

Wayne State University

ENGINEERING RESEARCH LABS - PHASE TWO

ENGINEERING BUILDING

PROJECT NO. 090-250890-1

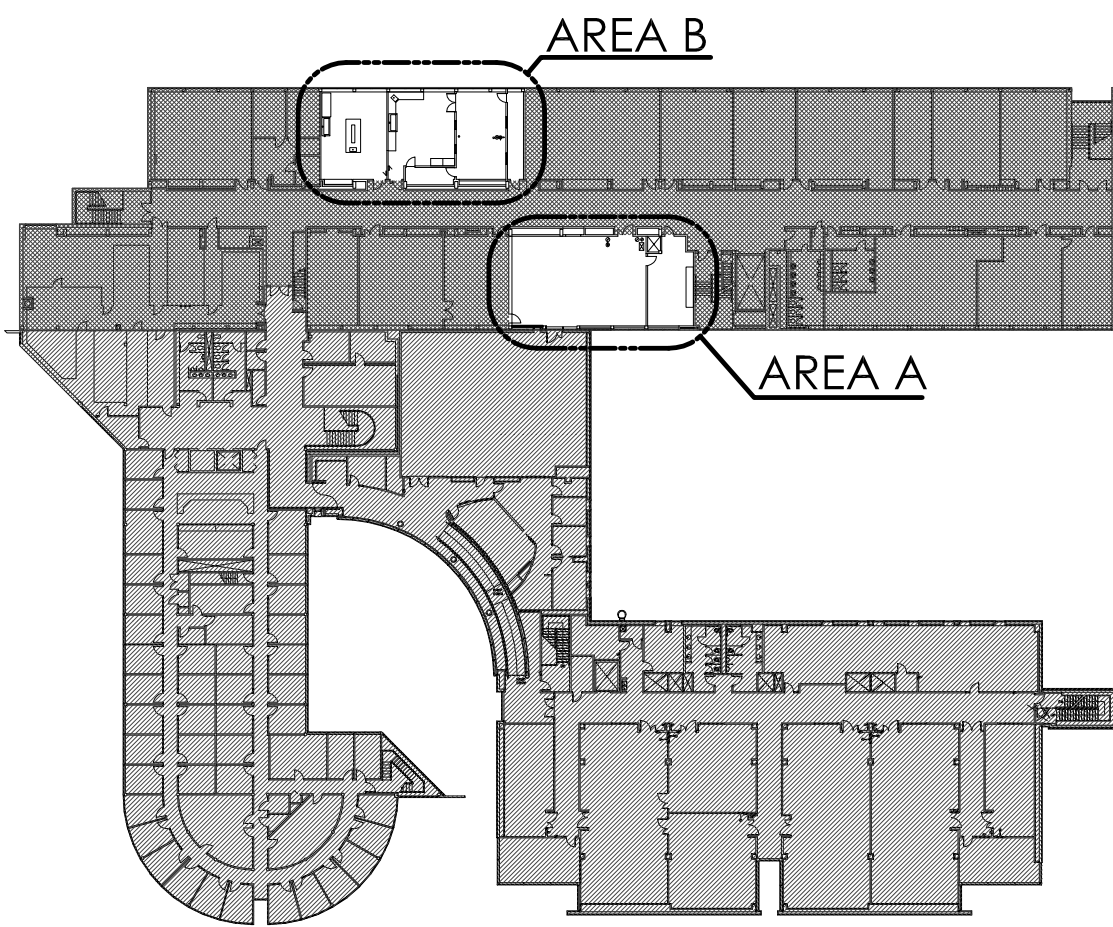
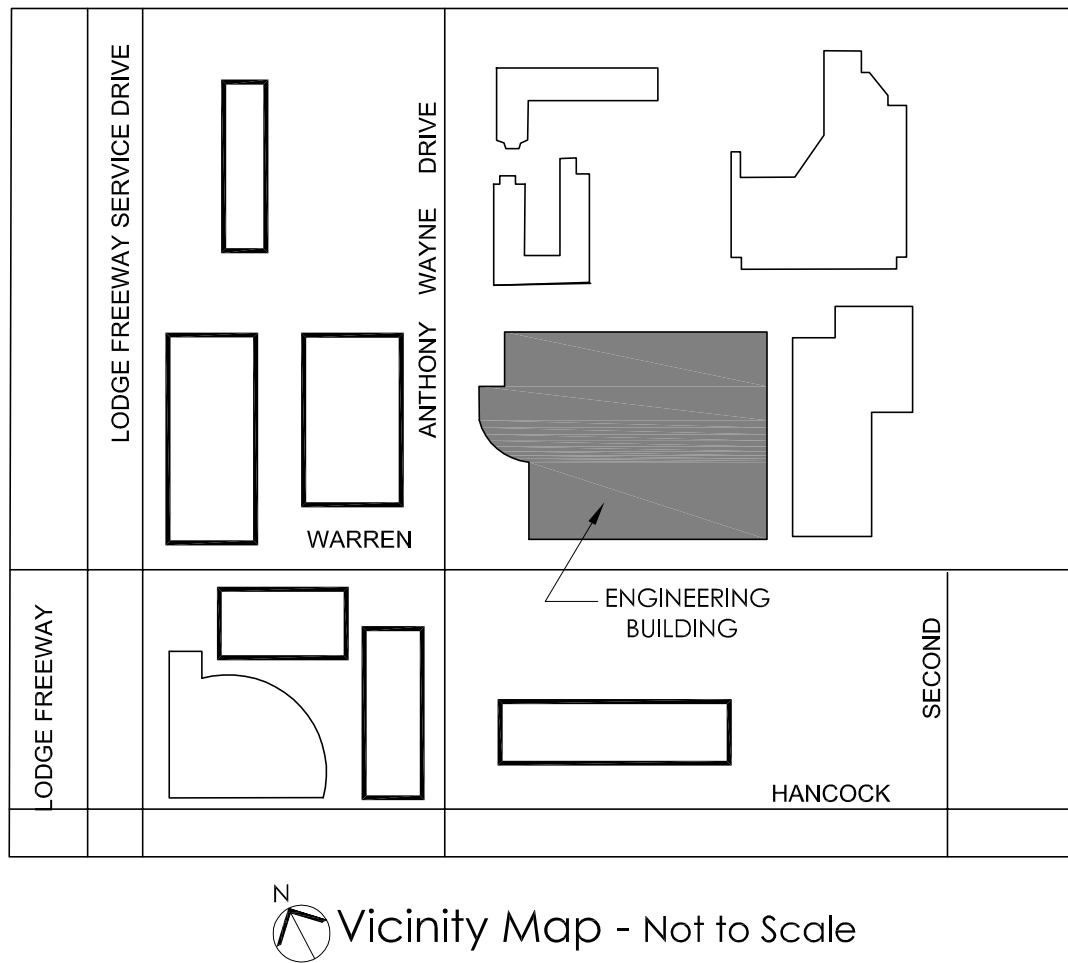
ISSUE: BID 02-06-2015

OWNER: WAYNE STATE UNIVERSITY
Design and Construction Services
5454 Cass Avenue
Detroit, Michigan 48202

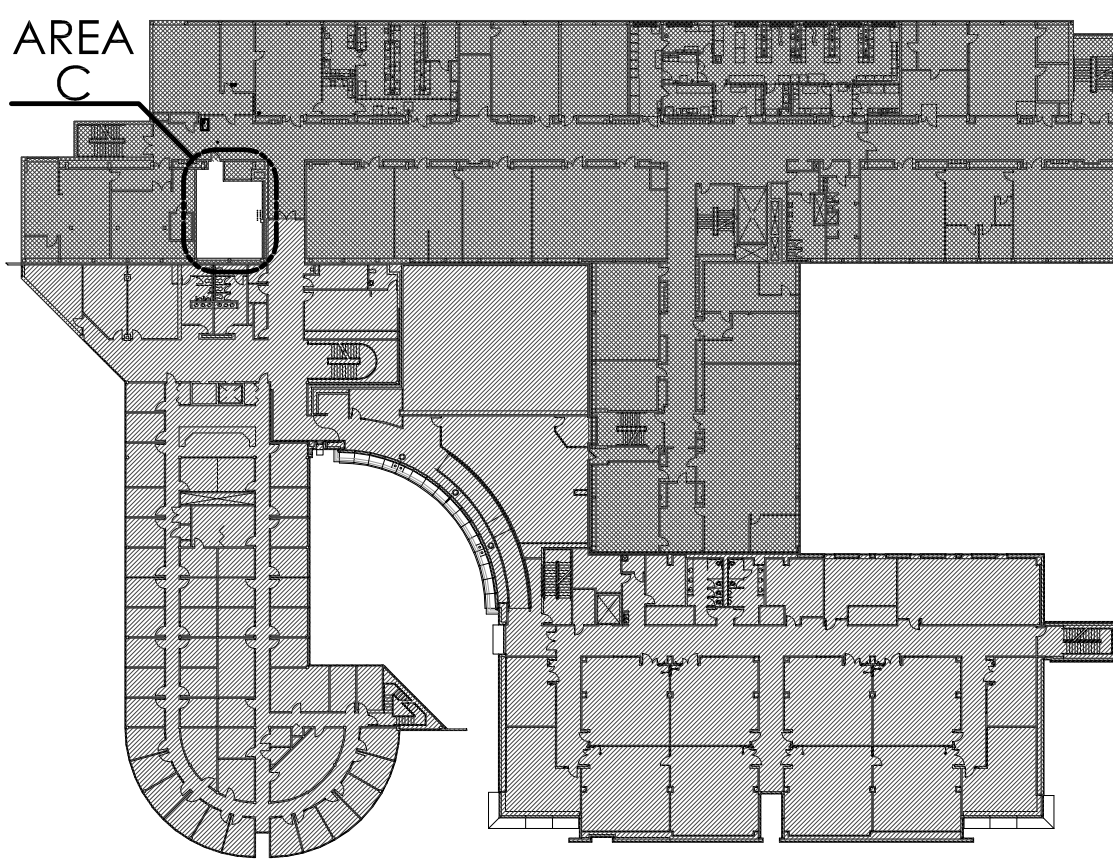
PROJECT LOCATION: Engineering Building
Limited Second & Third Floor Areas
5050 Anthony Wayne Drive
Detroit, Michigan 48202

ARCHITECT: iDesign Solutions
400 Water Street, Suite LL1
Rochester, Michigan 48307
Tel: 248.440.7310
www.iDesign-Solutions.info

MECH / ELECT ENGINEER: Peter Basso Associates
5145 Livernois, Suite 100
Troy, MI 48098
Tel: 248.879.5666
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3rd Floor
Location Map - Not to Scale

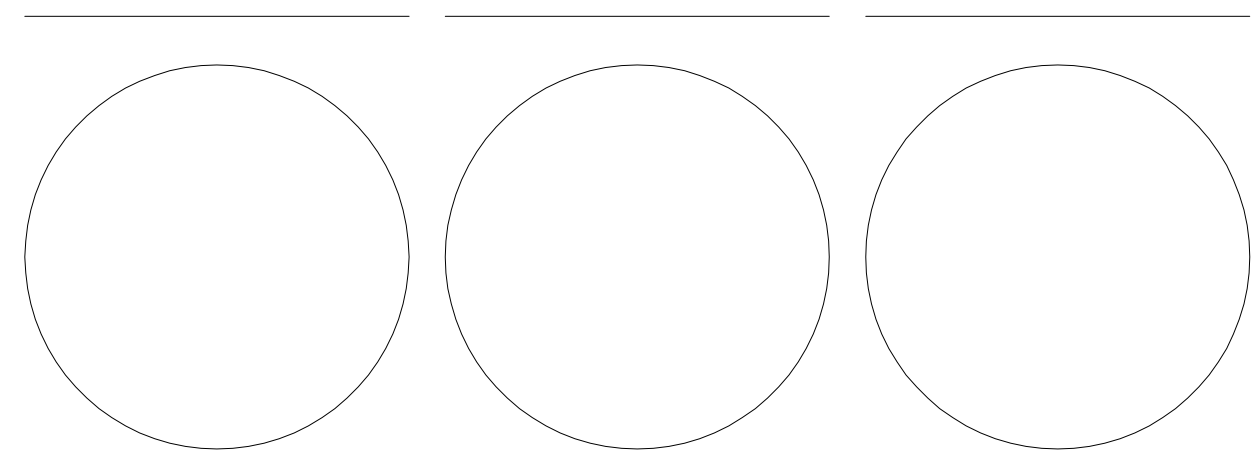


2nd Floor
Location Map - Not to Scale

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E-002	ELECTRICAL STANDARD SCHEDULES AND PANEL SCHEDULES
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PROFESSIONAL SEALS



WAYNE STATE
UNIVERSITY

656 West Kirby Street, Detroit, MI 48202

Project Location:

WAYNE STATE UNIVERSITY
ENGINEERING BUILDING
5050 ANTHONY WAYNE DRIVE
DETROIT MICHIGAN 48202

CONTACT: Mark Gibbons

iDesign Solutions, LLC



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drawn by: CTW

coordination checked: CTW

checked: LAC

approved: LAC

project:

Engineering
Research Labs -
Phase Two

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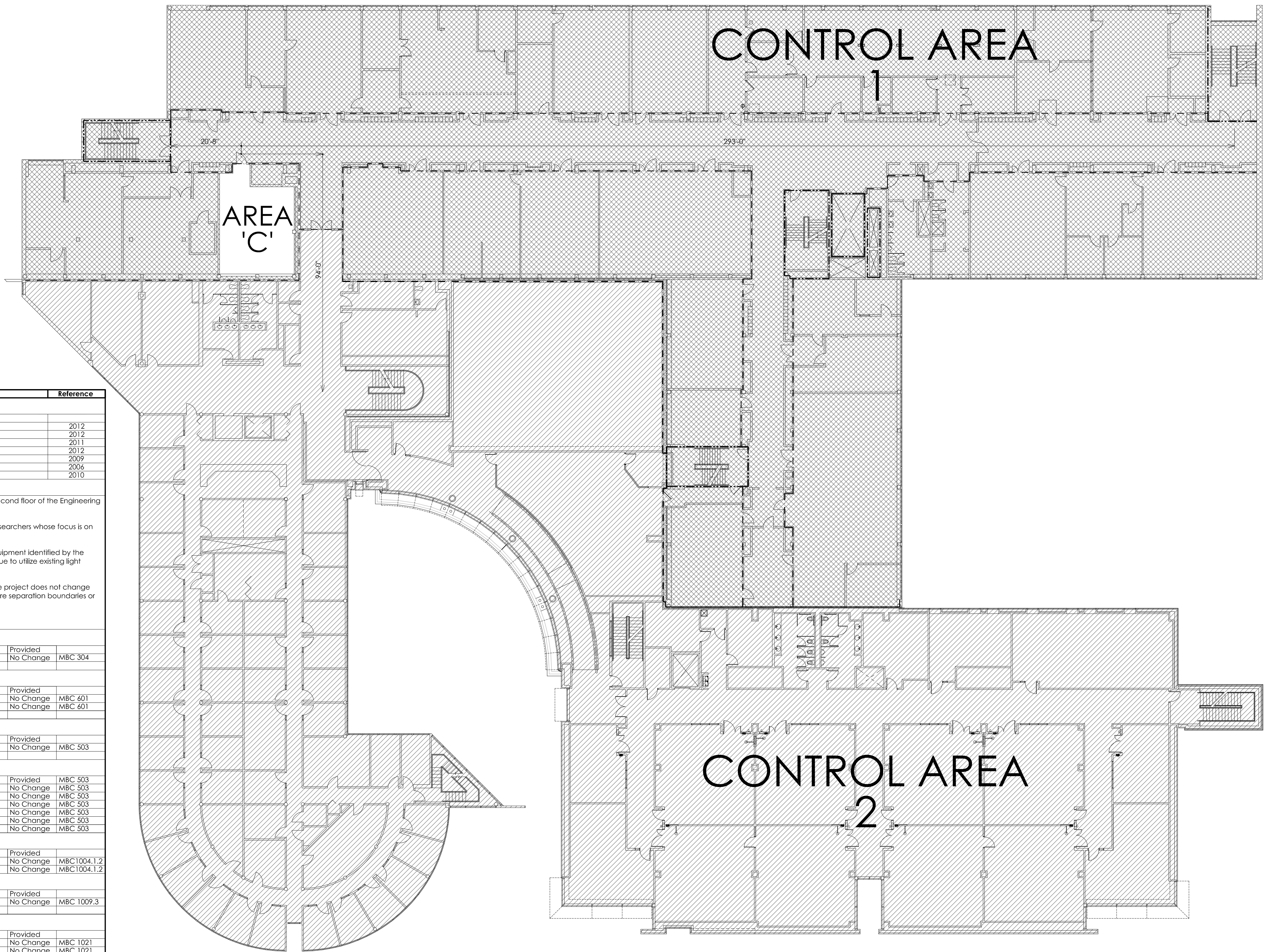
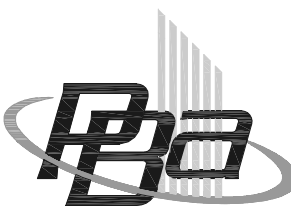
Cover Sheet

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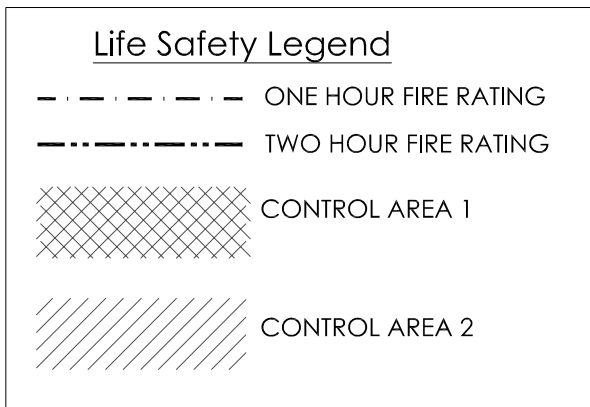
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G-00

(1156-2: iDesign project number)



CODE WORKSHEET				
Item				Reference
1.	APPLICABLE CODES			
	Michigan Building Code			2012
	Michigan Mechanical Code			2012
	National Electrical Code With Michigan Electrical Code			2011
	Michigan Plumbing Code			2012
	Michigan Uniform Energy Code			2009
	Natl. Fire Protection Assoc. 101 - Life Safety			2006
	Americans with Disabilities Act/MBC Ch. 11			2010
2.	Project Description			
	The project is for the alteration of one space totaling approximately 650 SF (Area "C") on the second floor of the Engineering Building located on the campus of Wayne State University in Detroit Michigan.			
	The purpose of this project is to renovate the space to accommodate a group of faculty researchers whose focus is on Chemical Engineering research.			
	The rooms shall be adapted to accommodate the addition of new laboratory benches, equipment identified by the researcher and supporting services to support the research activities. The rooms shall continue to utilize existing light fixtures where possible, general HVAC, water and compressed gas services.			
	In summary, these changes are necessary to accommodate specific research activities. The project does not change the occupancy, function or means of egress of the space. The work proposed will not alter fire separation boundaries or the building structure.			
3.	Occupancy			
	Use Group "B" Educational occupancy above 12th grade	Existing	Provided	
		B	No Change	MBC 304
4.	Construction Classification			
	Type II-B	Existing	Provided	
	Fire Suppresion: Limited Suppressed (Sprinkler System)		No Change	MBC 601
			No Change	MBC 601
5.	Allowable Height			
	Number of Stories Above Grade	Existing	Provided	
		3	No Change	MBC 503
6.	Allowable Area			
	Lower Level (Basement)	Existing	Provided	MBC 503
	First Floor	27,949 sf	No Change	MBC 503
	Second Floor	34,666 sf	No Change	MBC 503
	Third Floor	34,666 sf	No Change	MBC 503
	Fourth Floor	27,949 sf	No Change	MBC 503
	Penthouse Floor	9,203 sf	No Change	MBC 503
	Total Area	134,443 sf	No Change	MBC 503
7.	Occupant Load			
	Second Floor	Existing	Provided	
	Third Floor	279 (Existing)	No Change	MBC1004.1.2
		279 (Existing)	No Change	MBC1004.1.2
8.	Egress			
	Egress Stairs (not req'd to be enclosed)	Existing	Provided	
		3 existing	No Change	MBC 1009.3
9.	Number of Exits and Exit Access			
	Second floor - number of exits	Required	Provided	
	Third floor - number of exits	3 (Existing)	No Change	MBC 1021
		3 (Existing)	No Change	MBC 1021
10.	Exit Access Travel Distance			
	Dead End Limit - 50'-0" Max	Actual	Provided	
	Travel Distance to Exit - 300'-0" Max (Sprinklered)	No Change	No Change	MBC 1018.4
	Common Path of Travel - 100'-0" Max	No Change	No Change	MBC 1016.2
		No Change	No Change	MBC 1014.1
11.	Fire Protection Systems			
	Automatic Sprinkler System	Existing Bldg	Provided	MBC 903
	Portable extinguishers	Existing	suit to fit new room layout	
	Fire Alarm System	Existing	new @ renovated labs	
		Existing	No Change	
12.	Accessibility - New Work			
	Comply with Chapter 11	Existing Bldg	Provided	
	Comply with Americans w/ Disabilities Act Accessibility Guidelines	Compliant	Compliant	MBC Ch 11
		Compliant	Compliant	ADAAG2010
13.	Control Area - Allowable			
	Second Floor	Allowable	Provided	
	Third Floor	3	2 (no change)	MBC 414.2.2
		2	2 (no change)	MBC 414.2.2



TOTAL AREA SECOND FLOOR TO BE RENOVATED = 627 SQUARE FEET

TOTAL AREA THIRD FLOOR TO BE RENOVATED = 3,751 SQUARE FEET
(AREA A = 1,768 SQUARE FEET)
(AREA B = 1,983 SQUARE FEET)

TOTAL PROJECT AREA TO BE RENOVATED = 4,378 SQUARE FEET

Project Location:

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ENGINEERING BUILDING
5050 ANTHONY WAYNE DRIVE
DETROIT MICHIGAN 48202

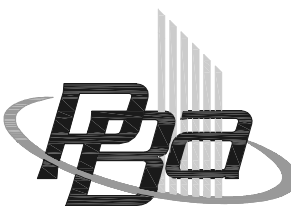
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Engineering
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Phase Two

sheet title:

Life Safety Plan and
Code Review - Third Floor

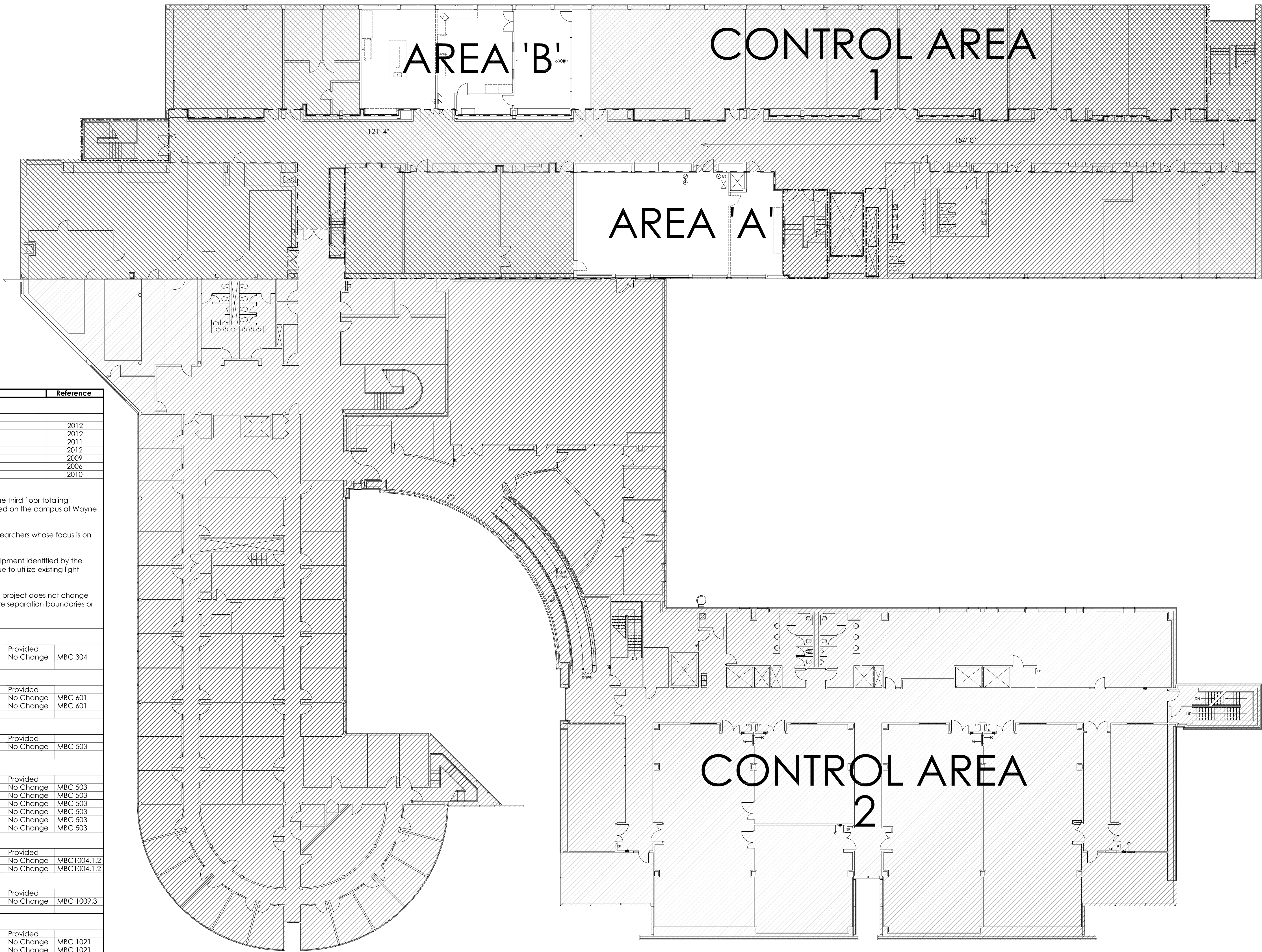
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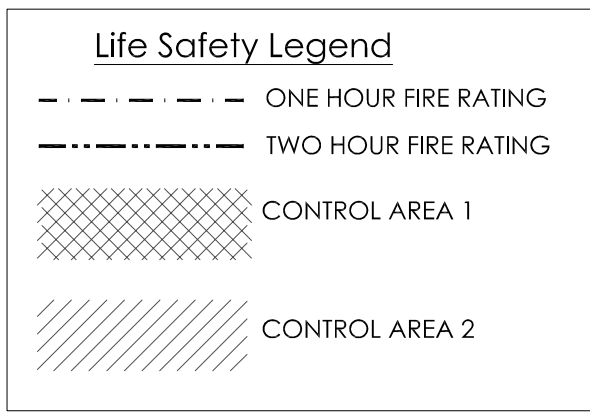
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(1156-2: iDesign project number)



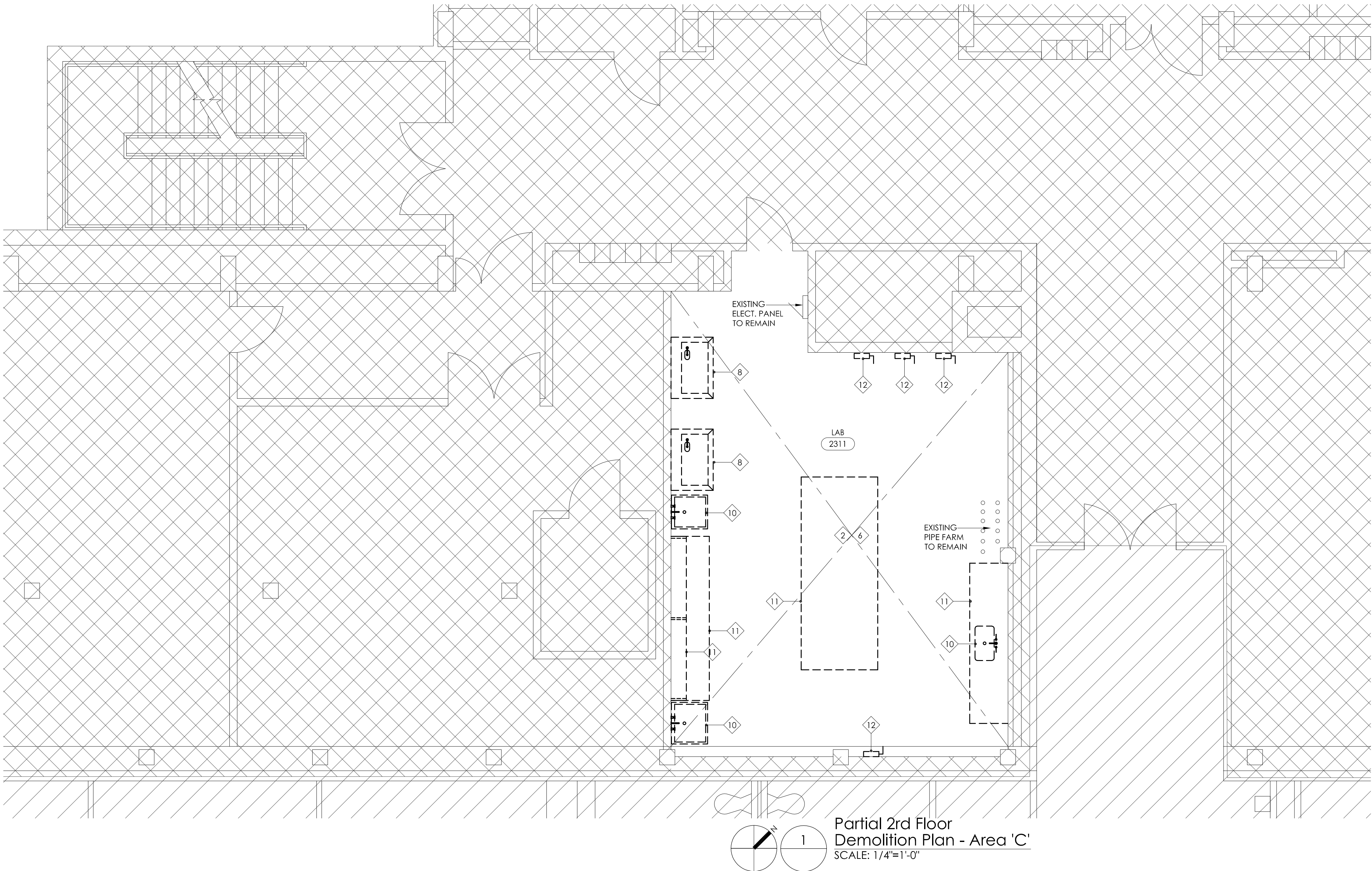
CODE WORKSHEET			
Item			Reference
1.	APPLICABLE CODES		
	Michigan Building Code		2012
	Michigan Mechanical Code		2012
	National Electrical Code With Michigan Electrical Code		2011
	Michigan Plumbing Code		2012
	Michigan Uniform Energy Code		2009
	Natl. Fire Protection Assoc. 101 - Life Safety		2006
	Americans with Disabilities Act/MBC Ch. 11		2010
2.	Project Description		
	The project is for the alteration of two separate groups of spaces (Area 'A' and Area 'B') on the third floor totaling approximately 3,751 sf (1,768 sf Area 'A' and 1,983 sf Area 'B') of the Engineering Building located on the campus of Wayne State University in Detroit Michigan.		
	The purpose of this project is to renovate the space to accommodate a group of faculty researchers whose focus is on optical and biomedical microsystem technology and research.		
	The rooms shall be adapted to accommodate the addition of new laboratory benches, equipment identified by the researcher and supporting services to support the research activities. The rooms shall continue to utilize existing light fixtures where possible, general HVAC, water and compressed gas services.		
	In summary, these changes are necessary to accommodate specific research activities. The project does not change the occupancy, function or means of egress of the space. The work proposed will not alter fire separation boundaries or the building structure.		
3.	Occupancy		
	Use Group 'B' Educational occupancy above 12th grade	Existing 8	Provided No Change MBC 304
4.	Construction Classification		
	Type II-B	Existing	Provided No Change MBC 601
	Fire Suppression: Limited Suppressed (Sprinkler System)		No Change MBC 601
5.	Allowable Height		
	Number of Stories Above Grade	Existing 3	Provided No Change MBC 503
6.	Allowable Area		
	Lower Level (Basement)	Existing 27,949 sf	Provided No Change MBC 503
	First Floor	34,666 sf	No Change MBC 503
	Second Floor	34,666 sf	No Change MBC 503
	Third Floor	27,949 sf	No Change MBC 503
	Penthouse Floor	9,203 sf	No Change MBC 503
	Total Area	134,443 sf	No Change MBC 503
7.	Occupant Load		
	Second Floor	Existing 279 (Existing)	Provided No Change MBC1004.1.2
	Third Floor	279 (Existing)	No Change MBC1004.1.2
8.	Egress		
	Egress Stairs (not req'd to be enclosed)	Existing 3 existing	Provided No Change MBC 1009.3
9.	Number of Exits and Exit Access		
	Second floor - number of exits	Required 3 (Existing)	Provided No Change MBC 1021
	Third floor - number of exits	3 (Existing)	No Change MBC 1021
10.	Exit Access Travel Distance		
	Dead End Limit - 50'-0" Max	Actual No Change	Provided No Change MBC 1018.4
	Travel Distance to Exit - 300'-0" Max (Sprinklered)	No Change	No Change MBC 1016.2
	Common Path of Travel - 100'-0" Max	No Change	No Change MBC 1014.1
11.	Fire Protection Systems		
	Automatic Sprinkler System	Existing Bldg	Provided MBC 903
	Portable extinguishers	Existing	suit to fill new room layout
	Fire Alarm System	Existing	new @ renovated labs
		Existing	No Change
12.	Accessibility - New Work		
	Comply with Chapter 11	Existing Bldg	Provided Compliant MBC Ch 11
	Comply with Americans w/ Disabilities Act Accessibility Guidelines	Compliant	Compliant ADAAG2010
13.	Control Area - Allowable		
		Allowable	Provided
	Second Floor	3	2 (no change) MBC 414.2.2
	Third Floor	2	2 (no change) MBC 414.2.2



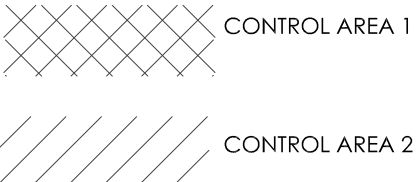
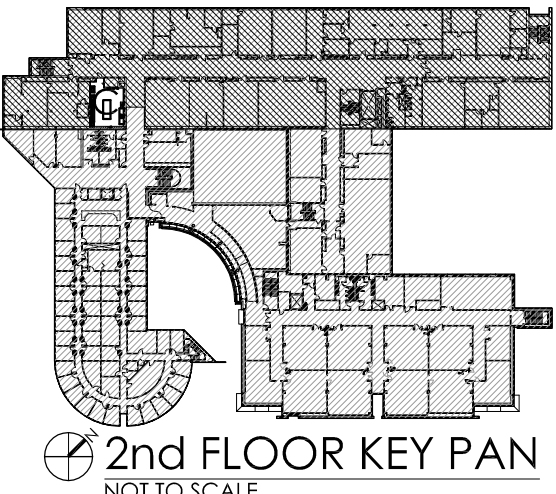
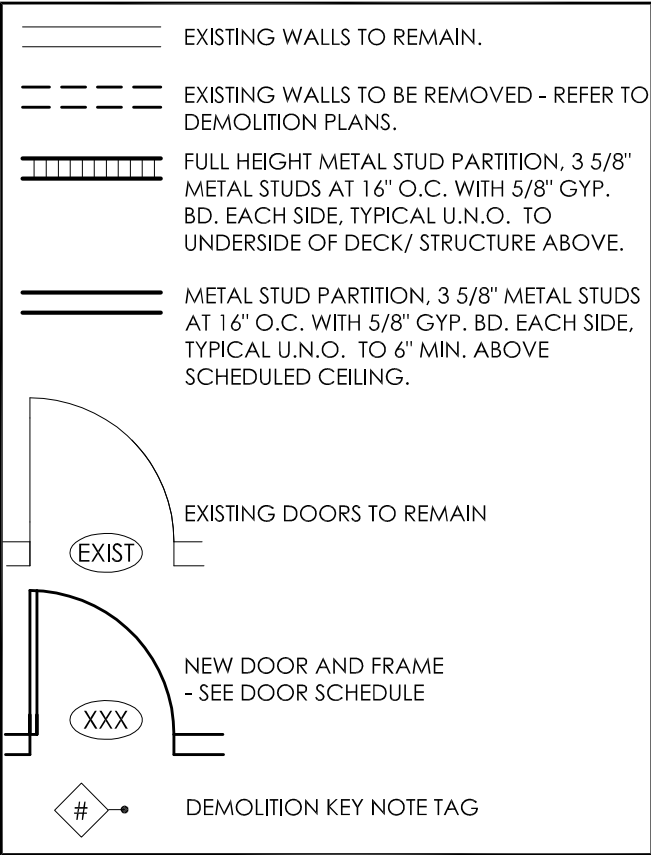
TOTAL AREA SECOND FLOOR TO BE RENOVATED = 627 SQUARE FEET

TOTAL AREA THIRD FLOOR TO BE RENOVATED = 3,751 SQUARE FEET
(AREA A = 1,768 SQUARE FEET)
(AREA B = 1,983 SQUARE FEET)

TOTAL PROJECT AREA TO BE RENOVATED = 4,378 SQUARE FEET



DEMO / FLOOR PLAN LEGEND



GENERAL CONSTRUCTION NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION, TYPICAL.
2. ALL INTERIOR PARTITIONS TO BE MINIMUM OF 6' ABOVE CEILING HEIGHT U.N.O.
3. ALL ACT CEILINGS TO BE 9'-0" A.F.F, TYPICAL, U.N.O.
4. REFER TO TYPICAL PARTITION CONSTRUCTION DETAILS, SHEET A401 FOR WALL/ PARTITION CONSTRUCTION INFORMATION.
5. REFER TO SHEETS A401 & A402 FOR LABORATORY EQUIPMENT LEGENDS, SCHEDULES AND DETAILS.

DEMOLITION GENERAL NOTES

1. REMOVE AND REPLACE EXISTING CONSTRUCTION AS REQUIRED FOR THE EXECUTION OF NEW WORK.
2. PROTECT EXISTING CONSTRUCTION TO REMAIN AS REQUIRED DURING DEMOLITION.
3. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS AND FOR COORDINATION OF WORK.
4. DISCONNECT ALL MISCELLANEOUS FEATURES (I.E. ELECTRICAL, MECHANICAL, PLUMBING, ETC.) ASSOCIATED WITH ITEMS TO BE DEMOLISHED (I.E. PARTITIONS, WALLS, CEILINGS, CABINETS ETC.).
5. REMOVAL OF ANY MECHANICAL, ELECTRICAL AND MISCELLANEOUS ITEMS WILL REQUIRE PATCH AND REPAIR OF ADJACENT MATERIALS TO REMAIN.
6. REMOVAL OF ANY WALLS, PARTITIONS, DOORS OR OTHER PERMANENT BUILDING ELEMENTS WILL REQUIRE PATCH AND REPAIR OF ADJACENT WALL, FLOOR, CEILING MATERIALS TO REMAIN.
7. REMOVE EXISTING UNUSED NAILS, SCREWS AND OTHER WALL PROTRUSIONS FROM EXISTING SURFACES TO REMAIN. PATCH AND REPAIR TO MATCH EXISTING ADJACENT SURFACES AS REQUIRED TO RECEIVE NEW FINISHES.
8. CONTRACTOR SHALL PLACE ANY ITEMS OR MATERIALS TO BE SALVAGED AND/OR RETAINED AS DIRECTED BY OWNER.
9. REMOVAL OF EXISTING BUILDING MATERIALS CONTAINING ASBESTOS SHALL BE BY THE OWNER'S ABATEMENT CONTRACTOR. CONTRACTOR SHALL COORDINATE THE REMOVAL OF EXISTING MATERIALS REQUIRED FOR REMOVAL OF MATERIALS CONTAINING ASBESTOS.

DEMOLITION KEY NOTES

- 1 REMOVE CMU INTERIOR PARTITION, DOOR, FRAME AND ALL ASSOCIATED COMPONENTS INTEGRATED TO WALL. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR NEW CONSTRUCTION. PATCH AND REPAIR ADJACENT SURFACES TO REMAIN. REFER TO MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 2 REMOVE FLOORING & BASE. PATCH, REPAIR & PREP FLOOR FOR NEW FINISHES & CONSTRUCTION. PATCH AND REPAIR ANY ADJACENT FLOOR FINISHES TO REMAIN OUTSIDE OF AREA OF WORK.
- 3 REMOVE DOOR AND FRAME. PATCH AND REPAIR ADJACENT SURFACES TO REMAIN.
- 4 REMOVE SCHEDULED DOOR HARDWARE (DOOR TO REMAIN). REFER TO DOOR SCHEDULE FOR INFORMATION.
- 5 PATCH / REPAIR ALL VACANT OPENINGS IN THE CLEAN ROOM WALL PANELS. REFER TO ARCHITECTURAL DRAWINGS FOR SCOPE AND MECHANICAL AND ELECTRICAL DRAWINGS FOR COORDINATION.
- 6 REMOVE & SALVAGE LIGHT FIXTURES FOR REUSE AT NEW WORK. REMOVE ASSOCIATED WIRING TO ELECTRICAL PANEL. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 7 REMOVE & SALVAGE ELECTRICAL PANEL FOR REUSE AT NEW WORK. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION.
- 8 REMOVE FUME HOOD, CANOPY & AND ASSOCIATED BASE CABINETS & TURN OVER TO OWNER. CAP EXHAUST & SERVICES AT NEAREST BRANCH LINE. REFER TO MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 9 REMOVE EMERGENCY SHOWER. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 10 REMOVE LAB SINKS, SINK FIXTURES AND SERVICE CHASE REMAINING IN SPACE. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 11 REMOVE & SALVAGE ALL REMAINING SHELVING, BASE CASEWORK AND BENCHTOPS. REFER TO ARCHITECTURAL & LABORATORY DRAWINGS FOR ADDITIONAL COORDINATION. COORD. WITH OWNER ALL ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 12 REMOVE ELECTRICAL PANEL / DISCONNECT PANEL- REFER TO ELECTRICAL

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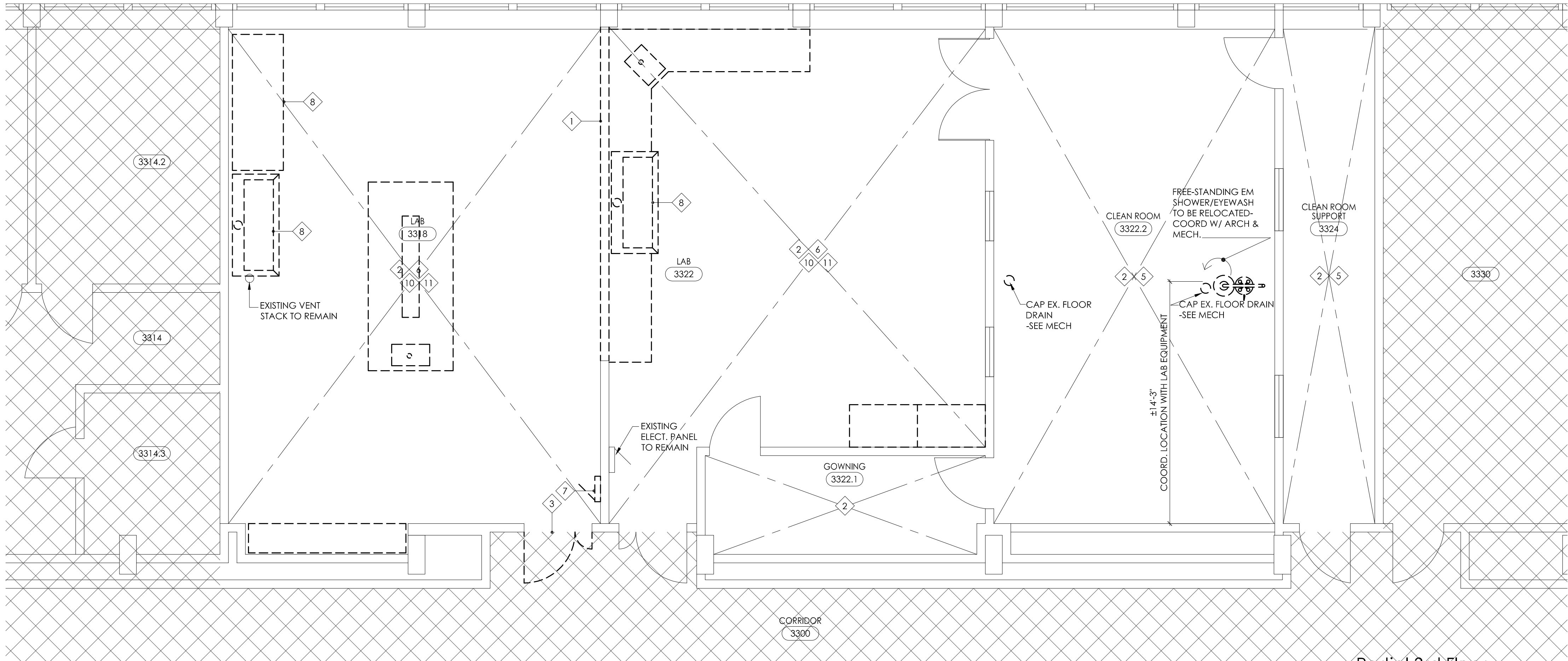
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Partial 2nd Floor Demo Plan

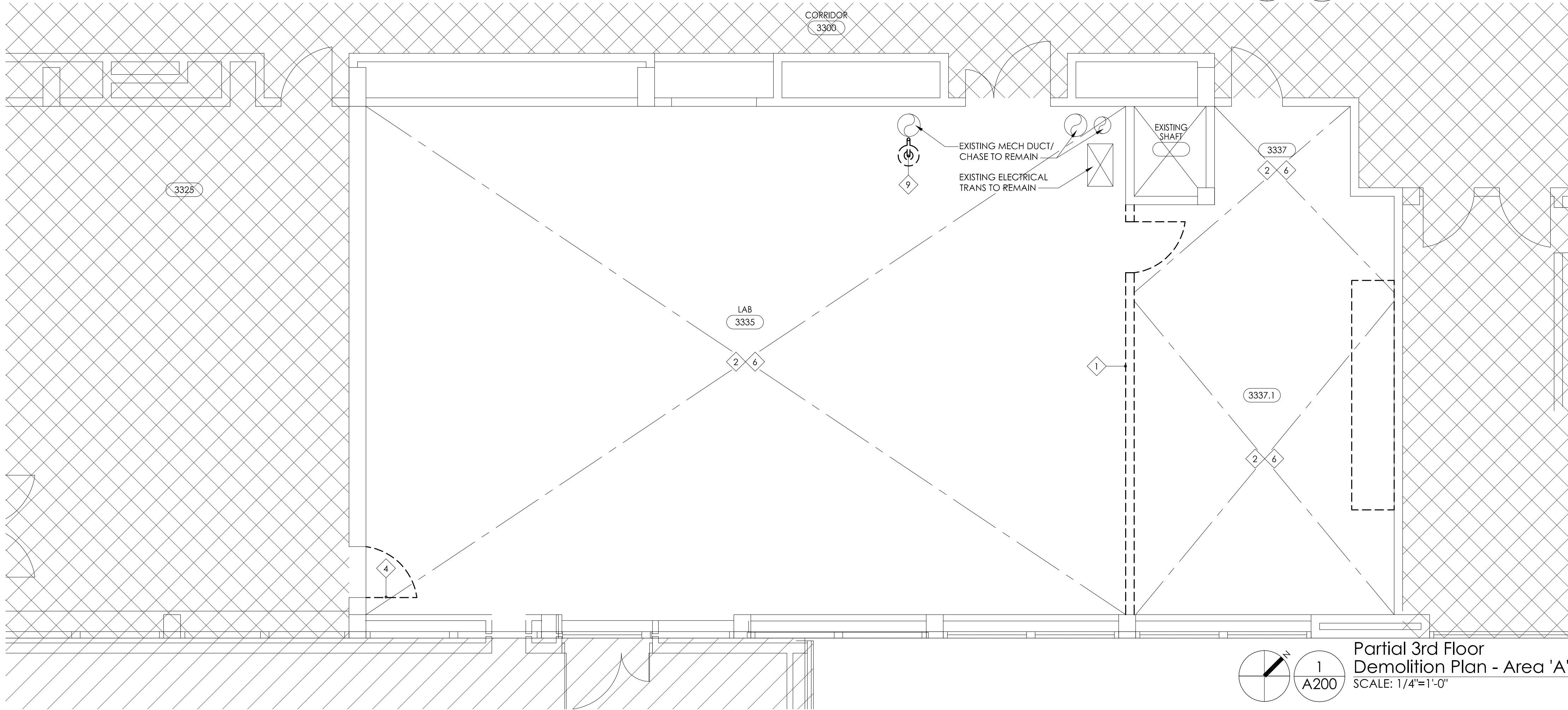
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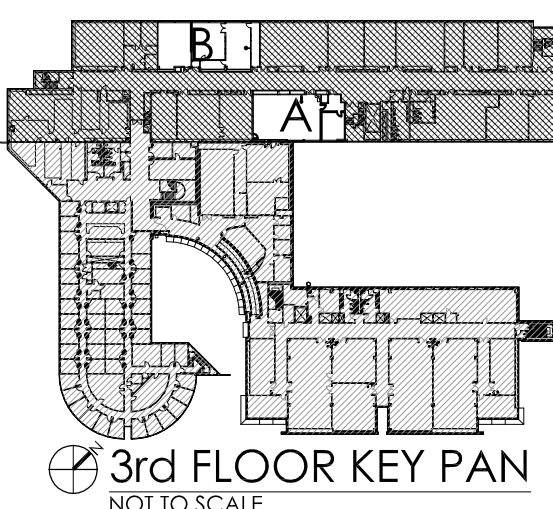
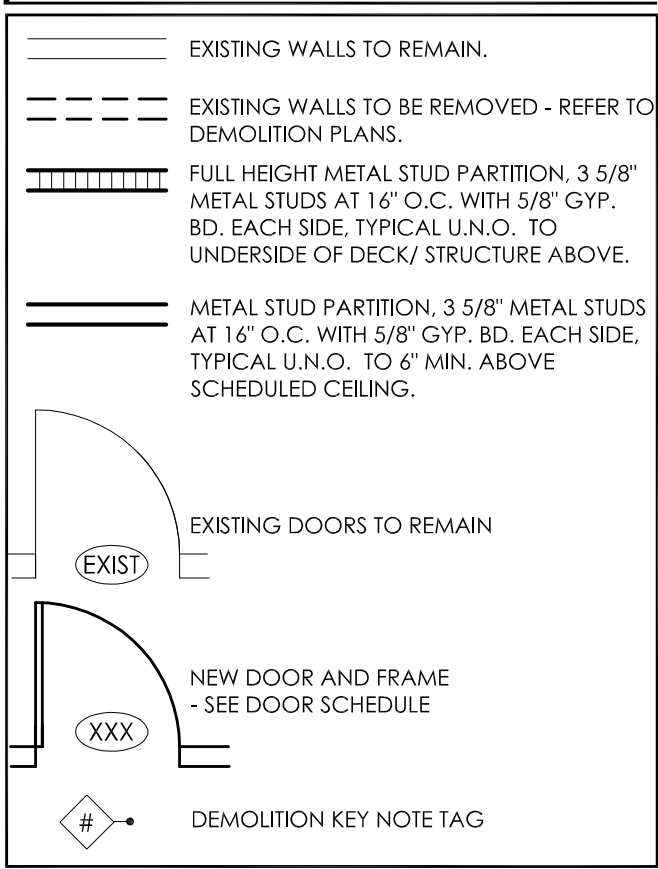


Partial 3rd Floor
Demolition Plan - Area 'B'
SCALE: 1/4"=1'-0"



Partial 3rd Floor
Demolition Plan - Area 'A'
SCALE: 1/4"=1'-0"

DEMO / FLOOR PLAN LEGEND



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- 2 REMOVE FLOORING & BASE. PATCH, REPAIR & PREP FLOOR FOR NEW FINISHES & CONSTRUCTION. PATCH AND REPAIR ANY ADJACENT FLOOR FINISHES TO REMAIN OUTSIDE OF AREA OF WORK.
- 3 REMOVE DOOR AND FRAME. PATCH AND REPAIR ADJACENT SURFACES TO REMAIN.
- 4 REMOVE SCHEDULED DOOR HARDWARE (DOOR TO REMAIN). REFER TO DOOR SCHEDULE FOR INFORMATION.
- 5 PATCH / REPAIR ALL VACANT OPENINGS IN THE CLEAN ROOM WALL PANELS. REFER TO ARCHITECTURAL DRAWINGS FOR SCOPE AND MECHANICAL AND ELECTRICAL DRAWINGS FOR COORDINATION.
- 6 REMOVE & SALVAGE LIGHT FIXTURES FOR REUSE AT NEW WORK. REMOVE ASSOCIATED WIRING TO ELECTRICAL PANEL. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 7 REMOVE & SALVAGE ELECTRICAL PANEL FOR REUSE AT NEW WORK. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION.
- 8 REMOVE FUME HOOD, CANOPY & AND ASSOCIATED BASE CABINETS & TURN OVER TO OWNER. CAP EXHAUST & SERVICES AT NEAREST BRANCH LINE. REFER TO MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 9 REMOVE EMERGENCY SHOWER. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 10 REMOVE LAB SINKS, SINK FIXTURES AND SERVICE CHASE REMAINING IN SPACE. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS AND COORDINATION. COORD. WITH OWNER FOR ITEMS TO BE RETAINED PRIOR TO DISPOSAL.
- 11 REMOVE & SALVAGE ALL REMAINING SHELVING, BASE CASEWORK AND BENCHTOPS. REFER TO ARCHITECTURAL & LABORATORY DRAWINGS FOR ADDITIONAL COORDINATION. COORD. WITH OWNER ALL ITEMS TO BE RETAINED PRIOR TO DISPOSAL.

WAYNE STATE UNIVERSITY

656 West Kirby Street, Detroit, MI 48202

Project Location:

WAYNE STATE UNIVERSITY
ENGINEERING BUILDING
5050 ANTHONY WAYNE DRIVE
DETROIT MICHIGAN 48202

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approved: LAC

project:

Engineering
Research Labs -
Phase Two

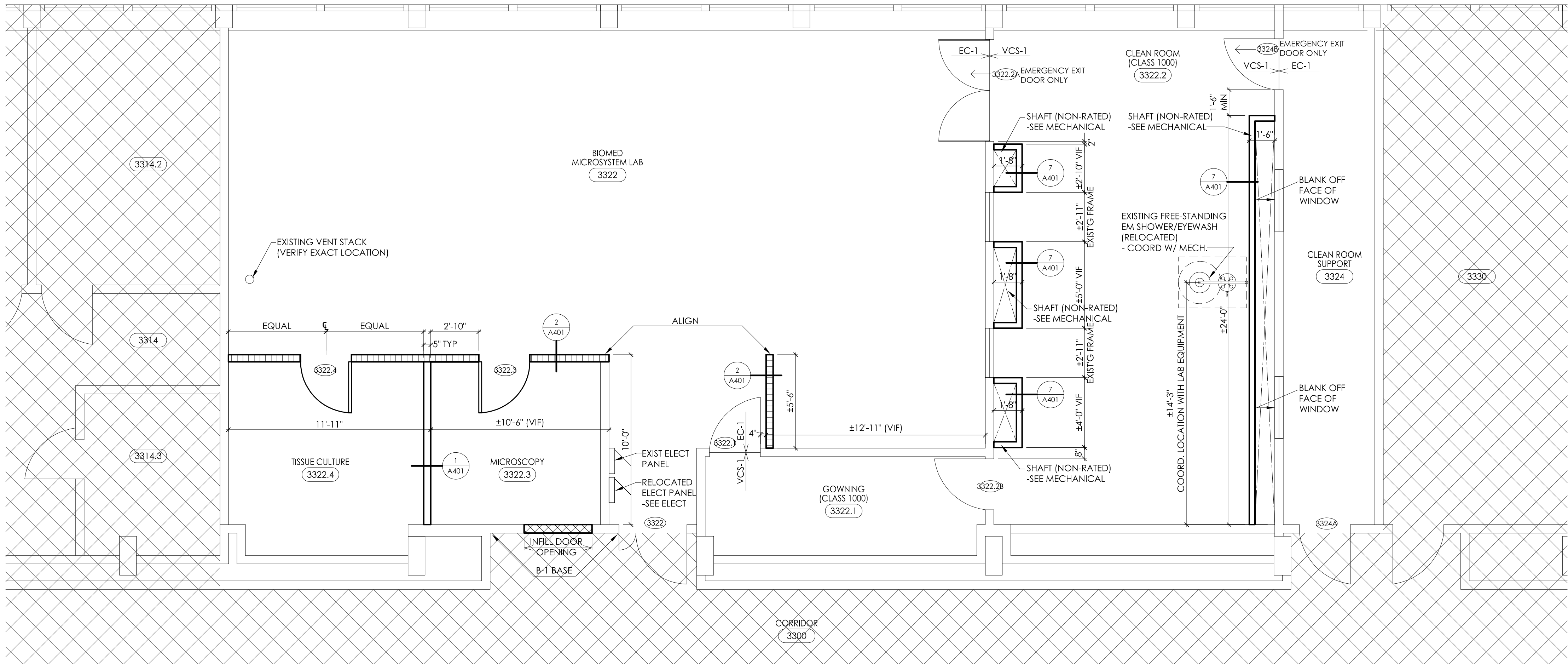
sheet title:

Partial 3rd Floor Demo Plan

project number: sheet number:

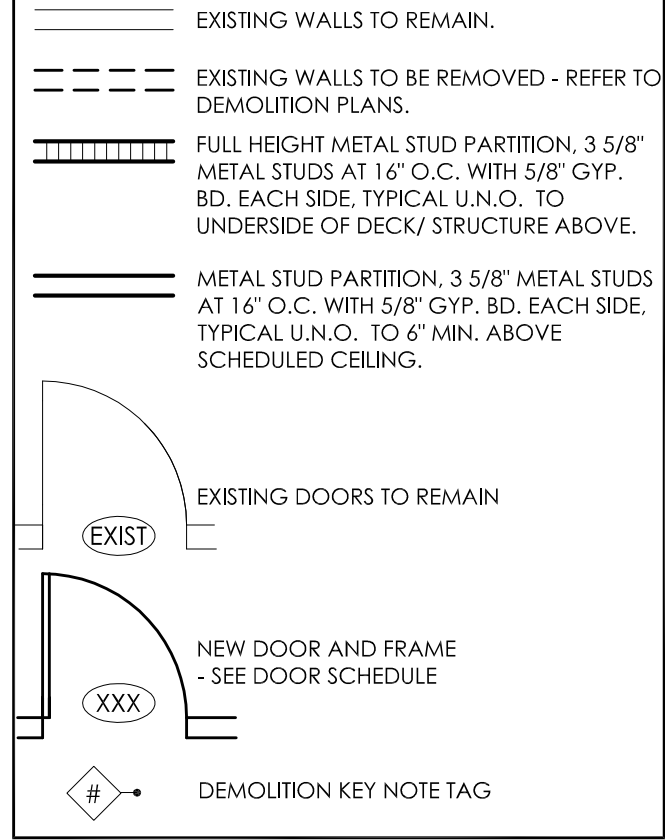
090-250890-1 A101

(1156-2: iDesign project number)



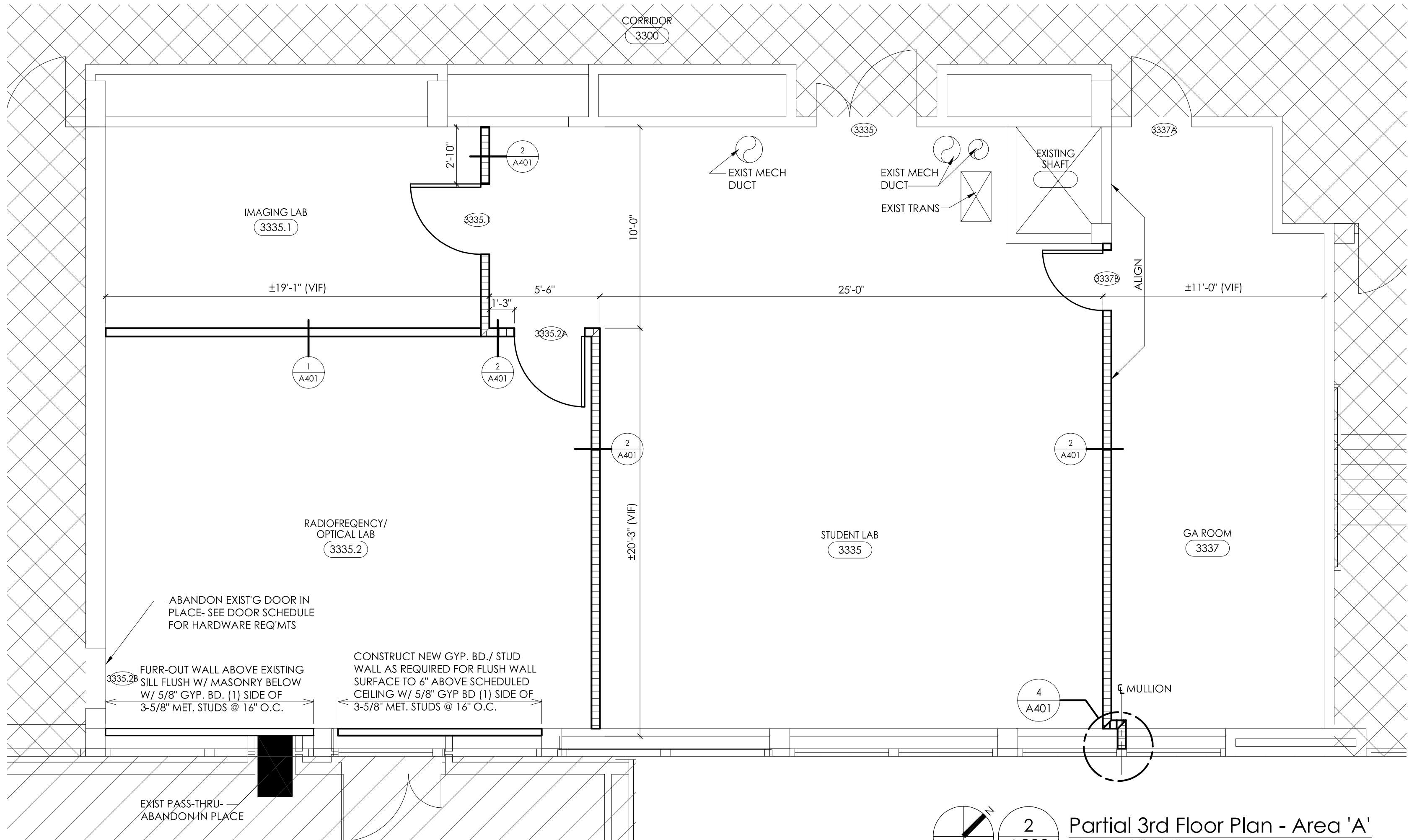
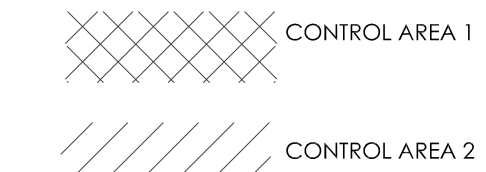
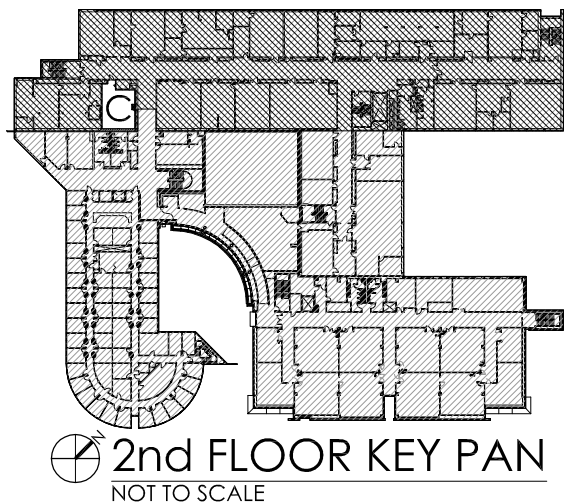
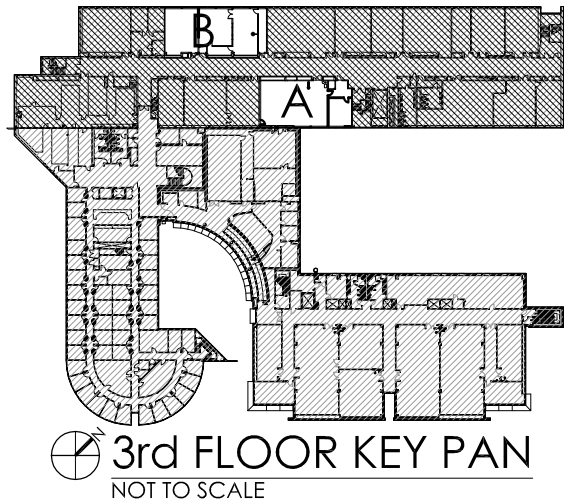
Partial 3rd Floor Plan - Area 'B'
SCALE: 1/4"=1'-0"

DEMO / FLOOR PLAN LEGEND

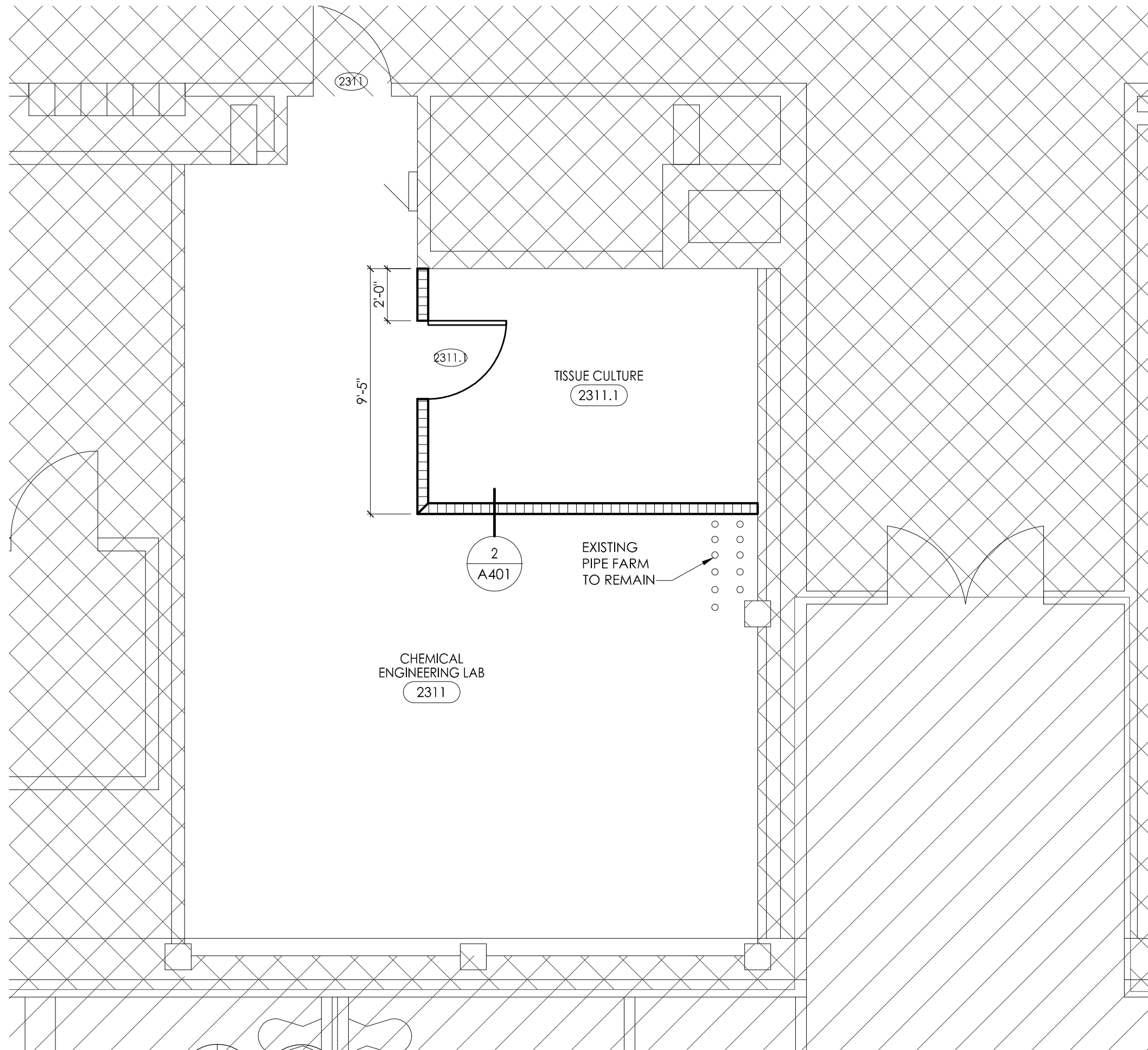


GENERAL CONSTRUCTION NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION, TYPICAL.
2. ALL INTERIOR PARTITIONS TO BE MINIMUM OF 6" ABOVE CEILING HEIGHT U.N.O.
3. ALL ACT CEILINGS TO BE 9'-0" A.F.F, TYPICAL, U.N.O.
4. REFER TO TYPICAL PARTITION CONSTRUCTION DETAILS, SHEET A401 FOR WALL/ PARTITION CONSTRUCTION INFORMATION.
5. REFER TO SHEETS A401 & A402 FOR LABORATORY EQUIPMENT LEGENDS, SCHEDULES AND DETAILS.



Partial 3rd Floor Plan - Area 'A'
SCALE: 1/4"=1'-0"



Partial 2nd Floor Plan - Area 'C'
SCALE: 1/4"=1'-0"

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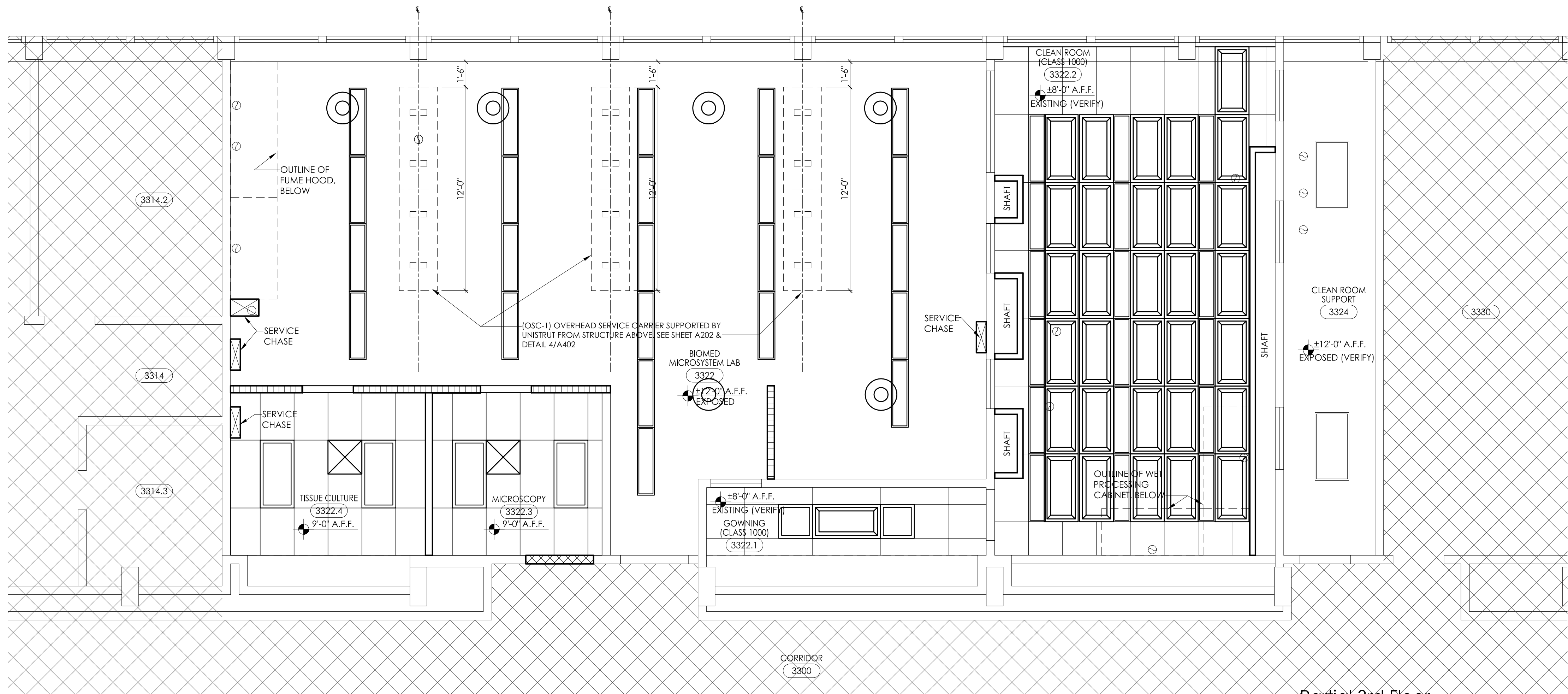
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Partial 2nd & 3rd Floor
Architectural Plans

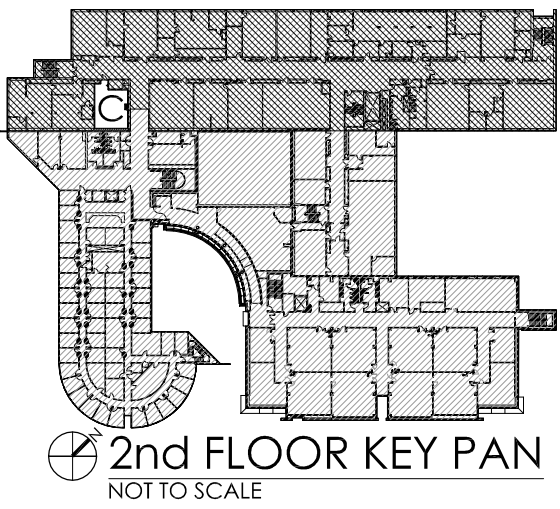
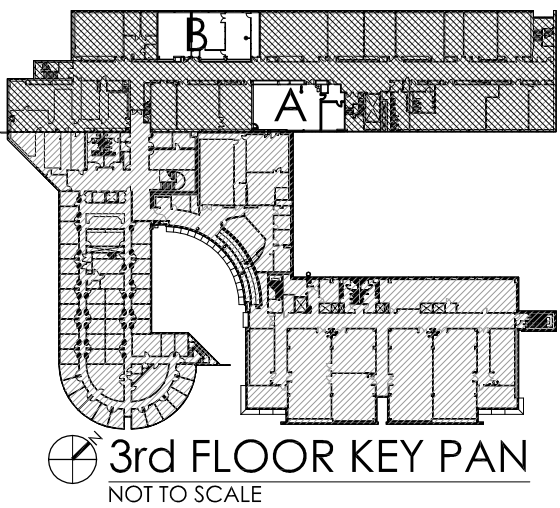
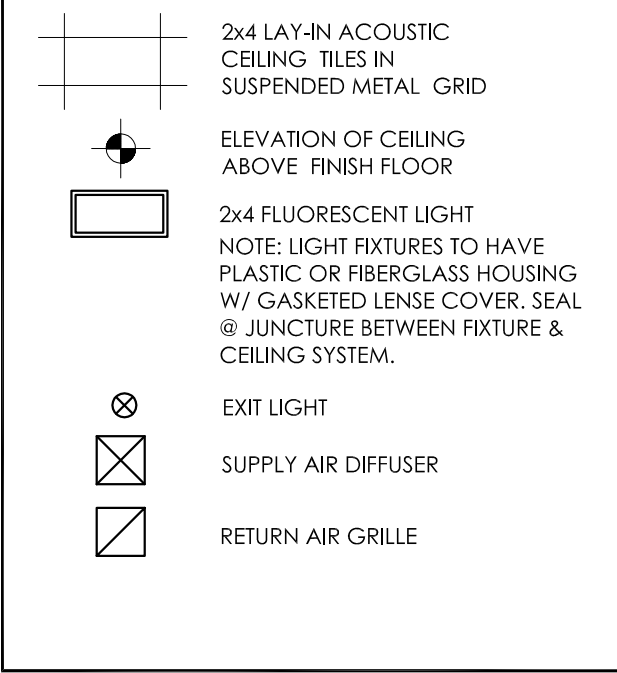
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090-250890-1 A201

(1156-2: iDesign project number)

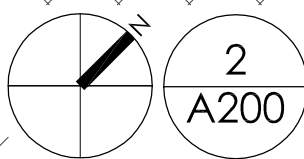


REFLECTED CEILING LEGEND

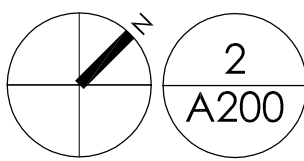
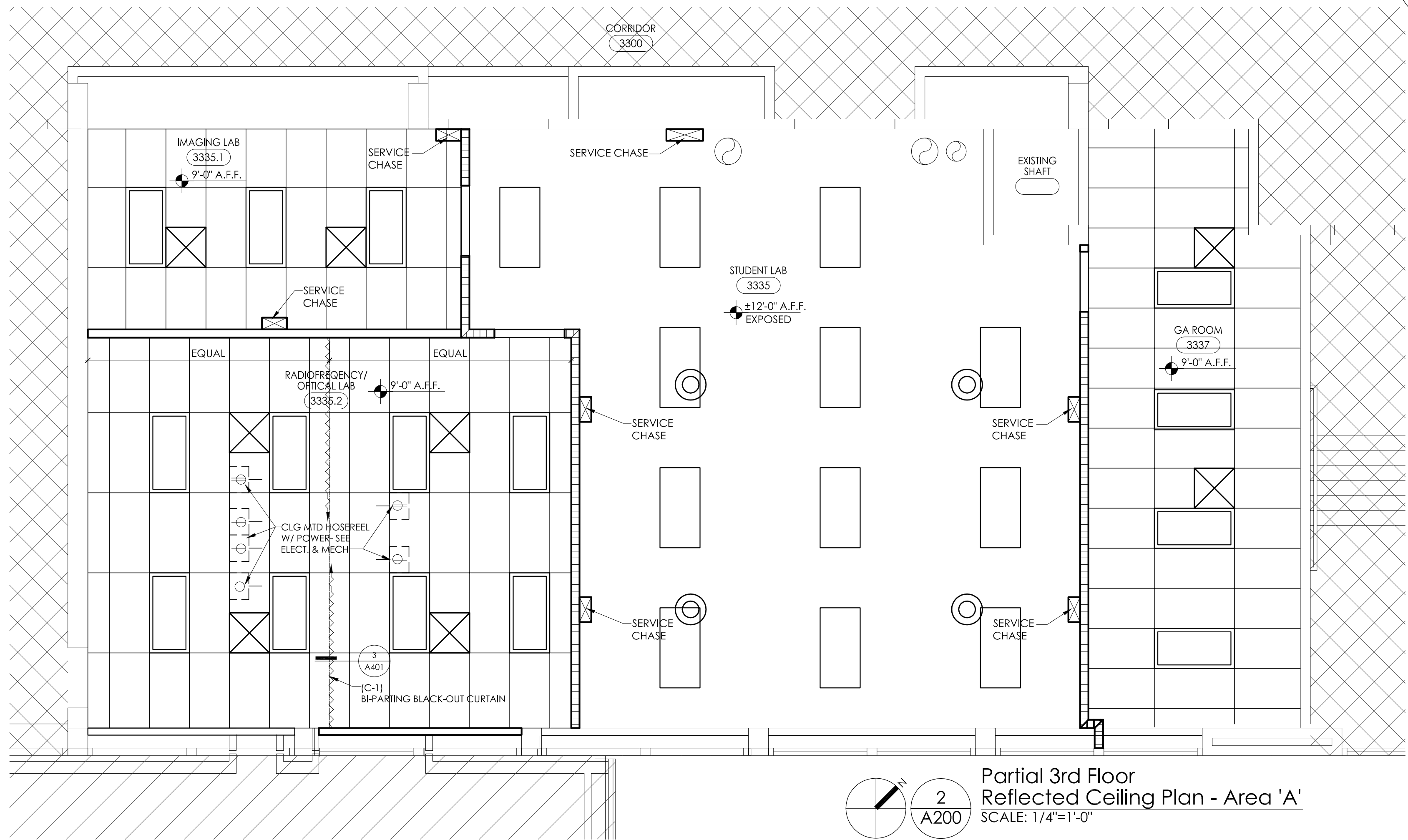


GENERAL CONSTRUCTION NOTES

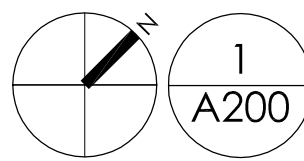
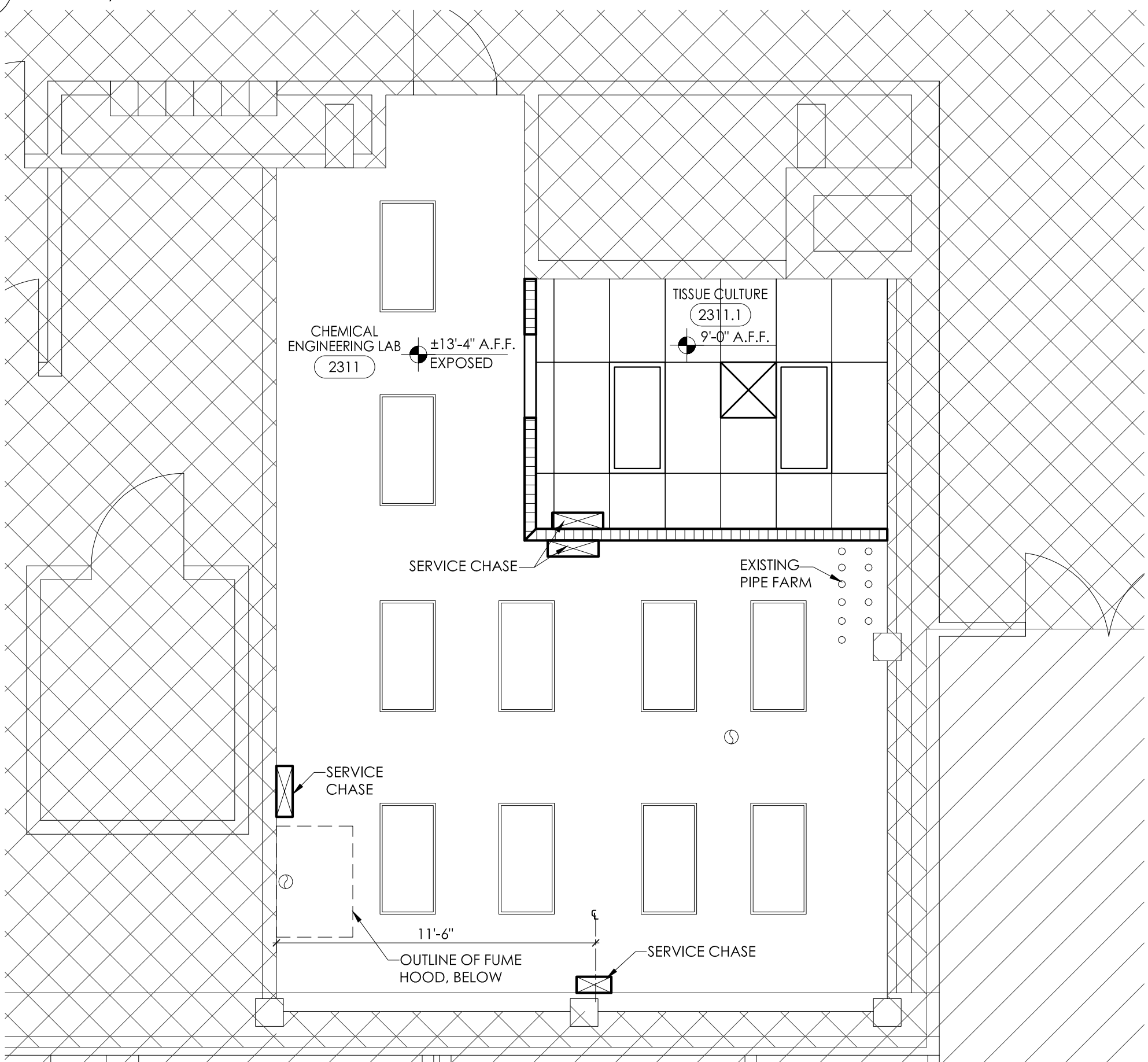
1. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION, TYPICAL.
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Partial 3rd Floor
Reflected Ceiling Plan - Area 'B'
SCALE: 1/4"=1'-0"



Partial 3rd Floor
Reflected Ceiling Plan - Area 'A'
SCALE: 1/4"=1'-0"



Partial 2nd Floor
Reflected Ceiling Plan - Area 'C'
SCALE: 1/4"=1'-0"

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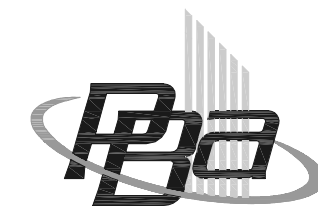
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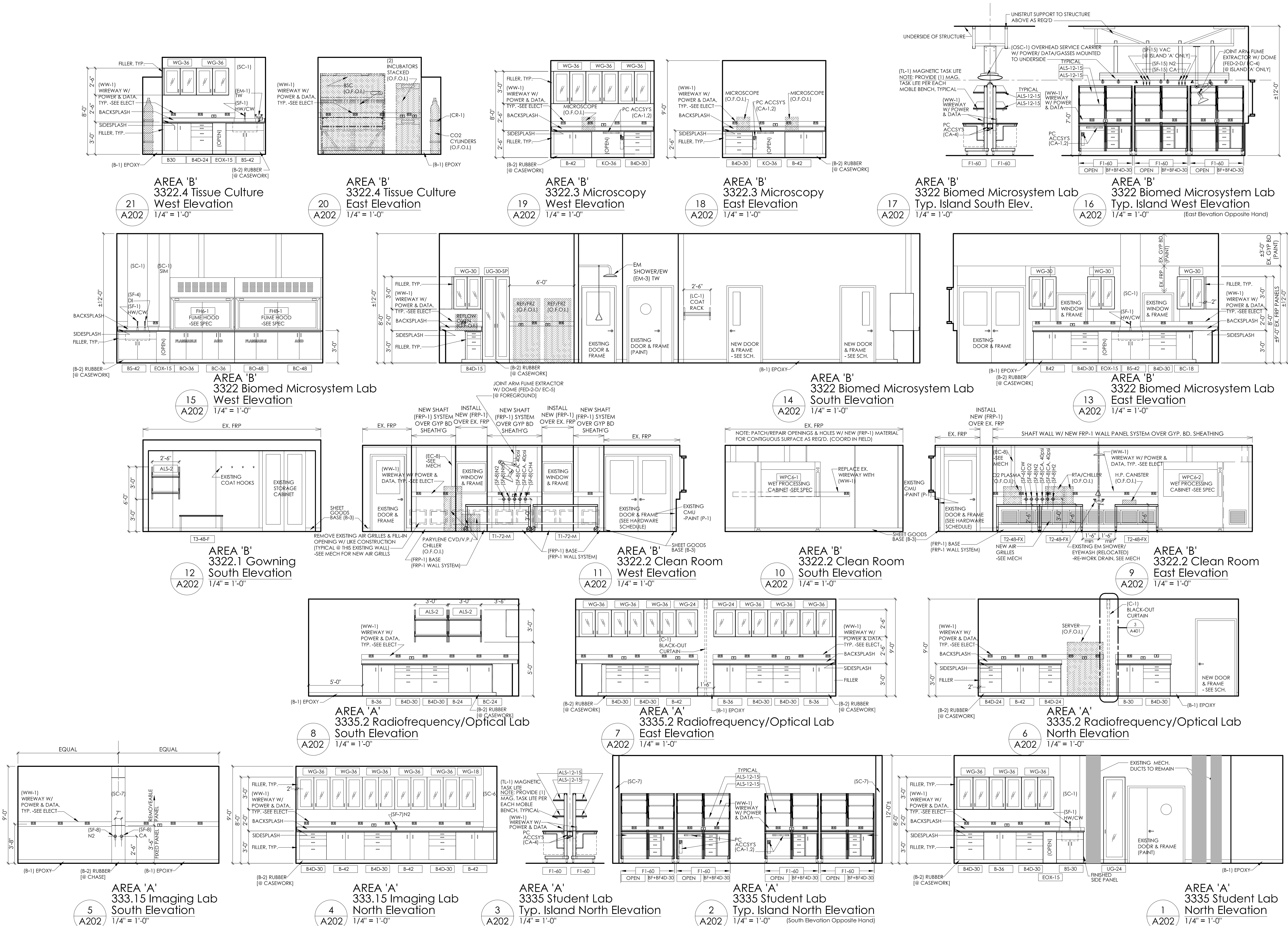
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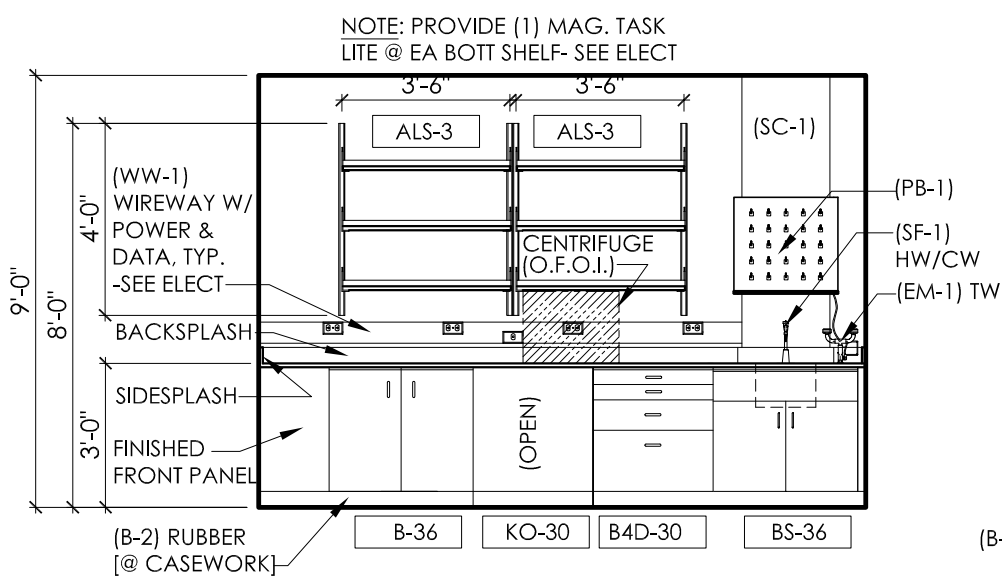
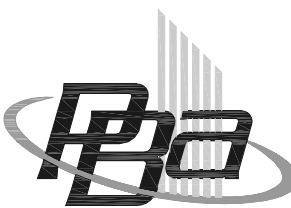
Partial 2nd & 3rd Floor
Reflected Ceiling Plans

project number: sheet number:

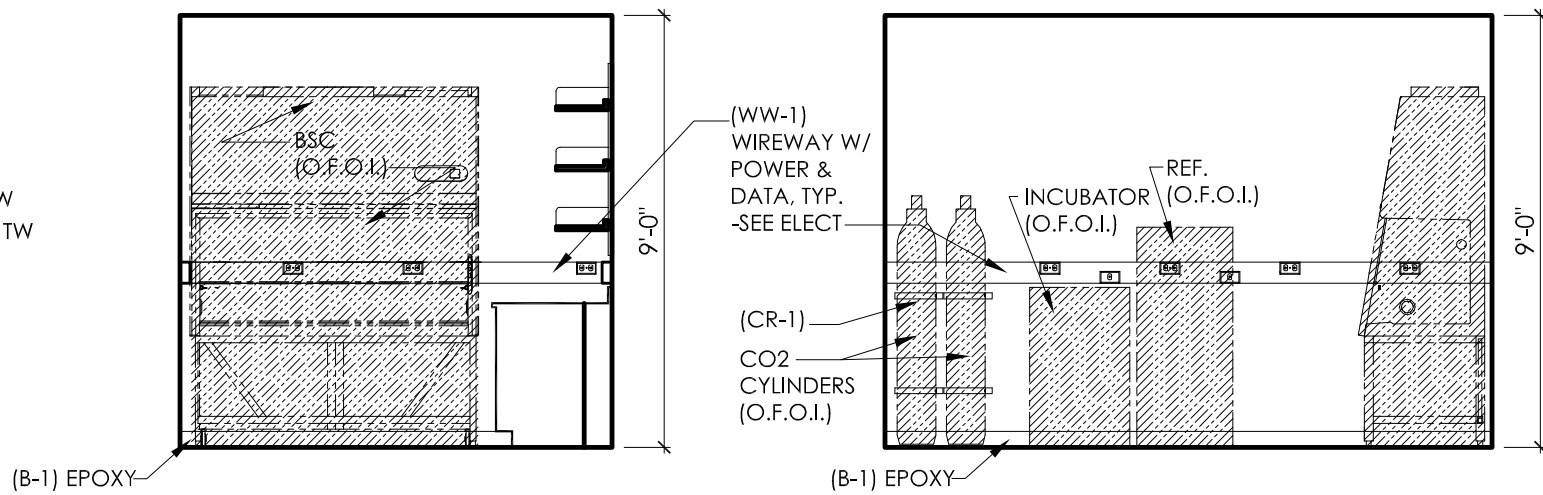
090-250890-1 A203

(1156-2: iDesign project number)

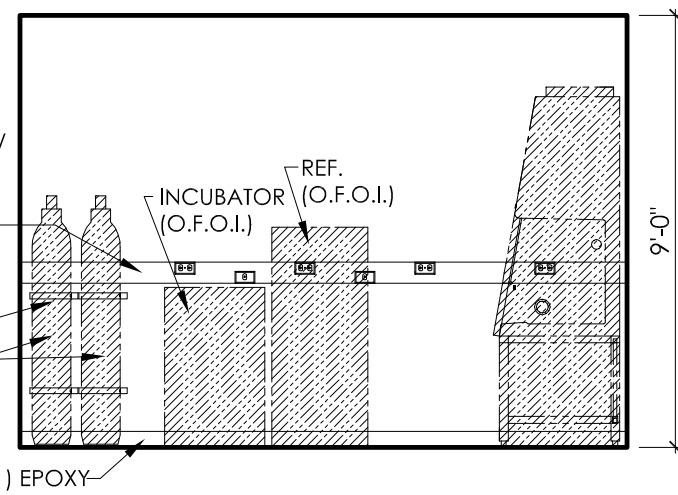




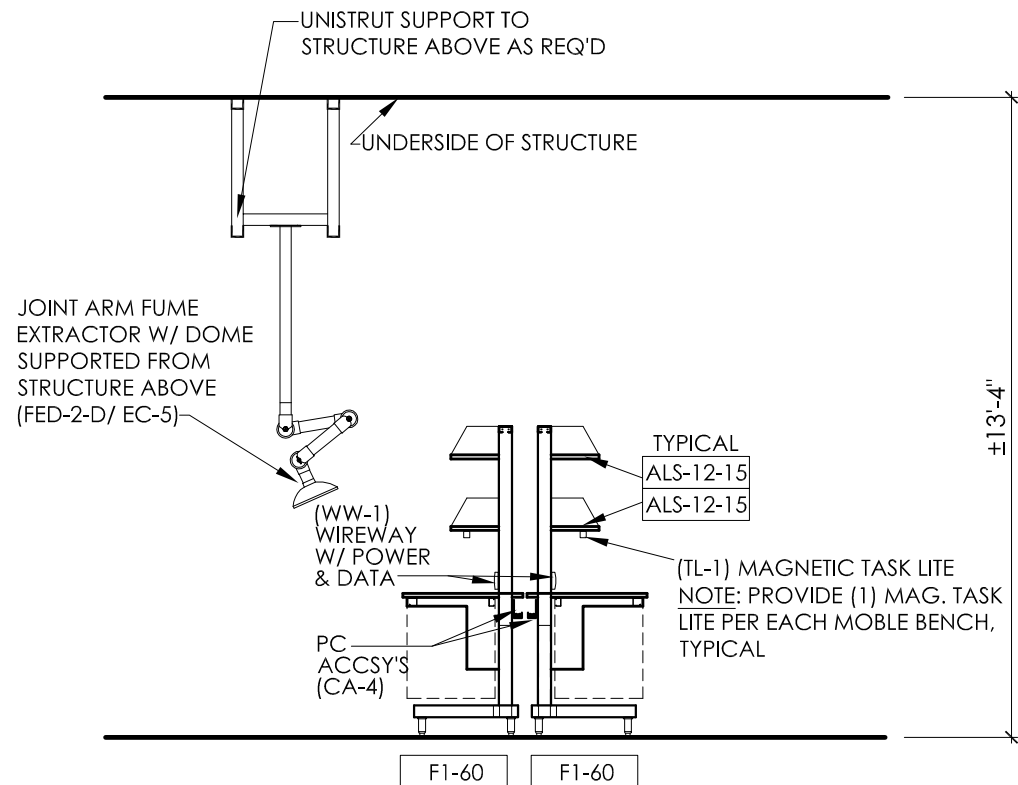
AREA 'C'
231.11 Tissue Culture
South Elevation
29
A202
1/4" = 1'-0"



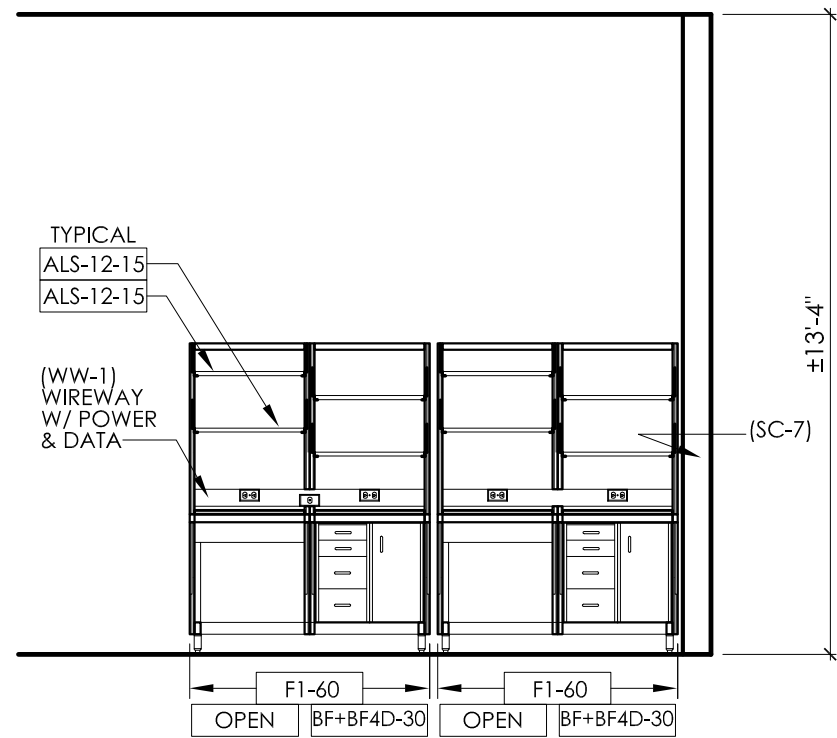
AREA 'C'
231.11 Tissue Culture
East Elevation
28
A202
1/4" = 1'-0"



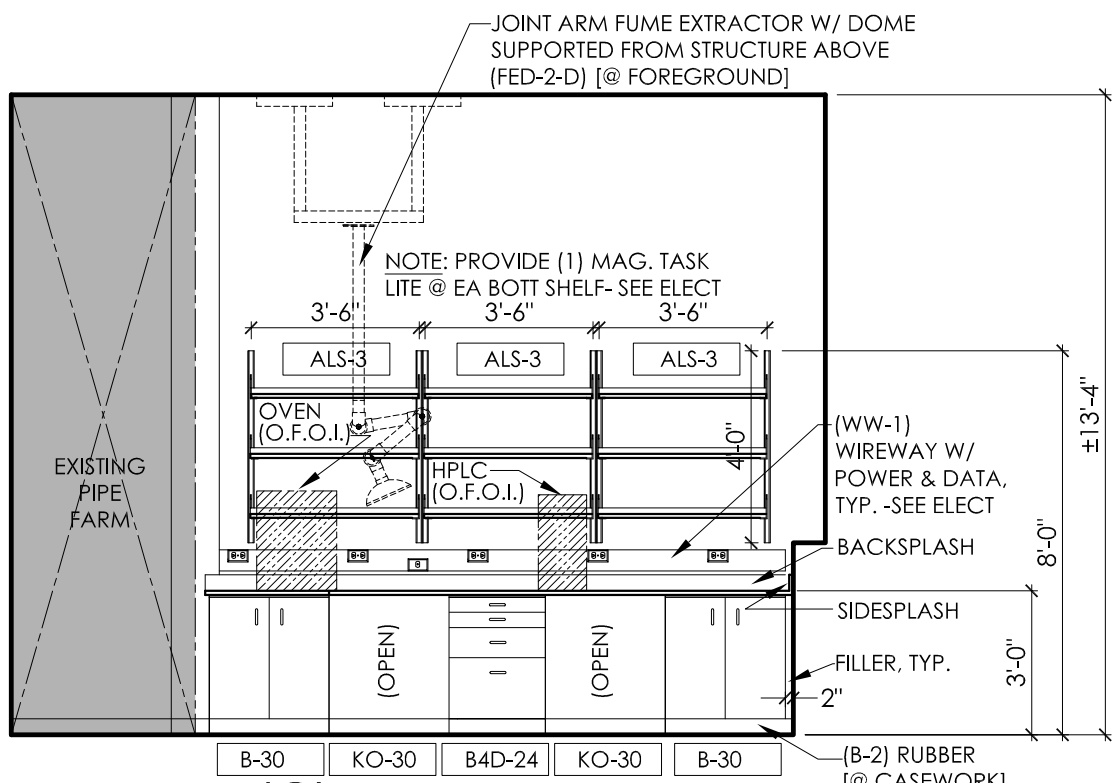
AREA 'C'
231.11 Tissue Culture
North Elevation
27
A202
1/4" = 1'-0"



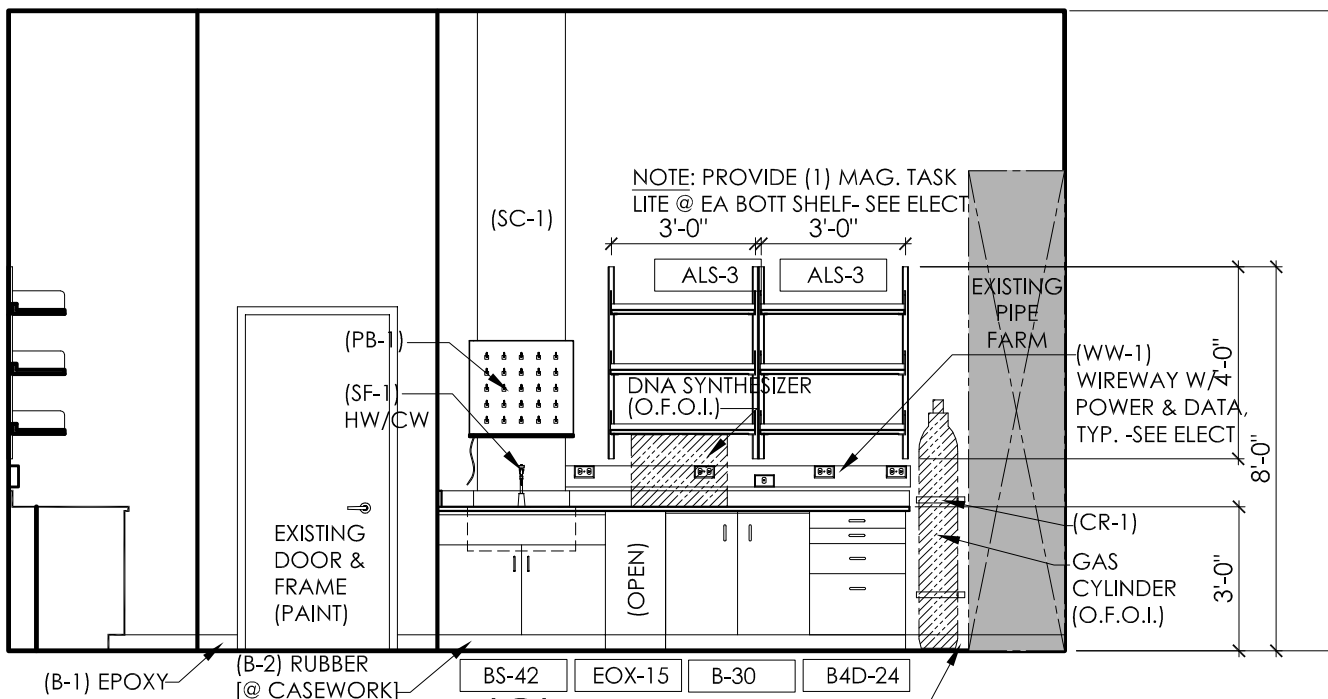
AREA 'C'
2311 Chem Engineering Lab
Island A South Elevation
26
A202
1/4" = 1'-0"



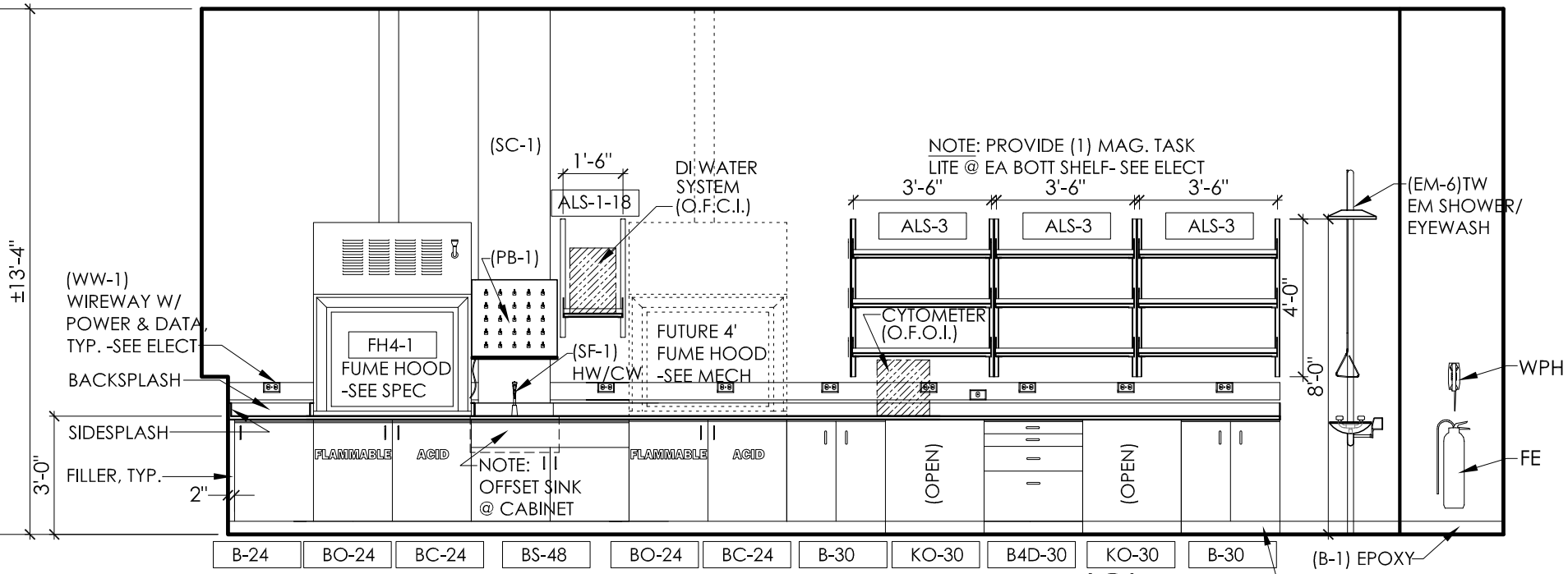
AREA 'C'
2311 Chem Engineering Lab
Island A West Elevation
25
A202
1/4" = 1'-0" (East Elevation Opposite Hand)



AREA 'C'
2311 Chem Engineering Lab
East Elevation
24
A202
1/4" = 1'-0"



AREA 'C'
2311 Chem Engineering Lab
North Elevation
23
A202
1/4" = 1'-0"



AREA 'C'
2311 Chem Engineering Lab
West Elevation
22
A202
1/4" = 1'-0"

designed by:	LAC
drawn by:	CTW
coordination checked:	CTW
checked:	LAC
approved:	LAC

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Engineering
Research Labs -
Phase Two

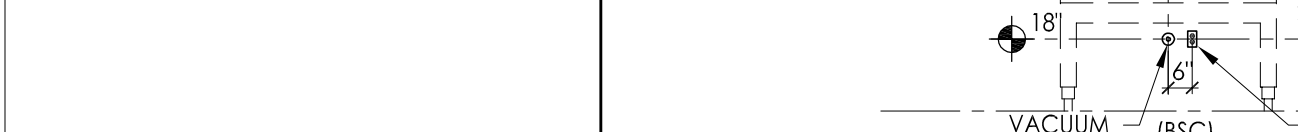
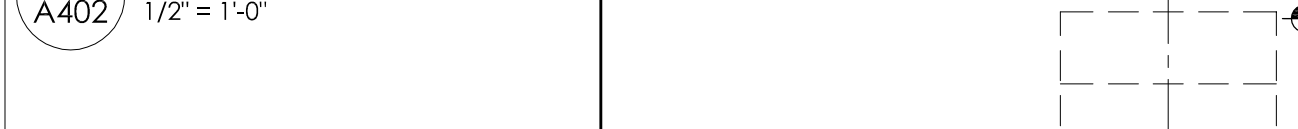
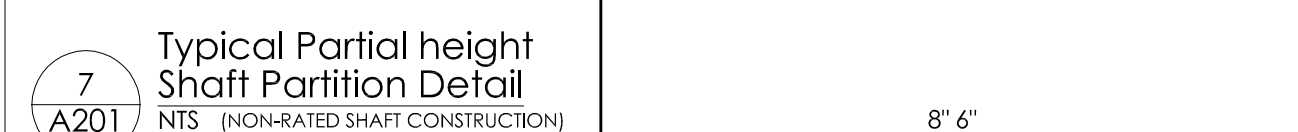
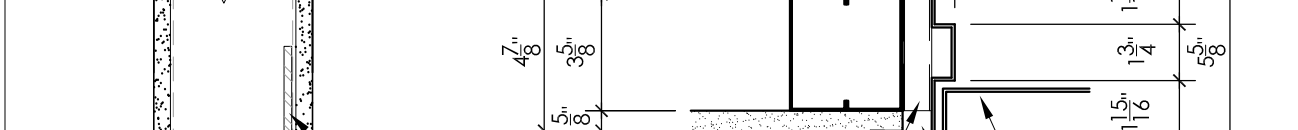
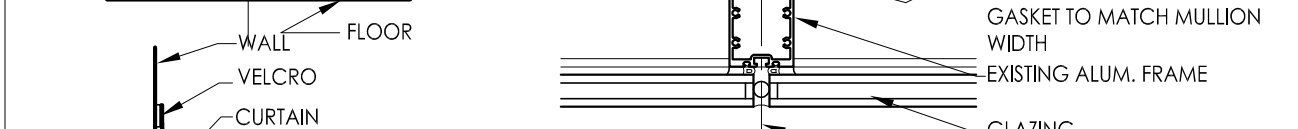
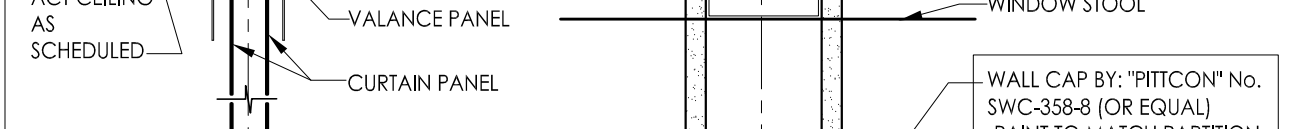
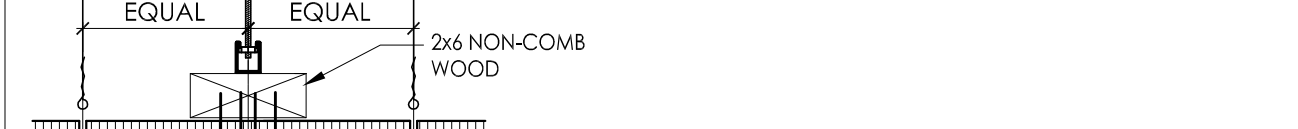
sheet title:

Interior Elevations
(AREA 'C')

project number: sheet number:

090-250890-1 A302

(1156-2: iDesign project number)



ARCHITECTURAL MATERIAL AND FINISH SCHEDULE		
KEY	MATERIAL	MANUFACTURER/ STYLE / COLOR
F-1	EPOXY COATG	DIUR-A-GARD DIUR-A-CHIP / COBBI ESTONE/ STANDARD FINISH

[illegible]

<p>HARDWARE GROUP/ REMARKS</p> <p>1. PAINT INTERIOR FACE OF EXISTING DOOR(S) & FRAME P-3. FINISH TO MATCH BUILDING STANDARD. VERIFY KEYING REQUIREMENTS WITH UNIVERSITY REPRESENTATIVE.</p> <p>2. EXISTING ALUM/GLOSS DOOR(S) & FRAME TO REMAIN. ENSURE HARDWARE MEETS [EMERGENCY] EGRESS-ONLY REQUIREMENTS AND WSU BUILDING STANDARDS.</p> <p>PROVIDE GASKETING @ DOOR SUCH AS 'PEMCO' SILICONSEAL SMOKE GASKETING TO SUITE DOOR.</p>

<p>TYPICAL DOOR INFORMATION</p> <p>1. All door sizes scheduled are based on actual frame openings, sizes noted on schedule are clear jamb to jamb frame dimensions and from reference floor line to head frame opening. Dimension tolerances must be considered for flooring materials to actual door dimensions.</p> <p>2. All hollow metal and wood doors including all fire labeled doors shall have special internal blocking to allow surface mounted closures and other hardware to be connected to the</p>	
--	--

5. Door undercuts for mechanical requirements require a 3/4" max. clear distance measured from the top of the finished floor material or threshold to the bottom of the door. Standard tolerances of undercutting of doors for thresholds and other floor covering materials are not noted and must be considered in determining the actual overall dimensions of the door. Coordinate with affected trades.

6. Location of doors noted on plans are dimensioned to the face of door jamb unless otherwise noted or detailed. If door location is not dimensioned - face of jamb shall be 4" to the wall.

	(W-width)	(ALS-2)		36"x48"
	ADJ. SHELVING &		FLOOR	
	STANDARDS		36"x36"	
	(PB-1)			

This side elevation shows the front wall assembly from the left. It includes a "REGULATOR" mounted on the wall, followed by a section labeled "(SEE ELECTRICAL)". To the right is a door frame with a "DOOR HANGER" indicated above it. The wall thickness is shown as 8 inches. Dimensions include a 3'-8" distance from the left edge to the start of the door frame, a 7'-7" height for the upper portion, a 5'-0" height for the door opening, and a 4'-6" distance from the door frame to the right edge. A 2'-10" dimension is also shown at the bottom.

POWER ——— STANDARD BENCH/
BASE CABINET

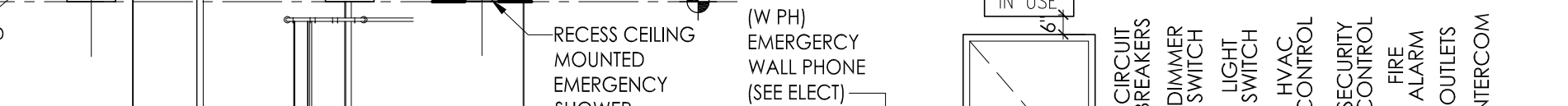
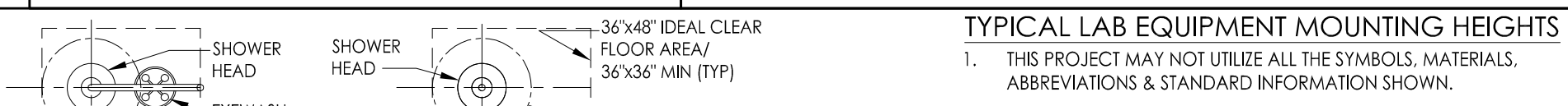
POWER ——— BARRIER FREE/ADA
SINK BASE CABINET

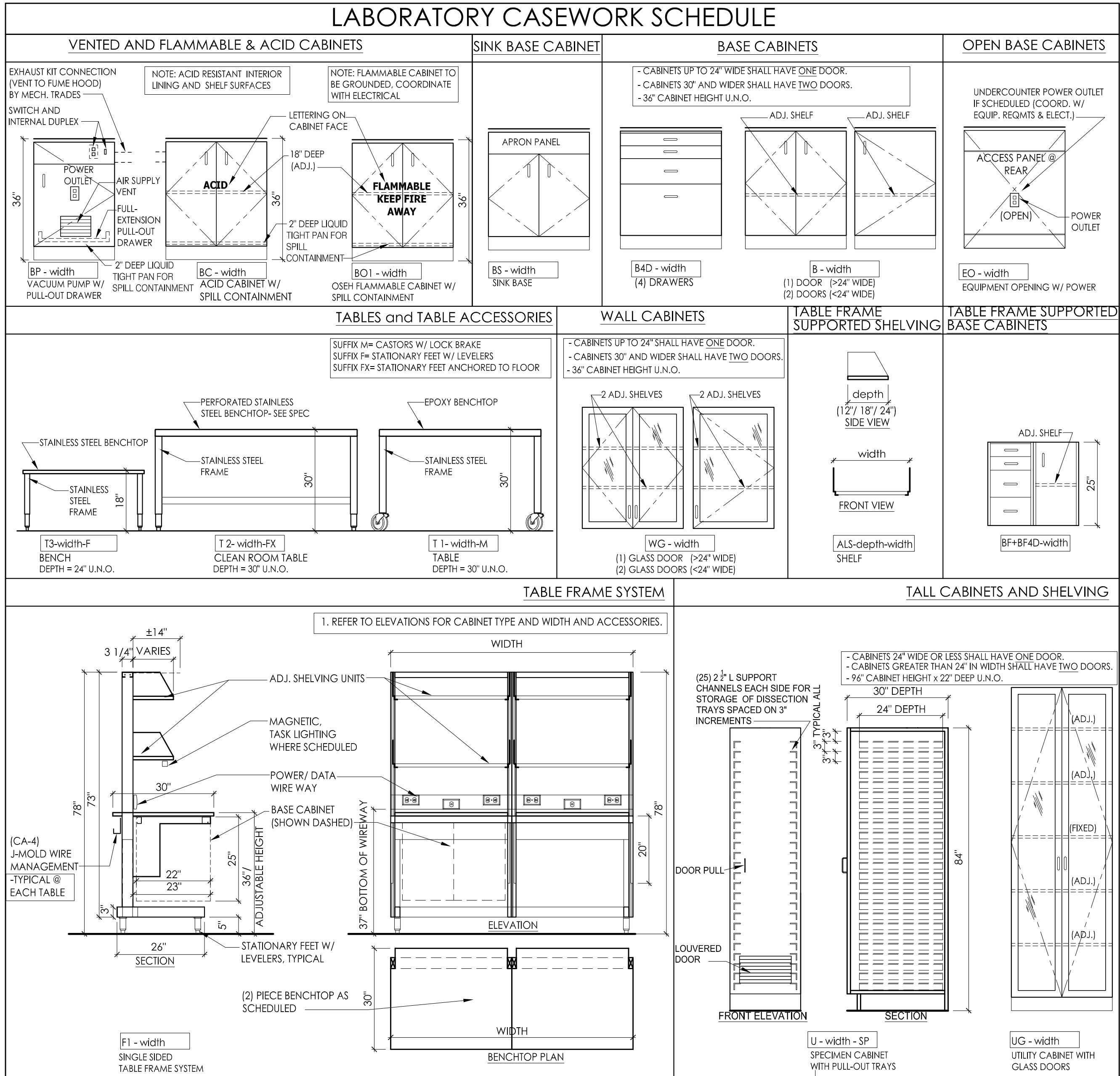
POWER ——— LOW BENCH/
LOW BASE CABINET

POWER ——— ACTIVATING EM
EYE/ FACE WASH
[EM-2]
EM EYEWASH PANIC BAR

82" 48" 36" 24" 12" 6" 3" 1 1/2" 3/4" 3/8" 1/4" 1/8" 1/16"

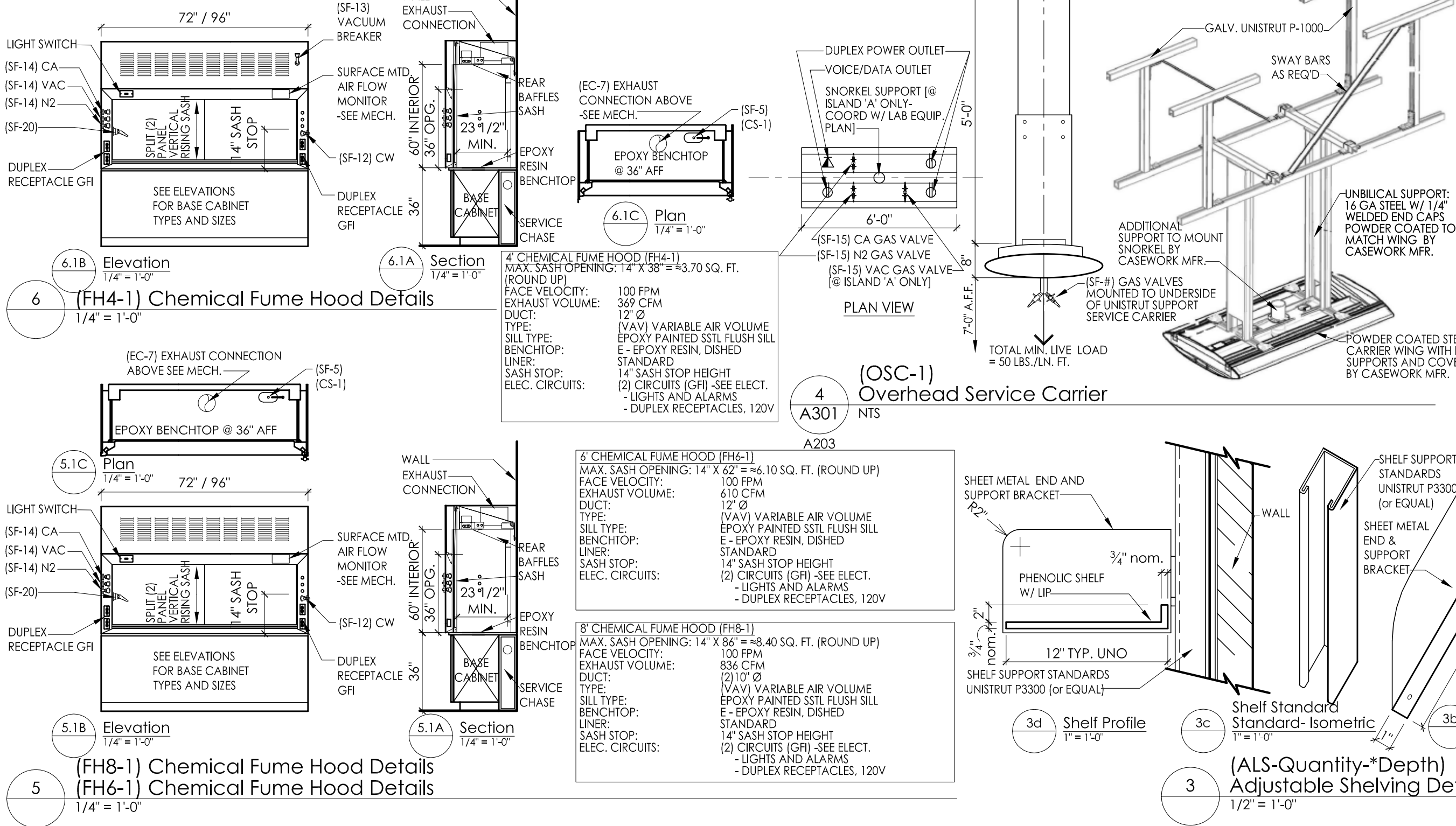
FOR





LABORATORY ACCESSORY, CASEWORK, FUME HOOD, AND SERVICE FITTING FINISH SCHEDULE

I.D.	ITEM	MATERIAL & FINISH	COLOR	NOTES	DETAIL
ACCESSORIES					
(AJS-#)	ADJUSTABLE LAB SHELVES	PHENOLIC RESIN PAINTED METAL	MFR. STD. BLACK MATCH CASEWORK	TRESPA TOP LAB (DESIGN STD) SLOTTED STANDARD SUPPORT/STEEL BRACKETS, ADJ. 1" INCREMENTS, SEE SPEC	3/A402
(OSC-1)	PREFABRICATED OVERHEAD SERVICE CARRIER WITH UNISTRUT SUPPORTS	PAINTED STEEL	MATCH CASEWORK	WING STYLE WITH SUPPORT AND UTILITY COVERS	4/A402
(WW-1)	DUAL SERVICE WIREWAY	MFR. STD.	DESIGNER GRAY	LEGRAAD ALDS 4000 (SEE ELEC)	
	ELECTRICAL RECEPTACLES & SWITCHES	MFR. STD.	STANDARD BLACK	EMERGENCY POWER = RED (SEE ELEC)	
(C-1)	BLACK-OUT CURTAIN	MFR. STD.	BLACK	PL SYSTEMS (DESIGN STD)	3/A401
(PB-1)	PEGBOARD DRYINGRACK	PAINTED METAL, SEMI-GLOSS	MFR. STD.	POLYPROPYLENE PEGS INTERVENEYSTEAS (DESIGN STD)	8/A401
(CA-1)	KEYBOARD TRAY	MFR. STD.	BLACK	HUMANSCALE 900-STD KEYBD W/MOUSE CUP (DESIGN STD)	
(CA-2)	CPU HOLDER	MFR. STD.	BLACK	HUMANSCALE, CPU555 (DESIGN STD)	
(CA-4)	WIRE MANAGEMENT	MFR. STD.	BLACK	J-SHAPE WIRE MANAGER, #WM2A MOCKEY (DESIGN STD)	
(JTL-1)	MAGNETIC TASK LIGHT	MFR. STD.	MFR. STD.	REED (DESIGN STD), 24" LENGTH, TYP	
BENCHTOPS, SINKS & CUP SINKS					
(E)	EPOXY RESIN	EPOXY RESIN, MATTIE	MFR. STD. BLACK	DURCON (DESIGN STD)	
(SSTL 1)	GOWNING ROOM BENCH	STAINLESS STEEL, 16 GAGE, #304 SATIN FINISH, FLUSH		TERRAUNIVERSAL (DESIGN STD) MODEL # 1560-31	
(SSTL 2)	CLEAN ROOM FIXED TABLES	STAINLESS STEEL, 16 GAGE, #304 SATIN FINISH, PERFORATED		TERRAUNIVERSAL (DESIGN STD) MODEL #2424-S	
CASEWORK					
	BASE CABINETS	PAINTED METAL, SEMI-GLOSS	DOVE GRAY OR SIM	MOTT PAINTED STEEL (DESIGN STD)	-
	WALL & TALL CABINETS	PAINTED METAL, SEMI-GLOSS	DOVE GRAY OR SIM	MOTT PAINTED STEEL (DESIGN STD)	-
	VENTED CABINETS	PAINTED METAL, SEMI-GLOSS	DOVE GRAY OR SIM	MOTT PAINTED STEEL (DESIGN STD)	-
	FLAMMABLE CABINETS	PAINTED METAL, SEMI-GLOSS	DOVE GRAY OR SIM	MOTT PAINTED STEEL (DESIGN STD)	-
	ACID CABINETS	PAINTED METAL, SEMI-GLOSS	DOVE GRAY OR SIM	MOTT PAINTED STEEL (DESIGN STD)	-
	INSTRUMENT TABLE FRAMES	PAINTED METAL, SEMI-GLOSS	DOVE GRAY OR SIM	MOTT PAINTED STEEL (DESIGN STD)	-
	CASEWORK HARDWARE, DOOR & DRAWER PULLS	STAINLESS STEEL, SATIN FINISH	NATURAL	-	-
	CASEWORK LETTERING	PAINTED	RED	-	-
FUME HOODS					
(FH-#)	FUME HOOD	PAINTED METAL, SEMI-GLOSS	DOVE GRAY OR SIM	MOTT PAINTED STEEL (DESIGN STD)	-
	ELEC. COVER PLATES	STAINLESS STEEL, SATIN	NATURAL	-	-
	RECEPTACLES AND SWITCHES	STAINLESS STEEL, SATIN	MFR. STD. BLACK	-	-
WET PROCESSING CABINET					
(WPC-1)	WET PROCESSING BENCH - ACID	POLYPROPYLENE	MFR. STD. WHITE	TERRAUNIVERSAL (DESIGN STD) PROVIDE ACID STORAGE CABINETS BELOW BENCH	
(WPC-2)	WET PROCESSING BENCH - SOLVENTS	BRUSHED STAINLESS STEEL	NATURAL	TERRAUNIVERSAL (DESIGN STD) PROVIDE SOLVENT STORAGE CABINETS BELOW BENCH	
EMERGENCY FIXTURES AND SERVICE FITTINGS					
(SF-#)	SINK FIXTURES	CHROME, SATIN FINISH	NATURAL	WITH CLEAR EPOXY COATING- SEE SCHEDULE & SPEC	-
(SF-#)	SERVICE FITTINGS	CHROME, SATIN FINISH	NATURAL	WITH CLEAR EPOXY COATING- SEE SCHEDULE & SPEC	-
(JES-#)	EMERGENCY FIXTURES	STAINLESS STEEL, SATIN FINISH	NATURAL	SEE SPEC	-



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ISSUE: date:

50% Review 02.04.2015

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designed by: LAC

drawn by: CTW

coordination checked: CTW

checked: LAC

approved: LAC

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Engineering
Research Labs -
Phase Two

sheet title:

Laboratory Schedules
and Details

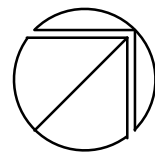
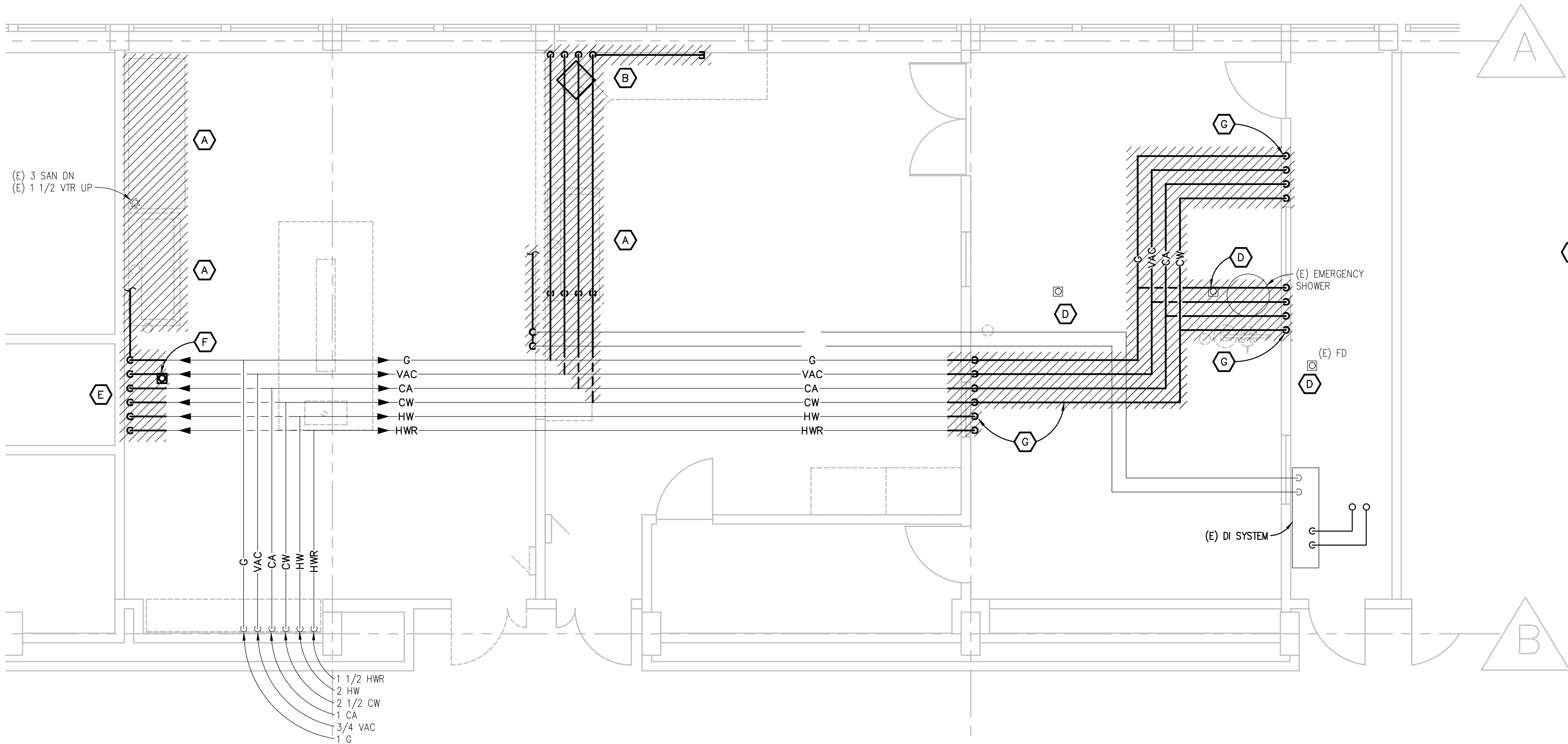
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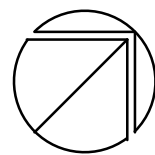
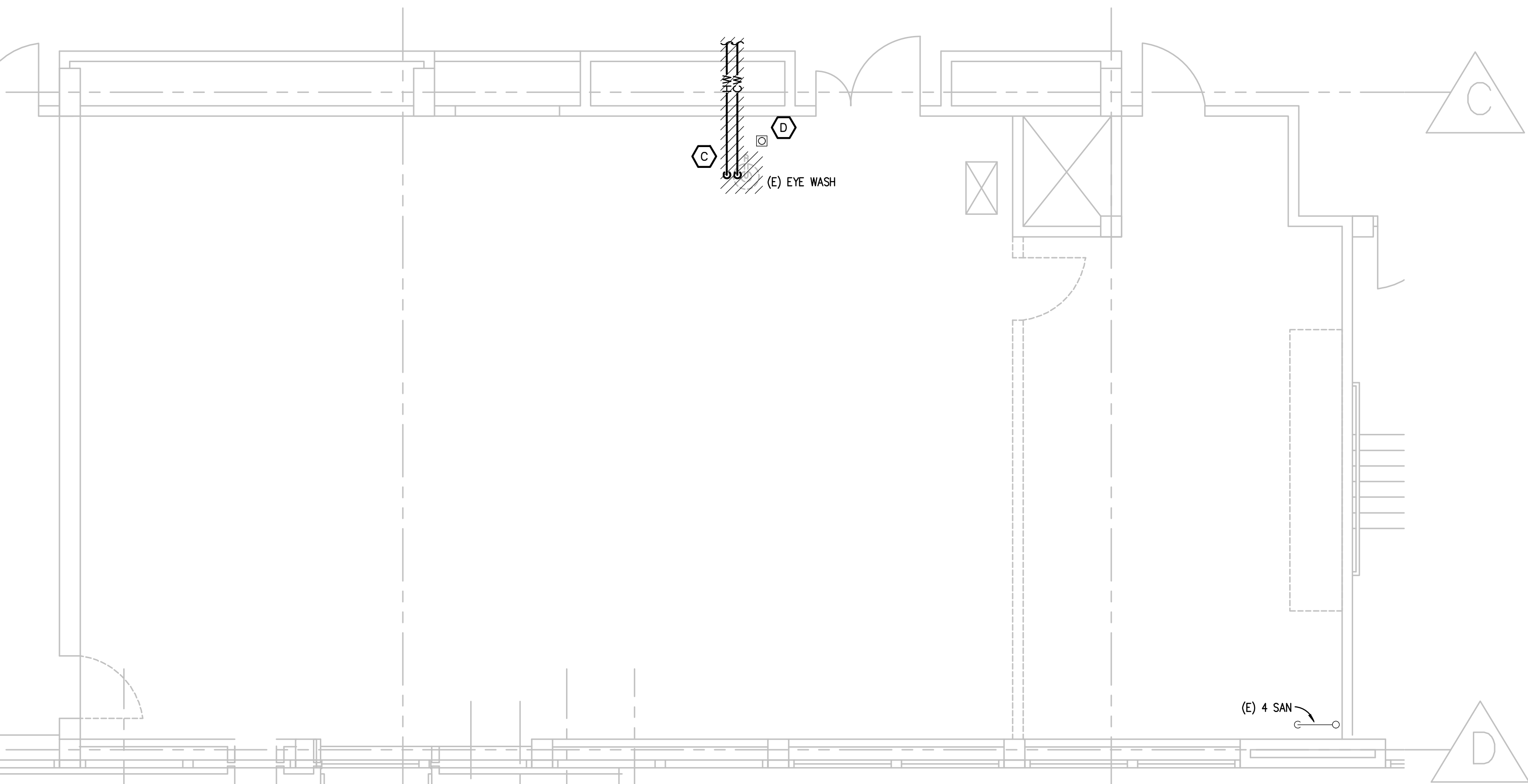
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(1156-2: iDesign project number)

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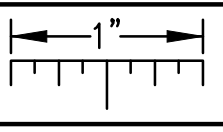


PARTIAL 3RD FLOOR PLUMBING DEMOLITION PLAN - AREA 'B'
SCALE: 1/4" = 1' - 0"



PARTIAL 3RD FLOOR PLUMBING DEMOLITION PLAN - AREA 'A'
SCALE: 1/4" = 1' - 0"

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.

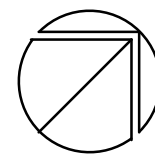
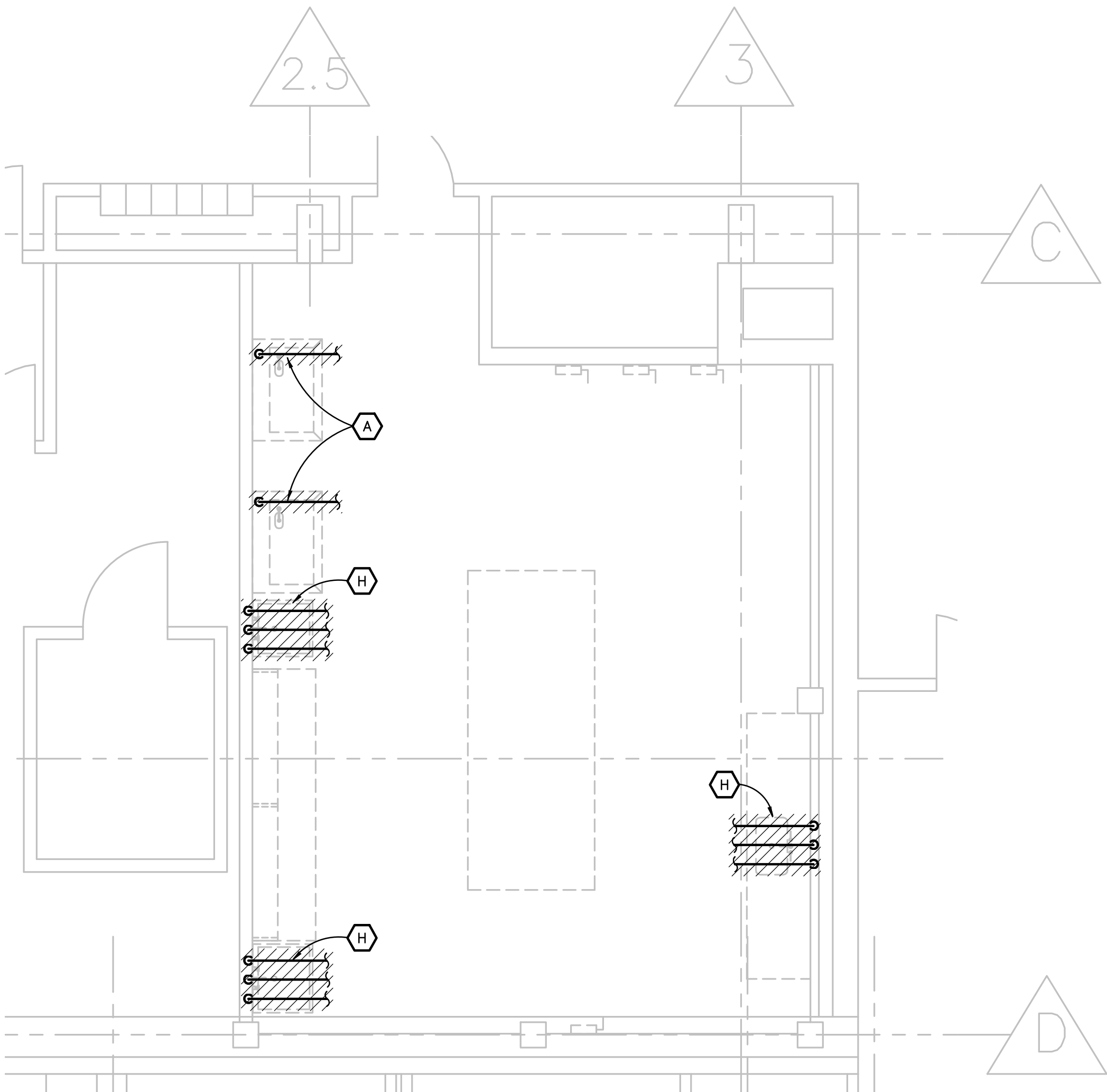
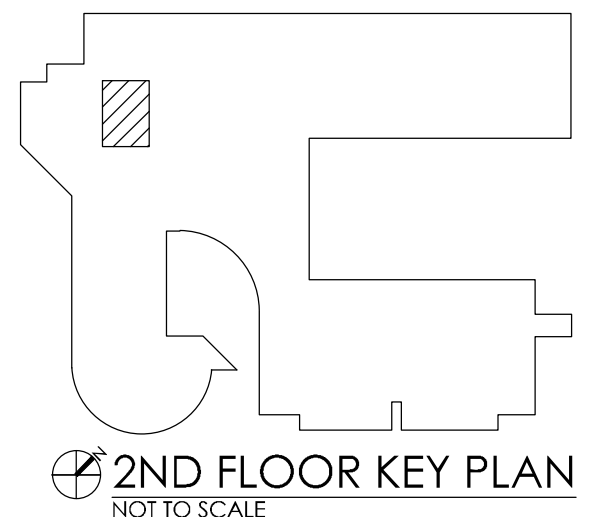
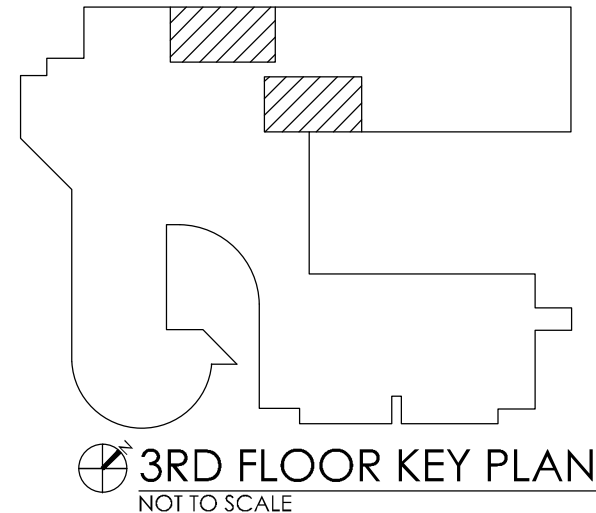


MECHANICAL GENERAL DEMOLITION NOTES:

1. ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE.
2. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. ACTUAL ROUTING AND SIZES OF EXISTING PIPING AND DUCTWORK MIGHT DIFFER TO A LIMITED EXTENT FROM WHAT IS SHOWN. MAJOR DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL EXISTING CONDITIONS SHALL BE REPORTED TO THE ENGINEER.
3. THE EXACT EXTENT OF DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK.
4. ALL MECHANICAL ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE, INCLUDING ALL RELATED ITEMS SUCH AS HANGERS, SUPPORTS, CONTROLS, ETC. CAP ALL OPEN ENDED PIPES AND DUCTWORK.

DEMOLITION KEY NOTES:

- A. REMOVE (E) HOOD AND ALL ASSOCIATED GASES/CW/DI. CAP PIPING AT MAIN OR LAST ACTIVE BRANCH.
- B. REMOVE SINK AND ALL ASSOCIATED PIPING BACK TO MAIN OR LAST ACTIVE BRANCH AND CAP.
- C. REMOVE (E) EYE WASH AND ASSOCIATED MIXING BOX. REMOVE HW AND CW BACK TO MAIN OR LAST ACTIVE BRANCH AND CAP.
- D. PREPARE (E) FD FOR INSTALLATION OF SURE SEAL GASKET.
- E. REMOVE EXISTING SERVICES TO (2) FUME HOODS. CAP IN CEILING FOR FUTURE CONNECTION.
- F. REMOVE EXISTING FLOOR DRAIN. REMOVE SAN PIPING BACK TO MAIN AND CAP.
- G. REMOVE PIPING AS SHOWN. CAP IN CEILING FOR FUTURE CONNECTION.
- H. REMOVE SINK AND ASSOCIATED PIPING. CAP WASTE IN CEILING SPACE OF FLOOR BELOW. CAP WATER/VENT AT MAINS.



PARTIAL 2ND FLOOR PLUMBING DEMOLITION PLAN - AREA 'C'
SCALE: 1/4" = 1' - 0"

WAYNE STATE UNIVERSITY

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PBA Project No. 20140386

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approved: GPI

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Research Labs -
Phase Two

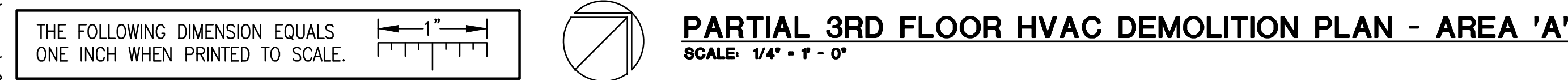
sheet title:

PARTIAL SECOND AND
THIRD FLOOR PLUMBING
DEMOLITION PLANS

project number: sheet number:

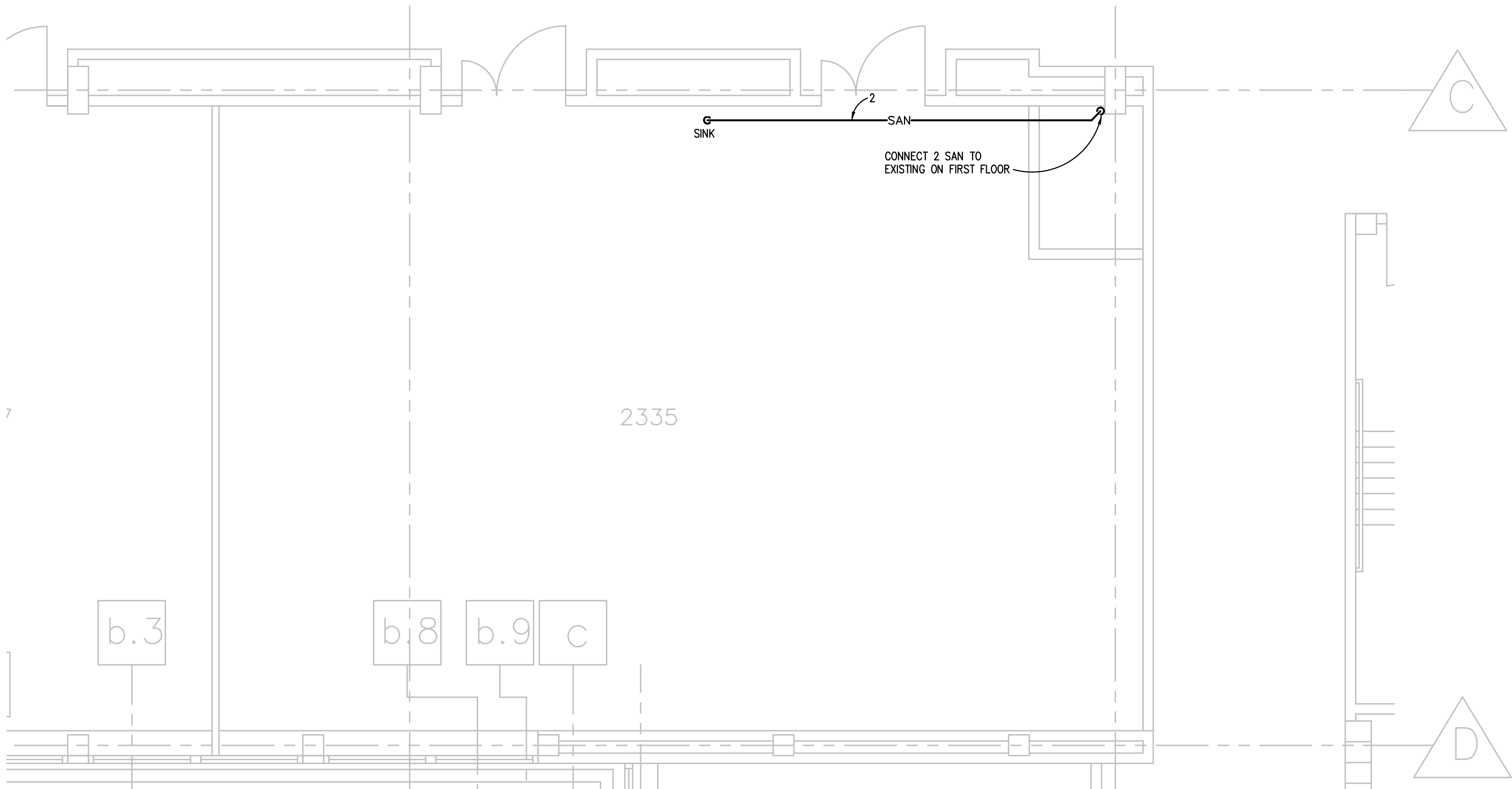
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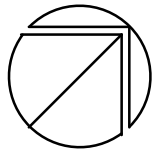


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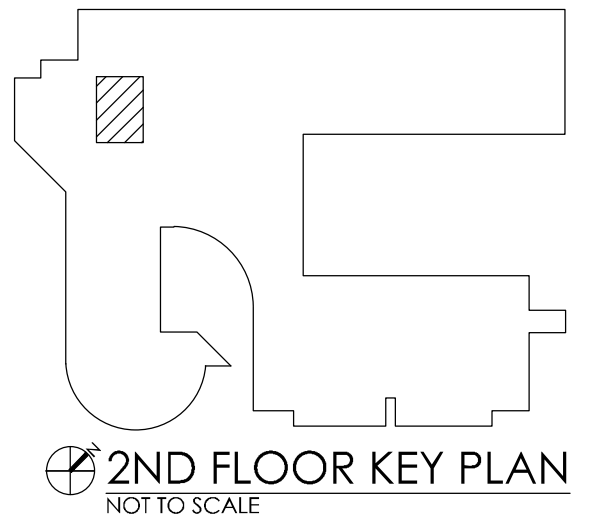
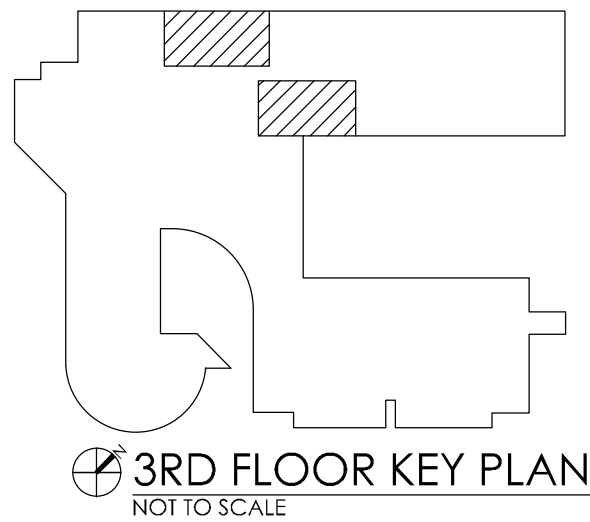
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE.



PARTIAL 2ND FLOOR PLUMBING PLAN - AREA 'A'
SCALE: 1/4" = 1' - 0"

PLUMBING GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
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3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.
6. HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS OTHERWISE NOTED.
7. PLUMBING VENT PIPING THROUGH ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF PARAPET.
8. PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.
9. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".



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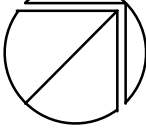
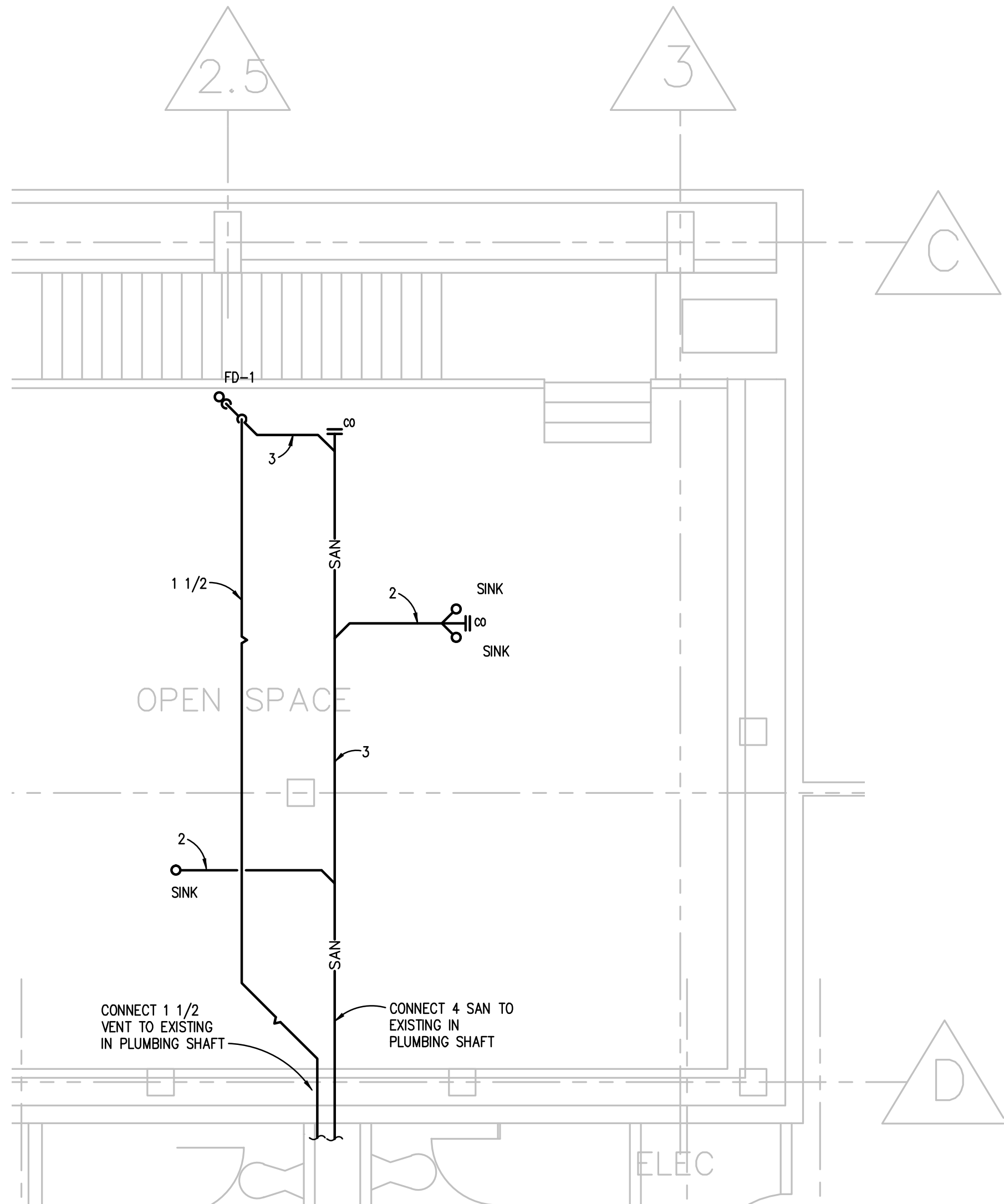
**PARTIAL FIRST FLOOR
PLUMBING PLANS**

project number: sheet number:

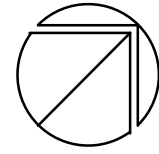
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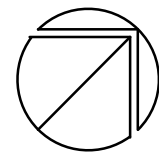
(1156-2: iDesign project number)



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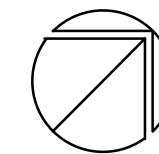


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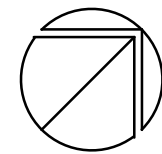
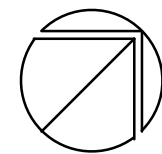
SCALE: 1/4" = 1' - 0"

A graphic scale bar indicating a length of 1 inch. The bar is divided into 16 equal segments, with a vertical line marking the midpoint (8 segments from each end).



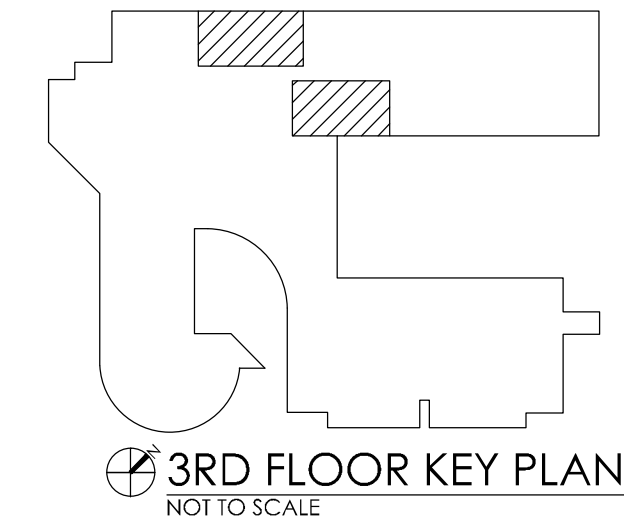
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SHEET METAL GENERAL NOTES:

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5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.



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approved:	GPI

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Engineering
Research Labs -
Phase Two

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PARTIAL SECOND AND
THIRD FLOOR SHEET
METAL PLANS

project number: sheet number:

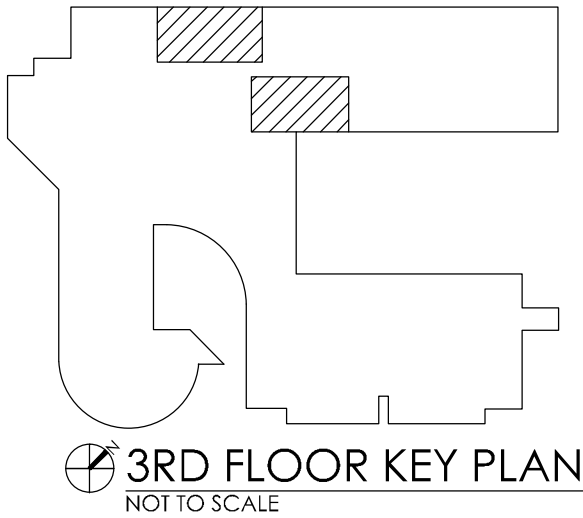
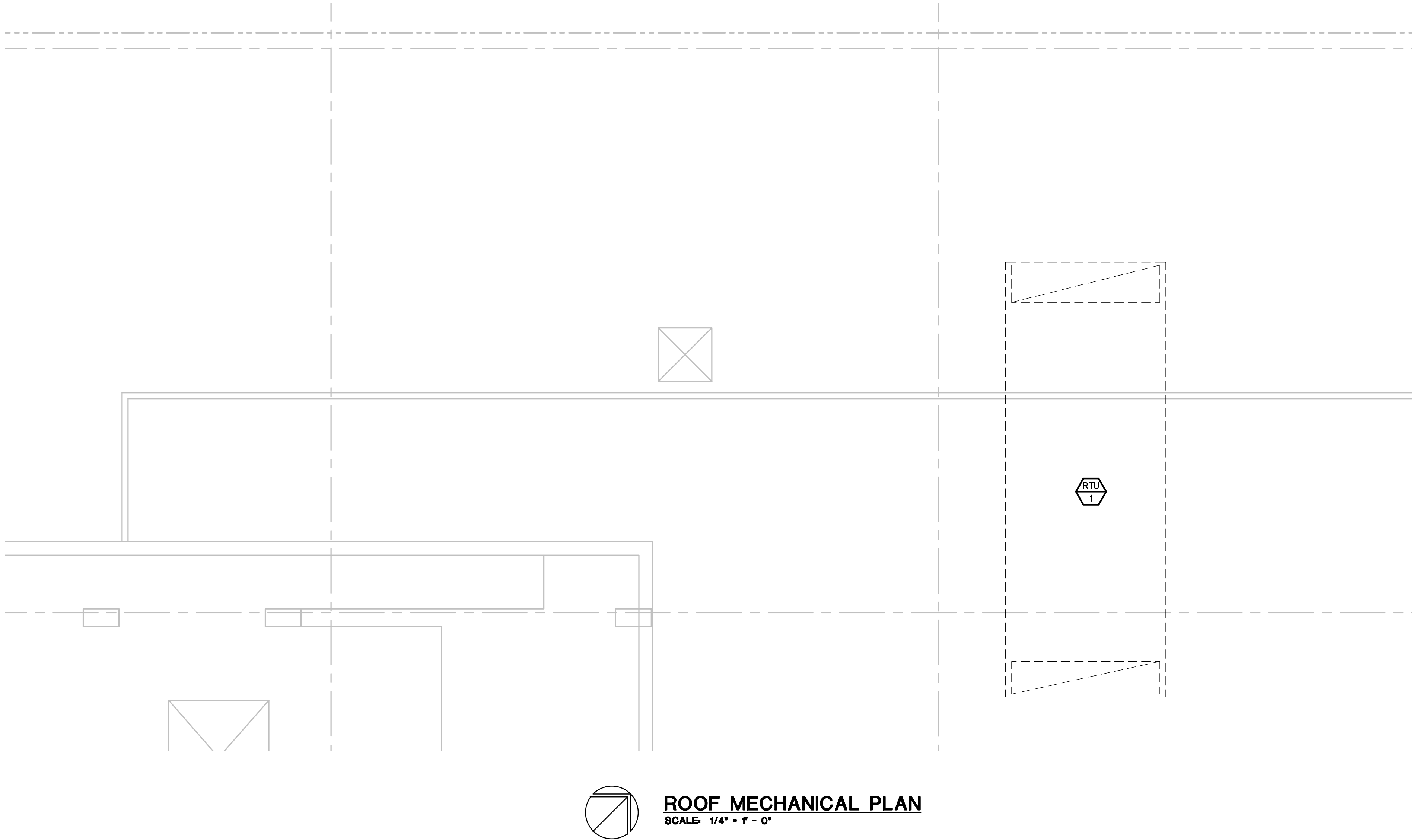
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THE FOLLOWING DIMENSION EQUALS
ONE INCH WHEN PRINTED TO SCALE.

1"



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5. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.

CONSTRUCTION KEY NOTES:

1. BALANCE EXISTING DIFFUSER TO CFM NOTED.

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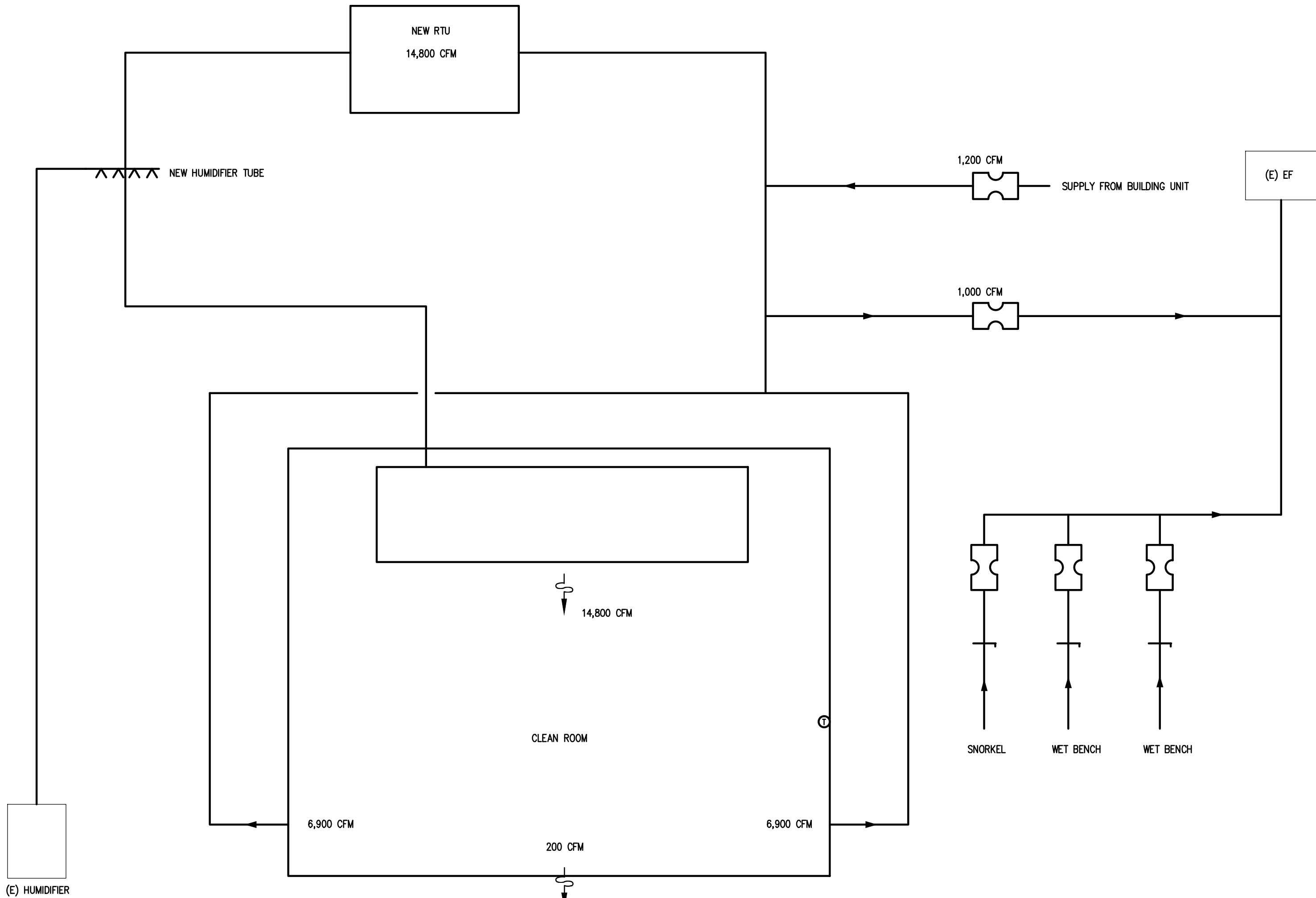
ROOF MECHANICAL
PLAN

project number: sheet number:

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AIRFLOW DIAGRAM
NO SCALE

GRILLE, REGISTER, AND DIFFUSER SCHEDULE								
UNIT IDENTIFICATION	FACE SIZE	NECK SIZE	FRAME TYPE	ACCESSORY	CONSTRUCTION	FINISH	MODEL NUMBER	REMARKS
S-1	24x48	SEE PLANS	NOTE 2	----	STEEL	WHITE	TRITEC	
S-2	24x24	SEE PLANS	NOTE 2	----	STEEL	WHITE	OMNI	
S-3	29	SEE PLANS	NOTE 2	----	STEEL	WHITE	TMRA	

NOTE:
1. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.
2. COORDINATE FRAME TYPE WITH ARCHITECT.

THERMOSTATIC MIXING VALVE SCHEDULE					
UNIT IDENTIFICATION	MINIMUM FLOW GPM	MAXIMUM FLOW GPM	PRESSURE DROP AT MAXIMUM FLOW PSIG	MODEL NUMBER	REMARKS
MV-1	1.5	8	30	S19-2000	
MV-2	2	36	30	S19-2100	

NOTE:
1. MODEL NUMBERS ARE BRADLEY UNLESS OTHERWISE NOTED.

PLUMBING CONNECTION SCHEDULE					
UNIT IDENTIFICATION	CW INCHES	HW INCHES	SAN INCHES	VENT INCHES	REMARKS
SINK	3/4	3/4	1 1/2	1 1/2	ARCHITECTURAL PROVIDED SINK & POINT OF USE DILUTION TANK
FD-1	-	-	3	1 1/2	
EEW	1/2	1/2	-	-	
ESH	1	1	-	-	

NOTE: INDIVIDUAL WATER LINE BRANCHES, WASTE LINES, VENTS, AND TRAPS FOR CONNECTION TO INDIVIDUAL FIXTURES, FIXTURE FITTINGS, AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE OR AS INDICATED ON DRAWINGS, WHICHEVER IS GREATER.

LABORATORY AIRFLOW TERMINAL UNIT SCHEDULE									
UNIT IDENTIFICATION	AIRFLOW RANGE		INLET STATIC PRESSURE MAXIMUM IN. W.G.	NUMBER VALVES PER UNIT	DUCT CONNECTIONS		COATING	MODEL NUMBER	REMARKS
	MINIMUM CFM	MAXIMUM CFM			INLET SIZE INCHES	OUTLET SIZE INCHES			
ELTU-1	840	840	0.01	1	10	10	---	APOGEE	
ELTU-2	610	610	0.01	1	10	10	---	APOGEE	
ELTU-3	2040	2040	0.01	1	16	16	---	APOGEE	
ELTU-4	400	400	0.01	1	12	12	---	APOGEE	

NOTE:
1. MODEL NUMBERS ARE SIEMENS UNLESS OTHERWISE NOTED.
2. MINIMUM AIRFLOW SHALL BE SET TO THE CFM INDICATED ON FLOOR PLANS.
3. BOXES SERVING LABORATORY FUME HOODS, BIO-SAFETY CABINETS, SNORKEL EXHAUST HOODS, ETC. SHALL BE PHENOLIC COATED ON THE BOX INTERIOR SURFACES REFER TO SPECIFICATIONS.

ROOFTOP AIR CONDITIONING UNIT SCHEDULE																																
UNIT I.D.	AREA SERVED	SUPPLY FAN						ELECTRIC HEATING COIL			FILTER SECTION		FILTER SECTION		CURB		MAXIMUM UNIT DIMENSIONS				MAXIMUM UNIT OPERATING WEIGHT LBS. (WITH CURB)	TOTAL UNIT ELECTRICAL				MODEL NO.	NOTES					
		AIRFLOW CFM	MINIMUM OUTSIDE AIR FLOW CFM	E.S.P. IN. W.G.	T.S.P. IN. W.G.	FAN SPEED RPM	BHP	HP	CAPACITY (MBH)	HEATING ELEMENT KW	FINAL AIR TEMP °F	TYPE	MERV	AIR PRESS. DROP INITIAL IN. W.G.	TYPE	MERV	AIR PRESS. DROP INITIAL IN. W.G.	TYPE		HEIGHT	LENGTH	HEIGHT (WITH CURB)	WIDTH	VOLTS	PHASE			FLA	MOP			
																		STANDARD	VIBRATION ISOLATION SPRING CURB NOTE 7													
RTU-1	CLEAN RM	16,000	—	2	5.0	1331	19.5	25	—	341.30	100	74.82	BAG	merv	—	—	HEPA	99.9	—	—	NO	YES	24"	23"—11 9/16"	5'-2 7/8"	8'-8"	748	208	3	66.4	125	39MW

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE CARRIER UNLESS OTHERWISE NOTED
3. MERV DESIGNATES THE "MINIMUM EFFICIENCY REPORTING VALUE" AS EVALUATED UNDER ASHRAE STANDARD 52.2 1999.
4. AIR HANDLING UNIT TOTAL STATIC PRESSURE FOR VARIABLE AIR VOLUME SYSTEMS IS BASED ON THE FILTER DIRTY AIR PRESSURE DROP AND AVERAGE/MIDLIFE FILTER AIR PRESSURE DROP FOR CONSTANT VOLUME SYSTEMS UNLESS NOTED OTHERWISE.
5. REFER TO VIBRATION ISOLATOR APPLICATION SCHEDULE.

PLUMBING FIXTURE SCHEDULE								
UNIT IDENTIFICATION	MANUFACTURER MODEL NUMBER	FLOOR DRAINS					ACCESSORIES AND FEATURES	REMARKS
		PATTERN	BODY MATERIAL	TOP SHAPE	OUTLET FITTING	COATING		
FD-1	J.R. SMITH 2005Y-A	FLOOR DRAIN	GRAY IRON	ROUND	GRAY IRON	ENAMEL	SEEPAGE FLANGE, CLAMPING DEVICE	5# NICKEL BRONZE TOP STRAINER AND COMPLETE W/TRAP SEAL PROTECTION DEVICE ("SURESEAL"), REFER TO SPECIFICATIONS.

APPROVED MANUFACTURERS:
FLOOR DRAINS - J.R. SMITH.

SCHEDULES GENERAL NOTES:

TYPICAL FOR ALL SCHEDULE SHEETS:

- REFER TO ELECTRICAL STANDARD SCHEDULES, ONE LINE DIAGRAM AND PANEL SCHEDULES FOR ADDITIONAL ELECTRICAL INFORMATION
- PROVIDE THE FOLLOWING FACTORY-WIRED ELECTRICAL OPTIONS/ACCESSORIES WHERE INDICATED IN SCHEDULE:

A - NON-FUSED DISCONNECT SWITCH

B - UNIT SHALL BE SINGLE POINT ELECTRICAL CONNECTION WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS

C - SERVICE RECEPTACLE

D - FUSED DISCONNECT SWITCH

E - COMBINATION STARTER

F - UNIT SHALL HAVE (2) SINGLE POINT CONNECTIONS WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS. (1) CONNECTION SHALL BE FOR CONDENSING SECTION AND (1) CONNECTION SHALL BE FOR THE REMAINDER OF THE UNIT.
- FOR MODULATION/CONTROL TYPE COLUMN, "VFC" INDICATES VARIABLE FREQUENCY CONTROLLERS, "AUTO" INDICATES AUTOMATIC OPERATION (CONTROLLED BY TEMPERATURE CONTROLS OR SELF CONTAINED CONTROLS), "MANUAL" INDICATES HAND OPERATION.
- IF VARIABLE FREQUENCY CONTROLLERS ARE INDICATED TO BE PROVIDED AND ARE NOT INSTALLED INTEGRAL TO THE UNIT, VARIABLE FREQUENCY CONTROLLERS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR (UNLESS OTHERWISE NOTED) AND INSTALLED BY THE ELECTRICAL CONTRACTOR INCLUDING THE LINE SIDE AND LOAD SIDE WIRING TO THE MOTOR AND INCLUDING MISCELLANEOUS STEEL REQUIRED FOR THE SUPPORT AND MOUNTING OF THE VFC. REFER TO FLOOR PLANS FOR LOCATION.
- WHERE EQUIPMENT IS INDICATED TO HAVE A SINGLE POINT ELECTRICAL CONNECTION, THAT EQUIPMENT SHALL COME COMPLETE WITH FACTORY INSTALLED STARTERS, MOTOR OVERLOAD PROTECTION, CONTACTORS, FUSING AND ALL NECESSARY INTERNAL WIRING AND CONTROLS. PROVIDE A FACTORY MOUNTED UNIT DISCONNECTING MEANS WHERE THE ELECTRICAL CONTRACTOR SHALL MAKE SINGLE POINT CONNECTION. INSTALL PACKAGED EQUIPMENT SUCH THAT THE ELECTRICAL CONNECTION AND CONTROLS ARE ACCESSIBLE AND HAVE CLEARANCES MEETING THE NATIONAL ELECTRICAL CODE.
- WHERE PACKAGED EQUIPMENT IS PROVIDED, NAMEPLATE MUST INDICATE MAXIMUM OVERCURRENT PROTECTION BY HACR RATED CIRCUIT BREAKERS OR FUSES. IF FUSE PROTECTION ONLY IS INDICATED, PROVIDE A FUSIBLE DISCONNECT AND FUSES WITH THE UNIT.
- WHERE EQUIPMENT IS DESIGNATED BY MANUFACTURER AND MODEL NUMBER, THIS IS THE BASIS OF DESIGN. IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT BY OTHER SPECIFIED MANUFACTURERS OR PROPOSED ALTERNATE EQUIPMENT BY THE BASIS OF DESIGN MANUFACTURER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS TO ELECTRICAL REQUIREMENTS, STRUCTURAL LOADING, OR ARCHITECTURAL APPURTENANCES AND SHALL INCLUDE THE COST OF SUCH REVISIONS IN HIS BID.
- WHERE EQUIPMENT IS SCHEDULED TO INCLUDE A SERVICE RECEPTACLE, PROVIDE A FACTORY MOUNTED SERVICE RECEPTACLE WITH APPROPRIATE FUSES AND TRANSFORMERS CONNECTED ON THE LINE SIDE OF THE UNIT DISCONNECT. PROVIDE A NAMEPLATE ON THE DISCONNECT SWITCH INDICATING THE PRESENCE OF LIVE POWER TO THE SERVICE RECEPTACLE WHEN THE UNIT DISCONNECT IS IN THE OFF POSITION.
- SIZE ALL EQUIPMENT FEEDERS BASED ON THE LISTED MOP (MAXIMUM OVERCURRENT PROTECTION). REFER TO THE FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE ON THE ELECTRICAL STANDARD SCHEDULES SHEET.

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TEMPERATURE CONTROL - SYMBOLS LIST

SCHEMATIC SYMBOLS

SYMBOL	DESCRIPTION
	AQUASTAT, STRAP ON BULB
	CARBON DIOXIDE SENSOR - WALL MOUNTED
	CURRENT SWITCH
	DAMPER - OPPOSED BLADE
	DAMPER - PARALLEL BLADE
	DAMPER MOTOR
	DIFFERENTIAL PRESSURE TRANSMITTER
	DIFFERENTIAL PRESSURE SWITCH
	FIRE ALARM SYSTEM, ADDRESSABLE CONTROL MODULE
	FLOW METER
	FLOW SWITCH
	FREEZESTAT
	GAUGE - PRESSURE
	GUARD FOR STAT OR SENSOR
	LINE - ELECTRIC
	LINE - PNEUMATIC
	MOTOR STARTER
	OCCUPANCY SENSOR
	RELAY, ELECTRIC
	SIGNAL - DDC/BAS, ANALOG INPUT
	SIGNAL - DDC/BAS, ANALOG OUTPUT
	SIGNAL - DDC/BAS, DIGITAL INPUT
	SIGNAL - DDC/BAS, DIGITAL OUTPUT
	SIGNAL - PACKAGED EQUIPMENT, ANALOG INPUT
	SIGNAL - PACKAGED EQUIPMENT, ANALOG OUTPUT
	SIGNAL - PACKAGED EQUIPMENT, DIGITAL INPUT
	SIGNAL - PACKAGED EQUIPMENT, DIGITAL OUTPUT

SCHEMATIC SYMBOLS (CONT.)

SYMBOL	DESCRIPTION
	SMOKE DETECTOR - DUCT MOUNTED
	SMOKE DETECTOR - SPACE MOUNTED
	START/STOP RELAY
	STATIC PRESSURE TRANSMITTER
	STATIC PRESSURE SENSOR OR PROBE
	SWITCH
	TEMPERATURE SENSOR - RIGID ELEMENT IN WELL
	TEMPERATURE SENSOR - DUCT MOUNTED AVG ELEMENT
	TEMPERATURE SENSOR - DUCT MOUNTED RIGID ELEMENT
	THERMOSTAT OR TEMPERATURE SENSOR (AS DEFINED ON TC DRAWINGS)
	TRANSFORMER
	VALVE - 2 WAY CONTROL VALVE
	VALVE - 3 WAY CONTROL VALVE
	VARIABLE FREQUENCY CONTROLLER

WIRING SYMBOLS

SYMBOL	DESCRIPTION
	COIL - MOTOR STARTER CONTACTOR
	COIL - EP OR SOLENOID VALVE
	CONTACT - INSTANT OPERATING, NO
	CONTACT - INSTANT OPERATING, NC
	GROUND
	MOTOR, SINGLE PHASE

WIRING SYMBOLS (CONT.)

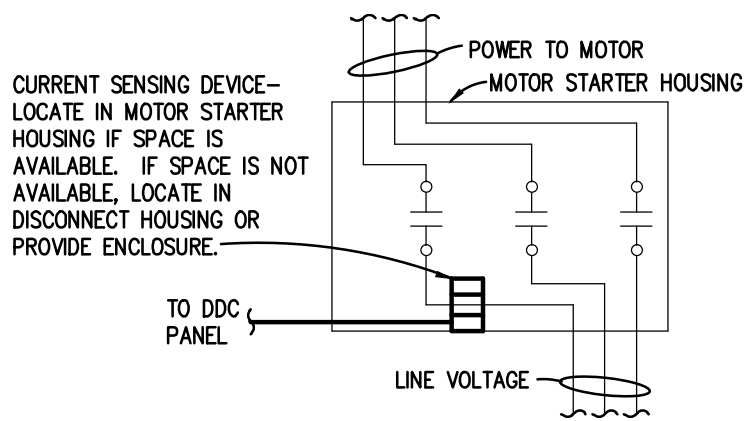
SYMBOL	DESCRIPTION
	SWITCH - 3 POSITION SELECTOR HAND/OFF/AUTO
	SWITCH - MANUAL SPST, NO
	SWITCH - MANUAL SPST, NC
	SWITCH - MANUAL SPDT
	SWITCH - PRESSURE & VACUUM, NO
	SWITCH - PRESSURE & VACUUM, NC
	SWITCH - TEMPERATURE ACTUATED, NO
	SWITCH - TEMPERATURE ACTUATED, NC
	THERMAL OVERLOAD, SINGLE PHASE
	THERMAL OVERLOAD CONTACTS - 3 PHASE
	TRANSFORMER
	WIRE TERMINATION AT DEVICE
	WIRE TO WIRE TERMINATION
	WIRING NOT CONNECTED

WIRING TERMS

ABBREVIATION	DESCRIPTION
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DPDT	DOUBLE POLE DOUBLE THROW
NO	NORMALLY OPEN
NC	NORMALLY CLOSED

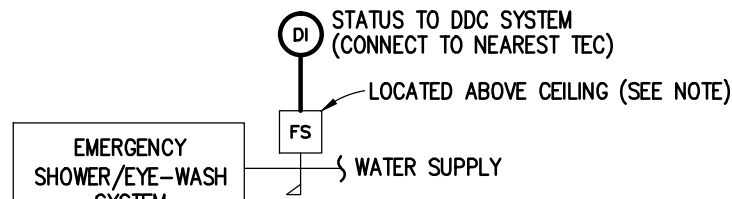
NOTES:

- SOME SYMBOLS & ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.
- REFER TO MECHANICAL STANDARDS ON DRAWING M0.1 FOR ADDITIONAL SYMBOLS & ABBREVIATIONS THAT MAY BE USED ON TEMPERATURE CONTROL DRAWINGS.



CURRENT SWITCH INSTALLATION DETAIL

NO SCALE



EMERGENCY SHOWER/EYE-WASH MONITORING

REFER TO PLUMBING FLOOR PLANS ON M2 DRAWING SERIES FOR QUANTITY AND LOCATIONS

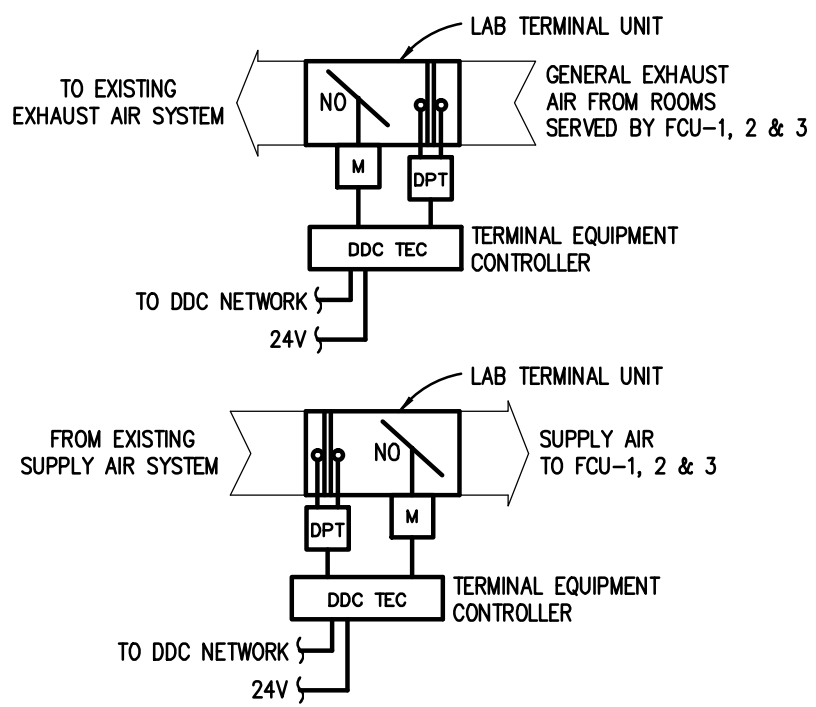
NOTE:

FLOW SWITCH WITH DRY CONTACT FOR REMOTE MONITORING SHALL BE PROVIDED WITH EMERGENCY SHOWER/EYE-WASH SYSTEMS AND INSTALLED BY MECHANICAL CONTRACTOR. COORDINATE WIRING REQUIREMENTS WITH SYSTEM SUPPLIER.

SEQUENCE OF OPERATION:

DDC SYSTEM SHALL MONITOR EACH EMERGENCY SHOWER/EYE-WASH SYSTEM FOR FLOW STATUS AND ALERT BUILDING AUTOMATION SYSTEM OPERATORS WHEN A SHOWER/EYE-WASH SYSTEM HAS BEEN ACTIVATED.

ALTERNATE #5



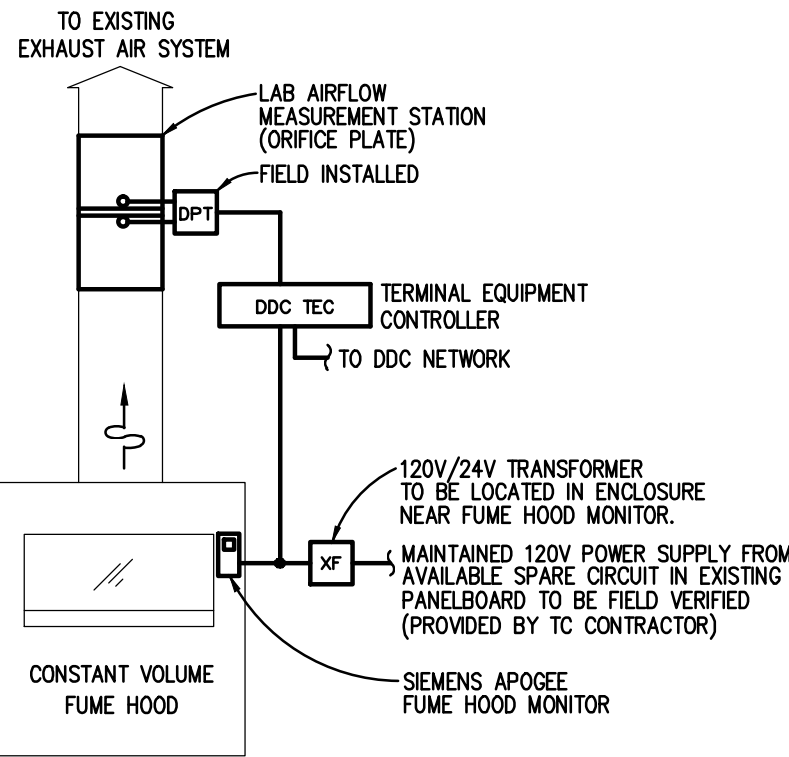
LAB CONTROL - CAV SA & GEN EA

NOTES:

REFER TO TERMINAL UNIT APPLICATION SCHEDULES FOR AIRFLOW SETPOINTS. REFER TO FLOOR PLANS FOR LTU LOCATIONS.

SEQUENCE OF OPERATION:

LAB CONTROLLERS SHALL MAINTAIN CONSTANT VOLUME SUPPLY AIR AND EXHAUST AIRFLOW SETPOINTS.



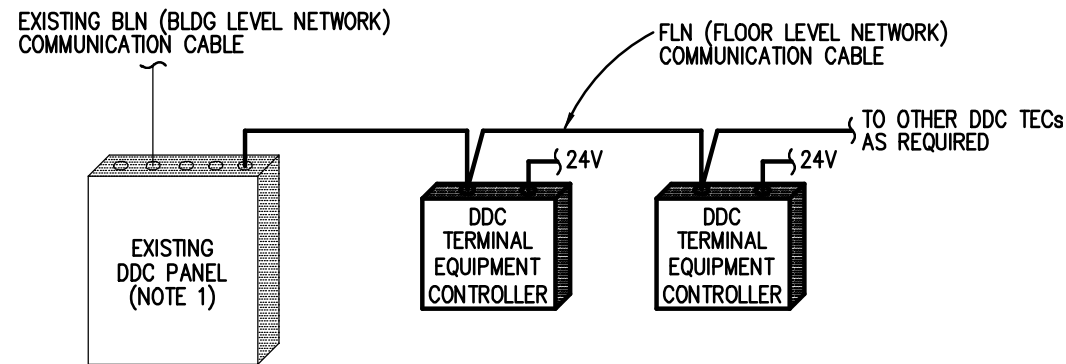
FUME HOOD MONITOR FIELD WIRING

NOTES:

REFER TO FLOOR PLANS FOR FUME HOOD LOCATION.

SEQUENCE OF OPERATION:

- FUME HOOD SHALL OPERATE CONTINUOUSLY. UPON LOSS OF AIRFLOW FOR CONSTANT VOLUME FUME HOOD, LOCAL FUME HOOD MONITOR LOCAL ALARM SHALL SOUND.
- FUME HOOD AIR FLOW SHALL BE MONITORED BY DDC.



DDC SYSTEM ARCHITECTURE

NO SCALE

NOTES:

- EXISTING BUILDING AUTOMATION SYSTEM (BAS) IS SIEMENS APOGEE. NEW DDC SYSTEM COMPONENTS SHALL BE PROVIDED BY SIEMENS AND CONNECTED TO EXISTING BAS LOCATED IN THE EXISTING BUILDING ADDITION. SIEMENS SHALL UPGRADE THE EXISTING BAS FRONT-END HARDWARE/SOFTWARE/DATABASE AS NECESSARY TO ACCOMMODATE NEW WORK.
- REFER TO TEMPERATURE CONTROL SCHEMATICS FOR THE REQUIRED POINTS ASSOCIATED FOR EACH SYSTEM.
- ELECTRICAL CONTRACTOR SHALL INSTALL ALL NEW TC COMPONENTS AND PROVIDE WIRING PER SIEMENS SHOP DRAWINGS AND AS COORDINATED WITH SIEMENS PROJECT REPRESENTATIVE INCLUDING NETWORK COMMUNICATION INTERFACE TO EXISTING TC COMPONENTS. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND COORDINATE WITH OTHER TRADES.
- TC CONTRACTOR SHALL PROVIDE REQUIRED 120V/24V POWER SUPPLY TRANSFORMER(S) FOR CONTROLLERS AND OTHER CONTROL COMPONENTS AS REQUIRED. ELECTRICAL CONTRACTOR SHALL PROVIDE REQUIRED 120V POWER SUPPLIES FROM DEDICATED AND/OR SPARE CIRCUITS IDENTIFIED ON ELECTRICAL PANEL SCHEDULES. COORDINATE WITH ELEC CONTRACTOR. REFER TO ELECTRICAL DWGS FOR PANEL SCHEDULES AND PANEL LOCATIONS.
- 24V TRANSFORMERS REQUIRED FOR TERMINAL UNIT DDC CONTROLLERS SHALL BE LOCATED IN MECHANICAL OR ELECTRICAL ROOMS - COORDINATE LOCATIONS. MAXIMUM TRANSFORMER SIZE SHALL BE 100VA. PROVIDE ENCLOSURE(S) FOR TRANSFORMERS.

GENERAL NOTES

- THESE GENERAL NOTES SHALL BE APPLICABLE FOR ALL TC DRAWINGS.
- "PROVIDE" IS DEFINED AS "FURNISH AND INSTALL".
- CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.
- FOR TEMPERATURE CONTROL DRAWINGS ONLY: ALL DETAILED INFORMATION IDENTIFIED WITH HEAVY LINE WEIGHT SHALL BE PROVIDED BY TEMPERATURE CONTROL SYSTEM PROVIDER AND/OR INSTALLING CONTRACTOR. ALL OTHER INFORMATION IDENTIFIED WITH LIGHT LINE WEIGHT SHALL BE PROVIDED BY OTHER TRADES.
- ALL CONTROL SCHEMATICS AND WIRING DIAGRAMS ARE FOR THE CLARIFICATION OF EQUIPMENT INTERLOCKING FUNCTIONS AND THE INTERFACE OF VARIOUS CONTRACTOR'S WORK AND SHALL NOT BE MISTAKEN AS SHOP DRAWINGS FOR ACTUAL INSTALLATION.
- TC SYSTEM PROVIDER SHALL PROVIDE DDC CONTROLLERS AS REQUIRED TO MEET INTENT OF DESIGN DOCUMENTS. REFER TO THE PLANS FOR THE DDC FUNCTIONS THAT APPLY TO EACH MECHANICAL SYSTEM.
- ALL TC PROVIDED COMPONENTS AND ALL TC CONTRACTOR INSTALLED WIRING SHALL BE LABELED PER SPECIFICATIONS.
- ALL WIRING AND SYSTEM CONTROL VOLTAGES SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATION AND THE ELECTRICAL SPECIFICATIONS.
- FAN MOTOR STARTERS, STARTER WIRING, CONTROL VOLTAGE TRANSFORMERS AND ASSOCIATED POWER WIRING SHALL BE PROVIDED BY OTHER TRADES.
- ALL DDC AND CONTROL INTERLOCK WIRING SHALL BE BY TC INSTALLING CONTRACTOR UNLESS OTHERWISE NOTED. COORDINATE WITH MOTOR STARTER SUPPLIERS TO DETERMINE EXACT WIRING REQUIREMENTS AND TERMINATION POINTS.
- ALL DDC AND CONTROL INTERLOCK WIRING BETWEEN COMPONENTS SHALL BE INSTALLED WITHOUT INTERMEDIATE STOPS. WIRE SPUNGING AT INTERMEDIATE TERMINAL STRIPS IS NOT ACCEPTABLE.
- ALL ELECTRICAL WIRING AND RACEWAY SYSTEMS SHALL COMPLY WITH ELECTRICAL SPECIFICATION REQUIREMENTS. WHERE RACEWAY IS REQUIRED, TWO SEPARATE ELECTRICAL RACEWAY SYSTEMS SHALL BE PROVIDED: ONE FOR 120V WIRING AND THE OTHER FOR 24V WIRING.
- TC INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER SUPPLIES REQUIRED FOR TC SYSTEM UNLESS OTHERWISE NOTED. REFER TO ELECTRICAL PANEL SCHEDULES FOR SPARE CIRCUITS IF NOTED; OTHERWISE, FIELD VERIFY AVAILABLE SPARE CIRCUIT.
- TC INSTALLING CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL FIELD MOUNTED COMPONENTS.
- SPACE TEMPERATURE SENSORS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
- REMOTELY MOUNTED FIELD DEVICES SUCH AS RELAYS, CONTROL TRANSFORMERS, ETC., SHALL BE HOUSED IN AN ENCLOSURE PROVIDED BY THE TC INSTALLING CONTRACTOR.
- CONTROL TRANSFORMERS WHEN REQUIRED SHALL BE SIZED FOR 150% OF ACTUAL LOAD.
- CURRENT SWITCHES USED FOR OPERATIONAL STATUS SHALL HAVE CURRENT THRESHOLD SETPOINT ADJUSTED TO INDICATE BELT OR DRIVE FAILURE.
- ALL CONTROL VALVES AND ASSOCIATED CONTROL ACTUATORS IDENTIFIED ON TC DRAWINGS SHALL BE FURNISHED BY TC SYSTEM PROVIDER UNLESS OTHERWISE NOTED.
- ALL CONTROL VALVES FURNISHED BY THE TC SYSTEM PROVIDER SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. ALL PIPE PENETRATIONS AND BASIC FITTINGS REQUIRED FOR SENSOR INSTALLATIONS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
- ALL INSTRUMENTATION TUBING REQUIRED FOR DPS AND DPT COMPONENT INSTALLATIONS SHALL BE PROVIDED BY TC INSTALLING CONTRACTOR.
- TC INSTALLATION CONTRACTOR SHALL FIELD MOUNT ALL REQUIRED PACKAGED CONTROL COMPONENTS FURNISHED BY EQUIPMENT SUPPLIERS WHERE INDICATED. ALL REQUIRED 24V AND 120V FIELD WIRING SHALL BE PROVIDED BY TC INSTALLATION CONTRACTOR UNLESS NOTED OTHERWISE. TC INSTALLATION CONTRACTOR SHALL COORDINATE SPECIFIC SYSTEM WIRING REQUIREMENTS WITH PACKAGED EQUIPMENT SUPPLIERS.

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Research Labs -
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TEMPERATURE
CONTROLS

project number: sheet number:

090-250890

M801

(1156-2: iDesign project number)

(NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT)

ELECTRICAL DRAWING INDEX

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	MANUAL FIRE ALARM BOX
	SMOKE DETECTOR
	DUCT SMOKE DETECTOR
	REMOTE TEST STATION (FOR DUCT DETECTOR)
	THERMAL DETECTOR
	PROJECTED BEAM DETECTOR
	FIRE ALARM BELL
	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE
	FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	FIRE ALARM COMBINATION VISUAL / AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	FIRE ALARM COMBINATION VISUAL / AUDIBLE NOTIFICATION APPLIANCE— CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	FIRE ALARM VISUAL NOTIFICATION APPLIANCE CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
	FIREFIGHTERS PHONE JACK
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
	ADDRESSABLE MONITORING MODULE
	ADDRESSABLE CONTROL MODULE
	TAMPER SWITCH
	FLOW SWITCH
	MAGNETIC DOOR RELEASE

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
KV	KILOVOLT	P	POLE
KVA	KILOVOLT - AMPERES	PB	PUSHBUTTON STATION
KW	KILOWATT	PH	PHASE
KWH	KILOWATT - HOURS	PT	POTENTIAL TRANSFORMER
		PDP	POWER DISTRIBUTION PANEL
LA	LIGHTNING ARRESTOR	RECEPT.	RECEPTACLE
LP	LIGHTING PANEL	RDP	RECEPTACLE DISTRIBUTION PANEL
LDP	LIGHTING DISTRIBUTION PANEL	RP	RECEPTACLE PANEL
MAX	MAXIMUM	RSC	RIGID STEEL CONDUIT
MCB	MAIN CIRCUIT BREAKER	SCHED	SCHEDULE
MCC	MOTOR CONTROL CENTER	SW	SWITCH
MDP	MAIN DISTRIBUTION PANEL	SWBD	SWITCHBOARD
MECH	MECHANICAL	SWGR	SWITCHGEAR
MIN	MINIMUM	TB	TERMINAL BOX
MISC.	MISCELLANEOUS	TELECOM	TELECOMMUNICATIONS
MLO	MAIN LUGS ONLY	TR	TAMPER RESISTANT
MTD	MOUNTED	TTB	TELEPHONE TERMINAL BACKBOARD
MTG	MOUNTING	TYP	TYPICAL
MTR	MOTOR	U.O.N.	UNLESS OTHERWISE NOTED
N	NEUTRAL	US	UPSTAGE
NC	NORMALLY CLOSED	V	VOLTS
NEC	NATIONAL ELECTRICAL CODE		
NF	NON-FUSIBLE	W	WIRE
NIC	NOT IN CONTRACT	WP	WEATHERPROOF
NL	NIGHT LIGHT		
NO	NORMALLY OPEN	XFMR	TRANSFORMER
NTS	NOT TO SCALE	XP	EXPLOSION PROOF
		(E)	EXISTING
ON	ON CENTER	(R)	RELOCATED
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED		
OFCI	OWNER FURNISHED, OWNER INSTALLED		

The diagram illustrates the components of a construction note and section reference. It shows a sequence of elements: a circle containing the number '1', a hexagon containing 'EF' and '1', and a circle containing '1' and 'E7.1'. Lines connect these elements to their respective labels: 'CONSTRUCTION OR DEMOLITION NOTE NUMBER' (pointing to the first circle), 'MECHANICAL EQUIPMENT DESIGNATION' (pointing to the hexagon), 'SECTION NUMBER' (pointing to the second circle), 'SHEET ON WHICH SECTION IS DRAWN' (pointing to the 'E7.1' in the second circle), 'AREA OF ENLARGEMENT' (pointing to a dashed rectangular box), 'PLAN NUMBER' (pointing to the third circle), and 'SHEET ON WHICH ENLARGED PLAN IS DRAWN' (pointing to the 'E7.1' in the third circle).

HEAVY LINE WEIGHT INDICATES NEW WORK
LIGHT LINE WEIGHT INDICATES EXISTING
EQUIPMENT OR REFERENCED INFORMATION
GRAY LINE INDICATES BACKGROUND INFORMATION
THIN GRAY LINE INDICATES CEILING GRID
DASHED LINES INDICATE CONDUIT ROUTED
IN OR BELOW SLAB OR GRADE
HATCH MARKS INDICATE EQUIPMENT TO
BE DISCONNECTED AND REMOVED.
CIRCUIT HOMERUN



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project:

sheet title:
ELECTRICAL
STANDARDS AND
DRAWING INDEX

(1156-2: IDesign project number)

FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE							
OVERCURRENT DEVICE RATING (AMPERES)	WIRE SIZE (AWG OR KCMIL)		CONDUIT SIZE				
	PHASE & NEUTRAL	GROUND	CONDUIT SIZE				
			SINGLE PHASE 2 WIRE+G (FPL, NL, XG)	SINGLE PHASE 3 WIRE+G (FPL, NL, XG)	THREE PHASE 3 WIRE+G (FPL, XG)	THREE PHASE & NEUTRAL 4 WIRE+G (FPL, NL, XG)	
15-20	12	12	3/4"	3/4"	3/4"	3/4"	
25-30	10	10	3/4"	3/4"	3/4"	3/4"	
35-40	8	10	3/4"	3/4"	3/4"	3/4"	
45-50	8 (6)	10	3/4"	3/4"	3/4"	3/4"	
60	6 (4)	10	3/4" (1")	3/4" (1")	3/4" (1")	3/4" (1")	
70	4	8	1"	1 1/4"	1 1/4"	1 1/4"	
80	4 (3)	8	1"	1 1/4"	1 1/4"	1 1/4"	
90-100	3 (2)	8	1 1/4"	1 1/4"	1 1/4"	1 1/4"	
110	2 (1)	6	1 1/4"	1 1/4"	1 1/2" (1 1/2")	1 1/2" (1 1/2")	
125	1 (1/0)	6	-	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/2"	
150	1/0	6	-	1 1/2"	1 1/2"	1 1/2"	
175	2/0	6	-	2"	2"	2"	
200	3/0	6	-	2"	2"	2 1/2"	
225	4/0	4	-	2"	2"	2 1/2"	
250	250	4	-	2 1/2"	2 1/2"	2 1/2"	
300	350	4	-	2 1/2"	2 1/2"	3"	
350	500	3	-	3"	3"	3"	
400	500	3	-	3"	3"	3"	
450	2-4/0	2-2	-	2-2"	2-2"	2-2 1/2"	
500	2-250	2-2	-	2-2 1/2"	2-2 1/2"	2-2 1/2"	
600	2-350	2-1	-	2-2 1/2"	2-2 1/2"	2-3"	
700	2-500	2-1/0	-	2-3"	2-3"	2-3"	
800	2-500	2-1/0	-	2-3"	2-3"	2-3 1/2"	
1000	3-400	3-2/0	-	3-3"	3-3"	3-3 1/2"	
1200	3-600	3-3/0	-	3-3 1/2"	3-3 1/2"	3-3 1/2"	
1600	4-600	4-4/0	-	4-3 1/2"	4-3 1/2"	4-3 1/2"	
2000	5-600	5-250	-	5-3 1/2"	5-3 1/2"	5-3 1/2"	

* = SEE NOTE 4

NOTES:

- CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.
- CONTRACTOR MAY COMBINE 20A CIRCUITS AS NOTED IN SPECIFICATION.
- CONDUCTORS ARE BASED ON THIN/THIN UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.
- CONDUCTORS ARE BASED ON 90C, 600V, INSULATED COPPER WIRE APPLIED AT 75C FOR TERMINATION RATED 60/75C OR 75C. FOR TERMINATION RATED AT 60C, USE CONDUCTORS AND CONDUIT SIZES INDICATED IN PARENTHESES.
- CONDUIT SIZES ARE VALID FOR EMT OR RGS. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.
- ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE REQUIRED WIRE SIZES TO ACCOMMODATE MECHANICAL EQUIPMENT LUG SIZES.
- SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.
- OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.
- SPLICE FROM ALUMINUM TO COPPER PRIOR TO ENTERING EQUIPMENT LISTED FOR USE WITH COPPER CONDUCTORS ONLY OR USE COPPER CONDUCTORS FOR THE ENTIRE LENGTH OF FEEDER.

SPECIAL RECEPTACLES	
TYPE	DESCRIPTION
	125V, 30A, SINGLE PHASE, LOCKING RECEPTACLE, 2 POLE, 3 WIRE (NEMA 15-30R)
	250V, 20A, SINGLE PHASE, LOCKING RECEPTACLE, 2 POLE, 3 WIRE (NEMA 16-20R)
	250V, 30A, SINGLE PHASE, LOCKING RECEPTACLE, 2 POLE, 3 WIRE (NEMA 16-30R)
	250V, 20A, THREE PHASE, LOCKING RECEPTACLE, 3 POLE, 4 WIRE (NEMA 115-20R)
	250V, 30A, THREE PHASE, LOCKING RECEPTACLE, 3 POLE, 4 WIRE (NEMA 115-30R)
	208Y/120V, 30A, THREE PHASE, LOCKING RECEPTACLE, 4 POLE, 5 WIRE (NEMA L21-30R)
	125/250V SINGLE PHASE RECEPTACLE, 3 POLE, 4 WIRE (NEMA 14-30R)
	125/250V SINGLE PHASE RECEPTACLE, 3 POLE, 4 WIRE (NEMA 14-50R)
	250V, 50A, THREE PHASE, LOCKING RECEPTACLE, 3 POLE, 4 WIRE (NEMA 115-50R)

OCCUPANCY SENSOR LEGEND	
TYPE	DESCRIPTION
	360° CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
	90° CEILING/WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
	360° CEILING MOUNTED PASSIVE INFRARED OCCUPANCY SENSOR
	360° CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR
	360° CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR - CORRIDOR OPTIMIZED
	WALL SWITCH PASSIVE INFRARED OCCUPANCY SENSOR
	WALL SWITCH PASSIVE INFRARED OCCUPANCY SENSOR - DUAL LEVEL SWITCHING
	WALL DIMMER SWITCH INFRARED OCCUPANCY SENSOR

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS						
BRANCH CIRCUIT RATING (A)	WIRE SIZE (AWG)	MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET)				
		120V	208V	240V	277V	480V
20A	12	83	143	165	191	331
	10	128	222	256	295	511
	8	201	348	402	464	804
	6	313	542	625	721	1250
30A	10	85	148	170	197	341
	8	134	232	268	309	536
	6	208	361	417	481	813
	4	313	542	625	721	1250

NOTES:

- THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD POWER FACTOR OF 0.85 PER NEC CHAPTER 9, TABLE 9.
- PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
- CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 9 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.
- LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 84% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH ASHRAE/IES 90.1 - 1999 AND THE NEC. FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

MOTOR CIRCUIT SIZING SCHEDULE (480V, 3 PHASE)					
MOTOR HP	SWITCH/ FUSE	CIRCUIT BREAKER	STARTER SIZE/TYPE	MOTOR DISCONNECT FUSE 3A	
1/2	30/3A	15A	1	30A	
3/4	30/3A	15A	1	30A	
1	30/6A	15A	1	30A	
1 1/2	30/6A	15A	1	30A	
2	30/6A	15A	1	30A	
3	30/10A	15A	1	30A	
5	30/15A	15A	1	30A	
7 1/2	30/20A	20A	1	30A	
10	30/20A	25A	1	30A	
15	30/30A	40A	2	30A	
20	60/40A	60A	2	60A	
25	60/50A	70A	2	60A	
30	60/60A	80A	3	60A	
40	100/80A	90A	3	100A	
50	100/100A	100A	3	100A	
60	200/125A	125A	4	200A	
75	200/150A	150A	4	200A	
100	200/200A	200A	4	200A	
125	200/200A	225A	5	200A	
150	400/250A	250A	5	400A	
200	400/350A	350A	5	400A	

NOTES:

- BASED ON MOTOR FULL LOAD AMPERES AS PROVIDED BY THE N.E.C.
- BASED ON MOTOR RUNNING OVERLOAD PROTECTIONS PROVIDED BY THERMAL OVERLOAD RELAYS.
- WHERE THE STARTER IS LOCATED REMOTE FROM THE MOTOR, PROVIDE DISCONNECT LOCATED AT THE MOTOR, SIZE AS INDICATED.

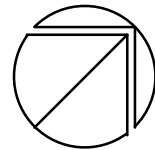
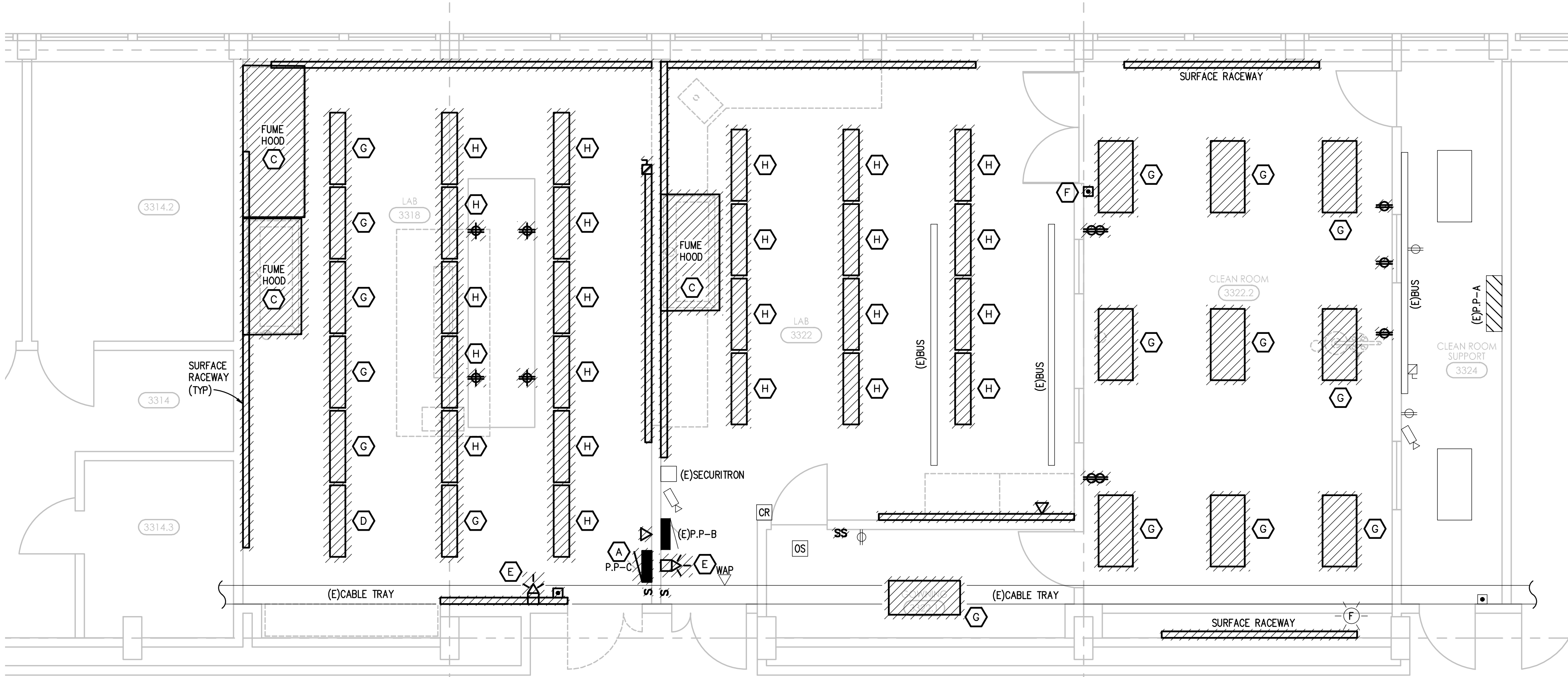
RACEWAY APPLICATION SCHEDULE									
RACEWAY		AC/MC CABLE	ELECTRICAL METALLIC TUBING (EMT)	SURFACE RACEWAY	FLEXIBLE METAL CONDUIT (FMC)	INTERMEDIATE METAL CONDUIT (IMC)	LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)	RIGID STEEL CONDUIT	KEYED NOTES
INDOOR	EXPOSED								
	NOT SUBJECT TO PHYSICAL DAMAGE - UNFINISHED SPACES		X						
	EXPOSED				X				
	NOT SUBJECT TO PHYSICAL DAMAGE - FINISHED SPACES								
OUTDOOR	CONCEALED IN CEILINGS, INTERIOR WALL AND PARTITIONS	X	X						NOT TO EXCEED 6'-0" IN CEILING SPACE
	CONNECTED TO VIBRATING EQUIPMENT				X	X			EQUIPMENT INCLUDING: TRANSFORMERS, HYDRAULIC PNEUMATIC, ELECTRIC SOLENOID, MOTOR DRIVEN EQUIPMENT
	DAMP AND WET LOCATIONS					X	X		USE LFMC IN DAMP/WET LOCATIONS

GENERAL NOTES:

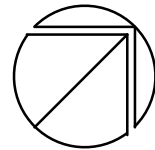
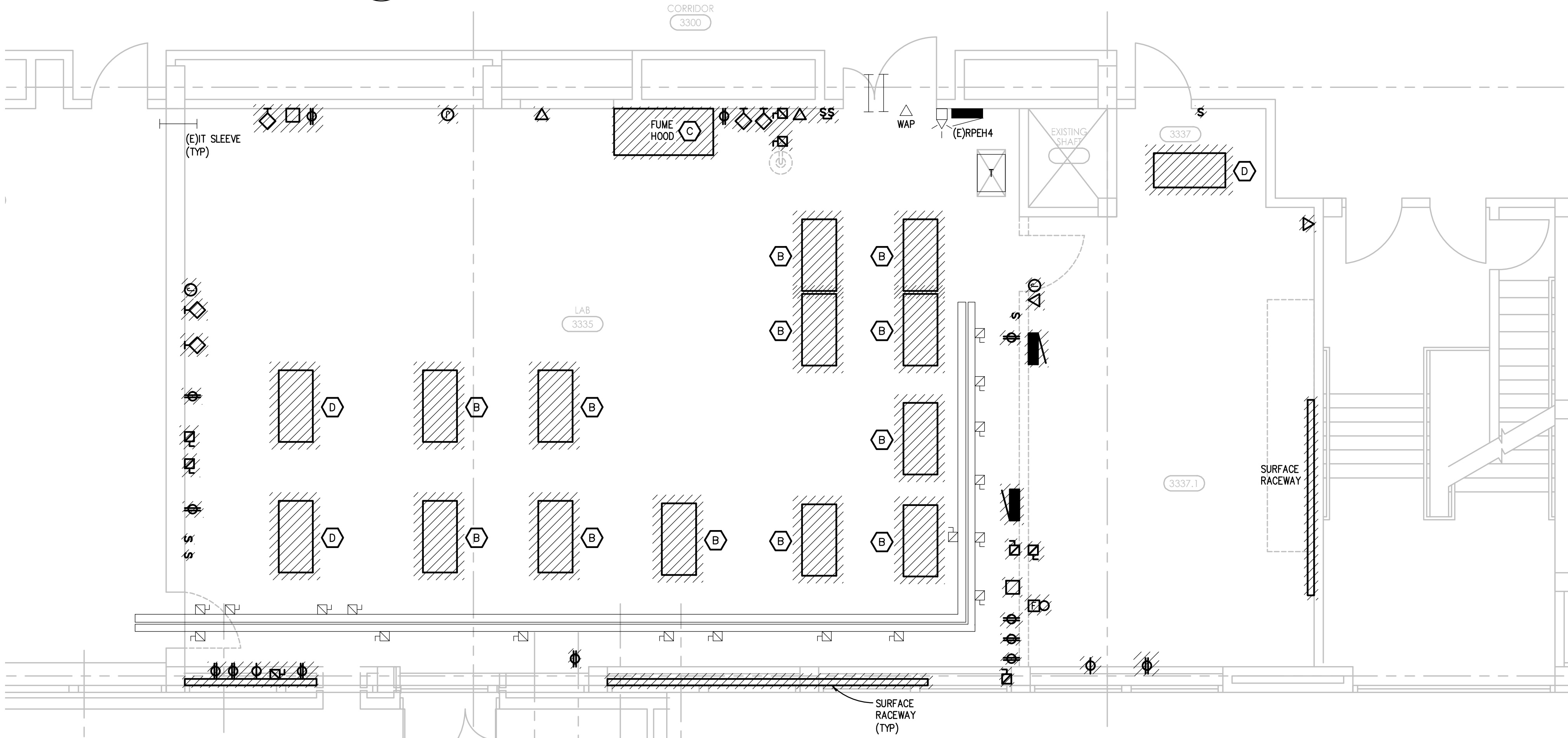
- "X" INDICATES ACCEPTABLE SELECTION.
- REFER TO "CONDUCTORS AND CABLES" SPECIFICATION FOR APPLICATION LIMITATIONS OF AC/MC CABLE.

PANELBOARD (E)P-P-B													
#	LOAD TYPE	DESCRIPTION	CB TYPE	CB VA	BA	BB	BC	VA	CB TYPE	DESCRIPTION	LOAD TYPE	#	
1	R	LAB WRENCH LAB 3302	EXIST	20	1000	2000			1000	20	EXIST FUME HOOD LAB 3302	NC	2
2	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	2
3	R	LAB WRENCH LAB 3302	EXIST	20	1000			2000	1000	20	EXIST FUME HOOD LAB 3302	NC	8
4	R	LAB WRENCH LAB 3302	EXIST	20	1000	2000			1000	20	EXIST FUME HOOD LAB 3302	NC	8
5	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
6	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
7	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
8	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
9	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
10	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
11	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
12	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
13	R	LAB WRENCH LAB 3302	EXIST	20	1000	1000							16
14	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000				16
15	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
16	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
17	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
18	R	LAB WRENCH LAB 3302	EXIST	20	1000	1000							16
19	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 3302	NC	8
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113	R	LAB WRENCH LAB 3302	EXIST	20	1000				1000	20	EXIST FUME HOOD LAB 330		

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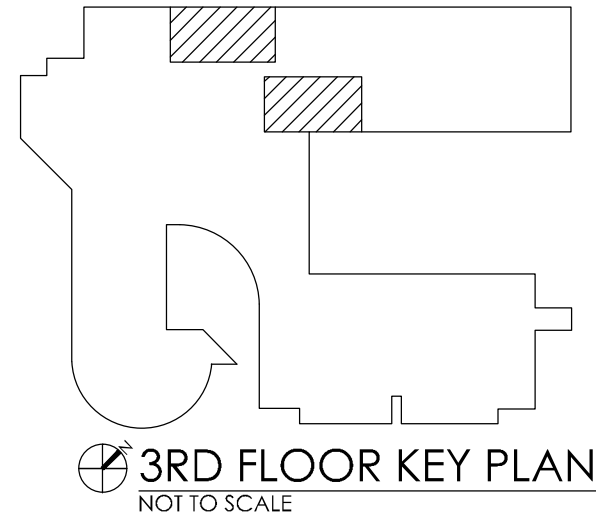
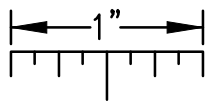


PARTIAL 3RD FLOOR ELECTRICAL DEMOLITION PLAN - AREA 'B'
SCALE: 1/4" = 1' - 0"



PARTIAL 3RD FLOOR ELECTRICAL DEMOLITION PLAN - AREA 'A'
SCALE: 1/4" = 1' - 0"

THE FOLLOWING DIMENSION EQUALS
ONE INCH WHEN PRINTED TO SCALE.



GENERAL NOTES:

1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES AND BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES, WHETHER OR NOT SPECIFICALLY INDICATED.
3. REMOVE LIGHTING FIXTURES AND ELECTRICAL DEVICES AS INDICATED ON PLAN WITH CROSS HATCHING. DEMOLITION SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE DEVICES SHOWN.
4. COORDINATE WITH NEW WORK PLANS, ONE LINE DIAGRAMS AND RISER DIAGRAMS FOR EXTENT OF DEMOLITION WORK.
5. PROVIDE PROPER SUPPORT FOR EXISTING TO REMAIN CONDUITS AND BOXES WHERE EXISTING SUPPORT IS TO BE REMOVED. RE-ROUTE BRANCH CIRCUIT CONDUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.
6. REMOVE ALL CONDUIT AND WIRE BACK TO THE SOURCE OR NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. MAINTAIN ELECTRICAL SERVICE TO ALL LIGHTING FIXTURES, DEVICES AND EQUIPMENT THAT ARE TO REMAIN. EXTEND CONDUIT AND WIRE AS REQUIRED WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM LOADS THAT ARE TO REMAIN.
8. DISPOSE OF ALL MATERIALS OFF SITE AND INCLUDE ALL COSTS FOR DISPOSAL IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING TOLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.
9. PROVIDE BLANK COVER PLATES WHERE SWITCHES AND DEVICES ARE REMOVED BUT EXISTING WALLS REMAIN INTACT.
10. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS "SPARE".
11. PROVIDE UPDATED TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS ALTERATION.
12. COORDINATE ANY SHUT DOWN OF EXISTING SERVICES AND EQUIPMENT THAT ARE REMAINING IN USE WITH THE OWNER'S REPRESENTATIVE. WHERE EXISTING BUILDING SERVICE IS REQUIRED TO BE SHUT DOWN, INCLUDE ALL ASSOCIATED OVERTIME COSTS TO PERFORM THIS WORK DURING WEEKENDS AND EVENINGS INCLUDE ALL COSTS FOR PROVIDING TEMPORARY POWER WHERE SHUT DOWNS MUST OCCUR FOR PERIODS LONGER THAN THESE HOURS. COORDINATE ELECTRICAL SHUT DOWNS WITH THE OWNER 72 HOURS PRIOR TO SHUT DOWN.

DEMOLITION NOTES:

- A. DISCONNECT PANELBOARD FEEDER AND REMOVE TO CEILING SPACE. REMOVE PANELBOARD. CLEAN, STORE AND PROTECT PANELBOARD FOR REINSTALLATION IN NEW LOCATION. EXTEND FEEDER TO NEW PANEL LOCATION. REFER TO NEW WORK PLANS.
- B. REMOVE LIGHT FIXTURE. PROTECT AND STORE FOR REINSTALLATION. REMOVE BRANCH CIRCUIT BACK TO SOURCE.
- C. FUME HOOD REMOVAL BY OTHERS. REMOVE BRANCH CIRCUIT BACK TO SOURCE.
- D. REMOVE LIGHT FIXTURE COMPLETE AND TURN OVER TO OWNER.
- E. REMOVE FIRE ALARM NOTIFICATION APPLIANCE. PROTECT AND STORE FOR REINSTALLATION.
- F. REMOVE EMERGENCY STOP BUTTON. PROTECT AND STORE FOR REINSTALLATION. BRANCH CIRCUIT TO REMAIN AND BE EXTENDED AS REQUIRED.
- G. REMOVE LIGHT FIXTURE COMPLETE AND TURN OVER TO OWNER. BRANCH CIRCUITING TO REMAIN.
- H. REMOVE LIGHT FIXTURE. PROTECT AND STORE FOR REINSTALLATION. BRANCH CIRCUIT TO REMAIN AND BE EXTENDED AS REQUIRED.

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Engineering
Research Labs -
Phase Two

sheet title:

THIRD FLOOR
ELECTRICAL
DEMOLITION PLAN

project number:

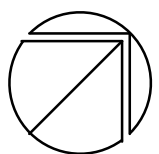
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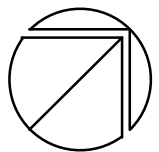
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PARTIAL 2ND FLOOR LIGHTING DEMOLITION PLAN
SCALE: 1/4" = 1' - 0"



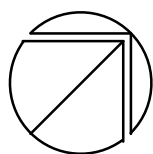
PARTIAL 2ND FLOOR POWER AND AUXILIARY DEMOLITION PLAN
SCALE: 1/4" = 1' - 0"

GENERAL NOTES:

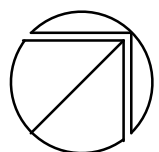
1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES AND BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES, WHETHER OR NOT SPECIFICALLY INDICATED.
3. REMOVE LIGHTING FIXTURES AND ELECTRICAL DEVICES AS INDICATED ON PLAN WITH CROSS HATCHING. DEMOLITION SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE DEVICES SHOWN.
4. COORDINATE WITH NEW WORK PLANS, ONE LINE DIAGRAMS AND RISER DIAGRAMS FOR EXTENT OF DEMOLITION WORK.
5. PROVIDE PROPER SUPPORT FOR EXISTING TO REMAIN CONDUITS AND BOXES WHERE EXISTING SUPPORT IS TO BE REMOVED. RE-ROUTE BRANCH CIRCUIT CONDUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.
6. REMOVE ALL CONDUIT AND WIRE BACK TO THE SOURCE OR NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. MAINTAIN ELECTRICAL SERVICE TO ALL LIGHTING FIXTURES, DEVICES AND EQUIPMENT THAT ARE TO REMAIN. EXTEND CONDUIT AND WIRE AS REQUIRED WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM LOADS THAT ARE TO REMAIN.
8. DISPOSE OF ALL MATERIALS OFF SITE AND INCLUDE ALL COSTS FOR DISPOSAL IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING TCLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.
9. PROVIDE BLANK COVER PLATES WHERE SWITCHES AND DEVICES ARE REMOVED BUT EXISTING WALLS REMAIN INTACT.
10. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS "SPARE".
11. PROVIDE UPDATED TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS ALTERATION.
12. COORDINATE ANY SHUT DOWN OF EXISTING SERVICES AND EQUIPMENT THAT ARE REMAINING IN USE WITH THE OWNER'S REPRESENTATIVE. WHERE EXISTING BUILDING SERVICE IS REQUIRED TO BE SHUT DOWN, INCLUDE ALL ASSOCIATED OVERTIME COSTS TO PERFORM THIS WORK DURING WEEKENDS AND EVENINGS INCLUDE ALL COSTS FOR PROVIDING TEMPORARY POWER WHERE SHUT DOWNS MUST OCCUR FOR PERIODS LONGER THAN THESE HOURS. COORDINATE ELECTRICAL SHUT DOWNS WITH THE OWNER 72 HOURS PRIOR TO SHUT DOWN.

DEMOLITION NOTES:

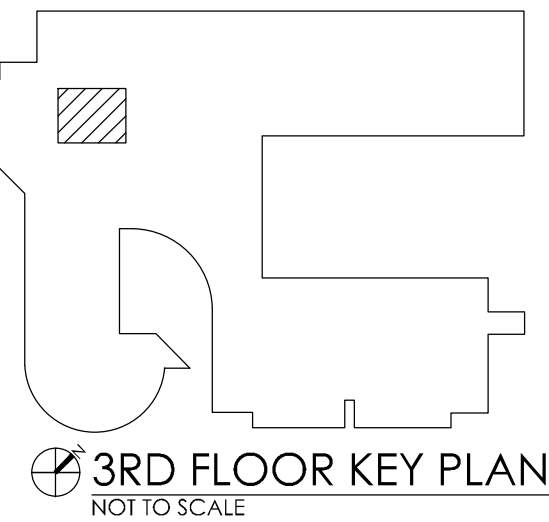
- A. DISCONNECT PANELBOARD FEEDER AND REMOVE TO CEILING SPACE. REMOVE PANELBOARD. CLEAN, STORE AND PROTECT PANELBOARD FOR REINSTALLATION IN NEW LOCATION. EXTEND FEEDER TO NEW PANEL LOCATION. REFER TO NEW WORK PLANS.
- B. REMOVE LIGHT FIXTURE. PROTECT AND STORE FOR REINSTALLATION. REMOVE BRANCH CIRCUIT BACK TO SOURCE.
- C. FUME HOOD REMOVAL BY OTHERS. REMOVE BRANCH CIRCUIT BACK TO SOURCE.
- D. REMOVE LIGHT FIXTURE COMPLETE AND TURN OVER TO OWNER.
- E. REMOVE FIRE ALARM NOTIFICATION APPLIANCE. PROTECT AND STORE FOR REINSTALLATION.
- F. REMOVE EMERGENCY STOP BUTTON. PROTECT AND STORE FOR REINSTALLATION. BRANCH CIRCUIT TO REMAIN AND BE EXTENDED AS REQUIRED.
- G. REMOVE LIGHT FIXTURE COMPLETE AND TURN OVER TO OWNER. BRANCH CIRCUITING TO REMAIN.
- H. REMOVE LIGHT FIXTURE. PROTECT AND STORE FOR REINSTALLATION. BRANCH CIRCUIT TO REMAIN AND BE EXTENDED AS REQUIRED.



PARTIAL 2ND FLOOR LIGHTING NEW WORK PLAN
SCALE: 1/4" = 1' - 0"



PARTIAL 2ND FLOOR POWER AND AUXILIARY NEW WORK PLAN
SCALE: 1/4" = 1' - 0"



GENERAL NOTES:

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2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
7. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
8. ELECTRICAL CONTRACTOR TO PROVIDE CONTROL WIRING FOR MECHANICAL SYSTEMS. PROVIDE CONDUITS, CONDUCTORS, CONTROL TRANSFORMERS, AND 120VAC/240VDC POWER AS REQUIRED FOR TEMPERATURE CONTROLS. ELECTRICAL CONTRACTOR TO INSTALL TEMPERATURE CONTROLS. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL TRADES AND SIEMENS DRAWINGS.
9. NEW FIRE ALARM APPLIANCE SHALL BE COMPATIBLE WITH EXISTING NATIONAL TIME AND SIGNAL ALARM SYSTEM. EXISTING FIRE ALARM CONTROL PANEL IS LOCATED IN THE CORRIDOR NEAR LOUNGE 1200 ON FIRST FLOOR. PROVIDE NECESSARY COMPONENTS, MODULES ETC. AS REQUIRED FOR FULLY FUNCTIONAL SYSTEM. RE-TEST AND CERTIFY EXISTING FIRE ALARM SYSTEM AT COMPLETION OF PROJECT.
10. ALL EXIT SIGNS SHALL BE CIRCUITED TO THE HOT LEG OF ADJACENT LIGHTING BRANCH CIRCUIT.

CONSTRUCTION KEY NOTES:

1. PROVIDE EXTERNAL EMERGENCY BATTERY PACK FOR EXISTING FIXTURE. CONNECT TO HOT LEG OF EXISTING CIRCUIT. REFER TO WIRING DIAGRAM ON E7.1.
2. REINSTALL PREVIOUSLY REMOVED FIXTURE AT 9'-0" A.F.F. CLEAN AND RE-LAMP AFTER REINSTALLATION. EXTEND EXISTING BRANCH CIRCUITING AS REQUIRED.
3. CLEAN AND RE-LAMP EXISTING FIXTURE. REWORK FIXTURE TO BE 9'-0" A.F.F. EXTEND EXISTING LIGHTING BRANCH CIRCUIT AS REQUIRED.
4. PROVIDE NEW OCCUPANCY SENSORS AND ASSOCIATED POWER PACK AS INDICATED AND REQUIRED. CONNECT TO EXISTING BRANCH CIRCUIT AND CONTROL. EXTEND CONDUIT AND WIRING AS REQUIRED. REFER TO DETAIL ON E7.1.
5. WIREMOLD DS4000 OR ENGINEER APPROVED EQUAL.
6. REINSTALL PREVIOUSLY REMOVED FIRE ALARM NOTIFICATION APPLIANCE. SET CANDELA RATING AS INDICATED. PROVIDE NECESSARY COMPONENTS, MODULES, ETC. AS REQUIRED FOR FULLY FUNCTIONAL SYSTEM.
7. CIRCUIT EXISTING EMERGENCY STOP TO (R)P-P-C.
8. CONNECT TO EXISTING BRANCH CIRCUIT AS REQUIRED.
9. SET CANDELA RATING AS INDICATED. PROVIDE NECESSARY COMPONENTS, MODULES, ETC. AS REQUIRED FOR FULLY FUNCTIONAL SYSTEM.
10. PROVIDE A 208V, 3ø, 20A CORD REEL FROM REELCRAFT, HUBBELL OR DANIEL WOODHEAD. COORDINATE WITH MANUFACTURER FOR SPECIAL ORDERING. COORDINATE CEILING MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS AND TRADES.
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12. PROVIDE A 120V 20A CORD REEL FROM REELCRAFT, HUBBELL OR DANIEL WOODHEAD. COORDINATE CEILING MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS AND TRADES.
13. ROUTE FURNITURE BRANCH CIRCUIT AND TELECOMMUNICATION CONDUIT FROM CEILING SPACE DOWN THROUGH CHASE WALL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS. CONNECT BRANCH CIRCUIT TO FURNITURE POWER BUS. REFER TO DETAIL ON SHEET E701. COORDINATE EXACT REQUIREMENTS WITH FURNITURE MANUFACTURER.
14. INSTALL PREVIOUSLY REMOVED EMERGENCY STOP. CIRCUIT EMERGENCY STOP TO ELECTRICAL PANEL (R)P-P-C.
15. SERVICE CARRIER PROVIDED BY OTHERS. PROVIDE DEVICES AND CIRCUIT AS INDICATED.
16. COORDINATE EXACT LOCATION OF RTU-1 WITH MECHANICAL DRAWINGS AND TRADES.

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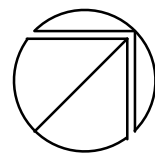
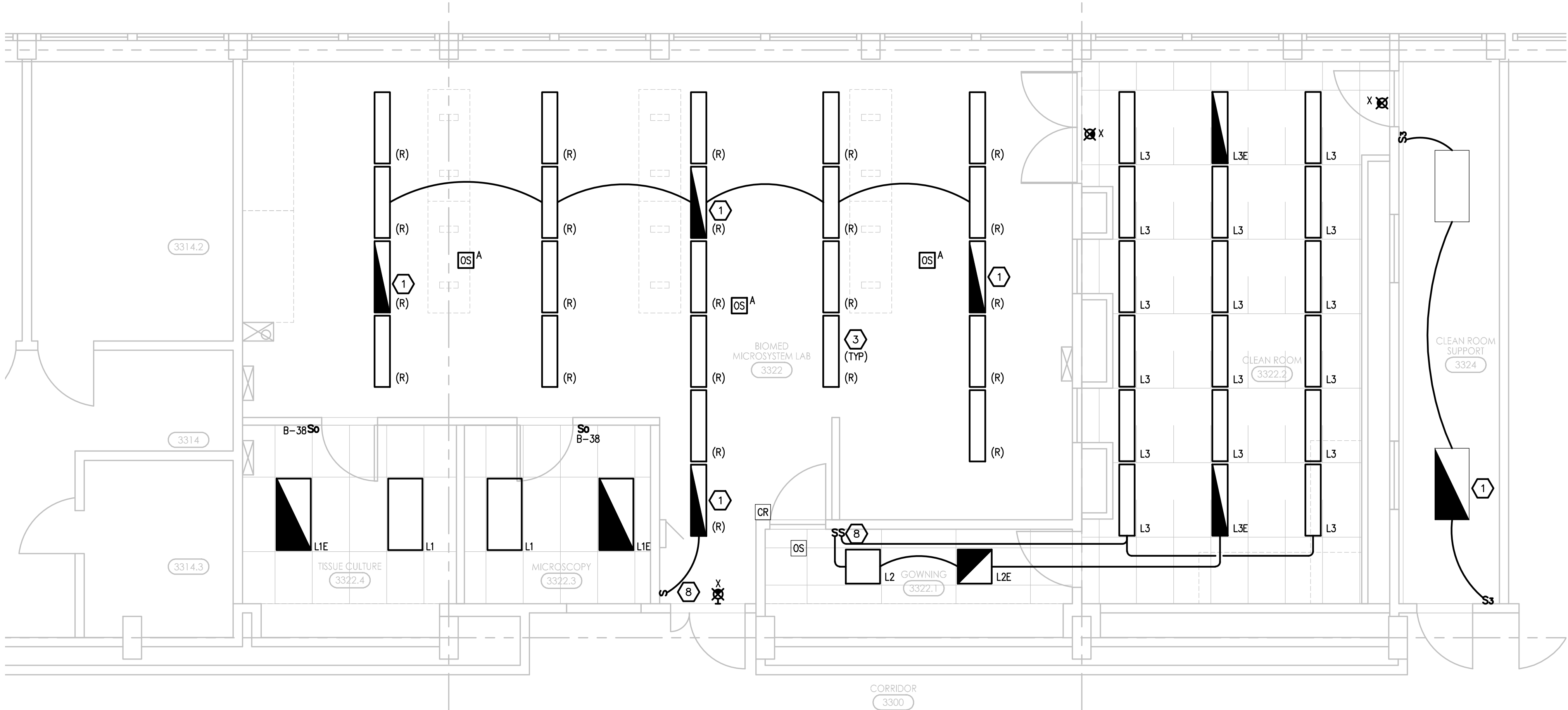
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ELECTRICAL PLANS

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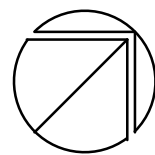
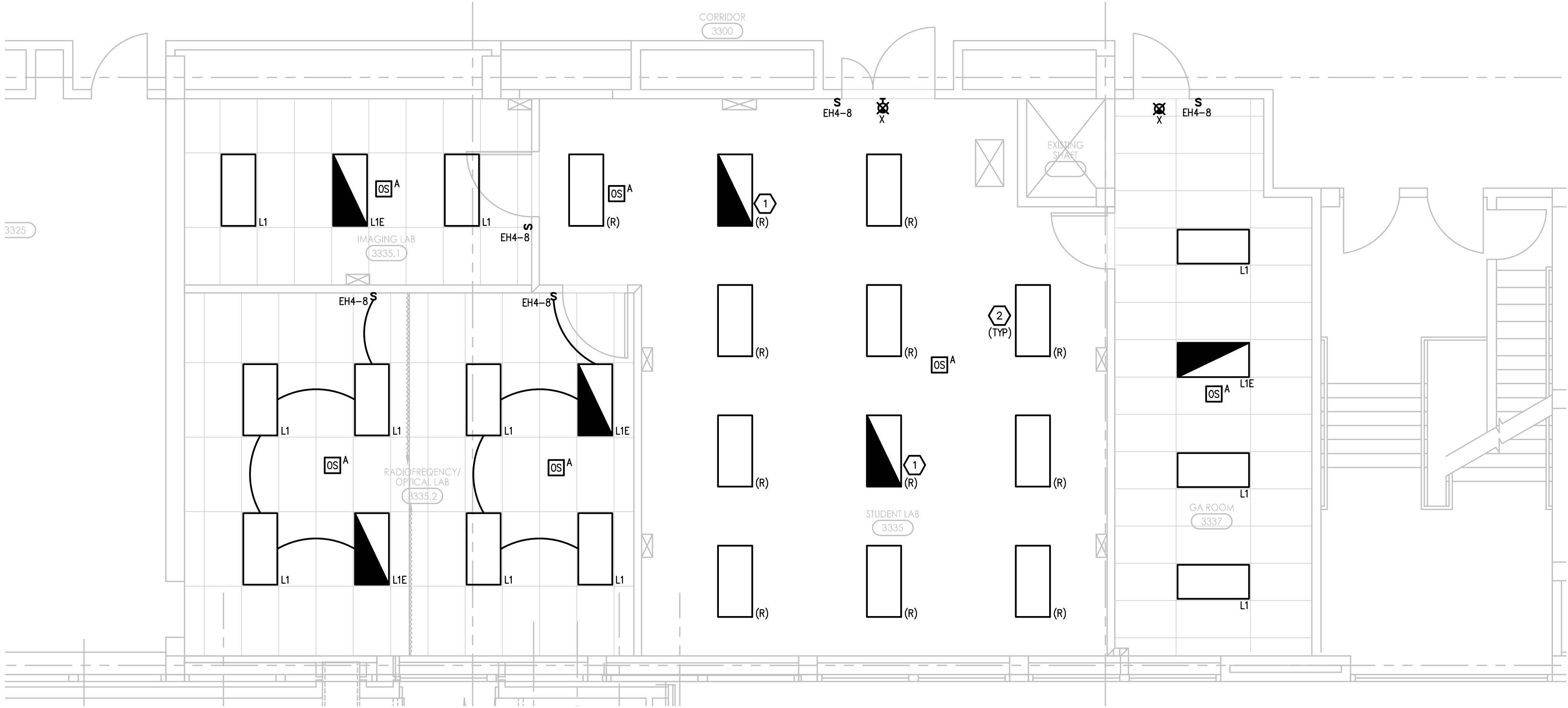
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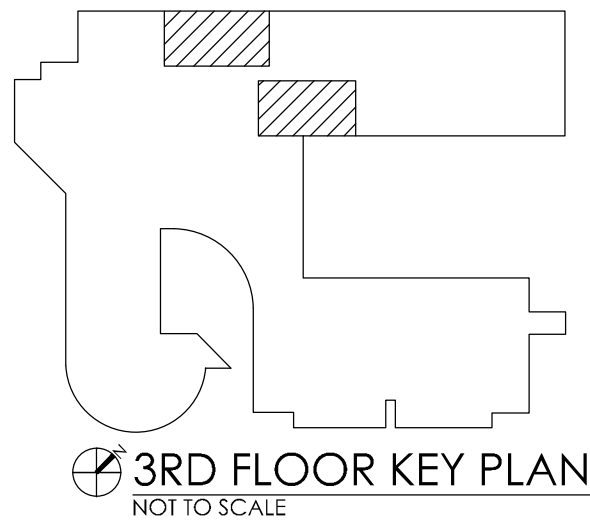
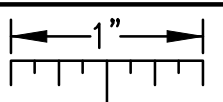


PARTIAL 3RD FLOOR LIGHTING PLAN - AREA 'B'
SCALE: 1/4" = 1' - 0"



PARTIAL 3RD FLOOR LIGHTING PLAN - AREA 'A'
SCALE: 1/4" = 1' - 0"

THE FOLLOWING DIMENSION EQUALS
ONE INCH WHEN PRINTED TO SCALE.



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Phase Two

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THIRD FLOOR LIGHTING
PLAN

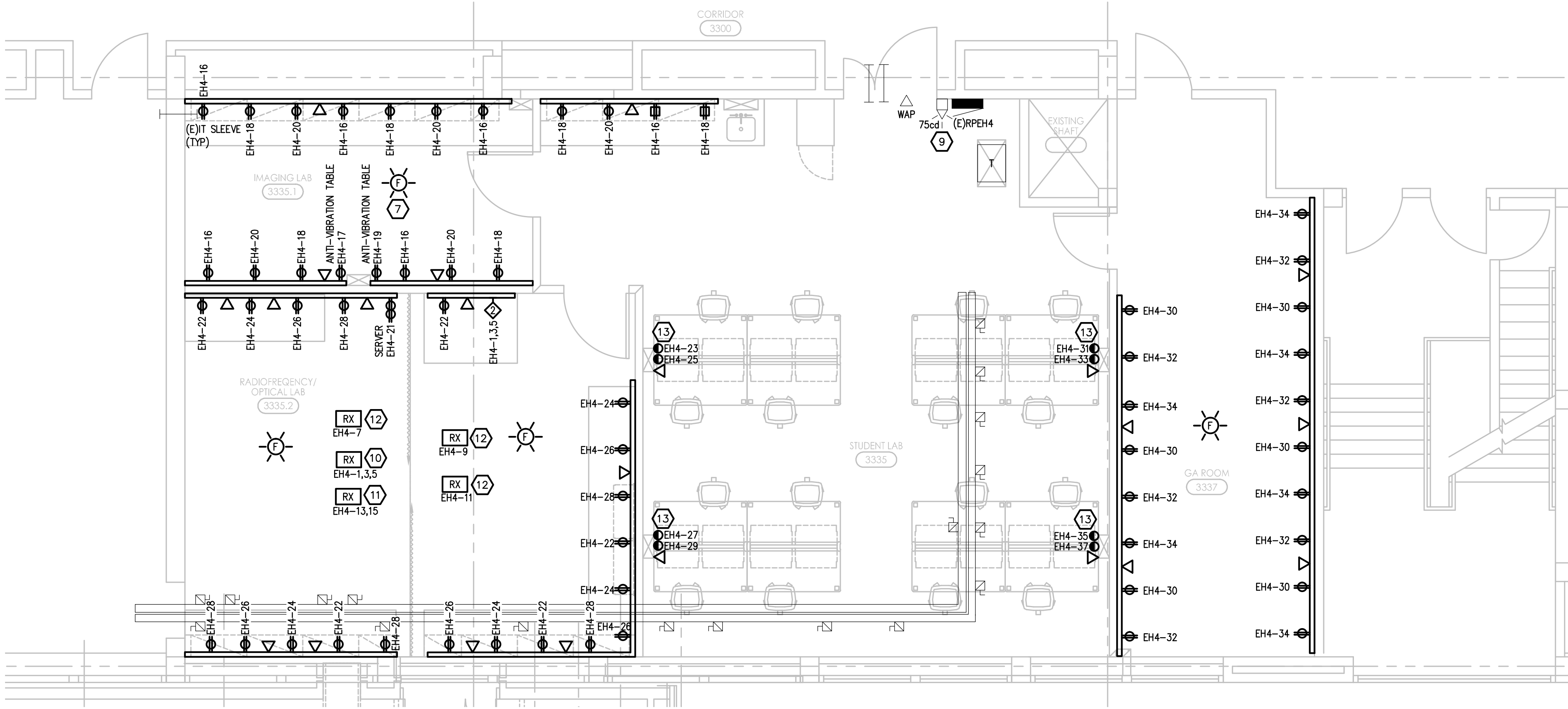
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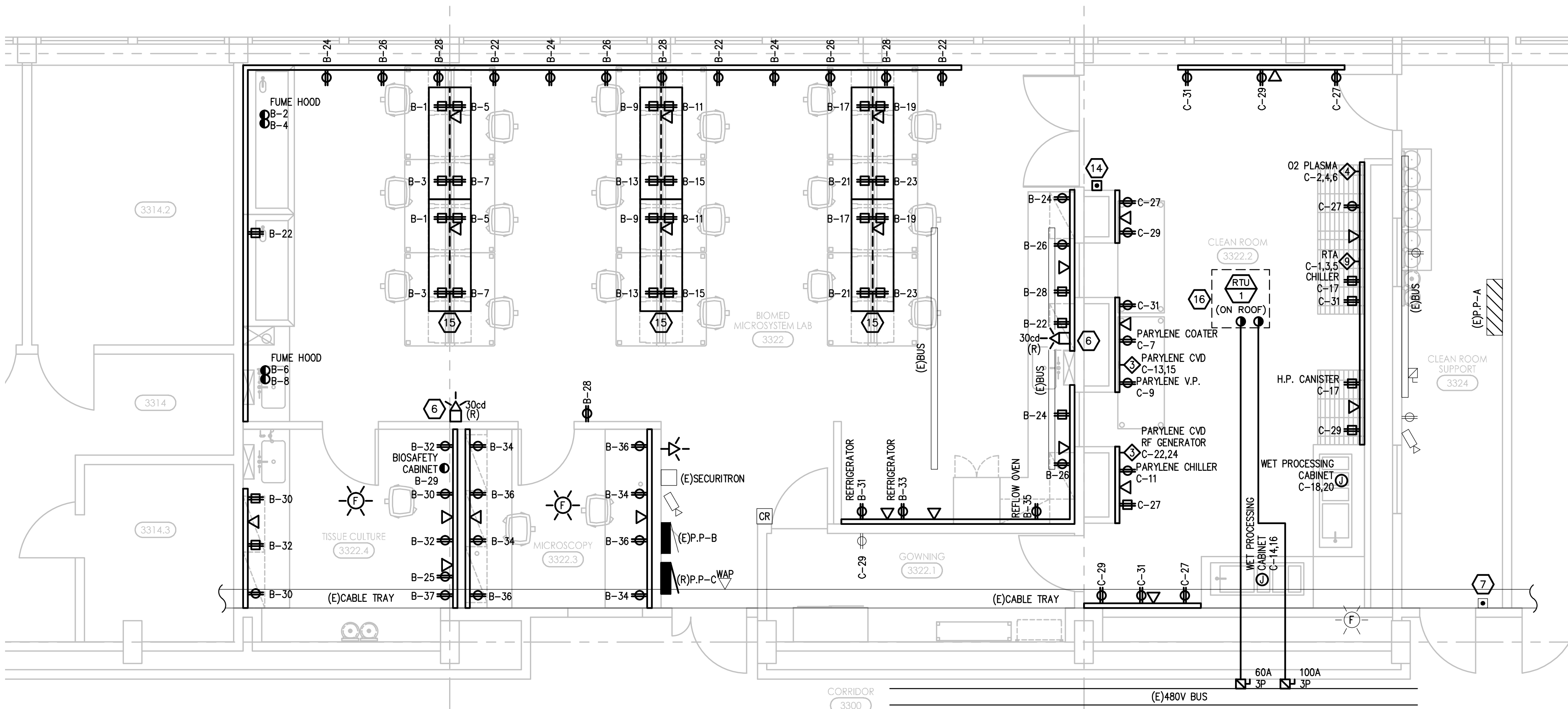
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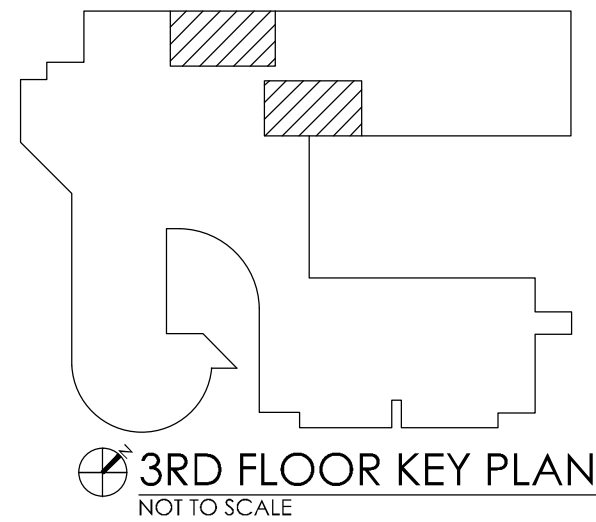
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PARTIAL 3RD FLOOR POWER PLAN - AREA 'A'
SCALE: 1/4" = 1' - 0"



PARTIAL 3RD FLOOR POWER PLAN - AREA 'B'
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- REINSTALL PREVIOUSLY REMOVED FIXTURE AT 9'-0" A.F.F. CLEAN AND RE-LAMP AFTER REINSTALLATION. EXTEND EXISTING BRANCH CIRCUITING AS REQUIRED.
- CLEAN AND RE-LAMP EXISTING FIXTURE. REWORK FIXTURE TO BE 9'-0" A.F.F. EXTEND EXISTING LIGHTING BRANCH CIRCUIT AS REQUIRED.
- PROVIDE NEW OCCUPANCY SENSORS AND ASSOCIATED POWER PACK AS INDICATED AND REQUIRED. CONNECT TO EXISTING BRANCH CIRCUIT AND CONTROL. EXTEND CONDUIT AND WIRING AS REQUIRED. REFER TO DETAIL ON E7.1.
- WIREMOLD DS4000 OR ENGINEER APPROVED EQUAL.
- REINSTALL PREVIOUSLY REMOVED FIRE ALARM NOTIFICATION APPLIANCE. SET CANDELA RATING AS INDICATED. PROVIDE NECESSARY COMPONENTS, MODULES, ETC. AS REQUIRED FOR FULLY FUNCTIONAL SYSTEM.
- CIRCUIT EXISTING EMERGENCY STOP TO (R)P.P.-C.
- CONNECT TO EXISTING BRANCH CIRCUIT AS REQUIRED.
- SET CANDELA RATING AS INDICATED. PROVIDE NECESSARY COMPONENTS, MODULES, ETC. AS REQUIRED FOR FULLY FUNCTIONAL SYSTEM.
- PROVIDE A 208V, 3Ø, 20A CORD REEL FROM REELCRAFT, HUBBELL OR DANIEL WOODHEAD. COORDINATE WITH MANUFACTURER FOR SPECIAL ORDERING. COORDINATE CEILING MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS AND TRADES.
- PROVIDE A 208V, 1Ø, 20A CORD REEL FROM REELCRAFT, HUBBELL OR DANIEL WOODHEAD. COORDINATE WITH MANUFACTURER FOR SPECIAL ORDERING. COORDINATE CEILING MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS AND TRADES.
- PROVIDE A 120V 20A CORD REEL FROM REELCRAFT, HUBBELL OR DANIEL WOODHEAD. COORDINATE CEILING MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS AND TRADES.
- ROUTE FURNITURE BRANCH CIRCUIT AND TELECOMMUNICATION CONDUIT FROM CEILING SPACE DOWN THROUGH CHASE WALL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS. CONNECT BRANCH CIRCUIT TO FURNITURE POWER BUS. REFER TO DETAIL ON SHEET E701. COORDINATE EXACT REQUIREMENTS WITH FURNITURE MANUFACTURER.
- INSTALL PREVIOUSLY REMOVED EMERGENCY STOP. CIRCUIT EMERGENCY STOP TO ELECTRICAL PANEL (R)P.P.-C.
- SERVICE CARRIER PROVIDED BY OTHERS. PROVIDE DEVICES AND CIRCUIT AS INDICATED.
- COORDINATE EXACT LOCATION OF RTU-1 WITH MECHANICAL DRAWINGS AND TRADES.

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Phase Two

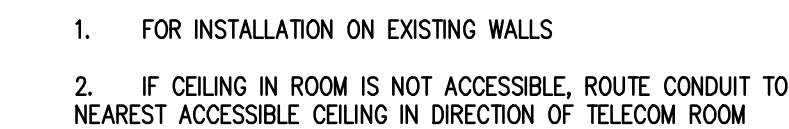
sheet title:

THIRD FLOOR POWER
AND AUXILIARY
SYSTEMS PLAN

project number: sheet number:

090-250890 E302

(1156-2: iDesign project number)



NO SCALE



NO SCALE

NOTE:

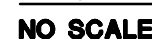
PRIMARY CIRCUIT ONLY. LAMP LEADS NOT SHOWN.



NO SCALE

NOTES:

1. REFER TO SPECIFICATIONS FOR ACCEPTED MANUFACTURERS.
2. PROVIDE POWER PACKS AND SLAVE PACKS AS REQUIRED FOR SWITCHING AS INDICATED ON PLAN. REVISE DETAIL AS REQUIRED BY MANUFACTURERS.
3. MOUNTING LOCATION PER MANUFACTURER'S RECOMMENDATION.
4. ADJUST SENSITIVITY LEVELS PER THE OWNER REQUIREMENTS.
5. PROVIDE FACTORY SUPPORT FOR AIMING/ADJUSTING OF SENSORS.
6. PLACE CEILING MOUNTED OCCUPANCY SENSORS IN CENTER OF A FULL CEILING TILE, WHERE APPLICABLE.
7. SENSOR ADJUSTMENT: BEFORE MAKING ADJUSTMENTS, MAKE SURE ROOM FURNITURE IS INSTALLED, LIGHTING CIRCUITS ARE TURNED ON, AND THE HVAC SYSTEMS ARE IN THE ON POSITION. VAV SYSTEMS SHOULD BE SET TO THEIR HIGHEST AIRFLOW. SET THE LOGIC ALGORITHM ON DIP SWITCHES TO THE LOGIC ALGORITHM DETECTION BY ONLY ONE TECHNOLOGY. SET THE TIME DELAY PER OWNERS DIRECTION.



NOTES:

IF CEILING IN ROOM IS NOT ACCESSIBLE ROUTE CONDUIT
TO NEAREST ACCESSIBLE CEILING IN DIRECTION OF
TELECOM ROOM.



NOTES:

IF CEILING IN ROOM IS NOT ACCESSIBLE ROUTE CONDUIT TO NEAREST ACCESSIBLE CEILING IN DIRECTION OF TELECOM ROOM.



NOTES:

1. ROUTE CABLING CAREFULLY THROUGH PATHWAYS AND RACEWAYS IN FURNITURE/CASEWORK.
2. PROVIDE PROTECTIVE AND AESTHETIC COVERING ON CABLING FROM OUTLET TO FURNITURE IN-FEED POINT.
3. PROVIDE GROMMETED STAINLESS STEEL PLATE. REFER TO SPECIFICATIONS.
4. PROVIDE BEND RADIUS OF CONDUITS PER TIA/EIA-569-A.