

Lakehead University Moksha Yoga

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Lead Consultant

BrookMcIlroy/

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Consultants



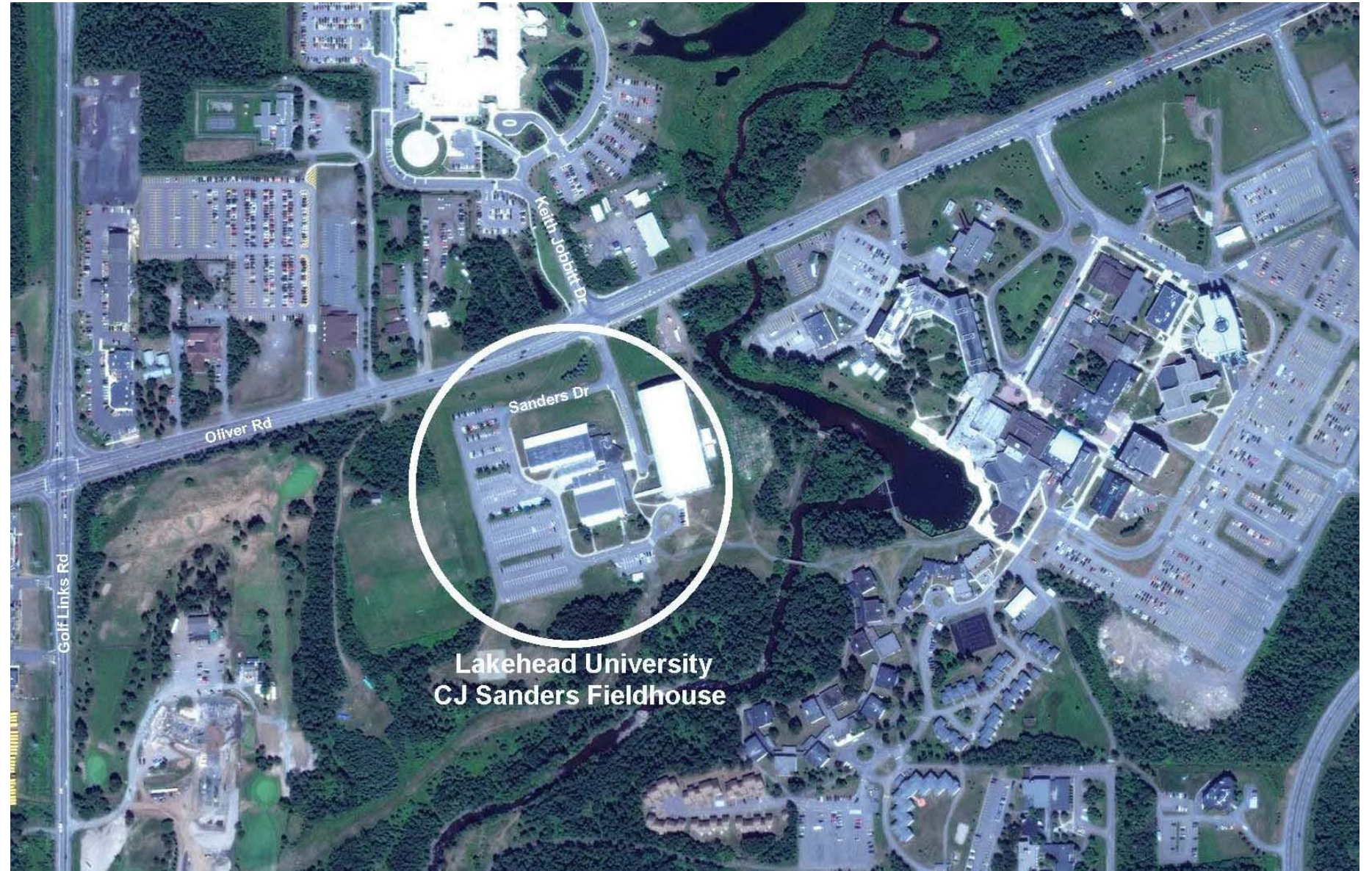
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KGS Group Consulting Engineers
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Drawing List

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Cross Section	A3
Interior Elevations	A4
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KGS - Door Opening Detail	14-1829-003
Profor - Partial & Key Plans, Electrical Demo and Renovation.	214060-E1
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Profor - Partial Floor Plan, HVAC Demolition and Renovation	214060-M1
Profor - Section and Details	214060-M2
Profor - Mech Specs, Scope of work and sequence of Operations.	214060-M3



Context Plan

A0

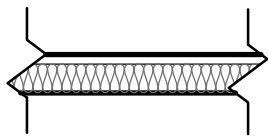
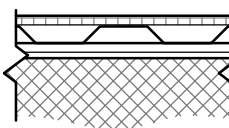
**12-026.10 • Lakehead University • Moksha Yoga
Cover**

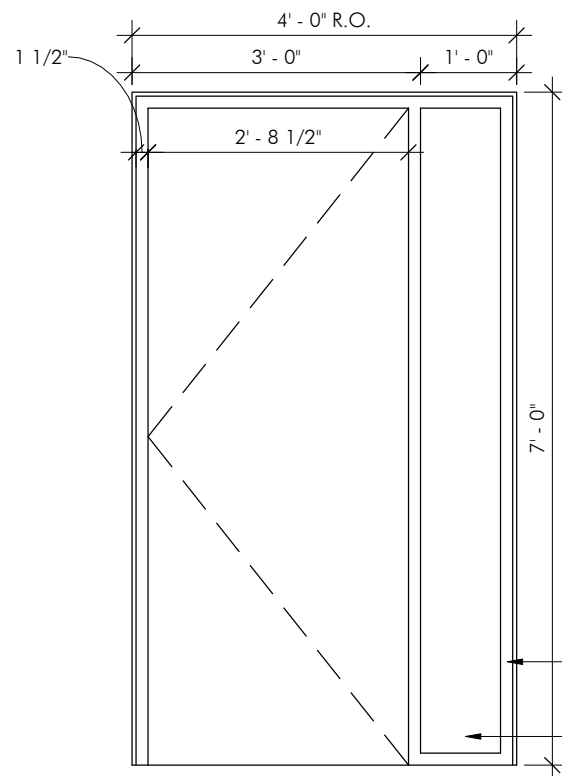
Date: 08/11/14

Project No: 12-026.10

BrookMcIlroy/

1 Assemblies
1 : 10

	<p>P1 - Interior Wall Assembly</p> <ol style="list-style-type: none"> .5" Drywall 6 mil AVB 1.5" Rigid Insulation w/ 2x2 wood furring at 2' o/c <p>*Provide blocking for fastening of mirrors and ballet bar.</p>
	<p>C1 - Interior Ceiling Assembly</p> <ol style="list-style-type: none"> Existing metal deck and OWSJ R40 spray foam insulation w/ thermal barrier. <p>-Walltite Eco - Spray Polyurethane Foam Insulation / Air Barrier (or approved equal).</p> <p>-AD Cementitious Thermal Barrier (or approved equal), 22m thick. Suitable for exposure in supply and return air ceiling conditions</p> <ol style="list-style-type: none"> Provide 1" coverage to OWSJ webs, see detail A5/2



Notes:

Contractor to provide construction core and zero pinned cylinder to LU for pinning. Keyway to be confirmed at shop drawing submission to LU.
BMI to confirm door closer provided.

Door Angle and paint color T.B.D.

Lock:

Keyed Lock ND53PD-RHO-626

• Push-button locking: Pushing button locks outside lever until unlocked by key or by turning the inside lever.

Hinges:

Interior Stanley FBB179 4.5" x 4"

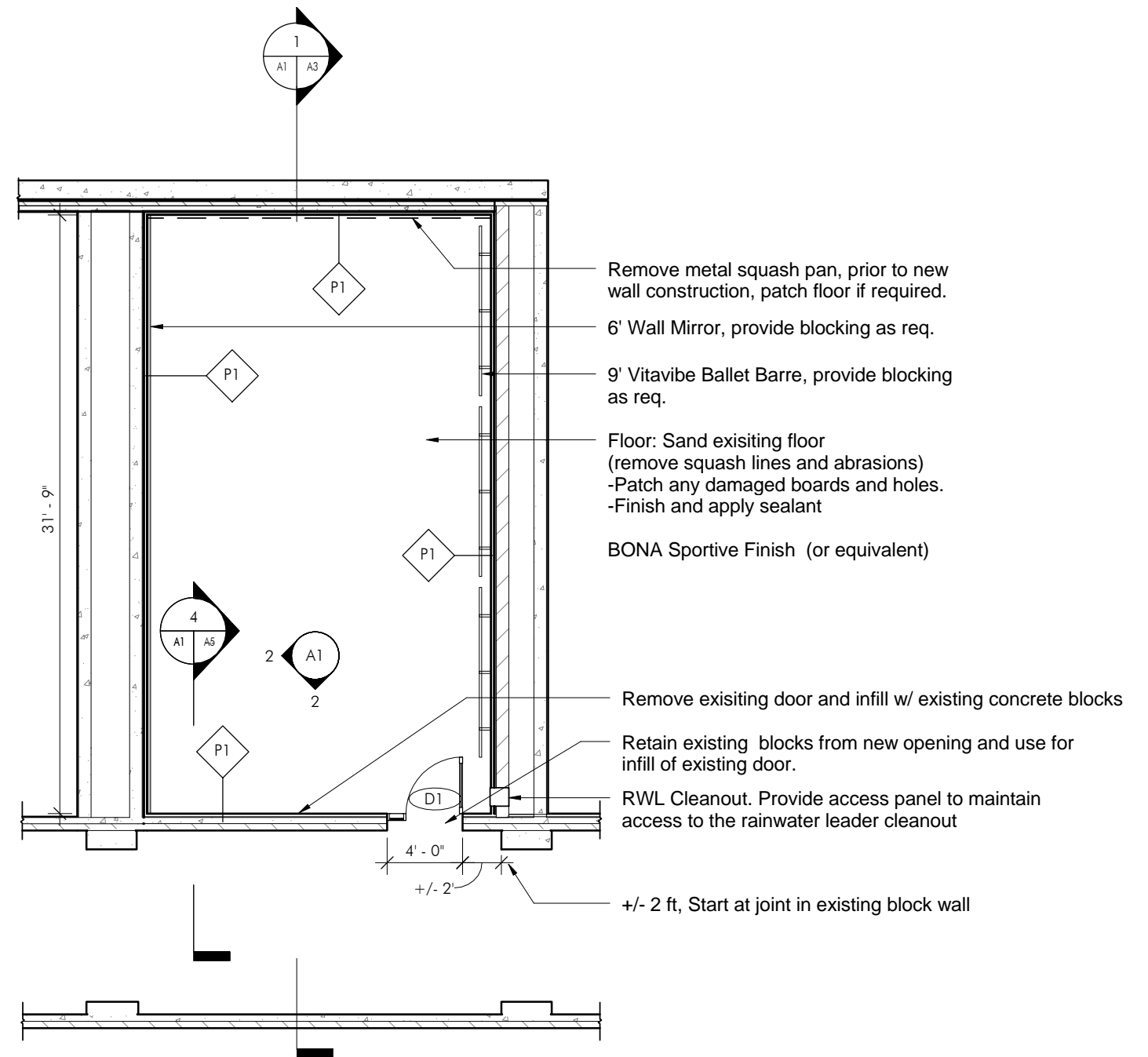
FBB179 – (ANSI A8112)

Steel – polished and plated

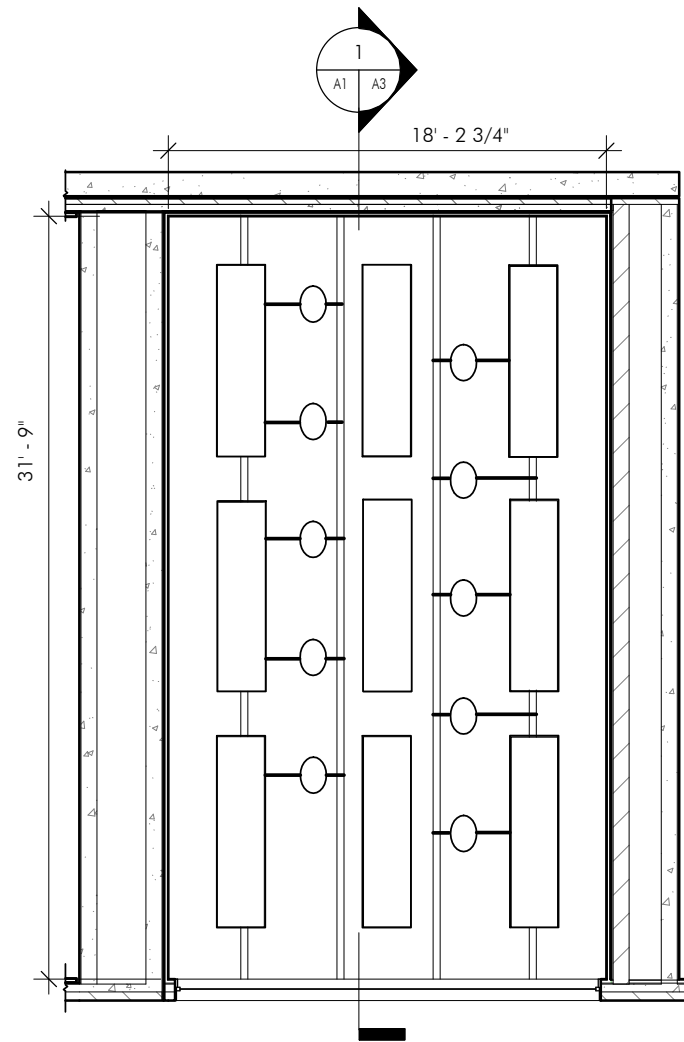
PAINT FRAME AND STEEL LINTEL ABOVE
(CONSULTANT TO PROVIDE COLOUR)

SOLID INFILL PANEL TO MATCH FRAME

2 Entry Door with Opaque Sidelight
1/2" = 1'-0"

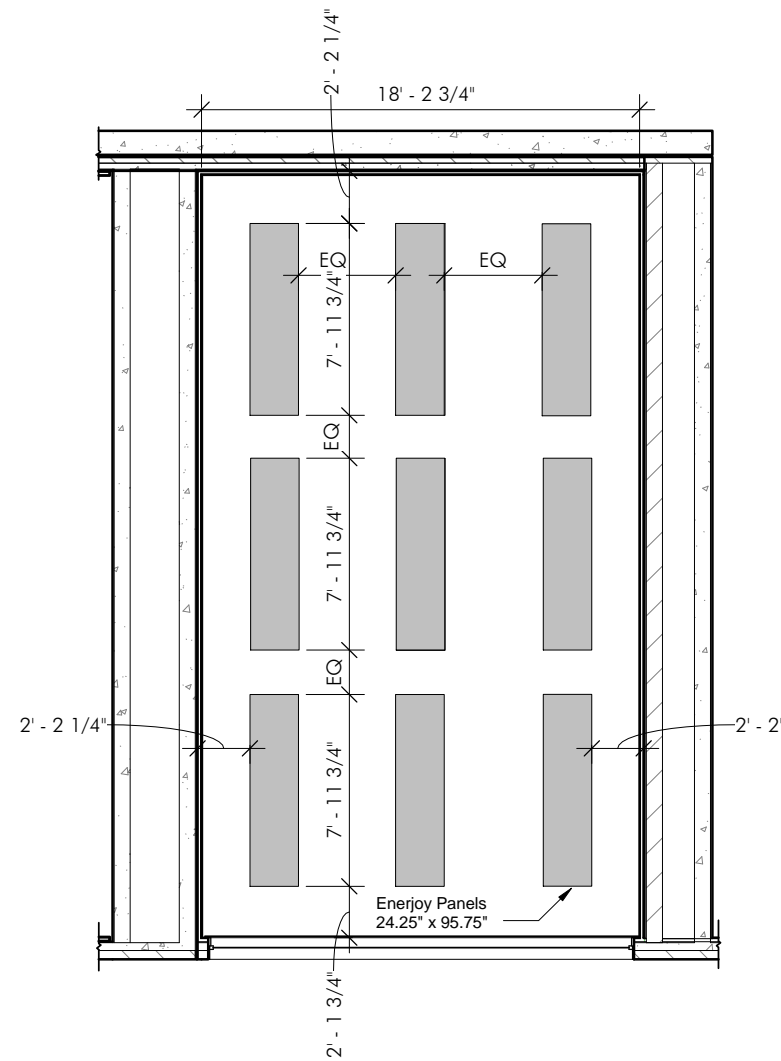


3 + / Floor
1/8" = 1'-0"



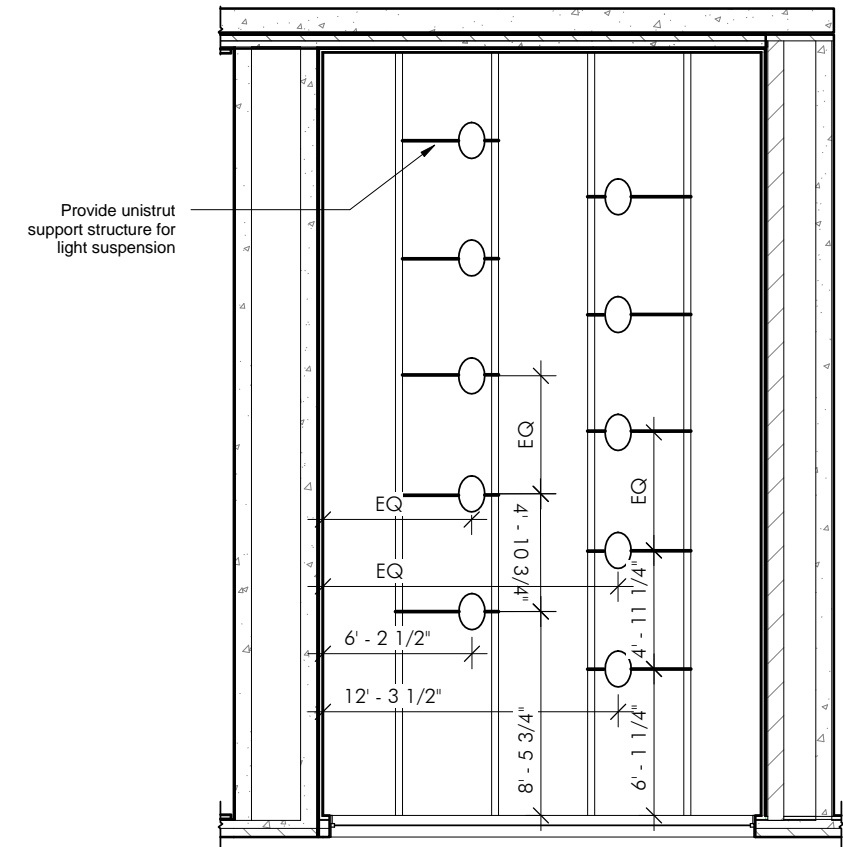
1 Reflected Ceiling Plan
1/8" = 1'-0"

Note:
*Dimensions are taken from existing wall



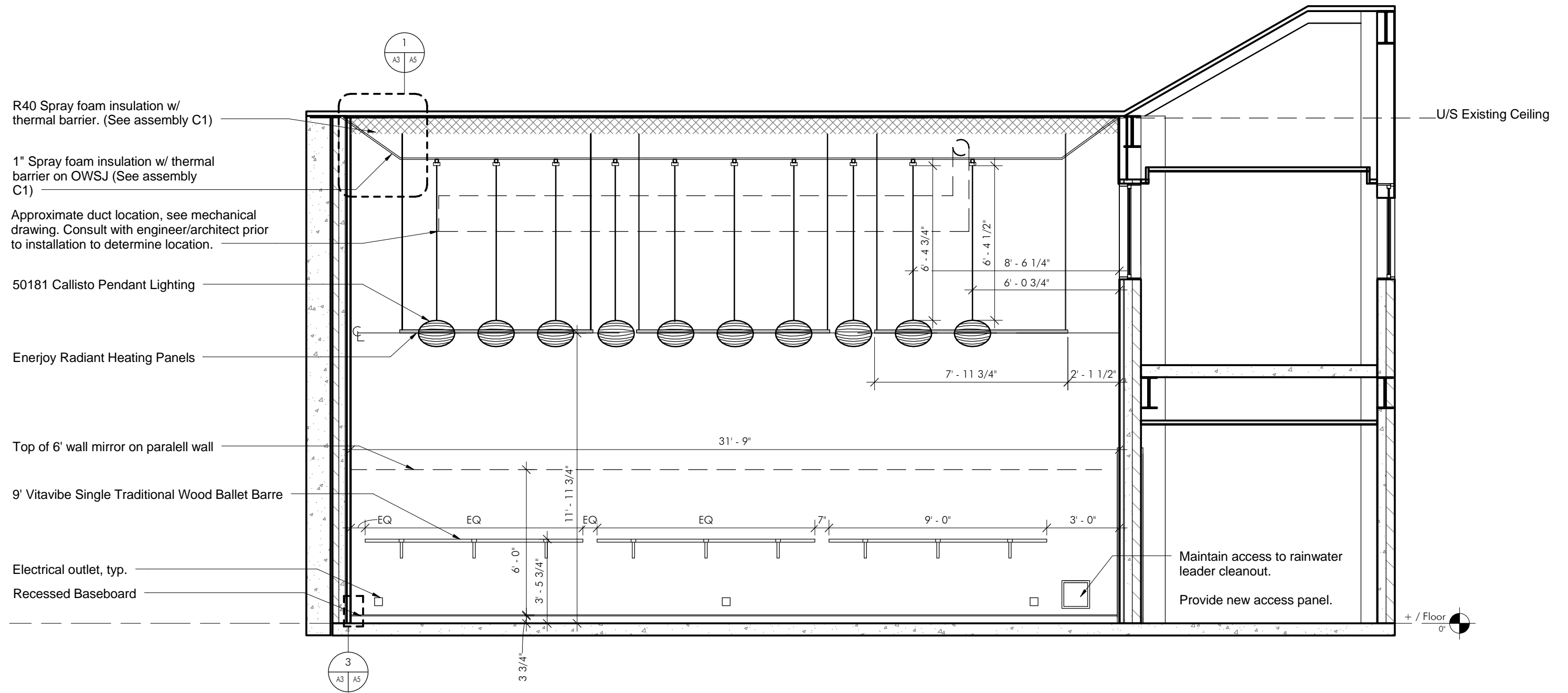
2 Energy Heating Panels RCP
1/8" = 1'-0"

Note:
*Dimensions are taken from existing wall



3 50181 Callisto Pendant Lighting
1/8" = 1'-0"

Note:
*Dimensions are taken from existing wall



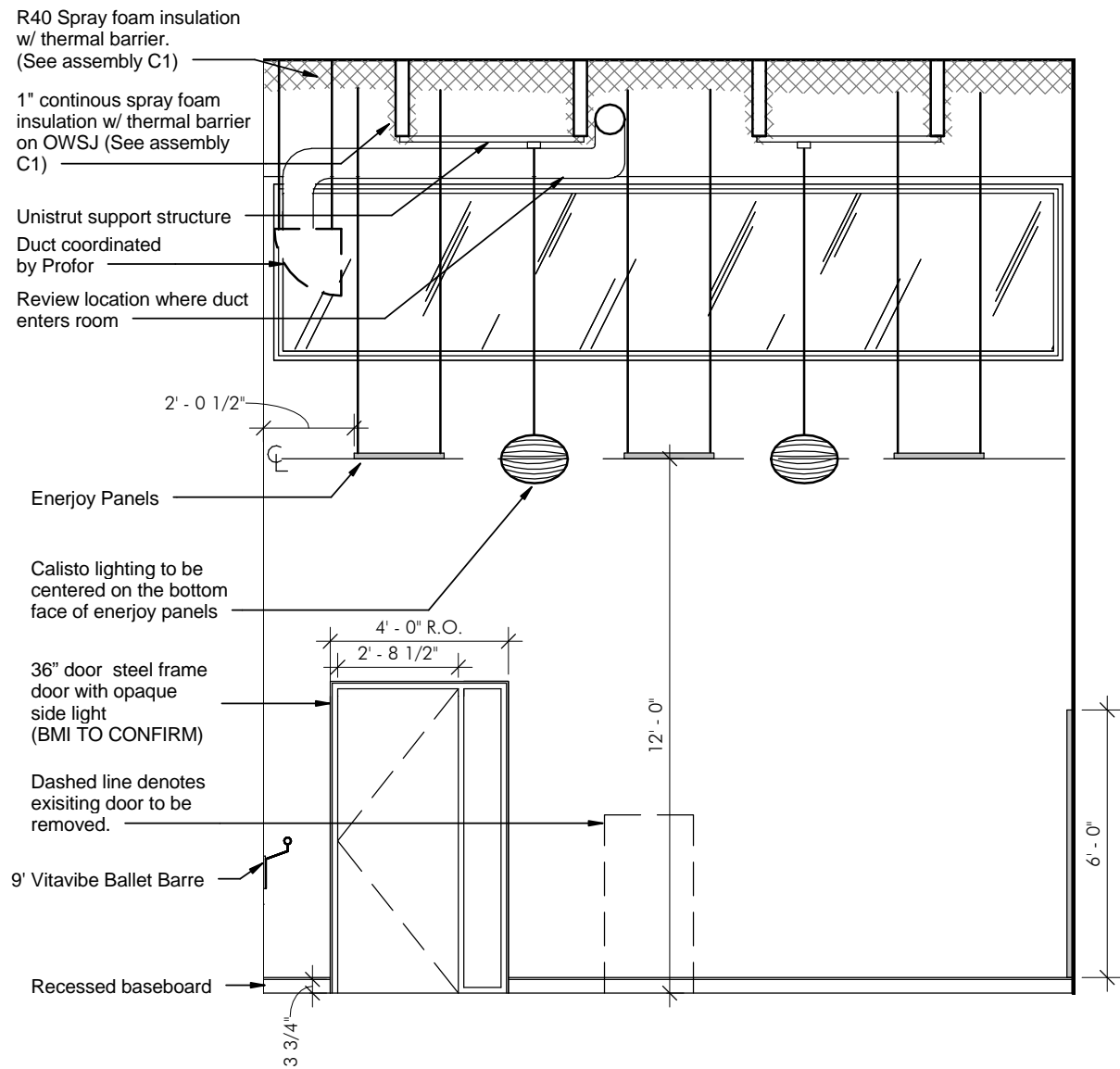
A3

12-026.10 • Lakehead University • Moksha Yoga
Cross Section Scale 1/4"=1'-0"

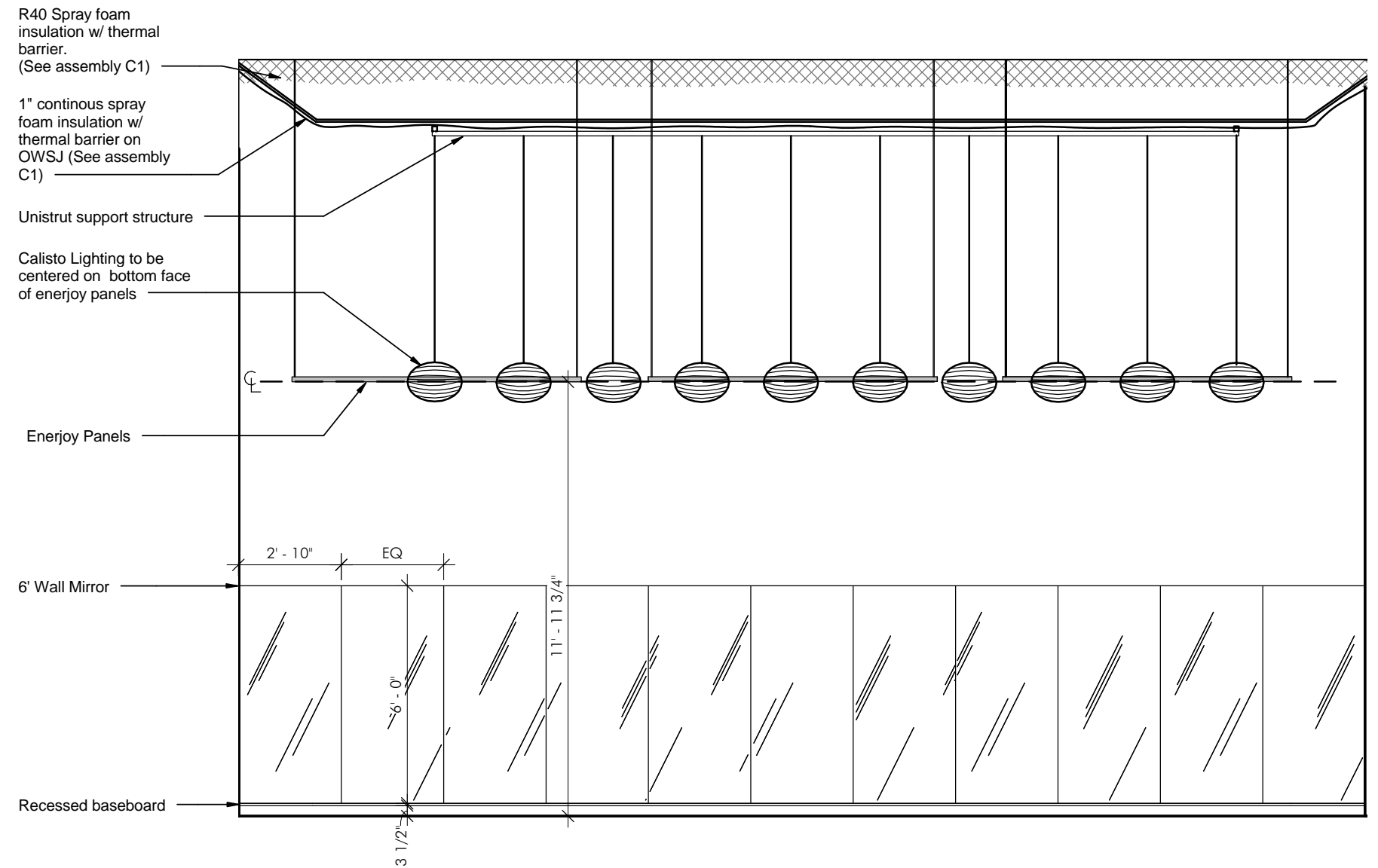
Date: 08/11/14

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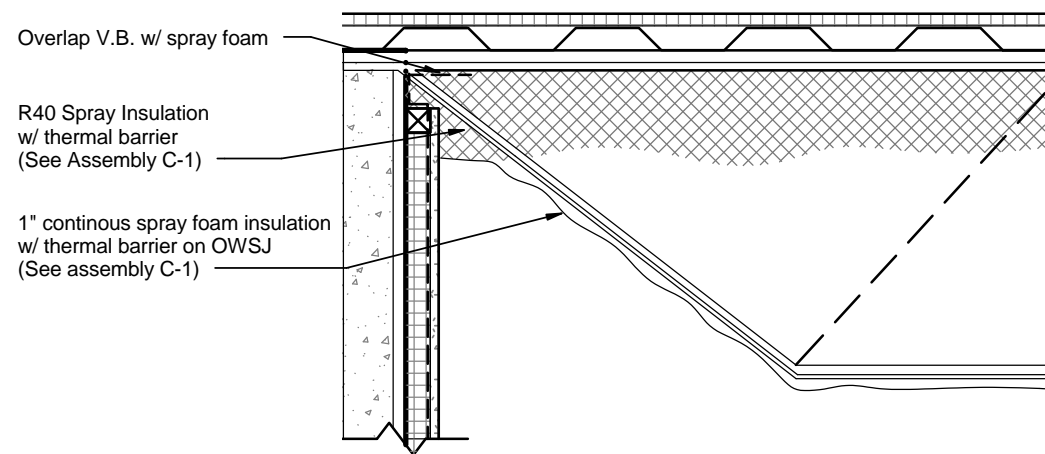
BrookMcIlroy



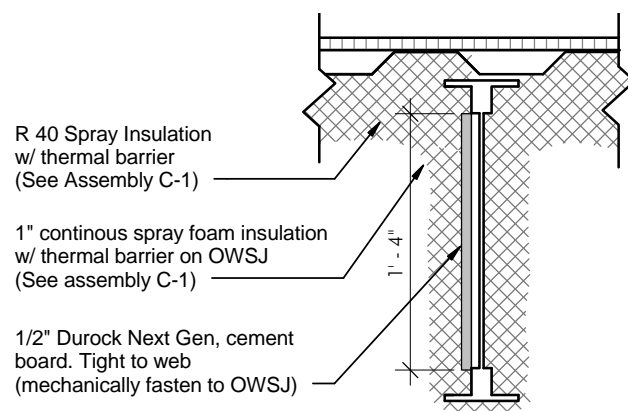
① North Interior Elevation - Entry
1/4" = 1'-0"



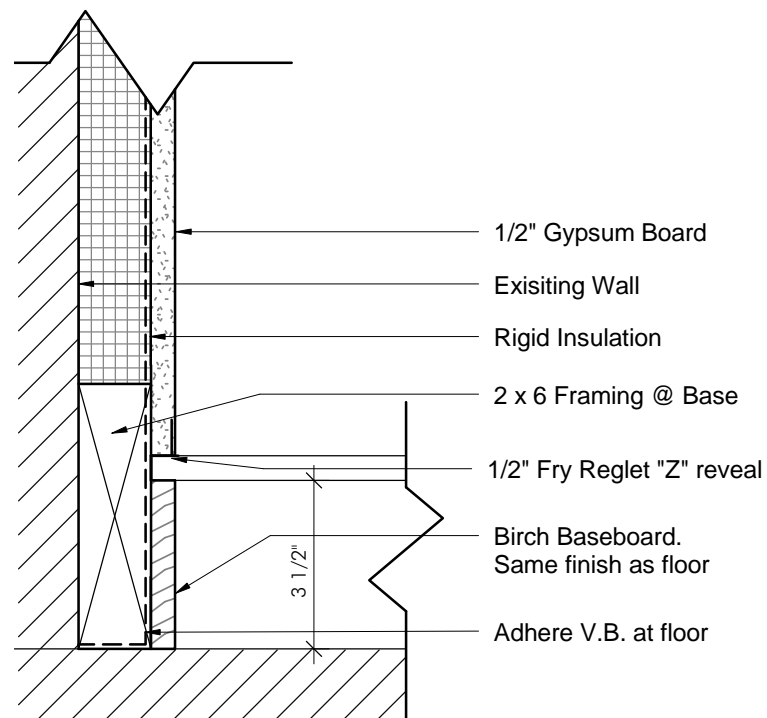
② West Interior Elevation - Ballet Barre
1/4" = 1'-0"



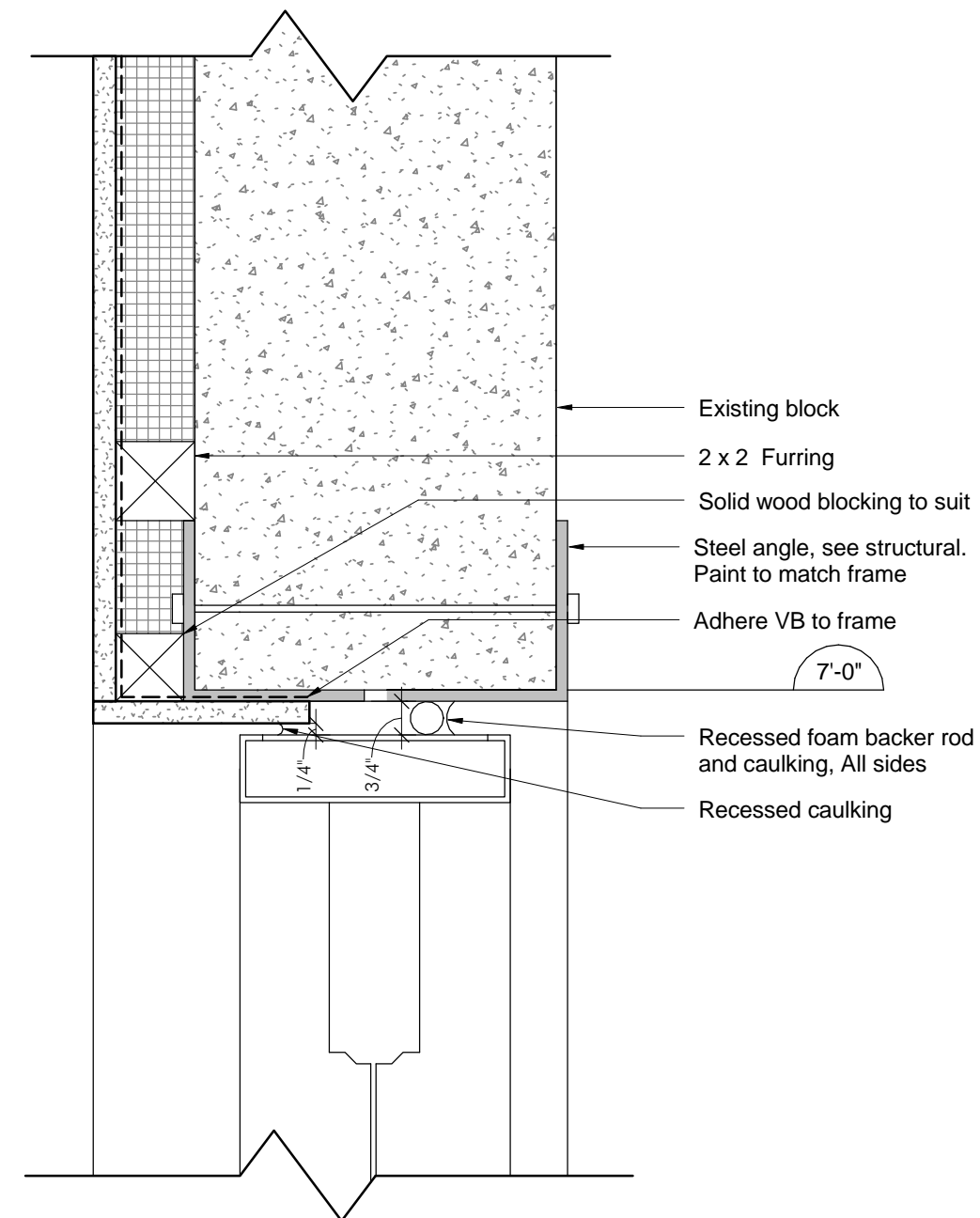
① Section Detail at wall / OWSJ Connection
1" = 1'-0"



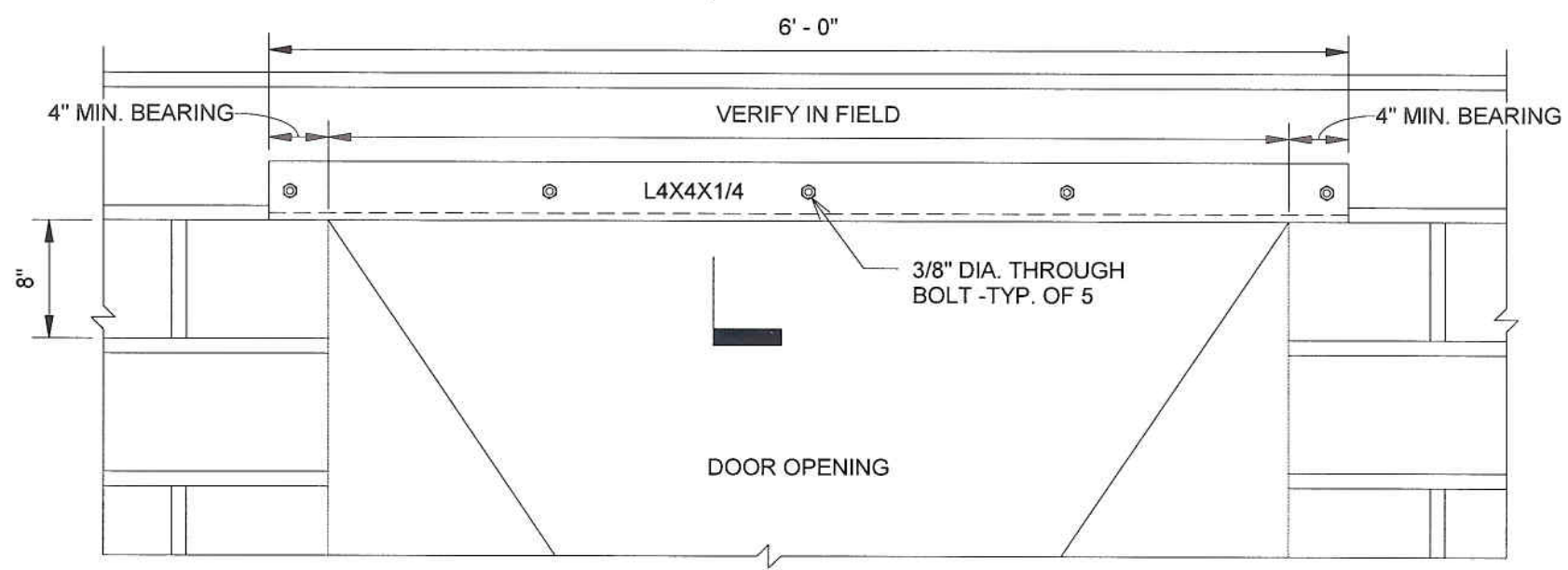
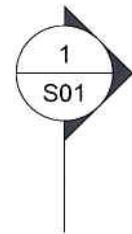
② Section Detail Spray Insulation at OWSJ
1" = 1'-0"



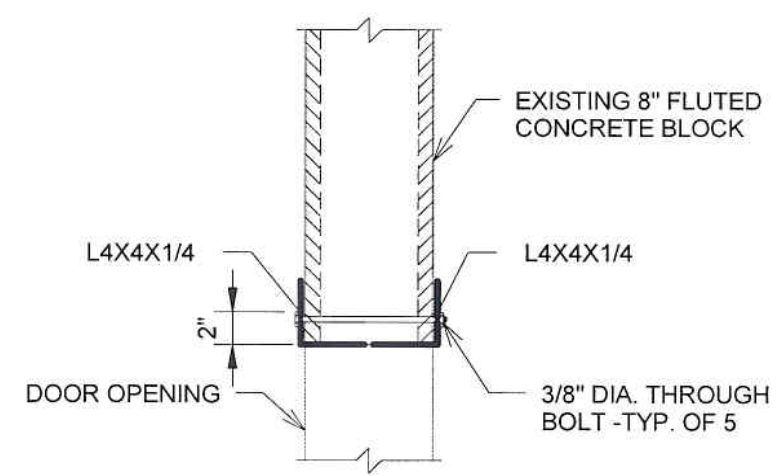
③ Recessed Baseboard Detail
3" = 1'-0"



④ Entry Door Head Detail
3" = 1'-0"



ELEVATION
1" = 1'-0"



1 SECTION DETAIL 1
1" = 1'-0"

LINTEL NOTES

1. SUPPORT MASONRY WALL DURING LINTEL INSTALLATION.
2. REMOVE MORTAR JOINT AND INSTALL ANGLE ONE SIDE AT A TIME.
3. LINTELS SHALL BE G40.21 300W STEEL, PRIMER PAINTED. FINISH PAINTING BY OTHERS.
4. DRILL AND INSTALL 3/8"Ø THROUGH BOLTS c/w NUT AND WASHER AT EACH END. CUT FLUSH TO NUTS.

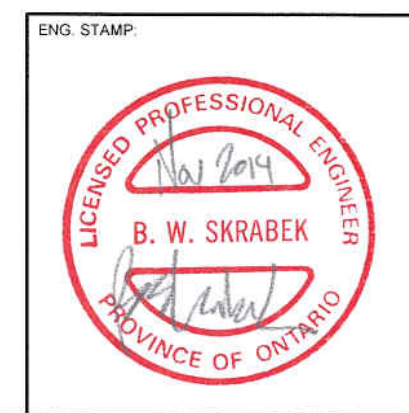
0	14/11/18	ISSUED FOR TENDER	BY
NO.	YY/MM/DD	DESCRIPTION	BY

REVISIONS / ISSUE

CLIENT:
BrookMcIlroy

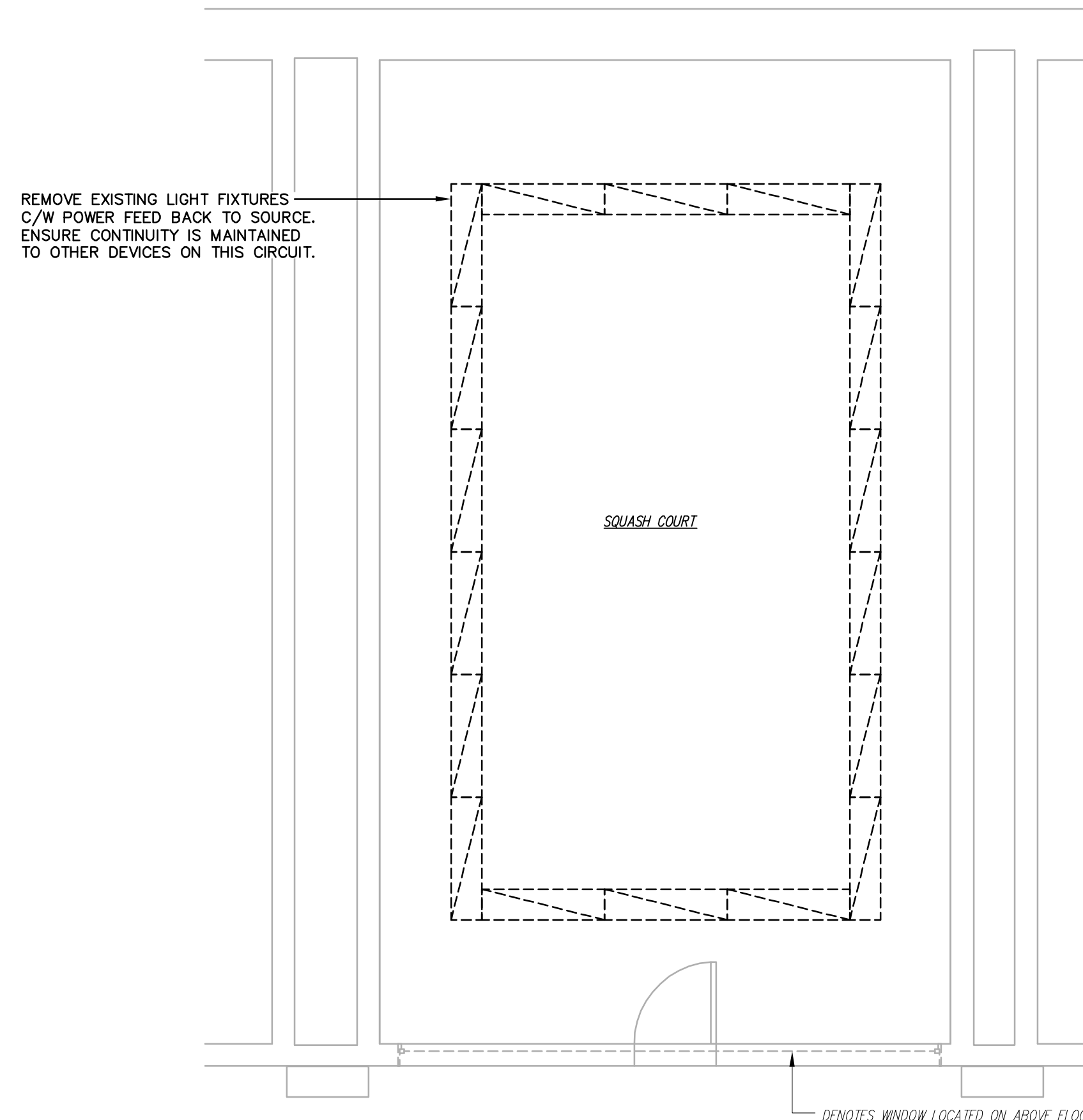
PROJECT:
MOKSHA YOGA STUDIO
LAKEHEAD UNIVERSITY

DWG. DESCRIPTION:
STRUCTURAL DETAILS
DOOR OPENING

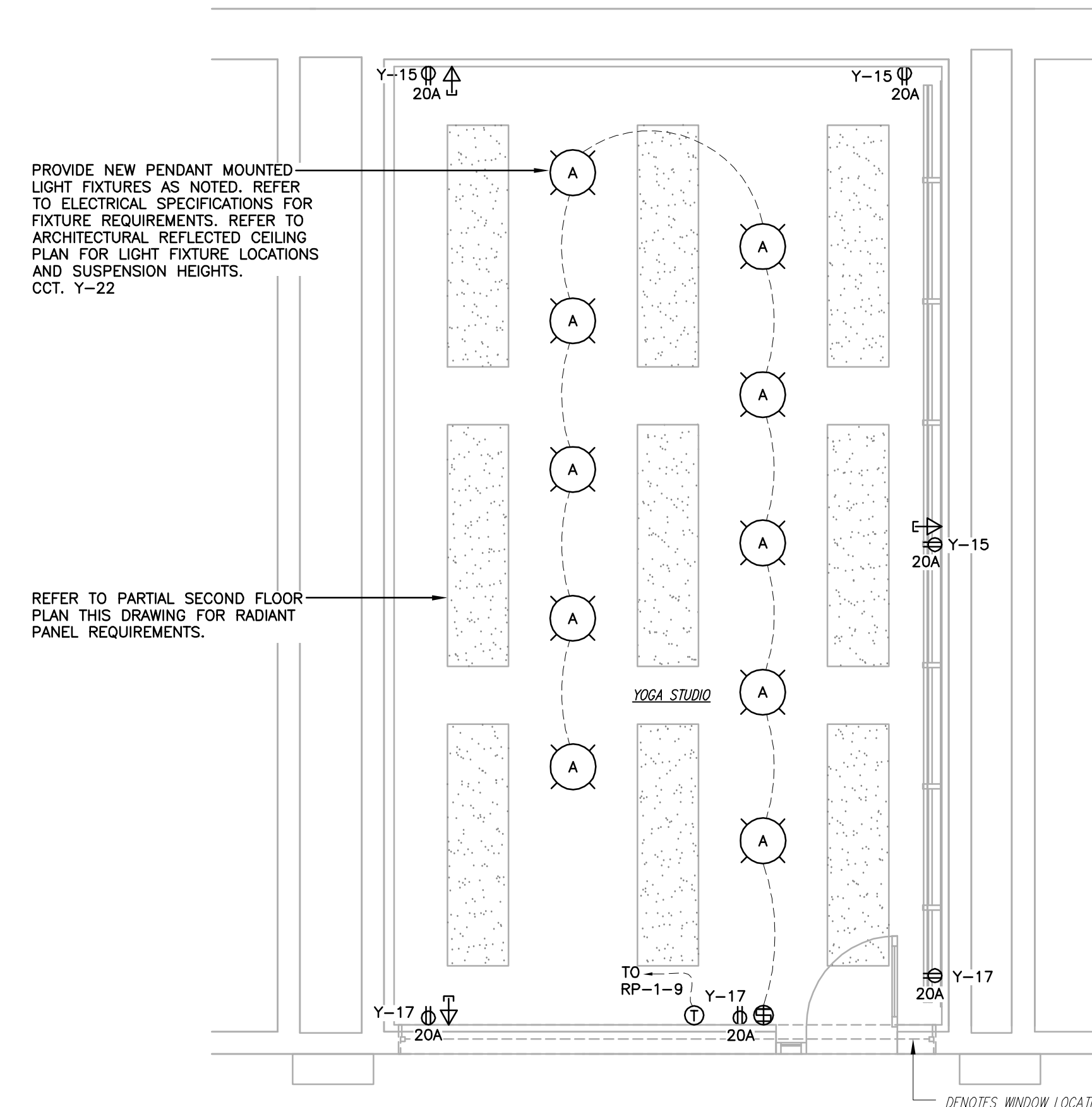


KGS GROUP CONSULTING ENGINEERS	DESIGN BY: BS	DATE: 14/09/09
	DESIGN CHECK: MS	DATE: 14/11/18
	DRAWN BY: CM	DATE: 14/09/09
	DWG CHECK: MS	DATE: 14/11/18

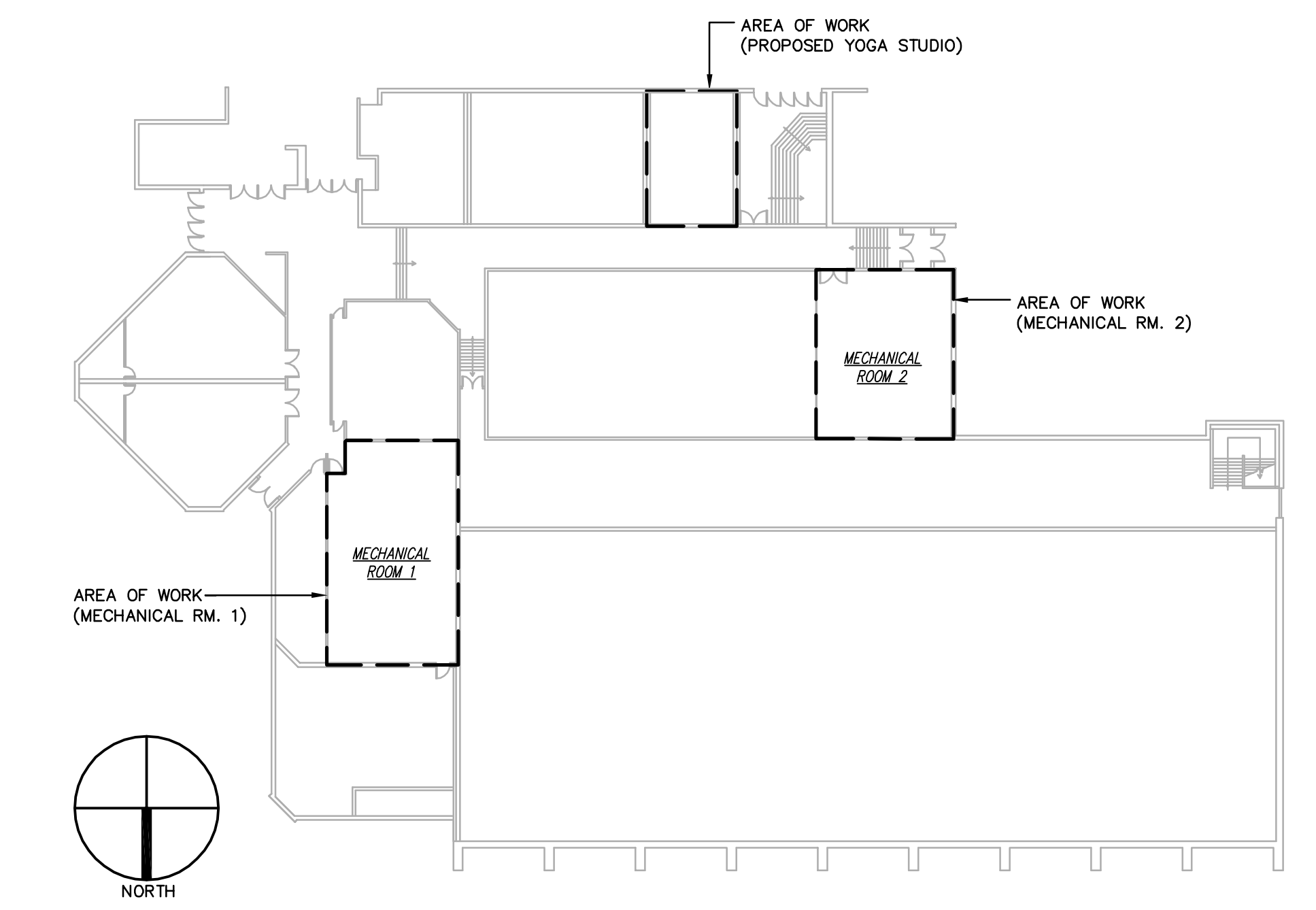
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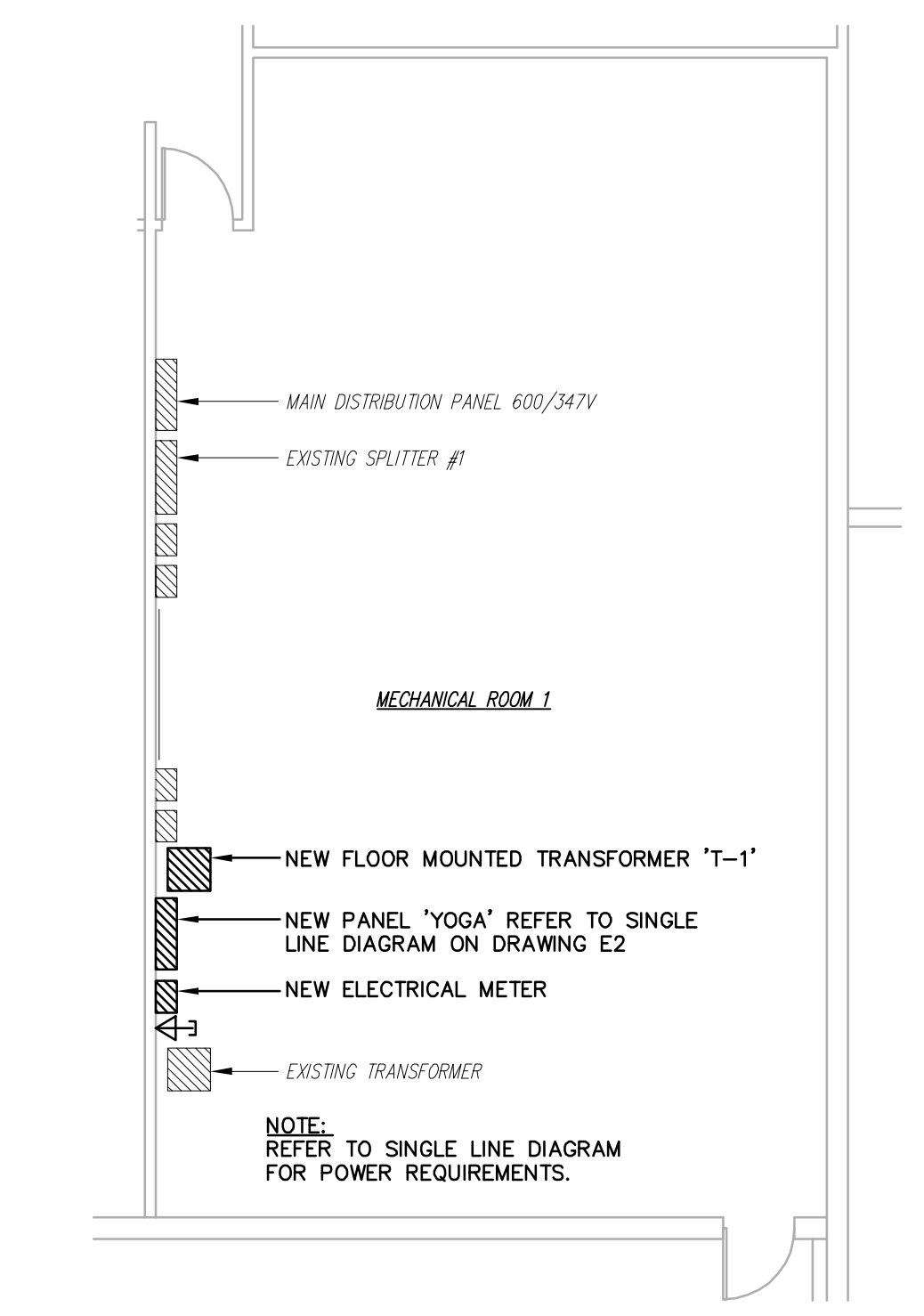
PARTIAL MAIN FLOOR PLAN - ELECTRICAL DEMOLITION
SCALE: 1/4" = 1'-0"



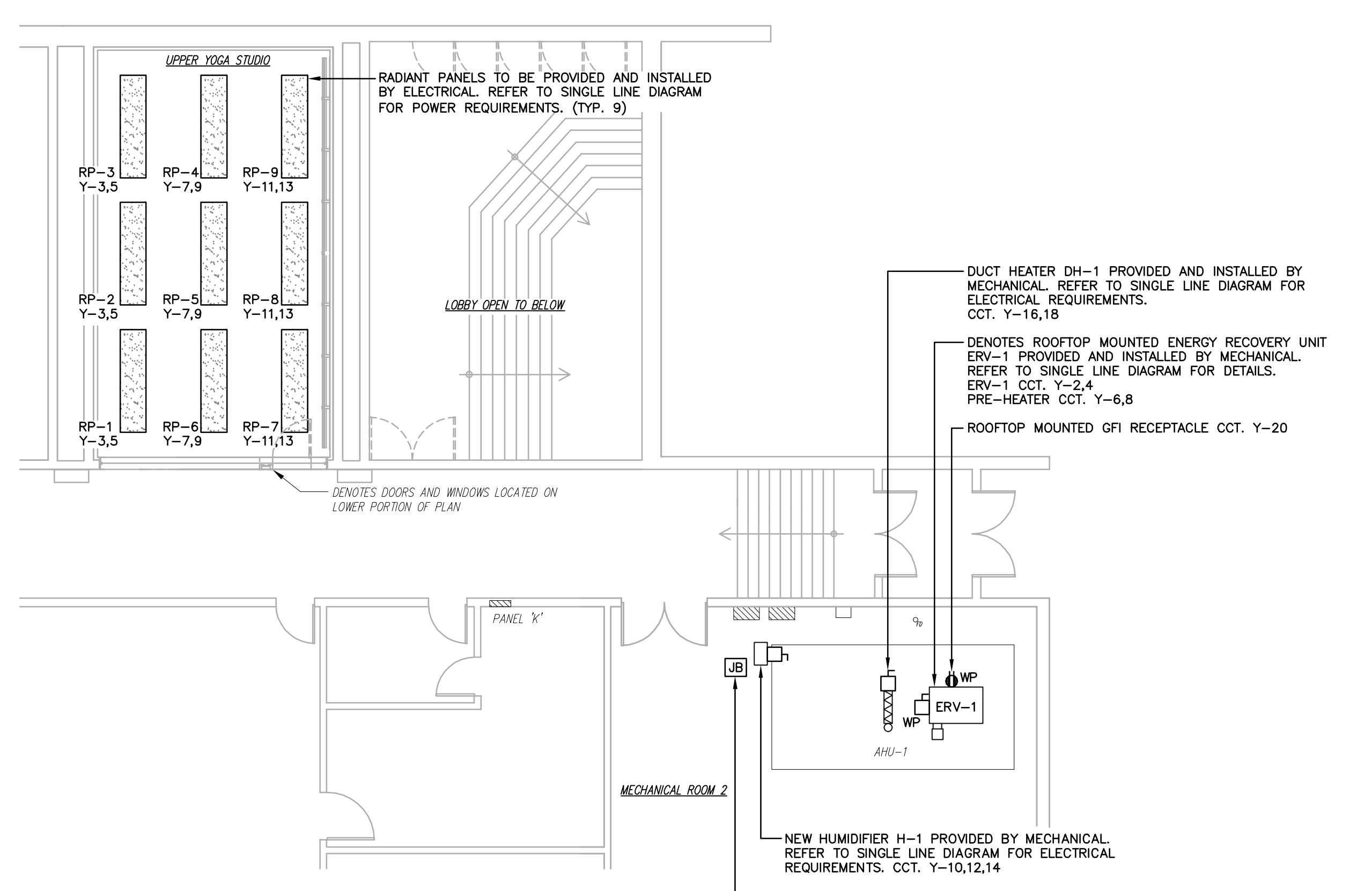
PARTIAL MAIN FLOOR PLAN - ELECTRICAL RENOVATION
SCALE: 1/4" = 1'-0"



KEY PLAN - LAKEHEAD UNIVERSITY FIELDHOUSE
SCALE: 1/32" = 1'-0"



PARTIAL MAIN FLOOR PLAN - MECHANICAL ROOM 1
NOT TO SCALE



PARTIAL SECOND FLOOR PLAN - POWER RENOVATION
SCALE: 1/8" = 1'-0"

ELECTRICAL LEGEND

- FLUORESCENT LIGHTING FIXTURE
- LIGHT FIXTURE - CEILING MOUNTED
- SINGLE POLE SWITCH C/W DIMMER
- DUPLEX RECEPTACLE
- GROUND FAULT INTERRUPTER RECEPTACLE - WEATHERPROOF
- VOICE/DATA JACK
- DISCONNECT SWITCH
- DISCONNECT SWITCH - WEATHERPROOF
- DUCT TYPE HEATER
- RADIANT PANEL
- THERMOSTAT

ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH MECHANICAL DRAWINGS

No.	Revision	Date	Initial
2	ISSUED FOR CONSTRUCTION	NOV. 08/14	JK
1	ISSUED FOR FINAL REVIEW	OCT. 17/14	JK
0	ISSUED FOR CLIENT REVIEW	SEPT. 19/14	JK

Notes:
 1. CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING DIMENSIONS AND EXISTING CONDITIONS AT THE OUTSET OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER. DO NOT PROCEED WITHOUT FURTHER WRITTEN DIRECTION FROM THE ENGINEER.
 2. DRAWING SHOWS GENERAL ARRANGEMENT ONLY. DO NOT SCALE.

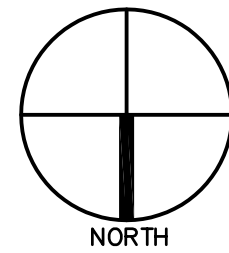
Approved

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LAKEHEAD UNIVERSITY
955 Oliver Rd., Thunder Bay Ontario

FIELDHOUSE - MOKSHA YOGA STUDIO
PARTIAL FLOOR PLANS, KEY PLAN
ELECTRICAL DEMOLITION & RENOVATION
AND ELECTRICAL LEGEND

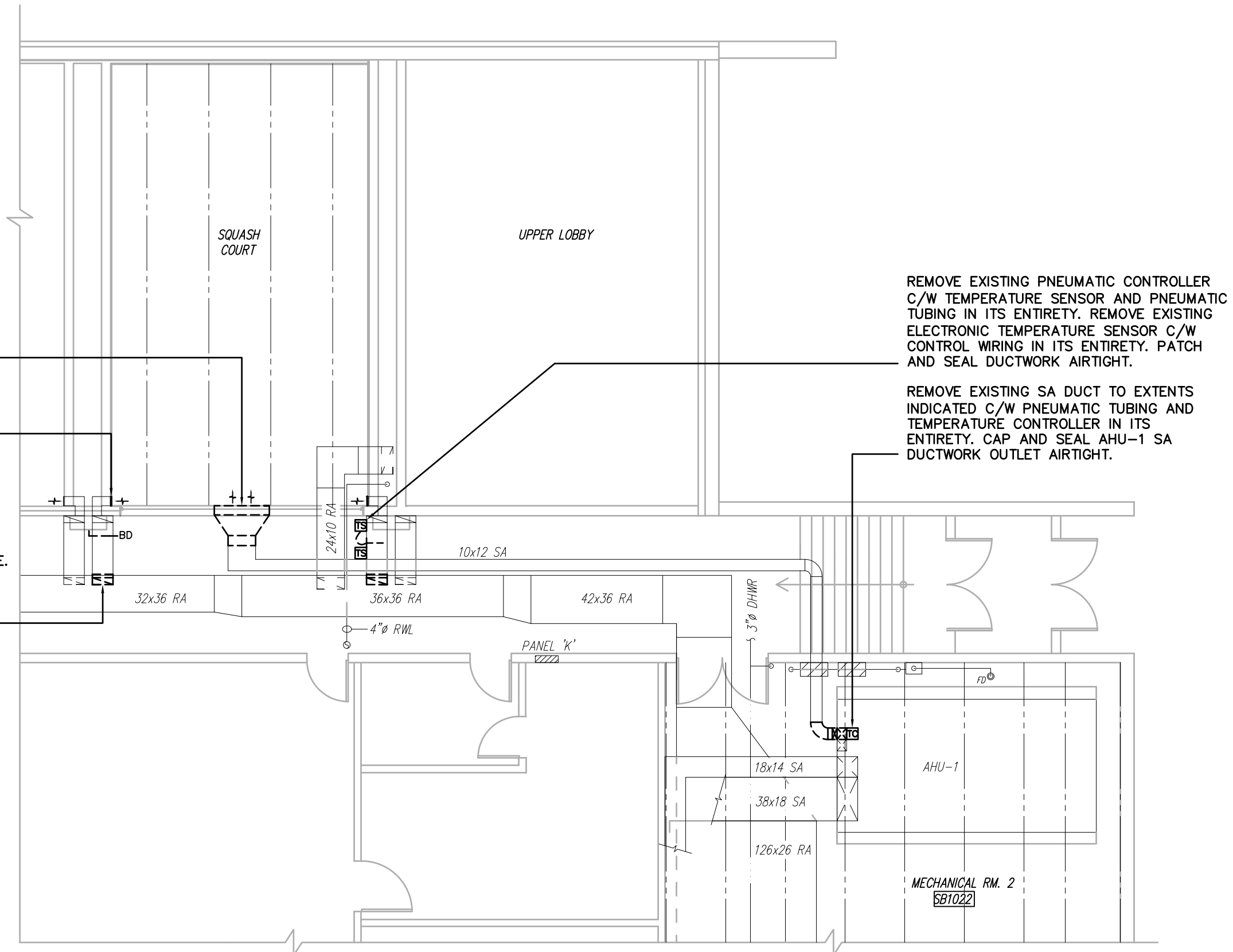
Scale: AS NOTED	Drawn By: SN Ckd. By: JK Dwg. No.: 214060-E1	Date: NOVEMBER 2014	Rev. 2
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REMOVE EXISTING SA DUCT C/W WALL GRILLE TO EXTENTS INDICATED. RETAIN WALL OPNG IN EXISTING 'SQUASH COURT' FOR REUSE.

REMOVE EXISTING RA GRILLE AND RETAIN FOR REUSE. (TYP. OF 2)

DISCONNECT EXISTING RA DUCT BRANCH AND RETAIN FOR REUSE. REMOVE EXISTING BALANCING DAMPER, CAP AND SEAL MAIN RA DUCTWORK AIRTIGHT WITH CROSSBROKEN PATCH. (TYP.)



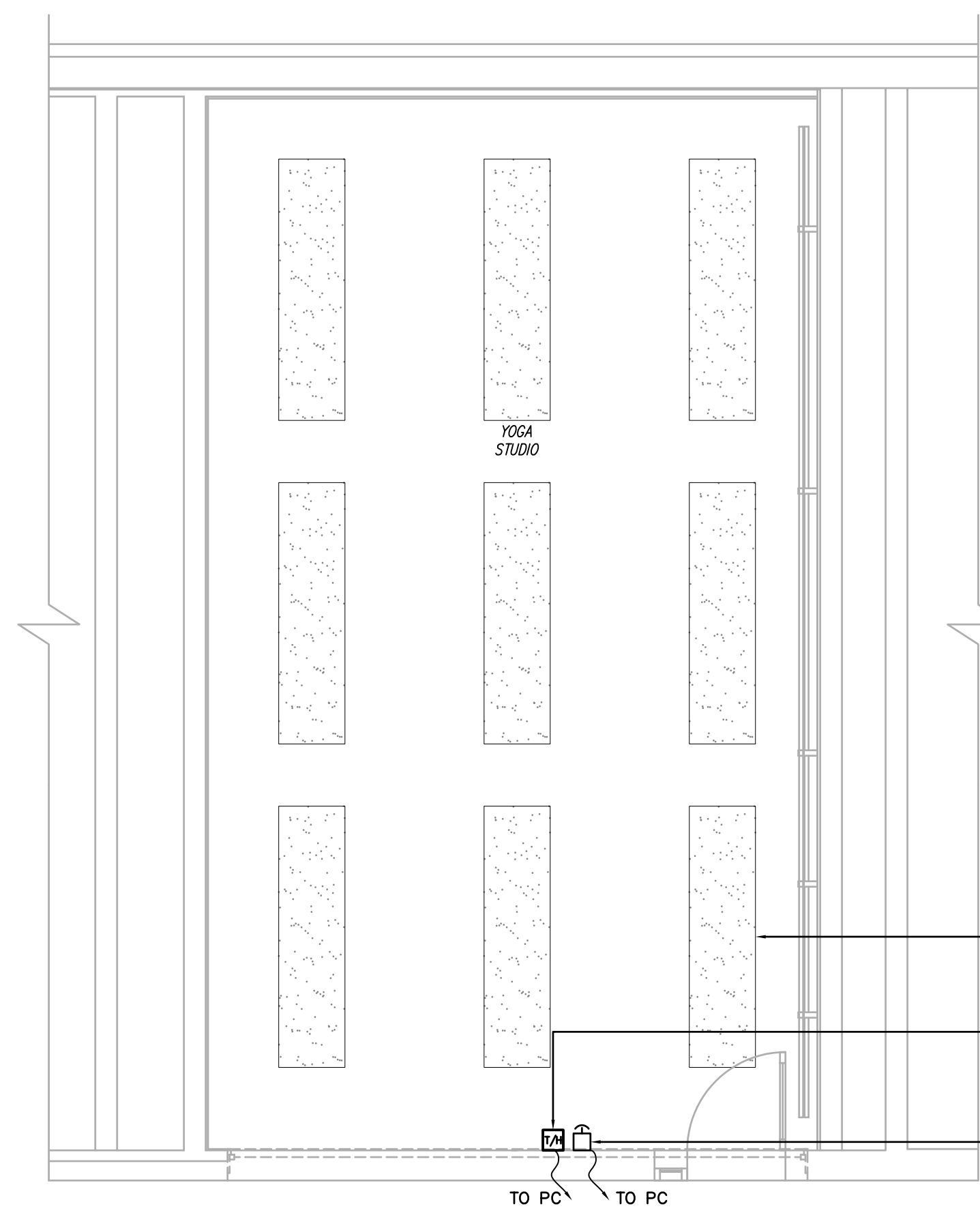
NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.

PARTIAL MAIN FLOOR PLAN - DEMOLITION

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

REMOVE EXISTING PNEUMATIC CONTROLLER C/W TEMPERATURE SENSOR AND PNEUMATIC TUBING IN ITS ENTIRETY. REMOVE EXISTING ELECTRONIC TEMPERATURE SENSOR C/W CONTROL WIRING IN ITS ENTIRETY. PATCH AND SEAL DUCTWORK AIRTIGHT.

REMOVE EXISTING SA DUCT TO EXTENTS INDICATED C/W PNEUMATIC TUBING AND TEMPERATURE CONTROLLER IN ITS ENTIRETY. CAP AND SEAL AHU-1 SA DUCTWORK OUTLET AIRTIGHT.



NOT ALL DUCTWORK AND EQUIPMENT SHOWN FOR CLARITY.

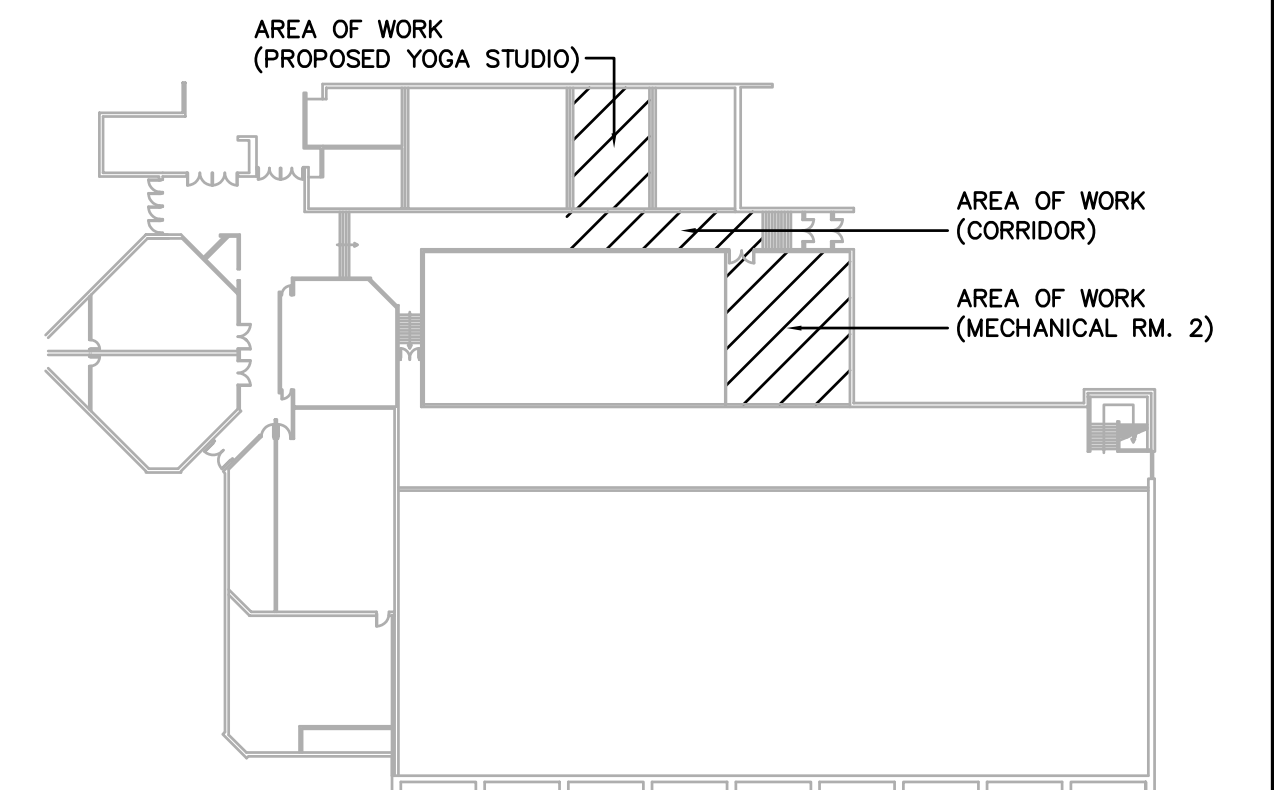
ENLARGED LOWER YOGA STUDIO PLAN - RENOVATION

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

NEW RADIANT HEATING PANEL FOR PANEL REQ'MTS. REFER TO ELECTRICAL DRAWINGS.

PROVIDE NEW REMOTE ERV TEMPERATURE/HUMIDITY CONTROLLER. MOUNT AT 4'-0" AFF.

PROVIDE NEW PURGE MODE PUSH BUTTON. MOUNT AT 4'-0" AFF.

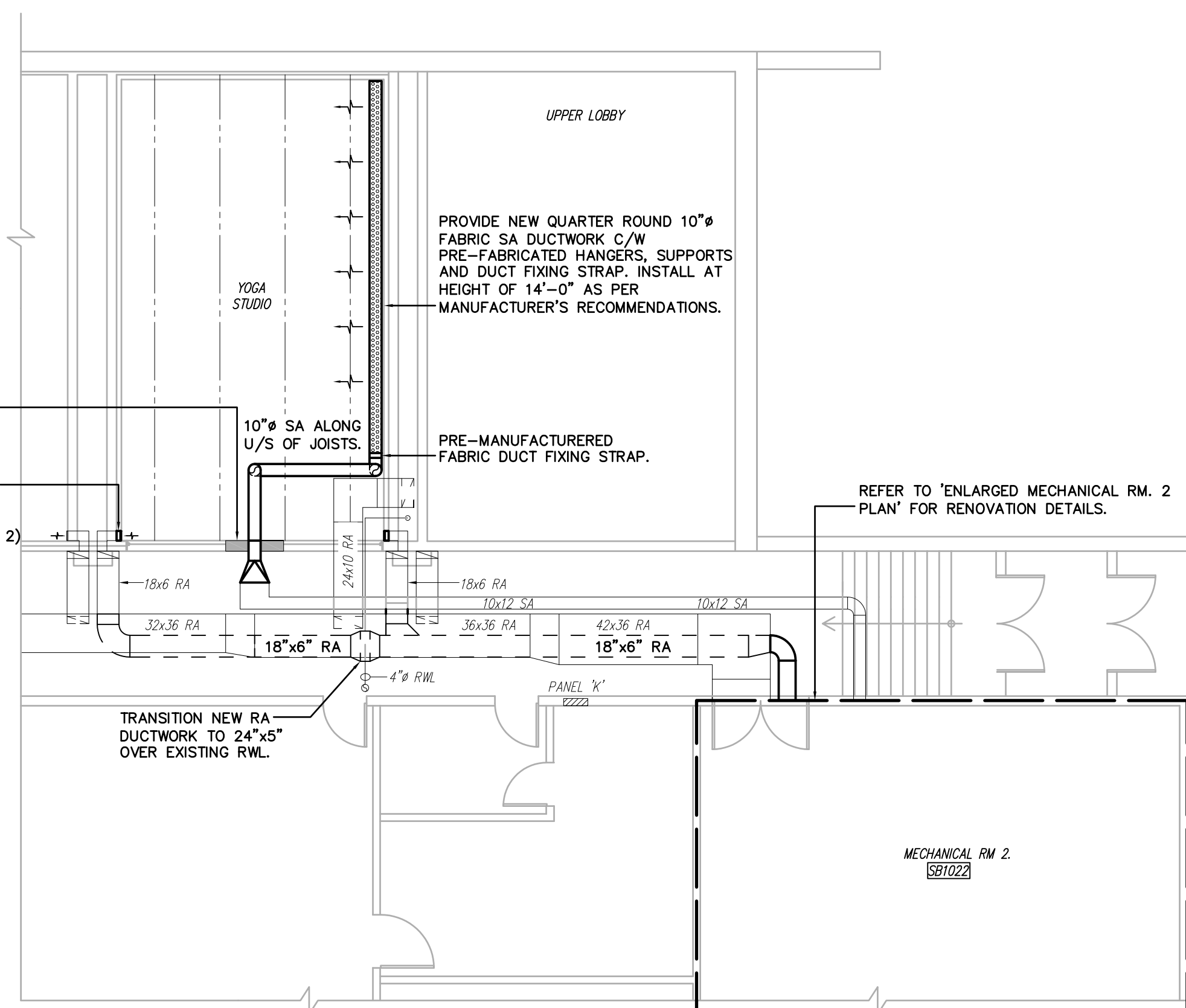


LAKEHEAD UNIVERSITY FIELDHOUSE - KEY PLAN

SCALE: NTS

PATCH AND SEAL REMAINING WALL OPNG TO MATCH EXISTING CONSTRUCTION.

EXTEND EXISTING RA DUCTWORK TO FACILITATE NEW INNER WALL CONSTRUCTION. REINSTALL RETAINED RA GRILLES. (TYP. OF 2)



NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.

PARTIAL MAIN FLOOR PLAN - RENOVATION

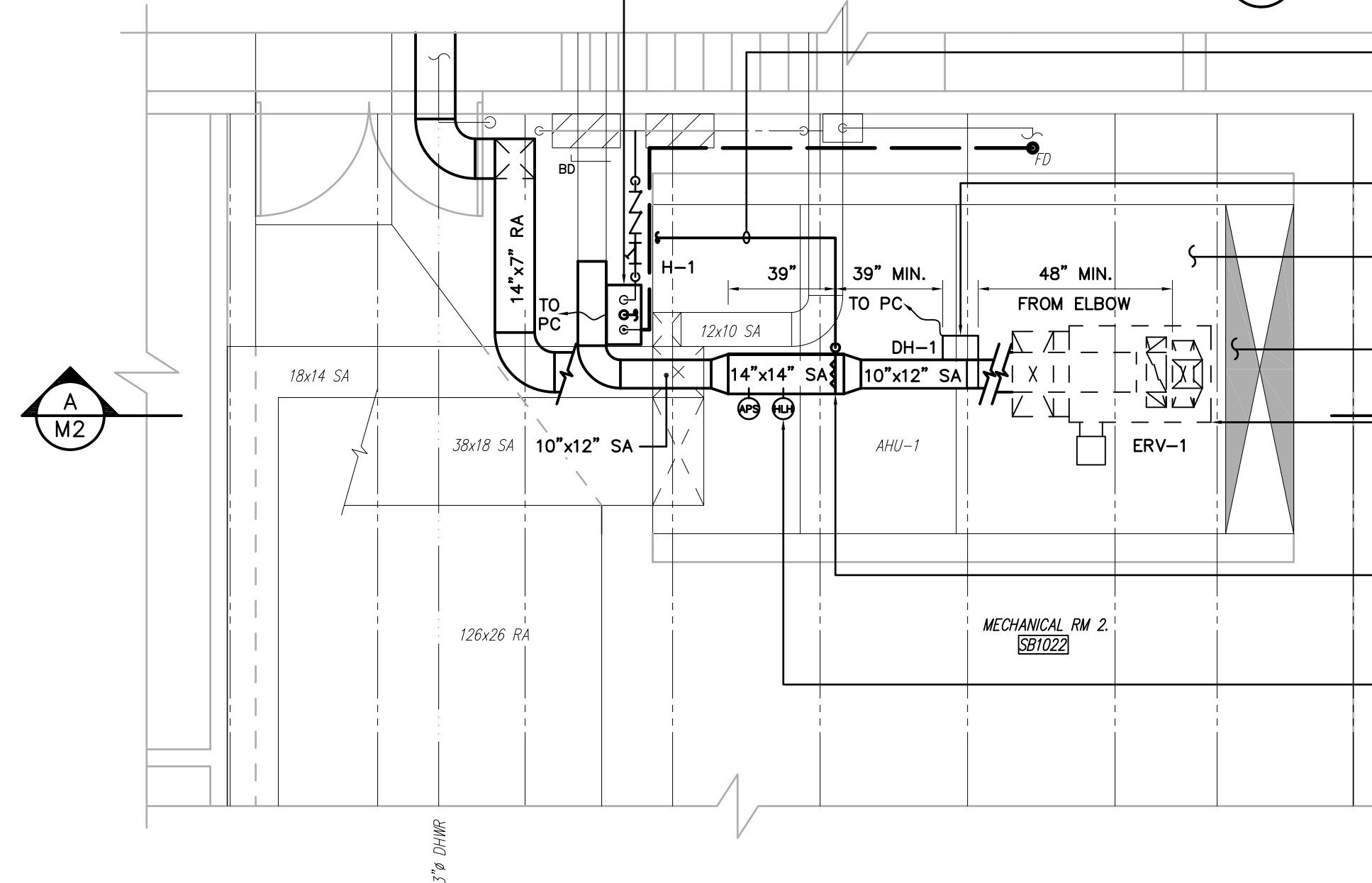
SCALE: 1/8" = 1'-0"

PROVIDE NEW QUARTER ROUND 10" Ø FABRIC SA DUCTWORK C/W PRE-FABRICATED HANGERS, SUPPORTS AND DUCT FIXING STRAP. INSTALL AT HEIGHT OF 14'-0" AS PER MANUFACTURER'S RECOMMENDATIONS.

PRE-MANUFACTURED FABRIC DUCT FIXING STRAP.

REFER TO 'ENLARGED MECHANICAL RM. 2 PLAN' FOR RENOVATION DETAILS.

PROVIDE NEW HUMIDIFIER H-1. PROVIDE NEW 1/2" Ø DCW PIPING C/W BACKFLOW PREVENTOR. ROUTE NEW 1/2" Ø AND 3/4" Ø SAN. PIPING TO EXISTING FLOOR DRAIN AS INDICATED. MOUNT H-1 ON FABRICATED UNISTRUT STAND C/W PLYWOOD BACKING. REFER TO ELECTRICAL DRAWINGS FOR POWER REQ'MTS. FOR INSTALLATION REQ'MTS. REFER TO DETAIL.



NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.

ENLARGED MECHANICAL RM. 2 PLAN - RENOVATION

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

PROVIDE NEW 1 1/2" Ø STEAM LINE C/W IN-DUCT DISTRIBUTOR.

PROVIDE NEW ELECTRIC DUCT HEATER DH-1. REFER TO ELECTRICAL DRAWINGS FOR INSTALLATION REQ'MTS.

RELOCATE EXISTING ELECTRICAL CONDUITS TO FACILITATE NEW ERV-1 AND DUCTWORK. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.

RELOCATE EXISTING PNEUMATIC TUBING TO FACILITATE NEW ERV-1 AND DUCTWORK.

OUTLINE OF NEW ENERGY RECOVERY VENTILATOR ERV-1 LOCATED ON ROOF. FOR INSTALLATION REQ'MTS, REFER TO DETAIL.

TRANSITION NEW SA DUCTWORK TO 14"x14" TO FACILITATE INSTALLATION OF HUMIDIFIER IN-DUCT DISTRIBUTOR.

PROVIDE NEW HIGH LIMIT HUMIDISTAT AND AIR PROVING SWITCH. CONNECT TO NEW HUMIDIFIER H-1.

GENERAL HVAC NOTES:

- CO-ORDINATE DISTRIBUTION DUCTWORK, DIFFUSERS AND GRILLES WITH DOMESTIC WATER PIPING, SANITARY, CONDENSATE PIPING AND CEILING HEIGHTS. INSTALL IN ACCESSIBLE CEILING SPACE WHERE POSSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED. REFER TO ARCHITECTURAL DRAWINGS FOR REFLECTED CEILING PLAN.
- ACOUSTICALLY LINE DUCTWORK WHERE INDICATED ON DRAWING M2.
- PROVIDE ADEQUATE SUPPORT FOR ALL EQUIPMENT, DUCTWORK AND PIPING. PROVIDE SERVICE CLEARANCE FOR ALL EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS.

No.	Revision	Date	Initial
2	ISSUED FOR CONSTRUCTION	NOV. 8/14	RG
1	ISSUED FOR FINAL REVIEW	OCT. 17/14	RG
0	ISSUED FOR CLIENT REVIEW	SEPT. 19/14	RG

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 2. DRAWING SHOWS GENERAL ARRANGEMENT ONLY. DO NOT SCALE.

Approved _____ Approved _____

LICENSED PROFESSIONAL ENGINEER
 R. A. GRAU
 100181428
 NOV 8/14
 PROVINCE OF ONTARIO

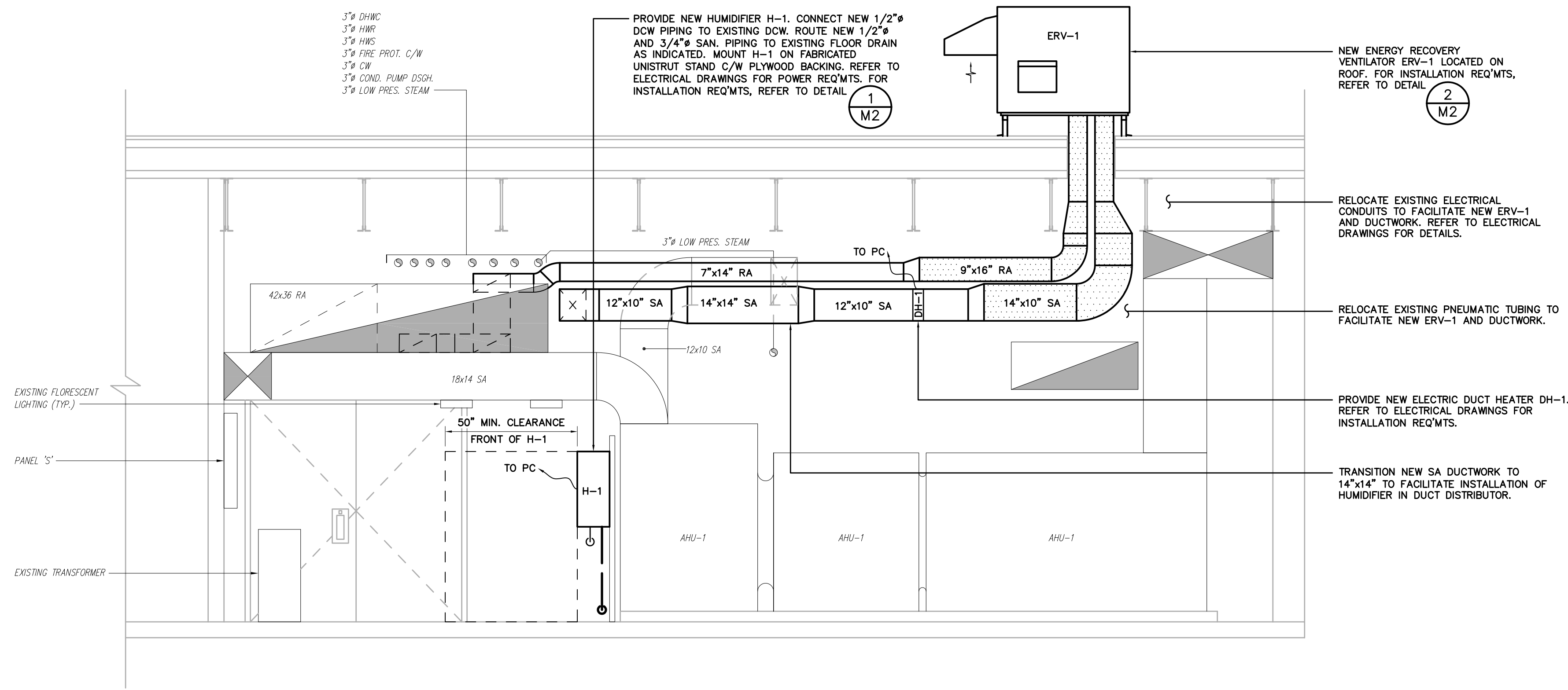
PROFOR
 Engineering Services Ltd.

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LAKEHEAD UNIVERSITY
 955 Oliver Rd., Thunder Bay, Ontario

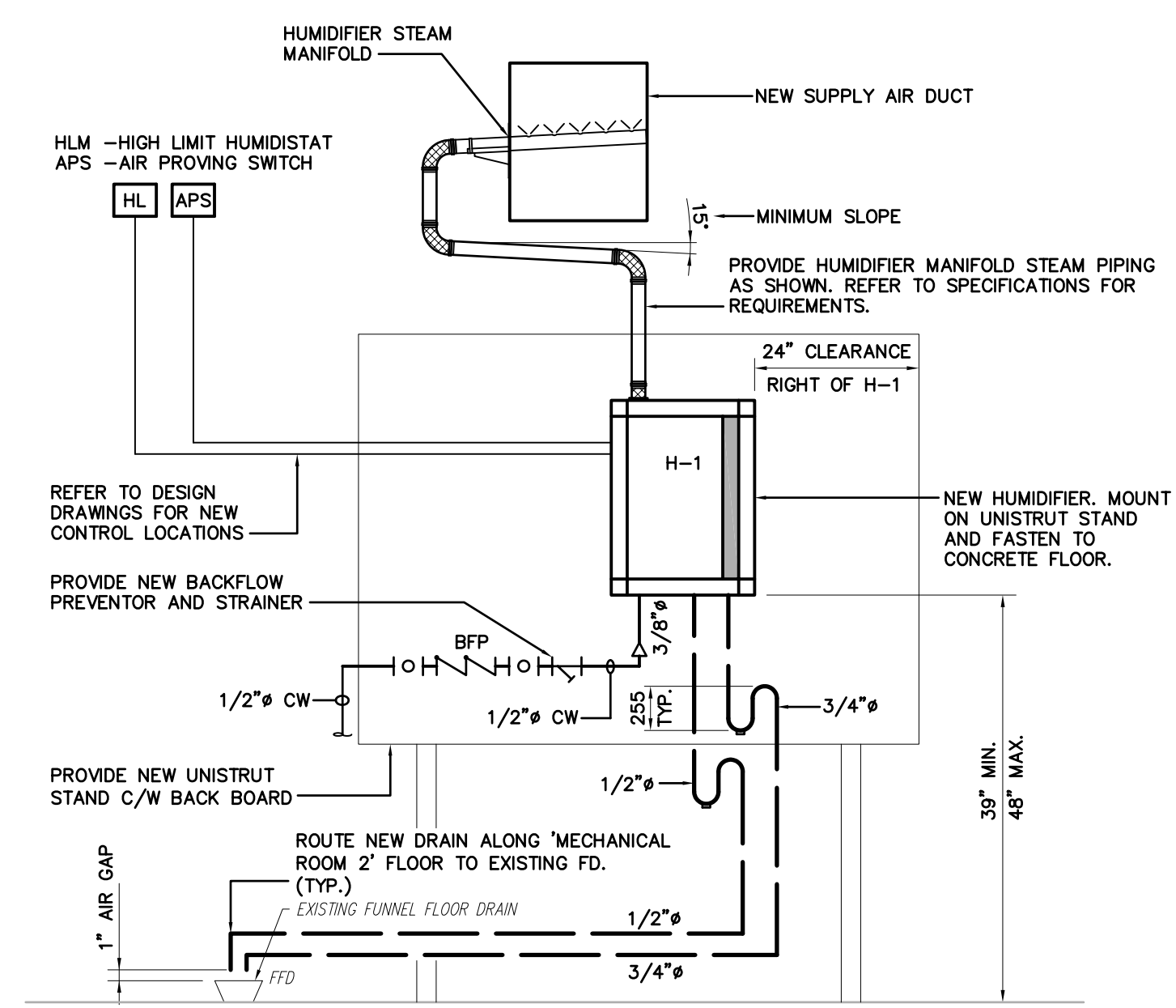
**FIELDHOUSE - MOKSHA YOGA STUDIO
 HVAC DEMOLITION AND RENOVATION**

Scale: AS NOTED	Drawn By: BT Ckd. By: RG/DS Dwg. No.: 214060-M1	Date: NOVEMBER 2014 Rev. 2
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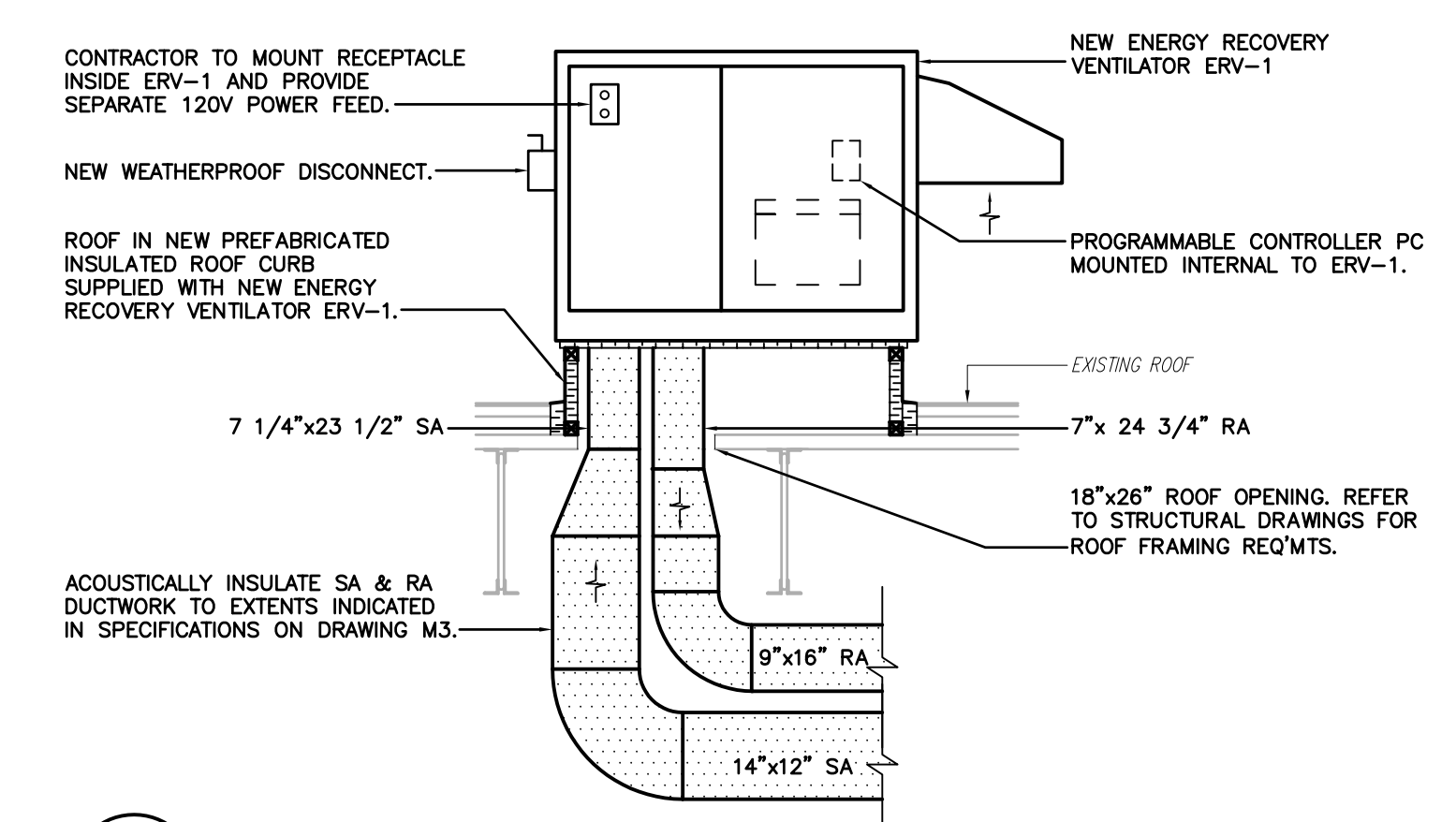


NOT ALL PIPING AND DUCTWORK SHOWN FOR CLARITY.

A SECTION - RENOVATION
SCALE: 3/8" = 1'-0"



1 DETAIL - HUMIDIFIER INSTALLATION
SCALE: NTS



2 DETAIL - ENERGY RECOVERY VENTILATOR INSTALLATION
SCALE: NTS

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Approved _____ Approved _____

LICENSED PROFESSIONAL ENGINEER
R. A. GRAU
100181428
Nov 8/14
PROVINCE OF ONTARIO

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LAKEHEAD UNIVERSITY
955 Oliver Rd., Thunder Bay, Ontario

FIELDHOUSE -- MOKSHA YOGA STUDIO
SECTION AND DETAILS

Scale: AS NOTED	Drawn By: BT Ckd. By: RG/DS Dwg. No.: 214060-M2	Date: NOVEMBER 2014 Rev. 2
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MECHANICAL SPECIFICATIONS

GENERAL

- PROVIDE ALL LABOUR, MATERIAL, EQUIPMENT, FEES, PERMITS AND INSPECTIONS BY OUTSIDE AGENCIES AND CHARGES TO PERFORM ALL OPERATIONS FOR THE COMPLETE INSTALLATION OF THE HVAC AND PLUMBING SYSTEMS AS INDICATED.
- ALL MATERIALS AND INSTALLATION IS TO COMPLY WITH THE ONTARIO BUILDING CODE, NFPA REGULATIONS, ONTARIO FIRE CODE, GAS UTILIZATION CODE, BUILDING STANDARDS FOR THE HANDICAPPED, ONTARIO HYDRO ELECTRICAL CODE AND THE CITY OF THUNDER BAY ENGINEERING STANDARDS.
- MAINTAIN INSURANCE TO FULLY PROTECT OWNER, CONSULTANT AND SELF FROM ANY AND ALL CLAIMS DUE TO ACCIDENTS, MISFORTUNES, ETC., TO LIMITS SET DOWN BY THE OWNER.
- REMOVE ALL WASTE MATERIALS AND CLEAN UP TO OWNER'S SATISFACTION. AT THE END OF THE JOB, CLEAN THE EQUIPMENT AND TOUCH UP FINISH TO RESTORE TO "AS NEW" CONDITION.
- ONLY FIRST CLASS WORKMANSHIP AND GOOD INSTALLATION PRACTICES WILL BE ACCEPTED. USE QUALIFIED TRADESMEN FOR ALL TYPES OF WORK.
- PROVIDE ALL NECESSARY HANGERS AND SUPPORT STEEL FOR YOUR WORK. TOUCH UP PAINT ALL CUT ENDS OF HANGER RODS AND UNISTRUT SUPPORTS WITH GALVANIZED PAINT.
- BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED BY YOUR WORK.
- CONTRACTOR SHALL FULLY PROTECT EXISTING FLOOR SURFACES USING APPROPRIATE COVERING (IE. PLYWOOD) FROM DAMAGE AS A RESULT OF DEMOLITION/INSTALLATION OF EQUIPMENT OR ANY WORK REQUIRED UNDER THE CONTRACT.
- PROVIDE SHOP DRAWINGS FOR MAJOR EQUIPMENT COMPONENTS FOR REVIEW BY THE ENGINEER.
- PATCH AND REPAIR ALL OPENINGS, SURFACES, ETC., TO MAINTAIN INTEGRITY OF FIRE SEPARATIONS AND BUILDING ENVELOPE.
- SCOPE OF WORK IS INTENDED TO BE A GENERAL SUMMARY OF THE WORK AND IS NOT ALL INCLUSIVE AND SHALL BE READ IN CONJUNCTION WITH MECHANICAL DRAWINGS AND ASSOCIATED ELECTRICAL DRAWINGS.
- MECHANICAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS.

PLUMBING

- DOMESTIC WATER PIPING TO BE TYPE 'M' COPPER TO ASTM B88M-86. INSULATE DOMESTIC WATER PIPING WITH 1/2" THICK FIBROUS GLASS SPLIT SECTIONAL PIPE INSULATION COMPLETE WITH VAPOUR BARRIER JACKET AND LONGITUDINAL SELF-SEAL LAP JOINT. COVER EXPOSED INSULATED PIPING, VALVES AND FITTINGS WITH PVC JACKETING. LABEL LINES TO INDICATE SERVICE AND DIRECTION OF FLOW.
- HUMIDIFIER STEAM PIPING, CONDENSATE LINE AND DRAIN PIPING TO BE TYPE 'M' COPPER TO ASTM B88M. INSULATE STEAM PIPING WITH 1 1/2" THICK FIBROUS GLASS SPLIT SECTIONAL PIPE INSULATION COMPLETE WITH VAPOUR BARRIER JACKET AND LONGITUDINAL SELF-SEAL LAP JOINT. COVER EXPOSED INSULATED PIPING, VALVES AND FITTINGS WITH PVC JACKETING.
- INSTALL ALL FIXTURES WITH SHUT-OFF VALVES. SHUT-OFF VALVES TO BE FULL PORT BALL VALVES WITH BRONZE CONSTRUCTION, CHROME PLATED BALL, CONBRACO 70 SERIES OR EQUAL.
- TEST BACKFLOW PREVENTORS AS PER CSA REQUIREMENTS. PROVIDE WRITTEN REPORT.

VENTILATION

- ALL DUCTWORK IS TO BE INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND SHALL BE ERECTED IN AN APPROVED, SUBSTANTIAL AND WORKMANLIKE MANNER. DUCTWORK TO BE TO SMACNA STANDARD. REVIEW STRUCTURAL/ARCHITECTURAL PLANS PRIOR TO FABRICATION OF DUCTWORK SYSTEMS.
- SEAL ALL TRANSVERSE JOINTS WITH WATER BASED HIGH PRESSURE DUCT SEALANT.
- ACOUSTICALLY LINE SUPPLY AND RETURN DUCTWORK; MINIMUM DISTANCE: 10"-0" FROM EQUIPMENT INLET AND OUTLET. DUCT SIZE SHOWN ACCOMMODATES FOR 1" THICK LINACOUSTIC INSULATION. DO NOT INCREASE SIZE.
- PROVIDE ALL CONTROLS FOR EQUIPMENT, INCLUDING THERMOSTATS AND HUMIDISTAT. MOUNT CONTROLS AT 4"-0" ABOVE THE FINISHED FLOOR. WIRE ALL CONTROLS TO MAKE A COMPLETE AND WORKING SYSTEM.
- ALL AIR SYSTEMS SHALL BE BALANCED BY TAB CONTRACTOR INDEPENDENT OF CONTRACTORS PERFORMING CONSTRUCTION WORK TO ±5% OF DESIGN VALUES SHOWN ON DRAWINGS. TAB CONTRACTOR SHALL SUBMIT AIR BALANCE REPORT IN TWO FORMATS: TWO (2) BOUND HARD COPIES AND ELECTRONIC FORMAT ON CD. SUBMIT AIR BALANCE REPORT FOR REVIEW BY THE DESIGN ENGINEER.
- PROVIDE ALL NECESSARY HANGERS AND SUPPORT STEEL FOR EQUIPMENT, DUCTWORK AND PIPING.
- DUCTWORK TO BE INSTALLED AS TIGHT TO STRUCTURE AS POSSIBLE.
- PROVIDE TURNING VANES AT ALL 90° DUCTWORK ELBOWS WHERE INDICATED ON DESIGN DRAWINGS.
- PROVIDE '0.5 D' THROAT RADIUS AT ALL ELBOWS UNLESS SHOWN OTHERWISE.

EQUIPMENT LIST

ERV-1 ENERGY RECOVERY VENTILATOR	SYSTEMAIR ERV 1300RT-EC OUTDOOR ENERGY RECOVERY VENTILATOR COMPLETE WITH DISTECH CONTROLS EGB-300 PROGRAMMABLE CONTROLLER, DOUBLE WALLED 20ga. GALVANIZED STEEL CABINET, 1" FIBERGLASS INSULATION, MERV 11 SUPPLY FILTERS, MERV 7 EXHAUST FILTERS, CORROSION RESISTANT ALUMINUM ROTOR MATRIX, EC-FAN MOTORS WITH BACKWARD INCLINED IMPELLERS, TOTAL ENTHALPHY WHEEL, INTAKE AND EXHAUST GALVANIZED STEEL HOODS, INSULATED MOTORIZED DAMPERS FOR SUPPLY AND EXHAUST PORTS, 12" PRE-FABRICATED ROOF CURB, HINGED DOUBLE ACCESS DOORS, SCR INTERNAL ELECTRIC 8kW PRE-HEAT COIL COMPLETE WITH INTERNAL TEMPERATURE CONTROLLER AND SENSOR, DIRTY FILTER SENSOR, NEMA3 ELECTRICAL DISCONNECT, 208/1/60 POWER. AIRFLOW CAPACITY: 600 CFM @ 0.5" WG ESP
H-1 HUMIDIFIER	NEPTRONIC MODEL SK310M-208-3 ELECTRONIC STEAM HUMIDIFIER COMPLETE WITH ALUMINUM CABINET WITH BACKED ENAMEL FINISH, KEY LOCKED ACCESS DOORS, PERMANENT CLEANABLE STAINLESS STEEL EVAPORATION CHAMBER, MICROPROCESSOR CONTROL WITH LCD SCREEN AND KEYPAD, INCOLOY 800/825 SELF CLEANING HIGH COEFFICIENT THERMAL EXPANSION ELEMENTS, AFEC (ANTI-FOAMING ENERGY CONSERVATION) SYSTEM, SSR (SOLID STATE RELAY) ELEMENT MODULATING CONTROLS, MID-RANGE TEMPERATURE SENSING ELEMENT, DUCT MOUNTED AIR PROVING SWITCH, 0-10 VDC INPUT CONTROL SIGNAL, 208/3/60 POWER. INPUT: 10 kW STEAM CAPACITY: 30.0 LB/HR
DH-1 DUCT HEATER	NEPTRONIC MODEL DC C100H 10"x12" INSERT HORIZONTAL AIRFLOW ELECTRIC DUCT HEATER SUPPLIED COMPLETE WITH OPEN COILS, MAGNETIC CONTACTOR, DISCONNECT SWITCH, AUTOMATIC THERMAL CUTOFF, 24V CONTROL TRANSFORMER, CONTROL FUSE, ELECTRONIC AIRFLOW SENSOR, SCR PROPORTIONAL CONTROLLER, AUXILIARY SWITCH, NEMA 1 CONTROL PANEL, CONTROL BOX WITH LEFT EXTENSION, EXTERNAL 0-10 VDC CONTROL INPUT, 208/1/60 POWER. HEATING CAPACITY: 4kW
FABRIC DUCT	FABRICAIR TREVIRA MODEL CS150 26"-0" LONG QUARTER ROUND DUCT COMPLETE WITH TRIPPLE T-RAIL SUSPENSION, TRIPPLE BULB EDGE, FIXING STRAP, CLIENT LOGO GRAPHIC. COLOUR: RED 1005
BFP BACKFLOW PREVENTOR	CONBRACO MODEL 4A-21-3-A2 REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER, 1/2" CONNECTIONS, C/W STRAINER AND FULL PORT BALL TYPE ISOLATION VALVES.
T/H	ALLURE MODEL EC-SMART-VUE-H REMOTE TEMPERATURE/HUMIDITY CONTROLLER COMPLETE WITH BACK-LIT DISPLAY AND GRAPHIC MENUS.

SCOPE OF WORK

- REMOVE EXISTING SUPPLY AIR DUCTWORK COMPLETE WITH WALL GRILLE, TEMPERATURE CONTROLLER, PNEUMATIC TUBING AND ALL ASSOCIATED COMPONENTS BACK TO SOURCE. CAP AND SEAL AHU-1 SUPPLY AIR OUTLET AIRTIGHT. RETAIN WALL OPENING IN SQUASH COURT FOR REUSE.
- REMOVE EXISTING RETURN AIR DUCTWORK COMPLETE WITH TEMPERATURE SENSORS, PNEUMATIC TUBING AND ALL ASSOCIATED COMPONENTS BACK TO EXTENTS INDICATED ON DESIGN DRAWINGS. CAP AND SEAL MAIN RETURN AIR DUCTWORK OPENING AIRTIGHT.
- ALL DEMOISHED COMPONENTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM SITE UNLESS NOTED OTHERWISE.
- PROVIDE NEW ENERGY RECOVERY VENTILATOR ERV-1 COMPLETE WITH PRE-FABRICATED ROOF CURB. INSTALL ON ROOF ABOVE MECHANICAL ROOM 2 AS INDICATED ON DESIGN DRAWINGS. PROVIDE NEW DISTRIBUTION DUCTWORK AS SHOWN ON DRAWINGS. INTERNALLY INSULATE SUPPLY AND RETURN AIR DUCTWORK TO LIMITS INDICATED AS PER SPECIFICATIONS. RELOCATE EXISTING ELECTRICAL CONDUITS AND PNEUMATIC TUBING TO FACILITATE INSTALLATION OF ERV-1. PROVIDE POWER FEED FROM NEW PANEL 'YOGA' LOCATED IN MECHANICAL ROOM 1. REFER TO SINGLE LINE DISTRIBUTION DIAGRAM ON ELECTRICAL DRAWINGS.
- PROVIDE NEW ELECTRIC DUCT HEATER DH-1. MAINTAIN EQUIPMENT CLEARANCES AS PER MANUFACTURER'S RECOMMENDATIONS. POWER FEED FROM NEW PANEL 'YOGA' LOCATED IN MECHANICAL ROOM 1. REFER TO SINGLE LINE DISTRIBUTION DIAGRAM ON ELECTRICAL DRAWINGS.
- PROVIDE NEW HUMIDIFIER H-1 COMPLETE WITH STEAM PIPING AND DISTRIBUTOR. PROVIDE NEW BACKFLOW PREVENTOR AND ISOLATION VALVES AND CONNECT TO EXISTING DOMESTIC COLD WATER PIPING. ROUTE NEW DRAIN PIPING TO MECHANICAL ROOM FLOOR DRAIN AS INDICATED ON DESIGN DRAWINGS. PROVIDE NEW IN-DUCT AIR PROVING SWITCH AND IN-DUCT HIGH LEVEL HUMIDISTAT AND CONNECT TO NEW HUMIDIFIER. CONSTRUCT NEW UNISTRUT HUMIDIFIER STAND ON SITE AS INDICATED ON DESIGN DRAWINGS. CONNECT NEW POWER FEEDS AND DISCONNECT SWITCH FROM PANEL 'YOGA'. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS AND AS PER INSTALLATION DETAIL ON DESIGN DRAWING.
- PROVIDE NEW QUARTER ROUND FABRIC SUPPLY AIR DUCTWORK COMPLETE WITH PRE-FABRICATED HANGERS, SUPPORTS, AND FIXING STRAP. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
- COMMISSION ALL NEW HVAC EQUIPMENT TO VERIFY PROPER OPERATION. COMMISSIONING WORK TO BE PERFORMED IN CONJUNCTION WITH THE DESIGN ENGINEER TO VERIFY THE PROPER FUNCTIONING OF THE MECHANICAL SYSTEMS IN ACCORDANCE WITH THE SEQUENCE OF OPERATIONS. COMMISSIONING TO INCLUDE SYSTEM DEMONSTRATION AND OPERATOR TRAINING.
- DURING CONSTRUCTION KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DESIGN DRAWINGS AND THAT WHICH IS INSTALLED. PROVIDE AS-BUILT DRAWINGS TO REFLECT THE ACTUAL INSTALLED CONFIGURATION AND SUBMIT TO THE DESIGN ENGINEER.
- PROVIDE OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT. O&M MANUALS SHALL BE SUBMITTED IN TWO FORMATS; BOUND HARD COPY AND ELECTRONIC FORMAT ON CD. SUBMIT O&M MANUALS TO THE DESIGN ENGINEER.

SEQUENCE OF OPERATIONS

ENERGY RECOVERY VENTILATOR ERV-1, DUCT HEATER DH-1 & HUMIDIFIER H-1

A PROGRAMMABLE CONTROLLER SHALL PROVIDE A WEEKLY USER DEFINED SCHEDULE FOR THE OPERATION OF THE ENERGY RECOVERY VENTILATOR ERV-1, DUCT MOUNTED HEATER DH-1 AND HUMIDIFIER H-1.

OCCUPIED MODE

THE ENERGY RECOVERY VENTILATOR SHALL RUN CONTINUALLY DURING OCCUPIED HOURS.

THE PROGRAMMABLE CONTROLLER SHALL ENERGIZE THE ENERGY RECOVERY VENTILATOR UPON PROOF OF OUTDOOR AND EXHAUST AIR MOTORIZED DAMPER OPENING, THE SUPPLY AND EXHAUST FANS SHALL BE ENERGIZED.

THE PROGRAMMABLE CONTROLLER SHALL MODULATE THE ERV'S INTERNAL ELECTRIC PREHEAT COIL TO MAINTAIN 7°F DISCHARGE AIR TEMPERATURE INTO THE ENERGY RECOVERY WHEEL.

THE PROGRAMMABLE CONTROLLER SHALL FIX THE SPEED OF THE ENERGY RECOVERY WHEEL TO ACHIEVE MAXIMUM ENERGY RECOVERY.

THE PROGRAMMABLE CONTROLLER SHALL MODULATE THE ELECTRIC DUCT HEATER DH-1 OUTPUT AS REQUIRED TO SATISFY A SUPPLY AIR TEMPERATURE SETPOINT OF 90°F.

THE PROGRAMMABLE CONTROLLER SHALL MODULATE THE ELECTRIC HUMIDIFIER H-1 OUTPUT TO MAINTAIN A ROOM HUMIDITY SETPOINT OF 30 % RH. A DUCT MOUNTED HIGH LIMIT HUMIDISTAT AND AIR PROVING SWITCH SHALL DISABLE HUMIDIFIER OPERATION UPON SENSING A RISE IN HUMIDITY ABOVE SETPOINT OR A LOSS OF SYSTEM AIRFLOW.

UNOCCUPIED MODE

DURING UNOCCUPIED HOURS, THE PROGRAMMABLE CONTROLLER SHALL DE-ENERGIZE THE ENERGY RECOVERY VENTILATOR, DUCT MOUNTED HEATER AND HUMIDIFIER. THE ERV'S MOTORIZED OUTDOOR AND EXHAUST AIR DAMPERS SHALL MOVE TO THE CLOSED POSITION.

PURGE MODE

WHEN INITIATED BY THE USER PUSH BUTTON, THE PURGE MODE SHALL RUN FOR A DURATION OF 30 MINUTES.

THE ENERGY RECOVERY VENTILATOR SHALL RUN CONTINUALLY DURING PURGE MODE.

THE PROGRAMMABLE CONTROLLER SHALL ENERGIZE THE ENERGY RECOVERY VENTILATOR UPON PROOF OF OUTDOOR AND EXHAUST AIR MOTORIZED DAMPER OPENING, THE SUPPLY AND EXHAUST FANS SHALL BE ENERGIZED.

THE PROGRAMMABLE CONTROLLER SHALL MODULATE THE ERV'S INTERNAL ELECTRIC PREHEAT COIL TO MAINTAIN 7°F DISCHARGE AIR TEMPERATURE INTO THE ENERGY RECOVERY WHEEL.

THE PROGRAMMABLE CONTROLLER SHALL MODULATE THE SPEED OF THE ENERGY RECOVERY WHEEL TO ACHIEVE A SUPPLY AIR TEMPERATURE SETPOINT OF 60°F.


THE PROGRAMMABLE CONTROLLER SHALL MODULATE THE ELECTRIC DUCT HEATER DH-1 OUTPUT AS REQUIRED TO SATISFY THE SUPPLY AIR TEMPERATURE SETPOINT OF 60°F.

THE PROGRAMMABLE CONTROLLER SHALL DE-ENERGIZE THE ELECTRIC HUMIDIFIER H-1.

No.	Revision	Date	Initial
2	ISSUED FOR CONSTRUCTION	NOV. 8/14	RG
1	ISSUED FOR FINAL REVIEW	OCT. 17/14	RG
0	ISSUED FOR CLIENT REVIEW	SEPT. 19/14	RG

Notes:

- CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING DIMENSIONS AND EXISTING CONDITIONS AT THE OUTSET OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER. DO NOT PROCEED WITHOUT FURTHER WRITTEN DIRECTION FROM THE ENGINEER.
- DRAWING SHOWS GENERAL ARRANGEMENT ONLY. DO NOT SCALE.

Approved	Approved
	


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FIELDHOUSE -- MOKSHA YOGA STUDIO
 MECHANICAL SPECIFICATIONS
 EQUIPMENT LIST, SCOPE OF WORK
 AND SEQUENCE OF OPERATIONS

Scale:	Drawn By: BT	Date:	
NA	Ckd. By: RG/DS	NOVEMBER 2014	
	Dwg. No.: 214060-M3	Rev. 2	