

Architect's Supplemental Instructions

Architect's Project No:
04561.01

Architect's ASI No: 067

Project:
Webster University
Interdisciplinary Science
Building

Date Issued: 06/08/2017

Contract Date:

Reason Code: Clarification

Discipline Code:

Owner:
Webster University

Architect:
Cannon Design
1100 Clark Avenue
St. Louis, MO 63102

Contractor:
Paric Construction

Contract For: General construction

The Work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Indicate your acceptance of these instructions for minor change to the Work as consistent with the Contract Documents and return a copy to the Architect within fourteen (14) business days of the date of issuance of these instructions. If you feel a change in Contract Sum or Contract Time is warranted, please submit an itemized quotation for the changes for approval within fourteen (14) business days of the date of issuance of these instructions prior to proceeding on the Work. Proceeding with the Work in accordance with these instructions indicates your acknowledgement that there will be no change.

Attachments:

Drawings:

M0101.A	LEVEL 01 AREA A FLOOR PLAN – MECHANICAL
M0102.A	LEVEL 02 AREA A FLOOR PLAN – MECHANICAL
M0103.A	LEVEL 03 AREA A FLOOR PLAN – MECHANICAL
M0602	SCHEDULES - MECHANICAL
M0603	SCHEDULES - MECHANICAL

Architect's Supplemental Instructions

Page 2

Description: ASI – 067

Please submit an itemized proposal for changes in contract Sum and Contract Time for proposed modifications to the Contract Documents described herein:

ASI-067 is being issued due to submitted equipment being different than basis of design equipment. Air flows have been adjusted on the plans and schedules to reflect provided equipment for the Test and Balance contractor's information. This ESI/ASI does not change the scope of the project.

M0101.A LEVEL 01 AREA A FLOOR PLAN – MECHANICAL

- Update lab table exhaust airflows in 191 Cadaver Lab to match schedule values.

M0102.A LEVEL 02 AREA A FLOOR PLAN – MECHANICAL

- Update GEV-201 exhaust airflows in 291 Cell/Bio Phys Research Lab.

M0103.A LEVEL 03 AREA A FLOOR PLAN – MECHANICAL

- Update GEV-301 exhaust airflows in 391 Anatomy / Physio Lab.
- Revise GEV-301b duct drop size and airflow to match submitted vented cabinet requirements.
- Update GEV-308 exhaust airflows in 374A bio fac. research.

M0602 SCHEDULES - MECHANICAL

- Add clarification Note #7 to HOOD AND GENERAL EXHAUST VALVE (HEV) (GEV) SCHEDULE: "7. AIRFLOW VALUES INDICATED ON THIS SCHEDULE ARE FOR OCCUPIED MODE. REFER TO LABORATORY FUME HOOD / SPACE PRESSURIZATION SYSTEM SCHEDULE FOR UNOCCUPIED AIRFLOW VALUES."
- Add clarification Note #10 to SUPPLY AIR VALVE WITH HOT WATER (SAV) SCHEDULE: "10. AIRFLOW VALUES INDICATED ON THIS SCHEDULE ARE FOR OCCUPIED MODE. REFER TO LABORATORY FUME HOOD / SPACE PRESSURIZATION SYSTEM SCHEDULE FOR UNOCCUPIED AIRFLOW VALUES."
- Update airflow values clouded on the above referenced schedules as well as the Laboratory Fume Hood / Space Pressurization System Schedule.

Architect's Supplemental Instructions

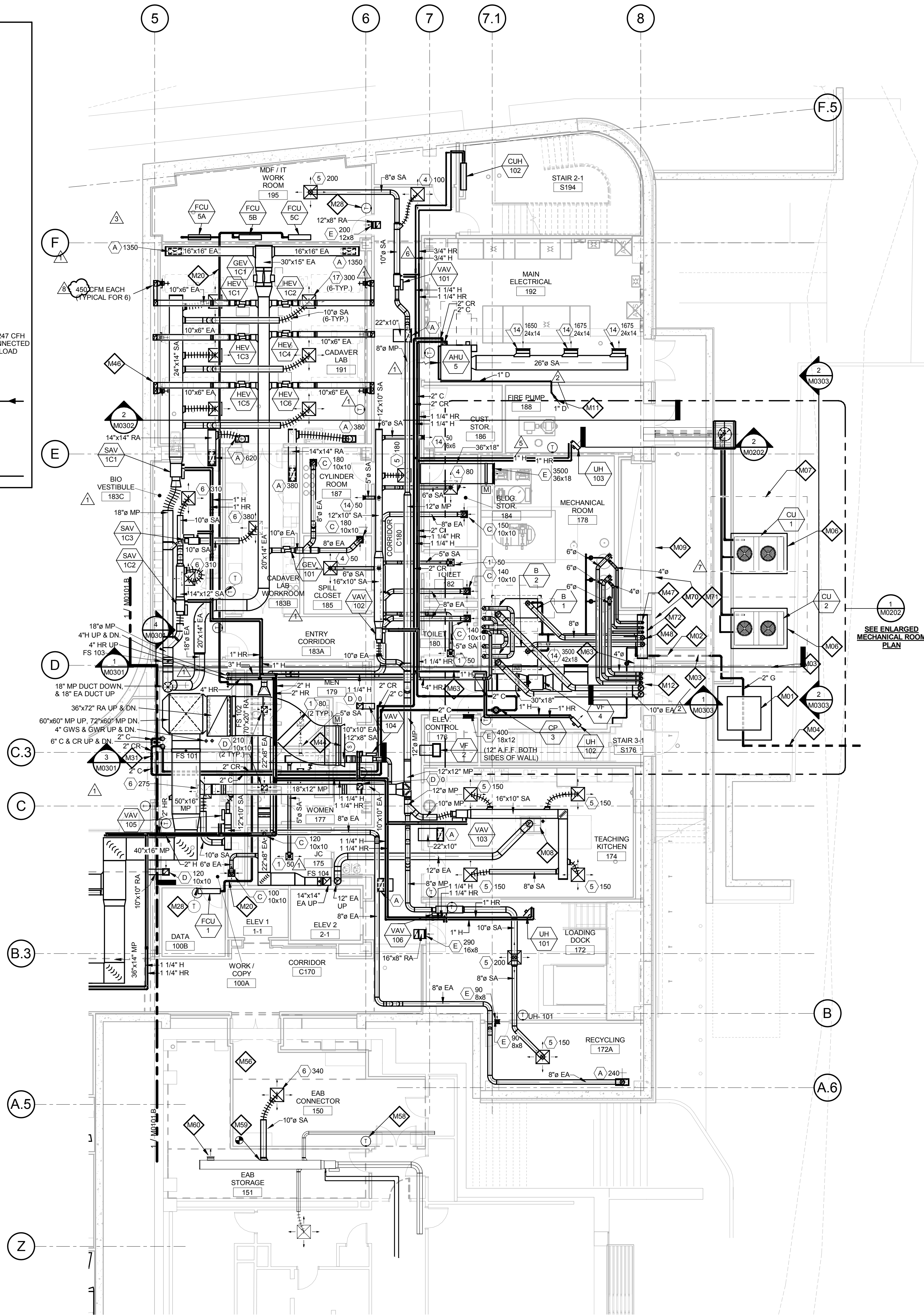
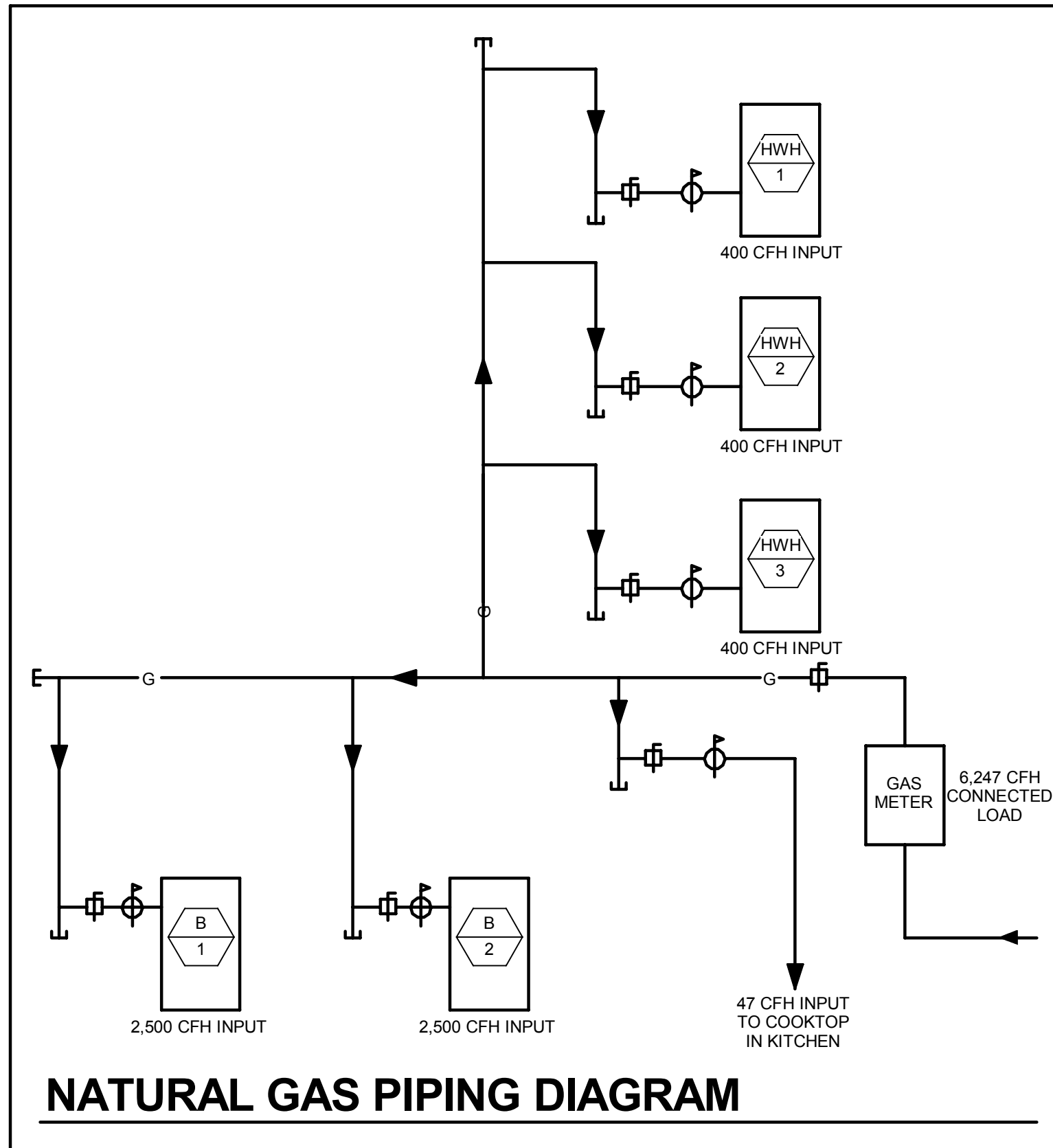
Page 3

M0602 SCHEDULES - MECHANICAL

- Update VAV-102 airflow value to match value shown on plan.

Issued by Architect:

Accepted by Contractor:



1 LEVEL 01 - AREA A - MECHANICAL PLAN
1/8" = 1'-0"

GENERAL NOTES:

- Because of the limited space available to install all of the mechanical work, coordination between the various trades is of the utmost importance. This contractor shall coordinate with all other trades prior to the fabrication and installation of any work.
- Refer to the reflected ceiling plans for ceiling construction, ceiling grid layout, ceiling mounted devices, and coordinate exact location and mounting type of all air devices.
- All ductwork upstream of terminal units shall be Medium Pressure (MP). All ductwork downstream of terminal units shall be Low Pressure (LP). Refer to specifications.
- All ductwork dimensions indicated on plans are sheet metal sizes. All medium pressure ductwork shall be unlined, externally insulated. All low pressure ductwork shall be lined. See specifications.
- All mitered 90° rectangular elbows shall be furnished with turning vanes having maximum $c = 0.12$. All smooth radius rectangular elbows shall have a throat radius greater than one half the duct width, unless furnished with splitter vanes. Under no circumstances shall the throat radius be less than one third the duct width. Unless otherwise noted or specified.
- Contractor shall furnish and install volume dampers for each duct take-off unless otherwise noted. See detail.
- Maximum length of Low Pressure (LP) flexible ductwork shall be 8'-0". Round LP duct of lengths greater than 8'-0" shall be rigid round. Flexible duct sizes on plans shall be neck size of diffusers or as indicated. See specifications.
- Maximum length of Medium Pressure (MP) flexible ductwork shall be 2'-0". Round MP duct of lengths greater than 2'-0" shall be rigid round. Flexible duct sizes on plans shall be air Terminal Unit inlet size or as indicated. See specifications.
- All ductwork runouts to Air Terminal Units and diffusers shall be the connection size unless otherwise noted.
- Piping runouts to terminal units shall be 3/4" unless otherwise noted. Refer to reheat box schedule.
- Verify exact location of thermostats, humidistats, BAS sensors, and other exposed control sensors with architectural elevations and drawings before installation.
- Schedule systems or equipment shut downs required for new construction with owner two weeks in advance. Some premium time work may be required.
- Refer to piping details for final connections to equipment.
- Provide service shut-off valves in major piping branch lines. All connections to risers and each building wing, A & B.

KEYED NOTES

- M01** PROPOSED GAS METER LOCATION: COORDINATE WITH LOCAL NATURAL GAS UTILITY COMPANY FOR METER SET SIZED FOR A TOTAL CONNECTED LOAD OF 6,247-CFH WITH A DELIVERY PRESSURE OF 2-PSIG. PROVIDE CONCRETE METER PAD PER THE LOCAL GAS COMPANY'S REQUIREMENTS AND SIZE.
- M02** 2-INCH MAIN BUILDING NATURAL GAS LINE ABOVE GRADE WITH SHUT-OFF VALVE.
- M03** 2-INCH NATURAL GAS LINE IN OPEN TRENCH WITH STEEL GRATING. SEE CIVIL DRAWINGS. SUPPORT PIPING WITH STAINLESS STEEL UNISTRUT FRAMING, MINIMUM 2-INCHES ABOVE TRENCH FLOOR.
- M04** NATURAL GAS MAIN EXTENSION BELOW GRADE BY LOCAL GAS COMPANY.
- M06** CONCRETE BASE FOR MECHANICAL EQUIPMENT, SEE CIVIL DRAWINGS. VERIFY SIZE WITH APPROVED SHOP DRAWINGS.
- M07** DASHED LINES INDICATE RECOMMENDED SERVICE, COIL PULLING SPACE, FILTER REMOVAL SPACE, AND/OR AIRFLOW CLEARANCES.
- M08** 3/4-INCH NATURAL GAS LINE BELOW SLAB WITHIN VENTED SLEEVE. SEE LOWER LEVEL FLOOR PLAN FOR CONTINUATION. PROVIDE GAS SHUT-OFF VALVE AND FLEXIBLE HOSE ADAPTER. FINAL CONNECTION TO COOK TOP BY KITCHEN EQUIPMENT INSTALLER.
- M09** OUTSIDE AIR INTAKE LOUVER, SEE ARCHITECTURAL DRAWINGS.
- M11** TERMINATE COOLING COIL DRAIN LINE OVER NEAREST FLOOR DRAIN OR INDIRECT WASTE. PROVIDE TRAP AS INDICATED ON PIPING DETAIL.
- M12** BOILER AND DOMESTIC WATER HEATER FLUES UP THROUGH ROOF.
- M20** REFRIGERANT LIQUID AND SUCTION PIPING BETWEEN DX COOLING COILS AND CONDENSING UNITS. COORDINATE PIPE SIZES WITH MANUFACTURER. PROVIDE 3/4" DRAIN LINE, ROUTE WITH REFRIGERANT PIPING, AND TERMINATE DRAINS FROM FCU-1, 2, 5A, 5B, AND 5C OVER FLOOR DRAIN IN LOWER LEVEL MECHANICAL ROOM. TERMINATE DRAINS FROM FCU-3 AND 4 OVER SERVICE SINK IN JANITORS CLOSET 375.
- M28** BAS TEMPERATURE SENSOR TO MONITOR IT/TCOM SPACES. FCU CONTROLLED BY UNIT MOUNTED THERMOSTAT.
- M31** 3-WAY CONTROL VALVE, SEE CHILLED WATER PIPING DIAGRAM.
- M44** AIRFLOW MEASURING STATION, KELE MODEL KOAMS FURNISHED WITH INLET BELL FOR PLENUM APPLICATIONS LOCATED IN MINIMUM OA DUCT OR RETURN AIR INLET ON EACH FLOOR.
- M46** EXHAUST DUCT DOWN THROUGH CHASE FOR DOWNDRAFT TABLE. VERIFY DUCT CONNECTION SIZE AND LOCATION. PROVIDE MANUAL DAMPER AND CONNECTION ADAPTER TO TABLE.
- M47** CONNECT DOMESTIC WATER HEATER COMBUSTION AIR DUCTS TO TOP OF PLENUM BOX AT LOUVER.
- M48** CONNECT HEATING HOT WATER BOILER COMBUSTION AIR DUCTS TO TOP OF PLENUM BOX AT LOUVER.
- M56** MODIFY EXISTING LOW PRESSURE SUPPLY DUCTWORK IN THIS AREA FOR NEW WALLS. REMOVE EXISTING DUCT MOUNTED AIR DEVICES AND PATCH DUCTWORK AIR-TIGHT. INSTALL NEW CEILING DIFFUSERS AND RETURN AIR GRILLE AS SHOWN AND AS REQUIRED FOR NEW CEILINGS.
- M57** REMOVE EXISTING DUCT MOUNTED AIR DEVICE AND CAP WITH SHEETMETAL. SEAL AIR-TIGHT.
- M58** NEW LOCATION FOR EXISTING TEMPERATURE SENSOR.
- M59** NEW CONNECTION TO EXISTING DUCTWORK.
- M60** EXISTING AIR DEVICE TO REMAIN. BALANCE TO 60-CFM.
- M61** RELOCATION EXISTING TEMPERATURE SENSOR.
- M63** INSTALL BOILER SAFETY SWITCH AND SIGN. COORDINATE LOCATION WITH OWNER, ARCHITECT, AND ALL OTHER TRADES.
- M70** REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL LOUVER INFORMATION.
- M71** BLANK OFF ALL UNUSED PORTIONS OF LOUVER WITH INSULATED METAL PANEL PAINTED BLACK BEHIND LOUVER.
- M72** PROVIDE 78"x18" INSULATED PLENUM BOX AT LOUVER FOR COMBUSTION AIR INTAKES. SLOPE BOTTOM OF PLENUM PER DETAIL ON SHEET M0501.

THE SEAL(S) AND SIGNATURE(S) APPLY ONLY TO THE DOCUMENT TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT.

Webster
UNIVERSITY

Webster University
Interdisciplinary Science
Building

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

William Tao & Associates, Inc.
MEP/FP Engineer
7955 Manchester Road, Suite 125
St. Louis, MO 63143
314-884-7600

David Mason & Associates, Inc.
Structural & Civil Engineer
800 South Vandeventer Avenue
St. Louis, MO 63110
314-534-1053

Faith Group
Technology
3101 S. Hanley Rd., Suite 100
St. Louis, MO 63143
314-591-2225

Kuhlmann Leavitt, Inc.
Environmental Graphics & Signage
7400 Pershing Ave.
St. Louis, MO 63130
314-725-6616

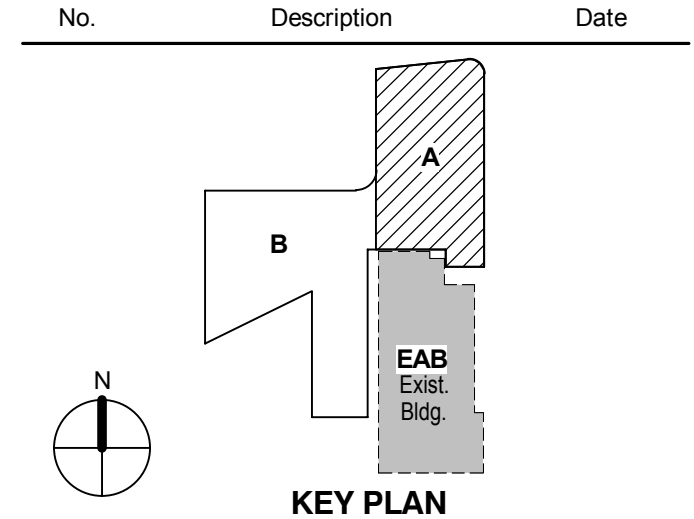
KWA Architects
Architecture
8721 Litzinger Road
St. Louis, MO 63124
314-962-2560

Spellman Brady & Company
Interior Designer
8251 Maryland Avenue, Suite 300
St. Louis, MO 63105
314-862-0070

SWT Design
Landscape Architect
7722 Big Bend Blvd.
St. Louis, MO 63119
314-644-5700

Webb Engineering Services, Inc.
Planning & Fire Protection
1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314-588-0600

8	ASHI-067	16 FEB 2017
7	ASHI-050	20 DEC 2016
6	ASHI-043	04 NOV 2016
5	ASHI-034	18 OCT 2016
4	ASHI-032	24 MAY 2016
3	ADDENDUM 2-4	19 APRIL 2016
2	ADDENDUM 2-2	17 MAR 2016
1	ADDENDUM 2-1	01 MAR 2016
- ISSUED FOR CONSTRUCTION (BP2)		



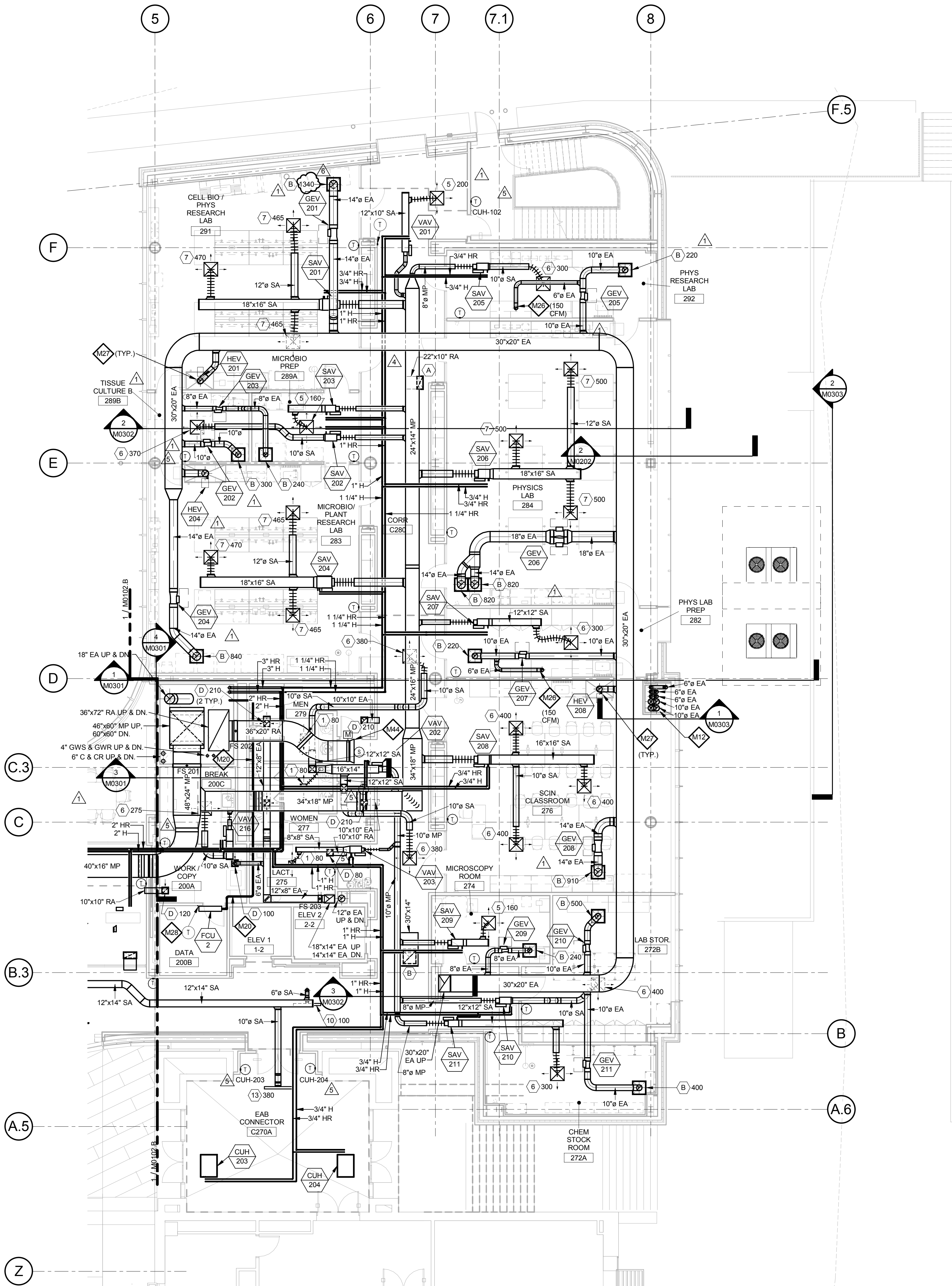
Drawing Title:

**LEVEL 01 AREA A FLOOR
PLAN - MECHANICAL**

Project No.: 04561.01 Checked by:

M0101.A

© Cannon Design 2015
All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written authorization by The Cannon Corporation.
6/9/2017 8:13:10 AM



1 LEVEL 02 - AREA A - MECHANICAL PLAN
1/8" = 1'-0"

GENERAL NOTES:

- Because of the limited space available to install all of the mechanical work, coordination between the various trades is of the utmost importance. This contractor shall coordinate with all other trades prior to the fabrication and installation of any work.
- Refer to the reflected ceiling plans for ceiling construction, ceiling grid layout, ceiling mounted devices, and coordinate exact location and mounting type of all air devices.
- All ductwork upstream of terminal units shall be Medium Pressure (MP). All ductwork downstream of terminal units shall be Low Pressure (LP). Refer to specifications.
- All ductwork dimensions indicated on plans are sheet metal sizes. All medium pressure ductwork shall be unlined, externally insulated. All low pressure ductwork shall be lined. See specifications.
- All mitered 90° rectangular elbows shall be furnished with turning vanes having maximum $c = 0.12$. All smooth radius rectangular elbows shall have a throat radius greater than one half the duct width, unless furnished with splitter vanes. Under no circumstances shall the throat radius be less than one third the duct width. Unless otherwise noted or specified.
- Contractor shall furnish and install volume dampers for each duct take-off unless otherwise noted. See detail.
- Maximum length of Low Pressure (LP) flexible ductwork shall be 8'-0". Round LP duct of lengths greater than 8'-0" shall be rigid round. Flexible duct sizes on plans shall be neck size of diffusers or as indicated. See specifications.
- Maximum length of Medium Pressure (MP) flexible ductwork shall be 2'-0". Round MP duct of lengths greater than 2'-0" shall be rigid round. Flexible duct sizes on plans shall be air Terminal Unit inlet size or as indicated. See specifications.
- All ductwork runouts to Air Terminal Units and diffusers shall be the connection size unless otherwise noted.
- Piping runouts to terminal units shall be 3/4" unless otherwise noted. Refer to reheat box schedule.
- Verify exact location of thermostats, humidistats, BAS sensors, and other exposed control sensors with architectural elevations and drawings before installation.
- Schedule systems or equipment shut downs required for new construction with owner two weeks in advance. Some premium time work may be required.
- Refer to piping details for final connections to equipment.
- Provide service shut-off valves in major piping branch lines. All connections to risers and each building wing; A & B.

KEYED NOTES

- BOILER AND DOMESTIC WATER HEATER FLUES UP THROUGH ROOF.
- REFRIGERANT LIQUID AND SUCTION PIPING BETWEEN DX COOLING COILS AND CONDENSING UNITS. COORDINATE PIPE SIZES WITH MANUFACTURER. PROVIDE 3/4" DRAIN LINE, ROUTE WITH REFRIGERANT PIPING, AND TERMINATE DRAINS FROM FCU-1, 2, 5A, 5B, AND 5C OVER FLOOR DRAIN IN LOWER LEVEL MECHANICAL ROOM. TERMINATE DRAINS FROM FCU-3 AND 4 OVER SERVICE SINK IN JANITORS CLOSET 375.
- 6-INCH ROUND EXHAUST DUCT FOR SNORKEL EXHAUST. COORDINATE FINAL CONNECTION TO SNORKEL WITH ARCHITECTURAL DRAWINGS.
- INSTALL HOOD EXHAUST VALVE IN VERTICAL POSITION NEAR HOOD. ELBOWS SHALL HAVE 1.5 DIAMETER RADIUS. USE 1.0 DIAMETER RADIUS ELBOWS ONLY WHERE NECESSARY.
- BAS TEMPERATURE SENSOR TO MONITOR IT/COM SPACES. FCU CONTROLLED BY UNIT MOUNTED THERMOSTAT.
- AIRFLOW MEASURING STATION, KELE MODEL KOAMS FURNISHED WITH INLET BELL FOR PLENUM APPLICATIONS LOCATED IN MINIMUM OA DUCT OR RETURN AIR INLET ON EACH FLOOR.

THE SEALS(S) AND SIGNATURE(S) APPLY ONLY TO THE DOCUMENT TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT.

Webster
UNIVERSITY

Webster University
Interdisciplinary Science
Building

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

William Tao & Associates, Inc.
MEP/FP Engineer
7955 Manchester Road, Suite 125
St. Louis, MO 63143
314-884-7600

David Mason & Associates, Inc.
Structural & Civil Engineer
800 South Vandeventer Avenue
St. Louis, MO 63110
314.534.1053

Faith Group
Technology
3101 S. Hanley Rd., Suite 100
St. Louis, MO 63143
314.591.2229

Kuhlmann Leavitt, Inc.
Environmental Graphics & Signage
7400 Pershing Ave.
St. Louis, MO 63130
314.725.6616

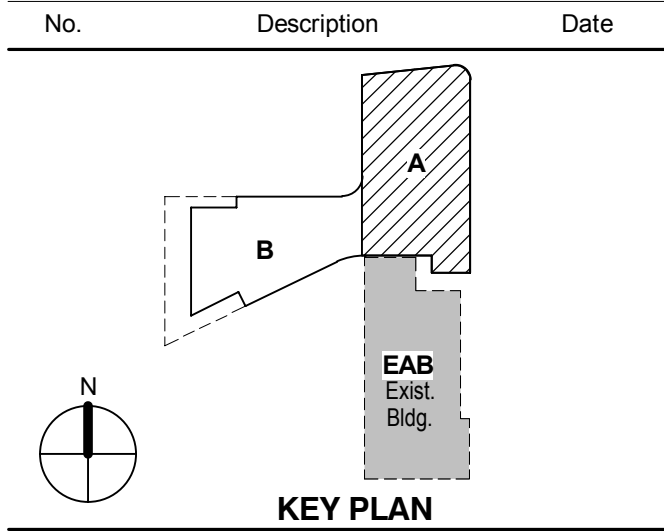
KWA Architects
Architecture
8721 Litzinger Road
St. Louis, MO 63124
314.962.2560

Spellman Brady & Company
Interior Designer
8251 Maryland Avenue, Suite 300
St. Louis, MO 63105
314.862.0070

SWT Design
Landscape Architect
7722 Big Bend Blvd
St. Louis, MO 63119
314.644.5700

Webb Engineering Services, Inc.
Plumbing & Fire Protection
1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314.588.0600

6	ASI-067	06 JUN 2017
5	ASI-050	16 FEB 2017
4	ASI-043	20 DEC 2016
3	ASI-034	04 NOV 2016
2	ASI-032	18 OCT 2016
1	ADDENDUM 2-1	17 MAR 2016
-	ISSUED FOR CONSTRUCTION (BP2)	01 MAR 2016



Drawing Title:
**LEVEL 02 AREA A FLOOR
PLAN - MECHANICAL**

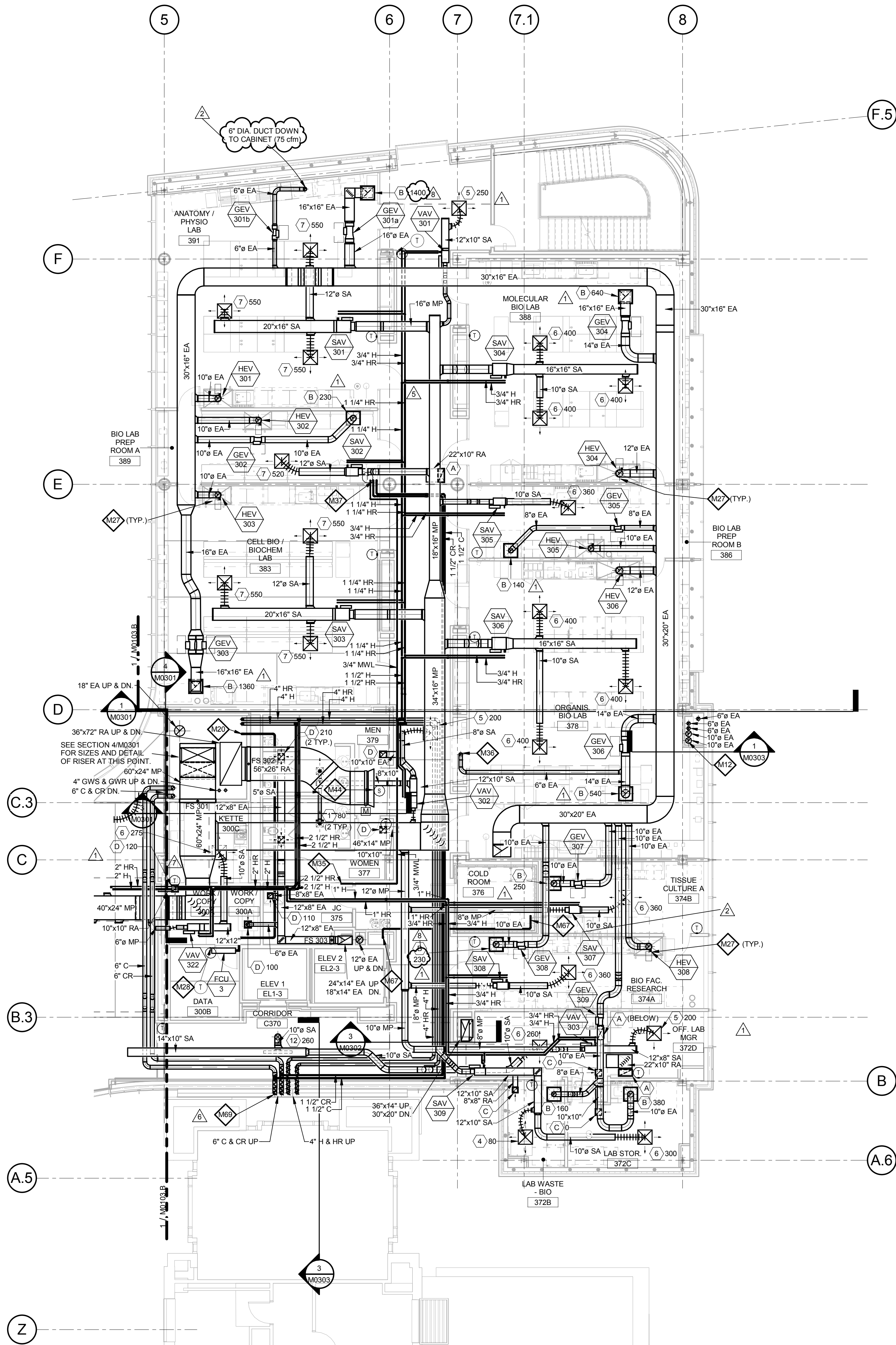
Project No.: 04561.01 Checked by:

M0102.A

© Cannon Design 2015
All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written authorization by The Cannon Corporation.
6/9/2017 8:13:21 AM

1 LEVEL 03 - AREA A - MECHANICAL PLAN

1/8" = 1'-0"



GENERAL NOTES:

- Because of the limited space available to install all of the mechanical work, coordination between the various trades is of the utmost importance. This contractor shall coordinate with all other trades prior to the fabrication and installation of any work.
- Refer to the reflected ceiling plans for ceiling construction, ceiling grid layout, ceiling mounted devices, and coordinate exact location and mounting type of all air devices.
- All ductwork upstream of terminal units shall be Medium Pressure (MP). All ductwork downstream of terminal units shall be Low Pressure (LP). Refer to specifications.
- All ductwork dimensions indicated on plans are sheet metal sizes. All medium pressure ductwork shall be unlined, externally insulated. All low pressure ductwork shall be lined. See specifications.
- All mitered 90° rectangular elbows shall be furnished with turning vanes having maximum $c = 0.12$. All smooth radius rectangular elbows shall have a throat radius greater than one half the duct width, unless furnished with splitter vanes. Under no circumstances shall the throat radius be less than one third the duct width. Unless otherwise noted or specified.
- Contractor shall furnish and install volume dampers for each duct take-off unless otherwise noted. See detail.
- Maximum length of Low Pressure (LP) flexible ductwork shall be 8'-0". Round LP duct of lengths greater than 8'-0" shall be rigid round. Flexible duct sizes on plans shall be neck size of diffusers or as indicated. See specifications.
- Maximum length of Medium Pressure (MP) flexible ductwork shall be 2'-0". Round MP duct of lengths greater than 2'-0" shall be rigid round. Flexible duct sizes on plans shall be air Terminal Unit inlet size or as indicated. See specifications.
- All ductwork runouts to Air Terminal Units and diffusers shall be the connection size unless otherwise noted.
- Piping runouts to terminal units shall be 3/4" unless otherwise noted. Refer to reheat box schedule.
- Verify exact location of thermostats, humidistats, BAS sensors, and other exposed control sensors with architectural elevations and drawings before installation.
- Schedule systems or equipment shut downs required for new construction with owner two weeks in advance. Some premium time work may be required.
- Refer to piping details for final connections to equipment.
- Provide service shut-off valves in major piping branch lines. All connections to risers and each building wing: A & B.

KEYED NOTES

- M12** BOILER AND DOMESTIC WATER HEATER FLUES UP THROUGH ROOF.
- M20** REFRIGERANT LIQUID AND SUCTION PIPING BETWEEN DX COOLING COILS AND CONDENSING UNITS. COORDINATE PIPE SIZES WITH MANUFACTURER. PROVIDE 3/4" DRAIN LINE, ROUTE WITH REFRIGERANT PIPING, AND TERMINATE DRAINS FROM FCU-1, 2, 5A, 5B, AND 5C OVER FLOOR DRAIN IN LOWER LEVEL MECHANICAL ROOM. TERMINATE DRAINS FROM FCU-3 AND 4 OVER SERVICE SINK IN JANITORS CLOSET 375.
- M27** INSTALL HOOD EXHAUST VALVE IN VERTICAL POSITION NEAR HOOD. ELBOWS SHALL HAVE 1.5 DIAMETER RADIUS, USE 1.0 DIAMETER RADIUS ELBOWS ONLY WHERE NECESSARY.
- M28** BAS TEMPERATURE SENSOR TO MONITOR IT/TCOM SPACES. FCU CONTROLLED BY UNIT MOUNTED THERMOSTAT.
- M35** 3/4" MWL CONNECTED TO BACKFLOW DEVICE IN JANITOR'S CLOSET. SEE PLUMBING DRAWINGS. ROUTE TO LEVEL 04 FOR PROCESS COOLING SYSTEM.
- M36** 6" ROUND DUCT FOR AQUARIUM SPACE. BALANCE AIRFLOW TO 100 CFM. TERMINATE OPEN END AS HIGH AS POSSIBLE.
- M37** 1-1/2" C & CR, AND 3/4" MWL UP TO LEVEL 04.
- M44** AIRFLOW MEASURING STATION, KELE MODEL KOAMS FURNISHED WITH INLET BELL FOR PLENUM APPLICATIONS LOCATED IN MINIMUM OA DUCT OR RETURN AIR INLET ON EACH FLOOR.
- M67** LOCATION FOR REFRIGERANT PIPING FOR COOLER, SEE ARCHITECTURAL SPECIFICATIONS AND DRAWINGS. PIPING SHALL BE INSTALLED PER COOLER SUPPLIERS REQUIREMENTS.
- M69** HHR AND C/CR PIPING TO BE HEAT TRACED BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL PLANS. COORDINATE INSTALLATION OF PIPE INSULATION OVER HEAT TRACE WITH ELECTRICAL CONTRACTOR. HEAT TRACE TO EXTEND 3 FT. INSIDE EACH BUILDING.

THE SEALS(S) AND SIGNATURE(S) APPLY ONLY TO THE DOCUMENT TO WHICH THEY ARE AFFIXED, AND EXPRESSLY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT.

Webster
UNIVERSITY

Webster University
Interdisciplinary Science
Building

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

William Tao & Associates, Inc.
ME/PFP Engineer
7955 Manchester Road, Suite 125
St. Louis, MO 63143
314-884-7600

David Mason & Associates, Inc.
Structural & Civil Engineer
800 South Vandeventer Avenue
St. Louis, MO 63110
314.534.1053

Faith Group
Technology
3101 S. Hanley Rd, Suite 100
St. Louis, MO 63143
314.591.2229

Kuhlmann Leavitt, Inc.
Environmental Graphics & Signage
7400 Pershing Ave.
St. Louis, MO 63130
314.725.6616

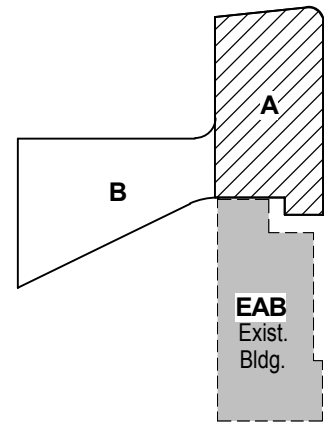
KWA Architects
Architecture
8721 Litzinger Road
St. Louis, MO 63124
314.962.2560

Spellman Brady & Company
Interior Designer
8251 Maryland Avenue, Suite 300
St. Louis, MO 63105
314.862.0070

SWT Design
Landscape Architect
7722 Big Bend Blvd
St. Louis, MO 63119
314.644.5700

Webb Engineering Services, Inc.
Planning & Fire Protection
1400 S. 3rd Street, Suite 201
St. Louis, MO 63104
314.588.0600

8	ASH-067	06 JUN 2017
7	ASH-050	16 FEB 2017
6	ASH-045	16 JAN 2017
5	ASH-043	20 DEC 2016
4	ASH-034	04 NOV 2016
3	ASH-032	18 OCT 2016
2	ADDENDUM 2-2	19 APRIL 2016
1	ADDENDUM 2-1	17 MAR 2016
-	ISSUED FOR CONSTRUCTION (BP2)	01 MAR 2016

No.	Description	Date
		
KEY PLAN		

Drawing Title:

**LEVEL 03 AREA A FLOOR
PLAN - MECHANICAL**

Project No.: 04561.01 Checked by:

M0103.A

© Cannon Design 2015
All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written authorization by The Cannon Corporation.
6/9/2017 8:13:27 AM

6/8/2017 8:13:27 AM

WTA 14127.01

D:\Autodesk\Revit 2015 Local\14127.01.WU_WTA_ME_AJS.rvt

SUPPLY AIR VALVE WITH HOT WATER (SAV) SCHEDULE																	
TAG ID	TAG NO	MANUFACTURER & MODEL NO.	INLET SIZE (INCHES)	COOLING CFM (SEE NOTE #10)		MAX NC	AIRFLOW CFM	HEATING COIL		WATER FLOW (GPM)	WATER TEMP. (°F)	EWT	LWT	MAX WATER PD (FT)	COIL CAPACITY (MBH)	MAX AIR PD (IN W.G.)	NOTES
				MIN	MAX			AIR TEMP. (°F)	AIR TEMP. (°F)								
SAV	1C1	PHOENIX MAV	24x12	470	1500	30	1500	50	78.5	4.5	140	100	2	55.7	0.35	1 to 8	
SAV	1C2	PHOENIX MAV	12"	150	500	25	500	50	87.8	2.0	140	100	2	25.8	0.35	1 to 8	
SAV	1C3	PHOENIX MAV	8"	150	380	25	380	50	86.9	1.5	140	100	2	15.2	0.35	1 to 8	
WTA LEVEL 01: 3																	
SAV	201	PHOENIX MAV	14"	420	1400	25	1400	55	79.8	2.9	140	100	2	38.2	0.35	1 to 7	
SAV	202	PHOENIX MAV	8"	240	370	25	370	55	79.5	0.8	140	100	2	10.0	0.35	1 to 7	
SAV	203	PHOENIX MAV	8"	160	160	25	160	55	72.0	0.5	140	100	2	3.0	0.35	1 to 7	
SAV	204	PHOENIX MAV	14"	420	1400	25	1400	55	78.8	2.8	140	100	2	36.6	0.35	1 to 7	
SAV	205	PHOENIX MAV	8"	95	300	25	300	55	79.0	0.6	140	100	2	7.9	0.35	1 to 7	
SAV	206	PHOENIX MAV	12"	605	1500	25	1500	50	78.5	2.9	140	100	2	38.7	0.35	1 to 7	
SAV	207	PHOENIX MAV	8"	120	300	25	300	55	77.9	0.6	140	100	2	7.6	0.35	1 to 7	
SAV	208	PHOENIX MAV	12"	600	1200	25	1200	50	77.5	2.2	140	100	2	29.8	0.35	1 to 7	
SAV	209	PHOENIX MAV	8"	65	160	25	160	55	72.0	0.5	140	100	2	3.0	0.35	1 to 7	
SAV	210	PHOENIX MAV	8"	120	400	25	400	55	82.2	0.9	140	100	2	12.0	0.35	1 to 7	
SAV	211	PHOENIX MAV	8"	100	300	25	300	50	84.2	0.7	140	100	2	9.7	0.35	1 to 7	
SAV	212	PHOENIX MAV	24x12	600	2200	30	2200	50	86.9	6.1	140	100	2	76.1	0.35	1 to 7, 9	
WTA LEVEL 02: 12																	
SAV	301	PHOENIX MAV	24x12	600	1650	30	1650	50	79.3	3.3	140	100	2	44.1	0.35	1 to 7	
SAV	302	PHOENIX MAV	10"	520	520	25	520	55	78.7	1.0	140	100	2	13.6	0.35	1 to 7	
SAV	303	PHOENIX MAV	24x12	495	1650	30	1650	50	78.2	3.2	140	100	2	42.2	0.35	1 to 7	
SAV	304	PHOENIX MAV	14"	1200	1200	25	1200	55	77.8	2.3	140	100	2	30.1	0.35	1 to 7	
SAV	305	PHOENIX MAV	8"	270	360	25	360	55	78.7	0.7	140	100	2	9.4	0.35	1 to 7	
SAV	306	PHOENIX MAV	14"	1200	1200	25	1200	55	79.2	2.4	140	100	2	31.9	0.35	1 to 7	
SAV	307	PHOENIX MAV	8"	360	360	25	360	50	78.0	0.7	140	100	2	9.1	0.35	1 to 7	
SAV	308	PHOENIX MAV	8"	270	360	25	360	50	78.6	0.7	140	100	2	9.4	0.35	1 to 7	
SAV	309	PHOENIX MAV	8"	100	380	25	380	50	86.9	1.0	140	100	2	13.2	0.35	1 to 7	
WTA LEVEL 03: 9																	
SAV	401	PHOENIX MAV	24x12	540	1800	30	1800	55	79.7	3.7	140	100	2	49.0	0.35	1 to 7	
SAV	402	PHOENIX MAV	10"	165	550	25	550	55	79.4	1.1	140	100	2	14.7	0.35	1 to 7	
SAV	403	PHOENIX MAV	24x12	540	1800	30	1800	55	78.6	3.5	140	100	2	46.8	0.35	1 to 7	
SAV	404	PHOENIX MAV	12"	800	1000	25	1000	55	78.8	2.0	140	100	2	26.2	0.35	1 to 7	
SAV	405	PHOENIX MAV	12"	1000	1000	25	1000	50	80.0	2.1	140	100	2	27.5	0.35	1 to 7	
SAV	406	PHOENIX MAV	8"	240	240	25	240	55	80.9	0.5	140	100	2	6.8	0.35	1 to 7	
SAV	407	PHOENIX MAV	12"	1000	1000	25	1000	55	82.0	2.2	140	100	2	29.7	0.35	1 to 7	
SAV	408	PHOENIX MAV	8"	50	50	25	50	55	78.8	0.5	140	100	2	1.1	0.35	1 to 7	
WTA LEVEL 04: 8																	
Grand total: 32																	
				11270 CFM		27310 CFM		27310 CFM		60.3							
PLAN DESIGNATION:																	
NOTES:																	
1. HEATING COIL SIZES SHALL INCLUDE 25% ADDITIONAL CAPACITY GREATER THAN LISTED IN ABOVE VALUES AT AIRFLOW AND WATER FLOWS LISTED.																	
2. PROVIDE AND INSTALL DUCT MOUNTED HEATING COIL. REHEAT COIL SHALL BE 2 ROW MINIMUM.																	
3. H & HR RUNOUTS TO REHEAT COILS SHALL BE 3/4" UNLESS OTHERWISE NOTED.																	
4. BOX AIR PRESSURE DROP (APD) INCLUDES COIL APD AT SCHEDULED MAXIMUM AIR FLOW RATE.																	
5. SUPPLY VALVES SHALL TRACK WITH THE EXHAUST AND HOOD VALVES TO CONTROL SPACE PRESSURE.																	
6. PROVIDE DISCHARGE SOUND ATTENUATOR.																	
7. VALVES SHALL BE LOW PRESSURE TYPE WITH OPERATING PRESSURES BETWEEN 0.3" AND 3.0" W.C.																	
8. ENTERING AIR TEMPERATURE IS 50 DEG. F.																	
9. PROVIDE WITH 3-WAY CONTROL VALVE. REFER TO HVAC TERMINAL BOX REHEAT PIPING WITH 3-WAY VALVE.																	
10. AIRFLOW VALUES INDICATED ON THIS SCHEDULE ARE FOR OCCUPIED MODE. REFER TO LABORATORY FUME HOOD / SPACE PRESSURIZATION SYSTEM SCHEDULE FOR UNOCCUPIED AIRFLOW VALUES.																	

LABORATORY FUME HOOD / SPACE PRESSURIZATION SYSTEM SCHEDULE																
ROOM NO.	HOOD EXHAUST VALVE (HEV)				SUPPLY AIR VALVE (SAV)				GENERAL EXHAUST VALVE (GEV)				No. of Doors (70cfm/door)	ROOM OFFSET (CFM)	ROOM PRESSURE	
	MARK	UNOCCUPIED MIN.	OCCUPIED MIN.	MAX.	MARK	UNOCCUPIED MIN.	OCCUPIED MIN.	MAX.	MARK	UNOCCUPIED	OCCUPIED	MAX.				ACH
191	HEV-1C1	0	0	0	SAV-1C1	540	1500	3000	GEV-1C1	150	2700	10.0	0	0	-	
191	HEV-1C2	0	0	450								0.0	0	0	-	
191	HEV-1C3	0	0	450								0.0	0	0	-	
191	HEV-1C4	0	0	450								0.0	0	0	-	
191	HEV-1C5	0	0	450								0.0	0	0	-	
191	HEV-1C6	0	0	450								0.0	0	0	-	
183C	—	0	0	0	SAV-1C2	190	280	620				0.0	0	0	Transfer	
183B	—	0	0	0	SAV-1C3	115	380	845				0.0	0	0	Transfer	
SUB TOTAL	0	0	2700	430	SAV-201	200	1400	1400	GEV-201	340	130	230	9.0	3	200	-
289B	—	0	0	0	SAV-202	240	240	370	GEV-202	130	130	340	13.3	—	110	+
289A	—	0	0	0	SAV-203	40	65	160	GEV-203	110	135	240	1.7	1	70	-
283	HEV-204	0	250	700	SAV-204	200	420	1400	GEV-204	340	310	840	18.4	2	140	-
292	—	0	0	0	SAV-205	60	95	300	GEV-205	130	165	370	1.9	1	70	-
284	—	0	0	0	SAV-206	240	605	1500	GEV-206	380	745	1640	35.5	2	140	-
282	—	0	0	0	SAV-207	60	120	300	GEV-207	130	190	370	2.4	1	70	-
276	HEV-208	0	200	430	SAV-208	200	600	1200	GEV-208	340	310	840	18.4	2	140	-
274	—	0	0	0	SAV-209	40	65	160	GEV-209	110	135	240	9.3	1	70	-
272B	—	0	0	0	SAV-210	60	120	400	GEV-210	130	190	500	7.0	1	70	-
272A	—	0	0	0	SAV-211	100	100	300	GEV-211	200	200	400	8.2	—	100	-
235	—	0	0	0	SAV-212	660	660	2200	GEV-212	730	730	2270	21.6	1	70	-
HEV-301	0	200	430	SAV-301	200	600	1650	GEV-301a	130	180	540	9.4	2	140	-	
391	—	0	0	0					GEV-301b	130	180	540	9.4	2	140	-
SUB TOTAL	0	200	430		200	600	1650		130	180	540	9.4	2	140	-	
389	HEV-302	0	200	430	SAV-302	60	160	520	GEV-302	130	30	230	4.9	1	70	-
383	HEV-303	0	200	430	SAV-303	200	495	1650	GEV-303	340	435	1360	9.5	2	140	-
388	HEV-304	0	250	700	SAV-304	80	480	1200	GEV-304	220	180	540	4.5	2	140	-
380	HEV-305	0	200	430	SAV-305	60	270	360	GEV-305	130	140	240	3.0	1	70	-
378	HEV-306	0	250	700	SAV-306	240	610	1200	GEV-306	380	180	540	3.2	2	140	-
374B	—	0	0	0	SAV-307	240	240	360	GEV-307	130	140	240	7.3	—	110	+
374A	HEV-308	0	200	430	SAV-308	60	270	360	GEV-308	130	140	240	7.3	1	70	-
372B/C	—	0	0	0	SAV-309	100	100	380	GEV-309	260	180	540	51.4	—	160	-
HEV-401a	0	250	700	SAV-401	200	540	1800	GEV-401	340	180	540	24.0	—	160	-	
491	HEV-401b	0	250	700												
SUB TOTAL	0	500	1400		200	540	1800		340	180	540		2	140	-	
489	—	0	0	0	SAV-402	60	165	550	GEV-402	130	235	620		1	70	-
HEV-403a	0	250	700	SAV-403	200	540	1800	GEV-403	340	180	540					
483	HEV-403b	0	250	700												
SUB TOTAL	0	500	1400		200	540	1800		340	180	540		2	140	-	
HEV-404a	0	250	700	SAV-404	200	800	1000		0	0	0					
HEV-404b	0	250	700													
HEV-404c	0	250	700													
488	HEV-404d	0	250	700												
SUB TOTAL	0	1000	2800		200	800	1000		0	0	0		2	140	-	
HEV-405a	0	250	700	SAV-405	200	600	1000									
HEV-405b	0	250	700													
HEV-405c	0	250	700													
HEV-405d	0	200	430													
HEV-405e	0	250	700													
HEV-405f	0	250	700													
480	HEV-405g	0	250	700												
SUB TOTAL	0	1700	4630		200	600	1000		0				2	140	-	
478	HEV-406	0	200	430	SAV-406	60	240	240	GEV-406	130	180	540	4.7	1	70	-
HEV-407a	0	200	430	SAV-407	60	700	1000									
HEV-407b	0	200	430													
HEV-407c	0	200	430													
HEV-407d	0	200	430													
HEV-407e	0	200	430													
472	HEV-407f	0	200	430												
SUB TOTAL	0	1400	3010		200	700	1000		0	0	0		2	140	-	
475	—	0	0	0	SAV-408	50	50	50	GEV-408	150	150	150		—	100	-

VARIABLE AIR VOLUME BOX WITH HOT WATER (VAV) SCHEDULE																		
r#	TAG NO	MANUFACTURER & MODEL NO.	INLET SIZE (INCHES)	COOLING CFM			DISCH. MAX IN.	CFM	AIR TEMP. (F°)			HEATING COIL			MAX WATER PD (FT)	COIL CAPACITY (MBH)	MAX AIR PD (IN. W.G.)	NOTES
				MIN	MAX	CFM			EAT	LAT	WATER FLOW (GPM)	EWT	LWT					
VAV	101	PRICE SDV	6"	90 CFM	300 CFM	25	135 CFM	55	86.9	0.5	140	100	2	4.8	0.35	1, 2, 3, 4		
VAV	102	PRICE SDV	8"	230 CFM	510 CFM	25	280 CFM	55	77.0	0.5	140	100	2	6.8	0.35	1, 3, 4		
VAV	103	PRICE SDV	9"	180 CFM	400 CFM	25	280 CFM	55	86.9	0.8	140	100	2	9.8	0.35	1, 2, 3, 4		
VAV	104	PRICE SDV	6"	65 CFM	210 CFM	25	105 CFM	55	75.0	0.5	140	100	2	2.3	0.35	1, 3, 4		
VAV	105	PRICE SDV	6"	70 CFM	275 CFM	25	95 CFM	55	74.0	0.5	140	100	2	1.9	0.35	1, 3, 4		
VAV	106	PRICE SDV	7"	105 CFM	350 CFM	25	350 CFM	55	93.0	1.1	140	100	2	14.6	0.35	1, 2, 3, 4		
VAV	107	PRICE SDV	6"	65 CFM	200 CFM	25	170 CFM	55	86.9	0.5	140	100	2	6.0	0.35	1, 2, 3, 4		
VAV	108	PRICE SDV	7"	110 CFM	360 CFM	25	360 CFM	55	95.0	1.4	140	100	2	18.7	0.35	1, 2, 3, 4		
VAV	109	PRICE SDV	8"	170 CFM	495 CFM	25	490 CFM	55	95.0	2.0	140	100	2	26.6	0.35	1, 2, 3, 4		
VAV	110	PRICE SDV	10"	480 CFM	800 CFM	25	600 CFM	55	83.2	1.4	140	100	2	16.6	0.35	1, 2, 3, 4		
VAV	111	PRICE SDV	7"	120 CFM	380 CFM	25	230 CFM	55	86.9	0.8	140	100	2	8.1	0.35	1, 2, 3, 4		
VAV	112	PRICE SDV	6"	50 CFM	150 CFM	25	75 CFM	55	73.5	0.5	140	100	2	1.2	0.35	1, 3, 4		
VAV	113	PRICE SDV	10"	480 CFM	800 CFM	25	500 CFM	55	86.9	1.3	140	100	2	17.6	0.35	1, 2, 3, 4		
VAV	114	PRICE SDV	9"	190 CFM	730 CFM	25	730 CFM	55	86.9	2.0	140	100	2	26.0	0.35	1, 2, 3, 4, 5		
VAV	115	PRICE SDV	14"	600 CFM	1820 CFM	25	1130 CFM	55	86.9	2.9	140	100	2	39.8	0.35	1, 2, 3, 4		
VAV	116	PRICE SDV	7"	125 CFM	370 CFM	25	280 CFM	55	77.0	0.5	140	100	2	6.7	0.35	1, 3, 4		
VAV	117	PRICE SDV	9"	225 CFM	685 CFM	25	550 CFM	55	76.5	0.9	140	100	2	12.8	0.35	1, 2, 3, 4		
VAV	118	PRICE SDV	12"	270 CFM	1135 CFM	25	1135 CFM	50	89.0	3.2	140	100	2	42.4	0.35	1, 2, 3, 4		
VAV	119	PRICE SDV	8"	175 CFM	490 CFM	25	320 CFM	55	86.9	0.9	140	100	2	11.2	0.35	1, 2, 3, 4		
VAV	120	PRICE SDV	6"	100 CFM	285 CFM	25	225 CFM	55	86.9	0.6	140	100	2	7.9	0.35	1, 2, 3, 4		
VAV	121	PRICE SDV	6"	60 CFM	215 CFM	25	185 CFM	55	86.9	0.5	140	100	2	6.5	0.35	1, 2, 3, 4		
VAV	122	PRICE SDV	6"	60 CFM	210 CFM	25	180 CFM	55	86.9	0.5	140	100	2	5.6	0.35	1, 2, 3, 4		
VAV	123	PRICE SDV	14"	700 CFM	1395 CFM	25	1085 CFM	55	86.9	2.9	140	100	2	38.2	0.35	1, 2, 3, 4		
VAV	124	PRICE SDV	14"	700 CFM	1955 CFM	25	1085 CFM	55	86.9	2.9	140	100	2	38.2	0.35	1, 2, 3, 4		
WTA LEVEL 01: 24				5420 CFM	14730 CFM		10555 CFM			29.4								
VAV	201	PRICE SDV	6"	65 CFM	200 CFM	25	200 CFM	55	93.4	0.7	140	100	2	8.4	0.35	1, 2, 3, 4		
VAV	202	PRICE SDV	10"	280 CFM	920 CFM	25	555 CFM	55	75.5	1.0	140	100	2	12.4	0.35	1, 2, 3, 4		
VAV	203	PRICE SDV	4"	45 CFM	80 CFM	25	80 CFM	55	86.9	0.5	140	100	2	1.6	0.35	1, 3, 4		
VAV	204	PRICE SDV	10"	180 CFM	840 CFM	25	505 CFM	55	84.0	1.2	140	100	2	16.0	0.35	1, 2, 3, 4		
VAV	205	PRICE SDV	6"	85 CFM	310 CFM	25	310 CFM	55	86.9	0.8	140	100	2	10.8	0.35	1, 2, 3, 4		
VAV	206	PRICE SDV	6"	85 CFM	310 CFM	25	310 CFM	55	86.9	0.8	140	100	2	10.7	0.35	1, 2, 3, 4		
VAV	207	PRICE SDV	7"	85 CFM	325 CFM	25	325 CFM	55	86.9	0.9	140	100	2	11.2	0.35	1, 2, 3, 4		
VAV	208	PRICE SDV	6"	195 CFM	195 CFM	25	195 CFM	55	86.9	0.5	140	100	2	6.8	0.35	1, 2, 3, 4		
VAV	209	PRICE SDV	14"	480 CFM	1900 CFM	25	990 CFM	55	86.9	2.6	140	100	2	34.7	0.35	1, 2, 3, 4		
VAV	210	PRICE SDV	14"	420 CFM	1500 CFM	25	600 CFM	55	84.0	1.5	140	100	2	19.1	0.35	1, 2, 3, 4		
VAV	212	PRICE SDV	12"	450 CFM	1500 CFM	25	1470 CFM	55	86.9	3.9	140	100	2	51.8	0.35	1, 2, 3, 4		
VAV	213	PRICE SDV	6"	50 CFM	210 CFM	25	140 CFM	55	75.5	0.5	140	100	2	3.1	0.35	1, 3, 4		
VAV	214	PRICE SDV	7"	105 CFM	305 CFM	25	155 CFM	55	75.5	0.5	140	100	2	3.5	0.35	1, 3, 4		
VAV	215	PRICE SDV	5"	65 CFM	200 CFM	25	120 CFM	55	75.5	0.5	140	100	2	2.4	0.35	1, 3, 4		
VAV	216	PRICE SDV	6"	70 CFM	275 CFM	25	95 CFM	55	75.5	0.5	140	100	2	1.9	0.35	1, 3, 4		
VAV	217	PRICE SDV	12"	360 CFM	1200 CFM	25	640 CFM	50	86.9	1.8	140	100	2	23.8	0.35	1, 2, 3, 4		
WTA LEVEL 02: 16				3020 CFM	10270 CFM		6690 CFM			18.2								
VAV	301	PRICE SDV	6"	65 CFM	200 CFM	25	250 CFM	55	89.6	0.7	140	100	2	9.5	0.35	1, 2, 3, 4		
VAV	302	PRICE SDV	6"	110 CFM	360 CFM	25	270 CFM	55	82.0	0.6	140	100	2	8.0	0.35	1, 2, 3, 4		
VAV	303	PRICE SDV	6"	65 CFM	200 CFM	25	110 CFM	55	86.9	0.5	140	100	2	3.9	0.35	1, 2, 3, 4		
VAV	304	PRICE SDV	10"	260 CFM	680 CFM	25	475 CFM	55	86.9	1.3	140	100	2	16.6	0.35	1, 2, 3, 4		
VAV	305	PRICE SDV	10"	200 CFM	735 CFM	25	80 CFM	55	95.5	1.6	140	100	2	21.4	0.35	1, 2, 3, 4		
VAV	306	PRICE SDV	9"	165 CFM	630 CFM	25	540 CFM	55	90.5	1.6	140	100	2	21.2	0.35	1, 2, 3, 4		
VAV	307	PRICE SDV	10"	165 CFM	660 CFM	25	0 CFM	55	93.0	1.7	140	100	2	22.6	0.35	1, 2, 3, 4		
VAV	308	PRICE SDV	10"	240 CFM	935 CFM	25	690 CFM	55	86.9	1.8	140	100	2	24.3	0.35	1, 2, 3, 4		
VAV	309	PRICE SDV	12"	360 CFM	1320 CFM	25	660 CFM	55	86.9	1.8	140	100	2	23.2	0.35	1, 2, 3, 4		
VAV	310	PRICE SDV	14"	540 CFM	1920 CFM	25	975 CFM	55	86.9	2.6	140	100	2	34.3	0.35	1, 2, 3, 4		
VAV	311	PRICE SDV	10"	225 CFM	750 CFM	25	600 CFM	55	86.9	1.6	140	100	2	21.1	0.35	1, 2, 3, 4, 5		
VAV	312	PRICE SDV	12"	430 CFM	1420 CFM	25	810 CFM	50	86.9	2.1	140	100	2	28.4	0.35	1, 2, 3, 4		
VAV	313	PRICE SDV	12"	300 CFM	1180 CFM	25	540 CFM	55	86.9	1.4	140	100	2	18.9	0.35	1, 2, 3, 4		
VAV	314	PRICE SDV	14"	480 CFM	1600 CFM	25	1040 CFM	55	86.3	2.7	140	100	2	36.4	0.35	1, 2, 3, 4		
VAV	315	PRICE SDV	10"	265 CFM	935 CFM	25	795 CFM	55	85.3	2.3	140	100	2	30.8	0.35	1, 2, 3, 4		
VAV	316	PRICE SDV	12"	265 CFM	1040 CFM	25	680 CFM	55	90.0	1.8	140	100	2	23.9	0.35	1, 2, 3, 4		
VAV	317	PRICE SDV	6"	65 CFM	210 CFM	25	205 CFM	55	86.9	0.5	140	100	2	4.1	0.35	1, 3, 4		
VAV	318	PRICE SDV	7"	110 CFM	390 CFM	25	295 CFM	55	75.0	0.5	140	100	2	6.3	0.35	1, 3, 4		
VAV	319	PRICE SDV	6"	75 CFM	320 CFM	25	180 CFM	55	75.0	0.5	140	100	2	6.3	0.35	1, 3, 4		
VAV	320	PRICE SDV	10"	120 CFM	710 CFM	25	215 CFM	55	86.9	0.5	140	100	2	7.6	0.35	1, 2, 3, 4		
VAV	321	PRICE SDV	9"	455 CFM	650 CFM	25	455 CFM	55	86.9	0.6	140	100	2	9.1	0.35	1, 3, 4		
VAV	322	PRICE SDV	6"	70 CFM	275 CFM	25	70 CFM	55	74.0	0.7	140	100	2	1.4	0.35	1, 3, 4		
VAV	411	PRICE SDV	8"	165 CFM	540 CFM	25	325 CFM	50	86.9	0.9	140	100	2	11.3	0.35	1, 2, 3, 4		
WTA LEVEL 03: 23				5195 CFM	17710 CFM		10260 CFM			30.3								
VAV	401	PRICE SDV	6"	90 CFM	300 CFM	25	240 CFM	55	86.9	0.8	140	100	2	8.4	0.35	1, 2, 3, 4		
VAV	402	PRICE SDV	7"	135 CFM	440 CFM	25	440 CFM	55	89.0	1.2	140	100	2	16.4	0.35	1, 2, 3, 4		
VAV	403	PRICE SDV	10"	215 CFM	720 CFM	25	665 CFM	55	86.9	1.8	140	100	2	23.4	0.35	1, 2, 3, 4		
VAV	404	PRICE SDV	9"	180 CFM	610 CFM	25	545 CFM	55	86.9	1.5	140	100	2	19.2	0.35	1, 2, 3, 4		
VAV	405	PRICE SDV	8"	130 CFM	420 CFM	25	355 CFM	55	86.9	1.0	140	100	2	12.5	0.35	1, 2, 3, 4		
VAV	406	PRICE SDV	10"	255 CFM	850 CFM	25	510 CFM	55	86.9	1.4	140	100	2	18.0	0.35	1, 2, 3, 4		
VAV	407	PRICE SDV	10"	300 CFM	1000 CFM	25	480 CFM	55	86.9	1.3	140	100	2	16.9	0.35	1, 2, 3, 4		
VAV	408	PRICE SDV	10"	200 CFM	670 CFM	25	325 CFM	55	86.9	0.9	140	100	2	11.3	0.35			