(16)

CITY OF PORTLAND, OREGON - BUREAU OF DEVELOPMENT SERVICES

1900 SW Fourth Avenue, Suite 5000 • Portland, Oregon 97201 • www.portlandonline.com/bds • Fax 503-823-7425

Facility Permit Plan Intake Form

FOR INTAKE, STAFF USE ONLY

Date Received 4-6-12

Building Registration # 01-126359-FC

Fixed Bid

Bin # F5

Building Permit # 2-128419-FA

Mechanical # 2-128425-FA

Plumbing Permit #

Electrical Permit #

Building/Mechanical Tom 1

Electrical Lee

Plumbing Wes 3

Fire Gary 2

Planning

BES

PDOT

Structural

Other

APPLICANT: Complete all sections below that apply to the project. Please print legibly.

Print Name JACKIE GILLES Sign Name Jackie Gilles 3480141

Street Address 110 NW 1ST AVE, SUITE 300

City PORTLAND State OR Zip Code 97209

Day Phone 503-280-8000 FAX 503-224-5442 email jackie.gilles@ohpd.net

Plans / permits available for pick up at 1900 SW 4th Avenue, 2nd floor between 8:00 am to 5:00 pm

Contact Name for plan/permit pick up JACKIE GILLES

Day Phone 503-280-8000 email jackie.gilles@ohpd.net

Project Building Name / # OHSU - RICHARD JONES HALL, 6TH FLOOR

Project Address or Location 3181 SW SAM JACKSON PARK RD, PORTLAND, OR 97201

Project Name and Description OHSU MMI LAB REMODEL - PHASE I

Total Project Value $124,000 Project Reference #/Billing ID # 12-RJH-125

Building Contractor WILLINE CONSTRUCTION CCB # 51880

Mechanical Contractor CCB #

Electrical Contractor CCB# License #

Plumbing Contractor CCB# License #

☒ **Building Permit**

No. of Stories 7

Const. Type 1B

(Y) [N] Alarms Required

(Y) [N] Smoke Det. Req'd

(Y) [N] Sprinklers Req'd

[Y] (N) Struct. Eng / Calcs Submitted

☐ **Mechanical Permit**

Mechanical Valuation $30,460

Description AIR REBALANCING

☐ **Electrical Permit**

Please provide a completed standard electrical permit application form. You may mail or deliver it to 1900 SW 4th Avenue, Portland, Oregon 97201 or FAX to 503-823-7425.

☐ **Plumbing Permit**

Number of Fixtures

Back Flow Devices

Water Service (# of Feet)

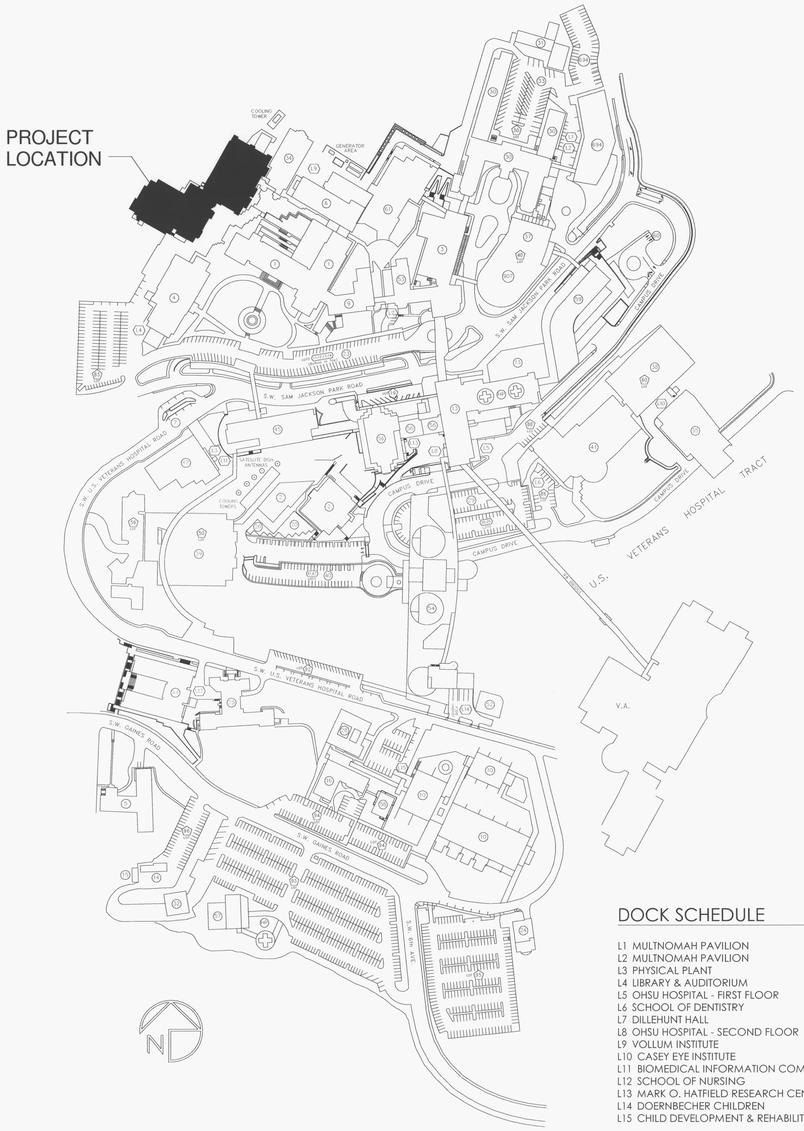
Medical Gas

Other

OREGON HEALTH & SCIENCE UNIVERSITY

BUILDING KEY

1. MACKENZIE HALL
2. FITNESS AND SPORTS CENTER & POOL
3. SAM JACKSON HALL
4. LIBRARY & AUDITORIUM
5. GAINES HALL
6. MEDICAL RESEARCH BUILDING
7. INFORMATION/PARKING BOOTH
9. BAIRD HALL
10. CHILD DEVELOPMENT & REHABILITATION CENTER
12. RICHARD T. JONES HALL
13. OHSU HOSPITAL
14. GREENHOUSE 1
15. GREENHOUSE 2
16. CHILD DEVELOPMENT & REHABILITATION CENTER (WEST)
17. PHYSICAL PLANT
20. MODULAR BUILDING STRUCTURE
23. PARKING STRUCTURE 1 SAM JACKSON PARKING STRUCTURE
24. DOTTER RESEARCH LABORATORY
25. CAMPUS SERVICES BUILDING
28. BUILDING 28
29. PARKING STRUCTURE 2 CAMPUS DRIVE PARKING STRUCTURE
31. EMMA JONES HALL
32. MOTOR POOL (INCINERATOR)
33. PARKING STRUCTURE 3 EMMA JONES PARKING STRUCTURE
34. VOLLUM INSTITUTE FOR ADVANCED BIOMEDICAL RESEARCH
35. CASEY EYE INSTITUTE
37. PARKING STRUCTURE 4
38. PARKING STRUCTURE 6 PHYSICIANS' PAVILION PARKING STRUCTURE CASEY EYE PARKING STRUCTURE
39. PARKING STRUCTURE 5 CANYON PARKING STRUCTURE
40. PARKING STRUCTURE 8 DOERNBECHER PARKING STRUCTURE
41. SCHOOL OF DENTISTRY
44. SCHOOL OF NURSING
45. BIOMEDICAL INFORMATION COMMUNICATION CENTER
52. HAZARDOUS WASTE STORAGE
53. DILLEHUNT HALL
54. DOERNBECHER CHILDREN'S HOSPITAL
56. MARK O. HATFIELD RESEARCH CENTER
57. ENERGY MANAGEMENT CENTER
58. 3T MRI BUILDING
59. PETER O. KOHLER PAVILION
60. PARKING STRUCTURE 9 PETER O. KOHLER PAVILION
61. BIOMEDICAL RESEARCH BUILDING
694. SHRINERS HOSPITAL
907. PHYSICIAN'S PAVILION
HP. HELIPORT



DOCK SCHEDULE

L1 MULTNOMAH PAVILION
L2 MULTNOMAH PAVILION
L3 PHYSICAL PLANT
L4 LIBRARY & AUDITORIUM
L5 OHSU HOSPITAL - FIRST FLOOR
L6 SCHOOL OF DENTISTRY
L7 DILLEHUNT HALL
L8 OHSU HOSPITAL - SECOND FLOOR
L9 VOLLUM INSTITUTE
L10 CASEY EYE INSTITUTE
L11 BIOMEDICAL INFORMATION COMMUNICATION CENTER
L12 SCHOOL OF NURSING
L13 MARK O. HATFIELD RESEARCH CENTER - SECOND FLOOR
L14 DOERNBECHER CHILDREN
L15 CHILD DEVELOPMENT & REHABILITATION CENTER - SECOND FLOOR

RICHARD JONES HALL, 6th FLOOR
MMI LAB REMODEL
OHSU PROJECT #12-RJH-125

CONSTRUCTION DOCUMENTS

CONTACT INFORMATION

OWNER
Oregon Health & Science University
Facilities Management and Construction
3505 SW US Veterans Hospital Road
Portland, OR, 97201-2940
Contact: John Novak, Project Manager
Email: novakjo@ohsu.edu
Telephone: (503) 494-4594

GENERAL CONTRACTOR
Inline Commercial Construction
18880 SW Shaw Street
Aloha, OR, 97006
Contact: Jon Sandquist, Project Manager
Email: jons@inline-cc.com
Telephone: (503) 906-3987
Fax: (503) 649-3301

ARCHITECT
Oh planning + design, architecture
115 NW First Avenue, Suite 300
Portland, OR 97209
Contact: Jackie Gilles, Project Manager
Email: jackie.gilles@ohpd.net
Telephone: (503) 280-8000
Fax: (503) 224-5442

MECHANICAL ENGINEER
Mazzetti Nash Lipsey Burch
520 SW Sixth Avenue
Portland, OR, 97201
Contact: Contact William Caron, Senior Associate
Email: williamc@mazzetti.com
Telephone: (503) 601-5963
Fax: (503) 445-6288

ELECTRICAL ENGINEER
Mazzetti Nash Lipsey Burch
520 SW Sixth Avenue
Portland, OR, 97201
Contact: Michael Holt, Senior Electrical Designer
Email: michaelh@mazzetti.com
Telephone: (503) 601-5968
Fax: (503) 445-6288

PROJECT SUMMARY

EQUIPMENT RELOCATION ON 6TH FLOOR, RICHARD JONES HALL
PROJECT AREA: 1,743 SF

THERE WILL BE NO STRUCTURAL MODIFICATIONS TO THE BUILDING.

DRAWING INDEX

- GENERAL -

FLS CODE SUMMARY FIRE EXITING AND SEPARATION

- ARCHITECTURAL -

A1.0 EQUIPMENT MOVE/SURPLUS FLOOR PLAN
A2.0 EQUIPMENT RELOCATION FLOOR PLAN

- MECHANICAL -

M0.1 MECHANICAL COVER SHEET
M0.2 HVAC DETAILS & SCHEDULES
M2.0 SIXTH FLOOR HVAC

- ELECTRICAL -

E1.0 ELECTRICAL SYMBOLS, SCHEDULES
E2.0 ELECTRICAL NEW WORK

DEFERRED SUBMITTALS

Section 07 8413 - Penetration Firestopping - Bidder Design
Section 28 3100 - Fire Detection & Alarm Systems - Bidder Design

PROJECT DATA

PROJECT LOCATION
OREGON HEALTH & SCIENCE UNIVERSITY,
MARQUAM HILL
RICHARD T. JONES HALL - 6TH FLOOR

OCCUPANCY:
B OCCUPANCY

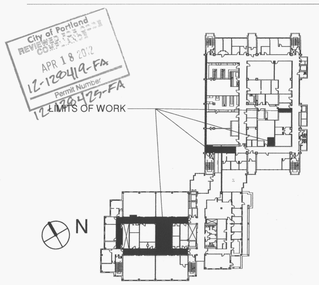
CONSTRUCTION:
TYPE 1B, FULLY SPRINKLERED

BUILDING DESCRIPTION:
7 STORIES PLUS BASEMENT

APPLICABLE CODES

Reference Codes:
OSSC: Oregon Structural Specialty Code, 2010 Edition (2006 IBC with Oregon Amendments)
OMSC: Oregon Mechanical Specialty Code, 2010 Edition (2006 IMC with Oregon Amendments and the 2006 IFGC as an appendix)
OPSC: Oregon Plumbing Specialty Code, 2011 Edition (2006 Uniform Plumbing Code, Chapters 2 through 11, 13, 14, 15 and 16; and Appendices A, B, D, E, J, and I; 2002 edition of NFPA 99C, Medical Gas and Vacuum Systems Standard; Oregon amendments)
OESC: Oregon Electrical Specialty Code, 2011 Edition (2008 NEC with Oregon Amendments)
OFC: Oregon Fire Code, 2007 Edition (2006 IFC with Oregon Amendments and Portlant Amendments)

KEY PLAN



City of Portland
REVIEWED FOR CODE COMPLIANCE
APR 18 2012
12-128419-FA
Permit Number
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OREGON HEALTH & SCIENCE UNIVERSITY
OHSU

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Contact: Michael Holt, LEED AP

MMI Lab Remodel - Phase 1

REGISTERED ARCHITECT
DEBORAH K. FRANCE
PORTLAND, OR
06/30/12
#5530
STATE OF OREGON

Date:	04/03/12
Project Number:	40032
Drawn By:	JG
Checked By:	DF

Revisions:

OHSU PROJECT #12-RJH-125

COVER SHEET

CS1

4/4/2012 1:19:10 PM

12-128419-FA
12-128425-FA
F5

1 (FLS) FIRE LIFE SAFETY PLAN
3/32" = 1'-0"

FILL PATTERN LEGEND

EXIT / PATH OF TRAVEL / EXIT EXIT / DIRECTIONAL — EXIT SIGNS (GENERALLY CROSS CORRIDOR AND MAIN EXITS INDICATED ON PLANS. ADDITIONAL EXIT SIGNAGE MAY OR MAY NOT BE SHOWN AND MAY BE REQUIRED BY FIRE MARSHALL)

2 HR OCCUPANCY SEPARATION - 90 MIN DOORS
1 HOUR REQUIRED BETWEEN I-2 & B OCCUPANCIES PER OSSC TABLE 508.3.3
2 HOUR REQUIRED FOR HORIZONTAL EXIT PER OSSC 1022.2

LAB/OFFICE/MECHANICAL ROOM

(EXISTING)
2 HR RATED FIRE & SMOKE CONSTRUCTION - 90 MIN DOORS
STAIRWAY ENCLOSURES - HORIZONTAL EXITS - EXIT ENCLOSURES

2 HR RATED VERTICAL SHAFTS
NOTE: ALL VERTICAL SHAFTS, WHETHER DESIGNATED ON DRAWING OR NOT, ARE REQUIRED TWO HOUR RATING PER OSSC 707.4
- ELEVATOR SHAFT WALLS
- MECHANICAL CHASES
- TRASH & LINEN CHUTES (90 MIN. RATED DOORS)
- ELECTRICAL CHASES

(EXISTING)
1 HR RATED FIRE & SMOKE CONSTRUCTION - 45 MIN DOORS
- LINEN/SOILED UTILITY
- STORAGE OVER 100SF
- WASTE COLLECTION
- GAS CYLINDER STORAGE
- ELECTRICAL ROOMS / TRANSFORMERS OVER 112.5KVA ACCUMULATIVE
- MECHANICAL ROOMS OVER 400,000 BTU PER HOUR INPUT

(EXISTING)
4 HR BUILDING SEPARATION

EGRESS CORRIDOR - WIDTH 44" MIN.

69' COMMON-PATH-OF-EGRESS TRAVEL:

EXIT-ACCESS TRAVEL DISTANCE:

A FIRE ALARM

FP FIRE PULL SWITCH

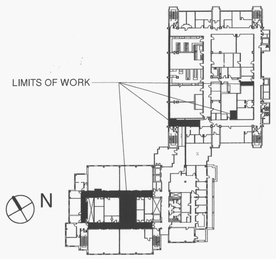
S FIRE STROBE

X/H FIRE EXTINGUISHER/ HOSE

GENERAL NOTES

1. THESE ARCHITECTURAL DOCUMENTS ARE FOR REFERENCE ONLY. THEY HAVE BEEN PREPARED, IN PART, BASED ON INFORMATION FURNISHED BY THE OWNER AND ARE NOT BASED ON PREVIOUS PROJECTS AS-BUILT CONTRACT DOCUMENTS. THE ARCHITECT DOES NOT ENSURE THAT ALL CONDITIONS HAVE BEEN NOTED OR ACCURATELY DOCUMENTED. USERS OF THESE DOCUMENTS SHOULD INDEPENDENTLY VERIFY ALL PAERTINENT INFORMATION AND CONDITONS. DO NOT CONSTRUE INFORMATION CONTAINED WITHIN THESE DRAWINGS TO ALLOW WORK NOT CONFORMING TO APPLICALBE CODES OR REQEUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
2. FIRE AND LIFE SAFETY INFORMATION FOR EXISTING IMPROVEMENTS INDICATED ON THIS AND OTHER DRAWINGS WITHIN THIS SET IS BASED ON DRAWING FLS-5 "FIRE/LIFE SAFETY CODE SUMMARY DIAGRAMS," AND FLS-6 "FIRE/LIFE SAFETY CODE SUMMARY DIAGRAMS," PROVIDED BY OWNER.
3. BUILDING IS FULLY SPRINKLERED.

KEY PLAN



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MMI Lab Remodel - Phase 1

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CODE SUMMARY FIRE EXITING AND SEPARATION

FLS

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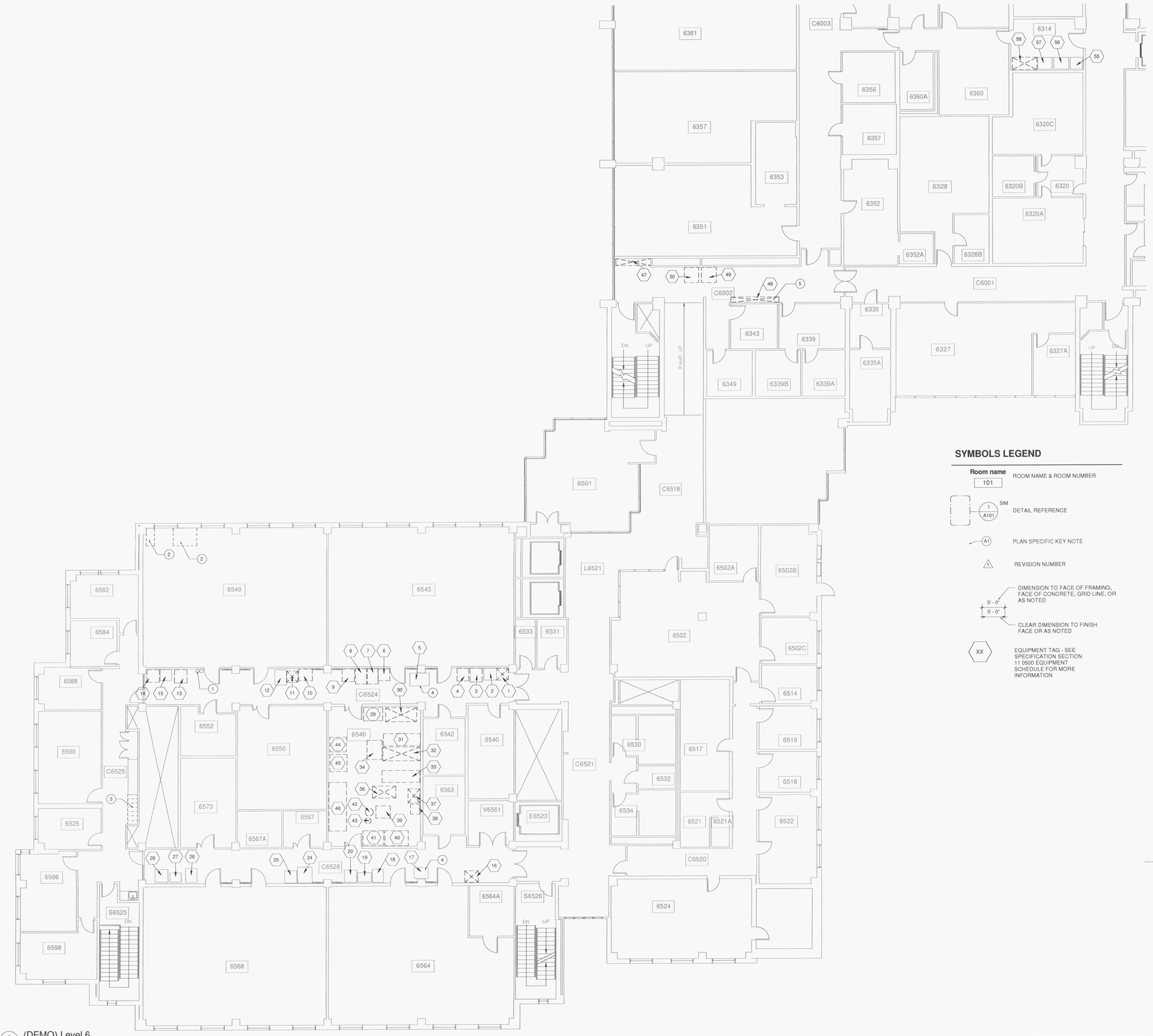


1 (DEMO) Level 6
1/8" = 1'-0"

SYMBOLS LEGEND

- Room name / 101 — ROOM NAME & ROOM NUMBER
- 1 A101 SIM — DETAIL REFERENCE
- A1 — PLAN SPECIFIC KEY NOTE
- 1 — REVISION NUMBER
- 5' - 0" / 5' - 0" — DIMENSION TO FACE OF FRAMING, FACE OF CONCRETE, GRID LINE, OR AS NOTED; CLEAR DIMENSION TO FINISH FACE OR AS NOTED
- XX — EQUIPMENT TAG - SEE SPECIFICATION SECTION 11 0500 EQUIPMENT SCHEDULE FOR MORE INFORMATION

GENERAL NOTES

1. ALL WORK TO COMPLY WITH 2010 OREGON STRUCTURAL SPECIALTY CODE.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH U.N.O. DO NOT MEASURE DRAWINGS TO DETERMINE DIMENSIONS. LARGE SCALE DETAILS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH U.N.O.
3. ALL AREAS OF DEMOLITION SHALL BE CLEARED AND CLEANED OF ALL ITEMS AND PREPARED TO RECIEVE NEW CONSTRUCTION, UNLESS NOTED OTHERWISE.
4. VERIFY LIMITS OF DEMOLITION PRIOR TO COMMENCING WORK.
5. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONSTRUCTION AND RELATED CONDITIONS PRIOR TO STARTING DEMOLITION OR NEW CONSTRUCTION. CONTRACTOR TO INFORM ARCHITCT OF ANY DISCREPANCIES WITHIN DRAWINGS OR BETWEEN DRAWINGS AND FIELD CONDITIONS BEFORE COMMENCEMENT OF AFFECTED WORK.
7. FOR ADDITIONAL DEMOLITION INFORMATION, SEE ALL CONSULTANT'S DRAWINGS.
8. LOCATE AND VERIFY EXISITTENCE AND USE OF EXISTING UTILITIES. TAKE NECESSARY MEASURES TO PROTECT AND PRESERVE FUNCTION AND CONDITION OF ANY UTILITIES TO BE REPAIRED, REPLACED OR REUSED IN NEW CONSTUCTION.
9. COORDINATE WITH OWNER REGARDING ANY WORK THAT IS TO OCCUR IN THE CEILING OF THE FLOOR BELOW SO AS NOT DISRUPT THE FUNCTIONS OF THE OWNER'S OCCUPIED AREA. CONTRACTOR TO REPLACE CEILING TO MATCH EXISTING ADJACENT CONSTRUCTION AND FINISH, UNLESS NOTED OTHERWISE.
10. REMOVAL OF EXISTING PLUMBING FIXTURES SHALL INCLUDE CAPPING OF PIPING AND WASTE LINES.
11. ALL ACOUSTICAL CEILINGS AND RELATED SUPPORT SYSTEMS TO BE REMOVED SHALL INCLUDE CEILING TILES, LIGHT FIXTURES, GRILLES, DIFFUSERS, STEEL SUPPORT GRIDS AND CEILING MOUNTED EQUIPMENT, UNLESS NOTED OTHERWISE.
12. CONTRACTOR SHALL TAKE PROPER MEASURES TO PROTECT AREAS OUTSIDE THE AREA OF WORK FROM DUST, AIR PARTICULATES, AND DEBRIS. COORDINATE WITH ARCHITECT, ENGINEER AND OWNER TO PROTECT AGAINST INFILTRATION OF THE ABOVE INTO THE REMAINING OCCUPIED AREAS.
13. DEMOLITION WORK TO TAKE PLACE PRIOR TO INTERIOR IMPROVEMENTS. PROVIDE SUCH MEASURES AS NECESSARY TO PREVENT PROPERTY DAMAGE OR BODILY INJURY.
14. ALL INTERIOR PATCHING AND REPAIR SHALL OCCUR AS PART OF THIS SCOPE OF WORK, U.N.O. CONTRACTOR SHALL PROTECT ALL EXISTING EXPOSED CONSTRUCTION FROM DAMAGE RESULTING FROM OR RELATED TO DEMOLITION AND CONSTRUCTION OPERATIONS.
15. CONTRACTOR SHALL REPAIR OR REPLACE ANY EXISTING CONSTRUCTION TO REMAIN THAT IS DAMAGED IN THE COURSE OF THE WORK TO ITS ORIGINAL CONDITION.
16. CONTRACTOR IS RESPONSIBLE FOR ALL WASTE REMOVAL AND SITE CLEAN UP DURING PERFORMANCE OF AND AT COMPLETION OF THE WORK.
17. CONTRACTOR TO PROTECT EXISTING FINISHES WHILE MOVING EQUIPMENT. CONTRACTOR TO REPAIR ANY DAMAGE AT NO COST TO THE OWNER. REPAIR TO MATCH EXISTING CONDITIONS.
18. CAP ANY EXISTING UTILITIES, INCLUDING PLUMBING, TO RELOCATE EQUIPMENT.
19. CONTRACTOR TO COORDIANTE MOVING SCHEDULE WITH OWNER.
20. CONTRACTOR TO MAINTAIN MINIMUM REQUIRED CLEARANCES WHEN RELOCATING EQUIPMENT. CORRIDOR CLEARANCE TO BE MIN. OF 44-INCHES CLEAR.
21. REFER TO EQUIPMENT SCHEDULE IN SPECIFICATION SECTION 11 0500 FOR MORE INFORMATION.
22. CONTRACTOR TO VERIFY EQUIPMENT ALARMMONITORING SYSTEM AND COORDINATE WITH OWNER. WHERE INTERRUPTION OF THE BUILDING'S LIFE SAFETY SYSTEM IS REQUIRED TO PERFORM THE WORK AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS, OR TO COORDINATE WITH OWNER'S OPERATIONS, THE CONTRACTOR SHALL PROVIDE INTERIM LIFE SAFETY MEASURES TO COMPLY WTIH LOCAL CODE AND OWNER'S REQUIREMENTS.

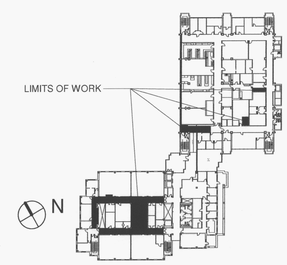
LEGEND

- EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- EXISTING EQUIPMENT TO REMAIN
- EXISTING EQUIPMENT TO BE RELOCATED
- EXISTING EQUIPMENT TO BE SURPLUSED BY OWNER
- EXISTING ELECTRICAL PANEL TO REMAIN

KEYNOTE LEGEND

1. NITROGEN TANKS ARE EXISTING AND NOT PART OF PROJECT SCOPE.
2. REMOVE EXISTING WOOD WORKSTATIONS AND SALVAGE FOR OWNER.
3. DEMOLISH EXISTING BUILT-IN CASEWORK.
4. EXISTING EQUIPMENT TO REMAIN IN PLACE. OWNER TO MAINTAIN FIRE LIFE SAFETY REQUIREMENTS.
5. EQUIPMENT TO BE DEMOLISHED BY THE CONTRACTOR.

KEY PLAN



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MMI Lab Remodel - Phase 1

REGISTERED ARCHITECT
DEBORAH K. FRANCE
PORTLAND, OR
06/30/12
#5530
STATE OF OREGON

Date:	04/03/12
Project Number:	40032
Drawn By:	JG
Checked By:	DF

Revisions:

OHSU PROJECT #12-RJH-125

EQUIPMENT MOVE/SURPLUS FLOOR PLAN

A1.0

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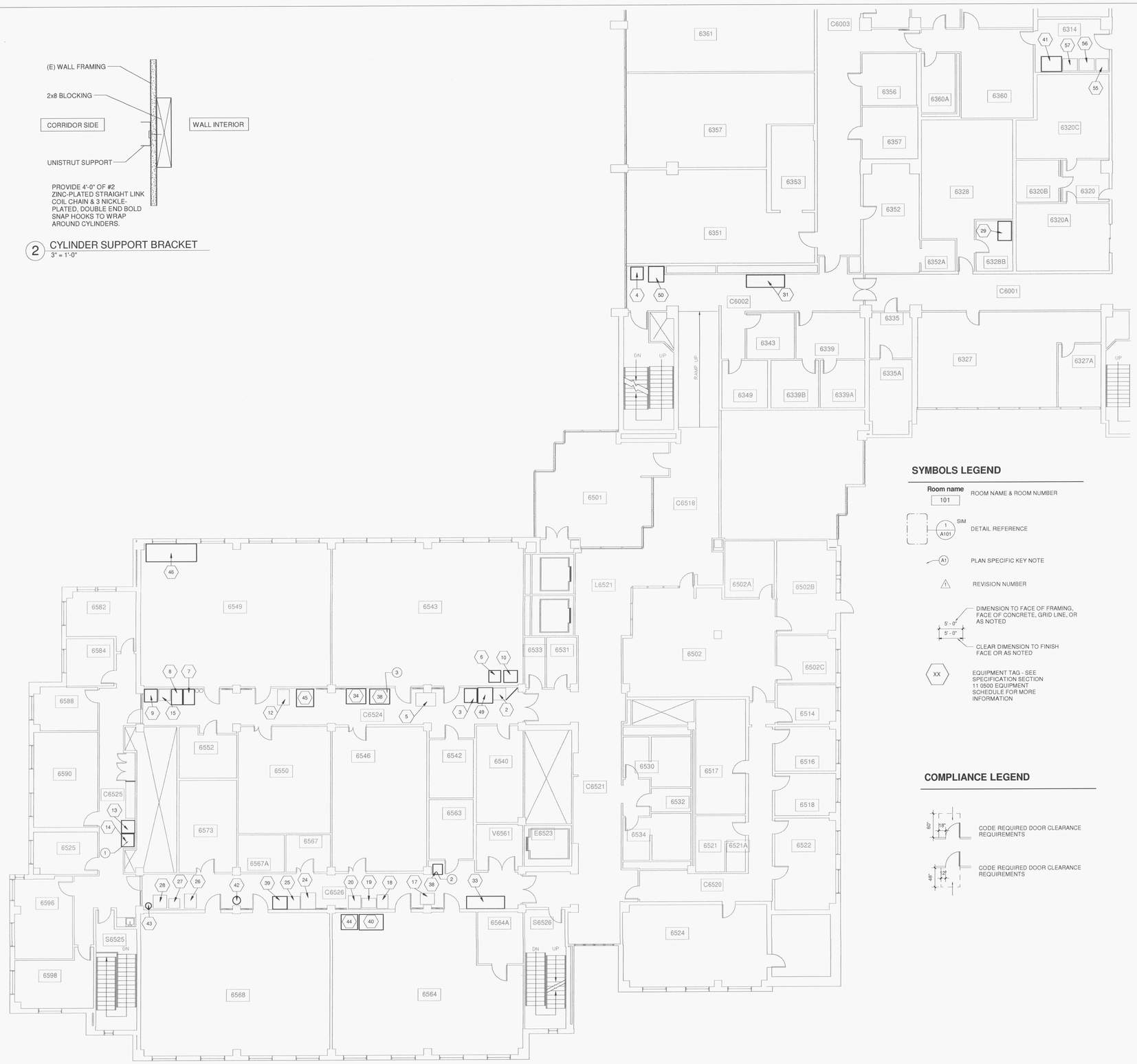
2 CYLINDER SUPPORT BRACKET
3" = 1'-0"



1 (NC) Level 6
1/8" = 1'-0"

SYMBOLS LEGEND

Room name 101 — ROOM NAME & ROOM NUMBER

1 A101 SIM — DETAIL REFERENCE

A1 — PLAN SPECIFIC KEY NOTE

1 — REVISION NUMBER

5' - 0" / 5' - 0" — DIMENSION TO FACE OF FRAMING, FACE OF CONCRETE, GRID LINE, OR AS NOTED; CLEAR DIMENSION TO FINISH FACE OR AS NOTED

XX — EQUIPMENT TAG - SEE SPECIFICATION SECTION 11 0500 EQUIPMENT SCHEDULE FOR MORE INFORMATION

COMPLIANCE LEGEND

60" / 18" — CODE REQUIRED DOOR CLEARANCE REQUIREMENTS

48" / 12" — CODE REQUIRED DOOR CLEARANCE REQUIREMENTS

GENERAL NOTES

1. ALL WORK TO COMPLY WITH 2010 OREGON STRUCTURA SPECIALTY CODE.
2. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH U.N.O. DO NOT MEASURE DRAWINGS TO DETERMIN DIMENSIONS. LARGE SCALE DETAILS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS.
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONSTRUCTION AND RELATED CONDITIONS PRIOR TO STARTING DEMOLITION OR NEW CONSTRUCTION.
4. CONTRACTOR TO INFORM ARCHITECT OF ANY DISCREPANCIES WITHIN DRAWINGS OR BETWEEN DRAWINGS AND FIELD CONDITIONS BEFORE COMMENCEMENT OF AFFECTED WORK.
5. LOCATE AND VERIFY EXISTENCE AND USE OF EXISTING UTILITIES. TAKE NEESSARY MEASURES TO PROTECT AND PRESERVE FUNCTION AND CONDITION OF ANY UTILITIES TO BE REPAIRED, REPLACED OR REUSED IN NEW CONSTRUCTION. COORDINATE WTIH ARCHITECT, ENGINEER AND OWNER.
6. ALL INTERIOR PATCHING AND REPAIR SHALL OCCUR IN THE INTERIOR IMPROVEMENTS SCOPE OF WORK. CONTRACTOR SHALL PROTECT ALL EXISTING EXPOSED CONSTRUCTION FROM DAMAGE RESULTING FROM OR RELATED TO DEMOLITION AND CONSTRUCTION OPERATIONS.
7. CONTRACTOR SHALL REPAIR OR REPLACE ANY EXISTING CONSTRUCTION TO REMAIN THAT IS DAMAGED IN THE COURSE OF THE WORK TO ITS ORIGINAL CONDITION.
8. WHERE INTERRUPTION OF THE BUIDLING'S LIFE SAFETY SYSTEM IS REQUIRED TO PERFORM THE WORK AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS, OR TO COORDINATE WITH OWNER'S OPERATIONS, THE CONTRACTOR SHALL PROVIDE INTERIM LIFE SAFETY MEASURES TO COMPLY WITH LOCAL CODE AND OWNER'S REQUIREMENTS.
9. CONTRACTOR IS RESPONSIBLE FOR ALL WASTE REMOVAL AND SITE CLEAN UP DURING PERFORMANCE OF AND AT COMPLETION OF THE WORK.
10. CONTRACTOR TO COORDINATE INTALLATION AND SCHEDULING OF OWNER OR OWNER'S VENDOR PROVIDED OR INSTALLED FIXTURES AND EQUIPMENT.
11. CONTRACTOR SHALL BE SOLEY RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ALL SHORING AND BRACING REQUIRED FOR THE CONSTRUCTION OF WORK. CONTRACTOR SHALL NOT STORE CONSTRUTION MATERIALS OR EQUIPMENT IN A MANNER SUCH THAT THE DESIGN LIVE LOADS OF THE STRUCTURE ARE EXCEEDED.
12. ALL FEATURES OF THE WORK NOT FULLY SHOWN SHALL BE THE SAME TYPE AND CHARACTER SHOWN FOR SIMILAR CONDITIONS. IN THE EVENT THAT ADDITIONAL WORK IS REQUIRED TO COMPLETE THE WORK AS INTENDED OR REQUIRED BY GOVERNING CODES AND SAFETY REGULATIONS, YET OMITTED OR NOT FULLY SHOWN ON THE DRAWINGS, CONTRACTOR MUST STILL PROVIDE CARPENTRY, MECHANICAL, ELECTRICAL AND/OR PLUMBING WORK AS NECESSARY FOR CERTIFICATE OF OCCUPANCY.
13. CONTRACTOR RESPONSIBLE TO COORDIANTE PRECISE ELECTRICAL OUTLET/ALARM LOCATIONS WITH OWNER EQUIPMENT.
14. OWNER PROVIDED NITROGEN TANKS TO BE SEISMICALLY BRACED TO WALL. SEE DETAIL 2/A2.0.
15. CONTRACTOR TO PATCH/REPAIR GYPBOARD WHERE NEW ELECTRICAL/ALARM BOXES INSTALLED. REPAIRS TO REMAIN FLUSH WITH EXISTING. FINISH TO MATCH EXISTING COLOR AND FINISH.
16. CONTRACTOR TO REPLACE ANY DAMAGED CEILING TILE OR TILE MODIFIED FOR SCOPE OF WORK. REPLACMENT TILE TO MATCH EXISTING CEILING TILE.
17. CONTRACTOR TO MAINTAIN REQUIRED CODE CLEARANCES WITH NEW EQUIPMENT LOCATIONS. MAINTAIN 44-INCHES CLEAR PATH OF EGRESS. REFER TO LEGEND FOR MORE INFORMATION.
18. REFER TO EQUIPMENT SCHEDULE IN SPECIFICAITON SECTION 11 0500.

LEGEND

EXISTING EQUIPMENT TO REMAIN

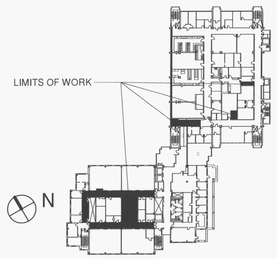
EXISTING EQUIPMENT TO BE RELOCATED

EXISTING ELECTRICAL PANEL TO REMAIN

KEYNOTE LEGEND

1. CONTRACTOR TO CONFIRM EXISTING FLOORING AT DEMOLISHED CASEWORK. CONTACT ARCHITECT IF NO FLOORING IS PRESENT.
2. OPTION A: NEW ICE MACHINE (OFCI) WITH NEW ELECTRCAL & PLUMBING CONNECTION. CONTRACTOR TO PRICE SEPARATELY.
3. OPTION B: RELOCATE (E) ICE MACHINE WITH NEW PLUMBING DRAIN.CONTRACTOR TO PRICE SEPARATELY.

KEY PLAN



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MMI Lab Remodel - Phase 1

REGISTERED ARCHITECT
DEBORAH K. FERNANDEZ
PORTLAND, OR
06/30/12
#5530
STATE OF OREGON

Date:	04/03/12
Project Number:	40032
Drawn By:	JG
Checked By:	DF

Revisions:

OHSU PROJECT #12-RJH-125

EQUIPMENT RELOCATION FLOOR PLAN

A2.0

4/4/2012 11:41:55 AM

SYMBOL LEGEND

	MATCHING LINE
2 / M3.1	SECTION DESIGNATION — SECTION NUMBER / DRAWING NUMBER
1 / M2.1	DETAIL DESIGNATION — DETAIL NUMBER / DRAWING NUMBER
HV / 1-1	EQUIPMENT DESIGNATION — EQUIPMENT TYPE / EQUIPMENT NUMBER
A 12x12 / 550	AIR OUTLET/INLET DEVICE DESIGNATION — TYPE (SEE SCHED) / SIZE / CFM
N	PROJECT NORTH ARROW
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	PIPING FLEXIBLE CONNECTION
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	AUTOMATIC 2-WAY CONTROL VALVE
	RELIEF VALVE
	PRESSURE REDUCING VALVE (PRV)
	BALL VALVE
	BUTTERFLY VALVE
	THERMOMETER
	PRESSURE GAUGE AND GAUGE COCK
	TEMPERATURE-PRESSURE TEST FITTING
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
	VAV/CAV WITH REHEAT
	AIR VALVE
	FLOW SWITCH
	ARROW INDICATES DIRECTION OF FLOW
R / R	SLOPING RISE IN DUCTWORK
D / D	SLOPING DROP IN DUCTWORK
18x12 / 18x12	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
18Φ / 18Φ	ROUND DUCT DIAMETER SIZE
	HEEL TAP TAKEOFF TO ROUND OR RECTANGULAR
	FLEXIBLE DUCT
	VOLUME DAMPER IN DUCT
	END CAP
X	REMOVE
R	RELOCATE
K	CUT AND PROVIDE TEMPORARY CAP
C	PROVIDE PERMANENT CAP

SYMBOL LEGEND

	RECTANGULAR SUPPLY DUCT UP
	RECTANGULAR SUPPLY DUCT DOWN
	RECTANGULAR RETURN DUCT UP
	RECTANGULAR RETURN DUCT DOWN
	RECTANGULAR EXHAUST DUCT UP
	RECTANGULAR EXHAUST DUCT DOWN
	ROUND DUCT, UP
	ROUND DUCT, DOWN
	DUCT ACCESS DOOR
	MITERED ELBOW WITH TURNING VANES
	MITERED ELBOW WITHOUT TURNING VANES
	BRANCH TAKEOFF WITH VOLUME DAMPER
	RADIUS ELBOW
	DUCT MOUNTED HEATING COIL, WITH DUCT ACCESS DOOR UPSTREAM OF HEATING COIL.
	CEILING SUPPLY DIFFUSER
	CEILING RETURN REGISTER OR GRILLE
	CEILING EXHAUST REGISTER OR GRILLE
	DIFFUSER, REGISTER OR GRILLE THROW INDICATOR (SUPPLY, RETURN OR EXHAUST)
	SUPPLY REGISTER WITH AIR OUTLET THROW INDICATOR
	RETURN OR EXHAUST REGISTER OR GRILLE WITH AIR INLET INDICATOR
	SQUARE FEET
T	TEMPERATURE SENSOR
P	PRESSURE TRANSMITTER
	DEMO PIPING AND DUCTWORK
	BEAM PENETRATION
(E)	EXISTING
	POINT OF CONNECTION

GENERAL NOTES

1. THE ENTIRE MECHANICAL SYSTEMS, INSTALLATION AND TESTING MUST BE IN COMPLIANCE TO THE LIFE SAFETY REQUIREMENTS OF THE CURRENT OREGON STRUCTURAL SPECIALTY CODE.
2. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
3. IN THE EVENT OF A DISCREPANCY BETWEEN CONTRACT DRAWINGS AND SPECIFICATIONS, THE MOST STRINGENT SHALL GOVERN.
4. ALL WORK TO BE IN ACCORDANCE WITH REQUIREMENTS OF GOVERNING STATE AND LOCAL FIRE AND BUILDING CODES, & NFPA CODE 101/99.
5. INSTALL ALL PIPING AND DUCTWORK TO AVOID ARCHITECTURAL FRAMING, STRUCTURAL MEMBERS, AND OTHER OBSTRUCTIONS. COORDINATE PIPING AND DUCTWORK LOCATION WITH ALL APPLICABLE CONTRACT DRAWINGS PRIOR TO PLACING SLEEVES IN FLOORS OR WALLS.
6. INSTALL ALL PIPING AND DUCTWORK TO BEST SUIT FIELD CONDITIONS AND COORDINATE WITH THE INSTALLATION WORK OF OTHER TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED TO DETERMINE EXACT LOCATIONS OF PIPING OR DUCTWORK.
7. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT DIFFUSER LOCATIONS AND FINISHED CEILING.
8. COORDINATE DUCTWORK, PIPING WITH EXISTING STRUCTURE AND, LIGHTING AND SPRINKLER SYSTEM DRAWINGS FOR NEW WORK. PROVIDE TRANSITIONS AS REQUIRED.
9. CONTRACTOR TO COORDINATE WITH ARCHITECTS CEILING ACCESS PANELS FOR ALL VOLUME DAMPERS IN INACCESSIBLE CEILING AS REQUIRED.
10. ALL DUCT DIMENSIONS ARE AIRSTREAM DIMENSIONS.
11. SEAL ALL FIRE RATED PENETRATIONS WITH FIRE RETARDANT MATERIAL AS SPECIFIED.
12. THERMOSTAT AND HUMIDISTAT APPEARANCE AND LOCATION SHALL BE COORDINATED WITH ARCHITECTS/OWNER.
13. PROVIDE REMOTE OPERATORS FOR ALL VOLUME DAMPERS LOCATED ABOVE INACCESSIBLE CEILING.
14. PROVIDE OPERATING HANDLES FOR ALL VALVE AND COCKS WITHOUT INTEGRAL OPERATORS.
15. PROVIDE VALVES AND OTHER PIPING SPECIALTIES SAME SIZE AS LINE SIZE SHOWN UNLESS OTHERWISE NOTED.
16. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE SO THERE WILL BE COUNTER FLOW BETWEEN WATER AND AIR.
17. PROVIDE 3/8" BLOW-OFF VALVE AND 1/2" IPS TO HOSE THREAD ADAPTER ON ALL STRAINERS.
18. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL HOT WATER SUPPLY/RETURN TAKE-OFFS TO REHEAT COIL IN VAV BOXES SHALL BE 3/4" DIAMETER.
19. ALL DUCT HEATING COILS SHALL BE ACCESSIBLE.
20. ALL BRANCH DUCTS TO AIR OUTLET SHALL BE EQUIPPED WITH DUCT VOLUME DAMPER.
21. CEILING DIFFUSER SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
22. SEPARATE ALL CEILING HANGING AND BRACING WIRES AT LEAST 6" FROM ALL UNBRACED DUCTS, PIPES, CONDUITS, ETC. AT THE CONTRACTOR'S OPTION HE MAY BRACE UNBRACED DUCTS, PIPES, CONDUITS, ETC. IN A MANNER CONFORMING TO REQUIREMENTS ESTABLISHED BY THE MECHANICAL AND ELECTRICAL CONTRACT DOCUMENTS, OR THE CONTRACTOR MAY INSTALL TRAPEZE SUPPORTS TO RECEIVE THE CEILING HANGING AND BRACING WIRES. THE GENERAL CONTRACTOR SHALL COORDINATE THE WORK AND RESPONSIBILITY FOR ACCOMMODATING SUCH WORK.
23. PROVIDE BALANCING DAMPERS AT EACH SUPPLY, RETURN AND EXHAUST BRANCH TAKE-OFF.
24. AT CONTRACTOR DISCRETION HE MAY SUBSTITUTE RECTANGULAR DUCTWORK 8" AND LESS TO ROUND DUCTWORK.
25. ALL DUCT ELBOWS BEFORE VAV BOXES AND REHEAT COILS SHALL BE OF FULL RADIUS HARD CONNECTION ELBOWS.
26. ALL PIPING AND DUCTWORK TO BE FLEXIBLE CONNECTED TO PUMPS, COILS ETC.
27. PROVIDE ELBOW SUPPORTS AT ALL PIPE CONNECTIONS TO EQUIPMENT.
28. INSTALL SHUT-OFF VALVES AT EACH BRANCH PIPE LINE.
29. UNLESS SPECIFICALLY SPECIFIED OR SHOWN OTHERWISE ALL CONSTRUCTION IS TO CONFORM TO SMACNA HVAC CONSTRUCTION STANDARDS AS A MINIMUM REQUIREMENT.
30. ALL CONTROL PANELS SHALL BE MOUNTED NO LESS THAN 4 FEET ABOVE FINISHED FLOOR.
31. ALL PIPING NOTED TO BE CAPPED FOR FUTURE EXTENSION SHALL BE PROVIDED WITH VALVE NEAR CAP TO PERMIT FUTURE CONNECTION OF THE SYSTEM.
32. ALL PLENUM BOXES, DUCTWORK ETC TO BE LOCATED INSIDE WALL CAVITIES OR INACCESSIBLE SPACES SHALL BE TESTED FOR AIRTIGHT CONSTRUCTION BEFORE INSTALLATION (TYPICAL).
33. ALL PIPING TO BE LOCATED INSIDE WALL CAVITIES OR INACCESSIBLE SPACES SHALL BE LEAK TESTED AND INSULATED WITH VAPOR BARRIER SEAL BEFORE INSTALLATION (TYPICAL).

SPECIFICATIONS

A. Interface With Building BMS System
1. Control valves to control via factory controls with temperature signal from BMS.
2. BACNET translation not acceptable.
3. Control parameters shall be transferred digitally to the BMS
   a. Room Temperature.
   b. Room Temperature Setpoint.
   c. Effective Room Temperature Setpoint.
   d. Supply Air Temperature.
   e. Hot Water Valve and Actuator.
   f. Heating Demand.
   g. Cooling Demand.
   h. Supply CFM.
   i. Exhaust CFM.
   j. Total Supply CFM.
   k. Total Exhaust CFM.
   l. Supply CFM Setpoint
   m. Exhaust CFM Setpoint
   o. Air Valve Pressure Alarm.
   p. Space Differential Pressure Transmitters and Alarms, as shown on the drawings.

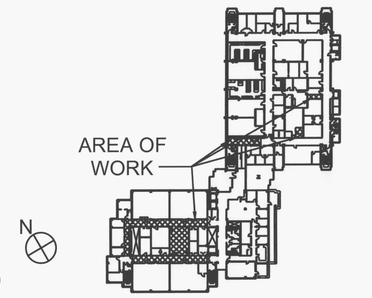
B. Hot Water Heating Coil:
1. Construction: 1/2 inch (13 mm) copper tube mechanically expanded into aluminum plate fins, leak tested under water to 200 psig (1380 kPa) pressure, factory installed.
2. Capacity as scheduled on Drawings.
3. Provide Belimo HW zone valves and actuators. Refer to section 23 09 93 for additional information and requirements.

C. Ductwork: Galvanized steel sheet metal except where otherwise indicated. Duct sizes shown on Drawings are net inside dimensions unless otherwise noted. Provide duct pressure class 2" for all low pressure ducts, 4" pressure class upstream of all TU's and 6" for all exhaust. Limit angle of transitions to no greater than 15°. provide turning vanes in all rectangular elbows. All round taps off of rectangular ducts to be conical. All round taps off round ducts to be low loss conical boot fittings or use conical lateral fittings. All rectangular taps off round ducts to be low loss boot fittings.

D. Copper Heating Water Piping Manufacturers: Cerro, Halstead, Reading, Nibco, Mueller, or Elkhart.

Pipe: Schedule 40 hard drawn Type K, seamless copper water tube, ASTM B88-95A & B813.

KEY PLAN



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MMI Lab Remodel - Phase 1

REGISTERED PROFESSIONAL ENGINEER 81024PE OREGON JULY 11, 2006 WILLIAM E. CARON

EXPIRES: 12/31/2013

Date:	04/03/12
Project Number:	40032
Drawn By:	JR
Checked By:	TP

Revisions:

OHSU PROJECT #12-RJH-125

MECHANICAL COVER SHEET

M0.1

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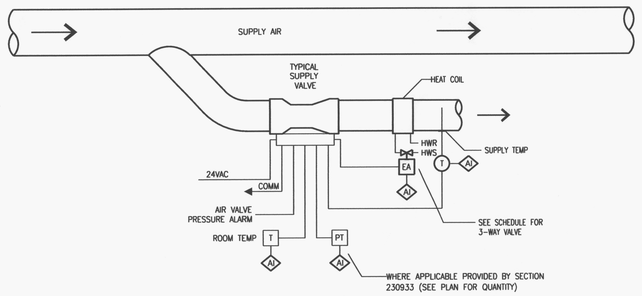
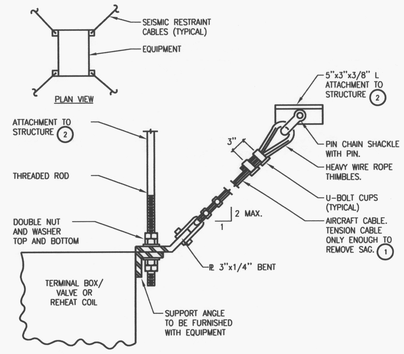
REFERENCE SPECIFICATIONS FOR ADDITIONAL CONTROLS INFORMATION.



5 / M0.2 SUPPLY AIR VALVE CONTROLS

SCALE: NONE

REFERENCE SPECIFICATIONS FOR ADDITIONAL CONTROLS INFORMATION.

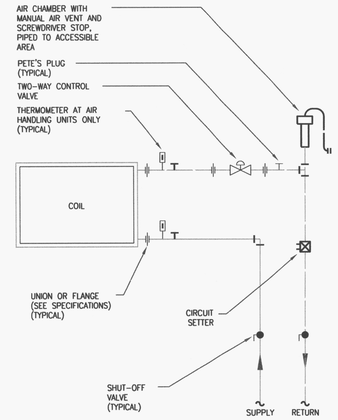


DETAIL NOTES

1. REFER TO SMACNA GUIDELINES FOR CABLE SIZING.
2. REFER TO SMACNA GUIDELINES FOR ANCHOR ATTACHMENTS.
3. SEISMIC BRACING SHALL BE INSTALLED AT 4 CORNER SUPPORTS.

3 / M0.2 MECHANICAL EQUIPMENT SEISMIC RESTRAINT

SCALE: NONE



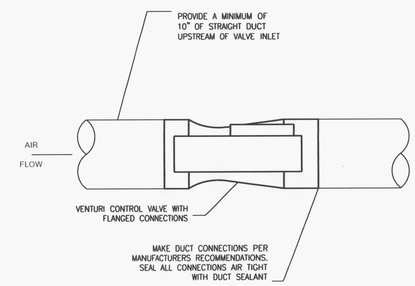
1 / M0.2 TWO-WAY HEATING COIL

DIAGRAMMATIC

SYMBOL LIST

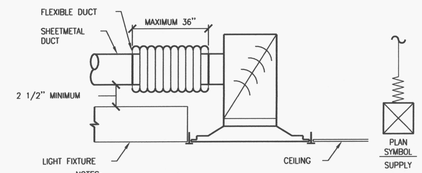
AI	ANALOG IN	PA	PNEUMATIC ACTUATOR
AO	ANALOG OUT		CONTACTORS
DI	DIGITAL IN	PT	DIFFERENTIAL PRESSURE TRANSMITTER – WALL MOUNTED
DO	DIGITAL OUT	PT	PRESSURE TRANSMITTER – DUCT / OR PIPE MOUNTED
T	TEMPERATURE SENSOR – WALL MOUNTED		WIRING FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR OR AIR VALVE TURNKEY CONTRACTOR
T	TEMPERATURE SENSOR – DUCT MOUNTED	M	WATER METER
T	TEMPERATURE SENSOR – PIPE MOUNTED IN THERMOMETER WELL	FS	FLOW SWITCH
VFD	VARIABLE FREQUENCY DRIVE	CS	CURRENT SENSOR
	STARTER	R	RELAY
ES	END SWITCH	S/S	START/ STOP
EA	DAMPER AND ACTUATOR	CPA	CONTROL POINT ADJUSTMENT
EA	ELECTRIC ACTUATOR	AFS	AIR FLOW SENSOR
EA	MODULATING VALVE		

NOTE:
FOR VALVE CONTROLLER MAINTAIN MINIMUM CLEARANCE OF 24" CLEAR BELOW VALVE FOR MAINTENANCE



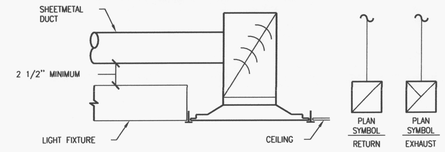
4 / M0.2 AIR SIDE CONTROL VALVE

SCALE: NONE



NOTES:

1. ATTACH FLEXIBLE DUCT WITH DRAW BANDS TO SHEETMETAL DUCT AND COLLAR. MAINTAIN CONTINUOUS VAPOR BARRIER ON SUPPLY OUTLET.
2. MAXIMUM OFFSET IN HORIZONTAL & VERTICAL PLANE TO BE 15" FOR FLEXIBLE DUCT CONNECTION TO DIFFUSER BOOT COLLAR.
3. DIFFUSER BOOT IS TO BE A MINIMUM OF THE DIFFUSER NECK SIZE OR 2" LARGER THAN THE DUCT SIZE CONNECTING TO IT WHICH EVER IS GREATER.



2 / M0.2 CEILING DIFFUSER CONNECTION

SCALE: NONE

SUPPLY AIR VALVES

SYMBOL	ROOM DESCRIPTION	TOTAL CFM	DESIGN BASIS/ REMARKS
SAV 6-33	HALLWAY A	700	SIEMENS OR PHOENIX SIZE 12
SAV 6-34	HALLWAY B	700	SIEMENS OR PHOENIX SIZE 12

GENERAL NOTES:

1.) SEE DETAIL 4 ON THIS SHEET FOR INSTALLATION DETAILS AND DETAIL 5 ON THIS SHEET FOR CONTROLS.
2.) VARIABLE VOLUME CONTROL VALVE IS TO MAINTAIN A CONSTANT AIRFLOW ON THE ROOM SIDE OF THE VALVE REGARDLESS OF SYSTEM PRESSURE FLUCTUATIONS.
3.) SUPPLY AIR VALVES TO BE LOW PRESSURE AND PROVIDED WITH FLANGED CONNECTIONS.
4.) MOUNT ACTUATORS FOR ALL SUPPLY VALVES IN THE 6 O'CLOCK POSITION TO ALLOW ACCESS FROM BELOW.
5.) DDC CONTROLS BY SIEMENS.

4/2/12 7:43 AM

HOT WATER REHEAT COILS

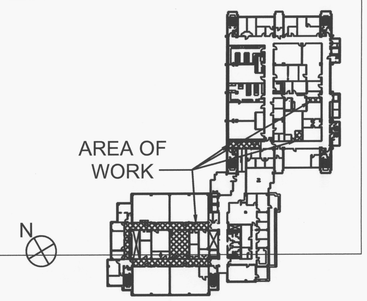
SYMBOL	CFM	CAPACITY MBH	SIZE W X H INCHES	MIN. ROWS	FV FPM	AIR SIDE EAT F DEG	AIR SIDE LAT F DEG	AIR SIDE MAX PD INCHES	WATER SIDE GPM	WATER SIDE EWT F DEG.	WATER SIDE MAX PD FEET	TCV TYPE 2 WAY	TCV TYPE 3 WAY	DESIGN BASIS/ REMARKS
RTU 6-29	700	12.9	16 X 14	2	450	55	72	0.15	1.7	100	6	*		TRANE TYPE T
RTU 6-30	700	12.9	16 X 14	2	450	55	72	0.15	1.7	100	6	*		TRANE TYPE T

GENERAL NOTES:

1.) BRANCH PIPING TO TERMINAL UNITS TO BE 3/4" UNLESS OTHERWISE NOTED ON THE DRAWINGS.

2.) SEE DETAIL 1 ON THIS SHEET FOR 2-WAY TEMPERATURE CONTROL VALVE COIL PIPING.

KEY PLAN



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OHSU PROJECT #12-RJH-125

HVAC DETAILS & SCHEDULES

M0.2

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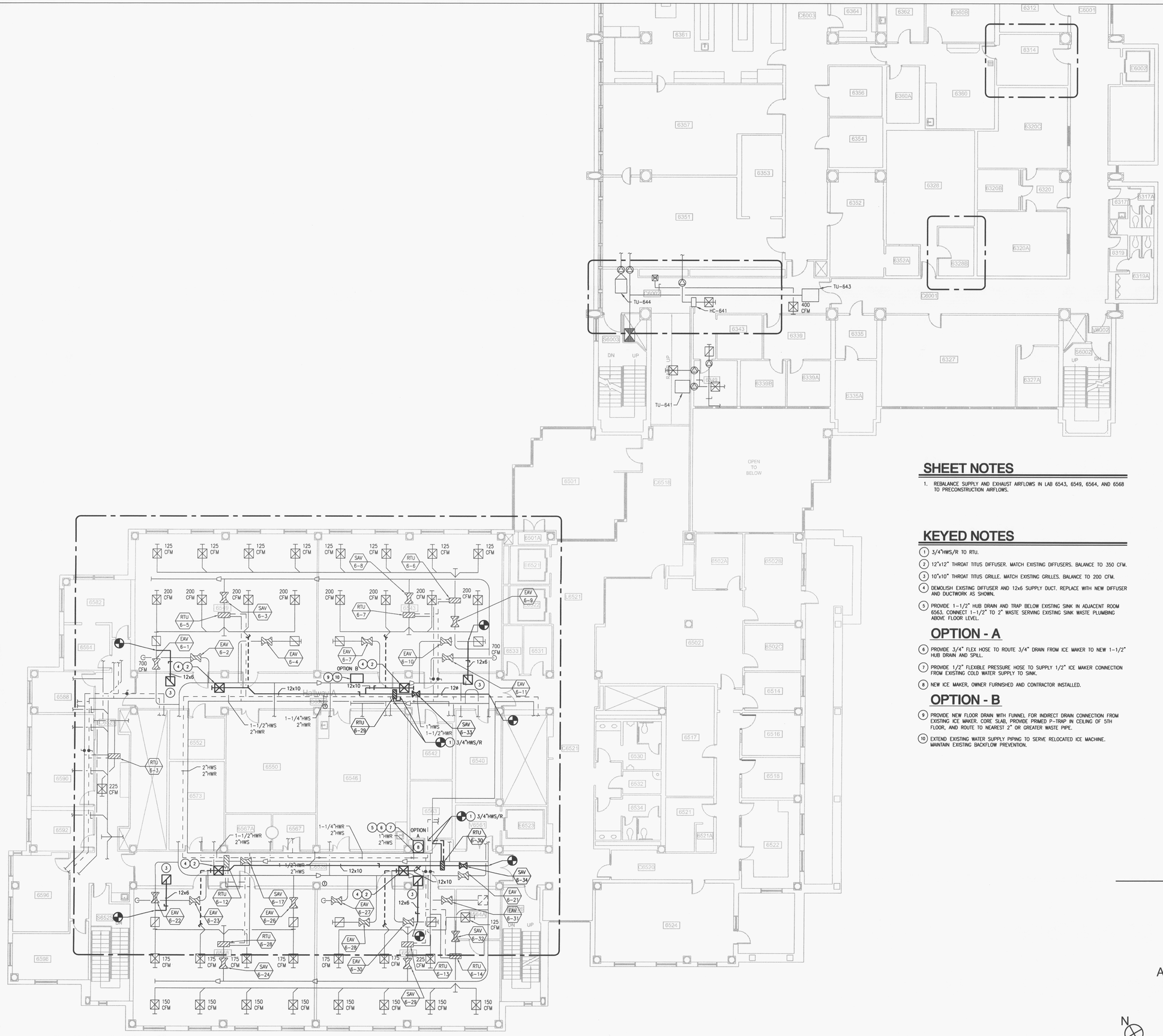


1 SIXTH FLOOR - HVAC

1/8"=1'-0"

SHEET NOTES

1. REBALANCE SUPPLY AND EXHAUST AIRFLOWS IN LAB 6543, 6549, 6564, AND 6568 TO PRECONSTRUCTION AIRFLOWS.

KEYED NOTES

1. 3/4"HWS/R TO RTU.
2. 12"x12" THROAT TITUS DIFFUSER. MATCH EXISTING DIFFUSERS. BALANCE TO 350 CFM.
3. 10"x10" THROAT TITUS GRILLE. MATCH EXISTING GRILLES. BALANCE TO 200 CFM.
4. DEMOLISH EXISTING DIFFUSER AND 12x6 SUPPLY DUCT. REPLACE WITH NEW DIFFUSER AND DUCTWORK AS SHOWN.
5. PROVIDE 1-1/2" HUB DRAIN AND TRAP BELOW EXISTING SINK IN ADJACENT ROOM 6563. CONNECT 1-1/2" TO 2" WASTE SERVING EXISTING SINK WASTE PLUMBING ABOVE FLOOR LEVEL.

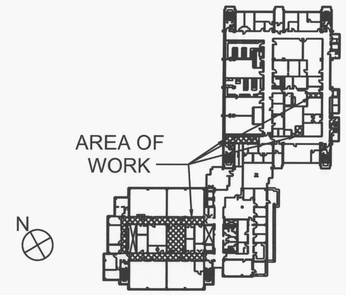
OPTION - A

6. PROVIDE 3/4" FLEX HOSE TO ROUTE 3/4" DRAIN FROM ICE MAKER TO NEW 1-1/2" HUB DRAIN AND SPILL.
7. PROVIDE 1/2" FLEXIBLE PRESSURE HOSE TO SUPPLY 1/2" ICE MAKER CONNECTION FROM EXISTING COLD WATER SUPPLY TO SINK.
8. NEW ICE MAKER, OWNER FURNISHED AND CONTRACTOR INSTALLED.

OPTION - B

9. PROVIDE NEW FLOOR DRAIN WITH FUNNEL FOR INDIRECT DRAIN CONNECTION FROM EXISTING ICE MAKER. CORE SLAB, PROVIDE PRIMED P-TRAP IN CEILING OF 5TH FLOOR, AND ROUTE TO NEAREST 2" OR GREATER WASTE PIPE.
10. EXTEND EXISTING WATER SUPPLY PIPING TO SERVE RELOCATED ICE MACHINE. MAINTAIN EXISTING BACKFLOW PREVENTION.

KEY PLAN



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MMI Lab Remodel - Phase 1

REGISTERED PROFESSIONAL ENGINEER 81024PE OREGON Mar. 11, 2008 WILLIAM E. CARON

EXPIRES: 12/31/2013

Date:	04/03/12
Project Number:	40032
Drawn By:	JR
Checked By:	TP

Revisions:

OHSU PROJECT #12-RJH-125

SIXTH FLOOR HVAC

M2.0

01 January, 2000

ELECTRICAL SYMBOL SCHEDULE

SYMBOLS	POWER SYMBOLS	NOTES
	MOTOR OUTLET	
	FUSED DISCONNECT SWITCH SWITCH XX/XX/XX = AMP SWITCH/POLES/AMP FUSE	
	HEAVY DUTY NON-FUSED DISCONNECT SWITCH SWITCH XX/XX = AMP SWITCH/POLES	
	COMBINATION MOTOR STARTER	
S_T	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD	
VFD	VARIABLE FREQUENCY DRIVE	
ATS	AUTOMATIC TRANSFER SWITCH	
	AUTOMATIC TRANSFER SWITCH	
	AUTOMATIC TRANSFER SWITCH WITH BY-PASS SWITCH	
T1 45KVA	TRANSFORMER	
T	TRANSFORMER	
	TRANSFORMER	
G	GENERATOR	
	STATIONARY – CIRCUIT BREAKER; RATING AS SHOWN ON PLANS	
	DRAWOUT CIRCUIT BREAKER; RATING AS SHOWN ON PLANS	
	SWITCH AND FUSE; RATING AS SHOWN ON PLANS	
	SWITCH AND FUSE; RATING AS SHOWN ON PLANS	
	NORMALLY OPEN CONTACT	
	NORMALLY CLOSED CONTACT	
	GROUND ROD IN GROUND WELL	
J , J	JUNCTION BOX	
	PUSH BUTTON STATION	
PC	PHOTOCELL	
TC	TIME CLOCK	
CP	CONTROL PANEL FURNISHED WITH EQUIPMENT	
LC	LIGHTING CONTACTOR	
	SURFACE MOUNTED PANELBOARD OR TERMINAL CABINET	
	FLUSH MOUNTED PANELBOARD OR TERMINAL CABINET	
	MOTOR STARTER	
	ELAPSE CLOCK	
A	AUTO SINK TOILET OUTLET	
A	WALL MOUNTED AUTO SINK TOILET OUTLET	
	FIRE ALARM VOICE COMMUNICATION CABINET	

SYMBOLS	WIRING DEVICE SYMBOLS	NOTES
	20A, 125V, DUPLEX RECEPTACLE OUTLET	
	20A, 125V, DOUBLE DUPLEX RECEPTACLE OUTLET	
	20A, 125V, DOUBLE DUPLEX RECEPTACLE OUTLET; SPECIAL MOUNTING HEIGHT; MOUNT AS NOTED ON PLANS OR SEE SPECIFICATIONS	
	20A,125V, DUPLEX RECEPTACLE; SPECIAL MOUNTING HEIGHT; MOUNT AS NOTED ON PLANS OR SEE SPECIFICATION	
	SPECIAL PURPOSE RECEPTACLE OUTLET; RATING AS SHOWN	
	SPECIAL PURPOSE RECEPTACLE OUTLET; RATING AS SHOWN; SPECIAL MOUNTING HEIGHT; MOUNT AS NOTED ON PLANS OR SEE SPECIFICATIONS	
	SURFACE RACEWAY – TYPE , OUTLETS, SPACING AND FINISH AS NOTED	
	20A, 125V, SINGLE RECEPTACLE OUTLET	
	20A, 125V, SINGLE RECEPTACLE OUTLET; SPECIAL MOUNTING HEIGHT; MOUNT AS NOTED ON PLANS OR SEE SPECIFICATIONS	
	20A, 125V, DUPLEX RECEPTACLE; FLOOR MOUNTED	
	20A, 125V, DOUBLE DUPLEX RECEPTACLE; FLOOR MOUNTED	
	20A,125V, DUPLEX RECEPTACLE; GFCI TYPE; +18" A.F.F. TO CENTERLINE	
	20A,125V, DUPLEX RECEPTACLE; GFCI TYPE; SPECIAL MOUNTING HEIGHT; MOUNT AS NOTED ON PLANS OR SEE SPECIFICATIONS	
	20A, 125V, DUPLEX RECEPTACLE; CEILING MOUNTED	
S	SINGLE POLE SWITCH	
S S	TWO SINGLE POLE SWITCHES UNDER COMMON FACEPLATE; EACH SWITCH OPERATES ONE BALLAST IN FIXTURES IT CONTROLS; +45" A.F.F. TO CENTERLINE	
S_P	SINGLE POLE SWITCH WITH PILOT LIGHT	
S_3	THREE WAY SWITCH	
S_K	KEY OPERATED SWITCH	
S_D	DIMMER SWITCH	
S_M	MOMENTARY CONTACT SWITCH	
OS	OCCUPANCY LIGHT CONTROL SWITCH; CEILING MOUNTED	
OS	OCCUPANCY LIGHT CONTROL SWITCH; WALL MOUNTED	
$	LOW VOLTAGE CONTROLLER	
PP	PUSH PLATE	
	DOUBLE DUPLEX GFCI	
	DOUBLE DUPLEX GFCI SMH	

SYMBOLS	TELECOMMUNICATION	NOTES
	DATA OUTLET	
	TELEPHONE OUTLET	
	TELEPHONE/DATA OUTLET	
	FLUSH DATA OUTLET; FLOOR MOUNTED	
	FLUSH TELEPHONE OUTLET; FLOOR MOUNTED	
	FLUSH TELEPHONE/DATA OUTLET; FLOOR MOUNTED	
	DATA OUTLET; CEILING MOUNTED	
	TELEPHONE OUTLET; CEILING MOUNTED	
	TELEPHONE/DATA OUTLET; CEILING MOUNTED	
	TELEPHONE/DATA WIRELESS ACCESS POINT; CEILING MOUNTED	
	LOW VOLTAGE CABLE TRAY, MOUNTED ABOVE ACCESSIBLE CEILING	

SYMBOLS	CONDUIT SYMBOLS	NOTES
	CONDUIT INSTALLED CONCEALED ABOVE CEILINGS OR IN WALLS IN FINISHED AREAS OR EXPOSED IN UNFINISHED AREAS	
	CONDUIT INSTALLED BELOW FINISHED FLOOR OR BELOW GRADE	
	INDICATES CONDUIT TURNING UP	
	INDICATES CONDUIT TURNING DOWN	
	CONDUIT STUBBED OUT WITH BUSHING	
	CONDUIT STUBBED OUT AND CAPPED	
	FLEXIBLE CONDUIT WITH SINGLE POINT OF CONNECTION AT ELECTRICAL EQUIPMENT	
—G—	GROUNDING CONDUCTOR	
	CONDUIT HOMERUN; ROUTE TO PANELBOARD, CABINET, OR TERMINAL BOARD INDICATED, AND TERMINATE CONDUCTORS TO CIRCUIT OVER CURRENT PROTECTIVE DEVICE	

	ABBREVIATIONS	NOTES
A, AMP	AMPERE	
AC	ALTERNATING CURRENT	
ACT	ABOVE COUNTER TOP	
AIC	AMPERE INTERRUPTING CAPACITY	
AFF	ABOVE FINISHED FLOOR	
AFG	ABOVE FINISHED GRADE	
ATS	AUTOMATIC TRANSFER SWITCH	
AT	TRIP RATING IN AMPERES	
AWG	AMERICAN WIRE GAUGE	
AV	AUDIO VISUAL	
C	CONDUIT	
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED	
CL	CENTERLINE	
CEC	CALIFORNIA ELECTRIC CODE	
CKT	CIRCUIT	
CLG	CEILING	
CR	CRITICAL BRANCH	
DC	DIRECT CURRENT	
DPDT	DOUBLE POLE, DOUBLE THROW	
DPST	DOUBLE POLE SINGLE THROW	
DIST	DISTRIBUTION	
EQ	EQUIPMENT BRANCH	
(E)	EXISTING TO REMAIN	
(ER)	REMOVE EXISTING.	
(EL)	RELOCATE EXISTING.	
EC	EMPTY CONDUIT	
ELEC	ELECTRICAL	
ELEV	ELEVATOR	
E, EMER	EMERGENCY	
EMT	ELECTRO METALLIC TUBING	
EWC	ELECTRIC WATER COOLER	
EWH	ELECTRIC WATER HEATER	
FA	FIRE ALARM	
FAAP	FIRE ALARM ANNUNCIATOR PANEL	
FACP	FIRE ALARM CONTROL PANEL	
FATC	FIRE ALARM TERMINAL CABINET	
FARA	FIRE ALARM REMOTE ANNUNCIATOR	
FCIP	FIRE ALARM CONTROL AND INDICATING PANEL	
GFCI	GROUND FAULT CIRCUIT INTERRUPTING	
G, GND	GROUND	
GEN	GENERATOR	
IG	ISOLATED GROUND.	
HP	HORSEPOWER	
HPF	HIGH POWER FACTOR	
LS	LIFE SAFETY BRANCH	
MECH	MECHANICAL	
MCB	MAIN CIRCUIT BREAKER	
MLO	MAIN LUGS ONLY	
NC	NORMALLY CLOSED	
NEC	NATIONAL ELECTRIC CODE	
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION	
NO	NORMALLY OPEN	
NTS	NOT TO SCALE	
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	
PB	PULL BOX	
ø, PH	PHASE	
PNL	PANEL	
PWR	POWER	
RSC	RIGID STEEL CONDUIT	
SPDT	SINGLE POLE, DOUBLE THROW	
SPST	SINGLE POLE, SINGLE THROW	
SWBD	SWITCHBOARD	
SWGR	SWITCH GEAR	
SYS	SYSTEM	
TP	TAMPER RESISTANT	
TB, TTB	TERMINAL BACKBOARD	
TC	TERMINAL CABINET	
TEL	TELEPHONE	
TP	TAMPER PROOF	
TV	TELEVISION	
V	VOLT	
VA	VOLT AMPERES	
W	WATT	
WP	WEATHERPROOF	
XFMR	TRANSFORMER	

PANEL SCHEDULE: 6LL

PANEL: 6LL | LOCATION: 6TH FLOOR, S. HALL | FED FROM: 5SDL
OC DEVICE TYPE: Breaker | DEVICE FAMILY: Bolt On
ENCLOSURE: NEMA 1 | MOUNTING: Surface | VOLTAGE: 208/120
MAINS(A): BKR | WIRING: 3-Phase 4-Wire
CONTINUOUS(A): 150 | BUS SC RATING(A): 10000 | FAULT CURRENT(A): 5451

OC AMPS P	NOTES	DESCRIPTION	DEMAND CODE	VA	CKT	PHASE LOADS VA A	B	C	CKT	VA	DEMAND CODE	DESCRIPTION	NOTES	OC AMPS P
20 1		RECPT. RM. 6016	RECEPTA	720	1	1440			2	720	RECEPTA	RECPT. RM. 6016		20 1
20 1		RECPT. RM. 6016	RECEPTA	720	3		1440		4	720	RECEPTA	RECPT. RM. 6016		20 1
20 1		RECPT. RM. 6016	RECEPTA	720	5			810	6	180	RECEPTA	RECPT. RM. 6016		30 2
20 1		RECPT. RM. 6016	RECEPTA	720	7	810			8	-		"		"
20 1		RECPT. RM. 6016	RECEPTA	720	9		810		10	180	RECEPTA	RECPT. RM. 6016		30 2
20 1		RECPT. RM. 6016	RECEPTA	720	11			810	12	-		"		"
20 1		RECPT. RM. 6016	RECEPTA	720	13	1440			14	720	RECEPTA	RECPT. RM. 6016		20 1
20 1		RECPT. RM. 6016	RECEPTA	720	15		720		16	0	SPARE	SPARE		20 1
20 1		RECPT. SOUTH HALL	RECEPTA	720	17			720	18	0	SPARE	SPARE		20 1
30 2		RECPT. SOUTH HALL	RECEPTA	720	19	360			20	0	SPARE	SPARE		20 1
"		"		-	21		360		22	0	SPARE	SPARE		20 1
20 1		SPARE	SPARE	0	23			0	24	0	SPARE	SPARE		20 1
30 2		N. HALL WARMER	RECEPTA	1490	25	745			26	0	SPARE	SPARE		20 1
"		"		-	27		745		28	0	SPARE	SPARE		20 1
20 1		SPARE	SPARE	0	29			0	30	0	SPARE	SPARE		20 1
20 1		S. HALL -20 FREEZE	FRIDGE/	1033	31	1033			32	0	SPACE	SPACE		0 1
20 1		S. HALL -20 FREEZE	FRIDGE/	1033	33		1033		34	0	SPACE	SPACE		0 1
20 1		S. HALL -20 FREEZE	FRIDGE/	1033	35			1033	36	0	SPACE	SPACE		0 1
20 1		ICE MACHINE	RECEPTA	648	37	648			38	0	SPACE	SPACE		0 1
0 1		SPACE	SPACE	0	39		0		40	0	SPACE	SPACE		0 1
0 1		SPACE	SPACE	0	41			0	42	0	SPACE	SPACE		0 1

ALL CONNECTED	KVA	3P AVE AMPS	* PHASE TOTALS	VA	AMPS	BUS TOTALS	KVA
TOTAL CONNECTED	14.46	40.1	* A-N	6269.8	52.2	CONNECTED	14.46
TOTAL DEMAND	12.08	33.5	* B-N	5047.3	42.0	DEMAND	12.08
TOTAL DESIGN	12.08	33.5	* C-N	3226.3	26.9	DESIGN	12.08

PANEL SCHEDULE: 6PLE-EQ1

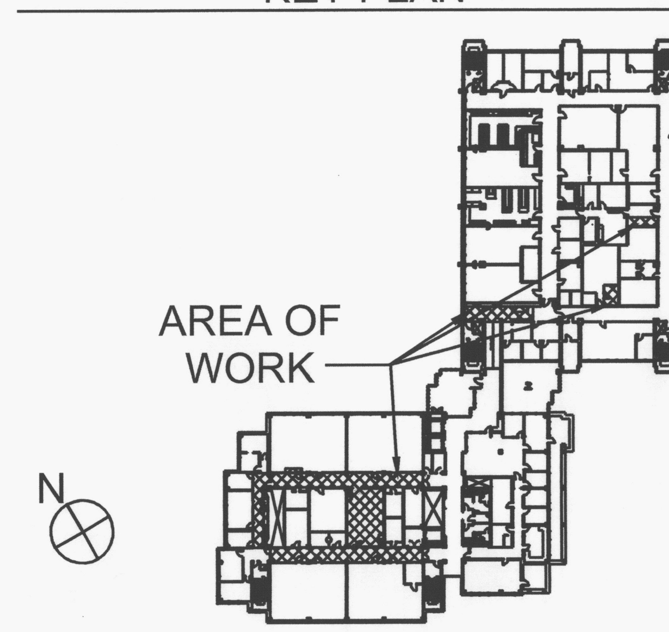
PANEL: 6PLE-EQ1 | LOCATION: 6th FLR CORRIDOR | FED FROM: Equipment Bus
OC DEVICE TYPE: Breaker | DEVICE FAMILY: Bolt On
ENCLOSURE: NEMA 1 | MOUNTING: Flush | VOLTAGE: 208/120
MAINS(A): MLO | WIRING: 3-Phase 4-Wire
CONTINUOUS(A): 225 | BUS SC RATING(A): 14000 | FAULT CURRENT(A): 10271

OC AMPS P	NOTES	DESCRIPTION	DEMAND CODE	VA	CKT	PHASE LOADS VA A	B	C	CKT	VA	DEMAND CODE	DESCRIPTION	NOTES	OC AMPS P
20 1		Recpt Shaker Rm 6351	RECEPTA	720	1	1412			2	769	FRIDGE/	-20 Freezer Rm 6352		20 1
20 1		Recpt Scaner Rm 6351	RECEPTA	720	3		1080		4	360	RECEPTA	Recpt.Water Polisher		20 1
20 1		Recpt Fridge Rm 6351	FRIDGE/	360	5			683	6	360	RECEPTA	Recpt.Water Polisher		20 1
20 1		Recpt Fridge Rm 6351	FRIDGE/	360	7	720			8	360	FRIDGE/	Recpt Fridge Rm 6369		20 1
20 1		Recpt Fridge Rm 6351	FRIDGE/	360	9		720		10	360	FRIDGE/	Recpt Fridge Rm 6369		20 1
20 1		Recpt Fume Hood 6351	RECEPTA	360	11			683	12	360	FRIDGE/	Recpt Fridge Rm 6369		20 1
20 1		Recpt Fridge Rm 6351	FRIDGE/	360	13	720			14	360	FRIDGE/	Recpt Fridge Rm 6369		20 1
20 1		Recpt Fridge Rm 6351	FRIDGE/	360	15		720		16	360	FRIDGE/	Recpt Fridge Rm 6369		20 1
20 1		Recpt. Telecom Rm	RECEPTA	720	17			1440	18	720	RECEPTA	Recpt. BSC Cabinet		20 1
20 1		Recpt. Telecom Rm	RECEPTA	720	19	1501			20	781	RECEPTA	Recpt.Incubator 6350		20 1
20 1		Recpt. Telecom Rm	RECEPTA	720	21		1874		22	2496	GENERAL	-80 Freezer, Hallway		20 2
20 1		Recpt. Telecom Rm	RECEPTA	720	23			1874	24	-		"		"
20 2		Top Count Mach. 6314	RECEPTA	2496	25	1608			26	360	RECEPTA	Recpt.ExhstHood 6350		20 1
"		"		-	27		2368		28	2496	GENERAL	-80 Freezer, Hallway		20 2
20 2		-80Freezer Hall 6002	FRIDGE/	1706	29			2101	30	-		"		"
"		"		-	31	853			32	0	SPACE	SPACE		0 1
20 2		-80Freezer Hall 6002	FRIDGE/	1706	33		853		34	0	SPACE	SPACE		0 1
"		"		-	35			853	36	0	SPACE	SPACE		0 1
20 3		BSL3 Exst Fan B	MECH. V	3819	37	1273			38	0	SPACE	SPACE		0 1
"		"		-	39		1273		40	0	SPACE	SPACE		0 1
"		"		-	41			1273	42	0	SPACE	SPACE		0 1

ALL CONNECTED	KVA	3P AVE AMPS	* PHASE TOTALS	VA	AMPS	BUS TOTALS	KVA
TOTAL CONNECTED	25.09	69.6	* A-N	7360.7	61.3	CONNECTED	25.09
TOTAL DEMAND	21.47	59.6	* B-N	9483.6	79.0	DEMAND	21.47
TOTAL DESIGN	21.47	59.6	* C-N	8503.4	70.8	DESIGN	21.47

1 SIXTH FLOOR - ELECTRICAL PANEL SCHEDULES

KEY PLAN



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MMI Lab Remodel - Phase 1

REGISTERED PROFESSIONAL ENGINEER 12357 OREGON SEPT. 23, 1983 THOMAS W. PRIDE
EXPIRES: 12/31/2012

Date: 04/03/12
Project Number: 40032
Drawn By: MLH
Checked By: TP

Revisions:

OHSU PROJECT #12-RJH-125

ELECTRICAL SYMBOLS SCHEDULES

E1.0

01 January, 2000
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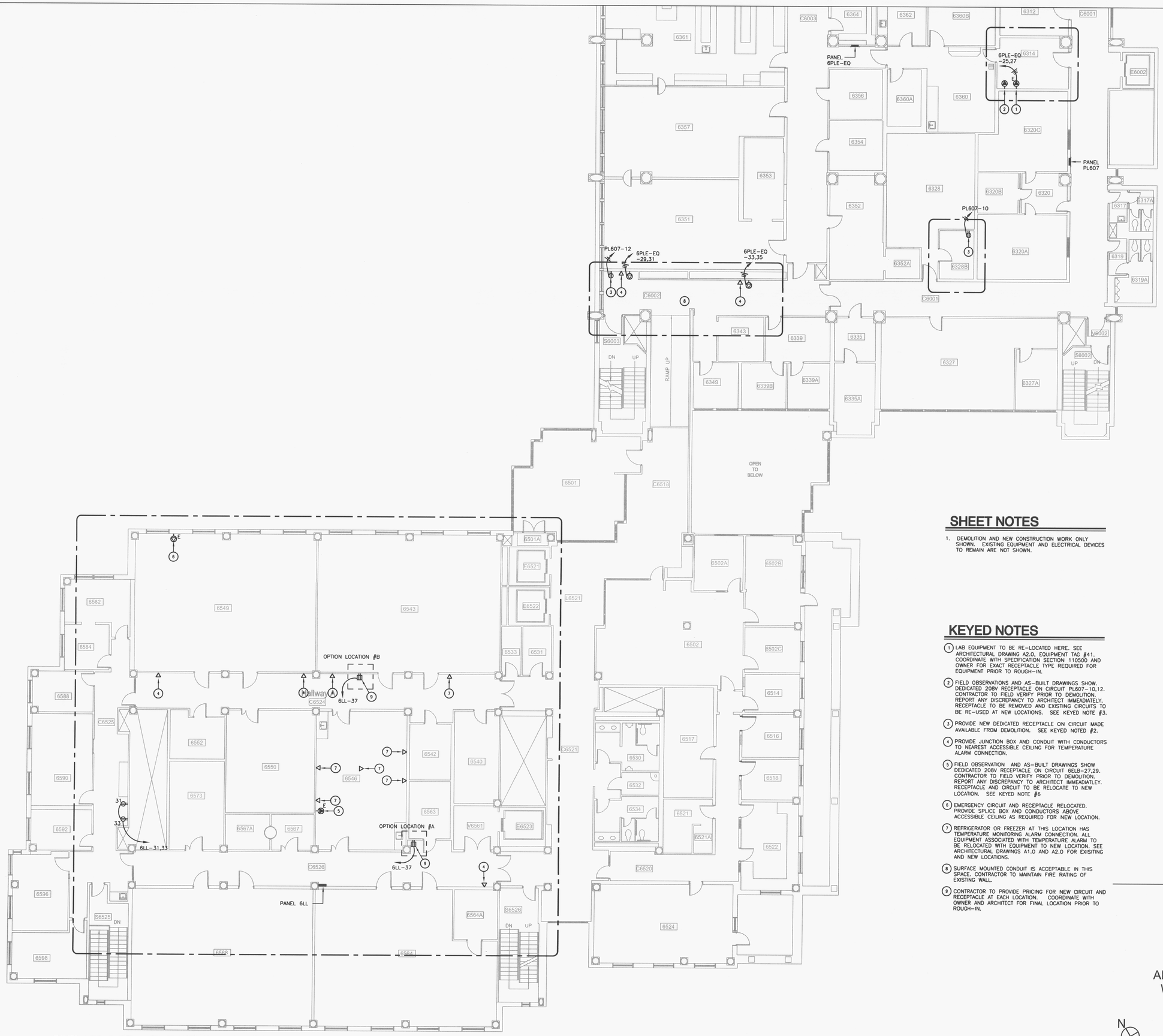


1 SIXTH FLOOR - ELECTRICAL WORK

1/8"=1'-0"

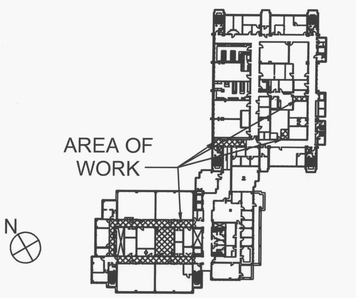
SHEET NOTES

1. DEMOLITION AND NEW CONSTRUCTION WORK ONLY SHOWN. EXISTING EQUIPMENT AND ELECTRICAL DEVICES TO REMAIN ARE NOT SHOWN.

KEYED NOTES

1. LAB EQUIPMENT TO BE RE-LOCATED HERE. SEE ARCHITECTURAL DRAWING A2.0, EQUIPMENT TAG #41. COORDINATE WITH SPECIFICATION SECTION 110500 AND OWNER FOR EXACT RECEPTACLE TYPE REQUIRED FOR EQUIPMENT PRIOR TO ROUGH-IN.
2. FIELD OBSERVATIONS AND AS-BUILT DRAWINGS SHOW. DEDICATED 208V RECEPTACLE ON CIRCUIT PL607-10,12. CONTRACTOR TO FIELD VERIFY PRIOR TO DEMOLITION. REPORT ANY DISCREPANCY TO ARCHITECT IMMEADIATELY. RECEPTACLE TO BE REMOVED AND EXISTING CIRCUITS TO BE RE-USED AT NEW LOCATIONS. SEE KEYED NOTE #3.
3. PROVIDE NEW DEDICATED RECEPTACLE ON CIRCUIT MADE AVAILABLE FROM DEMOLITION. SEE KEYED NOTED #2.
4. PROVIDE JUNCTION BOX AND CONDUIT WITH CONDUCTORS TO NEAREST ACCESSIBLE CEILING FOR TEMPERATURE ALARM CONNECTION.
5. FIELD OBSERVATION AND AS-BUILT DRAWINGS SHOW DEDICATED 208V RECEPTACLE ON CIRCUIT 6ELB-27,29. CONTRACTOR TO FIELD VERIFY PRIOR TO DEMOLITION. REPORT ANY DISCREPANCY TO ARCHITECT IMMEADIATLEY. RECEPTACLE AND CIRCUIT TO BE RELOCATE TO NEW LOCATION. SEE KEYED NOTE #6
6. EMERGENCY CIRCUIT AND RECEPTACLE RELOCATED. PROVIDE SPLICE BOX AND CONDUCTORS ABOVE ACCESSIBLE CEILING AS REQUIRED FOR NEW LOCATION.
7. REFRIGERATOR OR FREEZER AT THIS LOCATION HAS TEMPERATURE MONITORING ALARM CONNECTION. ALL EQUIPMENT ASSOCIATED WITH TEMPERATURE ALARM TO BE RELOCATED WITH EQUIPMENT TO NEW LOCATION. SEE ARCHITECTURAL DRAWINGS A1.0 AND A2.0 FOR EXISITING AND NEW LOCATIONS.
8. SURFACE MOUNTED CONDUIT IS ACCEPTABLE IN THIS SPACE. CONTRACTOR TO MAINTAIN FIRE RATING OF EXISTING WALL.
9. CONTRACTOR TO PROVIDE PRICING FOR NEW CIRCUIT AND RECEPTACLE AT EACH LOCATION. COORDINATE WITH OWNER AND ARCHITECT FOR FINAL LOCATION PRIOR TO ROUGH-IN.

KEY PLAN



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MMI Lab Remodel - Phase 1

REGISTERED PROFESSIONAL ENGINEER THOMAS W. FRAISE
EXPIRES: 12/31/2012

Date:	04/03/12
Project Number:	40032
Drawn By:	MLH
Checked By:	TP

Revisions:

OHSU PROJECT #12-RJH-125

ELECTRICAL NEW WORK

E2.0

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01 January 2000