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GENERAL NOTES - ALL HVAC SHEETS

A. ALL MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL BUILDING CODES. REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR MECHANICAL AND PLUMBING CONSTRUCTION.

B. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, PAY ALL FEES, AND COMPLY WITH ALL NATIONAL, STATE, AND MUNICIPAL LAWS, CODES, AND ORDINANCES RELATING TO BUILDING AND PUBLIC SAFETY.

C. THE CONTRACTOR SHALL PREPARE A FULL SET OF COORDINATION DRAWINGS, SHOWING THE RELATIONSHIP OF ALL EXISTING AND NEW SYSTEMS TO BE INSTALLED. THESE DRAWINGS SHALL INDICATE SIZES, ELEVATIONS, AND EXACT LOCATIONS OF ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS. THESE DRAWINGS SHALL BE COMPLETED PRIOR TO BEGINNING ANY WORK AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW. CONTRACTOR SHALL NOTE ANY ITEMS THAT PREVENT HIM FROM MEETING THE DESIGN INTENT OF THE CONSTRUCTION DOCUMENTS ON THESE DRAWINGS.

D. CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR A COMPLETE WORKING AND COORDINATED SYSTEM.

E. COORDINATE THE EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT WITH THE LOCATIONS OF LIGHT FIXTURES, PIPING, CONDUIT, AND OTHER CONSTRUCTION, TO ALLOW FOR PROPER ACCESS TO SERVICE EQUIPMENT.

F. COORDINATE THE LOCATION OF DUCTWORK AND PIPING WITH ALL OTHER TRADES AND PROVIDE OFFSETS IN DUCTWORK AND PIPING AS REQUIRED.

G. IT IS THE INTENT OF THESE DOCUMENTS TO ALLOW ALL CEILING CONSTRUCTION AND HEIGHTS TO BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS. COORDINATE THE LOCATION OF DUCTWORK AND PIPING AND PROVIDE OFFSETS IN DUCTWORK AND PIPING AS REQUIRED TO MEET THIS INTENT.

H. CONDUIT, PIPING, AND DUCTWORK SHALL BE INDEPENDENTLY SUPPORTED, AND EACH SUPPORT SHALL BE INDEPENDENT OF PARTITION AND CEILING SYSTEM SUPPORTS. WHERE INDEPENDENT SUPPORT IS NOT POSSIBLE AN ENGINEERED SUPPORT SYSTEM SHALL BE UTILIZED.

I. INSTALL ALL FLOOR MOUNTED EQUIPMENT ON PADS AS SPECIFIED. PAD BY GENERAL CONTRACTOR. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR.

J. ALL WORK SHALL BE SCHEDULED AND PERFORMED IN STRICT COORDINATION WITH ARCHITECTURAL PHASING PLANS AND WITH HOSPITAL SCHEDULES, OCCUPANCIES, AND WORK.

K. PROTECT EQUIPMENT AND WORK FROM DAMAGE DURING HANDLING AND INSTALLATION UNTIL COMPLETION OF CONSTRUCTION.

L. REMOVE ALL EXCESS MATERIAL AND DEBRIS AND CLEAN ALL EQUIPMENT UPON COMPLETION OF WORK. TOUCH UP WITH PAINT WHERE REQUIRED.

M. CONTRACTOR SHALL VISIT JOBSITE AND VERIFY SIZE AND LOCATION OF ALL EXISTING ITEMS AND CONDITIONS.

N. ALL CONNECTION BETWEEN PIPES OF DISSIMILAR MATERIALS SHALL BE MADE WITH DIELECTRIC UNIONS.

O. CONTRACTOR SHALL COORDINATE ALL WORK CLOSELY WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES.

P. ALL EXISTING FACILITIES SHALL BE PROTECTED DURING THE CONSTRUCTION ACTIVITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE AND STORE ITEMS WHICH ARE SUBJECT TO DAMAGE.

Q. ARCHITECT SHALL HAVE FINAL APPROVAL OF ALL GRILLE, DIFFUSER, AND THERMOSTAT LOCATIONS.

R. COORDINATE ALL AIR DEVICE LOCATIONS AND MOUNTING FRAME STYLES WITH LIGHTING PLANS AND ARCHITECTURAL REFLECTED CEILING PLANS.

S. COORDINATE ALL WALL MOUNTED DEVICE LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS.

T. DEMOLITION OF EACH PHASE SHALL OCCUR AS PART OF THE WORK FOR THAT PHASE. REMOVE ONLY THE WORK THAT SERVES THE AREA OF DEMOLITION.

U. PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO PREVENT DISRUPTING ADJACENT AREAS OF THE PHASE IN WHICH WORK IS BEING PERFORMED.

V. PROVIDE ADDITIONAL VALVES, TAPS, TEMPORARY DUCTWORK, ETC. AS NECESSARY TO PROVIDE UNINTERRUPTED SERVICE TO AREAS OUTSIDE OF THE PHASE IN WHICH WORK IS BEING PERFORMED.

W. ALL NECESSARY SHUTDOWNS OR OUT OF PHASE WORK SHALL BE COORDINATED WITH THE BUILDING REPRESENTATIVE.

X. THE CONTRACTOR SHALL COMPLY WITH THE OWNER'S REQUIREMENTS FOR INFECTION CONTROL. MAINTAIN RENOVATION AREA UNDER NEGATIVE PRESSURE AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE A NEGATIVE PRESSURE AIR MACHINE TO PROTECT DUCTWORK AGAINST EXCESSIVE DUST. WHERE PERMISSIBLE, USE EXISTING EXHAUST-TO-EXHAUST AIR FROM CONSTRUCTION AREA(S) DIRECTLY TO THE OUTSIDE. WHERE THE OUTSIDE IS INACCESSIBLE THE DISCHARGE FROM THE NEGATIVE PRESSURE AIR MACHINE SHALL BE DUCTED INTO AN EXISTING EXHAUST SYSTEM AFTER PROPER AIR FILTRATION WITHIN THE MACHINE HAS BEEN ACHIEVED, TO ENSURE THAT THE EXISTING DUCTWORK IS NOT CONTAMINATED WITH CONSTRUCTION DUST.

Y. PROVIDE A VISIBLE PRESSURE GAUGE AT THE ENTRANCE TO THE CONSTRUCTION AREA, TO MONITOR THE PRESSURE RELATIONSHIP BETWEEN THE CONSTRUCTION AREA(S) AND THE ADJACENT SPACES. REFERENCE THE ARCHITECTURAL DRAWINGS FOR THE LOCATION OF CONSTRUCTION BARRIERS. ADJUST THE VOLUME OF THE MACHINE TO PROVIDE A NEGATIVE PRESSURE OF -0.01" W.G. WITHIN THE SPACE DURING THE RENOVATION. IT IS PERMISSIBLE MAINTAIN SUPPLY AIR TO THE SPACE, BUT SPACE PRESSURE SHALL REMAIN UNDER NEGATIVE PRESSURE AS PREVIOUSLY STATED. DECREASE THE RETURN AIR CAPACITY IN ADJACENT CORRIDOR(S) TO BALANCE THE OFFSET BETWEEN SUPPLY AND EXHAUST AIR IN THE RENOVATED AREA(S). DO NOT POSITIVELY PRESSURIZE EXISTING DUCTWORK. USE THE NEGATIVE PRESSURE AIR MACHINE FOR SPOT FILTRATION/EXHAUST SERVICE WHEN WORKING ABOVE THE CEILING, OUTSIDE THE WALLS OF THE RENOVATED SPACE. THE NEGATIVE PRESSURE AIR MACHINE SHALL BE FARR ZEPHYR OR APPROVED EQUAL. FINAL FILTER EFFICIENCY SHALL BE 99.95% OR HIGHER FOR 1 MICRON PARTICLES.

Z. CONTRACTOR SHALL TEST ALL EXISTING FIRE, FIRE/SMOKE, AND SMOKE DAMPERS FOR PROPER OPERATION. ALL FAULTY DAMPERS SHALL BE REPLACED WITH AN APPROVED EQUAL. PROVIDE TAG ON T-GRID AS SPECIFIED FOR ALL NEW AND EXISTING FIRE, FIRE/SMOKE, AND SMOKE DAMPERS.

AA. CONTRACTOR SHALL PREMEASURE ALL SUPPLY, RETURN AND EXHAUST AIRFLOWS ON THE EXISTING AIR HANDLING UNITS AND EXHAUST FANS SERVING ALL AREAS OF CONSTRUCTION AT FULL COOLING AIRFLOWS. THE CONTRACTOR SHALL MEASURE AIR FLOWS AT THE EQUIPMENT, AT EACH BRANCH, AT EACH TERMINAL BOX, AND AT EACH AIR DEVICE. THESE MEASUREMENTS SHALL BE RECORDED NEATLY IN PLAN FORM (SHOWING ALL EQUIPMENT AND DUCTWORK) AND SHALL BE USED TO REBALANCE THE SYSTEMS AFTER CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL BE RESPONSIBLE FOR REBALANCING THE OLD SYSTEMS TO ACCOMODATE NEW AND EXISTING LOAD AND BALANCING THE NEW SYSTEMS.

BB. CONTRACTOR SHALL MAKE PROVISIONS FOR TEMPORARY HEATING AND COOLING FOR AREAS WHERE SERVICE SHUT DOWN WILL BE REQUIRED. PROVIDE TEMPORARY DUCTS, RENTAL AIR HANDLERS AND FANS AS REQUIRED. LOCATIONS OF TEMPORARY SERVICES SHALL BE DETERMINED BY THE CONTRACTOR. AREAS OF CERTAIN SHUT DOWN / TEMPORARY SERVICES INCLUDE BUT IS NOT LIMITED TO THE EMERGENCY DEPARTMENT AND IMAGING AREA.

CC. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF WALLS THAT EXTEND TO STRUCTURE. EACH HVAC DUCT OR PIPE PENETRATION THROUGH THESE WALLS SHALL BE INSTALLED AS SPECIFIED OR DETAILED. WHERE FLEXIBLE DUCT WOULD PENETRATE A WALL WHICH EXTENDS TO STRUCTURE, PROVIDE INSULATED RIGID DUCT EXTENDING 12" ON EITHER SIDE OF THE PARTITION.

DD. ALL DEVIATIONS FROM SCHEDULED EQUIPMENT THAT RESULTS IN ADDITIONAL COST DUE TO LACK OF COORDINATION WITH DIMENSIONS, WEIGHTS, AND CONNECTION POINTS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

EE. THE LOW PRESSURE DUCT IMMEDIATELY DOWNSTREAM OF THE TERMINAL BOXES SHALL BE THE SAME SIZE AS THE DISCHARGE OF THE BOX UNLESS NOTED OTHERWISE. IF DIFFERENT THAN DISCHARGE, PROVIDE TRANSITION.

FF. DUCT SIZES ARE NET FREE AREA.

GG. PROVIDE ROUND DUCTS TO ALL AIR DEVICES UNLESS NOTED OTHERWISE. DUCT SIZE SHALL MATCH AIR DEVICE NECK SIZE OR THE TABLE IN AIR DEVICE SCHEDULE, WHICHEVER IS LARGER. FLEXIBLE DUCTS SHALL BE SIZED SIMILARLY. DO NOT USE FLEXIBLE DUCTS ABOVE NON-LAYIN CEILINGS.

HH. PROVIDE MANUAL VOLUME DAMPER IN EACH AIR DEVICE RUNOUT DUCT AS FAR FROM AIR DEVICE AS POSSIBLE.

II. INSTALL TURNING VANES IN ALL 90 DEGREE SQUARE ELLS IN SUPPLY, RETURN, AND EXHAUST DUCTS. (NONE ALLOWED IN COMBUSTION AIR DUCTS).

JJ. MULTI-BLADE DAMPERS OF ANY TYPE INSTALLED WITHIN 36" OF AN ELL OR OTHER FITTING SHALL MULTI-BLADE DAMPERS OF ANY TYPE INSTALLED WITHIN 36" OF AN ELL OR OTHER FITTING SHALL UPSTREAM OF THE FITTING.

KK. PROVIDE DRAIN PAN UNDER PIPES INSIDE ELECTRICAL AND COMMUNICATION ROOMS.

LL. COORDINATE LOCATION OF ALL DISCONNECTS, CONTROL PANELS AND ELECTRICAL CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT TO MAINTAIN NEC REQUIRED CLEARANCES OF 42" DEEP AND 30" WIDE IN FRONT OF EQUIPMENT.

MM. ALL SHUTDOWNS OR OUT OF PHASE WORK SHALL BE COORDINATED WITH THE BUILDING REPRESENTATIVE.

NN. EXISTING FIRE/SMOKE DAMPERS TO REMAIN SHALL STAY IN PLACE. THE NEW WALL INSTALLED SHALL MEET THE FIRE/SMOKE DAMPERS TO CREATE AN INSTALLATION PER MANUFACTURER'S UL TESTED AND LISTED INSTALLATION DETAILS.

GENERAL DEMOLITION NOTES:

A. ALL CAPPED DUCT TAPS AND CONNECTING DUCTS THAT ARE NOT BEING USED ARE TO BE REMOVED BACK TO THE MAIN DUCT AND PATCHED AS PER ITEM B BELOW.

B. SEAL AIRTIGHT AND PATCH OPENINGS IN EXISTING DUCTWORK THAT IS TO REMAIN INCLUDING OPENINGS. WHERE TAPS OR DUCTWORK ARE TO BE REMOVED, THE FOLLOWING SHALL OCCUR:

- OPENINGS IN THE MAIN DUCTS ARE TO BE COVERED WITH A SHEET METAL PATCH. THE PATCH IS TO BE LARGER THAN THE EXISTING OPENING AND IS TO BE SECURED WITH SHEET METAL SCREWS FOUR INCHES ON CENTERS.
- A LIBERAL QUANTITY OF FIRE RESISTANT ADHESIVE IS TO BE APPLIED UNDER THE EDGES OF THE METAL PATCH AND THE ASSEMBLY SCREWED IN PLACE.

C. REFER TO THE ARCHITECTURAL PHASING PLAN FOR THE AREAS SHOWN ON THIS PLAN. WORK SHALL BE SCHEDULED AND PERFORMED IN SEQUENCE WITH THE PHASING PLAN.

D. DEMOLITION OF EACH PHASE SHALL OCCUR AS PART OF THE WORK FOR THAT PHASE. REMOVE ONLY THE WORK THAT SERVES THE AREA OF DEMOLITION.

E. PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO PREVENT DISRUPTING ADJACENT AREAS OF THE PHASE IN WHICH WORK IS BEING PERFORMED.

F. PROVIDE ADDITIONAL VALVES, TAPS, TEMPORARY DUCTWORK AND/OR PIPING AS NECESSARY TO PROVIDE UNINTERRUPTED SERVICE TO AREAS OUTSIDE OF THE PHASE IN WHICH WORK IS BEING PERFORMED.

G. ALL WORK SHALL BE PERFORMED IN STRICT COORDINATION WITH BUILDING SCHEDULES, OCCUPANCIES AND WORK. CONTRACTOR SHALL COORDINATE WITH BUILDING REPRESENTATIVE.

H. ALL NECESSARY SHUTDOWNS OR OUT OF PHASE WORK SHALL BE SCHEDULED WITH THE BUILDING REPRESENTATIVE.

MECHANICAL ABBREVIATIONS

AC	ABOVE CEILING	FCU	FAN COIL UNIT
AFF	ABOVE FINISHED FLOOR	FPB	FAN POWERED BOX
AI	ANALOG INPUT	FPI	FINS PER INCH
AO	ANALOG OUTPUT	GC	GENERAL CONTRACTOR
BFC	BELOW FINISHED CEILING	GEF	GENERAL EXHAUST FAN
BF	BELOW FLOOR, BLIND FLANGE	GSF	GENERAL SUPPLY FAN
BG	BELOW GRADE	MVD	MANUAL VOLUME DAMPER
BV	BUTTERFLY VALVE	N	NEW
CRU	COMPUTER ROOM UNIT	OBD	OPPOSED BLADE DAMPER
CRU	CONDENSATE RETURN UNIT	R	RELOCATED
CU	CONDENSING UNIT	RA	RETURN AIR
DI	DIGITAL INPUT	RCA	RECIRCULATED (RETURN) AIR
DO	DIGITAL OUTPUT	RLA	RELIEF AIR
DS	DISCONNECT SWITCH	SA	SUPPLY AIR
E	EXISTING	UH	UNIT HEATER
EDH	ELECTRIC DUCT HEATER	VAV	VARIABLE AIR VOLUME
EUH	ELECTRIC UNIT HEATER	WH	WATER HEATER
EF	EXHAUST FAN	WHP	WATER-SOURCE HEAT PUMP
SF	SUPPLY FAN	FMB	FILTER MIXING BOX
EA	EXHAUST AIR	IN HG	INCHES MERCURY (PRESSURE)
OA	OUTSIDE AIR	IN WC	INCHES WATER COLUMN (PRESSURE)
CHW	CHILLED WATER	IBT	INVERTED BUCKET TRAP
UNO	UNLESS NOTED OTHERWISE	TAV	THERMOSTATIC AIR VENT (STEAM SYSTEM)
PRV	PRESSURE RELIEF VALVE	MA	MIXED AIR
SV	SAFETY VALVE	LE	LAUNDRY EQUIPMENT

MECHANICAL/ELECTRICAL SYSTEM COORDINATION SCHEDULE

SYSTEM	FURNISHED BY	INSTALLED BY	POWER WIRING BY	CONTROL OR SUPERVISION WIRING BY
LIFE SAFETY SYSTEM	---	---	---	---
FIRE/SMOKE DAMPER/ ACTUATOR	DIV 23	DIV 23	DIV 26	DIV 28
FIRE SPRINKLER - FLOW SWITCH	DIV 22	DIV 22	DIV 26	DIV 28
MEDICAL GAS ALARM	DIV 22	DIV 22	DIV 26	DIV 22
MOTOR STARTERS (INTEGRAL TO EQUIP.)	DIV 22/23	---	DIV 26	DIV 23
MOTOR STARTERS (NON-INTEGRAL TO EQUIP.)	DIV 26	DIV 26	DIV 26	DIV 23
COMBINATION MOTOR STARTER/DISCONNECT (INTEGRAL TO EQUIP.)	DIV 22/23	---	DIV 26	DIV 23
COMBINATION MOTOR STARTER/DISCONNECT (NON-INTEGRAL)	DIV 26	DIV 26	DIV 26	DIV 23
DISCONNECT SWITCHES (NON-INTEGRAL TO EQUIPMENT)	DIV 26	DIV 26	DIV 26	---

THIS TABLE IS PROVIDED AS A GUIDE TO THE DOCUMENT PREPARATION AND IN NO WAY INDICATES CONTRACTOR MEANS AND METHODS

CATH LAB AIR BALANCE SCHEDULE

ROOM	ROOM NAME	SQUARE FEET	CEILING HEIGHT (FEET)	PRESSURE	OUTSIDE AIR AIR CHANGES	MINIMUM OUTSIDE AIR REQUIRED	OUTSIDE AIR PROVIDED	SUPPLY AIR AIR CHANGES	COOLING CFM REQUIRED	SUPPLY CFM PROVIDED	EXHAUST AIR CHANGES	EXHAUST CFM REQUIRED	EXHAUST CFM PROVIDED	RETURN CFM PROVIDED
A100	VESTIBULE	76	8	NEGATIVE	0	0	5	2	20	20	--	--	0	0
A101	CATH LAB #4	689	9.5	POSITIVE	3	327	410	15	1636	1640	--	--	200	1400
A102	CONTROL	148	8	NEUTRAL	0	0	75	0	300	300	--	--	300	0
A103	MEN'S LOCKER ROOM	113	8	NEGATIVE	0	0	23	6	90	95	--	--	100	0
A104	P.D.U.	257	8	POSITIVE	0	0	17	2	69	70	--	--	0	0
A105	PREP	157	8	NEUTRAL	0	0	17	2	43	70	--	--	0	0
A106	EQUIP	99	8	NEUTRAL	0	0	0	4	53	1200	--	--	0	1200
A107	STORAGE	77	8	NEUTRAL	0	0	0	0	0	200	--	--	0	200
A108	SHWR/TOILET	66	8	NEGATIVE	0	0	0	0	0	0	10	88	100	0

PROJECT DESIGN CRITERIA

LOCATION:	
CITY/STATE	AURORA, COLORADO
APPLICABLE CODES:	
BUILDING	2006 IBC
MECHANICAL	2006 IMC
PLUMBING	2006 IPC
ENERGY	2006 IECC
ELECTRICAL	2008 NEC
LATITUDE:	
DEG. N. LAT.	39.75
ELEVATION:	
FT. ABOVE SEA LEVEL	5331

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE 12/18/09

09-443744

09-443746

MECHANICAL SYMBOLS

ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION
A/#	NEW EQUIPMENT DESIGNATION (TOP - EQUIP. ABBREV., BOTTOM - MARK)
A/#	NEW DIFFUSER DESIGNATION (TOP - SCHEDULE DESIG., BOTTOM - CFM)
	NEW EQUIPMENT
	EXISTING EQUIPMENT
	EXISTING EQUIPMENT TO BE REMOVED OR RELOCATED
	NEW PIPING
	EXISTING PIPING
	EXISTING PIPING TO BE REMOVED OR RELOCATED
	NEW DUCT
	EXISTING DUCT
	EXISTING DUCT TO BE REMOVED OR RELOCATED
	NEW DUCT PROVIDED AS NOTED
	NEW SUPPLY DIFFUSER
	EXISTING SUPPLY DIFFUSER
	EXISTING SUPPLY DIFFUSER TO BE REMOVED OR RELOCATED
	NEW R/A OR EXHAUST GRILLE
	EXISTING R/A OR EXHAUST GRILLE
	EXISTING R/A OR EXHAUST GRILLE TO BE REMOVED OR RELOCATED
	FLEXIBLE DUCT
T	THERMOSTAT
T	EXISTING THERMOSTAT TO BE REMOVED OR RELOCATED
	45° PRESSURE TAP W/ VOLUME DAMPER
	CONICAL TAP WITH VOLUME DAMPER
	CONICAL TAP W/O VOLUME DAMPER
	MANUAL VOLUME DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	FIRE/SMOKE DAMPER
	EXISTING FIRE/SMOKE DAMPER
M	MOTORIZED DAMPER
B	BAROMETRIC DAMPER
CHS	CHILLED WATER SUPPLY PIPE
CHR	CHILLED WATER RETURN PIPE
CS	CONDENSER WATER SUPPLY PIPE
CR	CONDENSER WATER RETURN PIPE
HS	HEATING WATER SUPPLY
HR	HEATING WATER RETURN
HPS	HIGH PRESSURE STEAM
HPR	HIGH PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LPR	LOW PRESSURE CONDENSATE RETURN
PCR	PUMPED CONDENSATE RETURN
PCHS	PRIMARY CHILLED WATER SUPPLY
PCHR	PRIMARY CHILLED WATER RETURN
SCHS	SECONDARY CHILLED WATER SUPPLY
SCHR	SECONDARY CHILLED WATER RETURN
MW	MAKE-UP WATER
CD	CONDENSATE DRAIN
	DIRECTION OF SLOPE
	DIRECTION OF FLOW
	EXPANSION LOOP
	GATE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	GLOBE VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	AUTOMATIC 2-WAY CONTROL VALVE
	AUTOMATIC 3-WAY CONTROL VALVE
	PLUG VALVE/BALANCING COCK
	SOLENOID VALVE
	CHECK VALVE
	VALVE IN VERTICAL
	UNION
	PETE'S PLUG
	GAUGE COCK
	THERMOMETER
	THERMOMETER WELL
	STRAINER WITH BLOW-OFF VALVE
	F & T STEAM TRAP
	STEAM BUCKET TRAP
	CONNECT TO EXISTING
EP	ELECTRIC PNEUMATIC SWITCH
	ECCENTRIC REDUCER (TOP SIDE)
	ECCENTRIC REDUCER (BOTTOM SIDE)
	CONCENTRIC REDUCER
V	VENT (FROM STEAM SYSTEM)
BD	BLOWDOWN (STEAM SYSTEM)
//	CONTROL SIGNAL
D	DRAIN LINE (FROM EQUIPMENT)
FH	DUCT FLEXIBLE CONNECTION
30#	STEAM LINE (30 PSIG SHOWN)
OF	OVERFLOW LINE (FROM EQUIPMENT)
	PRESSURE DIFFERENTIAL SENSOR - PARAGON CONTROLS, SPM-100

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KEY PLAN
FIRST FLOOR





Revisions

NO.	ISSUE	DATE

Sheet Information

Date	12-09-2009
Job Number	142542.002
Drawn	JF
Checked	AB
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Title

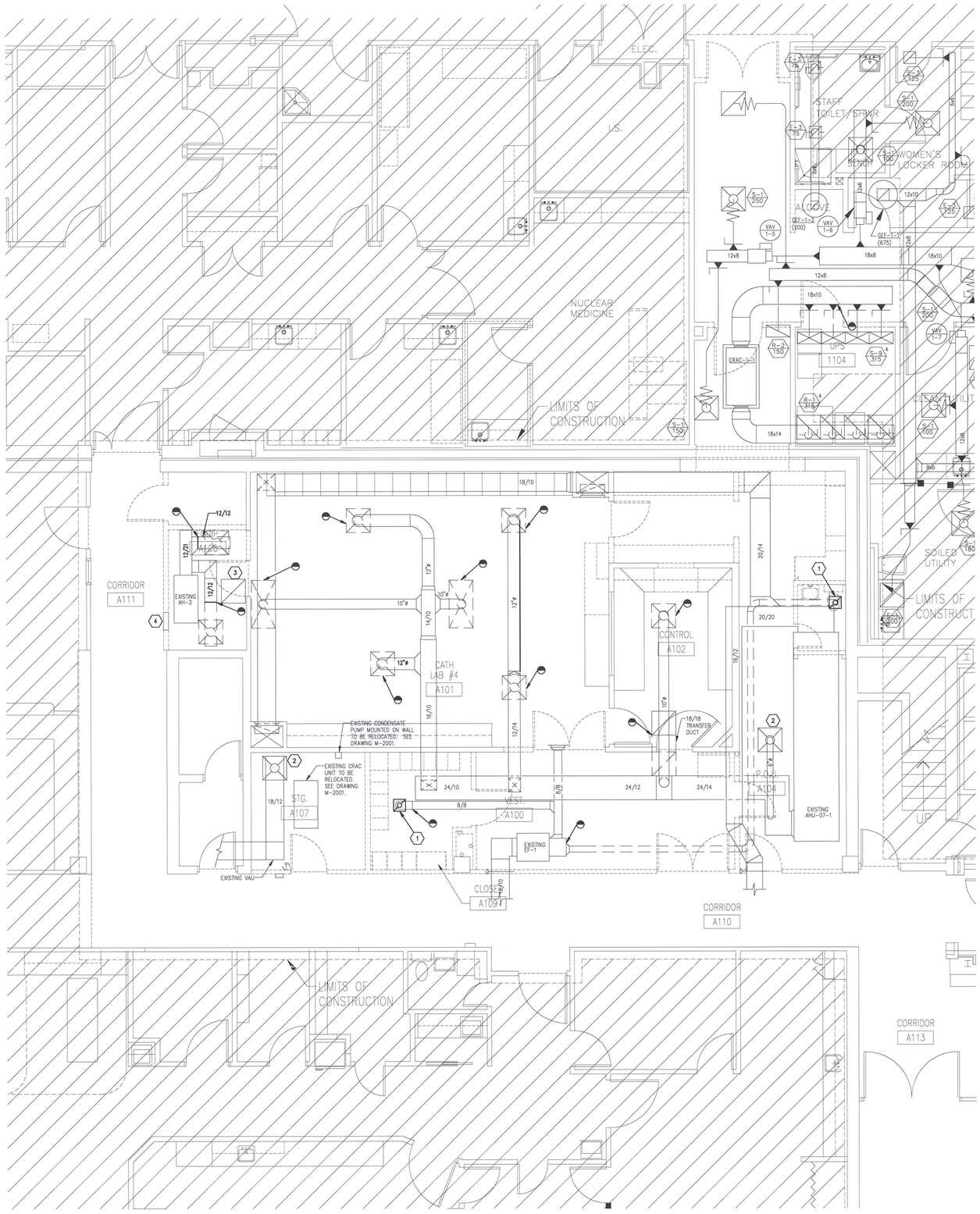
MECHANICAL LEGENDS & NOTES

Sheet

M-0001

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01 FIRST FLOOR DEMOLITION PLAN - HVAC

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

FIRST FLOOR

GENERAL NOTES

A. REFER TO SHEET M0.00 FOR GENERAL NOTES.

B. REFER TO ARCHITECTURAL PLANS FOR PHASING OF WORK.

LEGEND NOTES

1. EXHAUST GRILLE TO BE CLEANED AND REINSTALLED IN NEW LOCATION INDICATED ON SHEET M2.01.
2. SUPPLY AIR OUTLET TO BE CLEANED AND REINSTALLED IN NEW LOCATION INDICATED ON SHEET M2.01.
3. RETURN AIR OUTLET TO BE CLEANED AND REINSTALLED IN NEW LOCATION INDICATED ON SHEET M2.01.
4. EXISTING DAMPER WITHIN WALL TO BE REMOVED.

CITY OF AURORA
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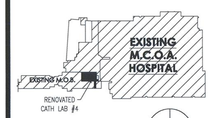
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KEY PLAN
FIRST FLOOR





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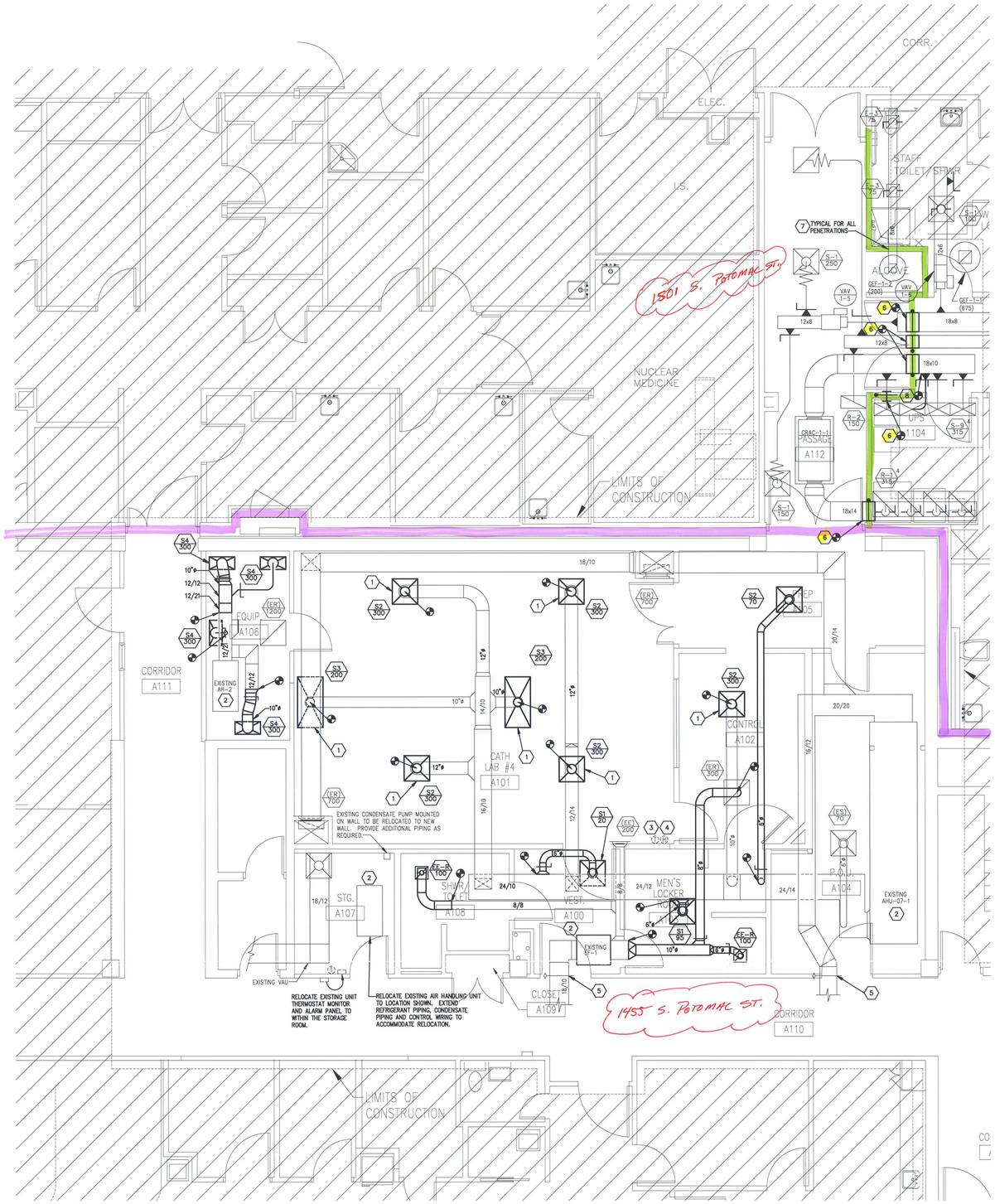
DEMOLITION PLAN - HVAC

Sheet

MD-2001

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01 FIRST FLOOR PLAN - HVAC
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A. MECHANICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO CONSTRUCTION AND VERIFY THE NATURE AND EXTENT OF MECHANICAL WORK, AS WELL AS LOCATIONS OF OTHER SYSTEM COMPONENTS.

B. INSTALL DAMPERS TO BE READILY ACCESSIBLE.

C. COORDINATE HVAC WORK WITH THE EQUIPMENT, PIPING, ELECTRICAL CONDUITS, BUILDING STRUCTURES AND CEILING HEIGHTS.

D. CONTRACTOR SHALL INSTALL NEW SYSTEM WITHOUT INTERFERENCE AND IN STRICT COORDINATION WITH OTHER TRADES INVOLVED.

E. VERIFY EXACT LOCATION OF CEILING MOUNTED AIR DEVICES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN.

F. CONTRACTOR SHALL REPAIR AND/OR REPLACE, WITHOUT ANY COST TO THE OWNER, ANY SYSTEMS DAMAGED DUE TO HIS WORK.

G. MASTIC SEAL ALL ROUND CONNECTIONS TO BE PERMANENTLY AIR TIGHT.

H. CONTRACTOR SHALL PATCH AND REPAIR DUCTWORK AS NEEDED TO PROVIDE AN AIR TIGHT DUCT SYSTEM.

I. ALL RECTANGULAR RETURN AIR DUCT TO BE EXTERNALLY LINED.

J. ALL RECTANGULAR EXHAUST DUCT TO BE EXTERNALLY LINED FROM FAN TO 20 FEET DOWNSTREAM.

K. ALL CONCEALED SUPPLY AIR DUCT TO BE EXTERNALLY WRAPPED UNLESS NOTED OTHERWISE.

L. REBALANCE ALL DIFFUSERS AND GRILLES TO VALUE INDICATED ON DRAWING.

M. REFER TO ARCHITECTURAL PLANS FOR PHASING OF WORK.

LEGEND NOTES

1. S2 AND S3 SUPPLY DIFFUSERS IN ROOM CATH LAB #4 SHALL BE REPLACED AND CONNECTED TO EXISTING SUPPLY DUCTWORK. PROVIDE NECESSARY EXTENSIONS/MODIFICATIONS TO ENSURE ADEQUATE OPERATION.
2. CLEAN, TEST AND REFURBISH EXISTING EQUIPMENT INLCUDING, BUT NOT LIMITED TO, COILS, MOTORS, FILTERS, ETC. REPLACE PARTS AS REQUIRED TO OBTAIN OPTIMAL PERFORMANCE. REPORT FINDINGS TO ENGINEER PRIOR TO COMMENCEMENT OF WORK.
3. RELOCATE EXISTING THERMOSTAT TO LOCATION INDICATED. PROVIDE ADDITIONAL WIRING TO ACCOMMODATE RELOCATION.
4. RELOCATE EXISTING HUMIDISTAT TO LOCATION INDICATED. PROVIDE ADDITIONAL WIRING TO ACCOMMODATE RELOCATION.
5. INSPECT EXISTING FIRE/SMOKE DAMPERS. REPLACE ANY DISFUNCTIONAL PARTS TO ENSURE PROPER OPERATION.
6. INSTALL NEW SMOKE DAMPER IN EXISTING SUPPLY AND RETURN DUCTWORK PENETRATING INTO CORRIDOR A112. PROVIDE DUCTWORK AS REQUIRED TO INSTALL DAMPER. DUCT SIZE TO MATCH EXISTING.
7. EXISTING DUCTWORK, PIPING, ETC. PENETRATING A112 WALL TO BE SEALED WITH THE APPROPRIATE CAULKING TO MAINTAIN THE RATING OF THE WALL.
8. RELOCATE FLEXIBLE DUCTWORK FROM COMPUTER ROOM AIR OUTLET TO LOCATION SHOWN AND RE-CONNECT TO EXISTING MAIN.

- SMOKE PARTITION
  SEE A-0111 FOR ALL WALL RATINGS
- EXISTING 3 HR. FIRE WALL

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE 12/17/09

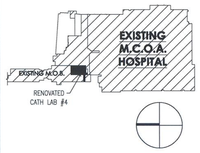
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KEY PLAN
FIRST FLOOR



COLORADO LICENSED
GORDON R. WALKER
#30087
PROFESSIONAL ENGINEER
12-08-09

Revisions		
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FIRST FLOOR PLAN - HVAC

Sheet

M-2001

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AIR DEVICE SCHEDULE

DESIG.	SIZE	OBD	FINISH	THROW	NECK SIZE	MANUFACTURER/MODEL NO.	REMARKS/NOTES	QUANTITY
S1	24X24	OBD	WHITE	4-WAY	NOTE 1	KRUEGER 5140OA	SEE GENERAL NOTES BELOW	2
S2	24X24	OBD	WHITE	4-WAY	NOTE 4	KRUEGER/CRFF-ARS, 115V, 1/5HP	SEE GENERAL NOTES BELOW	6
S3	24X48	OBD	WHITE	4-WAY	NOTE 4	KRUEGER/CRFF-ARS, 115V, 1/5HP	SEE GENERAL NOTES BELOW	2
ES	EXISTING	--	--	--	EXISTING	EXISTING	EXISTING TO REMAIN	
ER	EXISTING	--	--	--	EXISTING	EXISTING	EXISTING TO REMAIN	
EE-R	EXISTING	--	--	--	EXISTING	EXISTING	EXISTING TO BE RELOCATED	

NOTES:

1. MARK "S1"

NECK SIZE (INCHES)	MAXIMUM CFM	DUCT SIZE (INCHES)
6" DIA	100	6" DIA
8" DIA	225	8" DIA
10" DIA	400	10" DIA
12" DIA	600	12" DIA
14" DIA	900	14" DIA
15" DIA	1000	15" DIA

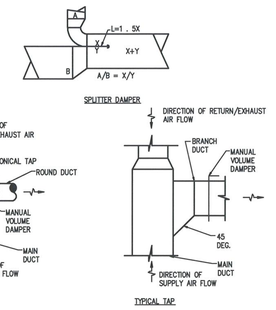
2. TWO SETS OF BLADES, 0.75" SPACING.
3. 45 DEGREE BLADES, 0.5" SPACING.
4. COORDINATE DUCTWORK CONNECTION TO KRUEGER CRFF-ARS OUTLETS WITH MANUFACTURER. PROVIDE A/C COLLAR FOR AIR OUTLET TO CONNECT TO SUPPLY DUCTWORK.
5. PROVIDE THREE-SPEED SWITCH FOR 24X48 KRUEGER CRFF AIR OUTLETS.
6. PROVIDE FACTORY INSULATION BLANKET.

S2 AND 23 CFM VALUES

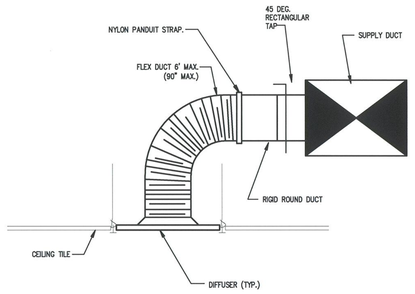
AIR OUTLET	MAXIMUM CFM
S2	300
S2	300
S2	300
S2	300
S2	300
S2	70
S3	200
S3	200

GENERAL NOTES(AIR DEVICES):

A. FRAME TYPE SHALL MATCH CEILING TYPE AND CEILING MODULE DIMENSIONS.
B. INDICATED NECK SIZES SHALL NOT BE REDUCED.
C. PROVIDE OBD WHERE INDICATED ON FLOOR PLANS.
D. DUCT MOUNTED AIR DEVICES SHALL BE FLANGE MOUNTED.
E. NO MOUNTING SCREWS SHALL BE VISIBLE EXCEPT ON EXPOSED DUCTWORK.
F. OFF WHITE POWDER COAT FINISH IN CEILINGS, FIELD PAINTED IN OTHER LOCATIONS TO MATCH ADJACENT SURFACES.
G. NOT ALL AIR DEVICE LISTED ARE USED, REFER TO PLANS.
J. ALL RETURN AIR GRILLES USED FOR PLENUM RETURN SHALL BE PROVIDED W/ SITE BAFFLE.



04 LOW PRESSURE DUCT DETAILS
NO SCALE



03 DIFFUSER CONNECTION DETAIL
NO SCALE

AIR DEVICE SCHEDULE

DESIG.	SIZE	OBD	FINISH	THROW	NECK SIZE	MANUFACTURER/MODEL NO.	REMARKS/NOTES	QUANTITY
S4	24X12	OBD	WHITE	DOUBLE DEFLECTION, ADJUSTABLE	NOTE 1	KRUEGER 5885	SEE GENERAL NOTES BELOW	4

NOTES:

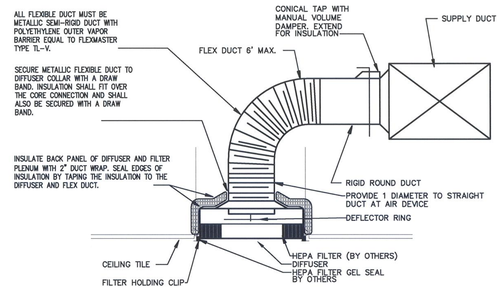
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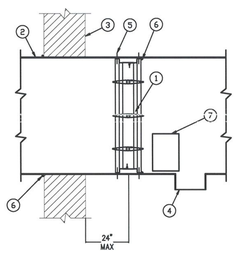
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J. ALL RETURN AIR GRILLES USED FOR PLENUM RETURN SHALL BE PROVIDED W/ SITE BAFFLE.



LAMINAR FLOW W/ HEPA FILTER DIFFUSER CONNECTION DETAIL
02 NO SCALE

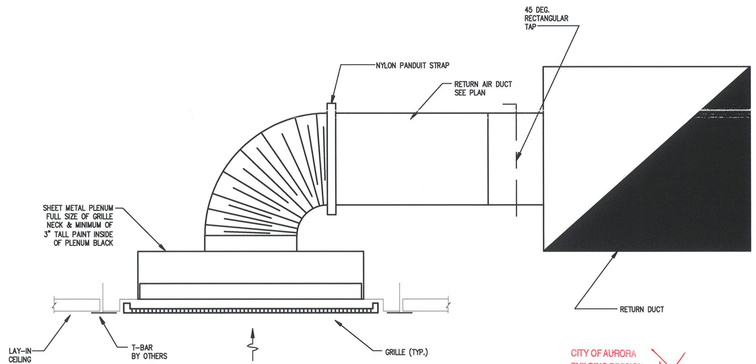


ITEM.	DESCRIPTION
1.	DAMPER
2.	DUCT (SLEEVE)
3.	SMOKE BARRIER
4.	DUCT OUTLET
5.	#8 MIN FASTENER
6.	CAULKING MATERIAL
7.	OPERATOR/ACTUATOR

DAMPER MAY BE SUPPLIED WITHOUT OPERATOR/ACTUATOR INSTALLED. UL LISTED FIRE DAMPER OPERATORS SPECIFIED ON DAMPER MARKING MAY BE FIELD INSTALLED. SEE OPERATOR/ACTUATOR INSTALLATION INSTRUCTIONS FOR FIELD MOUNTING OF DAMPER OPERATORS.

OPERATION:
A. SMOKE DAMPER MODE: SMOKE DETECTOR UPON SENSING HEAT/SMOKE ACTUATES DAMPER MOTOR TO CLOSE DAMPER

05 SMOKE DAMPER INSTALLATION
NO SCALE



01 RETURN AIR GRILLE DUCT CONNECTION
NO SCALE

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE 12/10/09

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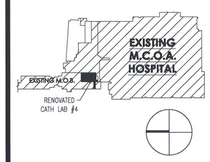
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MECHANICAL SCHEDULES & DETAILS

Sheet

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