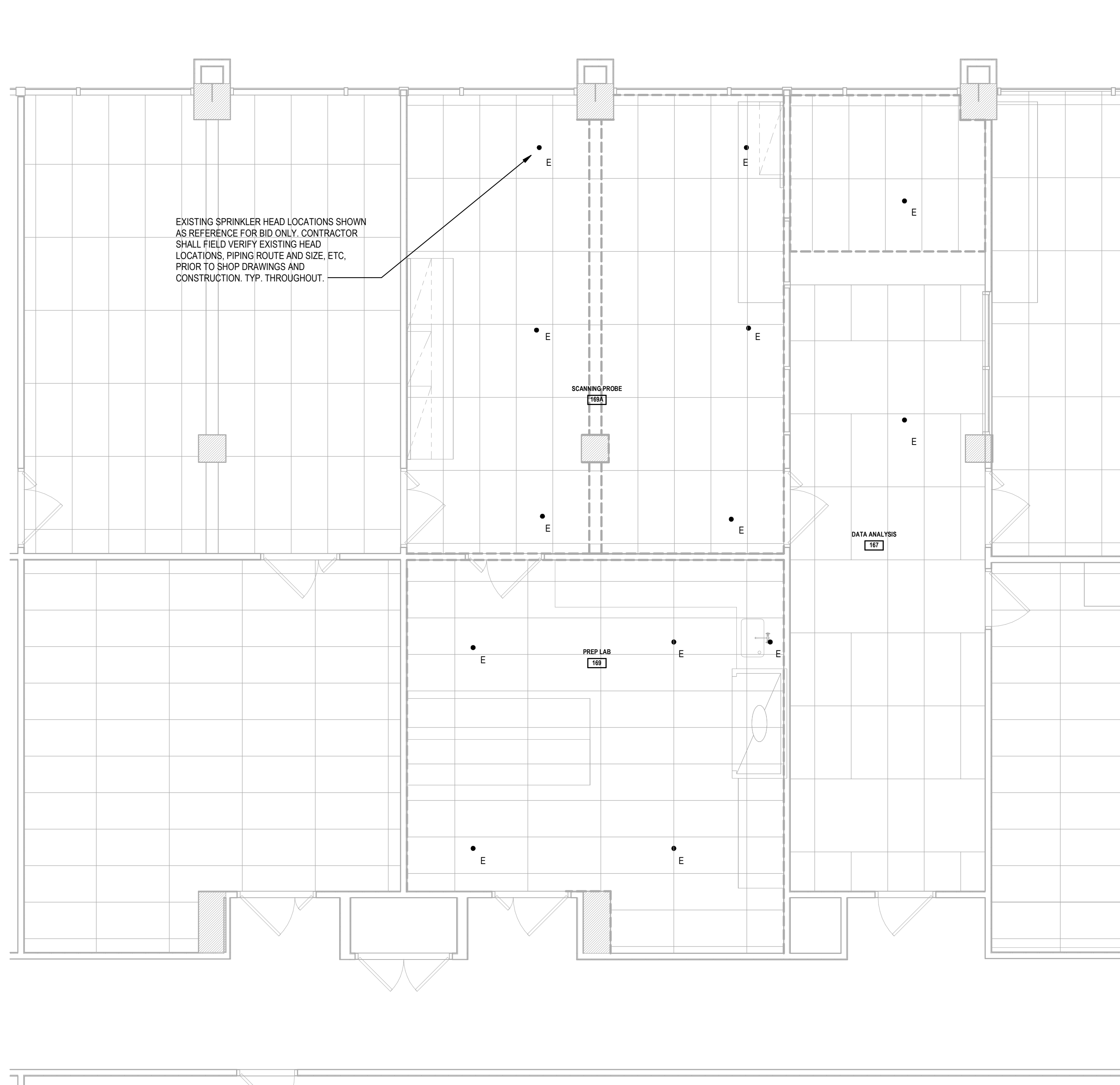
E

D

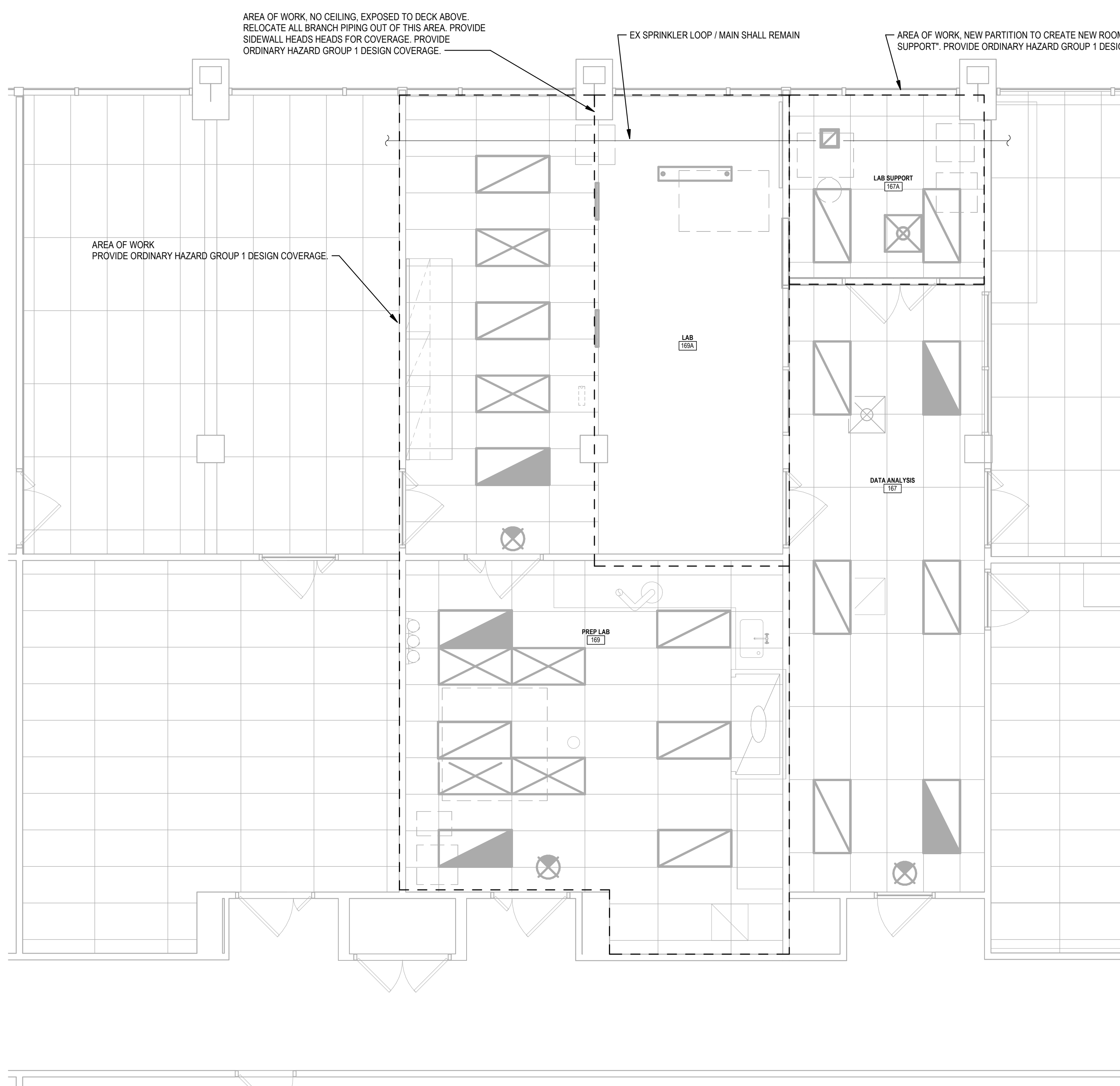
C

B

A



1 FIRST FLOOR SPRINKLER PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"



2 FIRST FLOOR FIRE PROTECTION PLAN - NEW WORK
SCALE: 1/4" = 1'-0"

GENERAL NOTES

- ALL PIPING SHALL BE SCHEDULE 40 STEEL.
- ALL FITTINGS, ACCESSORIES, HANGERS, ETC, SHALL BE ULL LISTED AND APPROVED FOR SPRINKLER APPLICATION.
- ALL SPRINKLER HEADS SHALL BE RECESSED CHROME TYPE, QUICK RESPONSE, WITH GAGES. CONTRACTOR SHALL VERIFY EXISTING SPRINKLER HEAD TYPE PRIOR TO BEGINNING INSTALLATION AND ALERT DESIGN TEAM IF ANY HEADS LOCATED WITHIN AREA OF WORK ARE NOT QUICK RESPONSE.
- CONTRACTOR SHALL CONFIRM EXISTING SPRINKLER HEAD LOCATIONS, PIPE SIZES, AND ROUTING IN FIELD. BRANCH PIPING SHALL BE ROUTED AS HIGH AS POSSIBLE ABOVE CEILINGS.
- CONTRACTOR SHALL PROVIDE HYDRAULIC CALCULATIONS TO CONFIRM COMPLIANCE WITH DESIGN.

6

5

4

3

2

1

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

Keyplan

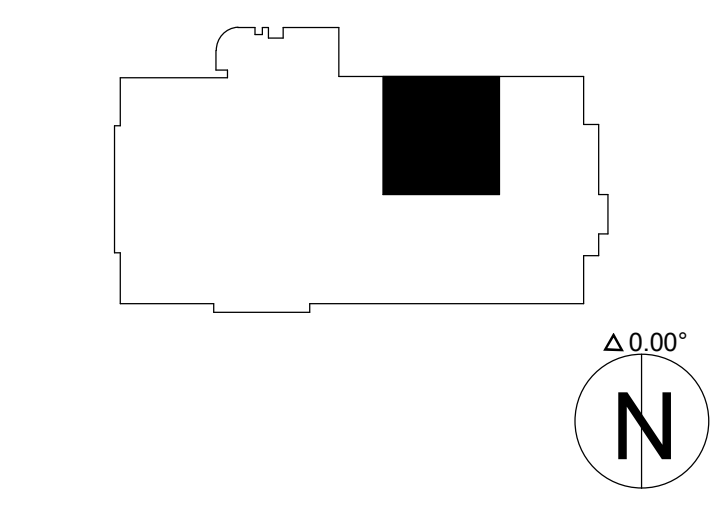
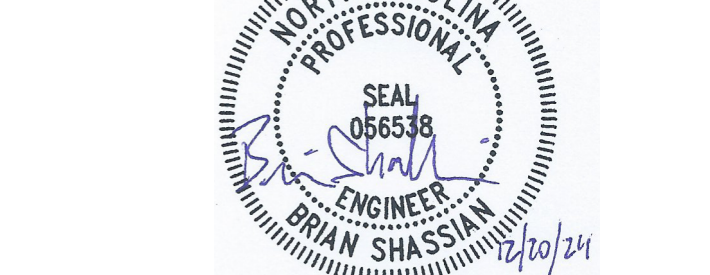


Table with 2 columns: TAG, SYSTEM, PRICE, MODEL, DESCRIPTION. Contains various equipment and material entries.



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title: MECHANICAL DATA SHEET

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

M001

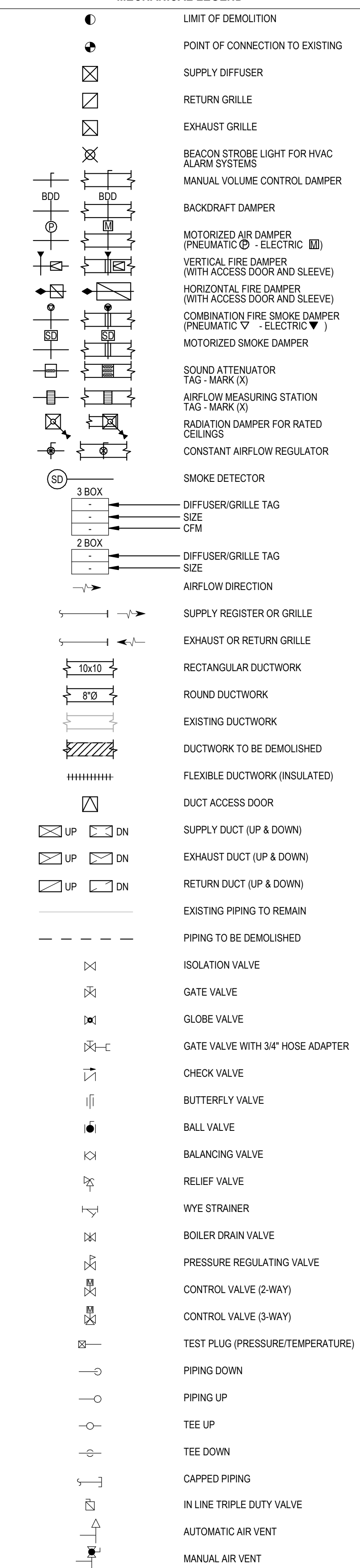
GENERAL NOTES

- 1. THE DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES...
2. THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE PROJECT PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION...
26. ALL FIRE DAMPERS AND U.L. FIRE STOPS SHALL BE INSTALLED IN COMPLETE ACCORDANCE WITH MANUFACTURERS U.L. LISTING AND INSTALLATION INSTRUCTIONS...

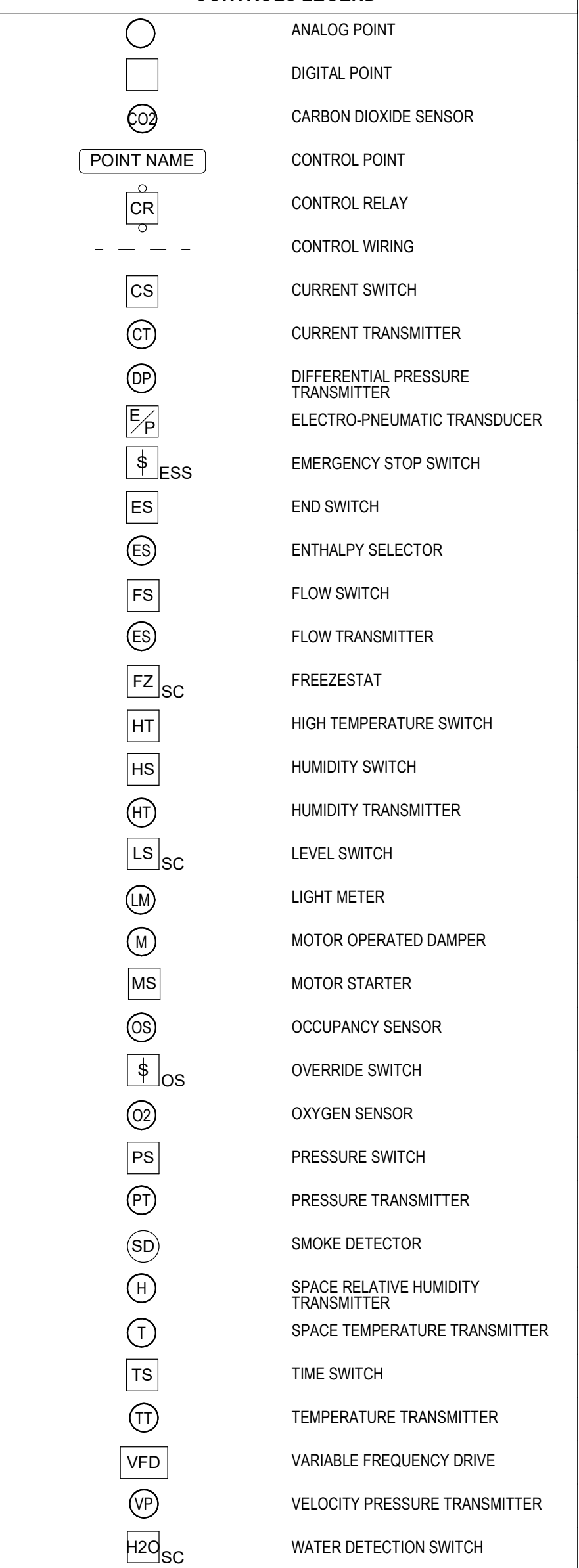
MECHANICAL SHEET INDEX

Table with 2 columns: TAG, DESCRIPTION. Lists M001 MECHANICAL DATA SHEET, M100 MECHANICAL DEMOLITION, M200 MECHANICAL NEW WORK, M800 MECHANICAL DETAILS, M801 AIRFLOW DIAGRAM.

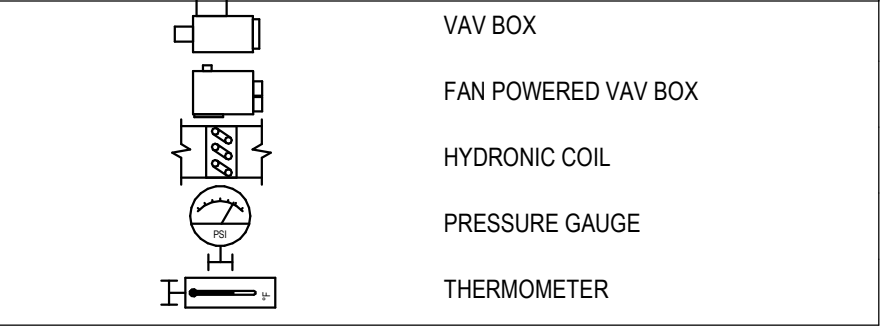
MECHANICAL LEGEND



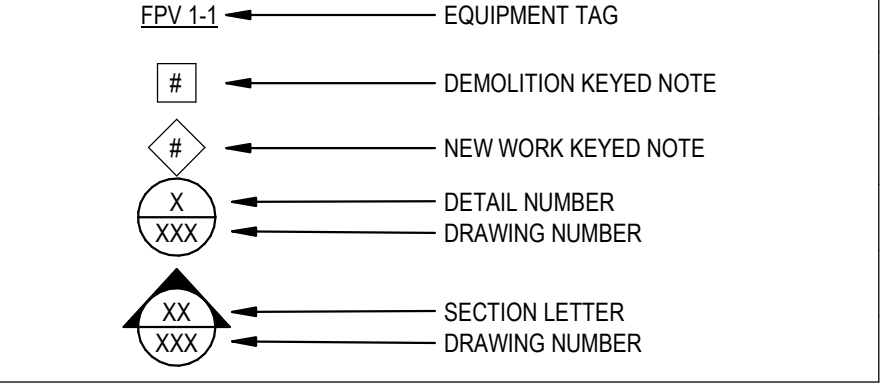
CONTROLS LEGEND



EQUIPMENT LEGEND



DRAWING SYMBOLS



2018 APPENDIX B

Table with 2 columns: CLIMATE ZONE, THERMAL ZONE, INTERIOR DESIGN CONDITIONS, BUILDING HEATING LOAD, BUILDING COOLING LOAD, MECHANICAL SPACE CONDITIONING SYSTEM, UNITARY, BOILER, CHILLER, LIST EQUIPMENT EFFICIENCIES.

CODES/STANDARDS

- NC MECHANICAL CODE - 2018 EDITION
ASHRAE STANDARDS:
62-2019, "VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY"
2018, "ADVANCED ENERGY GUIDE FOR K-12 SCHOOL BUILDINGS, SMALL RETAIL BUILDINGS, SMALL OFFICE BUILDINGS"
55-2017, "THERMAL ENVIRONMENTAL CONDITIONS FOR HUMAN OCCUPANCY"

MECHANICAL ABBREVIATIONS

Table with 4 columns: ABBREVIATION, DESCRIPTION, ABBREVIATION, DESCRIPTION. Lists various mechanical abbreviations like AAV, ADU, AD, AFF, AFU, APD, BFD, BMP, CFM, CMD, COND, CW, CWMU, CHWR, CHWS, CWS, CWR, DI, DN, EA, EAG-X, EAT, EC, ESP, ETR, EWT, EX, FACP, FCU, FPM, GPC, HWS, HWR, HP, HPC, HPS.

HAZARDOUS MATERIALS WARNING

HAZARDOUS MATERIALS, INCLUDING ASBESTOS CONTAINING MATERIALS, ARE EITHER NOT PRESENT OR WERE REMOVED PRIOR TO CONSTRUCTION...

VARIABLE AIR VOLUME SCHEDULE

Table with 7 columns: TAG, AREA (ROOMS) SERVED, CFM MAX, CFM MIN, INLET DUCT SIZE, BASIS OF DESIGN, NOTES. Includes notes about box modulation and control power.

TERMINAL SCHEDULE

Table with 6 columns: TAG, SYSTEM, BASIS OF DESIGN, PRICE, MODEL, DESCRIPTION. Lists terminal equipment like EAG-1 EXHAUST, SAD-1 SUPPLY, SAD-2 SUPPLY.

NOTES

- 1. PROVIDE EACH INLET OR OUTLET WITH A MANUAL LOCKING VOLUME DAMPER.
2. PROVIDE ALL HARDWARE REQUIRED FOR INSTALLATION IN CEILING SYSTEM.
3. ALTERNATIVE APPROVED MANUFACTURERS ARE TITUS, NALOR, TUTTLE BAILEY.

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

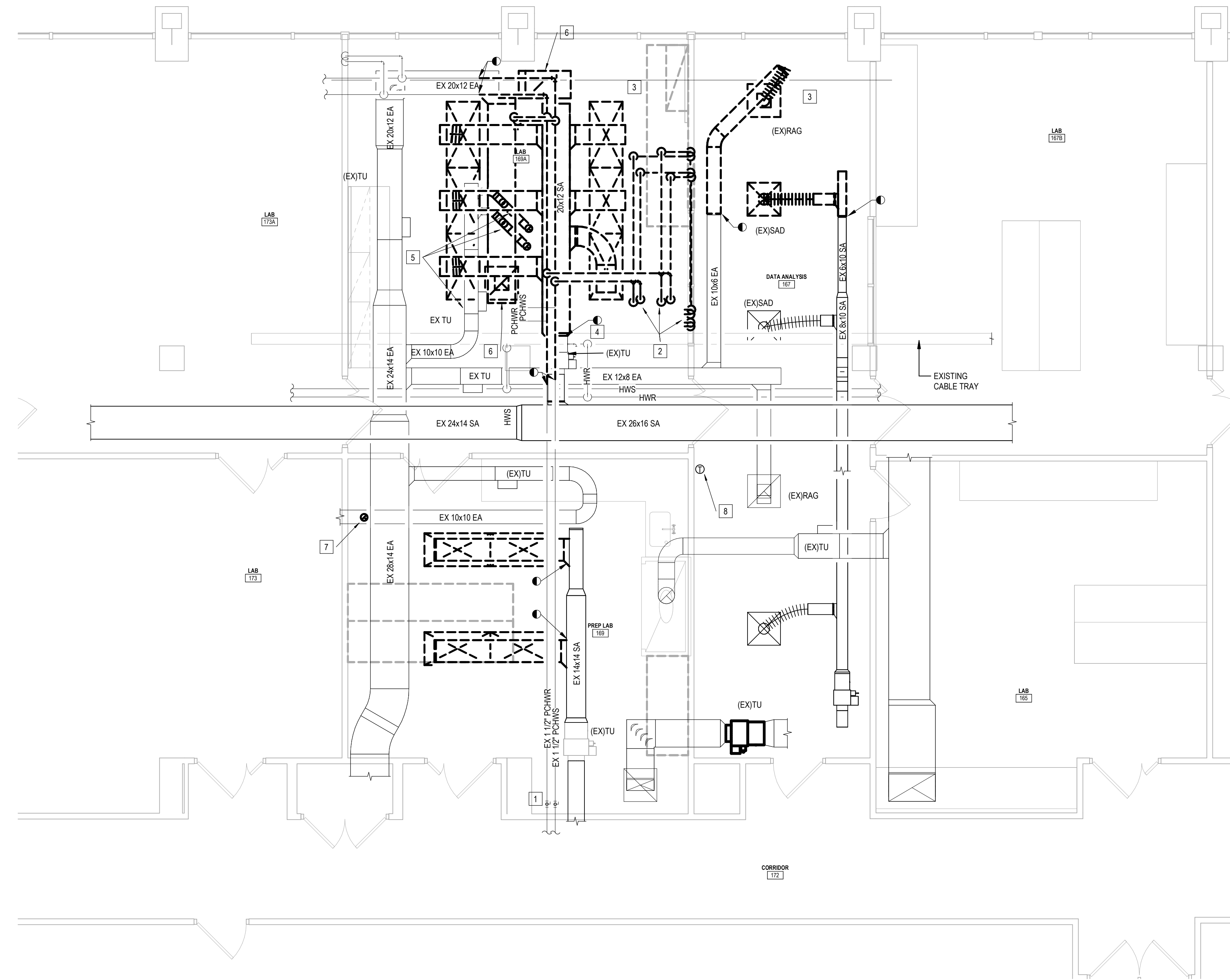
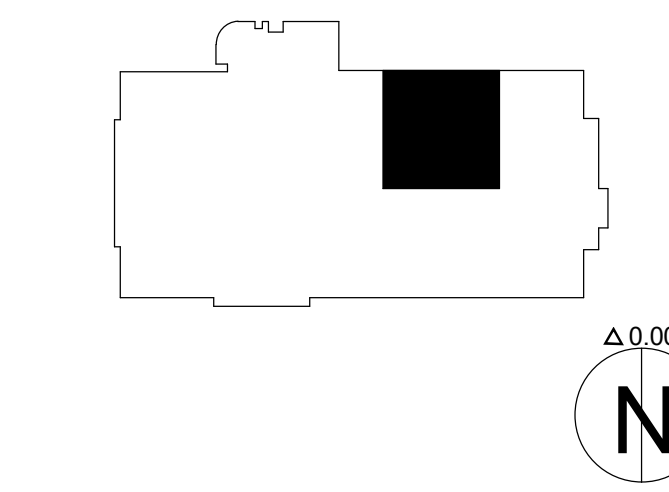
McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

Keyplan



1 FIRST FLOOR MECHANICAL PLAN - DEMOLITION
SCALE: 1/4" = 1'-0"

- GENERAL NOTES
1. DUCT ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL CONFIRM IN THE FIELD ALL EXISTING SYSTEMS PRIOR TO DEMOLITION OR FABRICATION OF DUCTWORK.
 2. 3 FT CLEARANCE OF EXISTING VAV CONTROLLERS AND COIL TRIM SHALL BE MAINTAINED.
 3. CONTRACTOR SHALL COORDINATE ANY AND ALL SHUTDOWNS OR INTERRUPTIONS TO EXISTING SYSTEM OPERATION WITH OWNER A MINIMUM OF 2 WEEKS IN ADVANCE.
 4. NEW EXHAUST DUCTWORK CONNECTED TO SNORKELS OR HOODS SHALL BE STAINLESS STEEL CONSTRUCTION.

DEMOLITION NOTES

1. VERIFY LOCATION AND FUNCTION OF EXISTING PCHW ISOLATION VALVES.
2. DEMOLISH ALL PCHW PIPING IN WALL AND BACK TO LIMITS OF DEMOLITION SHOWN ON PLAN.
3. PIPING AND DUCTWORK LOCATED IN AREA OF CEILING TO BE RAISED SHALL BE REMOVED. SEE NEW WORK PLAN.
4. REMOVE ALL SUPPLY DUCT AND ASSOCIATED DIFFUSERS DOWNSTREAM OF EX TERMINAL UNIT.
5. REMOVE (2) 5" DIA EXHAUST DUCTS BACK TO TAP ON MAIN AND CAP THE TAP. TERMINAL UNIT SHALL BE SET TO 0 CFM IN BAS.
6. REMOVE (2) EX EXHAUST GRILLES.
7. REMOVE 5" DIA. TAP THROUGH CEILING AND SEAL OPENING ON EXHAUST MAIN.
8. EXISTING THERMOSTAT TO BE RELOCATED. PROVIDE NEW WIRING FROM RELOCATED STAT TO EXISTING VAV.



NCSU PARTNERS
III RENOVATION
RALEIGH, NORTH
CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
MECHANICAL DEMOLITION

Project Name: RENOVATION TO LAB 167, 169 &
169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

M100

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

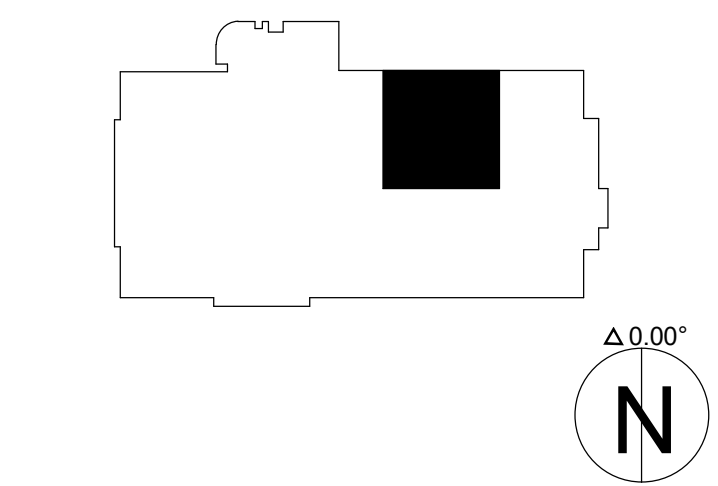
Consultants

McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8891
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8891, Fax: (919) 233-8031
NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS III RENOVATION
RALEIGH, NORTH CAROLINA

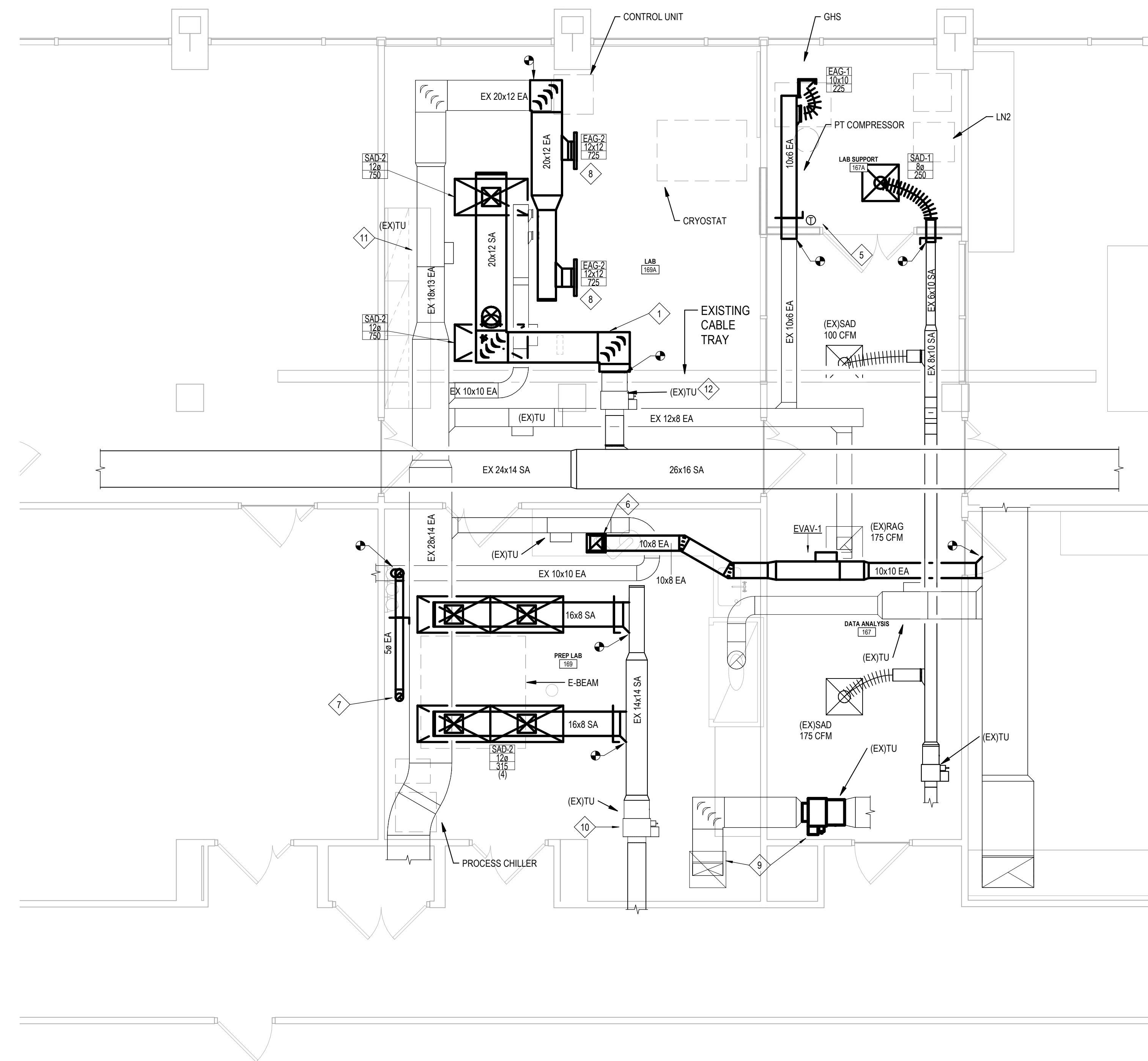
Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
MECHANICAL NEW WORK

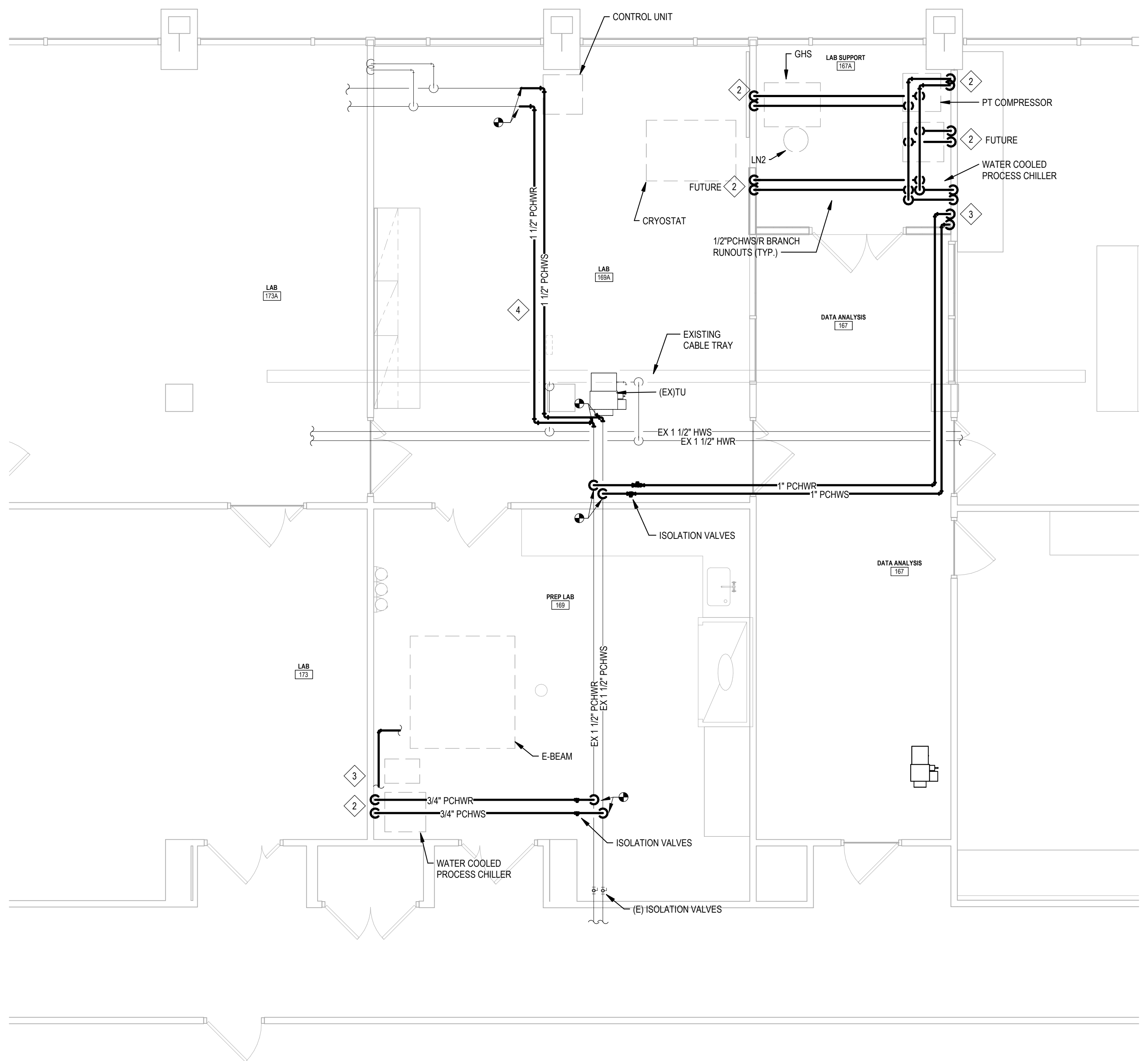
Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

M200



1 FIRST FLOOR MECHANICAL DUCTWORK - NEW WORK
SCALE: 1/4" = 1'-0"



2 MECHANICAL PIPING FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

- GENERAL NOTES**
- DUCT ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL CONFIRM IN THE FIELD ALL EXISTING SYSTEMS PRIOR TO DEMOLITION OR FABRICATION OF DUCTWORK.
 - 3 FT CLEARANCE OF EXISTING VAV CONTROLLERS AND COIL TRIM SHALL BE MAINTAINED.
 - CONTRACTOR SHALL COORDINATE ANY AND ALL SHUTDOWNS OR INTERRUPTIONS TO EXISTING SYSTEM OPERATION WITH OWNER A MINIMUM OF 2 WEEKS IN ADVANCE.
 - NEW EXHAUST DUCTWORK CONNECTED TO SNORKELS OR HOODS SHALL BE STAINLESS STEEL CONSTRUCTION.
 - SEE DETAILS FOR MC RESPONSIBILITIES FURNISHING DISCONNECTS FOR EQUIPMENT.
 - BALANCE ALL NEW AND EXISTING GRILLES, DIFFUSERS, ETC. TO AIRFLOWS SHOWN ON PLAN.
- NEW WORK NOTES**
- ROUTE DUCT TO MINIMIZE AMOUNT VISIBLE IN EXPOSED CEILING AREA.
 - ROUTE PCHW PIPING DOWN FROM CEILING. STUBBING OUT OF WALL AT 36" AFF WITH ESCUTCHEON. TERMINATE WITH VARIABLE AREA FLOW METER WITH INTEGRAL VALVE. SEE DETAILS. PROVIDE EACH BRANCH WITH ISOLATION VALVES ABOVE THE CEILING.
 - SEE DETAILS FOR PIPING CONFIGURATION OF PROCESS CHILLER.
 - RE-ROUTE CHW PIPING TO AVOID RAISED CEILING AREA.
 - RELOCATED THERMOSTAT. PROVIDE NEW WIRING BACK TO ASSOCIATED EXISTING VAV.
 - CONNECT TO EXHAUST SNORKEL. BALANCE EXHAUST SNORKEL TO 350 CFM.
 - TERMINATE TAP BELOW CEILING. SEE DETAILS. BALANCE TAP TO 100 CFM. RE-BALANCE EXISTING TAP ON OTHER SIDE OF WALL TO 100 CFM.
 - SIDEWALL EXHAUST GRILLES ON VERTICAL FACE OF CEILING PLENUM.
 - CHANGE BAS EXHAUST SETPOINTS TO BE MIN/MAX AIRFLOW OF 100/75 CFM. SEQUENCE TO REMAIN UNCHANGED.
 - CHANGE BAS SUPPLY SETPOINT FOR TERMINAL UNIT TO 1260 CFM. SEQUENCE TO REMAIN UNCHANGED.
 - CHANGE BAS SUPPLY SETPOINT FOR TERMINAL UNIT TO 1450 CFM. SEQUENCE TO REMAIN UNCHANGED.
 - CHANGE BAS SUPPLY SETPOINT FOR TERMINAL UNIT TO 1500 CFM. SEQUENCE TO REMAIN UNCHANGED.

Client

North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants

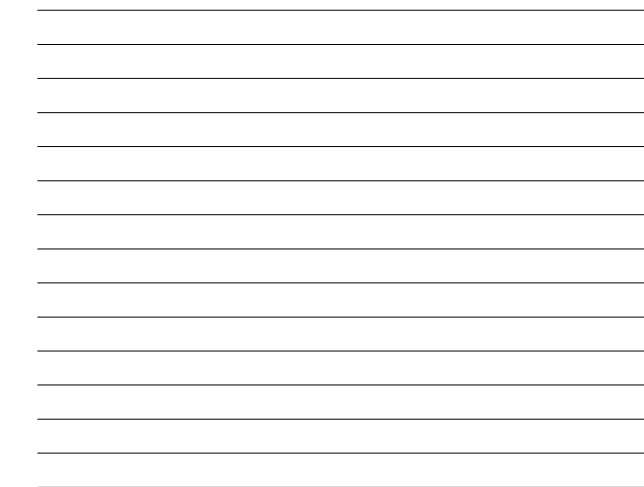
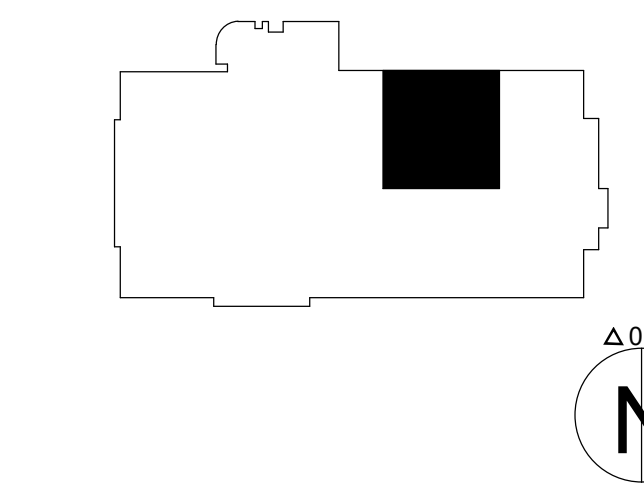
McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
Phone: (919) 233-8091, Fax: (919) 233-8031
www.mckimcreed.com



4300 Edwards Mill Road
Suite 200
Raleigh, North Carolina 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
www.mckimcreed.com

Keyplan



NCSU PARTNERS III RENOVATION
RALEIGH, NORTH CAROLINA

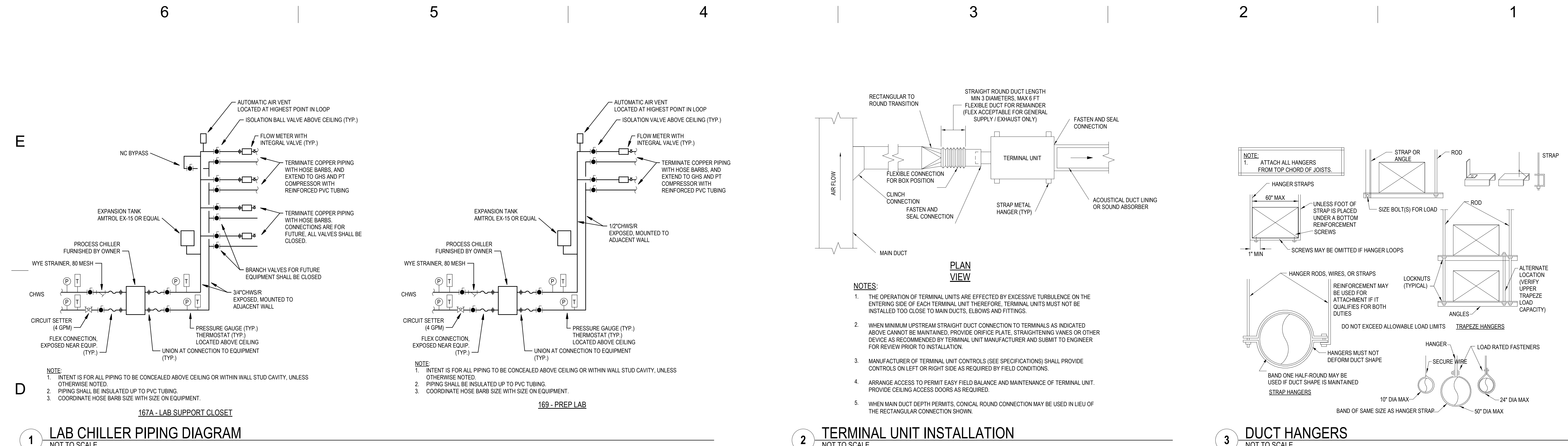
Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
MECHANICAL DETAILS

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

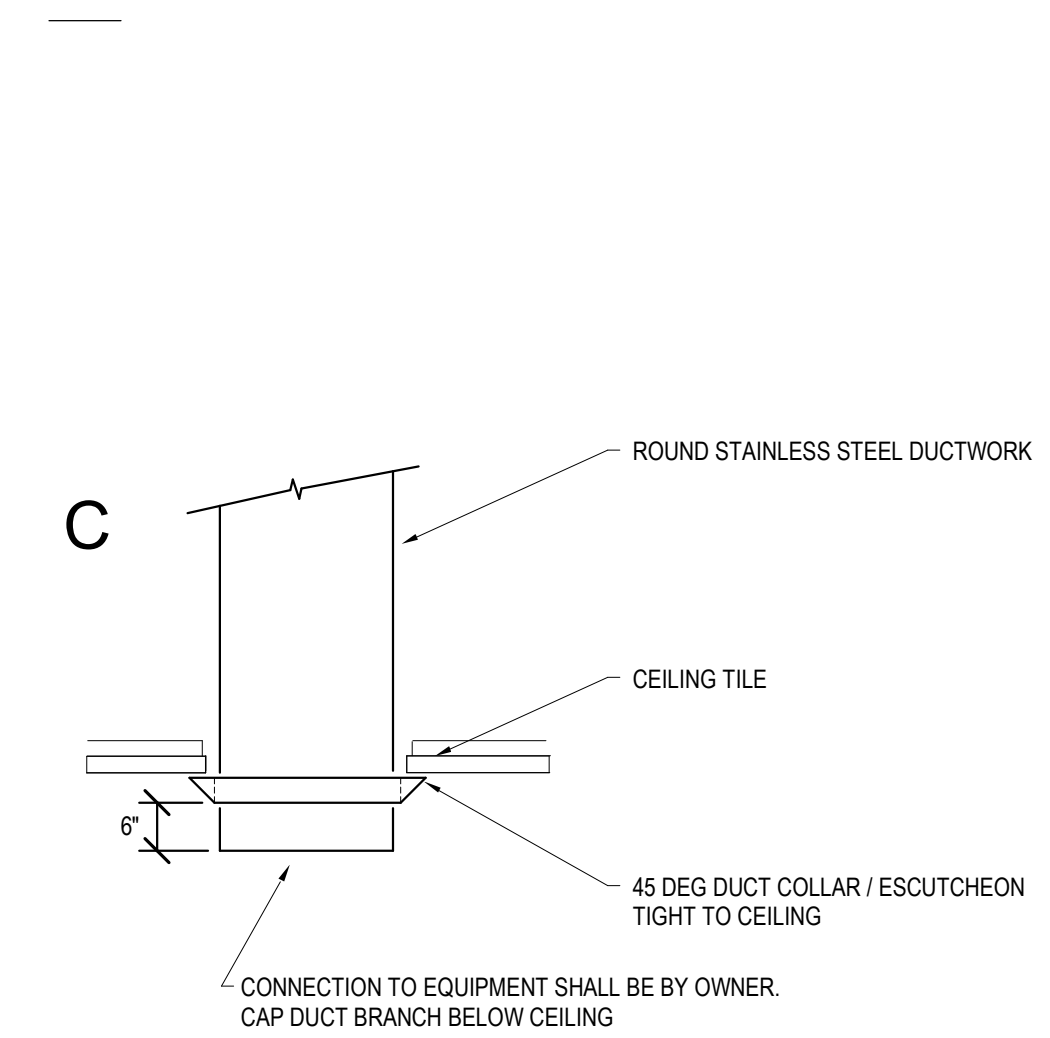
M800



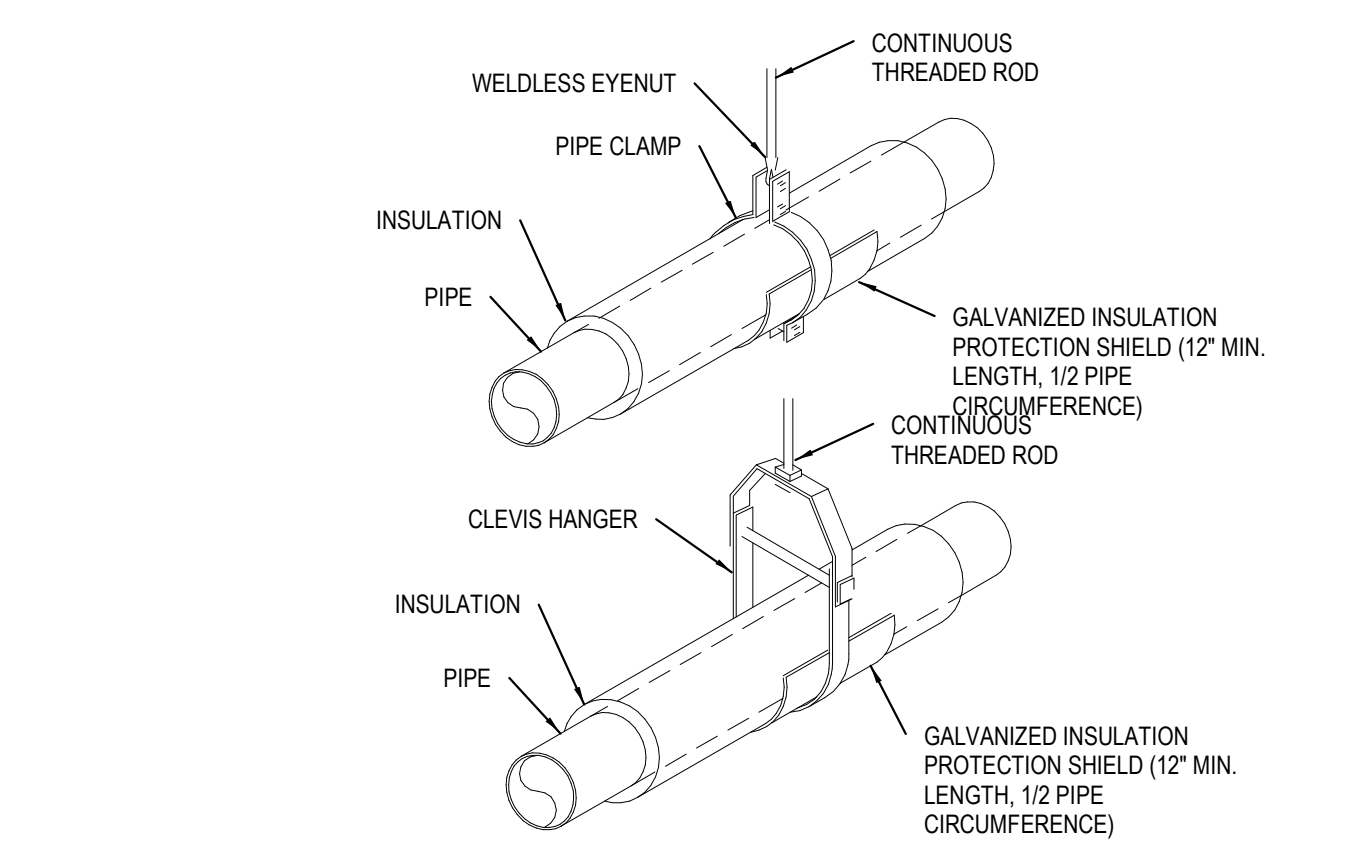
1 LAB CHILLER PIPING DIAGRAM
NOT TO SCALE

2 TERMINAL UNIT INSTALLATION
NOT TO SCALE

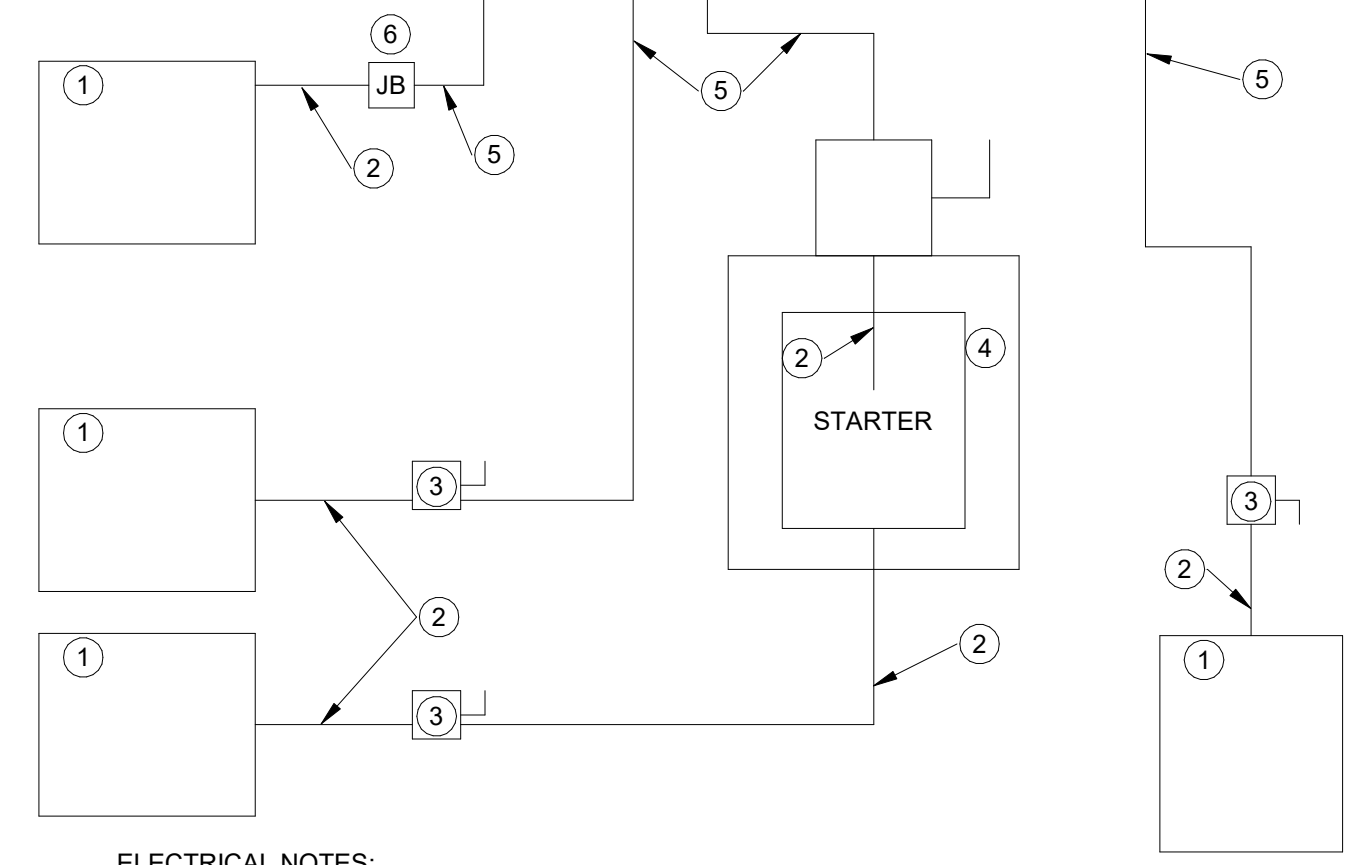
3 DUCT HANGERS
NOT TO SCALE



5 DUCT THROUGH CEILING
NOT TO SCALE



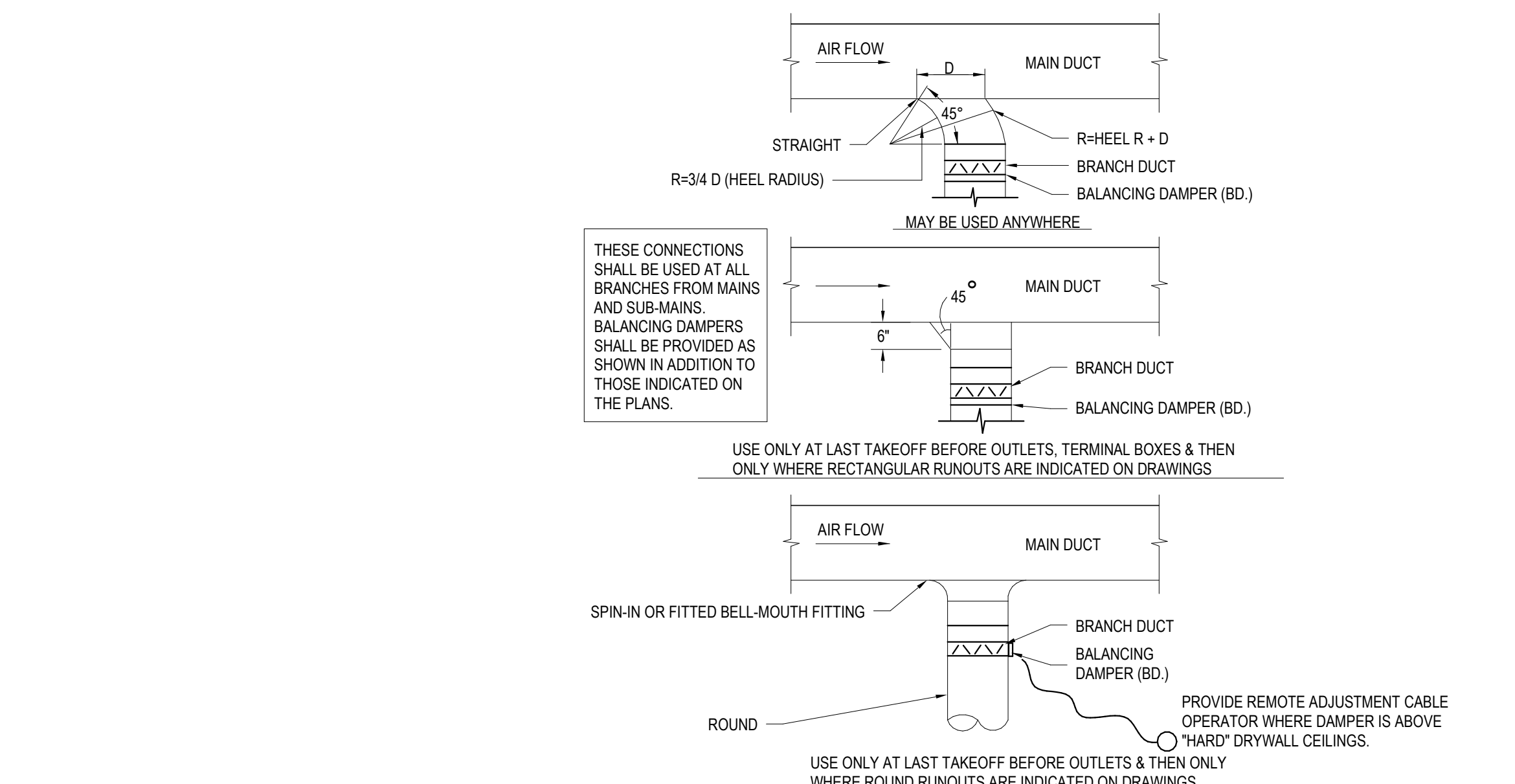
6 PIPE SUPPORTS
NOT TO SCALE



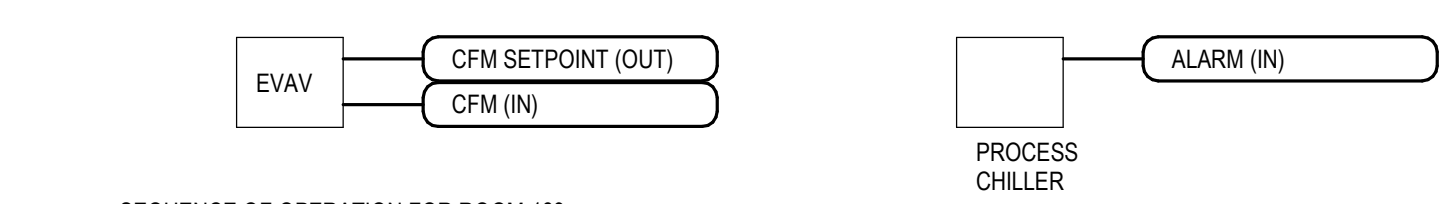
ELECTRICAL NOTES:

- EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
- CONDUIT & WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
- IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
- A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER LOCATE ADJACENT TO EQUIPMENT.
- FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
- JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT IF NO STARTER OR DISCONNECT IS SUPPLIED. A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING SHALL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
- PROJECTS UTILIZING AN MCC, THE STARTER, CB OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- IN ALL CASES, THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP AND TEST EQUIPMENT.

8 SCO ELECTRICAL CONNECTION COORDINATION DIAGRAM
NOT TO SCALE



4 BRANCH TAKEOFF
NOT TO SCALE



9 CONTROLS SEQUENCE
NOT TO SCALE

SEQUENCE OF OPERATION FOR ROOM 169

NEW EVAV-1:
TERMINAL UNIT SHALL MAINTAIN CONSTANT AIRFLOW SETPOINT.

EXISTING VAV'S AND VALVES SERVING PREP LAB 169:
EXISTING SEQUENCE SHALL REMAIN, EXCEPT NEW CONSTANT SUPPLY AIRFLOW SHALL BE 1265 CFM AND NEW TOTAL ROOM EXHAUST AIRFLOW SHALL BE 1415.

CONTROLS SCOPE FOR PROCESS CHILLER

BAS SHALL ALARM ON SIGNAL FROM PROCESS CHILLER.

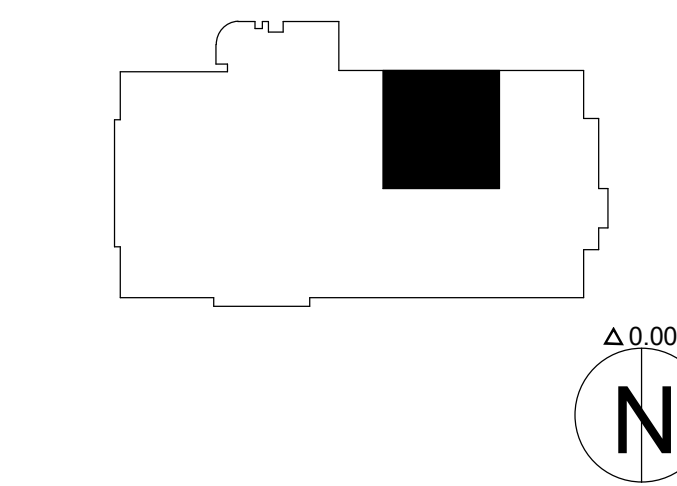
ON ACTIVATION OF ALARM, EMAIL SHALL BE SENT TO LAB'S EMERGENCY CONTACT LIST.

Client
North Carolina State University
851 Main Campus Drive
Raleigh, NC, 27612

Consultants
McKim & Creed
4300 Edwards Mill Road, Suite 200
Raleigh, NC 27612
919.233.8091
www.mckimcreed.com



Keyplan



NCSU PARTNERS III RENOVATION RALEIGH, NORTH CAROLINA

Project Number: 22057.03
Status & Date: 12/20/2024

Sheet Title:
A AIRFLOW DIAGRAM

Project Name: RENOVATION TO LAB 167, 169 & 169A - PARTNERS BUILDING III
Building No: 713
NC State Project ID Number: 202435062
SCO # 24-28212-01A

PRINT IN COLOR
Sheet Number:

M801

6

5

4

3

2

1

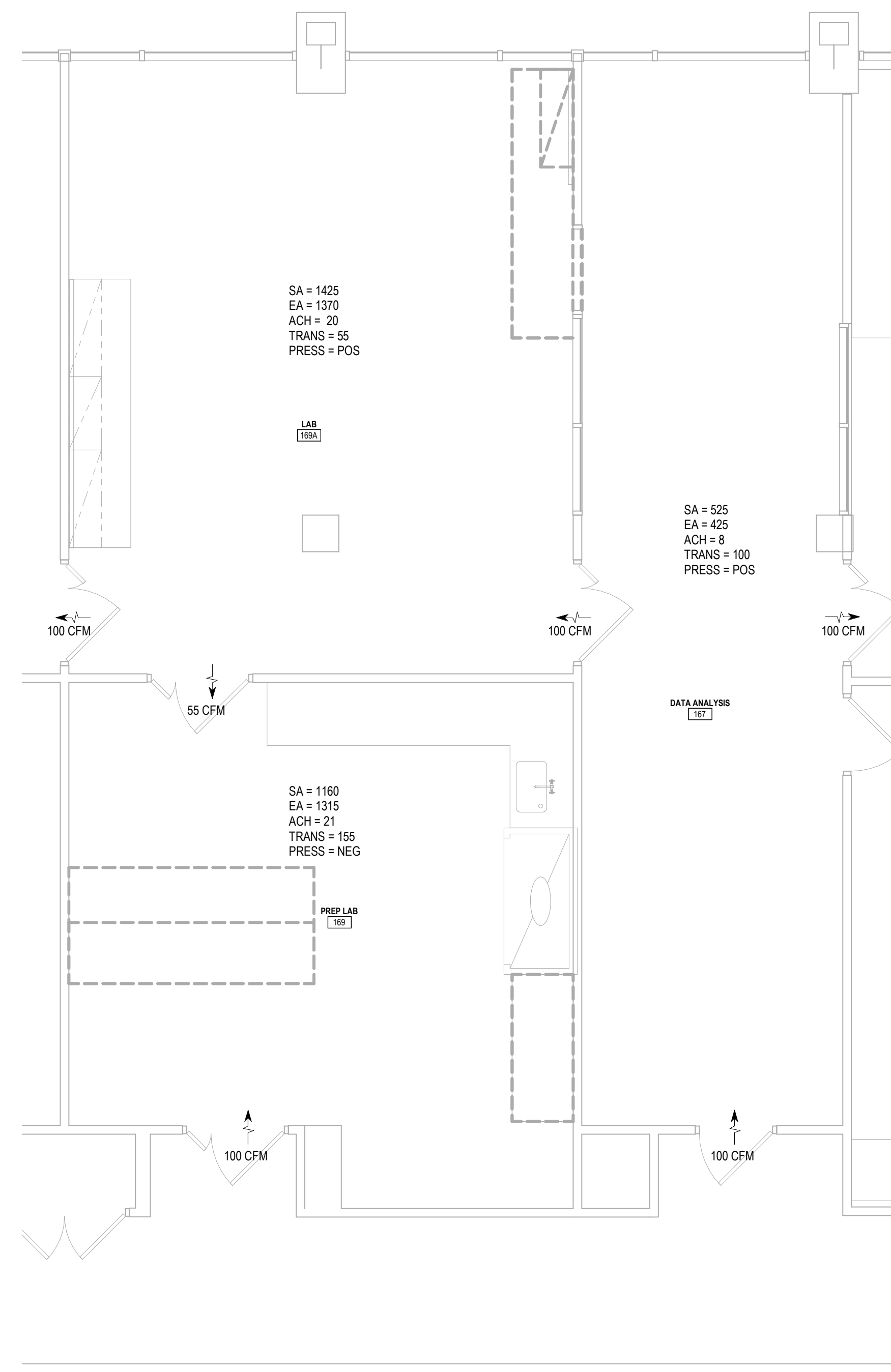
E

D

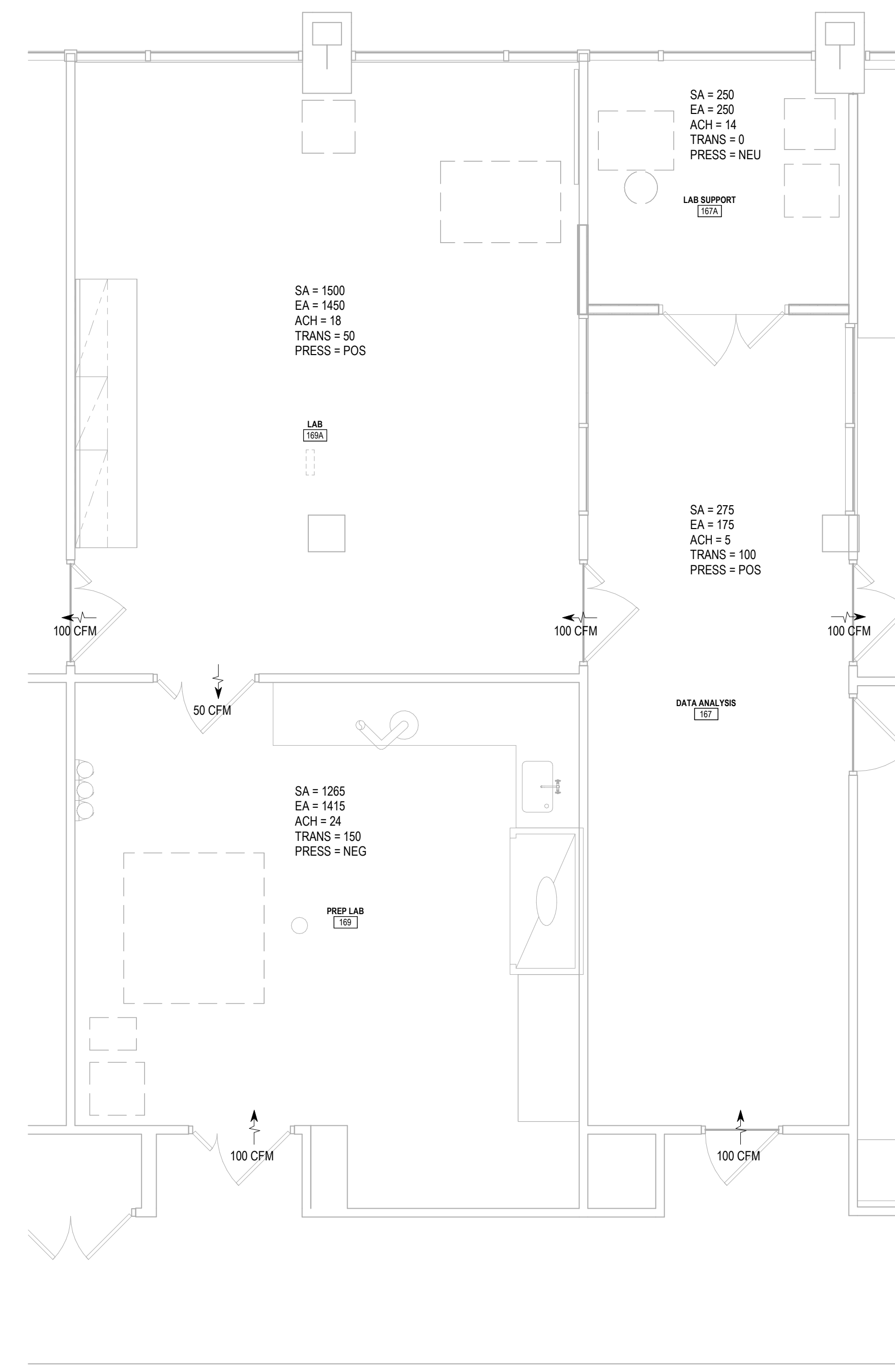
C

B

A



1 EXISTING AIRFLOW DIAGRAM
SCALE: 1/4" = 1'-0"



2 NEW AIRFLOW DIAGRAM
SCALE: 1/4" = 1'-0"

6

5

4

3

2

1