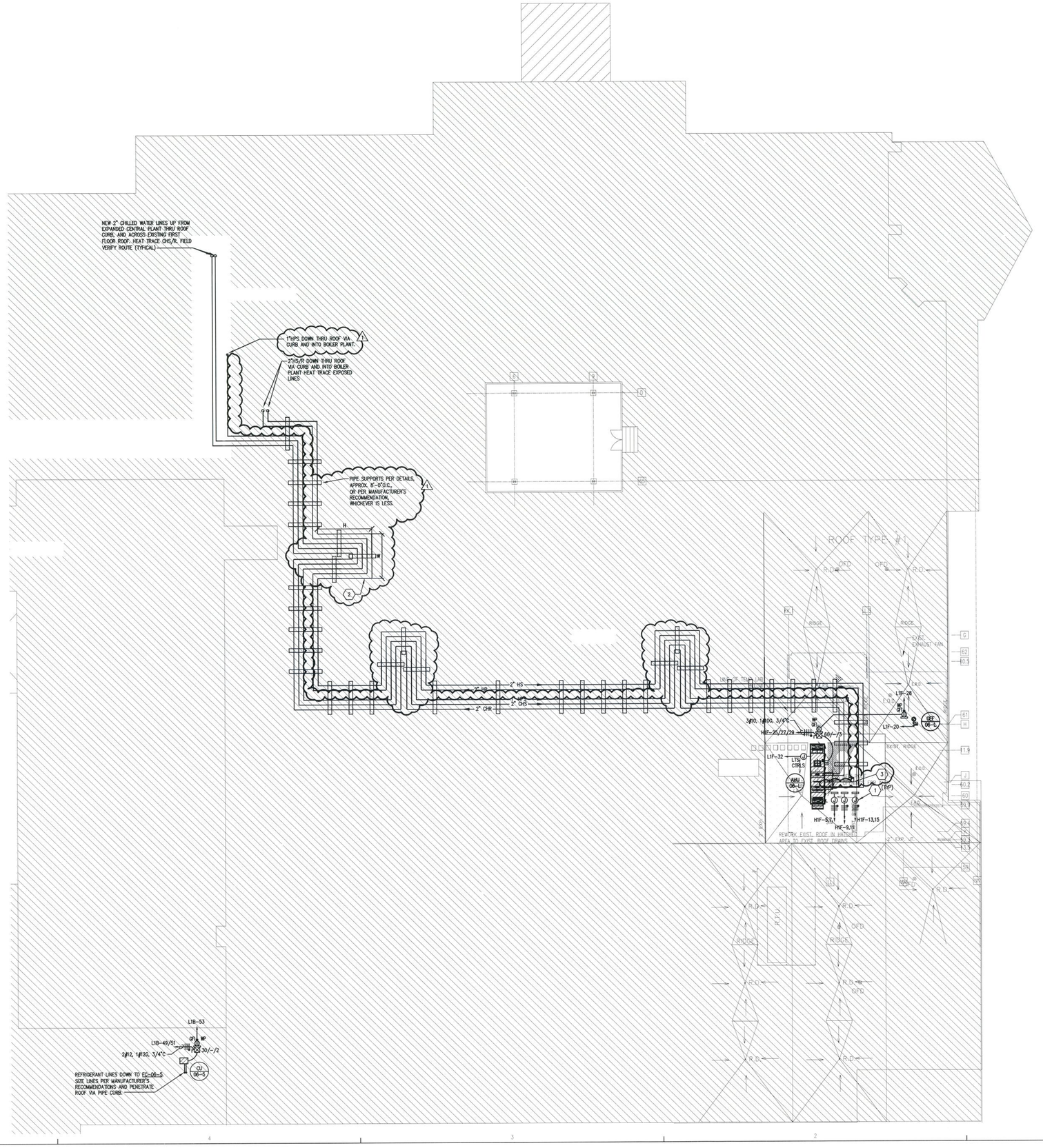
City of Aurora
Building Codes Division
15151 E Alameda Pkwy
Aurora, CO 80012
(303) 739-7420

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01 ROOF PLAN - MEP
SCALE: 1/16" = 1'-0"

GENERAL NOTES

A. COORDINATE LOCATION OF ALL DISCONNECTS, CONTROL PANELS AND ELECTRICAL CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT TO MAINTAIN NEC REQUIRED CLEARANCES IN FRONT OF EQUIPMENT.

B. MOUNT ALL DISCONNECT SWITCHES AND ALL ROOF RECEPTACLES TO UNISTRUT FRAME. REFER TO DETAIL 06/E-7102 FOR ADDITIONAL INFORMATION.

LEGEND NOTES

1. JUNCTION BOX FOR CONNECTION TO HEAT TRACE ON EXTERIOR WATER PIPING. PROVIDE 20/1 30mA GFI CIRCUIT BREAKER. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. CIRCUIT TO A NEW CIRCUIT BREAKER IN AN EXISTING SPACE IN THE PANEL INDICATED.
2. EXPANSION LOOP PLANS: FOR ALL EXPANSION LOOPS, 2H=W. MINIMUM VALUES SHALL BE H=5'-0", W=4'-0", UNLESS OTHERWISE INDICATED.
3. CONDENSATE FROM STEAM LINE SHALL BE ROUTED THROUGH THE HUMIDIFIER DRAIN COOLER IN THE AIR HANDLING UNIT.

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Medical Center of Aurora
South Campus
Private Room Expansion
Aurora, Colorado

HCA
Project # 306660001

In association with:

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Martin Martin, Inc.
4251 Kipling Street
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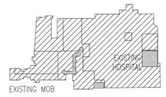
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JULY 13
EARLY RELEASE PKG. #2
ISSUED FOR PERMIT & CONSTRUCTION

KEY PLAN
FIRST FLOOR





Revisions

1	ADDENDUM #1	08/08/06

06-124732

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

NO.	ISSUE	DATE

Sheet Information

Date	07-13-2006
Job Number	142228.000
Drawn	YC
Checked	JS
Approved	AG

Title

ROOF PLAN MEP

Sheet

MEP-2101

Issued for Construction

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Dan Seeley, ccrd partners 09/19/2006 - 8:39AM

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
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 OR FLANGE
	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)
	DUCT FLEXIBLE CONNECTION
— 30# —	STEAM LINE (30 PSIG SHOWN)
— OF —	OVERFLOW LINE (FROM EQUIPMENT)
S	DIESEL FUME EXHAUST SYSTEM SWITCH
T ID	TEMPERATURE INDICATING DEVICE
H ID	HUMIDITY INDICATING DEVICE

MEP SYSTEM COORDINATION SCHEDULE

SYSTEM	FURNISHED BY	INSTALLED BY	POWER WIRING BY	CONTROL OR SUPERVISION WIRING BY
EMERGENCY GENERATOR	DIV 26	DIV 26	DIV 26	DIV 26
SUB-BASE FUEL TANK	DIV 26	DIV 26	DIV 26	DIV 26
MUFFLER	DIV 23	DIV 23	---	---
EXHAUST PIPING	DIV 26	DIV 26	---	---
REMOTE ANNUNCIATOR	DIV 26	DIV 26	DIV 26	DIV 26
LIFE SAFETY SYSTEM	DIV 27	DIV 27	DIV 26	DIV 27
SMOKE DAMPER/ACTUATOR	DIV 23	DIV 23	DIV 26	DIV 27
FIRE/SMOKE DAMPER/ ACTUATOR	DIV 23	DIV 23	DIV 26	DIV 27
DUCT SMOKE DETECTOR	DIV 27	DIV 26	---	DIV 27
OR SMOKE PURGE SYSTEM	DIV 23	DIV 23	DIV 26	DIV 27
NURSE CALL/ FIRE ALARM INTERFACE	DIV 27	DIV 27	---	DIV 27
FIRE SPRINKLER SYSTEM	DIV 21	DIV 21	DIV 26	DIV 27
WATERFLOW SWITCHES	DIV 21	DIV 21	DIV 26	DIV 27
TAMPER SWITCHES	DIV 21	DIV 21	DIV 26	DIV 27
FIRE PUMP	DIV 21	DIV 21	DIV 26	SIV 21
SUPERVISORY CONTACTS	DIV 21	DIV 21	---	DIV 27
FIRE PUMP ANNUNCIATOR	DIV 21	DIV 21	DIV 26	DIV 26
MEDICAL GAS ALARM	DIV 22	DIV 22	DIV 26	DIV 22
CHEMICAL FEED SYSTEM	DIV 22	DIV 22	DIV 26	DIV 22
BOILERS	DIV 23	DIV 22	DIV 26	DIV 23
FUEL OIL SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
FEED WATER SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
ELEVATOR CONTROL AND STATUS PANEL	DIV 14	DIV 14	DIV 26	DIV 14
MOTOR STARTERS (INTEGRAL TO EQUIP.)	DIV 23	N/A	DIV 26	DIV 23
MOTOR STARTERS (NON-INTEGRAL TO EQUIP.)	DIV 23	DIV 26	DIV 26	DIV 23
COMBINATION MOTOR STARTER/DISCONNECT (INSIDE OF MCC'S)	DIV 26	DIV 26	DIV 26	DIV 26
COMBINATION MOTOR STARTER/DISCONNECT (INTEGRAL TO EQUIP.)	DIV 23	N/A	DIV 26	DIV 23
COMBINATION MOTOR STARTER/DISCONNECT (NON-INTEGRAL)	DIV 23	DIV 26	DIV 26	DIV 23
CHILLERS	DIV 23	DIV 23	DIV 26	DIV 23
PUMPS	DIV 23	DIV 26	DIV 26	DIV 23
AIR HANDLERS	DIV 23	DIV 26	DIV 26	DIV 23
FANS	DIV 23	DIV 26	DIV 26	DIV 23
FAN POWERED BOXES	DIV 23	DIV 26	DIV 26	DIV 23
MISC. MOTORS	DIV 23	DIV 26	DIV 26	DIV 23
FAN COIL UNITS	DIV 23	DIV 26	DIV 26	DIV 23
PACKAGED PUMP SYSTEMS	DIV 23	DIV 26	DIV 26	DIV 23
VARIABLE FREQUENCY DRIVES (VFD'S)	DIV 23	DIV 26	DIV 26	DIV 23
PUMPS	DIV 23	DIV 26	DIV 26	DIV 23
COOLING TOWERS	DIV 23	DIV 26	DIV 26	DIV 23
AIR HANDLING SYSTEMS	DIV 23	DIV 26	DIV 26	DIV 23
DISCONNECT SWITCHES (NON-INTEGRAL TO EQUIPMENT)	DIV 26	DIV 26	DIV 26	---
HEAT TRACE	DIV 23	DIV 23	DIV 26	DIV 23
MAIN FUEL OIL SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
THIS TABLE IS PROVIDED AS A GUIDE TO THE DOCUMENT PREPARATION AND IN NO WAY INDICATES CONTRACTOR MEANS AND METHODS				

CONTROL DIAGRAM SYMBOLS

SYMBOL	DESCRIPTION
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
TT-X	TEMPERATURE TRANSMITTER #X
HT-X	RELATIVE HUMIDITY TRANSMITTER #X
V-X	CONTROL VALVE #X
SPT-X	STATIC PRESSURE TRANSMITTER #X
ESC-X	END SWITCH, NORMALLY CLOSED #X
ESO-X	END SWITCH, NORMALLY OPEN #X
TS-X	TEMPERATURE SENSOR #X
SD-X	SMOKE DETECTOR #X
OL	OVERLOAD RELAY #X
DPS-X	DIFFERENTIAL PRESSURE SENSOR #X
CSR-X	CURRENT SENSING RELAY #X
FM-X	FLOW METER #X
FS-X	FLOW SWITCH #X
EAS-X	EMERGENCY AIR HANDLER SHUTDOWN BUTTON – AHU-#X

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

LIFE SAFETY LEGEND

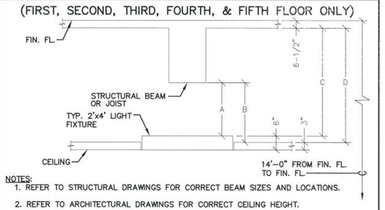
—3FS—3FS—3FS—	NEW ONE HOUR FIRE WALL TO RESIST THE PASSAGE OF SMOKE
—1F—1F—1F—	NEW ONE HOUR FIRE WALL
—2FS—2FS—2FS—	NEW TWO HOUR FIRE WALL TO RESIST THE PASSAGE OF SMOKE
—2F—2F—2F—	NEW TWO HOUR FIRE WALL
—S—S—S—S—S—	LIMIT TRANSFER OF SMOKE (NO FIRE-RESISTANCE RATING)
—X1FS—X1FS—X1FS—	EXISTING ONE HOUR FIRE WALL TO RESIST THE PASSAGE OF SMOKE
—X1F—X1F—X1F—	EXISTING ONE HOUR FIRE WALL
—X2FS—X2FS—X2FS—	EXISTING TWO HOUR FIRE WALL TO RESIST THE PASSAGE OF SMOKE
—XS—XS—XS—XS—	EXISTING LIMIT TRANSFER OF SMOKE (NO FIRE-RESISTANCE RATING)

PROJECT DESIGN CRITERIA

LOCATION:	
CITY/STATE	AURORA, COLORADO
APPLICABLE CODES:	
BUILDING	2003 IBC
MECHANICAL	2003 IMC
PLUMBING	2003 IPC
ENERGY	1989 MEC
ELECTRICAL	2002 NEC
LATITUDE:	
DEG. N. LAT.	39.75
ELEVATION:	
FT. ABOVE SEA LEVEL	5331

CLEARANCE SCHEDULE

(FIRST, SECOND, THIRD, FOURTH, & FIFTH FLOOR ONLY)



NOTES:
1. REFER TO STRUCTURAL DRAWINGS FOR CORRECT BEAM SIZES AND LOCATIONS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR CORRECT CEILING HEIGHT.

CEILING HEIGHT	18" BEAM		16" BEAM		14" BEAM		12" BEAM		10" BEAM		NO BEAM	
	A	B	A	B	A	B	A	B	A	B	C	D
8'-0"	41.5"	44.5"	43.5"	46.5"	45.5"	48.5"	47.5"	50.5"	49.5"	52.5"	59.5"	62.5"
8'-6"	35.5"	38.5"	37.5"	40.5"	39.5"	42.5"	41.5"	44.5"	43.5"	46.5"	53.5"	56.5"
9'-0"	29.5"	32.5"	31.5"	34.5"	33.5"	36.5"	35.5"	38.5"	37.5"	40.5"	47.5"	50.5"
10'-0"	17.5"	20.5"	19.5"	22.5"	21.5"	24.5"	23.5"	26.5"	25.5"	28.5"	35.5"	38.5"
10'-6"	11.5"	14.5"	13.5"	16.5"	15.5"	18.5"	17.5"	20.5"	19.5"	22.5"	29.5"	32.5"

NOTE: DEDUCT 6" FROM COLUMNS A & C WHEN CAN LIGHTS OCCUR.

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

D. 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.

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

F. 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.

G. 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.

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

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

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

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

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

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

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

O. 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.

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

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

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

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

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

X. 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.

Y. ALL NECESSARY SHUTDOWNS OR OUT OF PHASE WORK SHALL BE COORDINATED WITH THE HOSPITAL REPRESENTATIVE.

Z. DUCT SIZES ARE NET FREE AREA.

AA. 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.

AB. TERMINAL BOX INLET DUCTS: SIZE THE RUNOUT DUCT AND ITS TAP AT MAIN TRUCK PER VAV BOX SCHEDULE.

AC. PROVIDE FRAMED 0.5" BY 0.5" BIRD SCREEN (GALVANIZED STEEL ASSEMBLY) AT ALL DUCTS TERMINATING WITHOUT AN AIR DEVICE, AT INDOOR FACE OF LOUVERS, AND AT UNDUCTED AIR FLOW OPENINGS AT EQUIPMENT.

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

AE. INSTALL SPACE THERMOSTAT ADJACENT TO LATCH SIDE OF DOOR IN SPACE INDICATED.

AF. INDICATED LOCATIONS ARE APPROXIMATE. AVOID HEAT PRODUCING EQUIPMENT.

AG. FINAL SPACE THERMOSTAT/SENSOR LOCATIONS SHALL BE AS DIRECTED BY THE ARCHITECT.

AH. INSTALL HUMIDISTATS IN SIMILAR FASHION.

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

AJ. FUTURE SPACE THERMOSTATS AND HUMIDISTATS: INSTALL 2"x4" BOX WITH STAINLESS STEEL COVER PLATE AND WITH 1/2" CONDUIT UP TO CEILING SPACE.

AK. LOCATE ISOLATION VALVES FOR EQUIPMENT AS CLOSE TO THE MAIN AS POSSIBLE.

AL. PROVIDE CONDENSATE DRAIN PIPING FROM ALL COOLING COILS TO DRAIN.

AM. MULTI-BLADE DAMPERS OF ANY TYPE INSTALLED WITHIN 36" OF AN ELL OR OTHER FITTING SHALL BE INSTALLED WITH THE DAMPER BLADE SHAFTS PARALLEL TO THE AIRSTREAM FLOW DIRECTION UPSTREAM OF THE FITTING.

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

AO. ROUTE EMERGENCY CONDENSATE LINES FROM FAN COIL UNITS AS INDICATED TO OPEN SITE ABOVE PLUMBING FIXTURE WHERE INDICATED.

AP. 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.

AQ. ALL FIRE AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION DETAILS AND BE U.L. TESTED AND LISTED.

AR. ALL MECHANICAL SYSTEMS AND COMPONENTS, INCLUDING BUT NOT LIMITED TO DUCTWORK, HYDRONIC PIPING, AND EQUIPMENT, SHALL BE BRACED AS REQUIRED FOR SEISMIC SITE CLASS "D" AND SEISMIC USE GROUP III (3). 1

GENERAL PIPING NOTES

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

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

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

D. 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.

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

F. ALL NECESSARY SHUTDOWNS OR OUT OF PHASE WORK SHALL BE SCHEDULED WITH THE HOSPITAL REPRESENTATIVE.

G. ARCHITECT SHALL HAVE FINAL APPROVAL OF ALL THERMOSTAT LOCATIONS.

H. G.C. TO PROVIDE ACCESS DOORS IF REQUIRED FOR ACCESS TO VAV'S AND ANY VALVES THAT ARE NOT ACCESSIBLE. VERIFY SIZE AND LOCATIONS WITH MECHANICAL CONTRACTOR.

I. RETRO-FIT ALL HEATING COILS AT ALL EXISTING AHU'S BY REMOVING 3-WAY VALVE AND REPLACING WITH 2-WAY VALVES. VALVE AND CAP AS REQUIRED.

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. 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 TO 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 HOSPITAL SCHEDULES, OCCUPANCIES AND WORK. CONTRACTOR SHALL COORDINATE WITH HOSPITAL REPRESENTATIVE.

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

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Medical Center of Aurora

South Campus
Private Room Expansion
Aurora, Colorado

HCA

Project # 306660001

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8-8-06

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BUILDING DIVISION
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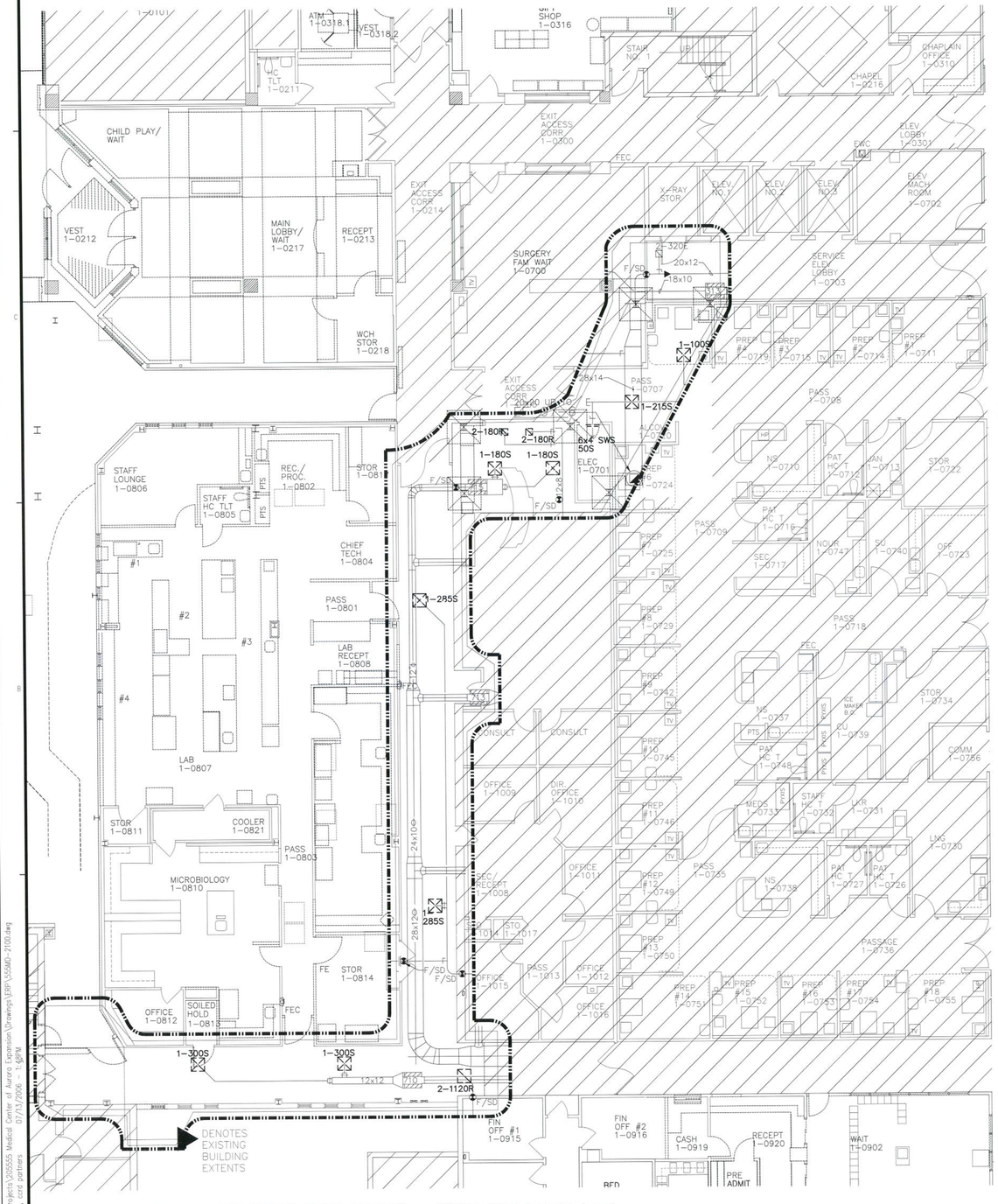
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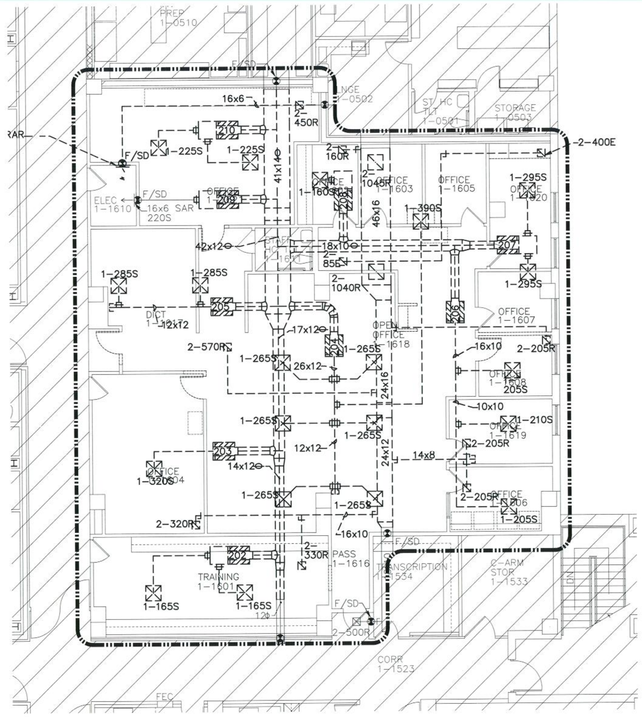
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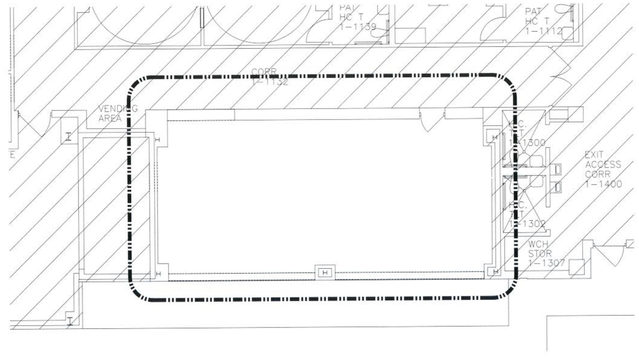
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Dan Seeley, ccrd partners 08/15/2006 - 8:37AM



01 DUCTWORK - FIRST FLOOR DEMO - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 DUCTWORK - FIRST FLOOR DEMO - TEMP LAB
SCALE: 1/8" = 1'-0"



03 DUCTWORK - FIRST FLOOR DEMO - BED STORAGE
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

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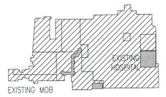
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KEY PLAN
FIRST FLOOR



COLORADO LICENSED 31031 PROFESSIONAL ENGINEER

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DUCTWORK PLAN FIRST FLOOR DEMO

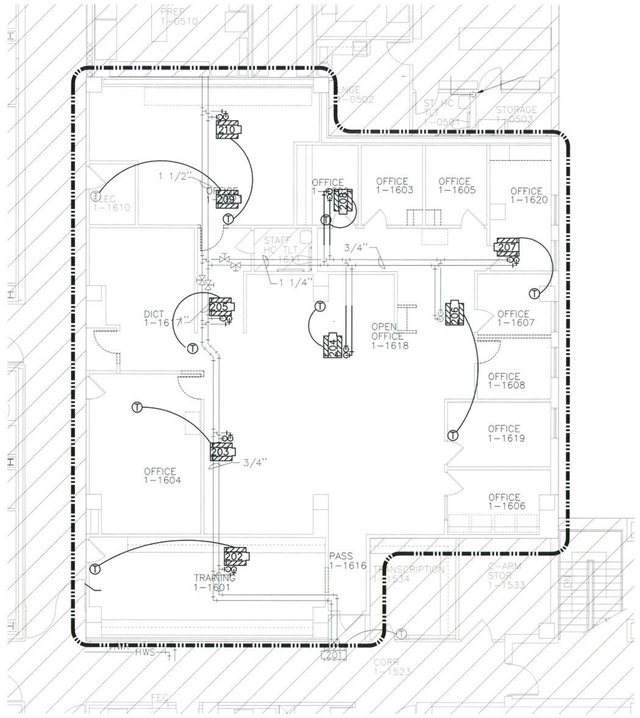
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04 HVAC PIPING - FIRST FLOOR DEMO - TEMP LAB
SCALE: 1/8" = 1'-0"

01 NOT USED
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

03 NOT USED
SCALE: 1/8" = 1'-0"

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HVAC PIPING
PLAN
FIRST FLOOR DEMO

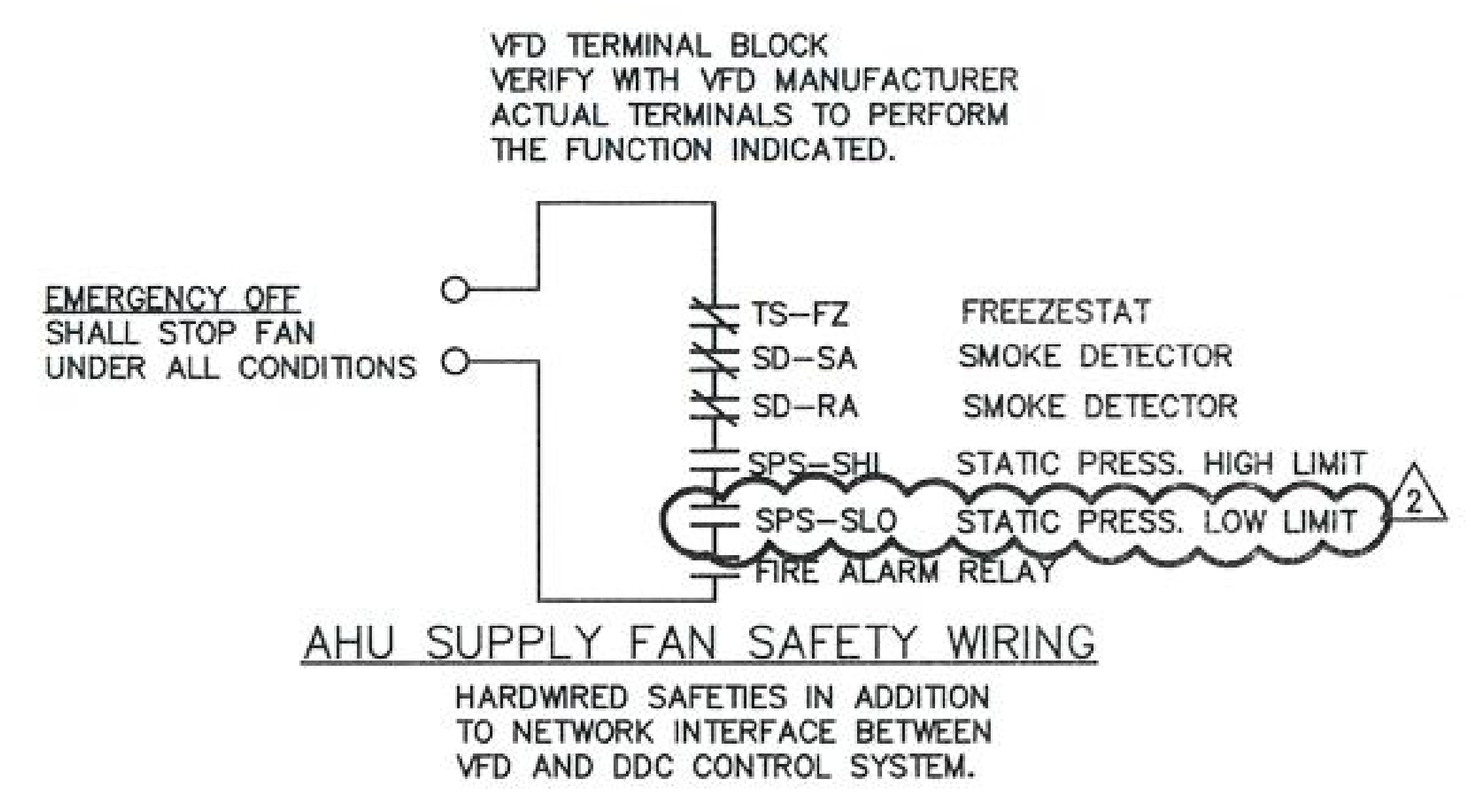
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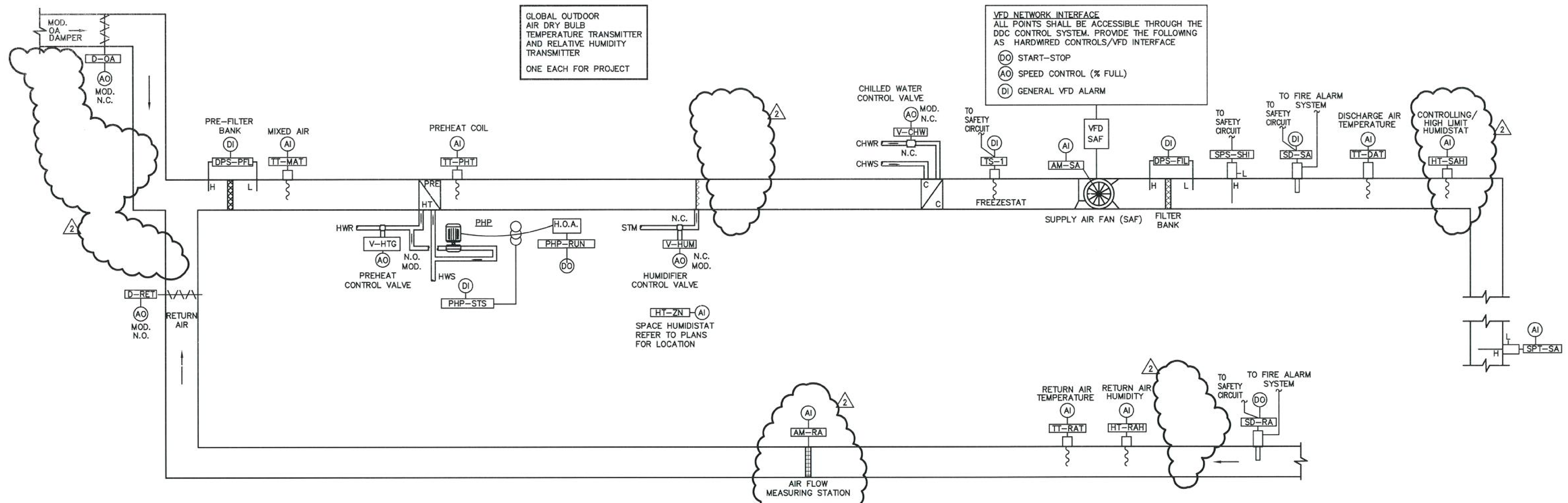
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AHU SUPPLY FAN SAFETY WIRING

HARDWIRED SAFETIES IN ADDITION TO NETWORK INTERFACE BETWEEN VFD AND DDC CONTROL SYSTEM.



01 AHU-06-L CONTROL DIAGRAM
SCALE: NTS

DDC INPUT / OUTPUT POINTS LIST

AHU-06-L
TEMP LAB / FUTURE PHARMACY

HARDWARE – OUTPUT

POINT DESCRIPTION	DESIGNATION	NOTES	QUANTITY	GRAPHIC DISPLAY	DIGITAL: DAMPER OPEN / CLOSE	DIGITAL: VALVE OPEN / CLOSE	DIGITAL: START / STOP	DIGITAL: FORCE ON	DIGITAL: FORCE OFF	DIGITAL: ENABLE / DISABLE	ANALOG: DAMPER CONTROL	ANALOG: VALVE CONTROL	ANALOG: CONTROL	ANALOG: FIXED PRESET
MISC POINTS														
OUTSIDE AIR TEMP	TT-OA		1	X										
OUTSIDE AIR HUMIDITY	HT-OA		1	X										
AHU (TYPICAL FOR EACH)			1											
(QUANTITY IS FOR EACH AHU)														
SENSORS														
SUPPLY TEMP	TT-DAT		1	X										
RETURN TEMP	TT-RAT		1	X										
MIXED AIR TEMP	TT-MAT		1	X										
PREHEAT DISCH TEMP	TT-PHT		1	X										
FREEEZESTAT	TS-FZ		1	X										
RETURN HUMID	HT-RAH		1	X										
HUMIDIFIER DISCH/HI LIMIT	HT-SAH		1	X										
SPACE HUMIDITY	HT-ZN		1	X										
SUP DUCT STATIC	SPT-SA		1	X										
SUP FAN HIGH STATIC	SPS-SHI		1											
PRE FILTER DP	DPS-FIL		1	X										
POST FILTER DP	DPS-PFL		1	X										
SUPPLY FAN AIRFLOW	AM-SA		1	X										
RETURN AIRFLOW	AM-RA		1	X										
SUP AIR SMOKE DET	SD-SA	1	1											
RET AIR SMOKE DET	SD-RA	1	1											
DAMPERS														
~~O.A. DPR~~	~~D-OA~~		1	X	X									
VALVES														
CHW VLV COMMAND	V-CHW		1	X								X		
HUMIDIFIER VALVE	V-HUM		1	X								X		
PREHEAT VLV COMMAND	V-HTG		1	X								X		
MOTOR/VFD'S														
SUPPLY FAN VFD	VFD-SAF	2	1											
SUP FAN VFD S/S	SF-RUN		1	X			X							
SUP FAN VFD SPEED	SF-SPD		1	X									X	
SUP FAN VFD GEN ALRM	SF-ALM		1											
PREHEAT PUMP S/S	PHP-RUN		1	X			X							
PREHEAT PUMP STATUS	PHP-STS		1	X										

HARDWARE – INPUT

POINT DESCRIPTION	DIGITAL: END SWITCH	DIGITAL: RELAY CONTACTS	DIGITAL: HAND SWITCH	DIGITAL: CURRENT RELAY	DIGITAL: PRESSURE SWITCH	DIGITAL: DIFFERENTIAL PRESS	DIGITAL: FLOW SWITCH	DIGITAL: AUX CONTACTS	DIGITAL: STATUS	DIGITAL: ALARM	DIGITAL: FAULT RESET	ANALOG: PRESSURE	ANALOG: DIFFERENTIAL PRESS	ANALOG: FLOW METER	ANALOG: KW	ANALOG: HERTZ REFERENCE	ANALOG: TEMPERATURE (DB)	ANALOG: RELATIVE HUMIDITY	ANALOG: DEW POINT	ANALOG: MEASURE	ANALOG: SPEED / POSITION	ANALOG: PULSE
OUTSIDE AIR TEMP																	X					
OUTSIDE AIR HUMIDITY																		X				
SUPPLY TEMP																	X					
RETURN TEMP																	X					
MIXED AIR TEMP																	X					
PREHEAT DISCH TEMP																	X					
FREEEZESTAT		X																				
RETURN HUMID																		X				
HUMIDIFIER DISCH/HI LIMIT																		X				
SPACE HUMIDITY																		X				
SUP DUCT STATIC													X									
SUP FAN HIGH STATIC					X																	
PRE FILTER DP						X																
POST FILTER DP						X																
SUPPLY FAN AIRFLOW																				X		
RETURN AIRFLOW																				X		
SUP AIR SMOKE DET		X																				
RET AIR SMOKE DET		X																				
~~O.A. DPR~~																						
CHW VLV COMMAND																						
HUMIDIFIER VALVE																						
PREHEAT VLV COMMAND																						
SUPPLY FAN VFD																						
SUP FAN VFD S/S																						
SUP FAN VFD SPEED																						
SUP FAN VFD GEN ALRM										X												
PREHEAT PUMP S/S																						
PREHEAT PUMP STATUS									X													

SOFTWARE

POINT DESCRIPTION	ALARMS: STATUS FAILURE	ALARMS: HIGHLIMIT	ALARMS: LOW LIMIT	ALARMS: SMOKE	ALARMS: MAINTENANCE	CALCULATED VALUE: KW	CALCULATED VALUE: BTUH	CALCULATED VALUE: CFM	CALCULATED VALUE: GPM	CALCULATED VALUE: RUN TIME	CALCULATED VALUE: INTEGRATOR	CALCULATED VALUE: GALLONS / TON	PROGRAMS: AUTO RESTART	PROGRAMS: CHILLER OPTIMIZATION	PROGRAMS: COND WATER RESET	PROGRAMS: DEMAND LIMITING	PROGRAMS: EVENT PROGRAMS	PROGRAMS: FAIL MODE (CLOSED)	PROGRAMS: FAIL MODE (OPEN)	PROGRAMS: LIGHTING CONTROL	PROGRAMS: RUN TIME	PROGRAMS: SCHEDULED START / STOP	PROGRAMS: LEAD / LAG	PROGRAMS: SUPPLY AIR RESET	PROGRAMS: TREND LOGGING
OUTSIDE AIR TEMP																									X
OUTSIDE AIR HUMIDITY																									X
SUPPLY TEMP		X	X																					X	X
RETURN TEMP		X	X																						X
MIXED AIR TEMP			X														X								X
PREHEAT DISCH TEMP			X														X								X
FREEEZESTAT	X																X								
RETURN HUMID		X	X																						X
HUMIDIFIER DISCH/HI LIMIT		X																							X
SPACE HUMIDITY		X	X																						X
SUP DUCT STATIC		X	X																					X	X
SUP FAN HIGH STATIC	X																								
PRE FILTER DP					X																				
POST FILTER DP					X																				
SUPPLY FAN AIRFLOW								X																	X
RETURN AIRFLOW								X																	X
SUP AIR SMOKE DET				X													X								
RET AIR SMOKE DET				X													X								
~~O.A. DPR~~																		X							X
CHW VLV COMMAND																		X							X
HUMIDIFIER VALVE																		X							X
PREHEAT VLV COMMAND																		X							X
SUPPLY FAN VFD																									
SUP FAN VFD S/S													X								X	X			
SUP FAN VFD SPEED																									X
SUP FAN VFD GEN ALRM	X																								
PREHEAT PUMP S/S					X																				
PREHEAT PUMP STATUS	X																				X				X

1. SMOKE DETECTORS SHALL BE FURNISHED BY F/A CONTR.
2. VFD'S SHALL HAVE NETWORK INTERFACE. ALL POINTS SHALL BE AVAILABLE OVER THE CONTROL SYSTEM. THE FOLLOWING IS A LIST OF MINIMUM SOFTWARE POINTS TO BE SPECIFICALLY AVAILABLE FOR CONTROL AND ALARM.
3. DAMPERS FURNISHED WITH AHU.
4. DAMPERS TO BE RATED SMOKE DAMPERS
5. ONE EACH PER PROJECT

SUPPLY AIR FAN

SUPPLY AIR FAN SHALL BE ENERGIZED/DE-ENERGIZED FROM THE VFD IN HAND POSITION OR THE DDC SYSTEM WHEN IN AUTO MODE. THE DDC CONTROL SYSTEM SHALL SENSE WHEN THE FAN IS IN HAND POSITION BY THE FAN STATUS VERIFICATION AND INITIATE THE AHU CONTROL SEQUENCE.

FAN SHALL SHUT DOWN FROM A SIGNAL FROM:
- THE FIRE ALARM PANEL THRU THE F/A RELAY.
- THE SUPPLY AIR SMOKE DETECTOR(S) (SD-SA).
- THE RETURN AIR SMOKE DETECTOR(S) (SD-RA).
- ~~FREEZE STAT (TS-FZ).~~
- THE HIGH LIMIT STATIC PRESSURE SWITCHES (SPS-SHI). 2

WHEN THE SUPPLY FAN SHUTS DOWN THE FOLLOWING SHALL OCCUR:
- THE OUTSIDE AIR DAMPER (D-OA) SHALL CLOSE.
- THE RETURN DAMPER (D-RET) SHALL OPEN.
- THE CHILLED WATER VALVE (V-CHW) SHALL CLOSE.
- THE PREHEAT COIL (V-HTG) SHALL REMAIN UNDER CONTROL OF THE PREHEAT DISCHARGE TEMPERATURE SENSOR (TT-PHT).
- THE HUMIDIFIER VALVE V-HUM SHALL CLOSE.

SUPPLY FAN SPEED CONTROL

THE SUPPLY FAN VARIABLE FREQUENCY DRIVE (VFD) SHALL BE CONTROLLED BY A DUCT MOUNTED DIFFERENTIAL STATIC PRESSURE TRANSMITTER SPT-SA MODULATING THE VFD TO MAINTAIN A SUPPLY DUCT STATIC PRESSURE SETPOINT (2.0 IN.W.G. ADJUSTABLE). THE VFD SHALL OUTPUT THE % FULL SPEED TO THE DDC SYSTEM BY THE NETWORK INTERFACE.

ON A FALL IN DIFFERENTIAL PRESSURE SENSED BY SPT-SA, SPT-SA SHALL, THROUGH THE DDC SYSTEM, SPEED UP THE AHU FAN VFD TO MAINTAIN SPT-SA SETPOINT. ON A RISE IN DIFFERENTIAL PRESSURE SENSED BY SPT-SA, SPT-SA SHALL, THROUGH THE DDC SYSTEM, SLOW DOWN THE AHU FAN VFD TO MAINTAIN SPT-SA SETPOINT. SPT-SA SHALL ALARM THE DDC SYSTEM IF ITS MEASURED PRESSURE IS EITHER TOO HIGH OR TOO LOW.

SPS-SHI SHALL SHUTDOWN THE FAN WHENEVER IT SENSES ~~A HIGH STATIC PRESSURE, ALARM THE DDC SYSTEM AND REQUIRE A LOCAL MANUAL RESET TO RESTART THE~~ FAN. 2

OUTSIDE AIR TRACKING

THE RETURN AIR AND OUTSIDE AIR DAMPERS SHALL BE CONTROLLED FROM AN OUTSIDE AIR QUANTITY SOFTWARE SETPOINT (SCHEDULED OUTSIDE AIR QUANTITY, ADJUSTABLE) USING AIRFLOW MEASURING DEVICES AND TRANSMITTERS AM-SA AND AM-RA INSTALLED AT THE INLET OF THE SUPPLY AND RETURN DUCTS. AM-SA SHALL MEASURE THE TOTAL AIRFLOW OF THE SUPPLY FAN AND AM-RA SHALL MEASURE THE TOTAL RETURN AIRFLOW. THE AIRFLOW MEASURING TRANSMITTERS SHALL OUTPUT THE TOTAL CFM READING TO THE DDC SYSTEM. THE DDC SYSTEM SHALL CALCULATE THE DIFFERENCE OF THE TOTAL SUPPLY AIR AND THE TOTAL RETURN AIR TO MAKE AN OUTSIDE AIR QUANTITY SOFTWARE POINT. THE DDC SYSTEM SHALL MODULATE THE DAMPERS TO MAINTAIN THE CALCULATED OUTSIDE AIR QUANTITY WITHIN 2% OF THE OUTSIDE AIR QUANTITY SETPOINT.

COOLING COIL

COOLING COIL CONTROL VALVE, V-CHW, SHALL BE CONTROLLED BY CONTROL LOOP WITH THE DISCHARGE TEMPERATURE TRANSMITTER, TT-DAT, AS THE INPUT, AND A SETPOINT OF (55°F, ADJUSTABLE). THE COILS VALVE SHALL ONLY OPEN AFTER IT HAS PROOF OF THE SUPPLY AIR FAN BEING ENERGIZED. ON A RISE IN TEMPERATURE ABOVE TT-DAT SETPOINT, THE VALVE SHALL MODULATE OPEN. ON A FALL IN TEMPERATURE BELOW TT-DAT SETPOINT, THE VALVE SHALL MODULATE CLOSED. TT-DAT SHALL ALARM THE DDC SYSTEM WHENEVER THE DISCHARGE TEMPERATURE IS TOO HIGH OR LOW.

PRE-HEAT RE-CIRCULATING PUMP

A PRE-HEAT RE-CIRCULATING PUMP SHALL BE PROVIDED WITH HAND-OFF-AUTO STARTER. THE AUTO POSITION SHALL BE CONTROLLED BY THE DDC CONTROL SYSTEM. WHENEVER THE OUTSIDE AMBIENT AIR TEMPERATURE IS LESS THAN 45°F (ADJ.), THE PUMP SHALL BE ENERGIZED. THE PUMP SHALL BE DE-ENERGIZED WHENEVER THE OUTSIDE AMBIENT AIR TEMPERATURE IS GREATER THAN 45°F (ADJ.).

PRE-HEAT COIL

PRE-HEAT COIL CONTROL VALVE, V-HTG, AND THE RE-CIRCULATING PUMP SHALL BE CONTROLLED AT ALL TIMES, INCLUDING WHEN THE UNIT IS DE-ENERGIZED., TO MAINTAIN A MINIMUM PREHEAT COIL DISCHARGE TEMPERATURE. A CONTROL LOOP WITH THE PREHEAT COIL DISCHARGE TEMPERATURE TRANSMITTER, TT-PHT, AS INPUT, AND A SETPOINT OF 45°F (ADJ.).

HUMIDIFIER

AS THE SPACE HUMIDITY RISES TO ITS ADJUSTABLE SETPOINT, THE HUMIDIFIER VALVE, V-HUM, SHALL MODULATE CLOSED. AS THE SPACE HUMIDITY DECREASES BELOW ITS SETPOINT THE HUMIDIFIER VALVE, V-HUM, SHALL MODULATE OPEN.

WHENEVER THE HUMIDIFIER DISCHARGE AIR IS ABOVE THE CONTROLLING LIMIT SETPOINT (80% ADJ.) AS SENSED BY THE HIGH LIMIT HUMIDISTAT, HT-SAH, THE HUMIDIFIER VALVE SHALL BE MODULATED CLOSED TO MAINTAIN THE CONTROLLING LIMIT SETPOINT.

WHENEVER THE HUMIDIFIER DISCHARGE AIR IS ABOVE THE HIGH LIMIT SETPOINT, 95% ADJUSTABLE, AS SENSED BY THE HT-SAH, THE DDC SYSTEM SHALL DISABLE THE HUMIDIFIER, CLOSE THE STEAM VALVE, AND AN ALARM SHALL BE SENT TO THE OPERATOR WHICH MUST BE ACKNOWLEDGED AND RESET IN ORDER TO RE-ENABLE THE HUMIDIFIER.

FREEZESTAT

WHENEVER FREEZESTAT, TS-FZ, SENSES A TEMPERATURE BELOW 36°F (ADJ.), IT SHALL PERFORM THE FOLLOWING:
- SHUTDOWN THE AHU FANS.
- START PRE-HEAT RE-CIRCULATING PUMP.
- FULLY OPEN THE CHILLED WATER VALVE (V-CHW)
- OPEN THE RETURN AIR DAMPER (D-RET).
- ISSUE A UNIQUE ALARM.

A MANUAL RESET AT THE AHU SHALL BE REQUIRED TO RESTART AN AHU THAT HAS AUTOMATICALLY SHUT DOWN FROM A FREEZE STAT TRIP.

FILTERS

ALL FILTERS SHALL HAVE A DIFFERENTIAL PRESSURE SWITCH (DPS-FIL & DPS-PFL) MEASURING THE PRESSURE DROP ACROSS THE FILTER BANKS (DPS-FIL & DPS-PFL). EACH SHALL ALARM THE DDC SYSTEM WHENEVER THE PRESSURE DROP ACROSS THE FILTER IS EXCESSIVE (DIRTY FILTER) (ADJ.).

FIRE ALARM SHUTDOWN

WHENEVER THE FIRE ALARM SYSTEM SENSES SMOKE/FIRE, THE FIRE ALARM SYSTEM SHALL SIGNAL THE DDC SYSTEM.

THE DDC SYSTEM IS TO DE-ENERGIZE THE UNIT AND SHALL PERFORM THE FOLLOWING.
- SHUTDOWN THE AHU FAN
- CLOSE CHILLED WATER VALVE V-CHW.
- CLOSE THE OUTSIDE AIR DAMPER (D-OA).
- OPEN THE RETURN AIR DAMPER (D-RET).
- THE PREHEAT COIL (V-HTG) SHALL REMAIN UNDER CONTROL OF THE PREHEAT COIL DISCHARGE THERMOSTAT, TT-PHT.

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KEY PLAN

COLORADO LICENSED PROFESSIONAL ENGINEER RICHARD L. [illegible] 31081
8/24/06

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CONTROLS
MECHANICAL

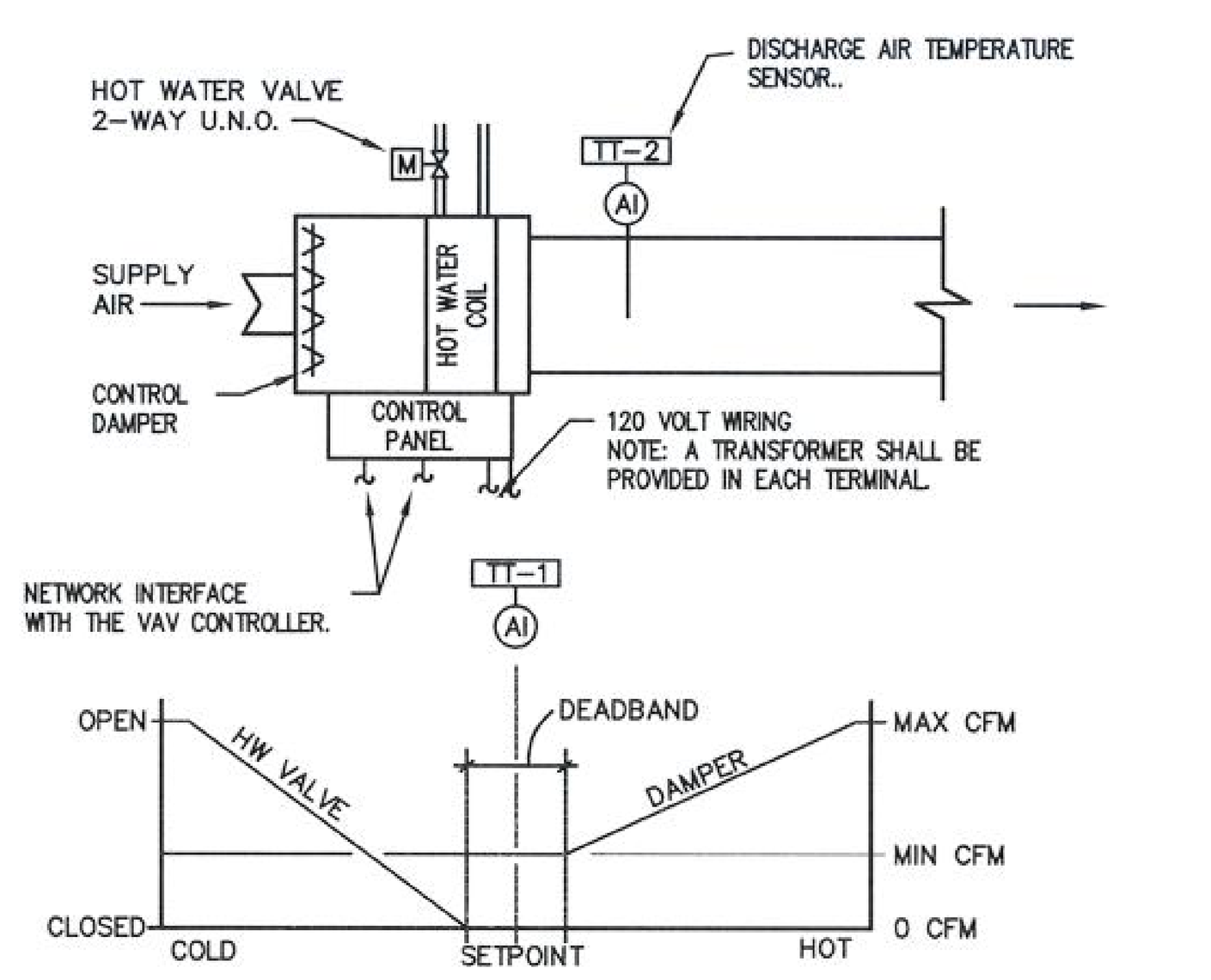
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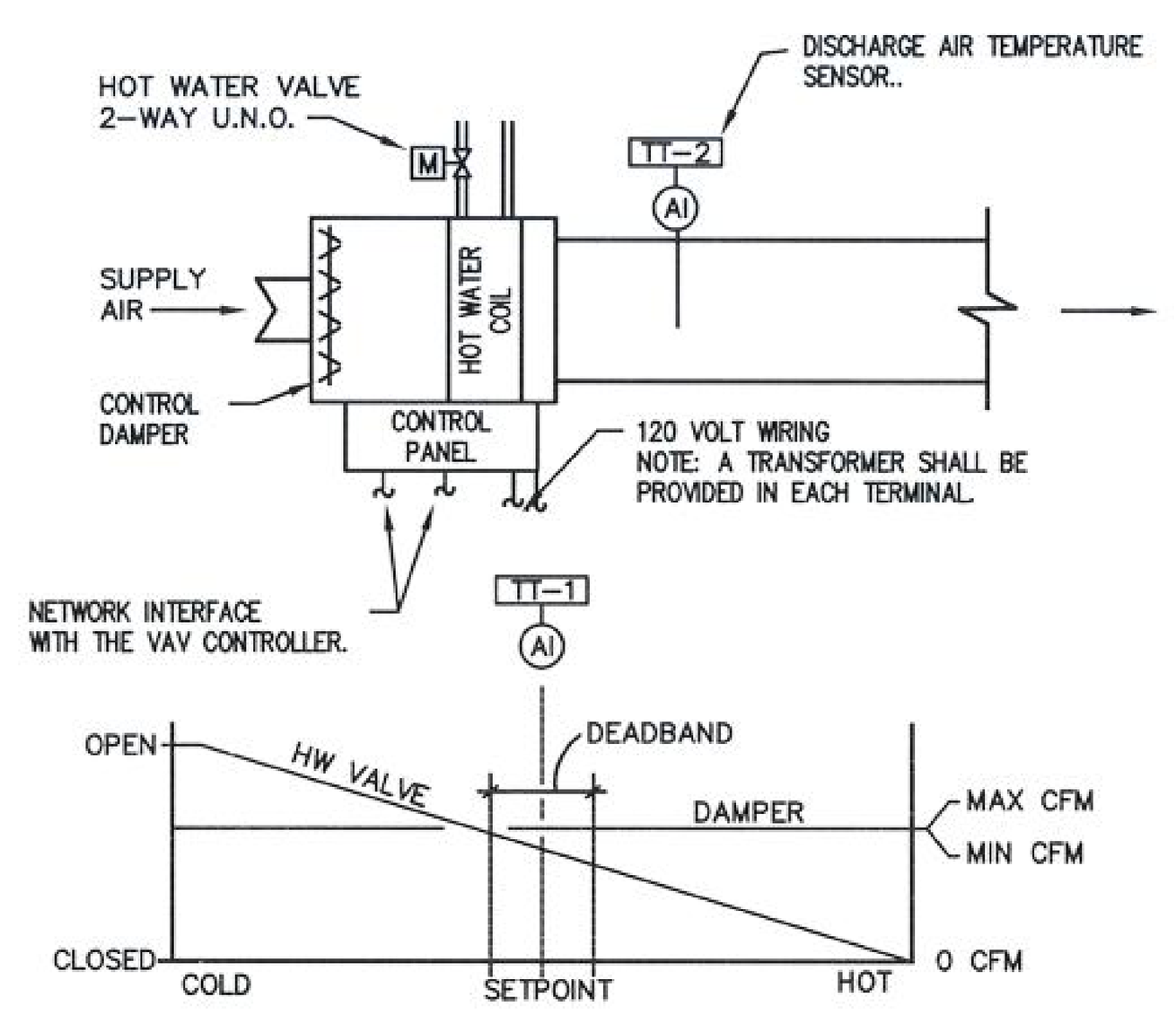
TYPICAL VARIABLE VOLUME BOX WITH HOT WATER REHEAT COIL

COOLING AND HEATING
ON A RISE IN SPACE TEMPERATURE TRANSMITTERS (TT-1) SETPOINT , TT-1 SHALL, THROUGH THE DDC, SET A HIGHER CFM FOR THE MODULATING DAMPER TP MAINTAIN. ON A FALL IN SPACE TEMPERATURE TT-1 SHALL, THROUGH THE DDC, SET A LOWER CFM FOR THE MODULATING DAMPER TO MAINTAIN AND UNDER NO CIRCUMSTANCES (EXCEPT SMOKE CONTROL IF APPLICABLE) SHALL THE CFM SETTING BE BELOW THAT OF THE MINIMUM CFM AS INDICATED ON THE DRAWINGS. ON A FURTHER DECREASE OF SPACE TEMPERATURE THE HOT WATER VALVE WILL MODULATE OPEN. TEMPERATURE SETPOINT SHALL BE ADJUSTABLE THROUGH THE DDC CONTROL SYSTEM AND SHALL HAVE USER ADJUSTABLE OFFSETS. THE DEADBAND SHALL BE ADJUSTABLE THROUGH THE DDC CONTROL SYSTEM.

GAIN OF VAV DAMPER CONTROL SHALL NOT EXCEED 20%.

THE DEADBAND SHALL NOT EXCEED +/-0.5'F.
THE FOLLOWING POINTS SHALL BE MAPPED AND TRENDED FROM THE OPERATORS WORKSTATION.
A VAV BOX SUMMARY SHALL BE PROGRAMMED TO ALLOW THE OPERATOR TO VIEW THE FOLLOWING POINTS IN TABULAR FORM:
- SPACE TEMPERATURE SETPOINT
- CURRENT SPACE TERMPERATURE
- CFM SETTING
- CURRENT CFM
- DAMPER POSITION
- VALVE POSITION
- VAV DISCHARGE AIR TEMP

03 TYPICAL VARIABLE VOLUME BOX WITH HOT WATER COIL
SCALE: NTS



TYPICAL CONSTANT VOLUME BOX WITH HOT WATER REHEAT COIL

COOLING AND HEATING
ON A RISE IN SPACE TEMPERATURE TRANSMITTERS (TT-1) SETPOINT (75 DEG. ADJ.), TT-1 SHALL, THROUGH THE DDC, MODULATE THE HOT WATER VALVE CLOSED. ON A FALL IN SPACE TEMPERATURE (70 DEG. ADJ.), TT-1 SHALL, THROUGH THE DDC, MODULATE OPEN THE HOT WATER VALVE.

THE DAMPER SHALL MODULATE TO MAINTAIN THE CFM SETTING AS INDICATED ON THE DRAWINGS AT ALL TIMES. UNDER NO CIRCUMSTANCES (EXCEPT SMOKE CONTROL IF APPLICABLE) SHALL THE CFM SETTING BE BELOW THAT OF THE MINIMUM CFM AS INDICATED ON THE DRAWINGS.

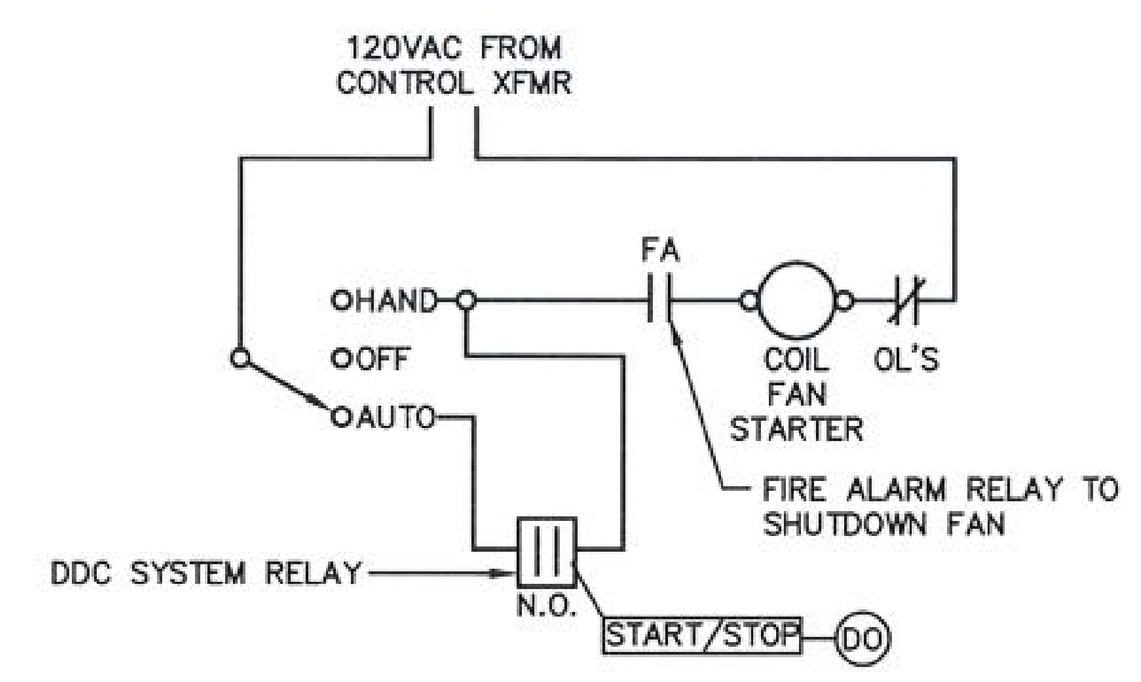
TEMPERATURE SETPOINT SHALL BE ADJUSTABLE THROUGH THE DDC CONTROL SYSTEM AND SHALL HAVE USER ADJUSTABLE OFFSETS. THE DEADBAND SHALL BE ADJUSTABLE THROUGH THE DDC CONTROL SYSTEM.

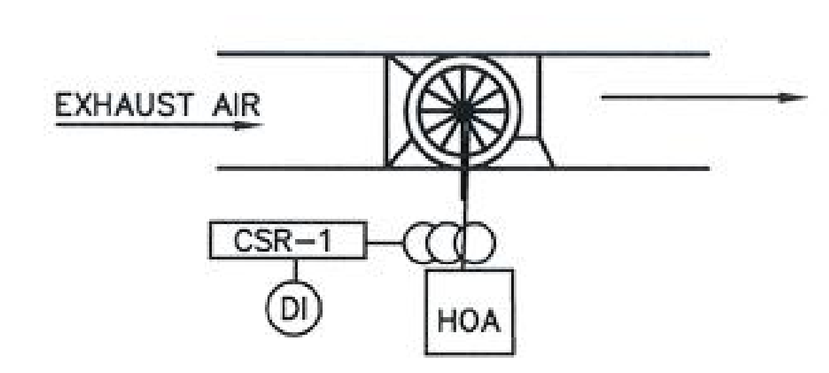
GAIN OF VAV DAMPER CONTROL SHALL NOT EXCEED 20%.

THE DEADBAND SHALL NOT EXCEED +/-0.5'F.

THE FOLLOWING POINTS SHALL BE MAPPED TO BE TRENDED FROM THE OPERATORS WORKSTATION.
A VAV BOX SUMMARY SHALL BE PROGRAMMED TO ALLOW THE OPERATOR TO VIEW THE FOLLOWING POINTS IN TABULAR FORM:
- SPACE TEMPERATURE SETPOINT
- CURRENT SPACE TEMPERATURE
- CFM SETTING
- CURRENT CFM
- DAMPER POSITION
- VALVE POSITION
- VAV DISCHARGE AIR TEMP

02 TYPICAL CONSTANT VOLUME BOX WITH HOT WATER COIL
SCALE: NTS





CONTROL SEQUENCE FOR A TYPICAL EXHAUST FAN
NOTE: DOES NOT APPLY TO ISOLATION ROOM AND REFRIGERANT EXHAUST FANS.
EXHAUST FANS SHALL RUN CONTINUOUSLY.

EXHAUST FANS SHALL SHUT DOWN ONLY UPON COMMAND FROM THE BAS, FIRE CONTROL PANEL (IF ONE EXISTS), OR AT THE HAND DISCONNECT. (1)

DDC INPUT / OUTPUT POINTS LIST

TYPICAL EXHAUST FAN — HARDWARE

POINT DESCRIPTION	DESIGNATION	NOTES	QUANTITY	GRAPHIC DISPLAY	OUTPUT DIGITAL: OPEN / CLOSE	START / STOP	FORCE ON	FORCE OFF	ENABLE / DISABLE	ON / OFF	OUTPUT ANALOG: DAMPER CONTROL	VALVE CONTROL	CONTROL	FIXED PRESET - VS DRIVE	INPUT DIGITAL: END SWITCH	RELAY CONTACTS	HAND SWITCH	CURRENT RELAY	PRESSURE	DIFFERENTIAL PRESS	FLOW	AUX CONTACTS	STATUS	ALARM	FAULT RESET	INPUT ANALOG: PRESSURE	DIFFERENTIAL PRESS	FLOW	KW	HERTZ REFERENCE	TEMPERATURE (DB)	RELATIVE HUMIDITY	DEW POINT	MEASURE	SPEED / POSITION	PULSE
START/STOP	S/S	1	1	X		X																														
STATUS	CSR-1	1	1	X														X																		

TYPICAL EXHAUST FAN — SOFTWARE

POINT DESCRIPTION	ALARMS: STATUS FAILURE	HIGH LIMIT	LOW LIMIT	SMOKE	MAINTENANCE	CALCULATED VALUE: KW	BTUH	CFM	GPM	RUN TIME	INTEGRATOR	GALLONS / TON	PROGRAMS: AUTO RESTART	CHILLER OPTIMIZATION	COND WATER RESET	DEMAND LIMITING	EVENT PROGRAMS	FAIL MODE (CLOSED)	FAIL MODE (OPEN)	LIGHTING CONTROL	RUN TIME	SCHEDULED START / STOP	LEAD / LAG	SUPPLY AIR RESET	TREND LOGGING
START/STOP										X			X			X					X	X			
STATUS	X																								

NOTES:
1 TYPICAL FOR EACH UNIT. QUANTITIES ARE FOR EACH UNIT.

01 TYPICAL EXHAUST FAN
SCALE: NTS

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Revisions

NO.	ISSUE	DATE
1	ADDENDUM #1	08/08/06

06-124732
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

Sheet Information

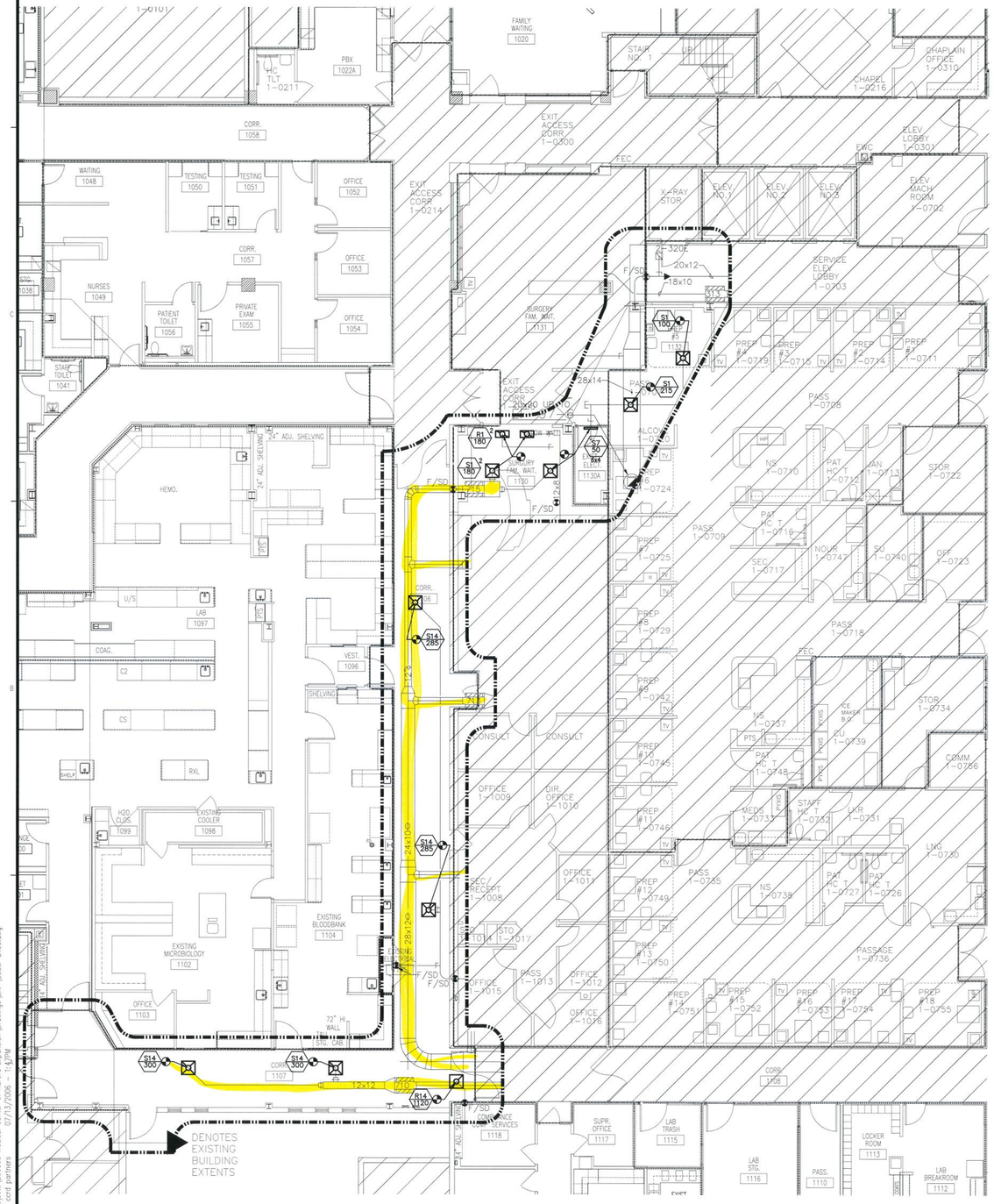
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Job Number	142228.000
Drawn	JS
Checked	RK
Approved	RK

Title
CONTROLS
MECHANICAL

Sheet
M-1102

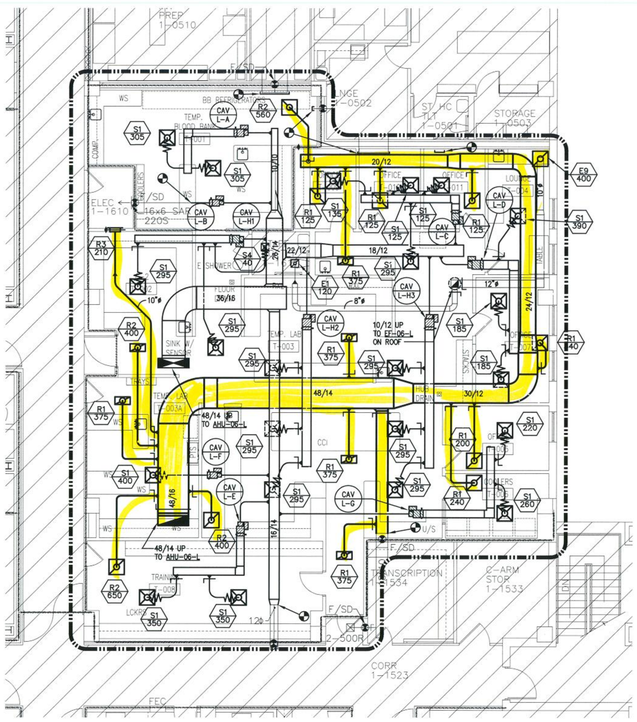
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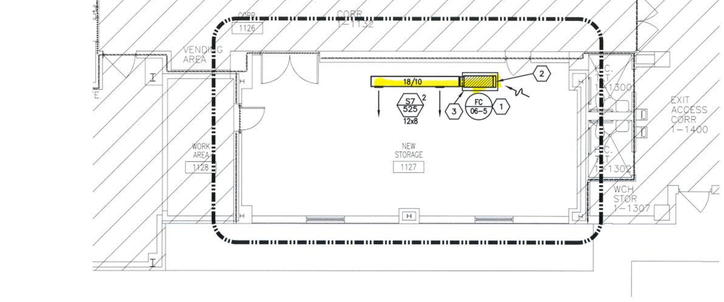


01 DUCTWORK - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"



04 DUCTWORK - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"



03 DUCTWORK - FIRST FLOOR - BED STORAGE
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET M-0000 FOR GENERAL NOTES.

LEGEND NOTES

1. FAN COIL UNIT SUSPENDED FROM STRUCTURE WITH HANGER RODS AND VIBRATION ISOLATORS.
2. R.A. DUCT FULL SIZE OF INLET FILTER SECTION.
3. DRAIN PAN GREATER THAN FULL SIZE OF UNIT AND EXTENDING AT LEAST 6" BEYOND COIL CONNECTIONS.

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KEY PLAN
FIRST FLOOR





Revisions

06-124732
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
APPROVED
DATE

NO.	ISSUE	DATE

Sheet Information

Date	07-13-2006
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Drawn	JS
Checked	RK
Approved	RK

Title

DUCTWORK PLAN FIRST FLOOR

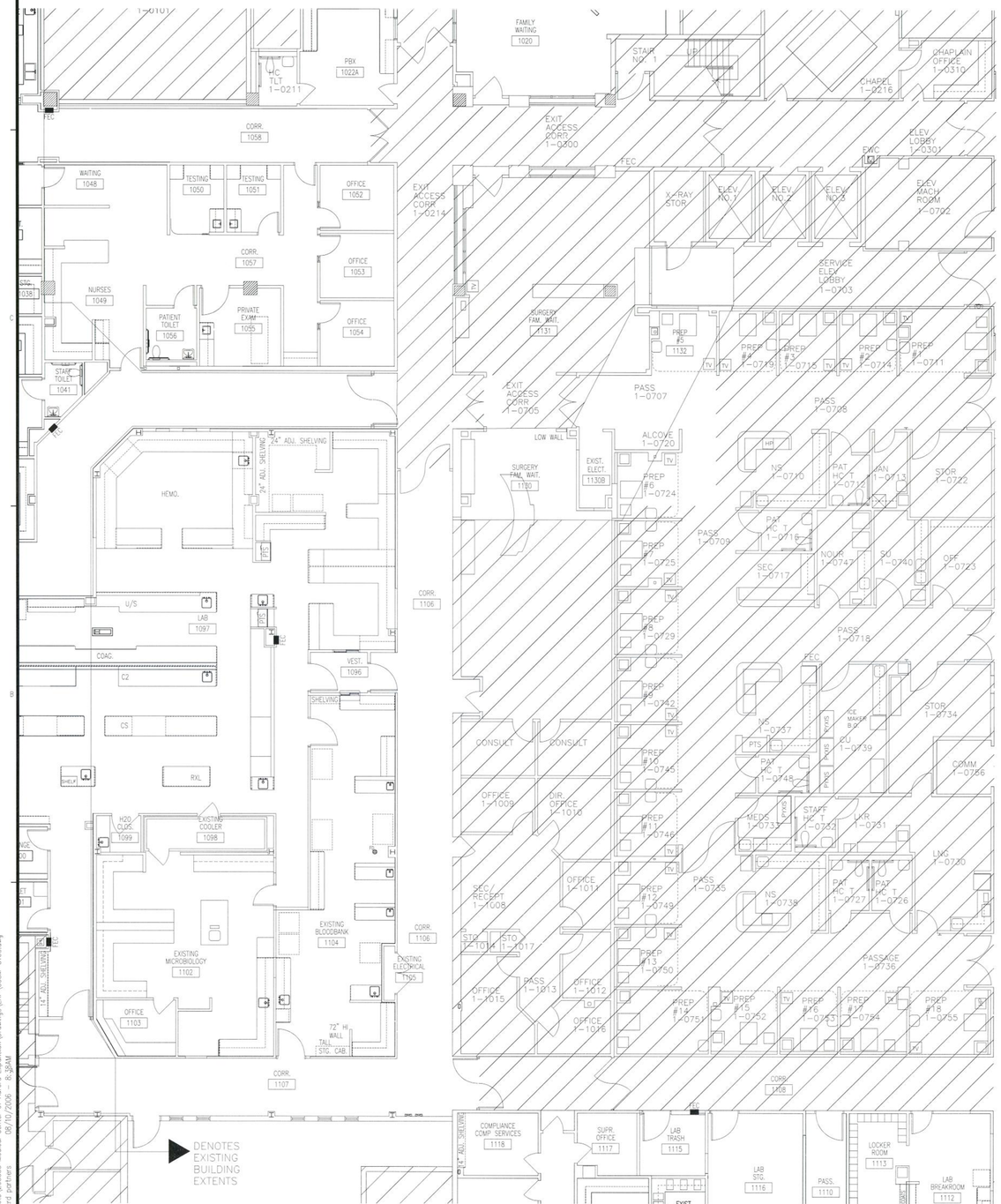
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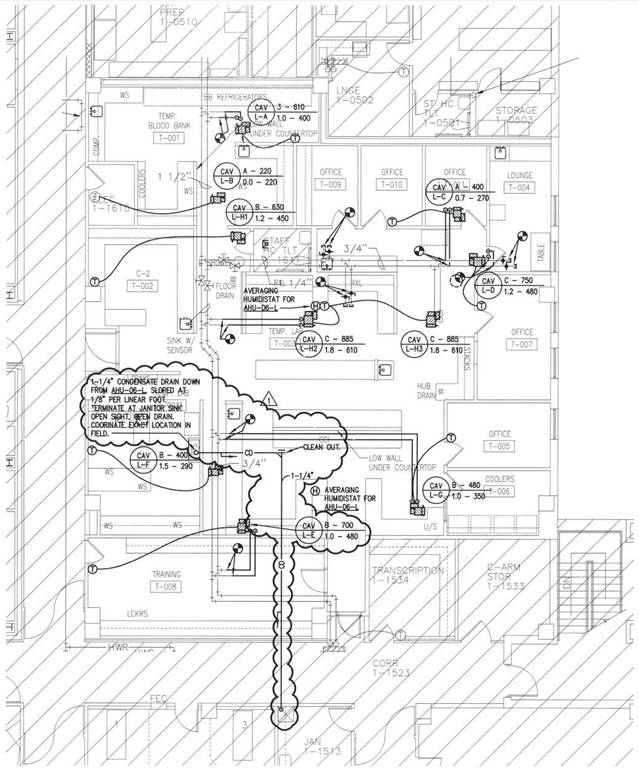
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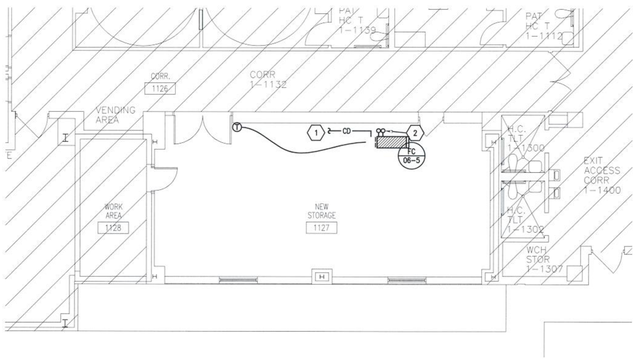
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Dan Seeley, ccrd partners 07/13/2006 - 11:47PM



01 HVAC PIPING - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 HVAC PIPING - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"



03 HVAC PIPING - FIRST FLOOR - BED STORAGE
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET M-0000 FOR GENERAL NOTES.

LEGEND NOTES

1. CONDENSATE DRAIN PIPED OPEN SIGHT, OPEN DRAIN TO NEAREST FLOOR DRAIN.
2. REFRIGERANT LINES UP TO CU-06-5 ON ROOF ABOVE. SIZE LINES PER MANUFACTURER'S RECOMMENDATIONS AND PENETRATE ROOF VIA PIPE CURB.

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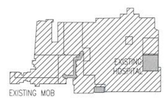
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KEY PLAN
FIRST FLOOR



COLORADO LICENSED
JOHN A. KOSOBUD
33831
PROFESSIONAL ENGINEER
6-29-06

Revisions

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1	ADDENDUM #1	08/08/06

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BUILDING DIVISION
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Checked	RK
Approved	RK

Title

HVAC PIPING PLAN FIRST FLOOR

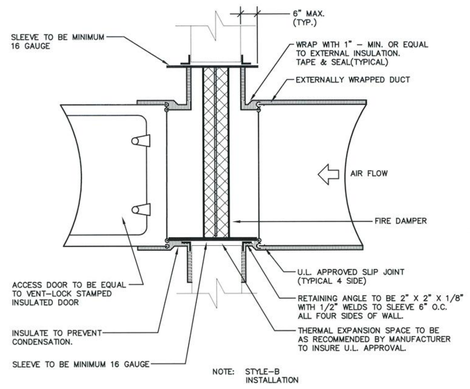
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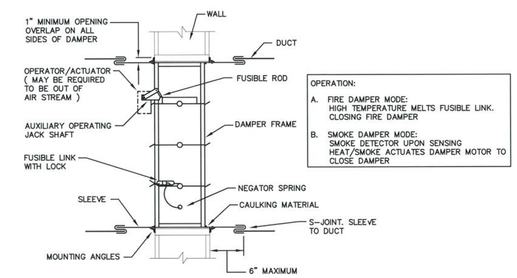
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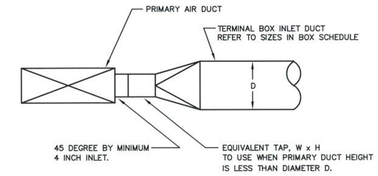
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Dan Seeley, carol partners



12 FIRE DAMPER INSTALLATION DETAIL
NO SCALE

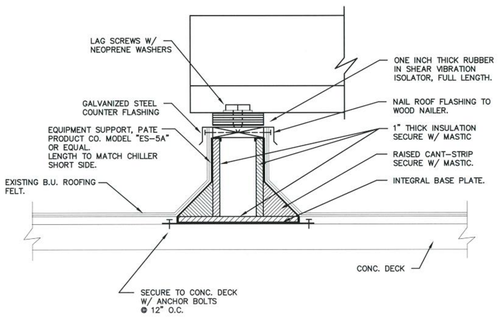


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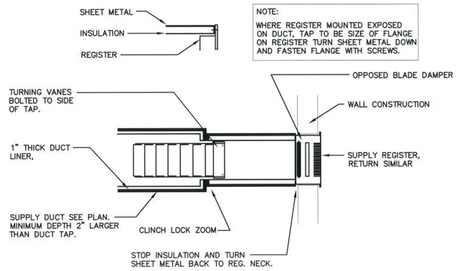


D (INCHES)	EQUIVALENT TAP, W x H (INCHES)
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10	10/8
12	12/10, 16/8
14	14/12, 16/10
16	16/14, 18/12, 22/10

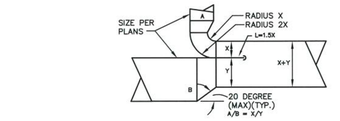
04 TERMINAL BOX EQUIVALENT TAPS
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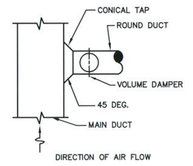
11 EQUIPMENT SUPPORT DETAIL
NO SCALE



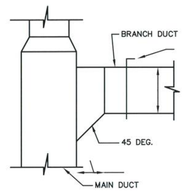
07 SIDE WALL REGISTER DETAIL
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SPLITTER DAMPER – SUPPLY DUCTS

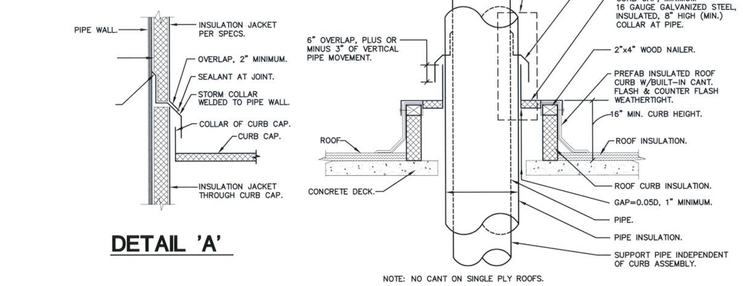


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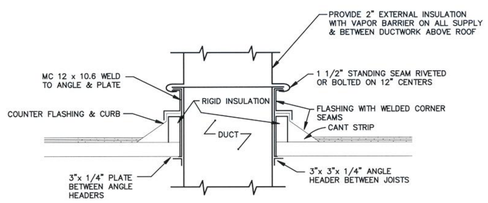


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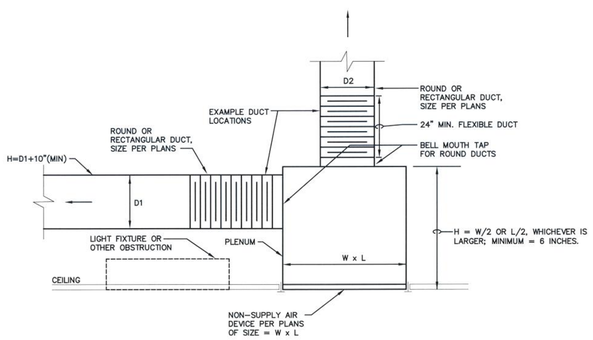
03 LOW PRESSURE DUCT DETAILS
NO SCALE



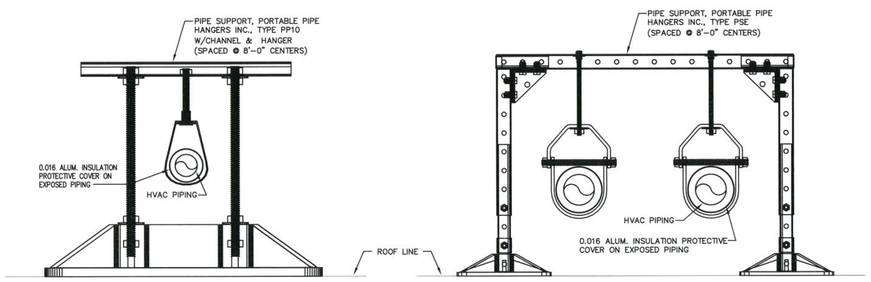
10 HVAC PIPE THROUGH ROOF
NO SCALE



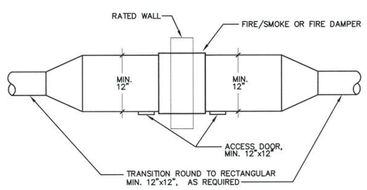
06 DUCT THRU ROOF DETAIL
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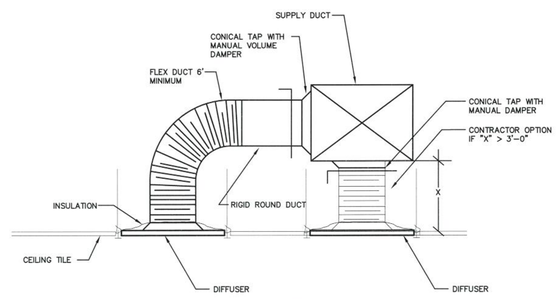
02 DUCTED NON-SUPPLY AIR DEVICE
NO SCALE



09 TYPICAL HVAC PIPING ROOF SUPPORT DETAIL
NO SCALE



05 TYPICAL F/S & FD PENETRATION THRU RATED WALL
NO SCALE



DUCTED RETURN GRILLE SIMILAR

01 DIFFUSER CONNECTION DETAIL
NO SCALE

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Revisions

06-124732
CITY OF AURORA
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APPROVED AS NOTED
DATE APPROVED SEP 29 2006

NO.	ISSUE	DATE

Sheet Information

Date	07-13-2006
Job Number	142228.000
Drawn	JS
Checked	RK
Approved	RK

Title

MECHANICAL DETAILS

Sheet

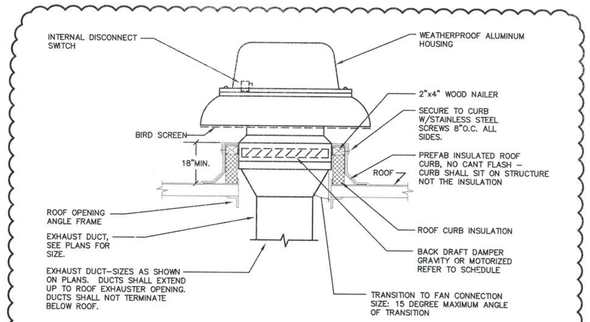
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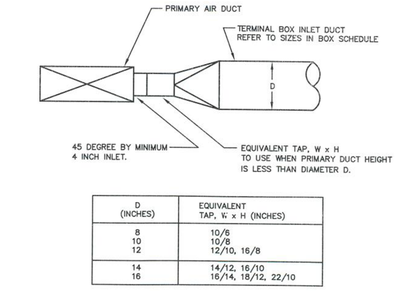
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12 NOT USED
NO SCALE

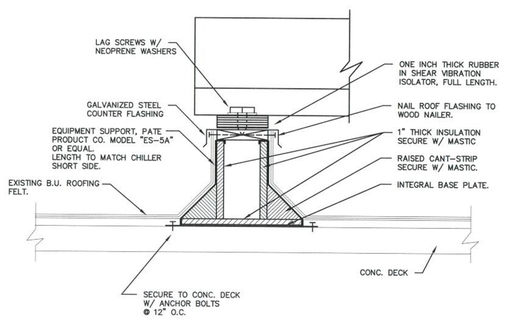


08 TYPICAL DOME TYPE EXHAUST FAN
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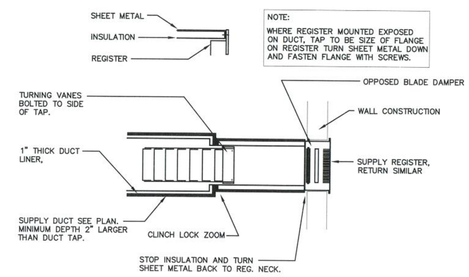


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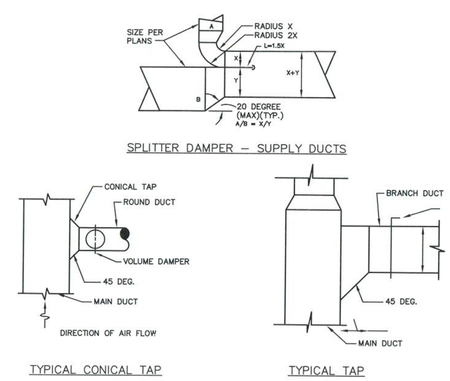
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11 EQUIPMENT SUPPORT DETAIL (EXISITNG ROOF)
NO SCALE



07 SIDE WALL REGISTER DETAIL
NO SCALE

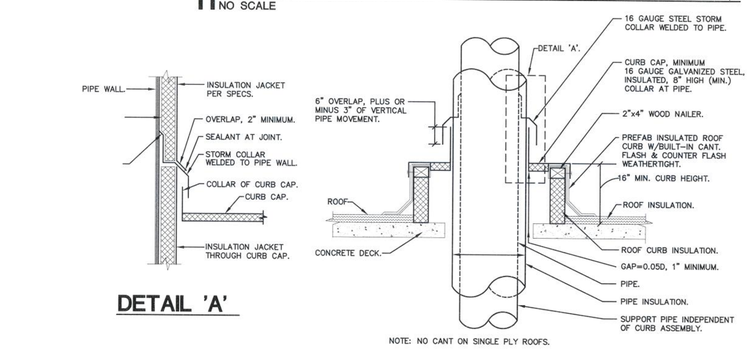


SPLITTER DAMPER - SUPPLY DUCTS

TYPICAL CONICAL TAP

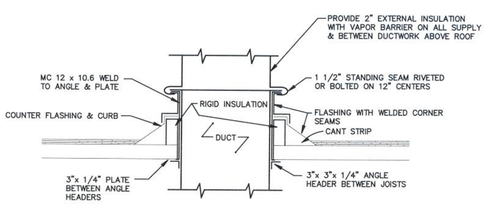
TYPICAL TAP

03 LOW PRESSURE DUCT DETAILS
NO SCALE

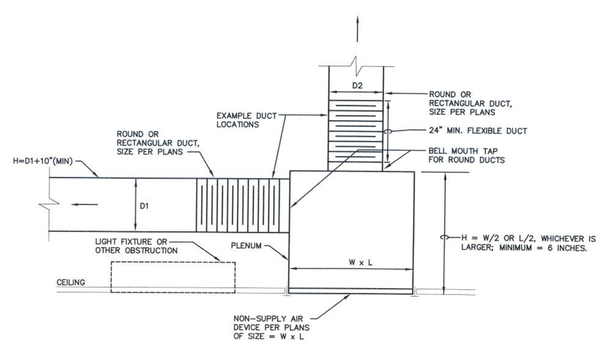


DETAIL 'A'

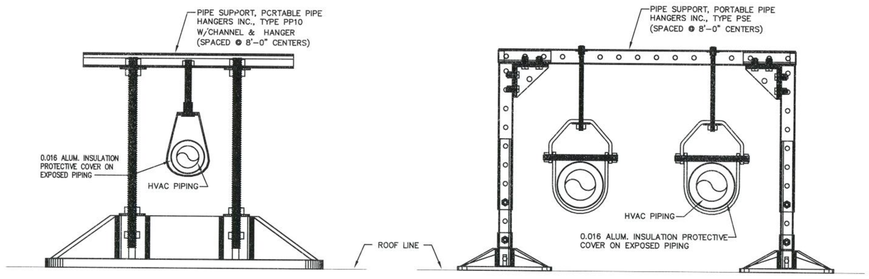
10 HVAC PIPE THROUGH ROOF
NO SCALE



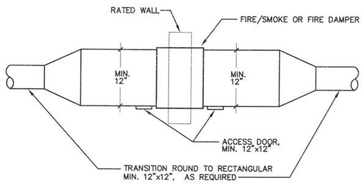
06 DUCT THRU ROOF DETAIL
NO SCALE



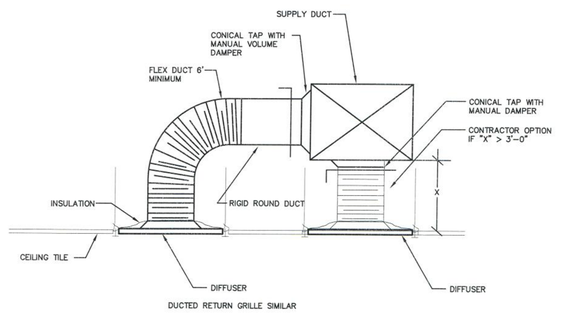
02 DUCTED NON-SUPPLY AIR DEVICE
NO SCALE



09 TYPICAL HVAC PIPING ROOF (EXISTING) SUPPORT DETAIL
NO SCALE



05 TYPICAL F/S & FD PENETRATION THRU RATED WALL
NO SCALE



DUCTED RETURN GRILLE SIMILAR

01 DIFFUSER CONNECTION DETAIL
NO SCALE

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Medical Center of Aurora
South Campus
Private Room Expansion
Aurora, Colorado

HCA
Project # 306660001

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KEY PLAN

COLORADO LICENSED 31031 PROFESSIONAL ENGINEER
4/15/06

Revisions

1	ADDENDUM #1	08/08/06
3	ADDENDUM #3	09/14/06

06-124732
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

NO.	ISSUE	DATE

Sheet Information

Date	07-13-2006
Job Number	142228.000
Drawn	JS
Checked	RK
Approved	RK

Title

MECHANICAL DETAILS

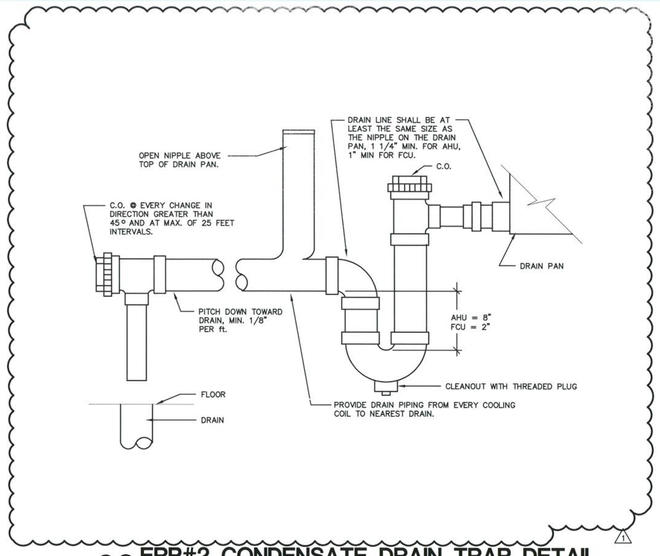
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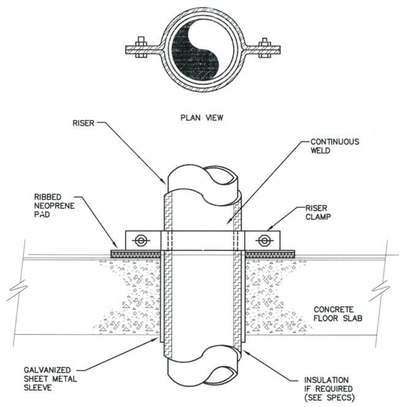
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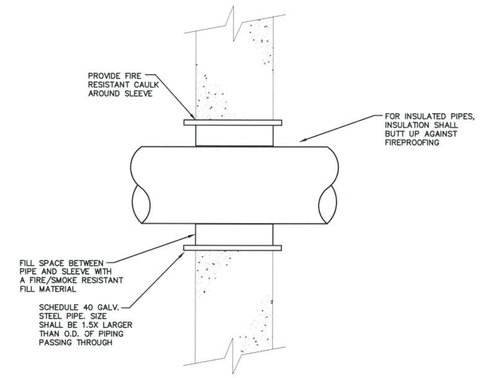
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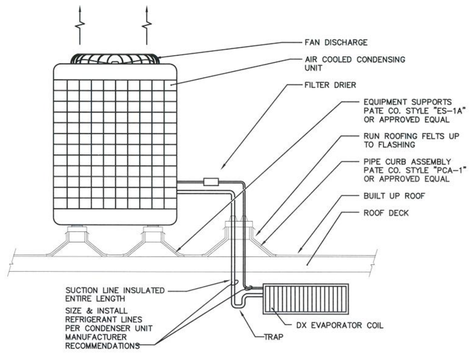
09 ERP#2 CONDENSATE DRAIN TRAP DETAIL
NO SCALE



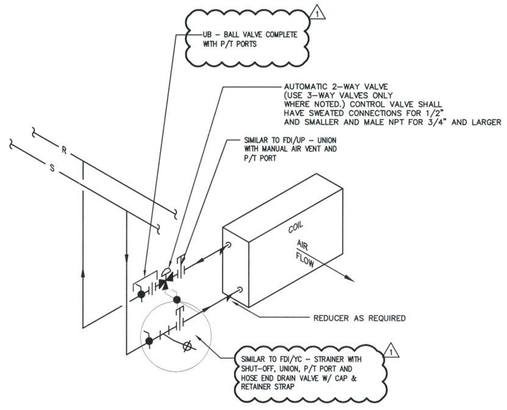
06 TYPICAL RISER SUPPORT DETAIL
NO SCALE



03 PIPE SLEEVE THRU RATED PARTITION
NO SCALE

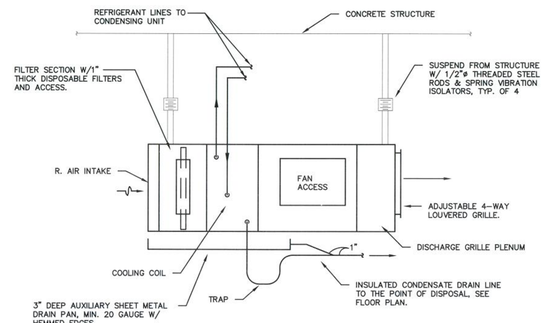


08 SPLIT REFRIGERANT CIRCUIT DETAIL
NO SCALE

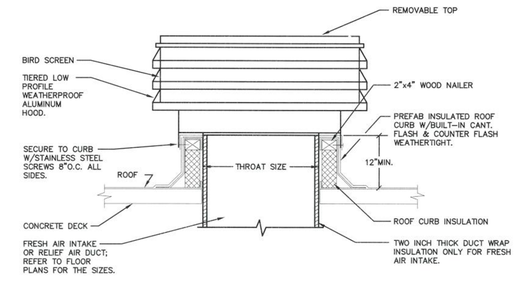


05 TERMINAL HOT WATER COIL PIPING
NO SCALE

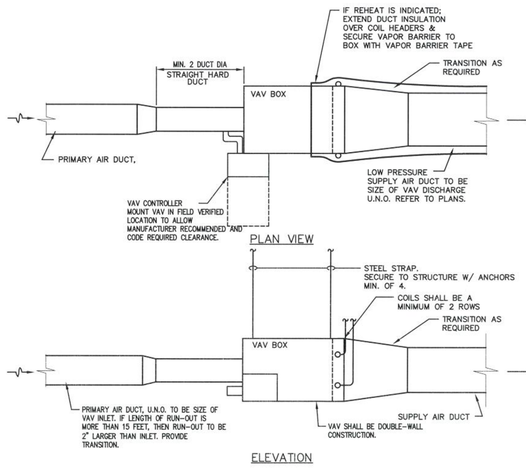
NOTE:
APPLIES TO FAN COIL UNITS AND VAV BOX COILS.



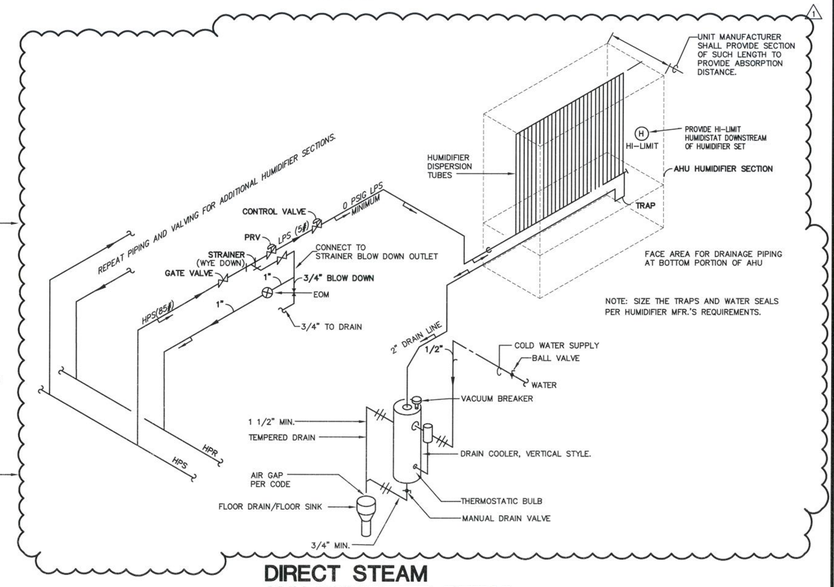
02 DX FAN COIL UNIT
NO SCALE



07 FRESH AIR INTAKE / RELIEF AIR HOOD ON ROOF
NO SCALE



04 VAV BOX INSTALLATION DETAIL
NO SCALE



01 DIRECT STEAM AHU HUMIDIFIER DETAIL
NO SCALE

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RICHARD KOLLMAN
21644
61031
PROFESSIONAL ENGINEER

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Sheet

M-7102

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AIR DEVICE SCHEDULE

DESIG.	FACE SIZE	OBD	FINISH	THROW	NECK SIZE	MANUFACTURER/MODEL NO.	MAX. NC LEVEL NOTE B	REMARKS/NOTES
S1	24"x24"	NO	OFF-WHITE	4-WAY	NOTE-1	PRICE/SCD	25	CEILING S.A. DIFFUSER, LOUVER FACE/G
S2	24"x24"	YES	OFF-WHITE	4-WAY	NOTE-1	PRICE/SCD	25	CEILING S.A. REGISTER, LOUVER FACE/G
S3	24"x24"	NO	OFF-WHITE	4-WAY	NOTE-1	PRICE/ASCD	25	CEILING S.A. DIFFUSER, LOUVER FACE/G
S4	12"x12"	NO	OFF-WHITE	4-WAY	NOTE-1	PRICE/SCD	25	CEILING S.A. DIFFUSER, LOUVER FACE/G
S5	12"x12"	NO	OFF-WHITE	4-WAY	NOTE-1	PRICE/ASCD	25	CEILING S.A. DIFFUSER, LOUVER FACE/G
S6	12"x12"	YES	OFF-WHITE	4-WAY	NOTE-1	PRICE/SCD	25	CEILING S.A. REGISTER, LOUVER FACE/G
S7	DUCT SIZE + 1 3/4"	NO	OFF-WHITE	–	SEE PLANS	PRICE/520	25	SIDEWALL SUPPLY GRILLE/G,2
S8	DUCT SIZE + 1 3/4"	YES	OFF-WHITE	–	SEE PLANS	PRICE/520	25	SIDEWALL SUPPLY REGISTER/G,2
S9	SEE PLANS	NO	OFF-WHITE	2-WAY	NOTE-1	PRICE/SDS75 48" LONG 2-SLOTS	30	CEILING SLOT SUPPLY DIFFUSER WITH UN-INSULATED SDB SUPPLY PLENUM/G,6
S10	12"x12"	YES	OFF-WHITE	4-WAY	NOTE-1	PRICE/SCD	25	CEILING S.A. DIFFUSER, LOUVER FACE/G, 8
S11	24"x24"	YES	OFF-WHITE	4-WAY	NOTE-1	PRICE/SCD	25	CEILING S.A. DIFFUSER, LOUVER FACE/G, 8
S12	48"x48"	YES	OFF-WHITE	–	46" X 46"	PRICE/910	25	SIDEWALL SUPPLY REGISTER/G, 3
S13	24"x48"	YES	OFF-WHITE	4-WAY	SEE PLANS	PRICE/SMDA	25	CEILING SUPPLY LOUVER/G, 2
S14	MATCH EXISTING	NO	OFF-WHITE	–	MATCH EXISTING	PRICE/SCD-FR	25	CEILING SUPPLY DIFFUSER (FIRE RATED)/G, 2
R1	24"x12"	NO	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING R.A. GRILLE/G,5
R2	24"x24"	NO	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING R.A. GRILLE/G,5
R3	DUCT SIZE + 1 3/4"	NO	OFF-WHITE	–	SEE PLANS	PRICE/535L	25	SIDEWALL R.A. GRILLE/G,2
R4	DUCT SIZE + 1 3/4"	YES	OFF-WHITE	–	SEE PLANS	PRICE/535L	25	SIDEWALL R.A. REGISTER/G,2
R5	24"x24"	YES	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING R.A. REGISTER/G,5
R6	24"x12"	YES	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING R.A. REGISTER/G,5
R7	SEE PLANS	NO	OFF-WHITE	–	NOTE-5	PRICE/SDR75 48" LONG 2-SLOTS	30	CEILING SLOT RETURN WITH UN-INSULATED SDB SLOT PLENUM/G
R8	MATCH EXISTING	NO	OFF-WHITE	–	MATCH EXISTING	PRICE/10-FR	25	CEILING R.A. REGISTER (FIRE RATED)/G,5
E1	12"x12"	NO	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING EXHAUST GRILLE/G,5
E2	24"x12"	NO	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING EXHAUST GRILLE/G,5
E3	12"x12"	YES	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING EXHAUST REGISTER/G,5
E4	DUCT SIZE + 1 3/4"	NO	OFF-WHITE	–	SEE PLANS	PRICE/535L	25	SIDEWALL EXHAUST GRILLE/G,2
E5	DUCT SIZE + 1 3/4"	YES	OFF-WHITE	–	SEE PLANS	PRICE/535L	25	SIDEWALL EXHAUST REGISTER/G,2
E6	10"x10"	NO	OFF-WHITE	–	8"x6"	PRICE/535L	25	CEILING EXHAUST GRILLE/G,3,5
E7	24"x12"	YES	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING EXHAUST REGISTER/G,5
E8	30"x24"	YES	OFF-WHITE	–	28"x22"	PRICE/535L	25	CEILING EXHAUST REGISTER/G,3,5
E9	24"x24"	YES	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING EXHAUST REGISTER/G,5
E10'	48"X48"	NO	OFF-WHITE	–	48"X48"	PRICE/535L	25	CEILING EXHAUST REGISTER/G,3,5
E11	48"x24"	NO	OFF-WHITE	–	48"X22"	PRICE/535L	25	CEILING EXHAUST REGISTER/G,3,5
E12	24"x24"	NO	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING EXHAUST REGISTER/G,5
E13	12"x12"	NO	OFF-WHITE	–	NOTE-5	PRICE/PDR	25	CEILING EXHAUST GRILLE/G,5
E14	MATCH EXISTING	NO	OFF-WHITE	–	MATCH EXISTING	PRICE/10-FR	25	CEILING EXHAUST GRILLE (FIRE RATED)/G,5

NOTES:

1. MARK "S1" – "S6":

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, 0.50" SPACING.
4. PRICE LFDC, 48" x 24", NECK SIZE AS INDICATED BELOW, LAMINAR FLOW, ALL ALUMINUM, PERFORATED DAMPER ADJUSTMENT THROUGH FACE. INTERNAL AIR DISTRIBUTION BAFFLES AND HEPA FILTER.

CFM	NECK SIZE	MIN. DUCT SIZE
UP TO 200	8"ø	8"ø
201 TO 300	10"ø	10"ø
301 TO 400	12"ø	12"ø

GENERAL NOTES (AIR DEVICES):

A. FRAME TYPE SHALL MATCH CEILING TYPE AND CEILING MODULE DIMENSIONS.
B. NC LEVEL = 45 MAXIMUM IN PUMP, CHILLER, FAN AND GENERATOR ROOMS.
C. INDICATED NECK SIZES SHALL NOT BE REDUCED.
D. PROVIDE OBD WHERE INDICATED ON FLOOR PLANS.
E. DUCT MOUNTED AIR DEVICES SHALL BE FLANGE MOUNTED.
F. NO MOUNTING SCREWS SHALL BE VISIBLE EXCEPT ON EXPOSED DUCTWORK.
G. OFF WHITE FINISH IN CEILINGS, FIELD PAINTED IN OTHER LOCATIONS TO MATCH ADJACENT SURFACES.
H. AIR DEVICES IN SHOWER ROOMS, TUB ROOMS, WHIRLPOOLS, ETC., (EXCLUDING PATIENT ROOM TOILETS) SHALL BE ALUMINUM.
I. NOT ALL AIR DEVICES LISTED ARE USED. REFER TO PLANS.

5. MARK "R1","R2","R5 – R6" & "E1 – E3","E7", "E9", "E12 – E14":

NECK SIZE (INCHES)	MAXIMUM CFM	APPLICATION
6" DIA	100	WHERE INDICATED
8" DIA	225	WHERE INDICATED
10" DIA	400	WHERE INDICATED
12" DIA	500	WHERE INDICATED
14" DIA	650	WHERE INDICATED
16" DIA	800	WHERE INDICATED
22/10	1000	WHERE INDICATED
22/22	2000	WHERE INDICATED

6. PATTERN CONTROLLER ON EACH SLOT.
7.

NOT USED						
	LENGTH (INCHES)	NO. OF SLOTS	SLOT WIDTH (INCHES)	EA. SLOT MAX. CFM/LF	FRAME SIZE	TITUS MODEL NO.
H1	PER PLANS	2	0.75	31	NECK SIZE +1"	SDS

EXAMPLE: 195 (NOT USED) (2 SLOTS, 48" LONG) (ML-38)

8. NOT USED.
9. ALL GRDs SHALL BE ALUMINUM.

ERP #2 AIR HANDLING UNIT SCHEDULE

DESIGNATION		AHU-06-L
LOCATION		1ST FLOOR ROOF
SERVICE		TEMPORARY LAB
SUPPLY FAN	CFM (MAX / MIN)	6700
	ESP / TSP ("WG)	6.29 / 3.0
	FAN MOTOR HP (MIN)	15.0
	POWER (VOLTS / PH)	460 / 3
	FAN WHEEL DIAMETER (IN)	22
	FAN WHEEL TYPE	SWSI
	DRIVE	BELT
	FAN RPM	2291
RETURN FAN	CFM (MAX / MIN)	NONE
	ESP / TSP ("WG)	
	FAN MOTOR HP (MIN)	
	POWER (VOLTS / PH)	
	FAN WHEEL DIAMETER (IN)	
	FAN WHEEL TYPE	
	DRIVE	
	FAN RPM	
COOLING COIL DATA	TYPE / SQ FT (MIN)	CHW / 14.4
	CFM	6700
	MAX FACE VEL (FPM)	500
	MAX AIR P.D. ("WG)	1.0
	TOTAL / SENS / LAT (MBH) (MIN) / SHR	268 / 268 / 0 / 1.0
	EAT °F DB/MB	93 / 60
	LAT °F DB/MB	50 / 49
	EWT °F/ LWT °F	42 / 56
	GPM (MAX)	40
	WATER P.D. (FT)	12.0
	MIN ROWS / MAX FINS PER FOOT	8 / 144
GLYCOL COIL DATA	TYPE / SQ FT (MIN)	NONE
	CFM	
	MAX FACE VEL (FPM)	
	MAX AIR P.D. ("WG)	
	TOTAL / SENS / LAT (MBH) (MIN) / SHR	
	EAT °F DB/MB	
	LAT °F DB/MB	
	EWT °F/ LWT °F	
	GPM (MAX)	
	WATER P.D. (FT)	
	MIN ROWS / MAX FINS PER FOOT	
HEATING COIL DATA	TYPE / POSITION	HW / PREHEAT
	CFM	6700
	MAX FACE VEL (FPM)	500
	MAX AIR P.D. ("WG)	1.0
	SENS (MBH)	500.0
	EAT °F DB	-13
	LAT °F DB	55
	EWT °F/ LWT °F	180 / 150
	GPM (MAX)	40
	WATER P.D. (FT)	5
	MIN ROWS / MAX FINS PER FOOT	2 / 8
OUTSIDE AIR CFM (MIN) (AT FULL COOLING)		600
FIRST FILTER DATA	CFM	6700
	TYPE	CARTRIDGE
	EFFICIENCY (%) (ASHRAE 52)	MERV 8
	MAX. VELOCITY (FPM)	450
	P.D. (DIRTY / CLEAN)	1.0 / 0.3
FINAL FILTER DATA	CFM	6700
	TYPE	CARTRIDGE
	EFFICIENCY (%) (ASHRAE 52)	MERV 13
	MAX. VELOCITY (FPM)	450
	P.D. (DIRTY / CLEAN)	1.5 / 0.5
BASED ON (MANUF / MODEL NO.)		YORK / SOLUTIONS
WEIGHTS (INCLUDING PLENUMS)		6200
REMARKS / NOTES		ALL

NOTES:

1. CLEAN FILTERS. ISP EQUALS AHU SP LOSS WITH CLEAN FILTERS. TSP EQUALS ESP + ISP. TSP LISTED IS FOR REFERENCE ONLY.
2. FAN MOTOR NAMEPLATE HP SHALL NOT BE EXCEEDED AT SCHEDULED CFM AND TSP
3. IF MANUFACTURERE'S COOLING COIL PROMOTES MOISTURE CARRYOVER AT THE ALLOWABLE MAX FACE VELOCITY, THEY SHALL OVERSIZE THE COIL FACE AREA TO PREVENT MOISTURE CARRYOVER AT THESE CONDITIONS.
4. COILS SHALL NOT BE COATED UNLESS OTHERWISE INDICATED.
5. COOLING COIL SENSIBLE HEAT RATIO (SHR) TOLERANCE EQUALS PLUS OR MINUS 0.3. EXAMPLE: CSHR = 0.79 MAX = 0.76 MIN=0.82
6. 5/8" OD TUBES
7. PROVIDE VAPOR-TIGHT INCANDESCENT LIGHT FIXTURE IN EACH ACCESSIBLE SECTION. PROVIDE ONE 3-WAY SWITCH WITH PILOT LIGHT ON EACH SIDE OF AHU TO ENERGIZE ALL LIGHTS. FACTORY WIRE ALL FIXTURES AND SWITCHES TO EXTERNAL JUNCTION BOX FOR FIELD CONNECTION TO A 120V CIRCUIT
8. HEATING COIL SHALL BE SAME SIZE AS CHW COIL UNLESS OTHERWISE INDICATED.
9. PRE-FILTERS SHALL BE SNAP-IN TYPE WITH SUPPORTS ON ALL FOUR SIDES. FILTER BANK SHALL BE FULL-SIZE. BLANK-OFF PLATES SHALL NOT BE USED. FILTERS AS MFG BY 3M/FILTRETE 800 ES PREMIUM.
10. REFER TO STEAM HUMIDIFIER SCHEDULE FOR HUMIDIFCATION SECTION.
11. HORIZONTAL DRAW-THRU
12. DOUBLE WALL CONSTRUCTION: 2" THICK, 3# INSULATION.
13. INTERNALLY ISOLATED FAN, DRIVE, AND MOTOR.
14. VARIABLE FREQUENCY DRIVES FOR EACH FAN MOTOR.
15. AHU SECTIONS WITH HUMIDIFIERS (AHU-06-L)
    AIR MIXING / FILTER SECTION
    AIR BLENDER SECTION
    HEATING COIL SECTION
    ACCESS SECTION
    HUMIDIFICATION SECTION
    COOLING COIL SECTION
    ACCESS SECTION
    MOISTURE ELIMINATOR SECTION
    FAN SECTION
    DIFFUSER SECTION
    FILTER SECTION
    DISCHARGE PLENUM
16. OUTSIDE AIR INTAKE SHALL BE 3'-0" MINIMUM ABOVE ROOF LEVEL
17. PROVIDE FACTORY INSULATED 24" HIGH ROOF CURB, DISCONNECT AND 115V/1PH
18. PROVIDE AND INSTALL CIRCULATION PUMP TO MAINTAIN MINIMUM 3 FT/SEC. COIL TUBE VELOCITY IN PRE-HEAT COIL.

VAV & CAV BOX W/ HOT WATER COIL SCHEDULE

SIZE	VAV VALVE SIZE (IN)	CFM RANGE COOLING MIN.–MAX.	INLET DUCT SIZE (INCHES)	OUTLET PLENUM WIDTH x HEIGHT (INCHES) (NOTE 10)	VALVE MAX. A.P.D. IN. W.G.	MAX. N.C.	EAT. DB °F	H.W. COIL MIN. MBH	H.W. COIL GPM	H.W. COIL EWT °F	H.W. COIL LWT °F	H.W. COIL MAX. P.D. AIR IN. W.G. AT COOLING CFM	H.W. COIL MAX. WATER P.D. (FT.)	H.W. COIL MIN. # ROWS (NOTE 13)	ENVIROTECH MODEL NO.	NOTES
A	6"	0–400	8"	10/12	0.25	35	53	NOTE 1	NOTE 1	175	145	0.25	10	2	SDR-WC-6	ALL
B	8"	0–700	10"	12/12	0.25	35	53	NOTE 1	NOTE 1	175	145	0.40	10	2	SDR-WC-8	ALL
C	10"	0–1000	10"	14/12	0.25	35	53	NOTE 1	NOTE 1	175	145	0.40	10	2	SDR-WC-10	ALL
D	12"	0–1450	12"	16/16	0.25	35	53	NOTE 1	NOTE 1	175	145	0.50	10	2	SDR-WC-12	ALL
E	14"	0–2000	16"	18/16	0.25	35	53	NOTE 1	NOTE 1	175	145	0.50	10	2	SDR-WC-14	ALL
F	16"	0–3000	18"	20/18	0.25	35	53	NOTE 1	NOTE 1	175	145	0.60	10	2	SDR-WC-16	ALL

NOTES:

1. REFER TO PLANS FOR H.W. COIL OPERATING GPM; MBH= GPM x 15
2. REFER TO PLANS FOR ACTUAL MAX. COOLING CFM AND MINIMUM CFM.
3. BOX COOLING AND HEATING CFM'S ARE PER PLANS.
   COOLING CFM = BOX MAXIMUM CFM.
   HEATING CFM = MINIMUM COOLING CFM = BOX MINIMUM CFM.
4. UNIT MOUNTED/WIRED FACTORY CONTROL PANEL.
   PROVIDE INTEGRAL 24 V CONTROL TRANSFORMER WITH BOX.
5. PRESSURE INDEPENDENT CONTROLS COMPATIBLE WITH BUILDING CONTROL SYSTEMS.
6. CONSTANT AIR VOLUME (CAV) BOXES SHALL BE IDENTICAL TO VARIABLE AIR VOLUME (VAV) BOXES.
7. FACTORY INTERNAL INSULATION: 1 INCH THICK, 0LB DENSITY, FOIL FACED AND SEALED FROM AIRSTREAM.
8. CFM DELIVERY SHALL BE ACCURATE WITHIN 5% FROM 100% TO 25% FLOW RATE.
9. HW COIL SHALL BE LOCATED AT DISCHARGE SIDE OF BOX.
10. OUTLET PLENUM BY CONTRACTOR.
    PROVIDE PLENUM WHERE INDICATED ON PLANS.
    DIMENSIONS ARE MINIMUM. COORDINATE WITH RUNOUT DUCT SIZES TO AIR DEVICES.
    PROVIDE TRANSITION FROM BOX OUTLET TO THE PLENUM.
11. CONTROLS SHALL BE FURNISHED AND SHIPPED TO VAV BOX FACTORY BY TEMPERATURE CONTROLS CONTRACTOR. CONTROLS SHALL BE INSTALLED AT VAV BOX FACTORY BY VAV BOX MANUFACTURER.
12. NOT USED
13. SHOP DRAWING:
    SUBMIT TABULATION (SPREADSHEET GENERATED) FOR EVERY BOX IN PROJECT SHOWING COMPLIANCE TO REQUIRED CFM'S, GPM'S, ETC., ON PLANS AND IN SCHEDULE. ONE ROW HW COILS MAY BE UTILIZED WHERE MBH ALLOWS IT. HW COILS SHALL BE CONTAINED WITHIN THE BOX AS MANUFACTURED.

VAV BOX LEGEND:

VARIABLE AIR VOLUME
SIZE – MAXIMUM CFM
GPM – MINIMUM CFM
BOX NUMBER (A,B,C,...,AA,AB,AC,...; ETC.)
AHU

EXAMPLES:

VAV 4–C AHU–4, BOX NUMBER C
VAV 2–BD AHU–2, BOX NUMBER BD
VAV 2AT3 AHU–2, BOX NUMBER AT3

ERP #2 STEAM HUMIDIFIER SCHEDULE

MARK	EQUIPMENT SERVED	CFM	MINIMUM HUMIDIFIER OUTPUT (LBS / HR)	MINIMUM NO. OF TUBES	MAX. ABSORPTION DISTANCE	MANUF. / MODEL	NOTES
H-L	AHU-06-L	6700	216	3" SPACING	24", NO EXCEPTIONS	DRISTEEM / LH	ALL

NOTES:

1. MULTI-TUBE DISPERSION. FOR UNITS IN AHU'S, REFER TO SCHEDULE FOR AVAILABLE COIL AREA. ALLOW 18" HEIGHT ALONG BOTTOM OF COIL FACE AREA FOR GRIC CONDENSATE DRAINAGE. HUMIDIFIER GRIDS SHALL BE INSTALLED AT AHU FACTORY, COMPLETE WITH PIPING.
2. 5 PSIG STEAM INLET PRESSURE.
3. DRISTEEM ULTASORB GRID.
4. OTHER REQUIRED COMPONENTS:
   STEAM TRAPS.
   ELECTRIC MODULATING STEAM VALVES.
   STRAINERS.
   DUCT HIGH LIMIT HUMIDISTAT.
   AIR FLOW SWITCH.
   DRAIN COOLER, HORIZONTAL STYLE.

ERP #2 SPLIT SYSTEM A/C UNIT SCHEDULE

DESIGNATION		FC-06-5
LOCATION		1ST FLOOR
SERVICE		BED STORAGE
FAN DATA	SUPPLY CFM	1000
	EXT. S.P. ("WG)	0.5
	FAN MOTOR HP	0.5
	VOLTS / PH	208 / 60
	MCA	2.5
	MOCP	15
	WEIGHT (LBS)	150
COOLING DATA	EAT °F DB/MB	80 / 67
	SENS. HEAT (MBH)	15.0
	TOTAL HEAT (MBH)	15.0
HEATING DATA	KW	5.5
	VOLTS / PH	208 / 1
OUTSIDE AIR CFM (MIN / MAX)		0 / 0
OUTSIDE AIR TEMPERATURE °F		--
CONDENSING UNIT DESIGNATION		CU-06-5
CU DATA	VOLTS / PH	208 / 1
	MCA	15.1
	MOCP	25
	WEIGHT (LBS)	200
MANUFACTURER		YORK
FAN COIL MODEL NO.		AHPB30B2A
CONDENSING UNIT MODEL NO.		H2RD030S06

NOTES:

1. CAPACITY AT 101°F O.A.T.
2. 10.0 MIN. SEER RATING.
3. CONTRACTOR SHALL PROVIDE AND INSTALL FACTORY POWERED CONTROLS AND CONTROL TRANSFORMER
4. PROVIDE ELECTRONIC ALTERNATOR AND FLOAT SWITCHES.
5. HORIZONTAL INSTALLATION
6. PROVIDE LOW AMBIENT CONTROL TO 0°F.
7. FACTORY WIRED SINGLE POINT CONNECTION

GENERAL NOTES

A. SELECT ALL EQUIPMENT FOR 5331 FEET ABOVE SEA LEVEL.
B. MOTORS FOR USE WITH A VFD SHALL BE INVERTER DUTY RATED AND NAMEPLATED.
C. 480/3 PHASE POWER FOR ALL MOTORS 3/4 HP AND LARGER.
D. BELT DRIVES SHALL BE RATED 1.5 TIMES MOTOR H.P.
E. PROVIDE MAGNETIC MOTOR STARTER FOR ALL NON-VFD MOTORS.

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Medical Center of Aurora
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Private Room Expansion
Aurora, Colorado

HCA
Project # 306660001

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JULY 13
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KEY PLAN

COLORADO LICENSED 31031 PROFESSIONAL ENGINEER

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06-124732

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MECHANICAL SCHEDULES

Sheet

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ERP #2 FAN SCHEDULE

MARK	LOCATION	SERVES	CFM	MAX	ESP	FAN DATA				ELECTRICAL MOTOR DATA			GREENHECK	NOTES
				dBA	(IN WG)	TYPE	RPM	DRIVE	WHEEL TYPE	HP (MIN)	RPM	VOLT / PH	MODEL	
GEF-06-L	1ST FLOOR ROOF	RESTROOMS	520	70	0.5	A	1800	BELT	BI	0.167	1725	120 / 1	GB-081	5,6,11,16,17

NOTES:

1. FAN TYPES
   - A. ROOFTOP CENTRIFUGAL
   - B. ROOFTOP PROPELLER
   - C. WALL PROPELLER
   - D. SWSI
   - E. ROOFTOP CENTRIFUGAL UPBLAST
   - F. MIXED FLOW
   - G. ROOFTOP FILTERED LOUVERED DOWNBLAST CENTRIFUGAL
   - H. CABINET CENTRIFUGAL
   - J. TUBULAR CENTRIFUGAL
2. WALL MOUNTED VFD PER SPECS.
3. SOUND TRAP HOUSING MOTOR MOUNTED AT 4:30 CLOCK POSITION
4. BOTTOM HORIZONTAL DISCHARGE
   SCROLL DRAIN PLUG
   ALL WELDED FAND HOUSING, STEEL
   ALL WELDED FAN WHEEL, STEEL
   CLEAN OUT PLATE ON FAN HOUSING
   95% SPRING & RUBBER VIB ISOLATORS
   MOTOR & DRIVE COVER
   FLANGED DUCT OUTLET
5. DISCONNECT SWITCH
6. 24" HIGH INSULATED STEEL CURB, SLOPED BASE, LEVEL TOP.
7. 2" WASHABLE FILTERS
8. RATED FOR 500°F FOR 4 HOURS AND 1000°F FOR 15 MINUTES OF OPERATION
9. HERESITE COATING ON AIRSTREAM COMPONENTS
10. TWO SPEED MOTOR
11. PROVIDE AND INSTALL BACKDRAFT DAMPER
12. STAINLESS STEEL SHAFT
13. INLET PLENUM, SIDE ACCESS DOOR
14. ISOLATION FANS SHALL RUN CONTINUOUSLY DURING A FIRE ALARM
15. UL / SUL 702 KITCHEN VENTILATION
16. FLEX CONNECTION AT FAN INLET
17. SHAFT SEALS
18. MOUNTED ON INTEGRA MAU CURB -- SEE M.
19. COMBUSTION AIR & VENTILATION FAN

FAN LEGEND

GEF	GENERAL EXHAUST FAN
GSF	GENERAL SUPPLY FAN
SEF	SMOKE EXHAUST FAN
SSF	SMOKE SUPPLY FAN
KEF	KITCHEN EXHAUST FAN
RAF	RETURN AIR FAN
RLF	RELIEF AIR FAN
IRF	ISOLATION ROOM FAN
LEF	LAB EXHAUST FAN

PUMP SCHEDULE

DESIGNATION	SERVES	LOCATION	TYPE	MIN EFF	GPM	TDH	ELECTRICAL				BELL & GOSSETT	NOTES
				%		FT	HP	BHP	RPM	VOLT / PH	MODEL #	
PHP-06-L	AHU PREHEAT PUMPS	AHU FAN ROOMS	IN-LINE	70	20	15	0.25	--	1750	120/1	SERIES 60 (1X1X5 1/4))	4

NOTES:

1. VARIABLE FREQUENCY DRIVE WITH INVERTER DUTY RATED MOTOR AND BYPASS SWITCH.
2. BASE MOUNTED.
3. STEEL OR CAST IRON BASE WITH DRAIN PAN AND DRAIN PIPE CONNECTION.
4. CONSTANT SPEED PUMP
5. ONE AS STANDBY.

GENERAL NOTES:

A. NAMEPLATE HORSEPOWER SHALL BE NON-OVERLOADING ON CURVE.
B. PROVIDE 1750 RPM MOTORS UNLESS OTHERWISE INDICATED.
C. OUTDOOR MOTORS SHALL BE TEFC PER DIV 23 SPECS.

GENERAL NOTES

A. SELECT ALL EQUIPMENT FOR 5331 FEET ABOVE SEA LEVEL.
B. MOTORS FOR USE WITH A VFD SHALL BE INVERTER DUTY RATED AND NAMEPLATED.
C. 480/3 PHASE POWER FOR ALL MOTORS 3/4 HP AND LARGER.
D. BELT DRIVES SHALL BE RATED 1.5 TIMES MOTOR H.P.
E. PROVIDE MAGNETIC MOTOR STARTER FOR ALL NON-VFD MOTORS.

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KEY PLAN

COLORADO LICENSED PROFESSIONAL ENGINEER
10-12-06

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1	ADDENDUM #1	08/08/06

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MECHANICAL SCHEDULES

Sheet

M-8102

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GENERAL NOTES - DEMOLITION

A. ITEMS REMOVED AND NOT REINSTALLED OR RETURNED TO OWNER SHALL BE DISPOSED OF LEGALLY (COORDINATE WITH OWNER FOR DISPOSAL OF ITEMS).

B. REMOVE EXISTING PIPING, WHERE NOTED, TO BEYOND FINISHED SURFACES AND CAP OR AS INDICATED ON PLANS. VERIFY EXACT LOCATION OF EXISTING PLUMBING AT SITE.

C. ANY EXISTING PLUMBING RISER LOCATED IN WALLS/CHASES DESIGNATED TO BE REMOVED, MUST BE RELOCATED TO A CONVENIENT LOCATION.

FIRE PROTECTION NOTES

A. IN THE RENOVATED AREAS CONTRACTOR TO MODIFY THE EXISTING SPRINKLER SYSTEM TO MATCH NEW CEILING LAYOUT. REMOVE EXISTING SPRINKLER HEADS & PROVIDE NEW BUILDING STANDARD QUICK RESPONSE SPRINKLER HEADS.

B. COORDINATE SPRINKLER LOCATIONS WITH ALL TRADES.

GENERAL NOTES

A. CONTRACTOR SHALL FIELD VERIFY EXISTING PLUMBING PIPING LOCATIONS THAT SHALL BE CONNECTED TO, PRIOR TO ANY PIPING INSTALLATION.

B. COORDINATE WITH OWNER AND PERSONNEL THE SHUT-DOWN OF THE EXISTING SYSTEM.

C. ROUTE ALL PLUMBING PIPING AS TIGHT AS POSSIBLE TO BOTTOM OF FLOOR STRUCTURE AND FLOOR JOISTS.

D. COORDINATE WITH MECHANICAL CONTRACTOR THE LOCATION AND ROUTING OF ALL PLUMBING AND MEDICAL GAS.

E. PROVIDE CLEANOUTS AT THE BASE OF THE STORM AND SANITARY STACKS.

F. COORDINATE VTR LOCATIONS WITH AIR INTAKE LOCATIONS. THERE SHALL BE AT LEAST 25 FEET DISTANCE IN BETWEEN THESE LOCATIONS.

G. ALL SANITARY SEWER WALL CLEANOUTS SHALL BE PLACED AT 18" AFF.

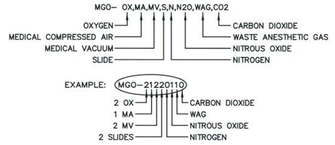
H. PROVIDE "NIBCO" TOLCO CUSTOM CLAMP ON ALL MEDICAL GAS PIPING ABOVE CEILING .

I. PROVIDE A REDUCE PRESSURE BACKFLOW PREVENTER AT EACH MEDICAL EQUIPMENT OR EQUIPMENT REQUIRED BY CODE.

MEDICAL GAS LEGEND

MGB = MEDICAL GAS BOOMS
MGC = MEDICAL GAS CEILING COLUMNS
MGD = MEDICAL GAS HOSE DROP
MGH = MEDICAL GAS HEADWALL
MGO = MEDICAL GAS WALL OUTLETS
MGP = MEDICAL GAS PEDESTAL
OX = OXYGEN
MA = MEDICAL COMPRESSED AIR
MV = MEDICAL VACUUM
S = SLIDE (ONE PER MV)
N = NITROGEN
N20 = NITROUS OXIDE
CO2 = CARBON DIOXIDE
WAG = WASTE ANESTHETIC GAS EVACUATION
AAP = AREA ALARM PANEL
NCC = NITROGEN CONTROL CABINET
MAP = MASTER ALARM PANEL
MAI = MEDICAL AIR INTAKE
MVE = MEDICAL VACUUM EXHAUST
ZVB = ZONE VALVE BOX

only worth this part.



MEDICAL GAS NOTES:

A. REFER TO AND COORDINATE WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS & MOUNTING HEIGHTS FOR MEDICAL GAS OUTLETS, ZONE VALVE BOXES, ALARM PANELS, ETC...

B. REFER TO ARCHITECTURAL DRAWINGS TO DETERMINE SUPPLIER OF MEDICAL GAS OUTLETS (CONTRACTOR OR EQUIPMENT SUPPLIER).

C. NOT ALL GASES MAY BE USED. THE GAS ORDER SHOWN IN THE EXAMPLE WILL BE TYPICAL FOR ALL OUTLETS.

D. COORDINATE MEDICAL GAS PIPE ROUTING WITH ALL THE OTHER TRADES BEFORE INSTALLATION.

E. ALL VALVES THAT ARE NOT LOCATED IN ZONE BOXES TO BE LOCKING TYPE.

PLUMBING SYMBOLS

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

SYMBOL	DESCRIPTION
— - —	DOMESTIC COLD WATER
— - —	DOMESTIC HOT WATER (120°F UNLESS OTHERWISE NOTED)
— - —	DOMESTIC HOT WATER RETURN (120°F UNLESS OTHERWISE NOTED)
—NPW—	NON-POTABLE WATER
—TP—	TRAP PRIMER LINE (1/2")
—TW—	TEMPERED WATER
	COLD OR HOT REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (R.P.P.B.P.)
— EX —	EXISTING PIPING TO REMAIN
	EXISTING PIPING TO BE REMOVED
	PIPING TO BE ELECTRICALLY HEAT TRACED
—SS—	SANITARY SEWER PIPING (SOIL OR WASTE)
	SANITARY VENT PIPING
—SSD—	SUB-SOIL DRAIN PIPING, FOOTING DRAIN PIPING
—AW—	ACID WASTE PIPING
—AV—	ACID VENT PIPING
—I.W.—	INDIRECT WASTE
—SED—	SEWAGE EJECTOR DISCHARGE PIPING (PUMPED SANITARY)
— CD —	CONDENSATE DRAIN PIPING
—DPD—	DRIP PAN DRAIN PIPING
	CONNECT NEW TO EXISTING
— SD —	STORM DRAIN PIPING (SD)
— OD —	STORM OVERFLOW DRAIN PIPING (OD)
—SPD—	SUMP PUMP DISCHARGE PIPING (PUMPED STORM WATER)
— G —	NATURAL GAS PIPING
— CA —	COMPRESSED AIR PIPING
— V —	VACUUM PIPING
—ATV—	ATMOSPHERIC VENT PIPING (STEAM OR HOT VAPOR)
— F —	FIRE PROTECTION (STANDPIPE, SPRINKLER, SERVICE)
—DFS—	DRY FIRE STANDPIPE PIPING
— SP —	SPRINKLER PIPING (SPRK.)
—SDR—	SPRINKLER DRAIN RISER PIPING
—DSP—	DRY SPRINKLER PIPING
—PASP—	PRE-ACTION SPRINKLER PIPING
— EPW —	EMERGENCY POTABLE WATER
— FOS —	FUEL OIL SUPPLY
— FOR —	FUEL OIL RETURN
	GATE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	GLOBE VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	GAS COCK / PLUG VALVE
	SOLENOID VALVE
	PRESSURE REGULATION VALVE (PRV)
AQ	AQUASTAT
	CHECK VALVE
	CHECK VALVE WITH AUTOMATIC BALL DRIP
	BACK WATER VALVE
	GAS PRESSURE REGULATOR VALVE
	BALANCING VALVE
	STRAINER WITH BLOW-OFF VALVE
	STRAINER
	HYDRAULIC SHOCK ARRESTOR (SA)
V	VACCUUM BREAKER (VB)
	FLOOR DRAIN W/ P-TRAP
	HUB DRAIN (ALL TYPES) (SPECIFY)
	FLOOR DRAIN (ALL TYPES) (SPECIFY)

SYMBOL	DESCRIPTION
	DOUBLE CLEANOUT, 2-WAY CLEANOUT (GRADE) (D.C.O.)
	GAUGE COCK
	PRESSURE GAUGE WITH GAUGE COCK
	THERMOMETER WITH SHUT-OFF COCK
	HOSE BIBB (H.B.) OR FREEZE PROOF WALL HYDRANT (FPWH)
	RECESSED BOX FREEZE PROOF WALL HYDRANT
	YARD HYDRANT
	SLEEVE THRU WALL
	EXPANSION LOOP
	ANCHOR
FCO GCO	FLOOR CLEANOUT OR GRADE CLEANOUT
WCO	WALL CLEANOUT
CO CO	CLEANOUT PLUG
	OS & Y VALVE SUPERVISED (HORIZ. POSITION/VERT. POSITION)
	INDICATING BUTTERFLY VALVE SUPERVISED (HORIZ. POSITION/VERT. POSITION)
FCA	SPRINKLER SYSTEM FLOOR CONTROL ASSEMBLY
	DOUBLE CHECK VALVE ASSEMBLY (D.C.V.A.) WITH OS & Y VALVES SUPERVISED
	FLOW SWITCH
	FIRE HOSE VALVE
	FIRE HOSE CABINET (SURFACE MOUNTED)
	FIRE HOSE CABINET (RECESSED)
	2-WAY SIAMESE FIRE DEPARTMENT CONNECTION
	DIRECTION OF SLOPE
	DIRECTION OF FLOW
	CAP OUTLET OR PLUGGED OUTLET
— OX —	MEDICAL OXYGEN PIPING
— MA —	MEDICAL AIR PIPING
— MV —	MEDICAL VACUUM PIPING
—WAG—	WASTE ANESTHERIC GAS EVACUATION
— N —	MEDICAL NITROGEN PIPING
—N_2O—	MEDICAL NITROUS OXIDE PIPING
—CO_2—	MEDICAL CARBON DIOXIDE PIPING
	MASTER ALARM SENSOR
	LOCAL ALARM SENSOR
	MEDICAL GAS PIPING DROPS IN WALL FULL SIZE

PLUMBING ABBREVIATIONS

ABV	AUTOMATIC BALANCING VALVE	MH	MANHOLE
AFF	ABOVE FINISH FLOOR	NPW	NON-POTABLE/DOWNSTREAM OF A BACKFLOW PREVENTER
AFG	ABOVE FINISH GRADE		
A/C	ABOVE HUNG CEILING	NC	NORMALLY CLOSED
AP	ACCESS PANEL OR DOOR	PD	PLANTER DRAIN
AC	AIR CHAMBER	PRV	PRESSURE REDUCING VALVE
AD	AREA DRAIN	TP	TRAP PRIMER
BT	BATHTUB	VTR	VENT THROUGH ROOF
BFF	BELOW FINISH FLOOR	YCO	YARD CLEANOUT
B/F	BELOW FLOOR		
B/G	BELOW GRADE		
DS	DOWNSPOUT		
DF	DRINKING FOUNTAIN		
FRS	FLUSH RIM SINK		
GC	GENERAL CONTRACTOR		
GCO	GRADE CLEANOUT		
INV	INVERT		
I.E.	INVERT ELEVATION		

MEP SYSTEM COORDINATION SCHEDULE

SYSTEM	FURNISHED BY	INSTALLED BY	POWER WIRING BY	CONTROL OR SUPERVISION WIRING BY
EMERGENCY GENERATOR	DIV 26	DIV 26	DIV 26	DIV 26
SUB-BASE FUEL TANK	DIV 26	DIV 26	DIV 26	DIV 26
MUFFLER	DIV 23	DIV 23	----	----
EXHAUST PIPING	DIV 26	DIV 26	----	----
REMOTE ANNUNCIATOR	DIV 26	DIV 26	DIV 26	DIV 26
LIFE SAFETY SYSTEM	DIV 27	DIV 27	DIV 26	DIV 27
SMOKE DAMPER/ACTUATOR	DIV 23	DIV 23	DIV 26	DIV 27
FIRE/SMOKE DAMPER/ ACTUATOR	DIV 23	DIV 23	DIV 26	DIV 27
DUCT SMOKE DETECTOR	DIV 27	DIV 26	----	DIV 27
OR SMOKE PURGE SYSTEM	DIV 23	DIV 23	DIV 26	DIV 27
NURSE CALL/ FIRE ALARM INTERFACE	DIV 27	DIV 27	----	DIV 27
FIRE SPRINKLER SYSTEM	DIV 21	DIV 21	DIV 26	DIV 27
WATERFLOW SWITCHES	DIV 21	DIV 21	DIV 26	DIV 27
TAMPER SWITCHES	DIV 21	DIV 21	DIV 26	DIV 27
FIRE PUMP	DIV 21	DIV 21	DIV 26	SIV 21
SUPERVISORY CONTACTS	DIV 21	DIV 21	----	DIV 27
FIRE PUMP ANNUNCIATOR	DIV 21	DIV 21	DIV 26	DIV 26
MEDICAL GAS ALARM	DIV 22	DIV 22	DIV 26	DIV 22
CHEMICAL FEED SYSTEM	DIV 22	DIV 22	DIV 26	DIV 22
BOILERS	DIV 23	DIV 22	DIV 26	DIV 23
FUEL OIL SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
FEED WATER SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
ELEVATOR CONTROL AND STATUS PANEL	DIV 14	DIV 14	DIV 26	DIV 14
MOTOR STARTERS (INTEGRAL TO EQUIP.)	DIV 23	N/A	DIV 26	DIV 23
MOTOR STARTERS (NON-INTEGRAL TO EQUIP.)	DIV 23	DIV 26	DIV 26	DIV 23
COMBINATION MOTOR STARTER/DISCONNECT (INSIDE OF MCC'S)	DIV 26	DIV 26	DIV 26	DIV 26
COMBINATION MOTOR STARTER/DISCONNECT (INTEGRAL TO EQUIP.)	DIV 23	N/A	DIV 26	DIV 23
COMBINATION MOTOR STARTER/DISCONNECT (NON-INTEGRAL)	DIV 23	DIV 26	DIV 26	DIV 23
CHILLERS	DIV 23	DIV 23	DIV 26	DIV 23
PUMPS	DIV 23	DIV 26	DIV 26	DIV 23
AIR HANDLERS	DIV 23	DIV 26	DIV 26	DIV 23
FANS	DIV 23	DIV 26	DIV 26	DIV 23
FAN POWERED BOXES	DIV 23	DIV 26	DIV 26	DIV 23
MISC. MOTORS	DIV 23	DIV 26	DIV 26	DIV 23
FAN COIL UNITS	DIV 23	DIV 26	DIV 26	DIV 23
PACKAGED PUMP SYSTEMS	DIV 23	DIV 26	DIV 26	DIV 23
VARIABLE FREQUENCY DRIVES (VFD'S)	DIV 23	DIV 26	DIV 26	DIV 23
PUMPS	DIV 23	DIV 26	DIV 26	DIV 23
COOLING TOWERS	DIV 23	DIV 26	DIV 26	DIV 23
AIR HANDLING SYSTEMS	DIV 23	DIV 26	DIV 26	DIV 23
DISCONNECT SWITCHES (NON-INTEGRAL TO EQUIPMENT)	DIV 26	DIV 26	DIV 26	----
HEAT TRACE	DIV 23	DIV 23	DIV 26	DIV 23
MAIN FUEL OIL SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
THIS TABLE IS PROVIDED AS A GUIDE TO THE DOCUMENT PREPARATION AND IN NO WAY INDICATES CONTRACTOR MEANS AND METHODS				

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Medical Center of Aurora
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Aurora, Colorado

HCA
Project # 306660001

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KEY PLAN



Revisions

08-124732

CITY OF AURORA
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GENERAL INFORMATION PLUMBING

Sheet

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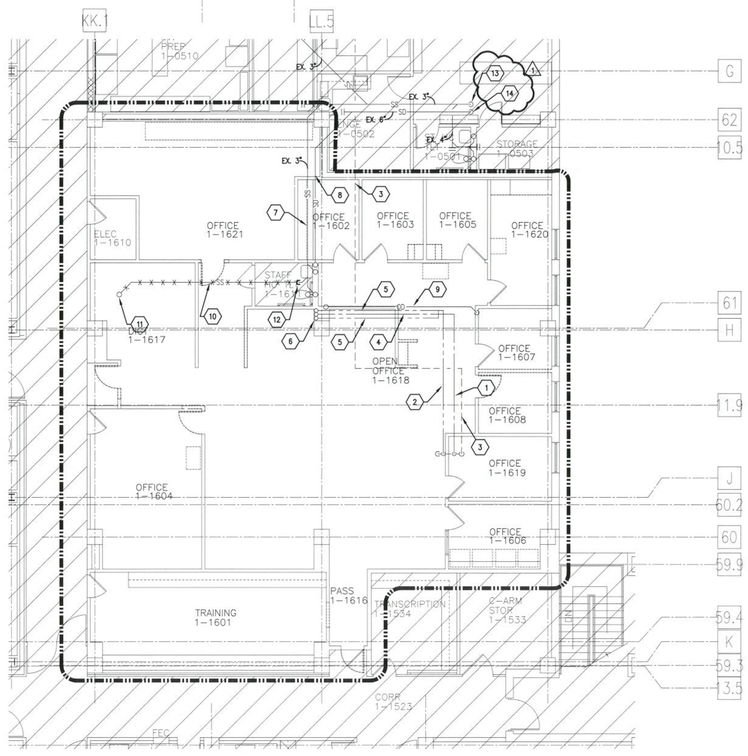
GENERAL NOTES (ERP)

A. CONTRACTOR SHALL FIELD VERIFY EXISTING PLUMBING PIPING LOCATIONS THAT SHALL BE REMOVED, PRIOR TO ANY PIPING INSTALLATION.

B. COORDINATE WITH OWNER AND PERSONNEL THE SHUT-DOWN OF THE EXISTING SYSTEM.

LEGEND NOTES (ERP)

1. EXISTING 1¼" COLD & HOT WATER LINES TO REMAIN.
2. EXISTING ¾" HOT WATER LINE TO REMAIN.
3. EXISTING 2" VENT LINE IN CEILING SPACE TO REMAIN.
4. EXISTING 1¼" COLD WATER LINE IN CEILING SPACE TO REMAIN.
5. EXISTING 1" HOT WATER LINE IN CEILING SPACE TO REMAIN.
6. EXISTING 1¼" COLD WATER LINE & 1" HOT WATER LINE UP TO FIRST FLOOR TO REMAIN.
7. EXISTING SANITARY LINE TO REMAIN.
8. EXISTING STORM LINE TO REMAIN.
9. EXISTING OVERFLOW DRAIN LINE TO REMAIN.
10. EXISTING SANITARY LINE TO BE REMOVED.
11. EXISTING SANITARY LINE UP TO BE REMOVED.
12. CAP EXISTING SANITARY LINE AS REQUIRED.
13. EXISTING 4" SANITARY LINE DOWN.
14. EXISTING 6" STORM LINE DOWN.



03 PLUMBING - UNDERFLOOR (BASEMENT) DEMO - TEMP LAB
SCALE: 1/8" = 1'-0"

01 NOT USED
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

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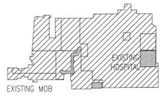
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KEY PLAN
FIRST FLOOR



COLORADO LICENSED PROFESSIONAL ENGINEER

Revisions

1	ADDENDUM #1	08/08/06

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PLUMBING
PLAN
UNDERFLOOR DEMO
TEMP. LAB.

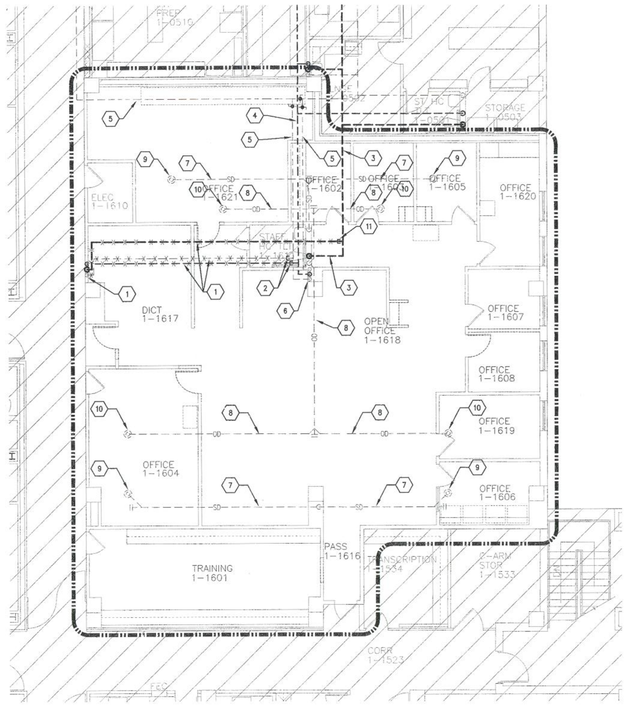
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04 PLUMBING - FIRST FLOOR DEMO - TEMP LAB
SCALE: 1/8" = 1'-0"

03 NOT USED
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

01 NOT USED
SCALE: 1/8" = 1'-0"

GENERAL NOTES (ERP)

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B. COORDINATE WITH OWNER AND PERSONNEL THE SHUT-DOWN OF THE EXISTING SYSTEM.

LEGEND NOTES (ERP)

1. REMOVE EXISTING COLD, HOT WATER & VENT LINES IN CEILING SPACE AND DOWN IN WALL.
2. VALVE & CAP EXISTING COLD, HOT WATER LINES AS REQUIRED.
3. EXISTING 2" VENT LINE IN CEILING SPACE TO REMAIN.
4. EXISTING ½" COLD WATER LINE IN CEILING SPACE TO REMAIN.
5. EXISTING 1" HOT WATER LINE IN CEILING SPACE TO REMAIN.
6. EXISTING ½" COLD WATER LINE & 1" HOT WATER LINE DOWN TO BASEMENT TO REMAIN.
7. EXISTING STORM LINE TO REMAIN.
8. EXISTING OVERFLOW DRAIN LINE TO REMAIN.
9. EXISTING ROOF DRAIN TO REMAIN.
10. EXISTING OVERFLOW DRAIN TO REMAIN.
11. CAP EXISTING VENT LINE AS REQUIRED.

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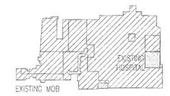
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PLUMBING
PLAN
FIRST FLOOR DEMO

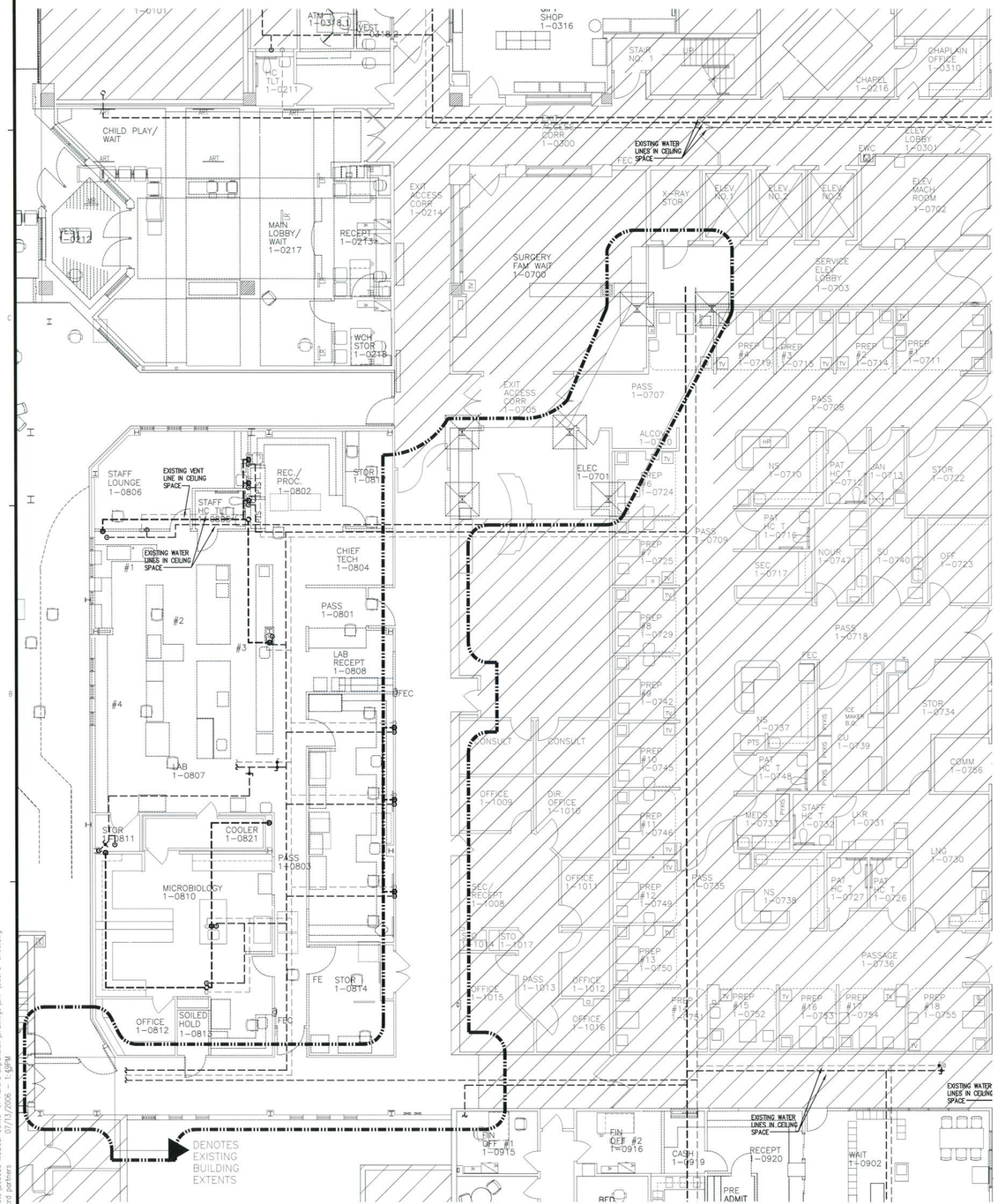
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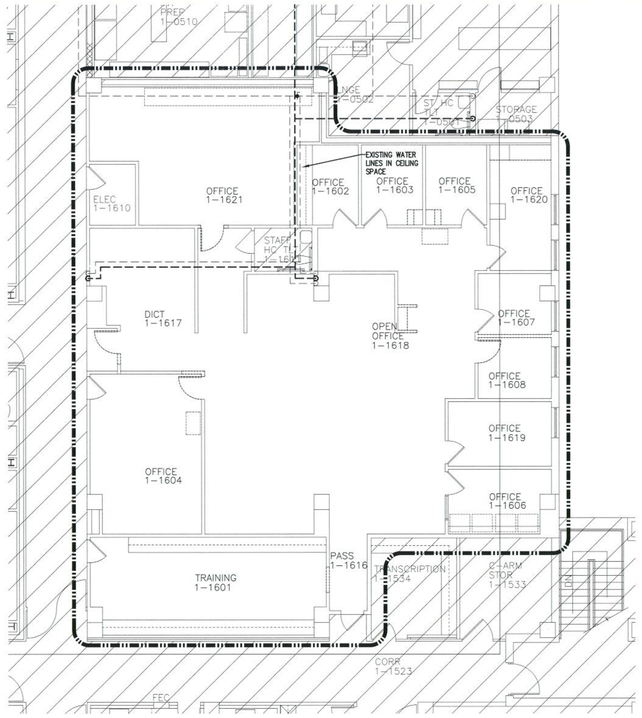
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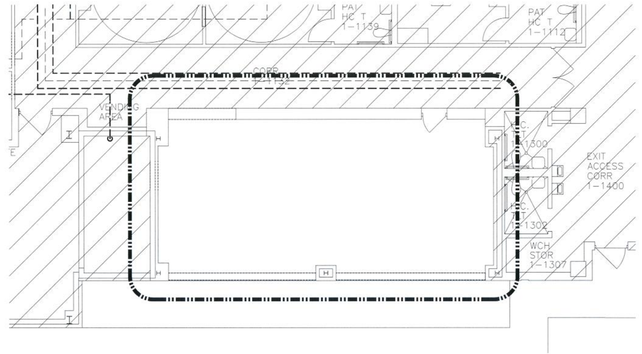
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01 MEDICAL GAS - FIRST FLOOR DEMO - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 MEDICAL GAS - FIRST FLOOR DEMO - TEMP LAB
SCALE: 1/8" = 1'-0"



03 MEDICAL GAS - FIRST FLOOR DEMO - BED STORAGE
SCALE: 1/8" = 1'-0"

02 MEDICAL GAS - FIRST FLOOR DEMO - MICROBIOLOGY - PHASE 2.2
SCALE: 1/8" = 1'-0"

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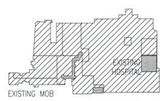
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KEY PLAN
FIRST FLOOR





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MEDICAL GAS PLAN FIRST FLOOR DEMO

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GENERAL NOTES

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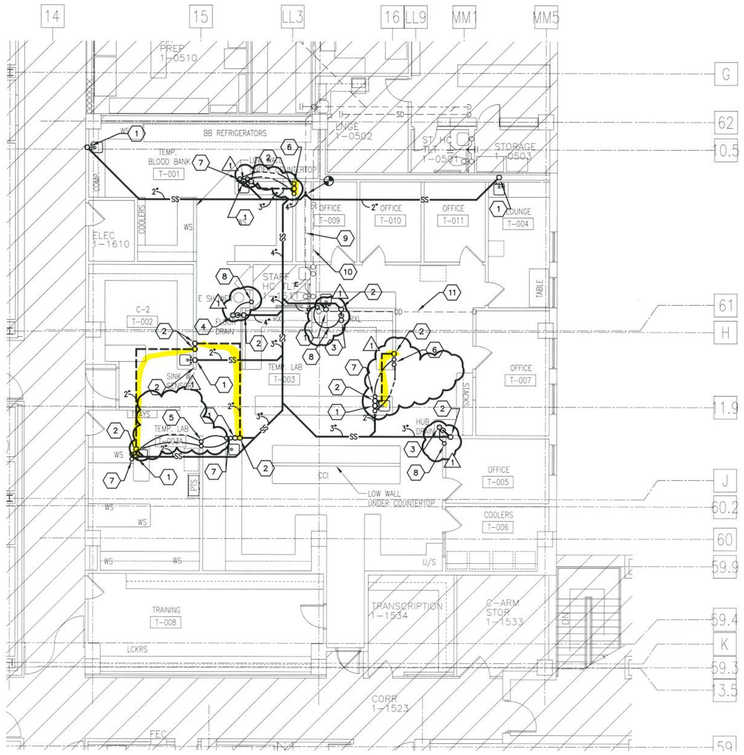
B. COORDINATE WITH OWNER AND PERSONNEL THE SHUT-DOWN OF THE EXISTING SYSTEM.

C. ROUTE ALL PLUMBING PIPING AS TIGHT AS POSSIBLE TO BOTTOM OF FLOOR STRUCTURE AND FLOOR JOISTS.

D. COORDINATE WITH MECHANICAL CONTRACTOR THE LOCATION AND ROUTING OF ALL PLUMBING PIPING.

LEGEND NOTES

1. 2" SANITARY UP TO SINK.
2. 2" VENT UP.
3. 3" SANITARY UP TO HUB DRAIN.
4. 4" SANITARY UP TO FLOOR DRAIN.
5. ¾" COLD & HOT WATER LINES UP.
6. ¾" COLD & HOT WATER LINES UP.
7. ¾" COLD & HOT WATER LINES UP TO SINK.
8. ½" COLD WATER TO TRAP PRIMER.
9. EXISTING SANITARY LINE.
10. EXISTING STORM LINE.
11. EXISTING OVERFLOW DRAIN LINE.



04 PLUMBING - UNDERFLOOR (BASEMENT) - TEMP LAB
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

01 NOT USED
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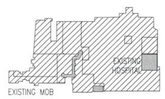
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KEY PLAN
FIRST FLOOR



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1	ADDENDUM #1	08/08/06

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PLUMBING
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UNDERFLOOR
TEMP. LAB.

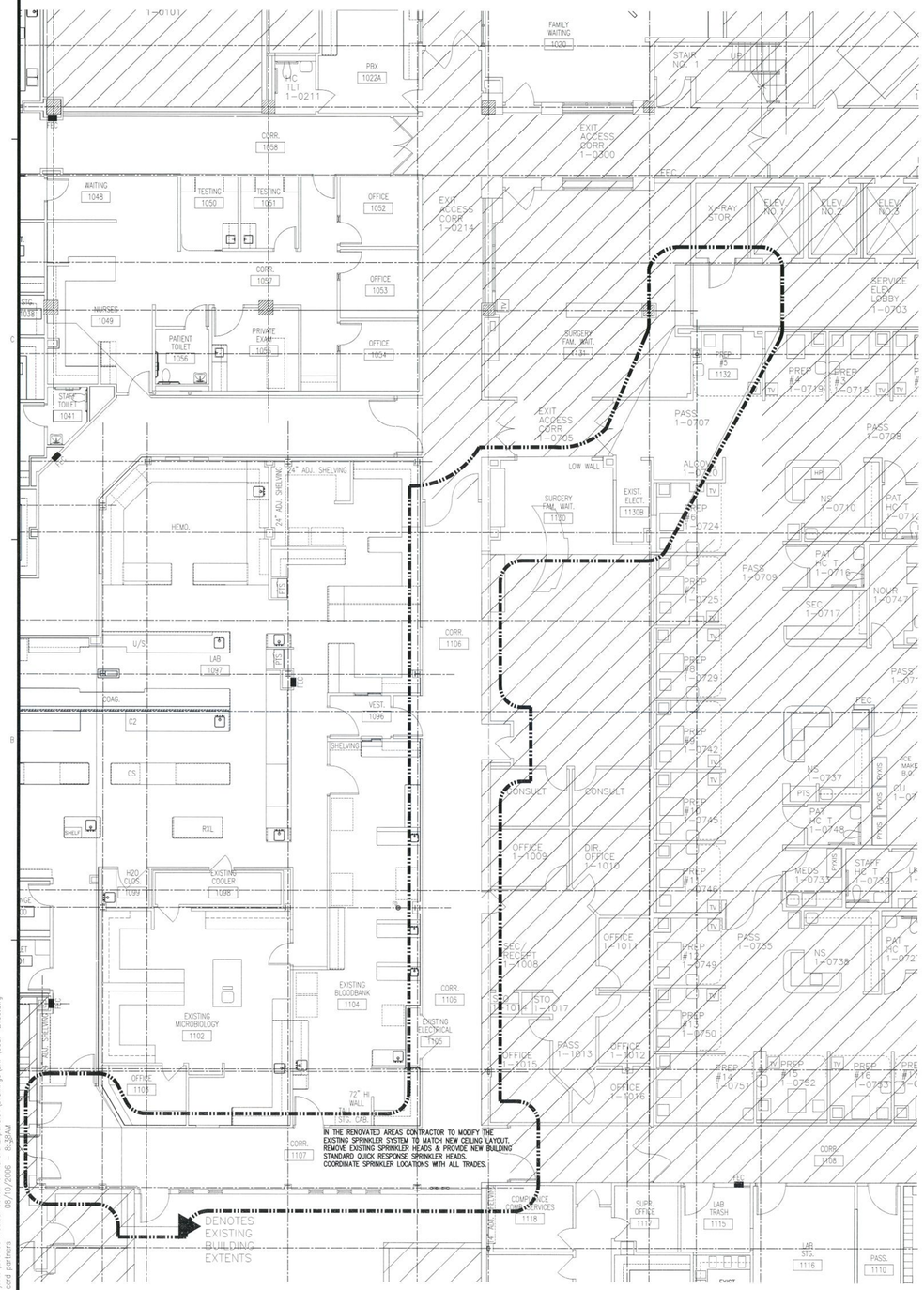
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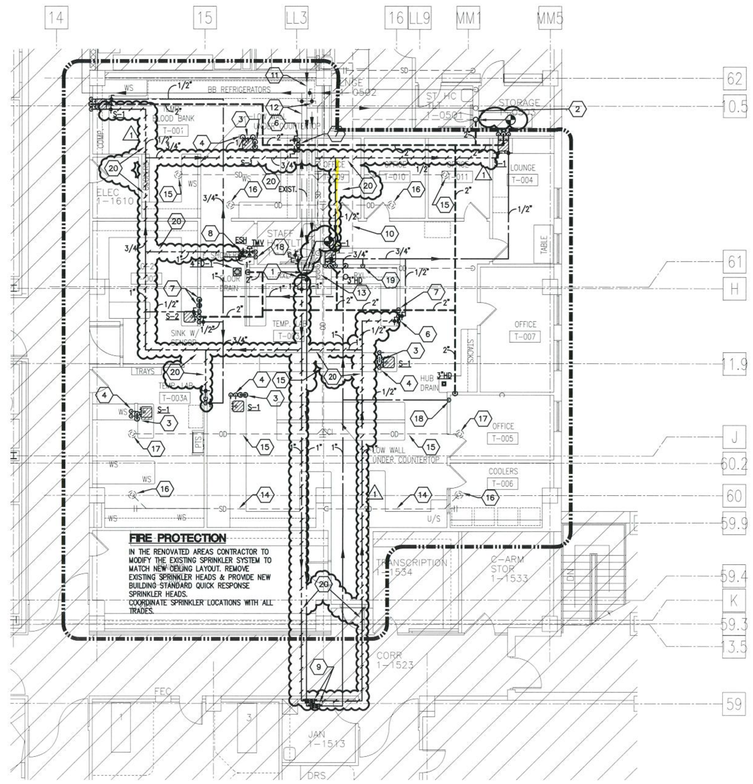
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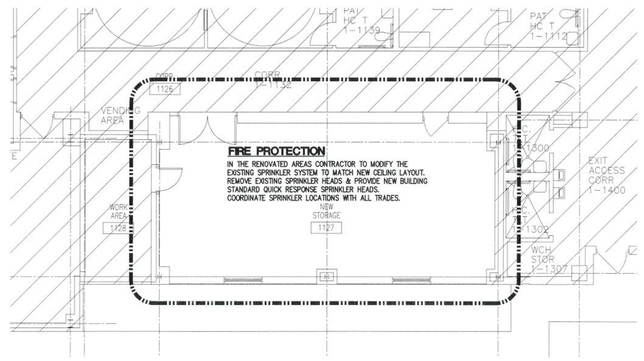
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01 PLUMBING - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



03 PLUMBING - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"



02 PLUMBING - FIRST FLOOR - BED STORAGE
SCALE: 1/8" = 1'-0"

GENERAL NOTES (ERP)

A. CONTRACTOR SHALL FIELD VERIFY EXISTING PLUMBING PIPING LOCATIONS THAT SHALL BE CONNECTED TO, PRIOR TO ANY PIPING INSTALLATION.

B. COORDINATE WITH OWNER AND PERSONNEL THE SHUT-DOWN OF THE EXISTING SYSTEM.

C. ROUTE ALL PLUMBING PIPING AS TIGHT AS POSSIBLE TO BOTTOM OF FLOOR STRUCTURE AND FLOOR JOISTS.

D. COORDINATE WITH MECHANICAL CONTRACTOR THE LOCATION AND ROUTING OF ALL PLUMBING PIPING.

E. PROVIDE A REDUCE PRESSURE BACKFLOW PREVENTER.

F. IN THE RENOVATED AREAS CONTRACTOR TO MODIFY THE EXISTING SPRINKLER SYSTEM TO MATCH NEW CEILING LAYOUT. REMOVE EXISTING SPRINKLER HEADS & PROVIDE NEW BUILDING STANDARD QUICK RESPONSE SPRINKLER HEADS.

G. COORDINATE SPRINKLER LOCATIONS WITH ALL TRADES.

LEGEND NOTES (ERP)

1. CONNECT NEW 1" COLD WATER & 1" HOT WATER LINES TO EXISTING 1½" COLD WATER & 1" HOT WATER LINES AS REQUIRED.
2. CONNECT NEW 2" VENT LINE TO EXISTING 4" VENT THRU THE ROOF. ⚠1
3. PROVIDE ISLAND VENT UNDER COUNTER. SEE DETAIL 1, SHT. P7001.
4. ½" COLD & HOT WATER LINES FROM BELOW FLOOR UP TO SINK.
5. ¾" COLD & HOT WATER LINES DOWN TO BELOW FLOOR.
6. ½" COLD & HOT WATER LINES DOWN TO BELOW FLOOR.
7. 2" VENT DOWN TO BELOW FLOOR.
8. ESH (EMERGENCY SHOWER), SPEAKMAN SE-236-PR WITH LEONARD TM-600 MIXING VALVE ABOVE CEILING.
9. PROVIDE 1" REDUCED PRESSURE BACKFLOW PREVENTER.
10. EXISTING 2" VENT LINE IN CEILING SPACE.
11. EXISTING 1½" COLD WATER LINE IN CEILING SPACE.
12. EXISTING 1" HOT WATER LINE IN CEILING SPACE.
13. EXISTING 1½" COLD WATER LINE & 1" HOT WATER LINE DOWN TO BASEMENT.
14. EXISTING STORM LINE.
15. EXISTING OVERFLOW DRAIN LINE.
16. EXISTING ROOF DRAIN.
17. EXISTING OVERFLOW DRAIN.
18. ½" COLD WATER DOWN TO TRAP PRIMER.
19. PROVIDE ¾" COLD WATER DOWN TO OWNER FURNISHED MILLIPORE UNIT. VERIFY EXACT LOCATION & MOUNTING HEIGHT. RUN ½" D.I. WATER LINE TO SINGLE FAUCET SPECIFIED FOR D.I. WATER. ⚠1
20. NEW HOT WATER LINE WITH 1" FIBERGLASS INSULATION AND HEAT CABLE (RAYCHEM TYPE HWAT-GZ) ALSO PROVIDED ON THE VERTICAL HW LINES DOWN TO THE FIRST FLOOR. THE PLBG CONTR. WILL FURNISH & INSTALL & THE ELECTRICAL CONTR. WILL MAKE THE CONNECTIONS.

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KEY PLAN
FIRST FLOOR



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PLUMBING PLAN FIRST FLOOR TEMP. LAB.

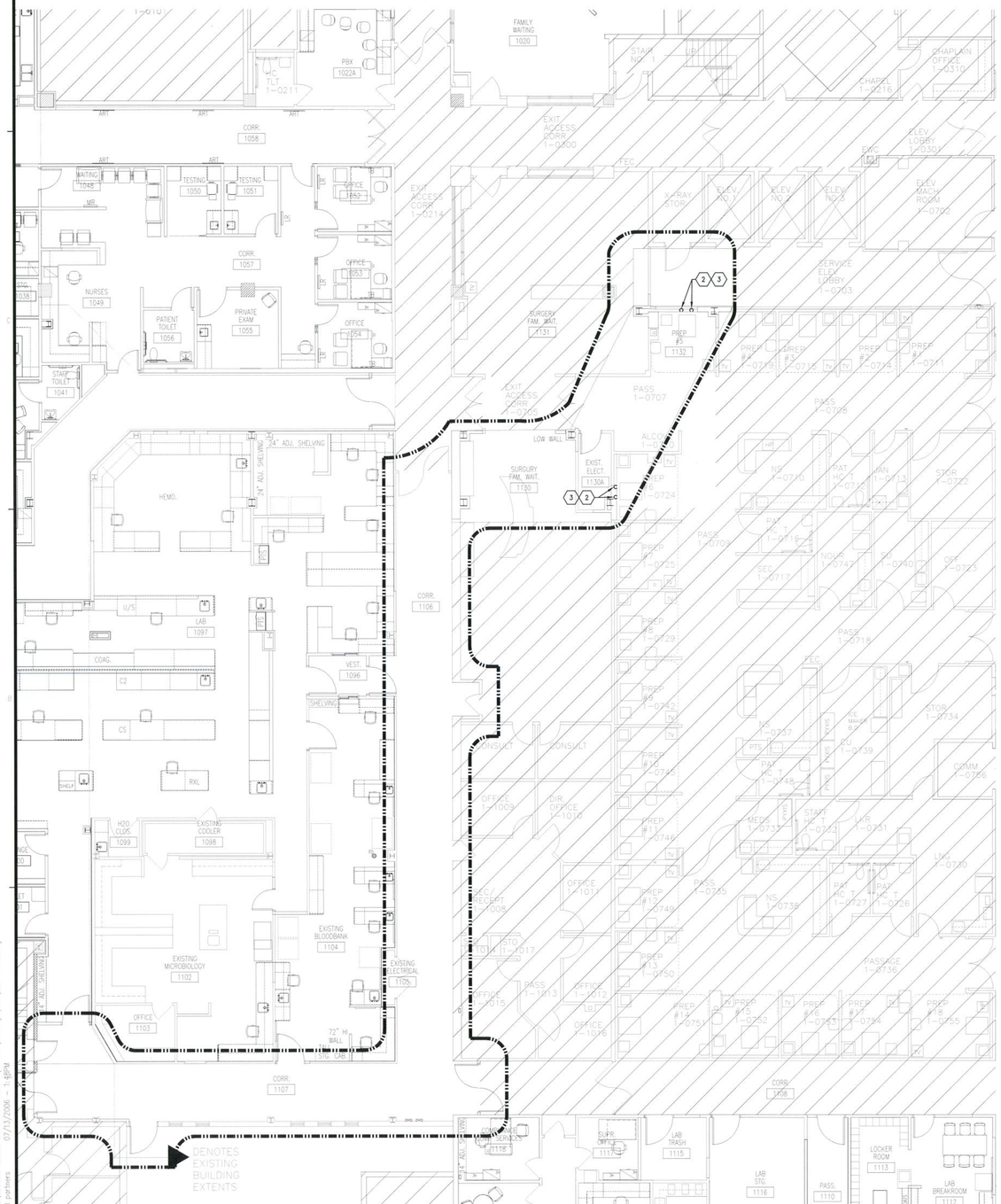
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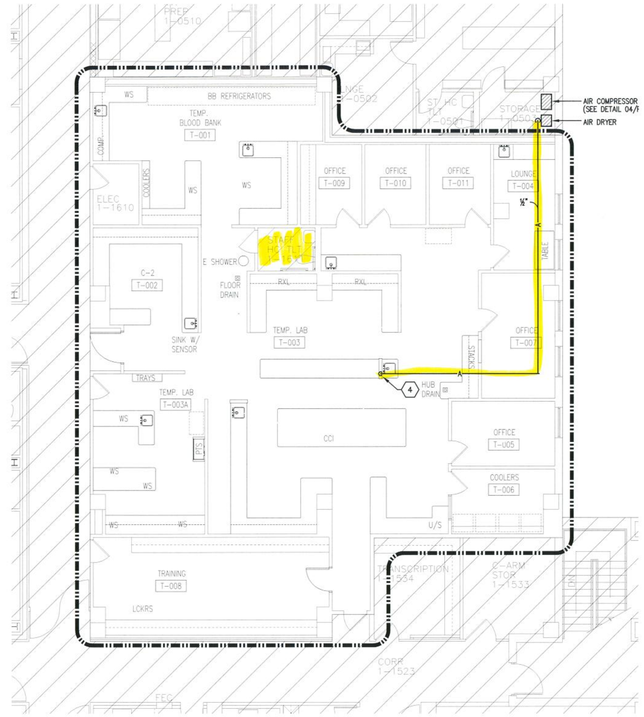
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01 MEDICAL GAS - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

03 NOT USED
SCALE: 1/8" = 1'-0"



04 MEDICAL GAS - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"

LEGEND NOTES

1. NOT USED.
2. CONTRACTOR TO COORDINATE SHUT DOWN & REMOVAL OF MEDICAL GAS PIPING DOWN IN WALLS TO BE REMOVED. SEE 01-DEMOLITION PLAN -1ST FLOOR DEMOLITION-EXIT CORRIDOR, SHEET NO. D-2000.
3. CONTRACTOR TO COORDINATE INSTALLATION OF NEW MEDICAL GAS PIPING DOWN IN NEW WALLS. RECONNECT TO EXISTING MEDICAL GAS PIPING IN CEILING AS REQUIRED. PROVIDE NEW QUICK CONNECT FOR MEDICAL GASES.
4. SHOP AIR OUTLET ON WALL ABOVE SINK.

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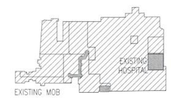
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KEY PLAN
FIRST FLOOR



COLORADO LICENSED 31031 PROFESSIONAL ENGINEER

Revisions

06-124732
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

NO.	ISSUE	DATE

Sheet Information

Date	07-13-2006
Job Number	142228.000
Drawn	RR
Checked	TK
Approved	TK

Title

MEDICAL GAS PLAN FIRST FLOOR

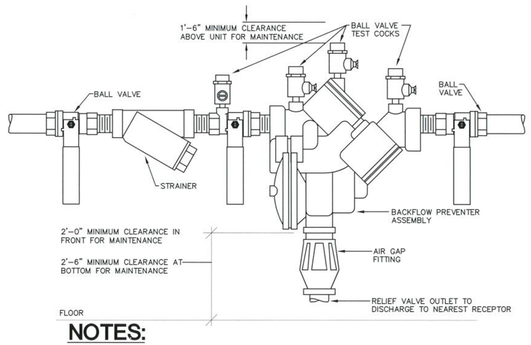
Sheet

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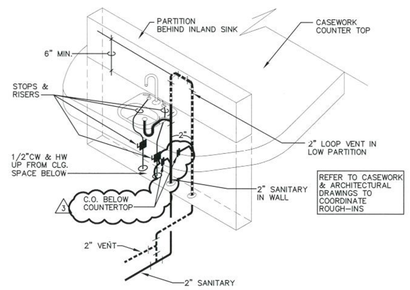
F:\2005 Projects\305555 Medical Center of Aurora Expansion\Drawings\EPP-MSAP-3100.dwg
Don Seeley, ccrd partners
07/13/2006 - 1:48PM



NOTES:

1. PROVIDE WATTS 3/4" 909QT.
2. BACKFLOW ASSEMBLIES AND INSTALLATION SHALL COMPLY WITH CITY OF AURORA REQUIREMENTS.

01 REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY
NO SCALE



02 ISLAND SINK LOOP VENT DETAIL
NO SCALE — TYPICAL FOR ALL ISLAND SINKS

PLUMBING FIXTURE SCHEDULE

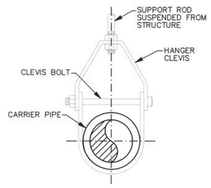
DESIG.	FIXTURE TYPE	CONNECTION SIZE				DESCRIPTION
		San. Sewer	Vent	Cold Water	Hot Water	
S-1	SINGLE COMPARTMENT SINK ADA COMPLIANT SOLID SURFACE	2"	2"	½"	½"	SINGLE COMPARTMENT "ELKAY" MODEL NO. LDRA-15X17, 6" DEEP, PROVIDE SINK FAUCET, "CHICAGO" MODEL No. 786-E29, 8" CENTER SET, PLATED FINISH, LAMINAR FLOW STREAM REGULATOR WITH 1.6 GPM FLOW RATE, STRAINER McGUIRE 152 FLAT CHROME, P-TRAP McGUIRE MODEL 8912 AND SUPPLIES McGUIRE No. 170LK
S-2	SINGLE COMPARTMENT SINK ADA COMPLIANT SOLID SURFACE	2"	2"	½"	½"	SINGLE COMPARTMENT "ELKAY" MODEL NO. LDRA-15X17, 6" DEEP, PROVIDE SINK FAUCET, "CHICAGO" MODEL No. 786-E29, 8" CENTER SET, PLATED FINISH, LAMINAR FLOW STREAM REGULATOR WITH 2.2 GPM FLOW RATE, STRAINER McGUIRE 152 FLAT CHROME, P-TRAP McGUIRE MODEL 8912 AND SUPPLIES McGUIRE No. 170LK
ESH	EMERGENCY SHOWER	–	–	–	1 1/4"	SPEAKMAN SE-236-PR EMERGENCY SHOWER
TMV	THERMAL MIXING VALVE	–	–	1"	1"	LEONARD TM-600 MIXING VALVE
FD	FLOOR DRAIN	AS NOTED ON PLANS				"J.R. SMITH" SERIES 2005, DUCCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE STRAINER HEAD, TRAP PRIMER CONNECTION, VANDAL RESISTANT SCREWS AND STAINLESS STEEL STRAINER HEAD.

GENERAL NOTES:

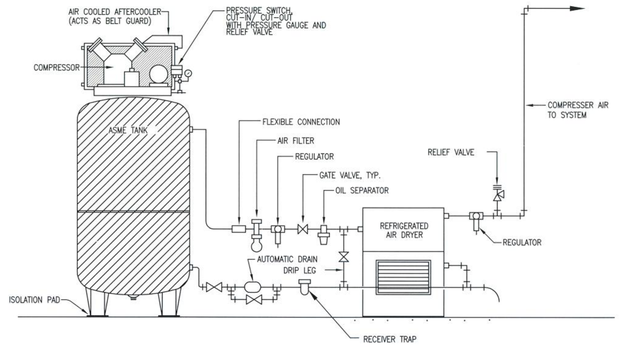
1. VERIFY ALL MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.
2. ALL P-TRAPS SHALL HAVE INTEGRAL CLEANOUT PLUGS.
3. ALL PLUMBING FIXTURES MUST CONFORM TO CURRENT "ADA" REQUIREMENTS FOR PERFORMANCE AND ACCESSIBILITY AS REQUIRED.

AIR COMPRESSOR UNITS SCHEDULE

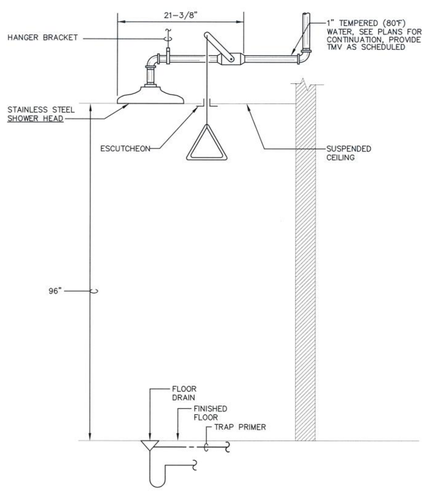
DESIG	SERVICE	TYPE	LOCATION	SCFM	PSI (MAX)	HP	RPM	VOLTS/ PHASE	CYCLE	RECEIVER CAPACITY (GAL.)	MANUFACTURER / MODEL NO.	REMARKS
CA	EQUIPMENT AIR	RECIP.	STORE ROOM	8	125	5	990	480/1PH	60	60	QUINCY QTSV-5-60 #151197-633 △2	PROVIDE A ZEKS MODEL HTA-060 HIGH TEMPERATURE REFRIGERATED AIR DRYER (RATED FOR 180°F INLET AIR TEMPERATURE); ZEKS MODEL ZTF15-H 0.1 MICRON COALESCING FILTER WITH ELECTRIC DRAIN; 200 GAL. ASME RATED (FOR 150 PSI) HORIZONTAL RECEIVER w/PRESSURE RELIEF VALVE AIR GAUGE AND ELECTRIC BALL VALVE DRAIN; ZEKS MODEL ZPA-15 OIL WATER SEPARATOR (150 CFM @ 90°F AND 90% RH). PROVIDE DUPLEX CONTROL PANEL WITH UNIT MOUNTED STARTERS AND DISCONNECTS
AIR DRYER	–	–	STORE ROOM	△2 –	–	1/2	–	△2 115/1PH	60	△2 –	–	



TYPICAL ADJUSTABLE CLEVIS FOR CAST IRON PIPE 03
NO SCALE



04 AIR COMPRESSOR DETAIL WITH AIR DRYER
NO SCALE



04 DECONTAMINATION SHOWER DETAIL
NO SCALE — (ESEW-1)

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Medical Center of Aurora
South Campus
Private Room Expansion
Aurora, Colorado

HCA
Project # 306660001

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JULY 13
EARLY RELEASE PKG. #2
ISSUED FOR PERMIT & CONSTRUCTION

KEY PLAN



COLORADO LICENSED PROFESSIONAL ENGINEER 31031 08/24/06

Revisions

△2	ADDENDUM #2	08/24/06
△3	ADDENDUM #3	09/08/06

06-124732

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 26 2006

NO.	ISSUE	DATE

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Checked	TK
Approved	TK

Title

PLUMBING SCHEDULES AND DETAILS

Sheet

P-7101

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Dan Dennis, revit partners 08/23/2006 - 11:30AM

GENERAL NOTES

GENERAL CONDITIONS

A1 THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND IT IS THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS THAT THE CONTRACTOR SHALL PROVIDE AN ELECTRICAL INSTALLATION THAT IS COMPLETE AND ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLE INCIDENTAL, OR CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFICALLY CALLED OUT OR SHOWN. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIALS, LABOR, SUPERVISION AND SERVICE NECESSARY SO AS TO PROVIDE A COMPLETE, FUNCTIONING ELECTRICAL SYSTEM IN SAFE WORKING ORDER.

A2 SYMBOLS FOR VARIOUS ELEMENTS AND SYSTEMS ARE SHOWN ON THE DRAWINGS. SHOULD THERE BE ANY DOUBT REGARDING THE MEANING OR INTENT OF THE SYMBOLS USED, AN INTERPRETATION SHALL BE OBTAINED FROM THE ARCHITECT IN WRITING. THE DECISION OF THE ARCHITECT SHALL BE FINAL.

A3 IT SHALL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO EXAMINE THE CONTRACT DOCUMENTS CAREFULLY BEFORE SUBMITTING HIS BID, WITH PARTICULAR ATTENTION TO ERRORS, OMISSIONS, CONFLICTS WITH PROVISIONS OF LAWS AND CODES HAVING JURISDICTION, CONFLICTS BETWEEN DRAWINGS OR DRAWINGS AND SPECIFICATIONS, AND AMBIGUOUS DEFINITION OF THE EXTENT OF COVERAGE BETWEEN CONTRACTS. ANY SUCH DISCREPANCY SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ARCHITECT FOR CORRECTION. SHOULD ANY OF THESE ERRORS, OMISSIONS, CONFLICTS, OR AMBIGUITIES EXIST, THE CONTRACTOR SHALL HAVE THEM EXPLAINED AND ADJUSTED IN WRITING BEFORE SIGNING THE CONTRACT OR PROCEEDING WITH THE WORK; OTHERWISE, HE SHALL, AT HIS OWN EXPENSE, SUPPLY THE PROPER MATERIALS AND LABOR TO MAKE GOOD ANY DAMAGE OR DEFECTS IN HIS WORK OR THE RESULTS OBTAINED THEREFROM, CAUSED BY SUCH DISCREPANCY.

A4 WHEREVER CONFLICTS OCCUR BETWEEN DIFFERENT PARTS OF THE CONTRACT DOCUMENTS. THE GREATER QUANTITY, THE BETTER QUALITY, OR LARGER SIZE SHALL PREVAIL UNLESS THE ARCHITECT INFORMS THE CONTRACTOR OTHERWISE IN WRITING.

A5 THE SCALE OF EACH DRAWING IS RELATIVELY ACCURATE; ANY DIMENSIONS SHOWN ARE APPROXIMATE TO CENTERLINE FROM ASSUMED BUILDING PERIMETER. THE CONTRACTOR SHALL OBTAIN THE NECESSARY DIMENSIONS FOR ANY EXACT TAKEOFFS FROM THE ARCHITECT. NO ADDITIONAL COST TO THE OWNER WILL BE CONSIDERED FOR FAILURE TO OBTAIN EXACT DIMENSIONS WHERE NOT CLEAR OR IN ERROR ON THE DRAWINGS. ANY DEVICE OR FIXTURE ROUGHED IN IMPROPERLY AND NOT POSITIONED ON IMPLIED CENTER-LINES OR AS REQUIRED BY GOOD PRACTICE MUST BE REPOSITIONED AT NO COST TO THE OWNER.

A6 ALL WORK AND MATERIALS SHALL BE GUARANTEED FREE FROM DEFECTS FOR A MINIMUM PERIOD OF ONE YEAR UNLESS NOTED OTHERWISE. THE WARRANTY PERIOD SHALL BEGIN AT THE DATE OF BENEFICIAL OCCUPANCY OF THE FACILITY.

A7 THE CONTRACTOR IS RESPONSIBLE FOR FILING AND PAYING ALL FEES AND OBTAINING NECESSARY PERMITS AND CERTIFICATES OF INSPECTION. THE CONTRACTOR SHALL DELIVER ALL CERTIFICATES OF INSPECTION TO OWNER/CONSTRUCTION MANAGER INCLUDING COPIES WITH MAINTENANCE MANUALS.

A8 ONLY EXPERIENCED CRAFTSMEN KNOWLEDGEABLE IN THEIR RESPECTIVE TRADE SHALL PERFORM THE WORK DESCRIBED IN THE CONSTRUCTION DOCUMENTS.

A9 ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADDITION OF NFPA STANDARD 70 (NATIONAL ELECTRICAL CODE). CONTRACTOR SHALL ALSO CONFORM TO ALL APPLICABLE LOCAL CODES AND AMENDMENTS.

A10 ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO SWITCHGEAR, CONDUIT, WIRE, BOXES AND FITTINGS SHALL BE NEW AND SHALL MEET NEMA AND ANSI STANDARDS AND SHALL BEAR THE UL LABEL.

A11 PROVIDE SHOP DRAWINGS FOR ENGINEER'S REVIEW FOR ALL ELECTRICAL EQUIPMENT, DEVICES, AND MATERIALS PROPOSED TO BE PROVIDED UNDER THIS CONTRACT. ANY DEVIATIONS FROM ITEMS SPECIFIED SHALL BE CLEARLY IDENTIFIED AND SEPARATELY SUBMITTED WITH A FORMAL SUBSTITUTION REQUEST. REFER TO SPECIFICATIONS (PROJECT MANUAL) FOR REQUIREMENTS.

ELECTRICAL EQUIPMENT

B1 PROVIDE AN IDENTIFICATION NAMEPLATE FOR EACH ELECTRICAL EQUIPMENT, APPURTENANCE DEPICTING THE DESIGNATION INDICATED ON THE DRAWINGS. REFER TO SPECIFICATIONS FOR EXACT REQUIREMENTS.

B2 WEATHERPROOF ENCLOSURES SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT, DEVICES AND APPURTENANCES (ALL SYSTEMS) INSTALLED OUTDOORS.

B3 CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL POWER OUTAGES WITH OWNER'S REPRESENTATIVE.

B4 CONTRACTOR SHALL NOT USE PERMANENT INK WHEN MAKING FIELD MARKINGS OR TEMPORARY CIRCUIT LABELS ON PANELS. CONTRACTOR SHALL USE REMOVABLE TAPE/TAGS FOR ALL TEMPORARY MARKINGS AND SHALL REMOVE THESE TEMPORARY MARKINGS AT THE CONCLUSION OF THIS PROJECT.

CONDUIT & RACEWAY

C1 ALL WORK SHALL BE COORDINATED SO THAT INTERFERENCES ARE AVOIDED. PROVIDE ALL NECESSARY OFFSETS IN CONDUITS, RACEWAYS, ETC., REQUIRED TO PROPERLY INSTALL THE WORK. EXPOSED WORK MUST BE KEPT AS CLOSE AS POSSIBLE TO WALLS, CEILINGS, COLUMNS, ETC., SO AS TO TAKE UP MINIMUM AMOUNT OF SPACE; ALL OFFSETS, FITTINGS, ETC., REQUIRED SHALL BE PROVIDED WITHOUT ADDITIONAL EXPENSE TO THE OWNER. WORK SHALL BE COORDINATED WITH OTHER TRADES.

C2 CONDUIT RUNS ARE DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR SIZING AND LOCATING PULL BOXES PER N.E.C. AND FOR COORDINATION WITH OTHER DISCIPLINES.

C3 HOMERUN CIRCUITS FOR ISOLATED GROUND RECEPTACLES SHALL BE SEPARATED FROM OTHER CIRCUITS. EACH CIRCUIT SHALL HAVE ITS OWN NEUTRAL CONDUCTOR AND EACH HOMERUN SHALL CONTAIN AN ISOLATED AND EQUIPMENT GROUND CONDUCTOR.

C4 CONTRACTOR SHALL PROVIDE AND INSTALL ADEQUATE SUPPORTS NECESSARY FOR THE RACEWAY SYSTEM. THIS INCLUDES BUT IS NOT LIMITED TO BLOCKING FOR SURFACE AND FLUSH MOUNTED PANELS. CONTRACTOR SHALL REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SIZES AND QUANTITIES OF ALL SUPPORTING MEANS.

C5 PENETRATIONS OF WALLS, FLOORS, AND ROOFS FOR THE PASSAGE OF ELECTRICAL RACEWAYS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO THE COMMENCEMENT OF WORK. ALL SUCH PENETRATIONS SHALL BE PROPERLY SEALED OFF AFTER INSTALLATION OF RACEWAY SO AS TO MAINTAIN THE STRUCTURAL, WATER PROOF, AND FIRE PROOF INTEGRITY OF THE WALL, FLOOR, OR ROOF SYSTEM PENETRATED.

C6 THE CONTRACTOR SHALL SEAL ALL CONDUITS THAT PENETRATE THE BASEMENT FLOOR SLAB TO MAKE THEM WATER TIGHT. THE CONDUITS SHALL BE DRIED PRIOR TO INSTALLATION OF WIRE/CABLE AND SHALL BE SEALED AT TERMINATIONS.

C7 ALL PENETRATIONS THROUGH FIRE RATED WALLS OR PARTITIONS SHALL BE MADE IN ACCORDANCE WITH U.L. 483 "FIRE RESISTANCE DIRECTORY". PENETRATIONS SHALL BE SLEEVED AND SEALED WITH A UL APPROVED FIRE RATED SEALANT. REFER TO ARCHITECTURAL PLANS FOR FIRE RATED WALLS.

C8 ALL EMPTY CONDUIT SYSTEMS SHALL CONTAIN A PULL WIRE FOR FUTURE PULLING OF CONDUCTORS.

BRANCH CIRCUITS AND FEEDERS

D1 UNLESS NOTED OTHERWISE, ALL CIRCUITS 100' OR LESS SHALL BE MINIMUM #12 AWG WIRE SIZE. CIRCUITS OVER 100' BUT LESS THAN 200' SHALL BE MINIMUM #10 AWG WIRE SIZE. CIRCUITS OVER 200' SHALL BE MINIMUM #8 AWG WIRE SIZE.

D2 ALL POWER WIRING SHALL BE INSTALLED IN CONDUIT. CONDUCTOR SIZES #12 AWG AND SMALLER SHALL BE SOLID. CONDUCTOR SIZES #10 AWG AND LARGER MAY BE STRANDED.

D3 A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE PULLED WITH THE CIRCUIT CONDUCTORS FOR GROUNDING WHETHER OR NOT INDICATED ON THE DRAWINGS. METAL RACEWAY, OR A CABLE ARMOR OR SHEATH SHALL NOT BE USED AS AN EQUIPMENT GROUNDING CONDUCTOR.

D4 CONTRACTOR SHALL GROUND ALL EQUIPMENT AND ELECTRICAL SYSTEM PER N.E.C.

WIRING DEVICES

E1 REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOCATION AND MOUNTING HEIGHT OF ALL WALL AND FLOOR MOUNTED ELEMENTS (OUTLETS, LIGHT SWITCHES, CONTROLLERS, POKE-THRU, ETC). ALL WALL/FLOOR MOUNTED ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL DIMENSIONED DRAWINGS. IF LOCATION FOR AN ITEM IS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, VERIFY THE EXACT LOCATION OF THE ITEM WITH THE ARCHITECT PRIOR TO INSTALLATION. THESE REQUIREMENTS APPLY TO ALL WALL/FLOOR TYPES IN ALL AREAS. DO NOT SCALE OR DIMENSION LOCATIONS FROM THESE DRAWINGS.

E2 CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION DETAIL OF OUTLETS IN MILLWORK WITH ARCHITECTURAL DRAWINGS (WALL ELEVATIONS, MILLWORK DETAILS, ETC.) AND WITH MILLWORK MANUFACTURER PRIOR TO ELECTRICAL ROUGH-IN.

E3 WALL AND FLOOR MOUNTED POWER RECEPTACLES SHOWN NEAR DATA OUTLETS SHALL BE LOCATED WITHIN SIX (6) INCHES OF THE DATA OUTLET. LOCATE AT SAME MOUNTING HEIGHT UNLESS NOTED OTHERWISE.

E4 PROVIDE METAL BACKBOX MOUNTING BRACKET (CADDY #RBS SERIES OR SIMILAR) TO MOUNT DEVICE BETWEEN METAL/WOOD STUDS AT SAME ELEVATION AND EQUAL SPACING.

E5 CONTRACTOR SHALL VERIFY THE EXACT POWER CONNECTION TYPE AND NEMA CONFIGURATION OF RECEPTACLES FOR EQUIPMENT FURNISHED BY THE OWNER, OTHER TRADES, OR UNDER A SEPARATE SECTION OF THIS CONTRACT PRIOR TO ELECTRICAL ROUGH-IN.

E6 MOUNT ALL RECEPTACLES THROUGHOUT THE PROJECT WITH THE GROUND POLE AT THE TOP OF THE CONFIGURATION WHEN MOUNTED VERTICALLY, AND ON THE RIGHT WHEN MOUNTED HORIZONTALLY.

E7 ALL RECEPTACLES WITHIN SIX FEET OF ANY PLUMBING FIXTURE AND/OR SINK SHALL BE EQUIPPED WITH GFCI FOR PERSONNEL PROTECTION.

E8 ALL RECEPTACLES LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE HOUSED IN ENCLOSURES THAT ARE RATED 'WEATHER-PROOF-WHILE-IN-USE' AND SHALL BE EQUIPPED WITH GFCI FOR PERSONNEL PROTECTION.

E9 ALL GFCI RECEPTACLES SHALL BE CONNECTED SO THAT ALL DEVICES ON THE SAME CIRCUIT AS THE GFCI RECEPTACLE DO NOT DE-ENERGIZE UPON TRIPPING. ALL GFCI RECEPTACLES SHALL INCLUDE A LOCK-OUT FUNCTION TO PROTECT AGAINST THE USE OF MISWIRED DEVICES OR DEVICES THAT HAVE BEEN DAMAGED DUE TO DISABLING SURGES.

E10 FINISH COLORS OF DEVICES AND CORRESPONDING COVER PLATES SHALL BE SELECTED AND APPROVED BY THE ARCHITECT. SPECIALTY RECEPTACLES AND COVERPLATES (I.E. ISOLATED GROUND, EMERGENCY, CRITICAL BRANCH, SURGE SUPPRESSION, ETC.) SHALL BE THE COLOR NOTED IN ELECTRICAL CONSTRUCTION DOCUMENTS.

E11 POKE-THRU DEVICES SHALL BE BE LISTED AND LABLED FOR FIRE RATING OF FLOOR-CEILING ASSEMBLY. ALL FLOOR CORES SHALL BE LOCATED/SPACED IN A MANNER THAT DOES NOT DECREASE THE FIRE RATING OF THE FLOOR-CEILING ASSEMBLY BASED ON THE LATEST NFPA AND UL STANDARDS FOR FLOOR-CEILING ASSEMBLIES.

E12 PROVIDE SAFETY (TAMPER-PROOF) RECEPTACLES IN ALL DAY-CARE ROOMS AND PUBLIC WAITING SPACES.

LIGHTING SYSTEM

G1 REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOCATION OF ALL CEILING ELEMENTS (LIGHTS, SPRINKLERS, DIFFUSERS, ETC). ALL CEILING MOUNTED ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL DIMENSIONED DRAWINGS. IF LOCATION FOR AN ITEM IS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, VERIFY THE EXACT LOCATION OF THE ITEM WITH THE ARCHITECT PRIOR TO INSTALLATION. THESE REQUIREMENTS APPLY TO ALL CEILING TYPES IN ALL AREAS. DO NOT SCALE OR DIMENSION LOCATIONS FROM THESE DRAWINGS.

G2 CONTRACTOR SHALL PROVIDE AND INSTALL ALL SUPPORTS FOR LIGHT FIXTURES. SUPPORTS SHALL BE INDEPENDENT OF THE CEILING GRID SUPPORT SYSTEM.

G3 LIGHT SWITCHES LOCATED IN A ROOM SHALL CONTROL ALL THE LIGHT FIXTURES IN THAT ROOM UNLESS NOTED OTHERWISE. CONTRACTOR SHALL GANG TOGETHER ALL SWITCHES/DIMMERS UNDER A SINGLE COVER PLATE IN ALL AREAS THAT REQUIRE MORE THAN ONE SWITCH TO CONTROL ELECTRICAL DEVICES.

G4 WALLBOX DIMMERS SHALL BE INSTALLED IN A MANNER SUCH THAT THEIR LISTED WATTAGE IS NOT DERATED DUE TO HEAT. SPACE ACCORDING TO DIMMER MANUFACTURER'S RECOMMENDATIONS AND PROVIDE 'WIDE-FIN' DESING DIMMERS WHERE REQUIRED.

G5 IN INSTANCES WHERE A TRACK LIGHTING SYSTEM, DIMMING SYSTEM, AND/OR LIGHTING CONTROL SYSTEM IS SPECIFIED, THE CONTRACTOR SHALL COORDINATE ALL NECESSARY COMPONENTS OF SUCH SYSTEM(S) WITH THE MANUFACTURER PRIOR TO BID AND INCLUDE ALL NECESSARY ACCESSORIES TO INSTALL A COMPLETE AND FUNCTIONING SYSTEM.

G6 ALL LIGHT FIXTURES SHALL BE INSTALLED WITH APPROPRIATE LAMPS AS INDICATED. FIXTURES SHALL ALSO BE INSTALLED WITH BALLASTS WHERE NECESSARY.

OCCUPANCY SENSOR NOTES:

G7 ALL SENSOR LOCATIONS ARE APPROXIMATE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.

G8 ULTRASONIC CEILING MOUNT SENSORS SHOULD BE LOCATED A MINIMUM OF SIX (6) FEET FROM HVAC SUPPLY/RETURN VENTS.

G9 CONTRACTOR IS RESPONSIBLE FOR PROPER SENSITIVITY AND TIME DELAY SETTINGS FOR NON-ADAPTIVE PRODUCTS, FOLLOWING THE MANUFACTURER'S RECOMMENDED PLACEMENT, AND FIELD VERIFICATION OF CIRCUITS WITH RESPECT TO POWER PACK PLACEMENT.

G10 CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF REQUIRED NUMBER OF POWER PACKS:
A. ONE POWER PACK IS REQUIRED FOR EACH CONTROLLED CIRCUIT;
B. SEVERAL SENSORS AND ADD-A-RELAYS CAN BE WIRED IN PARALLEL TO A SINGLE POWER PACK, NOT TO EXCEED 150mA TOTAL POWER CONSUMPTION;
C. IF MULTIPLE CIRCUITS ARE TO BE CONTROLLED BY A SINGLE SENSOR, AUXILIARY RELAYS MAY BE USED IN CONJUNCTION WITH A POWER PACK.

G11 SENSORS MOUNTED OVER DOORWAYS SHOULD BE PLACED ONE (1) FOOT INSIDE THRESHOLD.

MECHANICAL & PLUMBING COORDINATION

H1 CONTRACTOR SHALL REFERENCE THE MECHANICAL AND PLUMBING DRAWINGS FOR ALL EQUIPMENT NEEDING ELECTRICAL CONNECTIONS. MAKE ALL CONNECTIONS AND PROVIDE APPROPRIATE WIRE, CONDUIT, AND OVERCURRENT PROTECTION FOR ALL EQUIPMENT.

H2 DISCONNECTING MEANS FOR ALL MECHANICAL AND PLUMBING EQUIPMENT SHALL BE MOUNTED INDEPENDENTLY OF THE EQUIPMENT.

H3 ALL CIRCUIT BREAKERS SERVING MECHANICAL EQUIPMENT SHALL BEAR AN 'HACR' RATING.

H4 CONTRACTOR SHALL COORDINATE BETWEEN TRADES AND PROVIDE CONTROL POWER FOR ALL VAV BOXES/DAMPERS/ETC, AS REQUIRED TO ENSURE A COMPLETE, FULLY FUNCTIONAL HVAC SYSTEM. SHOULD AN EXACT CIRCUIT NUMBER NOT BE INDICATED ON ELECTRICAL DRAWINGS, CONTRACTOR SHALL UTILIZE AVAILABLE 20A/1P SPACE FROM THE NEAREST 208V/120V PANEL OR FROM BUILDING CONTROL POWER DISTRIBUTION SYSTEM.

H5 CONTRACTOR SHALL COORDINATE MOTOR DISCONNECT AND CONTROL WITH MECHANICAL DRAWINGS AND BETWEEN TRADES.

H6 COORDINATE ALL REQUIRED ENERGY MANAGEMENT SYSTEM POINTS AND CONTACT CONNECTIONS TO ENSURE THE COMPLETE AND PROPER OPERATION OF ALL SYSTEMS.

H7 ALL DISCONNECTS DOWN STREAM OF VFDs SHALL BE PROVIDED WITH AUXILIARY CONTACTS TO SHUT DOWN UPSTREAM VFD WHEN SWITCH IS OPENED.

EMERGENCY POWER SYSTEM

I1 ALL EMERGENCY SYSTEMS SHALL BE RUN IN A SEPARATE RACEWAY/CONDUIT SYSTEM AND SHALL BE CLEARLY LABELED AS SUCH.

ELEVATOR

J1 COORDINATE EXACT LOCATION OF ELEVATOR DISCONNECT SWITCH WITH ELEVATOR CONTRACTOR. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH ELEVATOR MANUFACTURER. PROVIDE ALL CONDUITS REQUIRED BY ELEVATOR MANUFACTURER, (EXAMPLE: CONDUITS BETWEEN ELEVATOR MACHINE ROOMS, ATS, TELECOMMUNICATIONS CLOSET, FIRE CONTROL ROOM, ETC.). PROVIDE SHUNT TRIP BREAKERS IN THE ELEVATOR MACHINE ROOM FOR EACH ELEVATOR. PROVIDE SMOKE AND HEAT DETECTORS FOR ELEVATOR RECALL AND ACTIVATION OF ELEVATOR SHUNT TRIP BREAKERS AS REQUIRED BY NFPA AND THE ELEVATOR CODES.

MISC

K1 CONTRACTOR IS RESPONSIBLE FOR PULLING CABLE FOR THE FOLLOWING SYSTEMS: VOICE/DATA/FIBER CABLE, EMERGENCY RADIO, INTERCOM, NURSE CALL, OVERHEAD PAGE/MUSIC, PUBLIC ADDRESS, HARDWIRED PHYSIOLOGICAL MONITORING EQUIPMENT, TELEMETRY SYSTEMS, AND ANTENNA SYSTEMS. COORDINATE WITH OWNER'S REPRESENTATIVE FOR REQUIREMENTS.

K2 THE ENGINEERED SYSTEMS, INCLUDING: NURSE CALL, DICTATION, INTERCOM, CODE BLUE, SOUND SYSTEMS, TELEVISION, RADIO, ETC. SHALL BE OWNER PROVIDED WITH STANDARD BACK BOXES AND CONDUITS STUBBED ABOVE THE CEILING, FURNISHED AND INSTALLED BY THE CONTRACTOR. SPECIAL BOXES WILL BE PROVIDED BY THE VENDOR AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL PULL ALL CABLE PROVIDED BY OTHERS, FOR THESE SYSTEMS.

K3 REFER TO AND COORDINATE WITH MEDICAL EQUIPMENT PRODUCT DATA BOOKS FOR ELECTRICAL CONNECTION REQUIREMENTS FOR ALL MEDICAL EQUIPMENT. COORDINATE EXACT REQUIREMENTS PRIOR TO INSTALLATION.

K4 PROVIDE 120V LIFE SAFETY CIRCUIT CONNECTIONS TO ALL FIRE ALARM EXTENDER PANELS. COORDINATE WITH VENDOR SHOP DRAWINGS EXACT QUANTITY AND LOCATION OF ALL PANELS.

K5 PROVIDE 120V EQUIPMENT POWER CIRCUIT TO ALL PNEUMATIC TUBE TRANSFER STATIONS. COORDINATE WITH VENDOR SHOP DRAWINGS EXACT QUANTITY AND LOCATIONS OF ALL STATIONS. PROVIDE 480V CONNECTION TO PNEUMATIC TUBE BLOWER. BLOWER TO BE LOCATED ON SHOP DRAWINGS.

K6 PROVIDE BACKBOX AND CONDUIT PATHWAYS FOR ALL CM DRAWINGS. REFER TO CM DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF SLEEVES, DEVICE BACKBOXES AND CONDUITS.

ELECTRICAL DEMOLITION NOTES

1. PROVIDE UPDATED, TYPE WRITTEN DIRECTORY OF ALL CORRECT CIRCUITS WITH LOAD DEFINITIONS FOR EACH PANEL BOARD. DIRECTORY SHALL BE LOCATED INSIDE PANEL DOOR.
2. INFORMATION PROVIDED ON THESE DRAWINGS HAVE BEEN TAKEN FROM DESIGN DRAWING AND FIELD OBSERVATIONS. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO PRICING AND COMMENCEMENT OF WORK.
3. WHERE EXISTING WALLS ARE DEMOLISHED, REMOVE ALL EXISTING ELECTRICAL DEVICES AND THEIR ASSOCIATED CONDUITS AND WIRING BACK TO THE POINT OF ORIGINATION. ENERGIZE ALL EXISTING DEVICES THAT WERE INTERRUPTED DURING DEMOLITION. WHERE ENTIRE CIRCUITS ARE REMOVED, TURN THE CIRCUIT BREAKER OFF AND LABEL AS "SPARE".
4. PROVIDE FOR ANY AND ALL DEMOLITION WORK NECESSARY TO ACCOMMODATE ALL NEW CONSTRUCTION, INCLUDING ARCHITECTURAL, MECHANICAL, PLUMBING OR ELECTRICAL WORK.
5. IF DEMOLITION IS REQUIRED TO INSTALL AN ITEM, THE CONTRACTOR SHALL RESTORE THE AREA TO PREVIOUS CONDITION, OR REPLACE DAMAGED ITEMS WITH NEW ITEMS TO MATCH EXISTING.
6. DESIGNATION 'EX' REPRESENTS EXISTING DEVICE OR LIGHT FIXTURE TO REMAIN AS CIRCUITED AND SWITCHED UNLESS NOTED OTHERWISE. EXISTING LIGHT FIXTURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
7. A DEVICE WITH AN 'R' INDICATES EXISTING DEVICE TO BE REMOVED INCLUDING ALL ASSOCIATED CONDUIT AND WIRING.
8. CONTRACTOR SHALL REMOVE ALL CONDUIT AND WIRING ASSOCIATED WITH DEVICES AND EQUIPMENT TO BE REMOVED AND/OR RELOCATED UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL ALL NECESSARY DEVICES, EQUIPMENT AND ACCESSORIES REQUIRED TO MAINTAIN SERVICE TO ALL "EXISTING TO REMAIN" DEVICES AND EQUIPMENT THAT MAY BE INTERRUPTED DURING DEMOLITION.
9. WHERE EXISTING MECHANICAL/PLUMBING EQUIPMENT IS DEMOLISHED, REMOVE ALL RELATED ELECTRICAL FEEDS TO THE EQUIPMENT AND THEIR ASSOCIATED CONDUITS BACK TO THE POINT OF ORIGINATION.
10. SPACE ALLOCATIONS FOR MATERIALS, EQUIPMENT AND DEVICES HAVE BEEN MADE ON THE BASIS OF PRESENT AND KNOWN FUTURE REQUIREMENTS AND THE DIMENSIONS OF ITEMS OF EQUIPMENT OR DEVICES OF A PARTICULAR MANUFACTURER WHETHER INDICATED OR NOT. THE CONTRACTOR SHALL VERIFY THAT ALL MATERIALS, EQUIPMENT AND DEVICES PROPOSED FOR USE ON THIS PROJECT ARE WITHIN THE CONSTRAINTS OF THE ALLOCATED SPACE.
11. REFER TO ARCHITECTURAL PLANS FOR AREAS WHERE CEILING IS DEMOLISHED. REMOVE ALL LIGHTING FIXTURES AND ASSOCIATED CONDUIT AND WIRING FROM THESE LOCATIONS.
12. ALL RECEPTACLES WITHIN THE PROJECT SCOPE SHALL BE HOSPITAL GRADE TYPE. IF A DEVICE IS INDICATED AS EXISTING TO REMAIN AND IS NOT A HOSPITAL GRADE RECEPTACLE, REPLACE THE EXISTING DEVICE WITH A HOSPITAL GRADE RECEPTACLE AND RECONNECT TO EXISTING CIRCUIT.
13. ALL LIGHTING FIXTURES DEMOLISHED UNDER THESE DRAWINGS SHALL BE RETURNED TO THE OWNER.

ELECTRCIAL ABBREVIATIONS

AAP	AREA ALARM PANEL	MH	MANHOLE
AFC	ABOVE FINISHED COUNTER	MLO	MAIN LUGS ONLY
AFF	ABOVE FINISHED FLOOR	MTD	MOUNT OR MOUNTED
ATS	AUTOMATIC TRANSFER SWITCH	N	NEW DEVICE
BFC	BELOW FINISHED CEILING	NC (N.C.)	NORMALLY CLOSED
BOF	BOTTOM OF FIXTURE	NEC	NATIONAL ELECTRIC CODE
C	CONDUIT	NF	NONFUSED
CB,C/B OR CKT BKR	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
		NL	NIGHT LIGHT
CKT	CIRCUIT	NO (N.O.)	NORMALLY OPEN
CCTV	CLOSED CIRCUIT T.V.	PB	PULL BOX
CLG	CEILING	PNL	PANEL
CUH	CABINET HEATER	PWR	POWER
EC	EMPTY CONDUIT	R	REMOVE DEVICES
ELEC	ELECTRIC	RL	RELOCATED DEVICE
E	EMERGENCY	RCPT(S) OR RECEPT	RECEPTACLE(S)
EMS	ENERGY MANAGEMENT SYSTEM		
EP	EXPLOSION PROOF	RF	RETURN AIR FAN
EWC	ELECTRIC WATER COOLER	SEF	SMOKE EXHAUST FAN
EX	EXISTING	SF	SUPPLY AIR FAN
F	FUSE	SO (S.O.)	SPACE ONLY
FA	FIRE ALARM	SP	SPARE
FACP, FAP	FIRE ALARM CONTROL PANEL	ST (S.T.)	SHUNT TRIP
FCU	FAN COIL UNIT	SW	SWITCH
FIXT	FIXTURE	TEL	TELEPHONE
FLR	FLOOR	TF	TRANSFER FAN
FLUOR	FLUORESCENT	TP	TAMPER PROOF
FTP, FTS	FAN TERMINAL UNIT	TV	TELEVISION
FTU	FAN TERMINAL UNIT	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
FUT	FUTURE		
G, GND	GROUND (EQUIPMENT)	UF	UNDERFLOOR
GEF	GENERAL EXHAUST FAN	UG	UNDERGROUND
GEN	GENERATOR	UH	UNIT HEATER
GFCI, GFI	GROUND FAULT CIRCUIT INTERRUPTER	UNO (U.N.O.)	UNLESS NOTED OR INDICATED OTHERWISE
HP	HORSE POWER		
HV	HIGH VOLTAGE	V	VOLTAGE
HWAT	HEAT TRACE	VFD	VARIABLE FREQUENCY DRIVE
IC	INTERRUPTING CAPACITY	VP	VAPOR PROOF
ICAND	INCANDESCENT	VV	VARIABLE VOLUME UNIT
IG	ISOLATED GROUND	W	WIRE
JB	JUNCTION BOX	W/	WITH
KEF	KITCHEN EXHAUST FAN	WG	WIRE GUARD
LTG	LIGHTING	WP	WEATHER PROOF
LTS	LIGHTS	WT	WATER TIGHT
LV	LOW VOLTAGE	XFMR	TRANSFORMER
MATV	MASTER ANTENNA	+xx	MOUNTING HEIGHT IN INCHES. AFF UNO.
MCB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER		
MDP	MAIN DISTRIBUTION PANEL		

KEY TO GENERAL NOTATIONS AND MOUNTING HEIGHTS

48" AFF INDICATES TO TOP OF DEVICE;
18" AFF INDICATES TO CENTER OF DEVICE;
60" AFF INDICATES TO BOTTOM OF DEVICE;
80" AFF INDICATES TO BOTTOM OF DEVICE;
ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.

(2) – LEGEND NOTES: DENOTES "SEE LEGEND NOTE NO. 2"

(7) – EQUIPMENT (ID) NUMBER FOR FOOD SERVICE EQUIPMENT. REFER TO FOOD SERVICE DOCUMENTS FOR DEFINITION AND REQUIREMENTS.

(717629) OR [717629] – EQUIPMENT (ID) NUMBER FOR OWNER PROVIDED EQUIPMENT. REFER TO OWNER'S EQUIPMENT BOOK / FF&E DOCUMENTS FOR DEFINITION AND REQUIREMENTS.

02/E-202 – DENOTES: REFERENCE 2 IN DRAWING (SHEET) E-202

[20.4] – FEEDER TAG. FEEDER SIZES ARE DETERMINED BY THE FEEDER SCHEDULE ON E-6000.

DEMOLITION/RENOVATION SYMBOLS NOTES

1. SYMBOLS WHEN SHOWN DASHED INDICATE EXISTING TO BE REMOVED.
2. SUBSCRIPT 'EX' NEXT TO ANY OF THE ABOVE SYMBOLS INDICATES EXISTING TO REMAIN.
3. SUBSCRIPT 'R' NEXT TO A SYMBOL INDICATES EXISTING TO BE REMOVED.

MEP SYSTEM COORDINATION SCHEDULE

SYSTEM	FURNISHED BY	INSTALLED BY	POWER WIRING BY	CONTROL OR SUPERVISION WIRING BY
EMERGENCY GENERATOR	DIV 26	DIV 26	DIV 26	DIV 26
SUB-BASE FUEL TANK	DIV 26	DIV 26	DIV 26	DIV 26
MUFFLER	DIV 23	DIV 23	---	---
EXHAUST PIPING	DIV 26	DIV 26	---	---
REMOTE ANNUNCIATOR	DIV 26	DIV 26	DIV 26	DIV 26
LIFE SAFETY SYSTEM	DIV 27	DIV 27	DIV 26	DIV 27
SMOKE DAMPER/ACTUATOR	DIV 23	DIV 23	DIV 26	DIV 27
FIRE/SMOKE DAMPER/ ACTUATOR	DIV 23	DIV 23	DIV 26	DIV 27
DUCT SMOKE DETECTOR	DIV 27	DIV 26	---	DIV 27
OR SMOKE PURGE SYSTEM	DIV 23	DIV 23	DIV 26	DIV 27
NURSE CALL/ FIRE ALARM INTERFACE	DIV 27	DIV 27	---	DIV 27
FIRE SPRINKLER SYSTEM	DIV 21	DIV 21	DIV 26	DIV 27
WATERFLOW SWITCHES	DIV 21	DIV 21	DIV 26	DIV 27
TAMPER SWITCHES	DIV 21	DIV 21	DIV 26	DIV 27
FIRE PUMP	DIV 21	DIV 21	DIV 26	SIV 21
SUPERVISORY CONTACTS	DIV 21	DIV 21	---	DIV 27
FIRE PUMP ANNUNCIATOR	DIV 21	DIV 21	DIV 26	DIV 26
MEDICAL GAS ALARM	DIV 22	DIV 22	DIV 26	DIV 22
CHEMICAL FEED SYSTEM	DIV 22	DIV 22	DIV 26	DIV 22
BOILERS	DIV 23	DIV 22	DIV 26	DIV 23
FUEL OIL SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
FEED WATER SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
ELEVATOR CONTROL AND STATUS PANEL	DIV 14	DIV 14	DIV 26	DIV 14
MOTOR STARTERS (INTEGRAL TO EQUIP.)	DIV 23	N/A	DIV 26	DIV 23
MOTOR STARTERS (NON-INTEGRAL)	DIV 23	DIV 26	DIV 26	DIV 23
COMB. MOTOR STARTER/DISCONNECT (INSIDE OF MCC'S)	DIV 26	DIV 26	DIV 26	DIV 26
COMB. MOTOR STARTER/DISCONNECT (INTEGRAL TO EQUIP.)	DIV 23	N/A	DIV 26	DIV 23
COMB. MOTOR STARTER/DISCONNECT (NON-INTEGRAL)	DIV 23	DIV 26	DIV 26	DIV 23
CHILLERS	DIV 23	DIV 23	DIV 26	DIV 23
PUMPS	DIV 23	DIV 26	DIV 26	DIV 23
AIR HANDLERS	DIV 23	DIV 26	DIV 26	DIV 23
FANS	DIV 23	DIV 26	DIV 26	DIV 23
FAN POWERED BOXES	DIV 23	DIV 26	DIV 26	DIV 23
MISC. MOTORS	DIV 23	DIV 26	DIV 26	DIV 23
FAN COIL UNITS	DIV 23	DIV 26	DIV 26	DIV 23
PACKAGED PUMP SYSTEMS	DIV 23	DIV 26	DIV 26	DIV 23
VARIABLE FREQUENCY DRIVES (VFD'S)	DIV 23	DIV 26	DIV 26	DIV 23
PUMPS	DIV 23	DIV 26	DIV 26	DIV 23
COOLING TOWERS	DIV 23	DIV 26	DIV 26	DIV 23
AIR HANDLING SYSTEMS	DIV 23	DIV 26	DIV 26	DIV 23
DISCONNECT SWITCHES (NON-INTEGRAL)	DIV 26	DIV 26	DIV 26	---
HEAT TRACE	DIV 23	DIV 23	DIV 26	DIV 23
MAIN FUEL OIL SYSTEM	DIV 23	DIV 23	DIV 26	DIV 23
THIS TABLE IS PROVIDED AS A GUIDE TO THE DOCUMENT PREPARATION AND IN NO WAY INDICATES CONTRACTOR MEANS AND METHODS				

LIGHTING SYMBOLS LEGEND

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
	2'x4' FLUORESCENT LIGHT FIXTURE ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	2'x4' FLUORESCENT LIGHT FIXTURE ON LIFE SAFETY CIRCUIT OR LEGALLY REQUIRED STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	2'x4' FLUORESCENT LIGHT FIXTURE ON CRITICAL CIRCUIT OR NON-ESSENTIAL STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	2'x4' FLUORESCENT LIGHT FIXTURE W/INBOARD LAMPS ON NORMAL CIRCUIT AND OUTBOARD LAMPS ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	2'x4' FLUORESCENT LIGHT FIXTURE W/INBOARD LAMPS ON LIFE SAFETY CIRCUIT AND OUTBOARD LAMPS ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	2'x4' FLUORESCENT LIGHT FIXTURE W/INBOARD LAMPS ON CRITICAL CIRCUIT AND OUTBOARD LAMPS ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	2'x2' FLUORESCENT LIGHT FIXTURE ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	2'x2' FLUORESCENT LIGHT FIXTURE ON LIFE SAFETY CIRCUIT OR LEGALLY REQUIRED STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	2'x2' FLUORESCENT LIGHT FIXTURE ON CRITICAL CIRCUIT OR NON-ESSENTIAL STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	2'x2' FLUORESCENT LIGHT FIXTURE W/INBOARD LAMPS ON NORMAL CIRCUIT AND OUTBOARD LAMPS ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	2'x2' FLUORESCENT LIGHT FIXTURE W/INBOARD LAMPS ON LIFE SAFETY CIRCUIT AND OUTBOARD LAMPS ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	2'x2' FLUORESCENT LIGHT FIXTURE W/INBOARD LAMPS ON CRITICAL CIRCUIT AND OUTBOARD LAMPS ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	WALL MOUNTED LINEAR FIXTURE ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	WALL MOUNTED LINEAR FIXTURE ON LIFE SAFETY CIRCUIT OR LEGALLY REQUIRED STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	WALL MOUNTED LINEAR FIXTURE ON CRITICAL CIRCUIT OR NON-ESSENTIAL STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	RECESSED/SURFACE MOUNTED LINEAR FIXTURE ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	RECESSED/SURFACE MOUNTED LINEAR FIXTURE ON LIFE SAFETY CIRCUIT OR LEGALLY REQUIRED STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	RECESSED/SURFACE MOUNTED LINEAR FIXTURE ON CRITICAL CIRCUIT OR NON-ESSENTIAL STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	RECESSED/SUSPENDED DOWNLIGHT FIXTURE ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	WALL MOUNTED FIXTURE ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	RECESSED/SUSPENDED DOWNLIGHT FIXTURE ON LIFE SAFTEY CIRCUIT OR LEGALLY REQUIRED STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	WALL MOUNTED FIXTURE ON LIFE SAFETY CIRCUIT OR LEGALLY REQUIRED STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	RECESSED/SUSPENDED DOWNLIGHT FIXTURE ON CRITICAL CIRCUIT OR NON-ESSENTIAL STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	WALL MOUNTED FIXTURE ON CRITICAL CIRCUIT OR NON-ESSENTIAL STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	RECESSED DOWNLIGHT FIXTURE WITH WALL WASH TRIM ON NORMAL CIRCUIT.	SEE FIXTURE SCHEDULE
	RECESSED DOWNLIGHT FIXTURE WITH WALL WASH TRIM ON LIFE SAFETY CIRCUIT OR LEGALLY REQUIRED STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	RECESSED DOWNLIGHT FIXTURE WITH WALL WASH TRIM ON CRITICAL CIRCUIT OR NON-ESSENTIAL STANDBY SYSTEM.	SEE FIXTURE SCHEDULE
	WALL MOUNTED FIXTURE OR DECORATIVE SCONCE.	SEE FIXTURE SCHEDULE
	CEILING MOUNTED EXIT SIGN. SHADING INDICATES DOUBLE OR SINGAL FACE. ARROW INDICATE CHEVRON DIRECTIONS.	SEE FIXTURE SCHEDULE
	END MOUNTED EXIT SIGN. SHADING INDICATES DOUBLE OR SINGAL FACE. ARROW INDICATE CHEVRON DIRECTIONS.	SEE FIXTURE SCHEDULE
	WALL MOUNTED EXIT SIGN. SHADING INDICATES DOUBLE OR SINGAL FACE ARROW INDICATE CHEVRON DIRECTIONS.	SEE FIXTURE SCHEDULE
	WALL MOUNTED 90-MINUTE BATTERY-POWERED EGRESS LIGHTING.	SEE FIXTURE SCHEDULE
	EXTERIOR LIGHT POLE FIXTURE.	SEE FIXTURE SCHEDULE
	EXISTING EXTERIOR LIGHT POLE FIXTURE.	SEE FIXTURE SCHEDULE
X	SPOT LIGHT SWITCHED ON NORMAL CIRCUIT. LETTER INDICATES FIXTURE TYPE.	SEE FIXTURE SCHEDULE
X	FLOOD LIGHT SWITCHED ON NORMAL CIRCUIT. LETTER INDICATES FIXTURE TYPE.	SEE FIXTURE SCHEDULE
	TRACK LIGHTING	SEE FIXTURE SCHEDULE
$\$$	WALL SWITCH SPST, 20A, 120/277V	48" AFF
$\$_2$	DOUBLE POLE TOGGLE SWITCH, 20A/208/480V	48" AFF
$\$_3$	3-WAY WALL SWITCH, 20A, 120/277V	48" AFF
$\$_4$	4-WAY WALL SWITCH, 20A, 120/277V	48" AFF
$\$_{DA}$	WALL BOX DIMMER SWITCH (A=600W, B=1000, C=1500, D=2000)	48" AFF
$\$_K$	KEY OPERATED WALL SWITCH	48" AFF
$\$_T$	WALL SWITCH WITH ADJUSTABLE COUNTDOWN TIMER	48" AFF
$\$_{3D}$	3-WAY WALL DIMMER SWITCH, 20A, 120/277V	48" AFF
$\$_{3K}$	3-WAY, KEY OPERATED WALL SWITCH, 20A, 120/277V	48" AFF
$\$_{MC}$	MOMENTARY WALL SWITCH, 20A, 120/277V	48" AFF
$\$_B$	LIGHTING CONTROL SWITCH BANK FOR MUTIPLE SWITCHES, REFER TO DETAIL FOR QUANTITY OF SWITCHES IN BANK.	48" AFF
$\$_{LV}$	LOW VOLTAGE WALL SWITCH	48" AFF
$\$_{OS}$	WALL MOUNTED OCCUPANCY SENSOR SWITCH	48" AFF
500	LEVITON CEILING MOUNTED MULTI-TECHNOLOGY #OSC05-MO	–
	LEVITON CEILING MOUNTED ULTRASONIC #OSC05-UO	–
	LEVITON CEILING MOUNTED MULTI-TECHNOLOGY #OSC10-MO	–
	LEVITON CEILING MOUNTED ULTRASONIC #OSC10-UO	–
	LEVITON CEILING MOUNTED MULTI-TECHNOLOGY #OSC20-MO	–
	LEVITON CEILING MOUNTED ULTRASONIC #OSC20-UO	–
	LEVITON POWER PACK FOR 120VAC SYSTEM #OSP20-070	–
	LEVITON ADD-A-RELAY POWER PACK FOR 120VAC SYSTEM #OSA20-R00	–
CN	LEVITON CENTURA DIMMING POWER PACK #CN100-0D0	–
PC	LEVITON CENTURA PHOTOCELL #OSCOP	–

FIRE ALARM SYMBOLS LEGEND

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
F	FIRE ALARM PULL STATION	48"AFF
F	FIRE ALARM AUDIBLE VISUAL SIGNAL	80"AFF
F	FIRE ALARM AUDIBLE SIGNAL	80"AFF
F	FIRE ALARM VISUAL SIGNAL	80"AFF
FS	FIRE ALARM SPRINKLER FLOW SWITCH	–
TS	FIRE ALARM SPRINKLER TAMPER SWITCH	–
PS	FIRE ALARM SPRINKLER PRESSURE SWITCH	–
FD	SMOKE DETECTOR CEILING OR WALL MOUNTED	–
FD_P	SMOKE DETECTOR PATIENT SLEEPING ROOM CEILING OR WALL MOUNTED	–
FH	HEAT DETECTOR CEILING OR WALL MOUNTED	–
FD	DUCT SMOKE DETECTOR	–
S	FIRE ALARM SPEAKER CEILING OR WALL MOUNTED	–
MHO	SMOKE DOOR MAGNETIC HOLD OPEN, CONNECT TO FIRE ALARM SYSTEM – STUB 3/4" C. ABOVE ACCESSIBLE CEILING FROM OUTLET	–
FACP	FIRE ALARM CONTROL PANEL	–
FAAP	FIRE ALARM ANNUNCIATOR PANEL	–
FP	TELEPHONE JACK FOR FIREMAN'S PHONE (BY FIRE ALARM CONTRACTOR). CONTRACTOR TO PROVIDE BACKBOX AND CONDUIT TO ABOVE ACCESSIBLE CEILING ONLY.	48" AFF
FPH	WARDEN STATION TELEPHONE FOR FIREMAN'S PERMANENT HANDSET (BY FIRE ALARM CONTRACTOR)	48" AFF
FPAP	FIRE PUMP ANNUNCIATOR PANEL	–
FCP	FIREFIGHTER'S CONTROL PANEL	–

WIRING DEVICE SYMBOLS LEGEND

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
	SINGLE RECEPTACLE – 20A/125V/2P/3W/G NEMA 5-20R	18" AFF
	DUPLEX RECEPTACLE – 20A/125V/2P/3W/G NEMA 5-20R	18" AFF
	DUPLEX RCPT. SPLIT-WIRED – 20A/125V/2P/3W/G NEMA 5-20R	18" AFF
GFCI	DUPLEX RCPT. GFCI – 20A/125V/2P/3W/G NEMA 5-20R	18" AFF
	QUADRAPLEX RECEPTACLE (TWO DUPLEX RCPTS. UNDER ONE COVERPLATE)	18" AFF
H	DUPLEX RECEPTACLE MOUNTED HORIZONTALLY IN SPLASHGAURD	18" AFF
E	DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT	18" AFF
S	DUPLEX RECEPTACLE, SAFETY TYPE (TAMPERPROOF)	18" AFF
TP	DUPLEX RCPT, TAMPER PROOF-20A/125V/2P/3W/G NEMA 5-20R	18" AFF
	SPECIAL PURPOSE RECEPTACLE (NEMA NO. AS INDICATED)	18" AFF
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTERTOP	8" AFC OR 42" AFF
	QUADRAPLEX RECEPTACLE (TWO DUPLEX RCPTS. UNDER ONE COVERPLATE) MOUNTED 8" ABOVE COUNTERTOP	8" AFC OR 42" AFF
E	DUPLEX RECEPTACLE MOUNTED 8" ABOVE COUNTERTOP ON EMERGENCY CIRCUIT	8" AFC OR 42" AFF
E	QUADRAPLEX RECEPTACLE (TWO DUPLEX RCPTS. UNDER ONE COVERPLATE) MOUNTED 8" ABOVE COUNTERTOP ON EMERG. CIRC.	8" AFC OR 42" AFF
	FLOOR MOUNTED RECEPTACLE – FLUSH MOUNTED, UNO	–
PM	DUPLEX RCPT FOR PATIENT MONITORING – PROVIDE AT SAME HEIGHT AS DATA OUTLET – REFER TO COMM. PLANS FOR MOUNTING HEIGHT	–
PROX CAB	DUPLEX RCPT FOR PROXIMITY CABINET – PROVIDE AT SAME HEIGHT AS DATA OUTLET – REFER TO COMM. PLANS FOR MOUNTING HEIGHT	–
J	JUNCTION BOX – SIZE & MOUNTING AS REQUIRED	AS REQUIRED
	MULTIOUTLET ASSEMBLY – LENGTH AND OUTLET SPACING AS INDICATED	AS REQUIRED
	PUSHBUTTON	48" AFF
PP	POWER POLE	–
30/30/3	DISCONNECT SWITCH – 30/30/3 INDICATES 30A, 30AMP FUSED, 3-POLE.	AS REQUIRED
30/–/3	DISCONNECT SWITCH – 30/–/3 INDICATES 30A, NONFUSED, 3-POLE.	AS REQUIRED
CB 30/3	CIRCUIT BREAKER DISCONNECT SWITCH – THERMAL MAGNETIC CB IN NEMA 1 ENCLOSURE; AMPS/POLES AS INDICATED	AS REQUIRED
2	MOTOR STARTER FVNR UNO; NUMBER INDICATES NEMA SIZE	AS REQUIRED
CB	COMBINATION MOTOR CONTROLLER/DISCONNECT SWITCH	AS REQUIRED
$\$_M$	MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD AND PILOT LIGHT	AS REQUIRED
	MOTOR	–
	208/120V PANELBOARD	–
	480/277V PANELBOARD	–
	DISTRUBUTION PANELBOARD	–
	EQUIPMENT CONNECTION	–
	CIRCUIT CONDUCTOR INDICATION (NEUTRAL, PHASE, EQUIPMENT GROUND, ISOLATED GROUND, SWITCH LEG)	–
	CIRCUIT HOMERUN TO PANELBOARD (2 #12, 1#12G, 3/4"C. 20A/1P CB UNO)	–
	CONDUIT INSTALLED IN CEILING SPACE OF FLOOR BELOW.	–
X,X,X	THREE SINGLE POLE DEVICE CIRCUIT NUMBERS	–
X/X/X	MULTI-POLE DEVICE CIRCUIT NUMBERS	–
RG	ROOM GROUND	AS REQUIRED
PG	PATIENT GROUND	AS REQUIRED
	EMERGENCY POWER OFF BUTTON. WALL MOUNTED – REFER TO VENDOR DRAWINGS FOR ADDITIONAL REQUIREMENTS	AS REQUIRED
DHTA	DECONTAMINATION HOLDING TANK ALARM – PANEL PROVIDED UNDER DIV 22	AS REQUIRED
GAP	GENERATOR ANNUNCIATOR PANEL	AS REQUIRED
MGAP	MEDICAL GAS ALARM PANEL – PANEL PROVIDED UNDER DIV 22	AS REQUIRED
AAP	AREA ALARM PANEL – PANEL PROVIDED UNDER DIV 22	AS REQUIRED
	GROUND BAR	–
T	STEP-DOWN TRANSFORMER	–
TVSS	TRANSIENT VOLTAGE AND SURGE SUPPRESSOR DEVICE	–

SECURITY SYMBOLS LEGEND

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
MD	MOTION DETECTOR	AS REQUIRED
CR	CARD READER	AS REQUIRED
KP	KEY PAD	AS REQUIRED
EX	EXCITER (INFANT SECURITY)	AS REQUIRED
SC	STROBE CHIME (INFANT SECURITY)	AS REQUIRED
DC	DOOR CONTACT	AS REQUIRED
PP	PUSH PLATE FOR AUTO-SWING DOOR.	AS REQUIRED
PB	PUSH BUTTON FOR RELEASE OF CONTROLED ACCESS DOOR.	AS REQUIRED
DACC	DOOR ACCESS CONTROL CABINET	AS REQUIRED
C	CCTV SECURITY CAMERA. CEILING MOUNTED. PROVIDE SINGLE GANG OULET BOX U.N.O.	–
CP	CCTV SECURITY CAMERA – PAN/TILT/ZOOM. CEILING MOUNTED. PROVIDE SINGLE GANG OULET BOX U.N.O.	–

CONFIRM ALL BACKBOX SIZE WITH VENDOR SHOP DRAWINGS PRIOR TO ELECTRICAL ROUGH-IN. PROVIDE 3/4" CONDUIT STUBBED ABOVE NEAREST ACCESSIBLE CEILING WITH NYLON PULLCORD.

MISC. HOSPITAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
TV	COMBINATION POWER AND MATV OUTLET FOR WALL MOUNTED TELEVISION. PROVIDE THREE GANG BOX WITH (1) 20A DUPLEX RCPT & MATV SIGNAL OUTLET AND TV CONTROLS. COORDINATE WITH VENDOR SHOP DRAWINGS.	REFER TO ARCH. ELEVS.
HE	HEAD-END EQUIPMENT	AS REQUIRED
MPR	MUSIC AND PAGING SYSTEM CENTRAL EQUIPMENT CABINET	AS REQUIRED
TVJ	MATV SYSTEM JUNCTION BOARD (SIZE AS REQUIRED)	–
SSA	STEREO CABINET. WALL MOUNTED – STUB 3/4" C. ABOVE ACCESSIBLE CEILING FROM OUTLET BOX.	60" AFF
C	CLOCK OUTLET. CONFIRM BACKBOX SIZE WITH VENDOR SHOP DRAWINGS. PROVIDE 3/4" CONDUIT STUBBED ABOVE NEAREST ACCESSIBLE CEILING WITH NYLON PULLCORD.	80" AFF
	ELAPSE TIME CLOCK OUTLET. CONFIRM BACKBOX SIZE WITH VENDOR SHOP DRAWINGS. PROVIDE 3/4" CONDUIT STUBBED ABOVE NEAREST ACCESSIBLE CEILING WITH NYLON PULLCORD.	80" AFF
EMS	EMS RADIO CONSOLE	X
H	EMERGENCY RADIO HEAR CONSOLE	X
HB	HEAR BASE STATION	X
MAP	MEDICAL GAS ALARM PANEL	X

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Revisions

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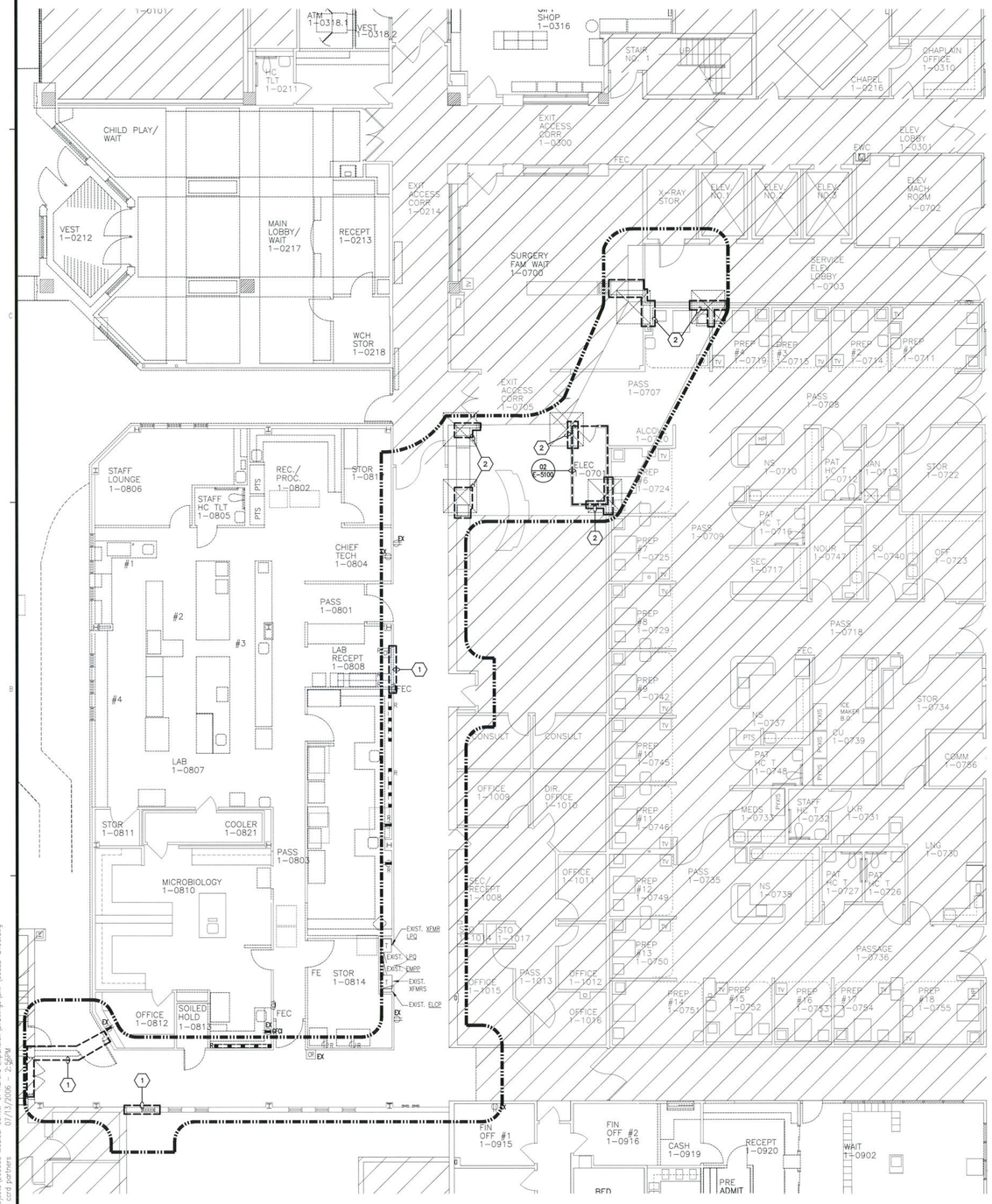
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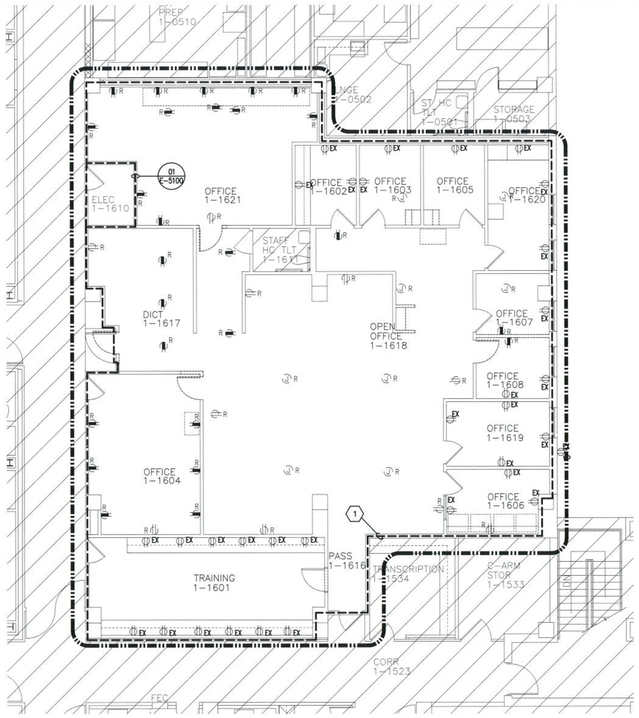
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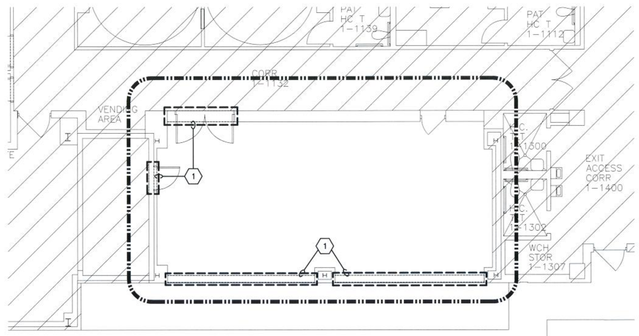
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01 POWER - FIRST FLOOR DEMO - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 POWER - FIRST FLOOR DEMO - TEMP LAB
SCALE: 1/8" = 1'-0"



03 POWER - FIRST FLOOR DEMO - BED STORAGE
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS FOR DEMOLITION REQUIREMENTS.

B. DESIGNATION 'EX' REPRESENTS EXISTING DEVICE TO REMAIN AS CIRCUITED UNLESS NOTED OTHERWISE. CLEAN AND REPAIR DEVICE AS REQUIRED.

LEGEND NOTES

1. REMOVE ALL ELECTRICAL DEVICES AND CIRCUITING IN THIS AREA UNLESS NOTED OTHERWISE. WHERE WALLS ARE BEING DEMOLISHED DOWN TO STUDS, REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED CONDUIT AND CONDUCTORS CONTAINED THERIN UNLESS NOTED OTHERWISE. CIRCUITS SHALL BE DEMOLISHED BACK TO POINT OF ORIGINATION. REFER TO ARCHITECTURAL DEMOLITION PLANS FOR ADDITIONAL INFORMATION.

2. REMOVE ALL ELECTRICAL DEVICES AND CIRCUITING IN THIS AREA DURING CONSTRUCTION OF NEW COLUMN FOOTING. RETAIN DEVICES FOR RE-INSTALLATION IN SAME LOCATION ONCE NEW COLUMNS ARE CONSTRUCTED. COORDINATE ANY DOWNTIME AS A RESULT OF WORK IN THE EXISTING ELECTRICAL ROOM WITH FACILITY PRIOR TO COMMENCEMENT OF WORK. REFER TO ARCHITECTURAL DEMOLITION PLANS FOR ADDITIONAL INFORMATION.

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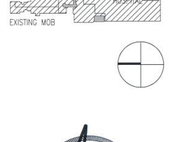
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KEY PLAN
FIRST FLOOR





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DEMOLITION PLAN
FIRST FLOOR
POWER AND
SPECIAL SYSTEMS

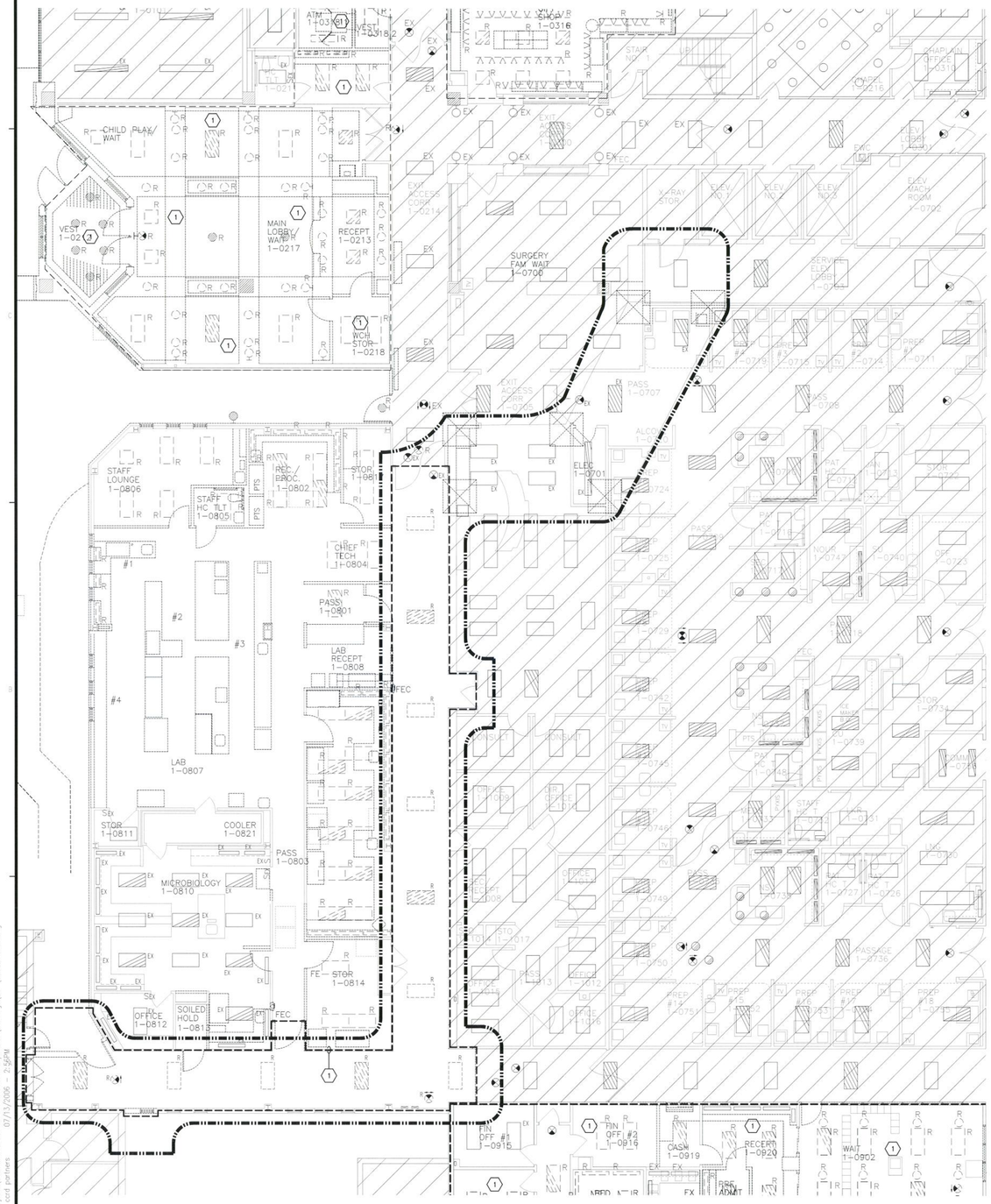
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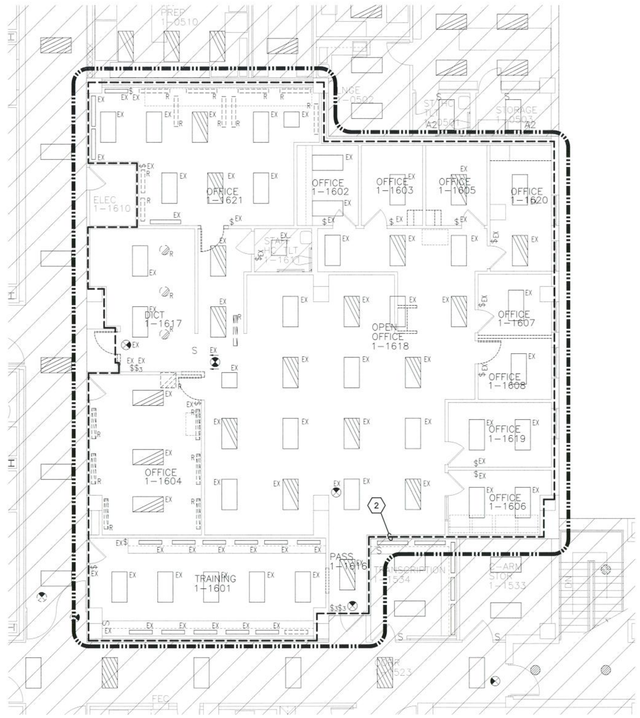
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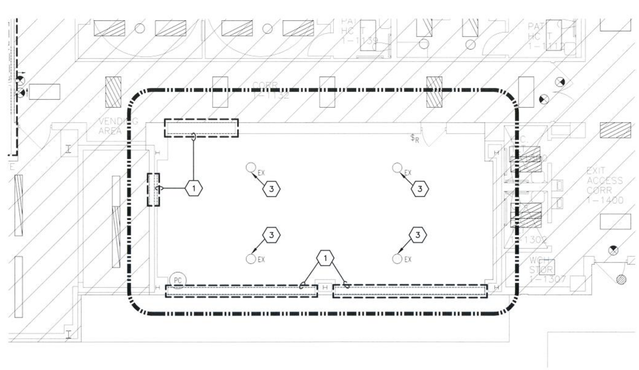
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Dan Seeley, cord partners



01 LIGHTING - FIRST FLOOR DEMO - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 LIGHTING - FIRST FLOOR DEMO - TEMP LAB
SCALE: 1/8" = 1'-0"



03 LIGHTING - FIRST FLOOR DEMO - BED STORAGE
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS FOR DEMOLITION REQUIREMENTS.

B. DESIGNATION 'EX' REPRESENTS EXISTING DEVICE OR LIGHT FIXTURE TO REMAIN AS CIRCUITED AND SWITCHED UNLESS NOTED OTHERWISE. EXISTING LIGHT FIXTURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.

C. A DEVICE WITH AN 'RL' INDICATES EXISTING DEVICE TO BE RELOCATED AND RE-USED.

D. A DEVICE WITH AN 'R' INDICATES EXISTING DEVICE TO BE REMOVED INCLUDING ALL ASSOCIATED CONDUIT AND WIRING.

LEGEND NOTES

1. REMOVE ALL ELECTRICAL WORK AND CIRCUITING IN THIS AREA UNLESS NOTED OTHERWISE. WHERE WALLS ARE BEING DEMOLISHED DOWN TO STUDS, REMOVE ALL ELECTRICAL DEVICES AND ASSOCIATED CONDUIT AND CONDUCTORS CONTAINED THERIN UNLESS NOTED OTHERWISE. CIRCUITS SHALL BE DEMOLISHED BACK TO POINT OF ORIGINATION. REFER TO ARCHITECTURAL DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
2. EXISTING DEVICES AND LIGHT FIXTURES IN THIS AREA TO REMAIN AS CIRCUITED AND SWITCHED UNLESS NOTED OTHERWISE.
3. DISCONNECT EXISTING FIXTURE FROM PHOTOCELL.

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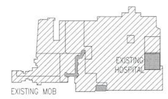
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KEY PLAN
FIRST FLOOR



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DEMOLITION PLAN FIRST FLOOR LIGHTING

Sheet

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01 OVERALL PLAN - ELECTRICAL

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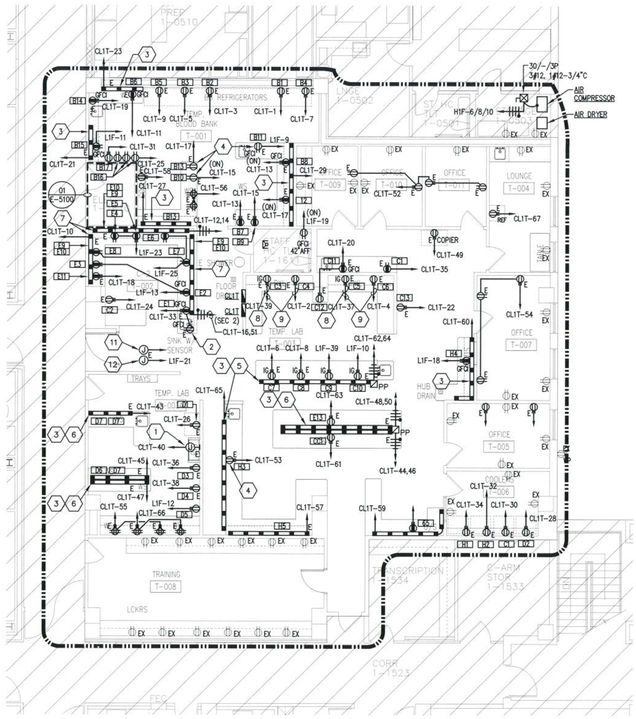
OVERALL PLAN
ELECTRICAL

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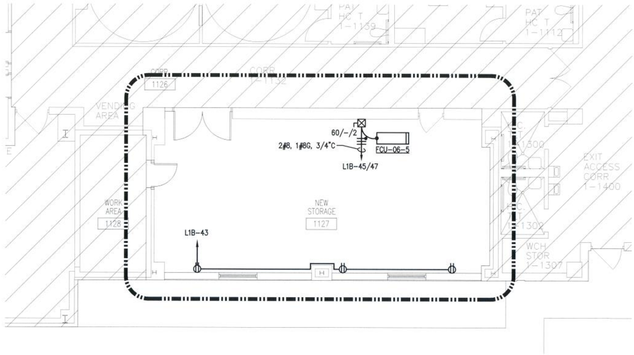
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04 POWER - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"



03 POWER - FIRST FLOOR - BED STORAGE
SCALE: 1/8" = 1'-0"

01 NOT USED
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. COORDINATE LOCATION OF ALL DISCONNECTS, CONTROL PANELS AND ELECTRICAL CONNECTIONS FOR MECHANICAL AND PLUMBING EQUIPMENT TO MAINTAIN NEC REQUIRED CLEARANCES IN FRONT OF EQUIPMENT.

B. ANY DEVIATIONS FROM SCHEDULED EQUIPMENT RESULTING IN ADDITIONAL COSTS DUE TO LACK OF COORDINATION WITH DIMENSIONS AND WEIGHTS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

C. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO F/S DAMPERS, VAV BOXES, FCU'S, ETC. WITH MECHANICAL DRAWINGS AND DIVISION 15 CONTRACTOR.

D. ALL CONDUIT AND DEVICES IN THE TEMP LAB ARE TO BE SURFACE MOUNTED. PAINT CONDUIT AND BOXES TO MATCH SURROUNDINGS.

E. CONNECT NEW SECURITY ACCESS DEVICES TO EXISTING SECURITY PANEL CURRENTLY SERVING THAT AREA. REFER TO E4 SERIES AND ARCHITECTURAL DOOR HARDWARE SCHEDULE FOR DEVICE LOCATIONS.

LEGEND NOTES

1. JUNCTION BOX MOUNTED AT 70" A.F.F. FOR 120 VOLT CRITICAL POWER CONNECTION TO PNEUMATIC TUBE STATION. COORDINATE EXACT REQUIREMENTS AND LOCATION WITH EQUIPMENT VENDOR DRAWINGS AND ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.
2. JUNCTION BOX FOR 120V CRITICAL POWER CONNECTION TO HANDS FREE CONTROL AT SCRUB SINK. COORDINATE LOCATION AND INSTALLATION WITH DIVISION 22.
3. SURFACE MOUNTED PLUGMOLD EQUAL TO WIREMOLD #AL-3300 MOUNTED AT 42" A.F.F. LOCATE 20A CRITICAL POWER HOSPITAL GRADE DUPLEX RECEPTACLES AT 2'-0" O.C.
4. RECEPTACLE MOUNTED IN CABINETRY. COORDINATE HEIGHTS AND EXACT LOCATION WITH EXISTING MILLWORK AND ARCHITECT PRIOR TO ROUGH-IN.
5. PLUGMOLD MOUNTED ON BACK OF CABINETRY. COORDINATE HEIGHTS AND EXACT LOCATION WITH EXISTING MILLWORK AND ARCHITECT PRIOR TO ROUGH-IN.
6. PLUGMOLD MOUNTED ON CABINETRY. COORDINATE HEIGHTS AND EXACT LOCATION WITH EXISTING MILLWORK AND ARCHITECT PRIOR TO ROUGH-IN.
7. SURFACE MOUNTED PLUGMOLD EQUAL TO WIREMOLD #AL-3300 MOUNTED AT 42" A.F.F. LOCATE 20A CRITICAL POWER HOSPITAL GRADE DUPLEX RECEPTACLES AT 1'-0" O.C.
8. PROVIDE 2#10 AND 1#10 GROUND IN 3/4" CONDUIT.
9. ENSURE THAT THESE CIRCUITS ORIGINATE FROM THE SAME POWER PHASE IN THE PANELBOARD.
10. INSTALL ANY EXISTING DEVICES REMOVED DURING DEMOLITION IN SAME LOCATION AFTER COLUMNS HAVE BEEN INSTALLED.
11. JUNCTION BOX LOCATED ABOVE ACCESSIBLE CEILING FOR 120V POWER CONNECTION TO COMBINATION FIRE/SMOKE DAMPERS, SMOKE DAMPERS, AND/OR MOTORIZED DAMPERS IN THIS AREA. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND QUANTITY OF DAMPERS. REFER TO TYPICAL SMOKE AND FIRE/SMOKE DAMPER DETAIL 03 ON SHEET E-7101. TIE INTO EXISTING DAMPER CIRCUIT CURRENTLY SERVING THIS AREA.
12. JUNCTION BOX LOCATED ABOVE ACCESSIBLE CEILING FOR 120V NORMAL POWER CONNECTION TO CAV BOXES IN THIS AREA. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND QUANTITY OF VAV BOXES. REFER TO TYPICAL VAV BOX DISCONNECT DETAIL 09 ON SHEET E-7101.

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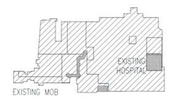
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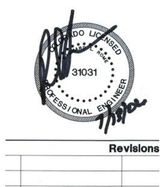
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KEY PLAN
FIRST FLOOR





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POWER PLAN
FIRST FLOOR

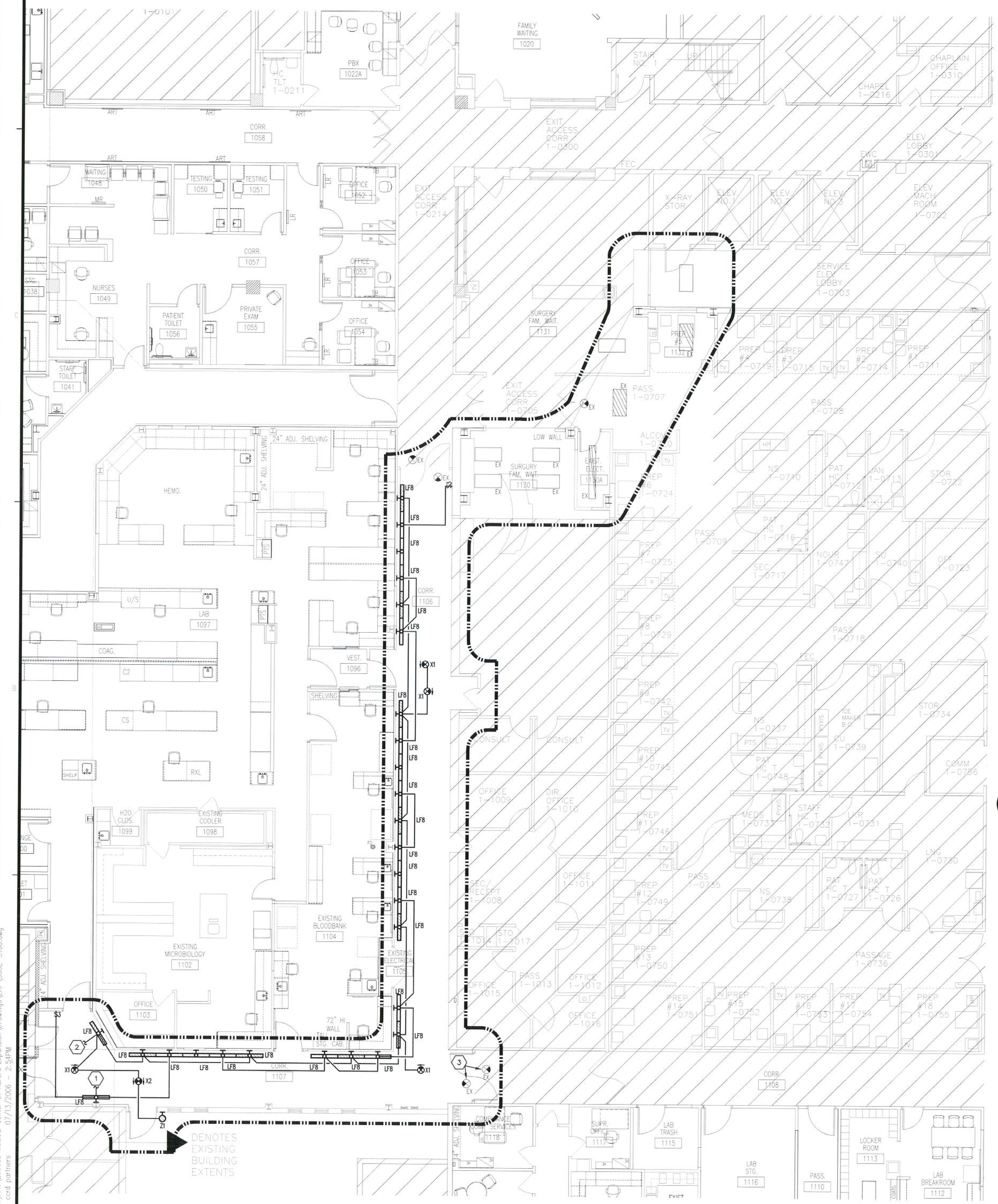
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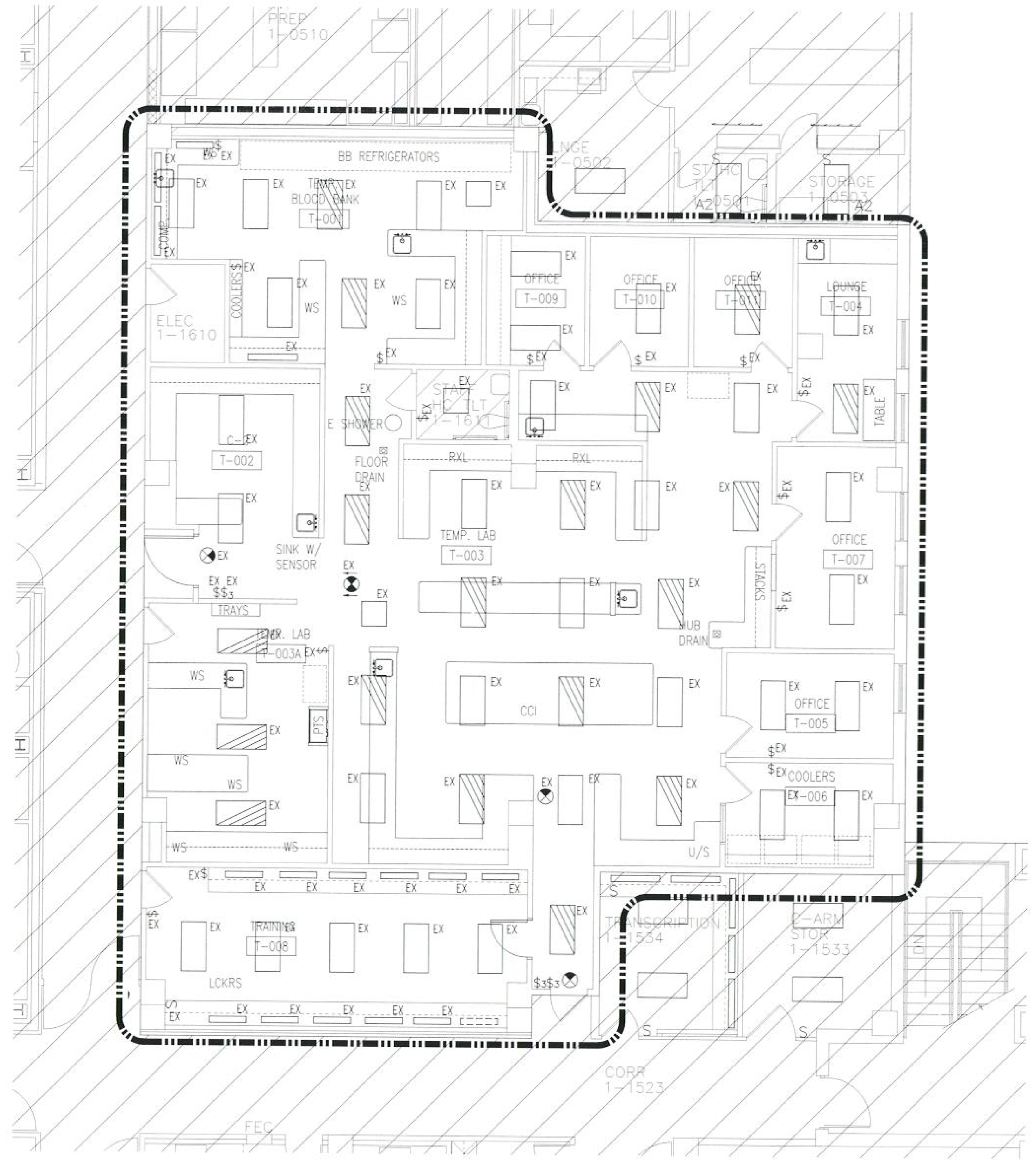
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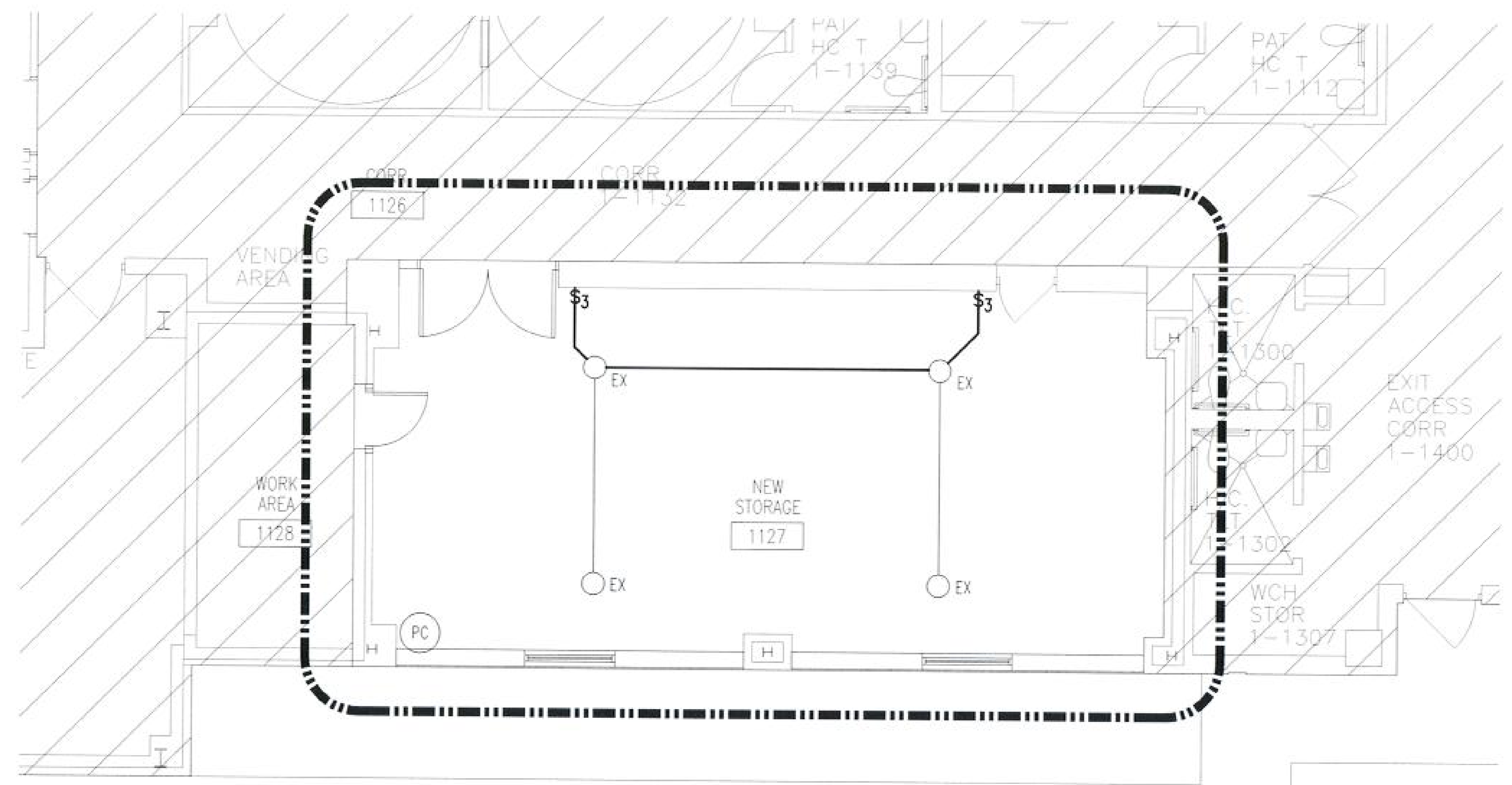


01 LIGHTING - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"



04 LIGHTING - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"



03 LIGHTING - FIRST FLOOR - BED STORAGE
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS FOR EXACT LOCATIONS OF ALL LIGHT FIXTURES, SWITCHES AND WIRING DEVICES.

B. DESIGNATION 'EX' REPRESENTS EXISTING DEVICE OR LIGHT FIXTURE TO REMAIN AS CIRCUITED AND SWITCHED UNLESS NOTED OTHERWISE. EXISTING LIGHT FIXTURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.

C. A DEVICE WITH AN 'RL' INDICATES EXISTING DEVICE TO BE RELOCATED AND RE-USED.

D. ALL NEW DEVICES AND CONDUIT IN TEMP LAB ARE TO BE SURFACE MOUNTED. PAINT CONDUIT AND BOXES TO MATCH SURROUNDINGS.

LEGEND NOTES

1. CONNECT TO EXISTING 277V NORMAL POWER CORRIDOR LIGHTING CIRCUIT AVAILABLE FROM DEMOLITION.
2. CONNECT TO EXISTING 277V LIFE SAFETY POWER CORRIDOR LIGHTING CIRCUIT AVAILABLE FROM DEMOLITION.
3. RELOCATE EXISTING EXIT SIGNS TO NEW DOOR LOCATION. EXTEND EXISTING CIRCUITING TO NEW LOCATION AS INDICATED

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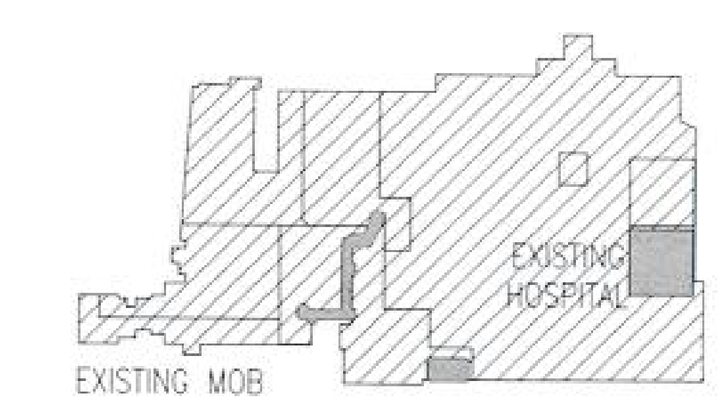
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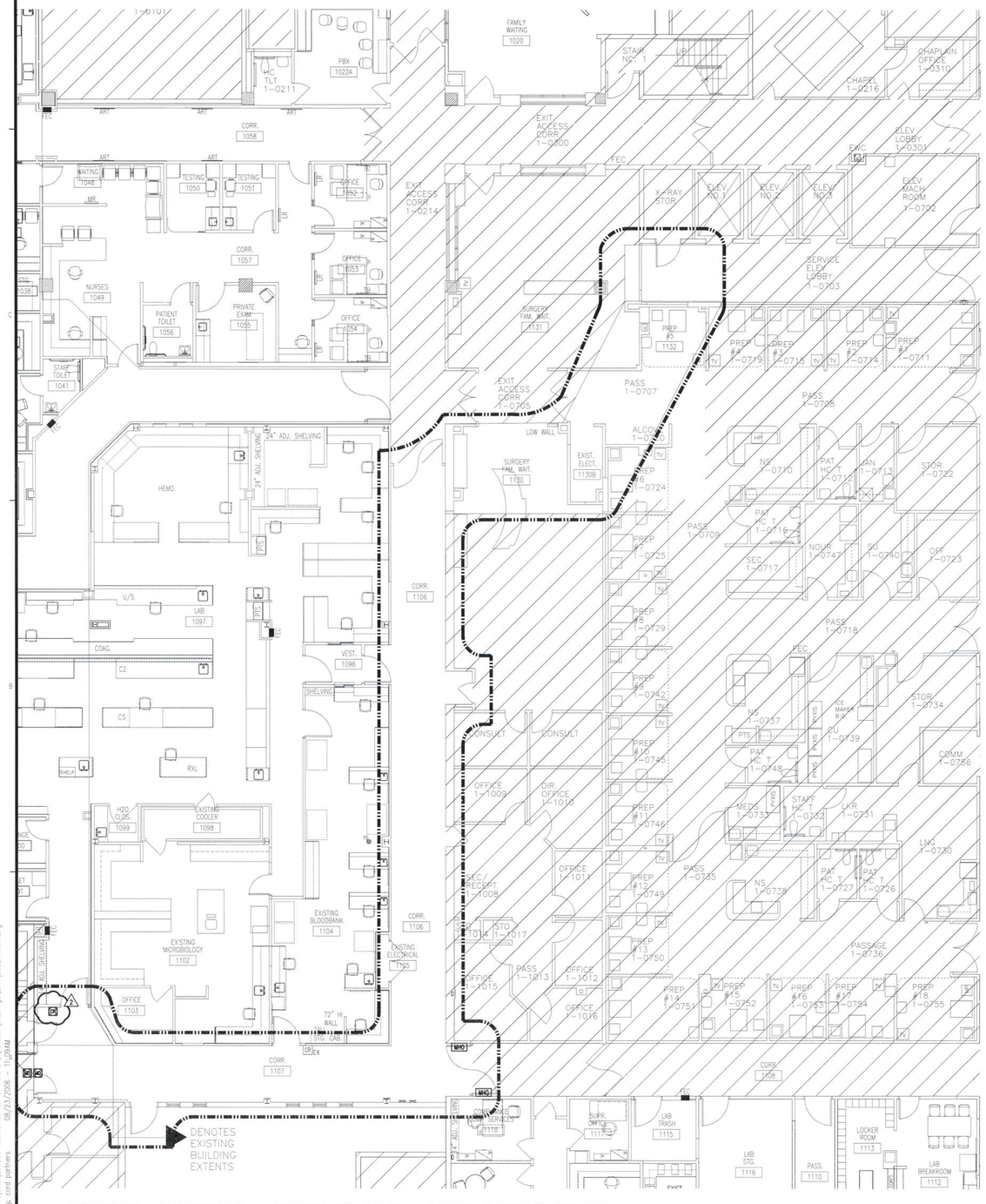
LIGHTING PLAN FIRST FLOOR

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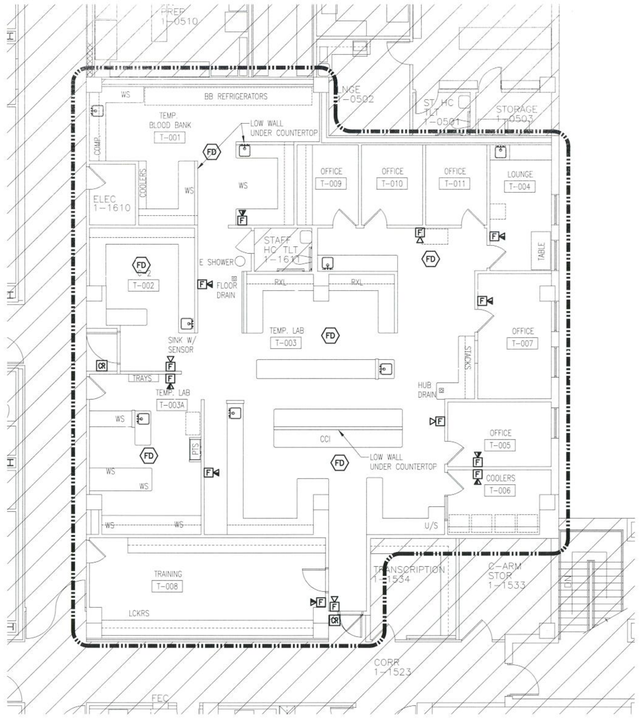
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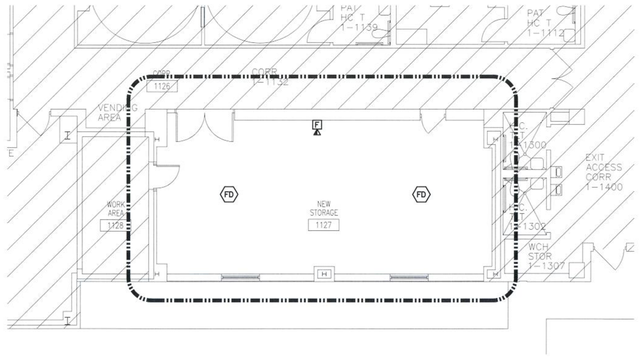
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01 SPECIAL SYSTEMS - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 SPECIAL SYSTEMS - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"



03 SPECIAL SYSTEMS - FIRST FLOOR - BED STORAGE
SCALE: 1/8" = 1'-0"

02 SPECIAL SYSTEMS - FIRST FLOOR - MICROBIOLOGY - PHASE 2.2
SCALE: 1/8" = 1'-0"

FIRE ALARM SYSTEM

THE FIRE ALARM INITIATING DEVICES, INDICATING DEVICES, CONTROL/ANNUNCIATOR PANELS, AND OTHER PERIPHERAL DEVICES SHOWN ON THESE DOCUMENTS DO NOT CONSTITUTE THE TOTAL QUANTITY AND/OR TYPE OF DEVICES REQUIRED FOR THE PROJECT. THE EQUIPMENT INDICATED ON THESE DRAWINGS IS SHOWN FOR THE PURPOSE OF COORDINATION ONLY. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, LAYOUT, AND INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS (INCLUDING THIRD PARTY LIFE SAFETY REPORTS), AND WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. THE SYSTEM DRAWINGS SHALL BE DESIGNED AND SEALED BY A NICET LEVEL III CERTIFIED DESIGNER. REFER TO THE PROJECT SPECIFICATIONS FOR SYSTEM PERFORMANCE REQUIREMENTS.

BUILDING CODE:	2003 IBC
FIRE CODE:	2003 IFC
BUILDING CONSTRUCTION TYPE:	I-B
OCCUPANCY:	HOSPITAL: I-2

GENERAL NOTES

A. PROVIDE DUCT MOUNTED SMOKE DETECTORS FOR CONTROL OF FIRE/SMOKE DAMPERS WHERE REQUIRED. COORDINATE EXACT LOCATIONS OF FIRE/SMOKE DAMPERS WITH MECHANICAL DRAWINGS. CONNECT FIRE/SMOKE DAMPER SMOKE DETECTORS TO FIRE ALARM SYSTEM. REFER TO 03/E-7101 FOR ADDITIONAL INFORMATION.

B. CONTRACTOR SHALL PROVIDE CONDUIT AND BOXES AS REQUIRED FOR SECURITY AND ELECTRONIC ACCESS CONTROLS. CONTRACTOR SHALL REFER TO ARCHITECTURAL DOOR SCHEDULE(S) FOR DOOR TYPES AND ARCHITECTURAL PLANS FOR DOOR TAGS. PROVIDE FIRE ALARM CONTACTS FOR ALL DOORS THAT REQUIRE ELECTRICAL LOCKS (STRIKE OR MAG-LOCKS). FIRE ALARM SHALL RELEASE ALL DOOR LOCKS IN THE EVENT OF A GENERAL (EVAC) ALARM CONDITION.

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Medical Center of Aurora
South Campus
Private Room Expansion
Aurora, Colorado

HCA
Project # 306660001

In association with:

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Martin Martin, Inc.
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Wheat Ridge, CO 80033
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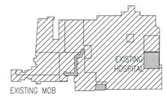
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MEP
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3625 N. HALL STREET
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DALLAS, TX-75219
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F: 214.521.1664

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Davis Partnership
2310 BLAKE STREET, SUITE 100
DENVER, CO 80205
T: 303.861.8555
F: 303.861.3027

JULY 13
EARLY RELEASE PKG. #2
ISSUED FOR PERMIT & CONSTRUCTION

KEY PLAN
FIRST FLOOR



COLORADO LICENSED
21031
PROFESSIONAL ENGINEER
07/21/06

Revisions

NO.	ISSUE	DATE
2	ADDENDUM #2	08/24/06

06-124732
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED/SEP 25 2006

Sheet Information

Date	07-13-2006
Job Number	142228.000
Drawn	TR
Checked	SG
Approved	SG

Title

SPECIAL SYSTEMS PLAN FIRST FLOOR

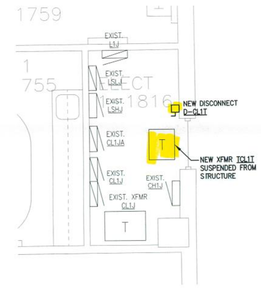
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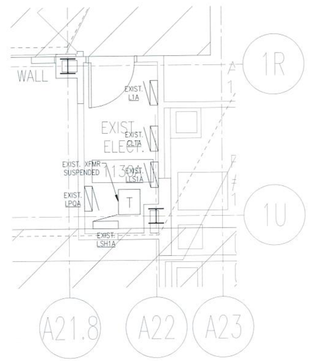
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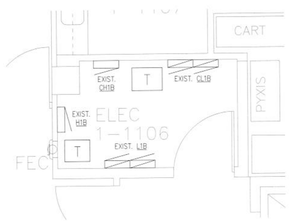
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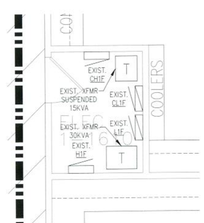
03 **FIRST FLOOR EXIST. ELECTRICAL RM 1816**
SCALE: 1/4" = 1'-0"



02 **FIRST FLOOR EXIST. ELECTRICAL RM 1130A**
SCALE: 1/4" = 1'-0"



04 **FIRST FLOOR EXIST. ELECTRICAL RM 1106**
SCALE: 1/4" = 1'-0"



01 **FIRST FLOOR EXIST. ELECTRICAL RM 1610**
SCALE: 1/4" = 1'-0"

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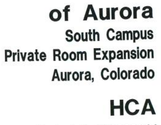
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JULY 13
EARLY RELEASE PKG. #2
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KEY PLAN
FIRST FLOOR





Revisions

06-124732

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

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Title

ENLARGED ELECTRICAL ROOMS

Sheet

E-5100

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Dan Sellers, Ford Farmer 07/13/2006 - 2:54PM

ONE-LINE DIAGRAM AND RISER SYMBOLS

XXX/X — CIRCUIT BREAKER	XXX/X, GF — CIRCUIT BREAKER WITH GROUND FAULT
X, S.O. — CIRCUIT BREAKER SPACE ONLY	XXX/X, S.T. — SHUNT TRIP CIRCUIT BREAKER
X, X — FUSE (DISCONNECT RATING / FUSE RATING)	PANEL NAME — PANELBOARD
NORMALLY OPEN CONTACT / NORMALLY CLOSED CONTACT	DISCONNECT
TRANSFORMER	K — ELECTRIC KIRK KEY INTERLOCK
GROUNDING ELECTRODE	CM — POWER CIRCUIT MONITOR
MOTOR	DPM — DIGITAL POWER METER
FUSE	XXX — FEEDER TAG. REFER TO FEEDER SCHEDULE FOR NUMBER AND SIZE OF CONDUCTORS AND CONDUIT.
AUTOMATIC TRANSFER SWITCH (ATS)	TVSS — POWER CONDITIONING TVSS DEVICE

MOTOR FEEDER SCHEDULE
480 VOLT 3 PHASE

MOTOR FEEDER TAG	HP	FLA	CB	FEEDER DESCRIPTION
5.M	5	7.6	15	3#12, 1#12 G, 3/4" C
7.5.M	7-1/2	11	20	3#12, 1#12 G, 3/4" C
10.M	10	14	25	3#12, 1#10 G, 3/4" C
15.M	15	21	40	3#10, 1#10 G, 3/4" C
20.M	20	27	50	3#8, 1#10 G, 3/4" C
25.M	25	34	60	3#6, 1#10 G, 3/4" C
30.M	30	40	70	3#6, 1#8 G, 3/4" C
40.M	40	52	100	3#4, 1#8 G, 1" C
50.M	50	65	125	3#3, 1#8 G, 1-1/4" C
60.M	60	77	150	3#1, 1#6 G, 1 1/4" C
75.M	75	96	175	3#1, 1#6 G, 1 1/4" C
100.M	100	124	225	3#2/0, 1#4 G, 2" C
125.M	125	156	300	3#3/0, 1#4 G, 2" C
150.M	150	180	350	3#4/0, 1 #3 G, 2" C
200.M	200	240	450	3#350KCM, 1#2 G, 2-1/2" C

TRANSFORMER SCHEDULE
GENERAL PURPOSE 480V-208Y/120V

KVA	PRIMARY OCPD	PRIMARY FEEDER DESCRIPTION	GROUNDING ELECTRODE	SECONDARY OCPD	SECONDARY FEEDER DESCRIPTION
6	15	3#12, 1#12 G, 3/4" C	1#8	20	3#12, 1#12 N, 1#12 G, 3/4" C
9	15	3#12, 1#12 G, 3/4" C	1#8	30	3#10, 1#10 N, 1#10 G, 3/4" C
15	30	3#10, 1#10 G, 3/4" C	1#8	60	3#4, 1#4 N, 1#10 G, 1-1/4" C
30	60	3#4, 1#10 G, 1" C	1#6	100	3#1, 1#1 N, 1#8 G, 1-1/2" C
45	90	3#2, 1#8 G, 1-1/4" C	1#6	150	3#1/0, 1#1/0 N, 1#6 G, 2" C
75	150	3#1/0, 1#6 G, 1-1/2" C	1#2	250	3#250KCM, 1#250KCM N, 1#4 G, 2-1/2" C
112.5	225	3#4/0, 1#4 G, 2" C	1#1/0	400	2 SETS EACH OF [3#3/0, 1#3/0 N, 1#3 G, 2" C]
150	300	3#350KCM, 1#4 G, 2-1/2" C	1#1/0	500	2 SETS EACH OF [3#250KCM, 1#250KCM N, 1#2 G, 2-1/2" C]
225	450	2 SETS EACH OF (3#4/0, 1#2 G, 2" C)	1#2/0	800	3 SETS EACH OF [3#300KCM, 1#300KCM N, 1#1/0 G, 3" C]

TRANSFORMER SCHEDULE
K-13 and K-4 RATED 480V-208Y/120V

KVA	PRIMARY OCPD	PRIMARY FEEDER DESCRIPTION	GROUNDING ELECTRODE	SECONDARY OCPD	SECONDARY FEEDER DESCRIPTION
6	15	3#12, 1#12 G, 3/4" C	1#8	20	3#12, 2#12 N, 1#12 G, 1#12 IG, 3/4" C
9	15	3#12, 1#12 G, 3/4" C	1#8	30	3#10, 2#10 N, 1#10 G, 1#10 IG, 3/4" C
15	30	3#10, 1#10 G, 3/4" C	1#8	60	3#4, 2#4 N, 1#10 G, 1#10 IG, 1-1/4" C
30	60	3#4, 1#10 G, 1" C	1#6	100	3#1, 2#1 N, 1#8 G, 1#8 IG, 2" C
45	90	3#2, 1#8 G, 1-1/4" C	1#6	150	3#1/0, 2#1/0 N, 1#6 G, 1#6 IG, 2" C
75	150	3#1/0, 1#6 G, 1-1/2" C	1#2	250	3#250KCM, 2#250KCM N, 1#4 G, 1#4 IG, 3" C
112.5	225	3#4/0, 1#4 G, 2" C	1#1/0	400	2 SETS EACH OF [3#3/0, 2#3/0 N, 1#3 G, 1#3 IG, 2-1/2" C]
150	300	3#350KCM, 1#4 G, 2-1/2" C	1#1/0	500	2 SETS EACH OF [3#250KCM, 2#250KCM N, 1#2 G, 1#2 IG, 3" C]
225	450	2 SETS EACH OF (3#4/0, 1#2 G, 2" C)	1#2/0	800	3 SETS EACH OF [3#300KCM, 2#300KCM N, 1#1/0 G, 1#1/0 IG, 3" C]

FEEDER SCHEDULE
600V MAX.

FEEDER TAG & AMPERE RATING	FEEDER DESCRIPTION
15.3, 20.3 15.4, 20.4 15.4I, 20.4I	3#12, 1#12 G, 3/4" C 3#12, 1#12 N, 1#12 G, 3/4" C 3#12, 1#12 N, 1#12 G, 1#12 IG, 3/4" C
25.3, 30.3 25.4, 30.4 25.4I, 30.4I	3#10, 1#10 G, 3/4" C 3#10, 1#10 N, 1#10 G, 3/4" C 3#10, 1#10 N, 1#10 G, 1#10 IG, 3/4" C
35.3, 40.3 35.4, 40.4 35.4I, 40.4I	3#8, 1#10 G, 3/4" C 3#8, 1#8 N, 1#10 G, 3/4" C 3#8, 1#8 N, 1#10 G, 1#10 IG, 1" C
45.3, 50.3 45.4, 50.4 45.4I, 50.4I	3#6, 1#10 G, 3/4" C 3#6, 1#6 N, 1#10 G, 1" C 3#6, 1#6 N, 1#10 G, 1#10 IG, 1" C
60.3 60.4 60.4I	3#4, 1#10 G, 1" C 3#4, 1#4 N, 1#10 G, 1 1/4" C 3#4, 1#4 N, 1#10 G, 1#10 IG, 1-1/4" C
70.3 70.4 70.4I	3#4, 1#8 G, 1" C 3#4, 1#4 N, 1#8 G, 1-1/4" C 3#4, 1#4 N, 1#8 G, 1#8 IG, 1-1/4" C
80.3 80.4 80.4I	3#3, 1#8 G, 1-1/4" C 3#3, 1#3 N, 1#8 G, 1-1/4" C 3#3, 1#3 N, 1#8 G, 1#8 IG, 1-1/4" C
90.3 90.4 90.4I	3#2, 1#8 G, 1-1/4" C 3#2, 1#2 N, 1#8 G, 1-1/4" C 3#2, 1#2 N, 1#8 G, 1#8 IG, 1-1/4" C
100.3 100.4 100.4I	3#1, 1#8 G, 1-1/4" C 3#1, 1#1 N, 1#8 G, 1-1/2" C 3#1, 1#1 N, 1#8 G, 1#8 IG, 1-1/2" C
110.3 110.4 110.4I	3#1, 1#6 G, 1-1/4" C 3#1, 1#1 N, 1#6 G, 1-1/2" C 3#1, 1#1 N, 1#6 G, 1#6 IG, 1-1/2" C
125.3, 150.3 125.4, 150.4 125.4I, 150.4I	3#1/0, 1#6 G, 1-1/2" C 3#1/0, 1#1/0 N, 1#6 G, 2" C 3#1/0, 1#1/0 N, 1#6 G, 1#6 IG, 2" C
175.3 175.4 175.4I	3#2/0, 1#6 G, 2" C 3#2/0, 1#2/0 N, 1#6 G, 2" C 3#2/0, 1#2/0 N, 1#6 G, 1#6 IG, 2" C
200.3 200.4 200.4I	3#3/0, 1#6 G, 2" C 3#3/0, 1#3/0 N, 1#6 G, 2" C 3#3/0, 1#3/0 N, 1#6 G, 1#6 IG, 2" C
225.3 225.4 225.4I	3#4/0, 1#4 G, 2" C 3#4/0, 1#4/0 N, 1#4 G, 2-1/2" C 3#4/0, 1#4/0 N, 1#4 G, 1#4 IG, 2-1/2" C
250.3 250.4 250.4I	3#250KCM, 1#4 G, 2-1/2" C 3#250KCM, 1-250KCM N, 1#4 G, 2-1/2" C 3#250KCM, 1-250KCM N, 1#4 G, 1#4 IG, 2-1/2" C
300.3 300.4 300.4I	3#350KCM, 1#4 G, 2-1/2" C 3#350KCM, 1-350KCM N, 1#4 G, 3" C 3#350KCM, 1-350KCM N, 1#4 G, 1#4 IG, 3" C
350.3 350.4 350.4I	3#500KCM, 1#3 G, 3" C 3#500KCM, 1-500KCM N, 1#3 G, 3-1/2" C 3#500KCM, 1-500KCM N, 1#3 G, 1#3 IG, 3-1/2" C
400.3 400.4 400.4I	2 SETS EACH OF [3#3/0, 1#3 G, 2" C] 2 SETS EACH OF [3#3/0, 1#3/0 N, 1#3 G, 2-1/2" C] 2 SETS EACH OF [3#3/0, 1#3/0 N, 1#3 G, 1#3 IG, 2-1/2" C]
450.3 450.4 450.4I	2 SETS EACH OF [3#4/0, 1#2 G, 2" C] 2 SETS EACH OF [3#4/0, 1#4/0 N, 1#2 G, 2-1/2" C] 2 SETS EACH OF [3#4/0, 1#4/0 N, 1#2 G, 1#2 IG, 2-1/2" C]
500.3 500.4 500.4I	2 SETS EACH OF [3#250KCM, 1#2 G, 2-1/2" C] 2 SETS EACH OF [3#250KCM, 1#250KCM N, 1#2 G, 2-1/2" C] 2 SETS EACH OF [3#250KCM, 1#250KCM N, 1#2 G, 1#2 IG, 2-1/2" C]
600.3 600.4 600.4I	2 SETS EACH OF [3#350KCM, 1#1 G, 2-1/2" C] 2 SETS EACH OF [3#350KCM, 1#350KCM N, 1#1 G, 2-1/2" C] 2 SETS EACH OF [3#350KCM, 1#350KCM N, 1#1 G, 1#1 IG, 3" C]
700.3 700.4 700.4I	2 SETS EACH OF [3#500KCM, 1#1/0 G, 3" C] 2 SETS EACH OF [3#500KCM, 1#500KCM N, 1#1/0 G, 3-1/2" C] 2 SETS EACH OF [3#500KCM, 1#500KCM N, 1#1/0 G, 1#1/0 IG, 3-1/2" C]
800.3 800.4 800.4I	3 SETS EACH OF [3#300KCM, 1#1/0 G, 3" C] 3 SETS EACH OF [3#300KCM, 1#300KCM N, 1#1/0 G, 3" C] 3 SETS EACH OF [3#300KCM, 1#300KCM N, 1#1/0 G, 1#1/0 IG, 3" C]
900.3 900.4 900.4I	3 SETS EACH OF [3#350KCM, 1#2/0 G, 3" C] 3 SETS EACH OF [3#350KCM, 1#350KCM N, 1#2/0 G, 3" C] 3 SETS EACH OF [3#350KCM, 1#350KCM N, 1#2/0 G, 1#2/0 IG, 3" C]
1000.3 1000.4 1000.4I	3 SETS EACH OF [3#400KCM, 1#2/0 G, 3" C] 3 SETS EACH OF [3#400KCM, 1#400KCM N, 1#2/0 G, 3" C] 3 SETS EACH OF [3#400KCM, 1#400KCM N, 1#2/0 G, 1#2/0 IG, 3" C]
1200.3 1200.4 1200.4I	4 SETS EACH OF [3#350KCM, 1#3/0 G, 3" C] 4 SETS EACH OF [3#350KCM, 1#350KCM N, 1#3/0 G, 3" C] 4 SETS EACH OF [3#350KCM, 1#350KCM N, 1#3/0 G, 1#3/0 IG, 3-1/2" C]
1400.3 1400.4 1400.4I	4 SETS EACH OF [3#500KCM, 1#4/0 G, 3" C] 4 SETS EACH OF [3#500KCM, 1#500KCM N, 1#4/0 G, 3-1/2" C] 4 SETS EACH OF [3#500KCM, 1#500KCM N, 1#4/0 G, 1#4/0 IG, 3-1/2" C]
1600.3 1600.4 1600.4I	5 SETS EACH OF [3#400KCM, 1#4/0 G, 3" C] 5 SETS EACH OF [3#400KCM, 1#400KCM N, 1#4/0 G, 3" C] 5 SETS EACH OF [3#400KCM, 1#400KCM N, 1#4/0 G, 1#4/0 IG, 3-1/2" C]
2000.3 2000.4 2000.4I	6 SETS EACH OF [3#400KCM, 1#250KCM G, 3" C] 6 SETS EACH OF [3#400KCM, 1#400KCM N, 1#250KCM G, 3" C] 6 SETS EACH OF [3#400KCM, 1#400KCM N, 1#250KCM G, 1#250KCM IG, 3-1/2" C]
2500.3 2500.4 2500.4I	7 SETS EACH OF [3#500KCM, 1#350KCM G, 3-1/2" C] 7 SETS EACH OF [3#500KCM, 1#500KCM N, 1#350KCM G, 3-1/2" C] 7 SETS EACH OF [3#500KCM, 1#500KCM N, 1#350KCM G, 1#350KCM IG, 4" C]
3000.3 3000.4 3000.4I	8 SETS EACH OF [3#500KCM, 1#400KCM G, 3" C] 8 SETS EACH OF [3#500KCM, 1#500KCM N, 1#400KCM G, 3-1/2" C] 8 SETS EACH OF [3#500KCM, 1#500KCM N, 1#400KCM G, 1#400KCM IG, 4" C]
4000.3 4000.4 4000.4I	11 SETS EACH OF [3#500KCM, 1#500KCM G, 3-1/2" C] 11 SETS EACH OF [3#500KCM, 1#500KCM N, 1#500KCM G, 3-1/2" C] 11 SETS EACH OF [3#500KCM, 1#500KCM N, 1#500KCM G, 1#500KCM IG, 4" C]

DEMAND FACTOR TABLE

LOAD TYPES	FACTORS										NEC REFERENCE
LIGHTS	1.00										210-19
RECEPTACLES	0-10kVA	>10kVA									220-13
	1.00	0.50									
MOTORS	MAX	ALL OTHERS									220-3 (3)
	1.25	1.00									
HOSPITAL	0-50kVA	>50kVA									220-11 & 220-13
	0.40	0.20									
DIAGNOSTIC	1 PIECE OF EQUIPMENT		OVER 1 PIECE OF EQUIPMENT								517-73
	1		1	2	3 or more						
	1.00		0.50	0.25	0.10						
ELEVATOR	1	2	3	4	5	6	7	8	9	10 or more	620-14
	1.00	0.95	0.9	0.85	0.82	0.79	0.77	0.75	0.73	0.72	
KITCHEN	1	2	3	4	5	6 or more					220-20
	1.00	1.00	0.90	0.80	0.70	0.65					
HEAT	1.00										
MISCELLANEOUS	1.00										
MISCELLANEOUS 2	1.00										

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Medical Center of Aurora

South Campus
Private Room Expansion
Aurora, Colorado

HCA

Project # 306660001

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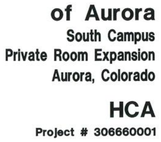
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KEY PLAN
FIRST FLOOR





Revisions

06-124732

CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 29 2006

NO.	ISSUE	DATE

Sheet Information

Date	07-13-2006
Job Number	142228.000
Drawn	SG
Checked	SG
Approved	SG

Title

ONE-LINE DIAGRAM SYMBOLS & SCHEDULES

Sheet

E-6000

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Dan Seeley, ccrd partners 07/13/2006 - 2:52PM

GENERAL NOTES:

A. FEEDER SIZES ARE DETERMINED BY THE FEEDER SCHEDULE ON SHEET E-6000 AND ARE DESIGNATED BY A RECTANGULAR TAG ([xxx]) ON EACH FEEDER UNLESS NOTED OTHERWISE.

LEGEND NOTES:

1. PROVIDE A NEW 480V, 60/3 CIRCUIT BREAKER IN AN EXISTING SPACE AS INDICATED.

EXISTING 2000KVA PAD MOUNTED TRANSFORMER BY UTILITY CO.

EXISTING PRIMARY FEED BY UTILITY CO.

69'

EXISTING MAIN SWITCHBOARD 'MSBA' 4000A, 480Y/277V, 3PH, 4W + G 100,000 A.I.C. (GE)

EXISTING MAIN SWITCHBOARD MSBA
A.I.C. RATING: 100,000A

EXISTING LOAD	1729 KVA	2080 A
NEW LOAD	75.3 KVA	90.6 A
TOTAL LOAD	1804 KVA	2170.6 A

4000/3 GF LSG

1 1600/3 LSG GF
2 1600/3 LSG GF
3 1600/3 LSG GF
4 2000/3 LSG GF
5 800/3 LSG GF
6 1200/3 LSG GF

90'

EXISTING NORMAL SWITCHBOARD 'MSB' 4000A MLO 480Y/277V, 3P, 4W+G, (GE AV LINE)

EXISTING NORMAL SWITCHBOARD MSB
A.I.C RATING: 42,000 A

EXISTING LOAD	681.7 KVA	820 A
NEW LOAD	64.4 KVA	77.5 A
TOTAL LOAD	746.1 KVA	897.5 A

1 200/3 SPARE
2 200/3 SPARE
14 100/3 SPARE
15 100/3 SPARE
16 100/3 SPARE
21 400/3 SPARE
22 400/3 SPARE
23 600/3 SPARE

13'

EXISTING PANEL H1F
A.I.C. RATING: 14,000A

EXISTING LOAD	14.8 KVA	17.8 A
NEW LOAD	41.3 KVA	49.6 A
TOTAL LOAD	56.1 KVA	67.4 A

EXIST. H1F

EXISTING T-L1F 30 KVA XFMR 480-208Y/120V

EXISTING PANEL L1F
A.I.C. RATING: 10,000A

EXISTING LOAD	16.9 KVA	47 A
NEW LOAD	4 KVA	11.1 A
TOTAL LOAD	20.9 KVA	58.1 A

EXIST. L1F

EXISTING DISTRIBUTION PANEL 'SSB' 2000A MLO, 480Y/277V, 3P, 4W+G, 50,000 (GE SPECTRA SERIES)

EXISTING DISTRIBUTION PANEL SSB
A.I.C. RATING: 50,000A

EXISTING LOAD	985 KVA	1185 A
NEW LOAD	10.9 KVA	13.1 A
TOTAL LOAD	995.9 KVA	1198.1 A

1 800/3
2 600/3
3 400/3
4 SPACE
5 250/3
6 225/3
7 SPACE
8 150/3
9 100/3 SPARE
10 SPACE

EXISTING DISTRIBUTION PANEL 'NPDP' 1200A MLO, 480Y/277V, 3P, 4W+G, 25,000 MIN A.I.C.

EXISTING DISTRIBUTION PANEL NPDP
A.I.C. RATING: 25,000A

EXISTING LOAD	299.3 KVA	360 A
NEW LOAD	23.1 KVA	27.8 A
TOTAL LOAD	322.4 KVA	387.8 A

1 600/3
2 400/3
3 200/3
4 150/3
5 SPACE

TO EQUIPMENT

8'

EXISTING PANEL H1B
A.I.C. RATING: 14,000A

EXISTING LOAD	112.2 KVA	135 A
NEW LOAD	10.9 KVA	13.1 A
TOTAL LOAD	123.1 KVA	148.1 A

EXIST. H1B

EXISTING T-L1B 45 KVA XFMR 480-208Y/120V

EXISTING PANEL L1B
A.I.C. RATING: 10,000A

EXISTING LOAD	33.1 KVA	92 A
NEW LOAD	10.9 KVA	30.3 A
TOTAL LOAD	44 KVA	122.3 A

EXIST. L1B

EXIST. L1A

EXISTING 1250KW/1600KVA, 480V, .8PF W/GROUND FAULT INDICATION EMERGENCY DIESEL ENGINE GENERATOR C (CUMMINS)

1200/3 800/3 GEN C

EXISTING 600KW/750KVA, 480V, .8PF, 902A W/GROUND FAULT INDICATION EMERGENCY DIESEL ENGINE GENERATOR A (CUMMINS)

1200/3 GEN A

EXISTING DISTRIBUTION PANEL 'DPGC' XXXXA MLO, 480Y/277V, 3P, 4W+G

1 1200/3 (K)
2 1200/3 (K)
3 1200/3 (K)

1200/3 (K)
1200/3 (K)
1 2

EXISTING DISTRIBUTION PANEL 'MTSA' 1200A MLO, 480Y/277V, 3P, 4W+G

EXISTING EMERGENCY DISTRIBUTION PANEL 'GPDPA' 1200A MLO, 480Y/277V, 3PH, 4W + G 42,000 MIN. A.I.C.

1 SPACE
2 600/3
3 225/3
4 225/3
5 SPACE

EXISTING EMERGENCY DISTRIBUTION PANEL GPDPA
A.I.C. RATING: 42,000 A

EXISTING LOAD	610.2 KVA	734 A
NEW LOAD	23.1 KVA	27.8 A
TOTAL LOAD	633.3 KVA	761.8 A

EXISTING DISTRIBUTION PANEL 'GPDP' 1200A MLO, 480Y/277V, 3P, 4W+G

1 600/3
2 400/3
3 200/3
4 SPACE

TO EQUIPMENT

EXISTING DISTRIBUTION PANEL GPDP
A.I.C. RATING: 22,000 A

EXISTING LOAD	320.9 KVA	386 A
NEW LOAD	23.1 KVA	27.8 A
TOTAL LOAD	344 KVA	413.8 A

EXISTING CRITICAL BRANCH OPEN TRANSITION 4-POLE 400A (CUMMINS) ATS-CRITICAL

9'

EXISTING DISTRIBUTION PANEL 'CBDP' 800A MLO, 480Y/277V, 3P, 4W+G, 18,000 A.I.C.

1 175/3
13 150/3
14 200/3

EXISTING DISTRIBUTION PANEL CBDP
A.I.C. RATING: 18,000A

EXISTING LOAD	200 KVA	240 A
NEW LOAD	23 KVA	27.7 A
TOTAL LOAD	223 KVA	267.7

EXISTING PANEL CH1J
A.I.C. RATING: 10,000A

EXISTING LOAD	78.1 KVA	94 A
NEW LOAD	23 KVA	27.7 A
TOTAL LOAD	101.1 KVA	121.7 A

283'

TCL1T 30 KVA XFMR 480-208Y/120V

8'

1

J D-TCL1T 100/100/3

108'

NEW CL1T

EXIST. CH1J

EXISTING T-CL1J 75 KVA XFMR 480-208/120V

EXIST. CL1J

EXIST. CL1JA

EXIST. CH1F

EXISTING T-CL1F 15 KVA XFMR 480-208/120V

EXIST. CL1F

LIFE SAFETY BRANCH OPEN TRANSITION 4-POLE 225A (CUMMINS) ATS-LIFE SAFETY

EXISTING DISTRIBUTION PANEL 'LSDP' 225A MLO, 480Y/277V, 3P, 4W+G, 14,000 A.I.C.

1/3/5 25/3
2 20/1
4 20/1
6 20/1
7 20/1
8 20/1
9 SPACE
10 20/3 SPARE (OFF)
11/13/15 XX/3
12 20/1
19/21/23 100/3
25/27/29 100/3
14-30 SPACE

EXISTING DISTRIBUTION PANEL LSDP
A.I.C. RATING: 14,000A

EXISTING LOAD	99.8 KVA	120 A
NEW LOAD	0.1 KVA	0.12 A
TOTAL LOAD	99.9 KVA	120.12 A

EXIST. LSHJ

EXISTING 15 KVA XFMR 480-208/120V

EXIST. LSJ

EXIST. LSHJG

EXIST. LSH1A

EXISTING 15 KVA XFMR 480-208/120V

EXIST. LSL1A

EXISTING PANEL LSH1A
AVAILABLE FAULT: 10,000 A

EXISTING LOAD	59 KVA	71 A
NEW LOAD	0.1 KVA	0.12 A
TOTAL LOAD	59.1 KVA	71.12 A

01 PARTIAL EXISTING & NEW POWER ONE-LINE DIAGRAM
NO SCALE

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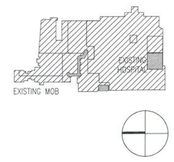
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JULY 13
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KEY PLAN
FIRST FLOOR



COLORADO LICENSED 31031 PROFESSIONAL ENGINEER
9/15/06

Revisions

NO.	ISSUE	DATE
1	ADDENDUM #3	09/15/06

06-124752
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

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Date	07-13-2006
Job Number	142228.000
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Checked	SG
Approved	SG

Title

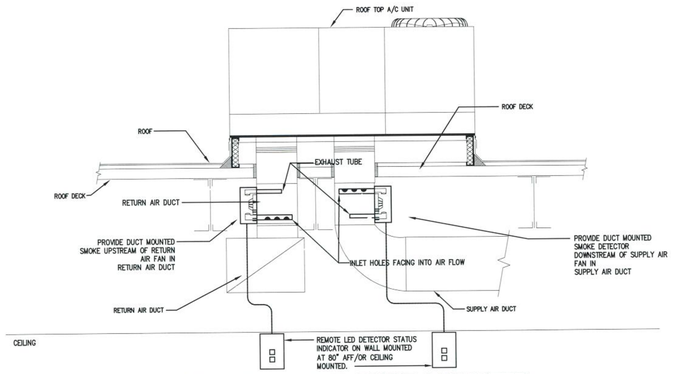
PARTIAL EXISTING & NEW POWER ONE-LINE DIAGRAM

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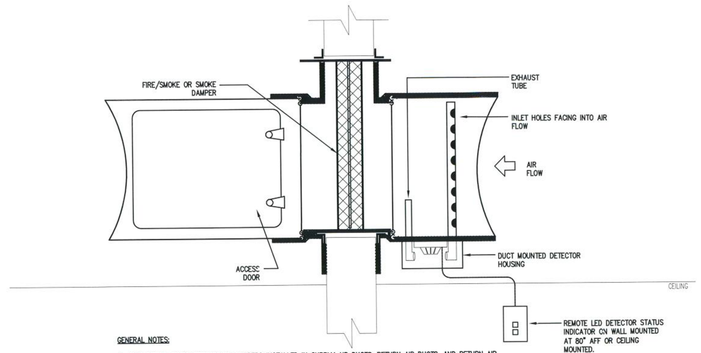
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ROOFTOP UNIT DUCT MOUNTED 01 SMOKE DETECTOR DETAIL
NO SCALE



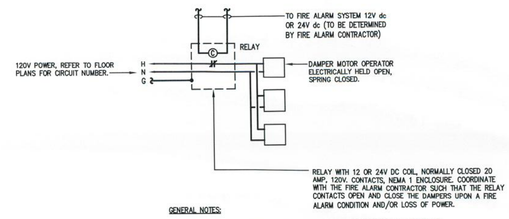
GENERAL NOTES:

A. THIS DETAIL SHALL PERTAIN TO DAMPERS INSTALLED IN SUPPLY AIR DUCTS, RETURN AIR DUCTS, AND RETURN AIR OPENINGS AS REQUIRED BY THE SPECIFICATIONS AND GOVERNING CODES.

B. PROVIDE SMOKE DETECTORS AT ALL FIRE/SMOKE AND SMOKE DAMPER LOCATIONS. COORDINATE EXACT LOCATION OF ALL FIRE/SMOKE AND SMOKE DAMPERS WITH DIVISION 15 FLOOR PLANS. AS REQUIRED BY LOCAL AUTHORITY HOUSING JURISDICTION.

C. INSTALL DUCT DETECTORS IN ACCORDANCE WITH DUCT MOUNTED SMOKE DETECTOR DETAIL.

02 FIRE DAMPER INSTALLATION DETAIL
NO SCALE



GENERAL NOTES:

A. REFER TO AND COORDINATED WITH DIVISION 23 FOR LOCATIONS OF ALL DAMPERS.

B. PROVIDE FIRE ALARM CONTROL RELAY MODULE AND CONTROL WIRING.

C. PROVIDE ALL 120V POWER WIRING FOR DAMPER.

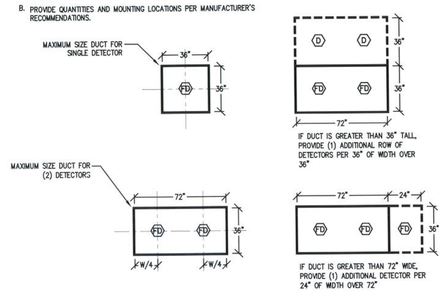
D. REFER TO DIVISION 23 FOR SMOKE CONTROL SEQUENCE OF OPERATION FOR NUMBER AND LOCATION OF SMOKE CONTROL ZONES. COORDINATE BETWEEN TRADES TO PROVIDE PROPER NUMBER OF FIRE ALARM RELAYS TO MEET REQUIREMENTS OF SEQUENCE OF OPERATION.

TYPICAL SMOKE DAMPER AND FIRE/ SMOKE DAMPER WIRING DETAIL 03
NO SCALE

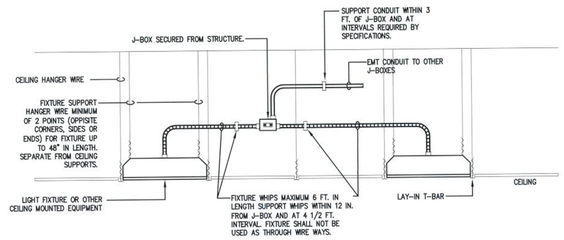
GENERAL NOTES:

A. INSTALLATION DETAILS BELOW SHALL PERTAIN TO SMOKE DETECTORS IN SUPPLY AIR DUCTS, RETURN AIR DUCTS, AND RETURN AIR OPENINGS AS REQUIRED BY THE SPECIFICATIONS AND GOVERNING CODES.

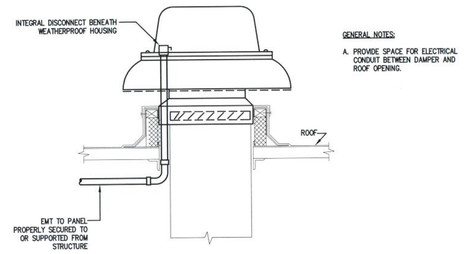
B. PROVIDE QUANTITIES AND MOUNTING LOCATIONS PER MANUFACTURER'S RECOMMENDATIONS.



04 DUCT MOUNTED SMOKE DETECTOR DETAILS
NO SCALE



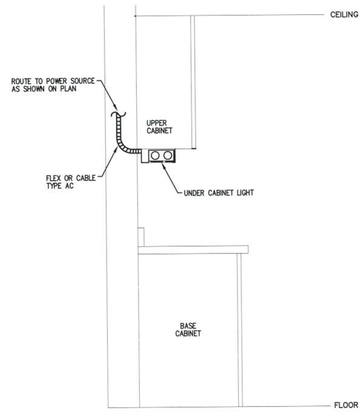
05 LAY-IN FIXTURE MOUNTING DETAIL
NO SCALE



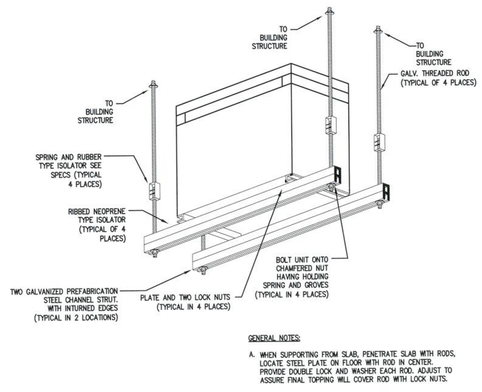
GENERAL NOTES:

A. PROVIDE SPACE FOR ELECTRICAL CONDUIT BETWEEN DAMPER AND ROOF OPENING.

ROOF MOUNTED EXHAUST 06 FAN CONNECTION DETAIL
NO SCALE



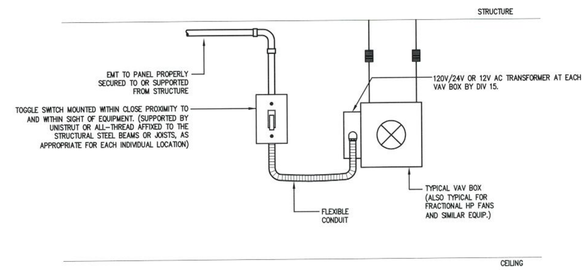
07 UNDER CABINET FIXTURE DETAIL
NO SCALE



GENERAL NOTES:

A. WHEN SUPPORTING FROM SLAB, PENETRATE SLAB WITH RODS, LOCATE STEEL PLATE ON FLOOR WITH ROD IN CENTER. PROVIDE DOUBLE LOCK AND WASHER EACH ROD. ADJUST TO ASSURE FINAL TOPPING WILL COVER ROD WITH LOCK NUTS.

CONCRETE STRUCTURE TRANSFORMER 08 OVERHEAD SUPPORT DETAIL
NO SCALE



09 TYPICAL CAV/VAV BOX
NO SCALE

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Revisions

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APPROVED AS NOTED
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Date	07-13-2006
Job Number	142228.000
Drawn	AL
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Approved	SG

Title

ELECTRICAL DETAILS

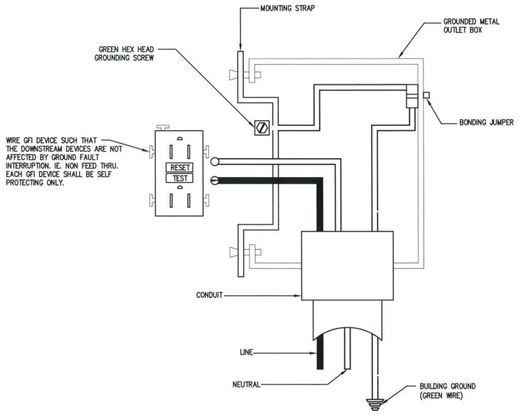
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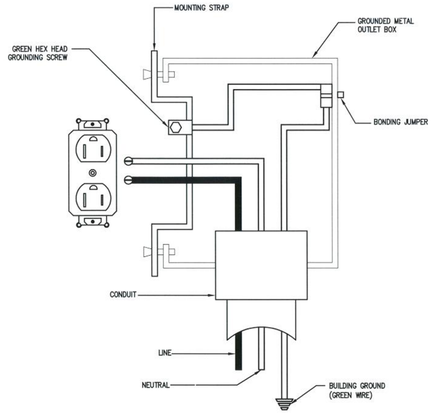
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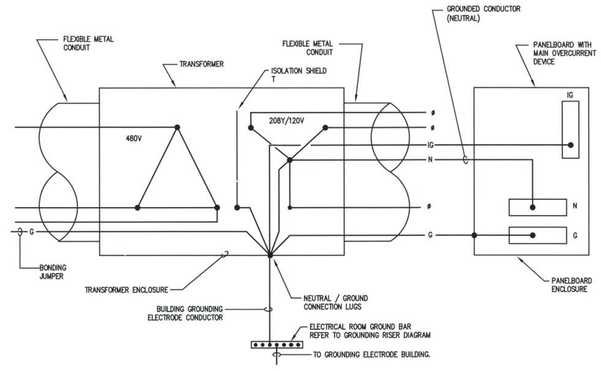
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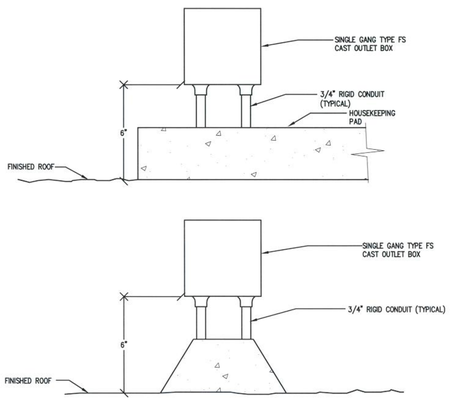
01 GFCI RECEPTACLE - WIRING DIAGRAM
NO SCALE



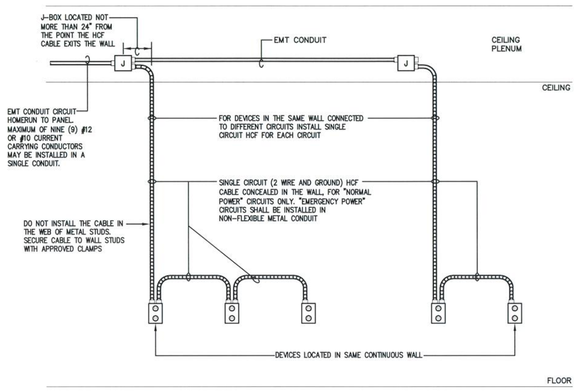
02 STANDARD RECEPTACLE GROUNDING DETAIL
NO SCALE



03 480 VOLT TO 208Y/120 VOLT ISOLATION TRANSFORMER GROUNDING DETAIL
NO SCALE

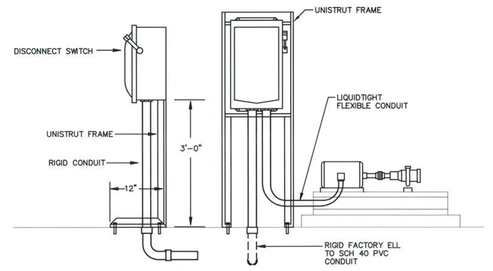


04 TYPICAL ROOF MOUNTED RECEPTACLE
NO SCALE



NOTES
1. NOT APPLICABLE FOR EMERGENCY POWER CIRCUITS
2. HFC CABLE MAY BE INSTALLED ONLY CONCEALED IN WALLS.

05 HEALTHCARE FACILITIES CABLE (HFC) INSTALLATION DETAIL
NO SCALE



06 MOTOR DISCNNECT DETAIL (WITH UNISTRUT FRAME)
NO SCALE

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ELECTRICAL DETAILS

Sheet

E-7102

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Dan Seeley, ccrd partners 07/13/2006 - 2:56PM

EXISTING PANEL: L1B

NORMAL

LOCATION: ELEC. 1106
MAIN BUS: 225A
MCB: 150A
VOLTAGE: 208/120
AIC: 10,000A

FED FROM: EXBP-H1B
WIRES: 4W + G
ENCLOSURE: NEMA 1
BUS TYPE: Copper
MOUNTING: Surface
PANEL LUGS: Main Circuit Breaker

NEUTRAL BUS: Yes
GROUND BUS: Yes
ISOLATED GROUND BUS: No
200% NEUTRAL: No
FEED THROUGH LUGS: Yes

CKT NO.	DESCRIPTION	TOTAL LOAD (VA)	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	PHASE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	TOTAL LOAD (VA)	DESCRIPTION	CKT NO
1	ADMISSION OUT PAT. LAB.	900	20	1	A	20	1	900	ADMISSION WAITING RM.	2
3	PRE-OP #4/5/6/ RECP.	540	20	1	B	20	1	720	ADMISSIONRECEPTION	4
5	PRE-OP #7/8/9/ RECP.	540	20	1	C	20	1	720	PRE-OP #1/2/3/ RECP.	6
7	RCPT'S RM'S. 1113-1116	1260	20	1	A	20	1	720	PRE-OP #10/11/ RECP.	8
9	RCPT'S RM'S. 1120-1121	1080	20	1	B	20	1	500	ENDO. PRE-OP SVCS. CENT.	10
11	ENDO. STAFF ING./SOIL UTIL.	900	20	1	C	20	1	900	RCPT'S. RM'S. 1124-1125	12
13	ENDO TREATMENT RM.	500	20	1	A	20	1	540	RCPT'S. RM'S. 1111---1113	14
15	TREATMENT RM. LTG./RECP.	500	20	1	B	20	1	500	CLN. UTIL. (ICE MACH.)/SOIL. UTIL	16
17	RCPT'S. RM. 1123	1260	20	1	C	20	1	500	ENDOSCOPIES	18
19	TREATMENT RM.	500	20	1	A	20	1	500	ENDOSCOPIES	20
21	HALL TIME CLOCK	200	20	1	B	20	1	500	ENDOSCOPIES	22
23	ADMISSION LTG.	600	20	1	C	20	1	900	ADMIT. OP LAB/FINAL	24
25	ADMISSION TRAINING OFF.	720	20	1	A	20	1	600	ADMIT. INS. OFF/INS LTG.	26
27	ADMISSION LOUNGE	900	20	1	B	20	1	720	ADMIT. OP RECEPTION	28
29	ADMISSION LOUNGE	900	20	1	C	20	1	1000	RCPT. MICRO. RM. 1112	30
31	RCPT. RM. 1112	600	20	1	A	20	1	1200	J-BOX DISHWASHER	32
33	ADMISSION OUT PATIENT LAB	1080	20	1	B	20	1	900	ADMISSION	34
35	ADMISSION OUT PATIENT LAB	1080	20	1	C	20	1	720	ADMISSIONS PRE-ADMIT OFF	36
37	FEED FOR L1A	2000	60	1	A	20	1	1300	ADM. OUT PAT. LAB RECP./LTG.	38
39	FEED FOR L1A	2000	–	1	B	20	1	1080	ADMISSION OUT PAT. LAB	40
41	FEED FOR L1A	2000	–	1	C	20	1	720	ADMISS. FINCI. SVCS. PAT. ACC.	42

NOTES:

EXISTING PANEL: L1B (SECTION 2)

NORMAL

LOCATION: ELEC. 1106
MAIN BUS: 225A
MCB: N/A
VOLTAGE: 208/120
AIC: 10,000A

WIRES: 4W + G
ENCLOSURE: NEMA 1
BUS TYPE: Copper
MOUNTING: Surface
PANEL LUGS: Main Lugs Only

NEUTRAL BUS: Yes
GROUND BUS: Yes
ISOLATED GROUND BUS: No
200% NEUTRAL: No
FEED THROUGH LUGS: No

CKT NO.	DESCRIPTION	TOTAL LOAD (VA)	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	PHASE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	TOTAL LOAD (VA)	DESCRIPTION	CKT NO
43	BED STORAGE	540	20	1	A	20	1	1200	RCPT. COFFEE RM. 1112	44
45	FCU-06-5	3312	40	2	B	20	1	200	AUTO DOOR SURGERY	46
47		3312			C	20	1	200	AUTO DOOR DIETARY	48
49	CU-06-5	1248	25	2	A	20	2	1664	220V HEATER BATH RM.	50
51		1248			B			1664		52
53	ROOF RECEPTS.	180	20	1	C	30	3	2640	3 PHASE DUCT HEATER	54
55	ENDOSCOPIES LAS.TREA RM.	3500	40	3	A			2640	–	56
57	ENDOSCOPIES LAS.TREA RM.	3500			B			2640	–	58
59	ENDOSCOPIES LAS.TREA RM.	3500			C	20	1	–		60
61		–	20	1	A	20	1	–		62
63		–	20	1	B	20	1	–		64
65		–	20	1	C	20	1	–		66
67		–	20	1	A	20	1	–		68
69		–	20	1	B	20	1	–		70
71		–	20	1	C	20	1	–		72
73		–	20	1	A	20	1	–		74
75		–	20	1	B	20	1	–		76
77		–	20	1	C	20	1	–		78
79		–	20	1	A	20	1	–		80
81		–	20	1	B	20	1	–		82
83		–	20	1	C	20	1	–		84

NOTES:

"L1B" LOAD SUMMARY

	LTS	RCPTS	MTRS	HSPTL	HEAT	MISC	TOTAL (KVA)	TOTAL (AMPS)
TOTAL CONNECTED LOAD	0.0	3.4	3.6	28.7	27.2	6.4	69.4	192.6
DEMAND FACTOR	SEE DEMAND FACTOR TABLE							
TOTAL DEMAND LOAD	0.0	3.0	4.5	11.6	27.0	6.0	52.1	144.6
CONTINUOUS (DESIGN) FACTOR	1.25	1.00	1.00	1.00	1.00	1.00		
TOTAL DESIGN LOAD	0.0	3.0	4.5	11.6	27.0	6.0	52.1	144.6

EXISTING PANEL: H1F

NORMAL

LOCATION: ELEC. 1610
MAIN BUS: 125A
MCB: 100A
VOLTAGE: 480/277
AIC: 14,000A

FED FROM: MSB
WIRES: 4W + G
ENCLOSURE: NEMA 1
BUS TYPE: Copper
MOUNTING: Surface
PANEL LUGS: Main Circuit Breaker

NEUTRAL BUS: Yes
GROUND BUS: Yes
ISOLATED GROUND BUS: No
200% NEUTRAL: No
FEED THROUGH LUGS: No

CKT NO.	DESCRIPTION	TOTAL LOAD (VA)	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	PHASE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	TOTAL LOAD (VA)	DESCRIPTION	CKT NO
1	PHARMACY LTG	500	20	1	A	20	1	500	PHARMACY LTG	2
3	PHARMACY LTG	500	20	1	B	20	1	500	WALL PACKS	4
5	HEAT TRACE	2125	20	1	C	15	3	2106	AIR COMPRESSOR	6
7	HEAT TRACE	2125	20	1	A			2106		8
9	HEAT TRACE	2190	20	1	B			2106		10
11	HEAT TRACE	2190	20	1	C	20	1	–	SPARE	12
13	HEAT TRACE	2500	20	1	A	20	1	–	SPACE	14
15	HEAT TRACE	2500	20	1	B	20	1	–	SPACE	16
17	SPACE	–	20	1	C	20	1	–	SPACE	18
19	SPACE	–	20	1	A	20	1	–	SPACE	20
21	SPACE	–	20	1	B	20	1	–	SPACE	22
23	SPACE	–	20	1	C	20	1	–	SPACE	24
25	AHU-06-L	5577	40	3	A		3	12300	PANEL "L1F"	26
27		5577			B			9780	VIA XFMR	28
29		5577			C			13716	"	30

NOTES:

"H1F" LOAD SUMMARY

	LTS	RCPTS	MTRS	HSPTL	HEAT	MISC	TOTAL (KVA)	TOTAL (AMPS)
TOTAL CONNECTED LOAD	0.0	0.0	23.3	37.5	13.6	0.0	74.5	89.6
DEMAND FACTOR	SEE DEMAND FACTOR TABLE							
TOTAL DEMAND LOAD	0.0	0.0	27.3	14.8	14.0	0.0	56.1	67.4
CONTINUOUS (DESIGN) FACTOR	1.25	1.00	1.00	1.00	1.00	1.00		
TOTAL DESIGN LOAD	0.0	0.0	27.3	14.8	14.0	0.0	56.1	67.4

EXISTING PANEL: CH1J

CRITICAL

LOCATION: ELEC RM 1-1816
MAIN BUS: 225A
MCB: N/A
VOLTAGE: 480/277
AIC: 10,000A

FED FROM: CBDP
WIRES: 4W + G
ENCLOSURE: NEMA 1
BUS TYPE: Copper
MOUNTING: Surface
PANEL LUGS: Main Lugs Only

NEUTRAL BUS: Yes
GROUND BUS: Yes
ISOLATED GROUND BUS: No
200% NEUTRAL: No
FEED THROUGH LUGS: No

CKT NO.	DESCRIPTION	TOTAL LOAD (VA)	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	PHASE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	TOTAL LOAD (VA)	DESCRIPTION	CKT NO
1	LIGHTS	–	20	1	A	20	1	–	LIGHTS	2
3	LIGHTS	–	20	1	B	20	1	–	LIGHTS	4
5	LIGHTS	–	20	1	C	20	1	–	LIGHTS	6
7	LIGHTS	–	20	1	A	20	1	–	LIGHTS	8
9	SPARE	–	20	1	B	20	1	–	SPARE	10
11	SPARE	–	20	1	C	20	1	–	SPARE	12
13	SPARE	–	20	1	A	20	1	–	SPARE	14
15	SPARE	–	20	1	B	20	1	–	SPARE	16
17	SPARE	–	20	1	C	20	1	–	SPARE	18
19	SPARE	–	20	1	A	20	1	–	SPARE	20
21	SPARE	–	20	3	B	20	1	–	SPARE	22
23	DECONTAM SUMP PUMP	–			C	20	1	–	SPARE	24
25		–			A	60	3	–	EXISTING PANEL "CH1F"	26
27		–	20	1	B			–		28
29	SPARE	–	20	1	C			–		30
31	SPARE	–	20	1	A	20	1	–	SPARE	32
33	SPARE	–	20	1	B	20	1	–	SPARE	34
35	SPARE	–	20	1	C	20	1	–	SPARE	36
37	PANEL "CL1T"	21538	60	3	A	125	1	–	EXISTING PANEL " CL1J"	38
39	VIA XFMR	23776			B			–		40
41	"	20082			C			–		42

NOTES:

"CH1J" LOAD SUMMARY

	LTS	RCPTS	MTRS	HSPTL	HEAT	MISC	TOTAL (KVA)	TOTAL (AMPS)
TOTAL CONNECTED LOAD	0.0	0.0	0.0	64.9	0.0	0.5	65.4	78.7
DEMAND FACTOR	SEE DEMAND FACTOR TABLE							
TOTAL DEMAND LOAD	0.0	0.0	0.0	23.0	0.0	0.0	23.0	27.7
CONTINUOUS (DESIGN) FACTOR	1.25	1.00	1.00	1.00	1.00	1.00		
TOTAL DESIGN LOAD	0.0	0.0	0.0	23.0	0.0	0.0	23.0	27.7

PANEL: CL1T

CRITICAL

LOCATION: TEMP LAB T-003
MAIN BUS: 100A
MCB: 100A
VOLTAGE: 208/120
AIC: 4,544A

FED FROM: CH1J
WIRES: 4W + G + IG
ENCLOSURE: NEMA 1
BUS TYPE: Copper
MOUNTING: Recessed
PANEL LUGS: Main Circuit Breaker

NEUTRAL BUS: Yes
GROUND BUS: Yes
ISOLATED GROUND BUS: Yes
200% NEUTRAL: No
FEED THROUGH LUGS: Yes

CKT NO.	DESCRIPTION	TOTAL LOAD (VA)	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	PHASE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	TOTAL LOAD (VA)	DESCRIPTION	CKT NO
1	DBL DOOR FRIG B1 RM T-001	1560	20	1	A	20	1	450	RMS #1 "C4" RM. T-003	2
3	DBL DOOR FRIG B2 RM T-001	1560	20	1	B	20	1	450	RMS #12"C5" RM. T-003	4
5	DBL DOOR FRIG B3 RM T-001	756	20	1	C	20	1	500	CS STRATUS "C7" RM. T-003	6
7	REAGENT FRIG B4 RM T-001	1440	20	1	A	20	1	500	CS STRATUS "C8" RM. T-003	8
9	FFP FRIG. B5 RM T-001	1920	20	1	B	20	1	1170	PLUG MOLD WORK STAT. T-002	10
11	PLT INCUBATOR."B6" RM T-001	1080	20	1	C	20	1	1080	PLUG MOLD WORK STAT. T-002	12
13	CENTRIFUGE. B7, B8	600	20	1	A	20	1	1080	PLUG MOLD WORK STAT. T-002	14
15	SMALL CENTRIFUGE B9, B10	600	20	1	B	20	1	1800	PLUG MOLD WORK STAT. T-002	16
17	GEL CARD B12, B13 RM. T-001	960	20	1	C	20	1	400	PRINTER "E11" RM. T-002	18
19	FFP THAWER "B14" RM. T-001	1200	20	1	A	20	1	540	DPNET, WILL"C11, C12" RM. T-003	20
21	PLUG MOLD WORK STAT. T-001	360	20	1	B	20	1	1476	WITROS 250 "C13" RM. T-003	22
23	PLUG MOLD WORK STAT. T-001	900	20	1	C	20	1	1440	REAGENT FRIDGE "C2" T-002	24
25	(3) PRINTERS B16 RM T-001	600	20	1	A	20	1	540	SEND OUT FRID. "D1" DIST. RM.	26
27	PLUG MOLD WORK STAT. T-001	1188	20	1	B	20	1	900	SPEC FRID/FREE."D2" DIST. RM.	28
29	PLUG MOLD WORK STAT. T-001	1080	20	1	C	20	1	600	FREEZER "D3" DIST. RM.	30
31	FAX B17 RM T-001	600	20	1	A	20	1	540	HEM REAGENT FRID."H2"	32
33	BAYER 855 E1 RM. T-002	600	20	1	B	20	1	1080	HEM SPEC. FRID./ FREE."H1"	34
35	FREZER "C1" RM.T-003	900	20	1	C	20	1	1380	CENTR. REFRGE. "D3"	36
37	RXL #1 "C3" RM. T-003	1900	20	1	A	20	1	1380	CENTR. REFRGE. "D4"	38
39	RXL #12"C5" RM. T-003	1900	20	1	B	20	1	200	PTS	40
41	SPARE	–	20	1	C	20	1	–	SPARE	42

NOTES:

"CL1T" LOAD SUMMARY

	LTS	RCPTS	MTRS	HSPTL	HEAT	MISC	TOTAL (KVA)	TOTAL (AMPS)
TOTAL CONNECTED LOAD	0.0	0.0	0.0	64.9	0.0	0.5	65.4	181.5
DEMAND FACTOR	SEE DEMAND FACTOR TABLE							
TOTAL DEMAND LOAD	0.0	0.0	0.0	23.0	0.0	0.0	23.0	63.8
CONTINUOUS (DESIGN) FACTOR	1.25	1.00	1.00	1.00	1.00	1.00		
TOTAL DESIGN LOAD	0.0	0.0	0.0	23.0	0.0	0.0	23.0	63.8

PANEL: CL1T (SECTION 2)

CRITICAL

LOCATION: TEMP LAB T-003
MAIN BUS: 100A
MCB: N/A
VOLTAGE: 208/120
AIC: 4,544A

WIRES: 4W + G + IG
ENCLOSURE: NEMA 1
BUS TYPE: Copper
MOUNTING: Recessed
PANEL LUGS: Main Lugs Only

NEUTRAL BUS: Yes
GROUND BUS: Yes
ISOLATED GROUND BUS: Yes
200% NEUTRAL: No
FEED THROUGH LUGS: No

CKT NO.	DESCRIPTION	TOTAL LOAD (VA)	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	PHASE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	TOTAL LOAD (VA)	DESCRIPTION	CKT NO
43	PLUG MOLD WORK STAT.	1080	20	1	A	20	1	1314	PLUG MOLD HEMATOLOGY	44
45	PLUG MOLD WORK STAT.	1368	20	1	B	20	1	1314	PLUG MOLD HEMATOLOGY	46
47	PLUG MOLD WORK STAT.	1368	20	1	C	20	1	1314	PLUG MOLD HEMATOLOGY	48
49	COPIER	500	20	1	A	20	1	1314	PLUG MOLD HEMATOLOGY	50
51	PLUGMOLD T-002	900	20	1	B	20	1	540	OFFICES T-010, T-011	52
53	LH H3 HEMATOLOGY RM.	1356	20	1	C	20	1	540	OFFICE T-007	54
55	WORKSTATIONS	720	20	1	A	20	1	720	BLOOD BANK WRST.	56
57	PLUG MOLD WORK STAT.	990	20	1	B	20	1	500	BLOOD BANK COOLERS	58
59	PLUG MOLD WORK STAT.	1998	20	1	C	20	1	360	PLUGMOLD STACKS	60
61	BCS "CC1" COAGULATION	1200	20	1	A	20	1	1260	PLUGMOLD T-003	62
63	BCS "E13" COAGULATION	1200	20	1	B	20	1	1260	PLUGMOLD T-003	64
65	PLUGMOLD WORKSTATION	1350	20	1	C	20	1	720	WORKSTATIONS	66
67	REFRIG. T-004	500	20	1	A	20	1	–	SPARE	68
69	HEAT CABLE	500	20	1	C	20	1	–	SPARE	70
71	SPARE	–	20	1	C	20	1	–	SPARE	72
73	SPARE	–	20	1	A	20	1	–	SPARE	74
75	SPARE	–	20	1	B	20	1	–	SPARE	76
77	SPARE	–	20	1	C	20	1	–	SPARE	78
79	SPARE	–	20	1	A	20	1	–	SPARE	80
81	SPARE	–	20	1	B	20	1	–	SPARE	82
83	SPARE	–	20	1	C	20	1	–	SPARE	84

NOTES:

"CL1T" LOAD SUMMARY

	LTS	RCPTS	MTRS	HSPTL	HEAT	MISC	TOTAL (KVA)	TOTAL (AMPS)
TOTAL CONNECTED LOAD	0.0	0.0	0.0	64.9	0.0	0.5	65.4	181.5
DEMAND FACTOR	SEE DEMAND FACTOR TABLE							
TOTAL DEMAND LOAD	0.0	0.0	0.0	23.0	0.0	0.0	23.0	63.8
CONTINUOUS (DESIGN) FACTOR	1.25	1.00	1.00	1.00	1.00	1.00		
TOTAL DESIGN LOAD	0.0	0.0	0.0	23.0	0.0	0.0	23.0	63.8

EXISTING PANEL: L1F

NORMAL

LOCATION: ELEC. 1610
MAIN BUS: 100A
MCB: 100A
VOLTAGE: 208/120
AIC: To Be Selected

FED FROM: H1F
WIRES: 4W + G
ENCLOSURE: NEMA 1
BUS TYPE: Copper
MOUNTING: Surface
PANEL LUGS: Main Circuit Breaker

NEUTRAL BUS: Yes
GROUND BUS: Yes
ISOLATED GROUND BUS: No
200% NEUTRAL: No
FEED THROUGH LUGS: No

CKT NO.	DESCRIPTION	TOTAL LOAD (VA)	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	PHASE	CIRCUIT BREAKER AMPS	CIRCUIT BREAKER POLES	TOTAL LOAD (VA)	DESCRIPTION	CKT NO
1	RECEPTACLE RM 1-0507	900	20	1	A	20	1	1080	RECEPTACLE RM 0506, 0508	2
3	RECEPTACLE RM 0506, 0505	1080	20	1	B	20	1	1080	RECEPTACLE RM 0509	4
5	RECEPTACLE RM 0509	360	20	1	C	20	1	1080	RECEPTACLE RM 0509	6
7	RECEPTACLE RM 0502, 01, 03	900	20	1	A	20	1	900	RECEPTACLE RM 1605, 1620	8
9	CELL WAS B11 RM T-001	360	20	1	B	20	1	720	CS STRATUS C10 T-003	10
11	FFP THAW B15 RM. T-001	1200	20	1	C	20	1	1380	REFRIG. CENT. D5 T-003A	12
13	BAYER E2, NAMJ E3 T-002	1140	20	1	A	20	1	1080	RECEPTACLE RM 0510	14
15	RECEPTACLE RM 0510	720	20	1	B	20	1	1080	RECEPTACLE RM 0509	16
17	RECEPT. RM 1-1621, 11, 09	900	20	1	C	20	1	1440	STACKS H4 HEMATOLOGY	18
19	RECEPT RM 1602, 1603	1260	20	1	A	15	1	300	GEF-06-L	20
21	CAV BOXES	500	20	1	B	20	1	900	RECEPTACLE RM 1618	22
23	CENT E4, CENT E5 T-002	420	20	1	C	20	1	900	RECEPTACLE RM 1618	24
25	TDX E6, OSM E7, AIR E8 T-002	960	20	1	A	20	1	900	RECEPTACLE RM 1607, 1608	26
27	RECEPTACLE RM 1534	360	20	1	B	20	1	360	ROOF RECEPTACLES	28
29	RECEPTACLE RM 1601	1080	20	1	C	20	1	1440	RECEPTACLE RM 0509	30
31	U.C. LTS RM 1601, RCPT 1533	1080	20	1	A	20	1	1080	RECEPTACLE RM 1601	32
33	RECEPT. CORR. 1600	540	20	1	B	20	1	360	RECEPTACLE RM 0509	34
35	RECEPTACLE RM 0503, 02	900	20	1	C	20	1	1176	EF #7-2	36
37	RECEPTACLE RM 0509	360	20	1	A	20	1	360	RECEPTACLE 1-0509	38
39	CS STRATUS C9 T-003	720	20	1	B	20	1	1000	COPIER RM 1612	40
41	RECEPTACLE RM 1621, 20, 18	720	20	1	C	20	1	720	HEALTH MANAGE. BREAKRM.	42

NOTES:

"L1F" LOAD SUMMARY

	LTS	RCPTS	MTRS	HSPTL	MISC	TOTAL (KVA)	TOTAL (AMPS)
TOTAL CONNECTED LOAD	0.0	0.0	0.3	35.5	0.0	35.8	99.4
DEMAND FACTOR	SEE DEMAND FACTOR TABLE						
TOTAL DEMAND LOAD	0.0	0.0	0.0	14.0	0.0	14.0	38.9
CONTINUOUS (DESIGN) FACTOR	1.25	1.00	1.00	1.00	1.00		
TOTAL DESIGN LOAD	0.0	0.0	0.0	14.0	0.0	14.0	38.9

LUMINAIRE SCHEDULE-ERP

TYPE	DESCRIPTION
X1	DESCRIPTION: LED EXIT LIGHT, SINGLE FACE, HIGH IMPACT, DIE-CAST ALUMINUM HOUSING, WHITE HOUSING AND FACEPLATE, STENCIL STYLE WITH RED LETTERS, UNIVERSAL CHEVRON ARROWS, UNIVERSAL BACK / CEILING / END MOUNTING, LOW ENERGY CONSUMPTION. LAMP(S): LED – INCLUDED BALLAST(S): VOLTAGE: 120/277V MULTI-TAP BALLAST INSTALLATION: CEILING MOUNTED MANF. PRESCOLITE #DMX1RAW SURELITES #CX61RW CONCEALITE #CCSWHWC OR CCSWRW
X2	DESCRIPTION: LED EXIT LIGHT, DOUBLE FACE, HIGH IMPACT, DIE-CAST ALUMINUM HOUSING, WHITE HOUSING AND FACEPLATE, STENCIL STYLE WITH RED LETTERS, UNIVERSAL CHEVRON ARROWS, UNIVERSAL BACK / CEILING / END MOUNTING, LOW ENERGY CONSUMPTION. LAMP(S): LED – INCLUDED BALLAST(S): VOLTAGE: 120/277V MULTI-TAP BALLAST INSTALLATION: CEILING MOUNTED MANF. PRESCOLITE #DMX2RAW SURELITES #CX62RW CONCEALITE #CCDWHWC
Z1	DESCRIPTION: COMPACT FLUORESCENT EXTERIOR WALL MOUNTED FIXTURE, DIE-CAST ALUMINUM HOUSING, DARK BRONZE FINISH, CORROSION RESISTANT, CLEAR TEMPERED GLASS LENS, FULLY GASKETED, HIGH IMPACT AND VANDAL RESISTANT, PAINTED AFTER FABRICATION, UL LISTED FOR WET LOCATIONS. LAMP(S): 2 – DTR13W/GX24Q/841 BALLAST(S): PROGRAM START ELECTRONIC BALLAST, < 10% THD VOLTAGE: 277V INSTALLATION: WALL MOUNTED AT 9'-0" A.F.G. U.N.O. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS MANF. KIM LIGHTING #SWI-13PL277-OB-P

ARCHITECTURALLY SELECTED LUMINAIRE SCHEDULE

TYPE	DESCRIPTION
LF8	DESCRIPTION: WALL MOUNTED DIRECT/INDIRECT ASYMMETRIC FLUORESCENT WITH RADIAL PERFORATED PANEL. ONE PIECE 20GA. STEEL HOUSING WITH DIE-CAST END CAPS. MOUNT FIXTURE ON THE WALL END TO END CONTINUOUSLY. LAMP(S): 1 – F032/841/ECO BALLAST(S): PROGRAM START ELECTRONIC BALLAST, <10% THD VOLTAGE: 277V INSTALLATION: WALL MOUNTED AT 7'-0" MANF. FOCAL POINT #FV2W-PS-11B-1C-277-S-WM-WH-XX

	L1B SEC 1	CL1T SEC 1
	L1B SEC 2	CL1T SEC 2
	H1F	L1F
	CH1J	

3

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Medical Center of Aurora

South Campus
Private Room Expansion
Aurora, Colorado

HCA

Project # 306660001

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Davis Partnership
2310 BLAKE STREET, SUITE 100
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KEY PLAN
FIRST FLOOR



COLORADO LICENSED
31031
PROFESSIONAL ENGINEER
9/15/06

Revisions

NO.	ISSUE	DATE
1	ADDENDUM #1	08/08/06
2	ADDENDUM #2	08/24/06
3	ADDENDUM #3	09/15/06

06-124732
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

Sheet Information

Date	07-13-2006
Job Number	142228.000
Drawn	TR
Checked	SG
Approved	SG

Title

ELECTRICAL SCHEDULES

Sheet

E-8100

Issued for Construction

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P:\2005 Projects\205555 Medical Center of Aurora Expansion\Drawings\ERP\555E-8100.dwg
Dan Sellers, Revit platform 09/13/2006 - 12:24AM

NURSE CALL RESPONDER IV SYMBOL LIST

Symbol	Manuf. Part #	Description	Backbox	Box Mounting Height	Cable Type
NCT	RAULAND NC2828	NURSE CALL TERMINAL WITH GROUP CONTROL MODULE & POWER SUPPLIES	NC2828	54" A.F.F.	
NM_T	RAULAND NTCSM	TOUCH SCREEN NURSE'S MASTER CONTROL	4 x 4 Sq. 2-1/8" deep 1 GANG RING	OUTLET	
NM_L	RAULAND NCLCD	LCD NURSE'S MASTER CONTROL	4 x 4 Sq. 2-1/8" deep 1 GANG RING	DESK	
NM_{LW}	RAULAND NCLCD	LCD WALL MOUNT NURSE'S MASTER CONTROL	4 x 4 Sq. 2-1/8" deep 1 GANG RING	DESK	
NM_R	RAULAND NCRECP	CONSOLE RECEPTACLE NURSE'S MASTER CONTROL	4 x 4 Sq. 2-1/8" deep 1 GANG RING	DESK	
S	RAULAND NCSTAFF	STAFF STATION	3 GANG 2-1/8"deep W/ 3 GANG RING	44" A.F.F.	
D	RAULAND NCDUTY	DUTY STATION	3 GANG 2-1/8"deep W/ 3 GANG RING	44" A.F.F.	
SP	RAULAND NCBSS1	SINGLE PATIENT STATION	3 GANG 2-1/8"deep W/ 3 GANG RING	44" A.F.F.	
DP	RAULAND NCBSD2	DUAL PATIENT STATION	3 GANG 2-1/8"deep W/ 3 GANG RING	44" A.F.F.	
RM	RAULAND NCBED	HILL ROM INTERFACE KIT	4 x 4 Sq. 2-1/8" deep 1 GANG RING	18" A.F.F.	
RM_S	RAULAND NCBED	HILL ROM INTERFACE KIT with Low voltage Light Control	4 x 4 Sq. 2-1/8" deep 1 GANG RING	18" A.F.F.	
FAM	RAULAND NCFAM	FIRE / AUX MODULE	4 11/16 sq. 2-1/8" deep	ABOVE CEILING IN CORRIDOR	
IA	RAULAND NCPB1	INFANT ASSIST STATION	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
EP	RAULAND NCPCSI	TOILET & SHOWER EMERGENCY STATION	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
CB	RAULAND NCNSCB	CODE BLUE STATION	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
CP	RAULAND NCSPB1	CODE PINK STATION	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
E	RAULAND NCSPB1	PUSH BUTTON EMERGENCY STATION	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
ZB	RAULAND NCDPB2	DUAL PUSH BUTTON STATION STAFF ASSIST / CODE	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
EB	RAULAND NCDPB2	DUAL PUSH BUTTON STATION SECURITY / PBX/ER	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
QJ	RAULAND NC4JACK	QUAD JACK	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
DJ	RAULAND NC2JACK	DUAL INPUT JACK	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
SRS	RAULAND NCSRS3	STAFF REGISTER STATION	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
D_E	RAULAND NCLED6	CORRIDOR DOME	4 11/16 sq. 2-1/8" deep 1 GANG RING	4" ABOVE DOOR	
D_2	RAULAND NCLED2	CORRIDOR DOME	4 11/16 sq. 2-1/8" deep 1 GANG RING	4" ABOVE DOOR	
Z	RAULAND NCLED6	ZONE LIGHT	4 11/16 sq. 2-1/8" deep 1 GANG RING	CEILING	
MS	RAULAND NCUS1	NON-AUDIO UNIVERSAL INTERFACE MODULE	4 11/16 sq. 2-1/8" deep 1 GANG RING	ABOVE CEILING	
S1	RAULAND NCJSOLO	SOLO DROP MODULE	4 11/16 sq. 2-1/8" deep 1 GANG RING	ABOVE CEILING	
S2	RAULANDNCBSPLIT2	CONTROL STATION SPLITTER	4 11/16 sq. 2-1/8" deep 1 GANG RING	ABOVE CEILING	
TS	RAULANDNCTSPLIT3	CONTROL/SUB STATION SPLITTER	1 GANG RING	ABOVE CEILING	
C2	RAULAND NCCOMT2	POWERED CONTROL STATION SPLITTER	1 GANG RING	ABOVE CEILING	
S4	RAULANDNCSSPLIT4	SUB-STATION SPLITTER	4 11/16 sq. 2-1/8" deep	ABOVE CEILING IN CORRIDOR	
JD	RAULAND NCJDROP	J-BUS INTERFACE	4 x 4 Sq. 2-1/8" deep 1 GANG RING	ABOVE CEILING IN CORRIDOR	
U	RAULAND NCUINT	UNIVERSAL INTERFACE MODULE	3 GANG 2-1/8"deep W/ 3 GANG RING	ABOVE CEILING IN CORRIDOR	
CC	RAULAND CC200	CALL CORD with 1/4" jack			
CD	RAULAND CCDIN	CALL CORD with DIN Connector			
ES_D	RAULAND ES3222	DIN ENT. SPKR.-TV, LIGHT1, & LIGHT2			
ES_1	RAULAND ES3222	DIN ENT. SPKR.-TV, LIGHT1, & LIGHT2			
ES_2	RAULAND ES3222	DIN ENT. SPKR.-TV, LIGHT1, & LIGHT2			
V	RAULAND ACC1300	VOLUME CONTROL	4 x 4 Sq. 2-1/8" deep 1 GANG RING	44" A.F.F.	
S	RAULAND ACC1400	CEILING SPEAKER	ACC1101	CEILING	2 CONDUCTOR, 18 GAUGE, UNSHIELDED (WEST PENN PART #224).
S		INTERCOM SPEAKER		CEILING	2 CONDUCTOR, 18 GAUGE, UNSHIELDED (WEST PENN PART #224).
S_E		8" SPEAKER HIGH FIDELITY (O.R. ROOMS)		CEILING	2 CONDUCTOR, 18 GAUGE, UNSHIELDED (WEST PENN PART #224). 2△
MPR		MUSIC/PAGING RACK			
AMP		P.A. AMPLIFIER			
IAMP		INTERCOM AMPLIFIER			
M_C		INTERCOM MICROPHONE	4 11/16 sq. 2-1/8" deep 1 GANG RING	CEILING	
M_W		INTERCOM MICROPHONE	4 x 4 Sq. 2-1/8" deep 1 GANG RING	BELOW DESK	
SSA		AM/FM RECEIVER & CD CHANGER			
T		TRACER SENSOR		CEILING	

Nurse Call Notes:
1) Provide ResponderNET w/HL7 integration.
2) Provide wireless integration modules

COMMUNICATIONS GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS PROPOSAL AND BECOME FAMILIAR WITH THE CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED, AND CORRELATE HIS SITE OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. INCONSISTENCIES DISCOVERED SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER AT ONCE, BEFORE SUBMITTAL OF BID PROPOSAL.
2. ALL COMMUNICATIONS PRODUCTS AND INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES. REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR COMMUNICATIONS CONSTRUCTION.
3. 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.
4. CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR A COMPLETE WORKING AND COORDINATED SYSTEM.
5. UNLESS OTHERWISE NOTED. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND U.L. LISTED OR LABELED. EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AND LISTING OR LABELING REQUIREMENTS AND RESTRICTIONS. PROVIDE SUBMITTAL DATA AS DEPICTED IN THE COMMUNICATIONS SPECIFICATIONS.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL FOR ALL COMMUNICATIONS MATERIALS PROPOSED TO BE PROVIDED UNDER THIS CONTRACT. ANY DEVIATIONS FROM ITEMS SPECIFIED SHALL BE CLEARLY IDENTIFIED. NO WORK IS AUTHORIZED WITHOUT SHOP DRAWINGS REVIEWED BY ENGINEER.
7. ALL EMPTY CONDUIT SYSTEMS SHALL CONTAIN A PULL WIRE FOR FUTURE PULLING OF CONDUCTORS.
8. REFER TO AND COORDINATE WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES AND EQUIPMENT.
9. REFER TO AND COORDINATE WITH DIVISION 15 FOR THE LOCATION OF ALL ITEMS LOCATED IN THE CEILING INCLUDING, BUT NOT LIMITED TO SUPPLY-AIR DIFFUSERS, RETURN-AIR DIFFUSERS AND FIRE SPRINKLER HEADS.
10. ALL PENETRATIONS THROUGH FIRE RATED WALLS OR PARTITIONS SHALL BE MADE IN ACCORDANCE WITH U.L. 483 "FIRE RESISTANCE DIRECTORY". PENETRATIONS SHALL BE SLEEVED AND SEALED WITH A UL APPROVED FIRE RATED SEALANT. REFER TO ARCHITECTURAL PLANS FOR FIRE RATED WALLS.
11. CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL OUTAGES WITH OWNER'S REPRESENTATIVE.
12. CONTRACTOR SHALL WARRANTY WORK FOR ONE (1) YEAR FROM THE COMPLETION OF THE PROJECT AND PROVIDE OWNER WITH AS BUILT DRAWINGS.
13. SPACE ALLOCATIONS FOR MATERIALS, EQUIPMENT AND DEVICES HAVE BEEN MADE ON THE BASIS OF PRESENT AND KNOWN FUTURE REQUIREMENTS AND THE DIMENSIONS OF ITEMS OF EQUIPMENT OR DEVICES OF A PARTICULAR MANUFACTURER WHETHER INDICATED OR NOT. THE CONTRACTOR SHALL VERIFY THAT ALL MATERIALS, EQUIPMENT AND DEVICES PROPOSED FOR USE ON THIS PROJECT ARE WITHIN THE CONSTRAINTS OF THE ALLOCATED SPACE.
14. ALL BACKBOXES UNLESS OTHERWISE SPECIFIED ARE INTENDED FOR 4" WALLS.
15. MOUNTING HEIGHTS SHOWN ARE RECOMMENDATION ONLY. THE CONTRACTOR IS TO VERIFY WITH ARCHITECT ALL MOUNTING HEIGHTS AND FINAL EQUIPMENT LOCATIONS PRIOR TO ROUGH-IN. THE GENERAL CONTRACTOR SHALL ALSO VERIFY THAT ALL APPLICABLE ADA CLEARANCES ARE ATTAINED PRIOR TO ROUGH-IN.
16. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL STANDARD BACKBOXES, APPLICABLE CONDUIT AND AC POWER REQUIREMENTS.
17. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING SPECIAL BACKBOXES AND CABLE SUPPLIED BY TELEHEALTH.
18. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING IN-WALL SUPPORT FOR TELEVISION WALL BRACKETS AS SPECIFIED BY TELEHEALTH.
19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TELEVISION WALL BRACKETS, CEILING BRACKETS AND FURNITURE MOUNTS THAT ARE SUPPLIED BY TELEHEALTH.
20. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING CCTV WALL AND CEILING BRACKETS SUPPLIED BY TELEHEALTH. THE GENERAL CONTRACTOR SHOULD COORDINATE FINAL PLACEMENT OF WALL AND CEILING BRACKETS WITH TELEHEALTH INSTALLER PRIOR TO INSTALLATION.
21. ALL EQUIPMENT DEVICES SHOWN ON LEGEND, ACCOMPANIED BY SYMBOLS, ARE UTILIZED ON THIS PROJECT. IF A DEVICE IS NOT ACCOMPANIED BY A SYMBOL, DISREGARD IT. A SYMBOL FOLLOWED BY AN ASTERICK INDICATES EQUIPMENT THAT IS PART OF THAT SYMBOL.

VOICE/DATA COMMUNICATIONS SYMBOLS

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

SYMBOL	DESCRIPTION	MNTG. HT. UNO (SEE NOTE 1)
N, N, PM	WIRELESS I.S. OUTLET, CEILING MOUNTED, LEAVE 50' COILED IN CEILING, JACK AND TEST. 2 2 VOICE; 1 DATA CABLE; PATIENT PM MONITORING, ORANGE CAT 5e CABLE. 4 2 VOICE, 4 2 DATA CABLES; 2 2 DATA CABLES	–
N	VOICE & DATA OUTLET, DOUBLE GANG BOX 4" X 4" WITH A 2" X 4" DEVICE COVER, 3/4" CONDUIT STUBBED ABOVE CEILING. 1 VOICE CABLE; 3 1 VOICE, 2 DATA CABLE; 2 1 VOICE, 1DATA CABLE; 4 2 VOICE, 2 DATA CABLE; 2V 2 VOICE CABLES; 4(1V,3D) 1 VOICE, 3 DATA CABLES; 4(3V,1D) 3 VOICE, 1 DATA CABLES	18" AFF
N	DATA ONLY OUTLET, DOUBLE GANG BOX 4" X 4" WITH A 2" X 4" DEVICE COVER, 3/4" CONDUIT STUBBED ABOVE CEILING. 1 DATA CABLE; 3 3 DATA CABLES; 2 2 DATA CABLES; 4 4 DATA CABLES	18" AFF OR AS INDICATED
K	DATA ONLY OUTLET (KRONOS TIME CLOCK) SINGLE GANG BOX 2" X 4", 3/4" CONDUIT STUBBED ABOVE CEILING.	54" AFF
N PM "N"	PATIENT MONITORING, ORANGE CAT 5e CABLE. "N" INDICATES MOUNTING HEIGHT. N DENOTES NUMBER OF CABLES	–
HPT	HANDICAPPED TELEPHONE OUTLET, SINGLE GANG BOX 2" X 4", 3/4" CONDUIT STUBBED ABOVE CEILING.	54" AFF
W	WALL TELEPHONE OUTLET, SINGLE GANG BOX 2" X 4", 3/4" CONDUIT STUBBED ABOVE CEILING.	54" AFF
N, N	OUTLET, MOUNTED ABOVE COUNTER TOP, N=CABLE QTY. (COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS) DATA ONLY OUTLET WILL BE MOUNTED DIRECTLY BELOW THE WALL TELEPHONE OUTLET AT 18" ABOVE FLOOR. 3/4" CONDUIT STUBBED ABOVE CEILING. DATA OUTLET: DOUBLE GANG BOX 4" X 4" WITH A 2" X 4" DEVICE COVER. WALL TELEPHONE OUTLET: SINGLE GANG BOX 2" X 4".	–
PT	PUBLIC TELEPHONE OUTLET, SINGLE GANG BOX 2" X 4", 3/4" CONDUIT STUBBED ABOVE CEILING.	54" AFF
	DICTATION DROP 1 VOICE CABLE. RUN TO DICTATION SERVER. LOCATION OF DICTATION SERVER TO BE SPECIFIED BY OWNERS DICTATION VENDOR. DOUBLE GANG BOX 4" X 4" WITH 2" X 4" DEVICE COVER. 3/4" CONDUIT STUBBED ABOVE CEILING.	18" AFF
N, N	VOICE AND/OR DATA OUTLET IN FLOOR. SEE DIVISION 26 SPECIFICATIONS FOR BOX AND COVER, 3/4" CONDUIT STUBBED ABOVE CEILING. N DENOTES NUMBER OF CABLES 1 VOICE CABLE – FLR MTD.; 3 1 VOICE, 2 DATA CABLES – FLR MTD; 2 1 VOICE, 1DATA CABLE – FLR MTD; 4 2 VOICE, 2 DATA CABLES – FLR MTD; 2V 2 VOICE CABLES – FLR MTD; (1V,3D) 1 VOICE, 3 DATA CABLES–FLR MTD; 1 DATA CABLE – FLR MTD; (3V,1D) 3 VOICE, 1 DATA CABLES–FLR MTD; 2 2 DATA CABLES – FLR MTD; 4 4 DATA CABLES – FLR MTD; 3 3 DATA CABLES – FLR MTD	–
19" DATA RACK	19" DATA RACK FOR MEDITECH EQUIPMENT. DIMENSIONS: 21"WIDE X 15" DEEP X 84" HIGH. REQUIRED FRONT AND REAR CLEARANCE 36"	–
	TELEPHONE BACKBOARD. EACH MEASURES 4' X 8' X 3/4" THICK. THIS SPACE IS RESERVED FOR TELECOM TERMINATING BLOCKS.	–
	CABLE SUPPORT RACK. THE COMMUNICATION CONTRACTOR WILL PROVIDE MATERIAL & INSTALLATION.	–
	FLOOR SLEEVE TO EXTEND A MINIMUM OF 1" ABOVE FLOOR LEVEL. ALL VERTICAL SLEEVES WILL BE 4" DIAMETER AND A MINIMUM OF THREE (3) SLEEVES PER TELECOMMUNICATIONS CLOSET.	–
	INDICATES ONE 1" SLEEVE, BUSHING AT BOTH ENDS, REQUIREMENT UNLESS OTHERWISE NOTED ON DRAWINGS.	–
(N) TO	(N) INDICATES QUANTITY OF 4" SLEEVES THROUGH RATED WALLS ALONG PATH INDICATED.	–

NOTES:
1. 48" AFF INDICATES TO TOP OF DEVICE; 80" AFF INDICATES TO BOTTOM OF DEVICE; ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.

COMMUNICATIONS ABBREVIATIONS (FOR CLARIFICATION ONLY)

A	DESK/WALL 2500, 2554, TELEMATRIX, 8004	ANALOG
B	POWERFAIL WALL	ANALOG
C	POWERFAIL DESK	ANALOG
D	PATIENT PHONE	ANALOG
E	POLYCOM (CONFERENCE PHONE)	ANALOG
F	FAX	ANALOG
G	8 – BUTTON	DIGITAL
H	16 – BUTTON	DIGITAL
I	24 – BUTTON	DIGITAL
J	CALL CENTER PHONE	DIGITAL
L	MISC.	DIGITAL
M	MODEM	ANALOG
N	900 MEGAHERTZ WIRELESS	DIGITAL
O	TDD	ANALOG
P	IP PHONE (2004)	NO PORTS
Q	IP PHONE (OTHER)	NO PORTS
R	ANALOG PHONE w/AMPLIFIED HANDSETS	ANALOG
CONSOLE	ATTENDANT CONSOLES. 25 PAIR CAT3 CABLE W/AMPHNOL CONNECTORS, PULLED TO MDF	DIGITAL
W	WALL MOUNT KIT	NO PORTS

TV/CCTV EQUIPMENT LEGEND

SYMBOL	MODEL #	DESCRIPTION	POWER	BACKBOX TYPE	BACKBOX MOUNTING
TV LCD	20FT3310	20" Philips LCD			
*	TH-LCDW	Wall Mount			See Detail
*	WPA0255	Saddle Block			
*	74-1504-3	Faceplate	120V	"G"	See Detail
TV 37" LCD	37HF7543	37" Philips LCD			
*	PLP-PH37	Adaptor Plate			
*	PS-1	Wall Mount			See Detail
*	WPA0255	Saddle Block			
*	74-1504-3	Faceplate	120V	"G"	See Detail
TV 42" LCD	42HF7543	42" Philips LCD			
*	PLP-PH37	Adaptor Plate			
*	PS-1	Wall Mount			See Detail
*	WPA0255	Saddle Block			
*	74-1504-3	Faceplate	120V	"G"	See Detail
DVD	DVP3050V	DVD/VCR Combo			See Note #2
*	WPA0255	Saddle Block			
*	3GSSGROM	Faceplate	120V	"G"	As Req'd
TVJ		TV Junction Backboard	120V		See Note #1
*	QDAX75043	Amplifier			

Note #1: A minimum 48" x 48" 3/4" plyboard to be provided by the general contractor for junction location. 120 vac power receptacle to be provided on board.

Note #2: DVD/VCR to be mounted on casework, shelving or furniture to be architecturally specified and provided by others. Mounting location of outlet for DVD/VCR to be coordinated with actual location of unit.

CABLE & CONDUIT

SYMBOL	MODEL #	DESCRIPTION	OUTSIDE DIAMETER	CONDUIT SIZE
"A"	355	Four Conductor Cable #22	.166	3/4"
"B"	AQC355	D.B. Two pair Cable #22	.269	3/4"
"D"	251	Two Pair Cable #22	.189	3/4"
"J"	Q841	RG/6U Quad Shield Coax	.283	3/4"
"Y"	05024BSG1	Fifty Pair Cable	.470	3"
"Z"	F11SSVR	RG11U Quad Shield	.395	2"
"U"	806	RG/6U Coax	.270	3/4"
"K"	252	3 pair cable	.203	3/4"
"W"	8238	RG/11 U Elev. Coax	.405	2"
"X"	9292	RG/11 U Coax	.405	2"
"H"	E-005024AFC355	Fifty Pair Direct Burial	.75	2"
"R"	F-04P24BPD-5	CAT 5 Cable #24	.19	3/4"
"C"	4806	D.B. RG6/U Coax	.33	3/4"
"G"	4811	D.B. RG11/U Coax	.455	3/4"
"M"	AQC352	D.B. 3 pair #22	.254	3/4"
"O"	CCQCABLE	100' Camera Cable	.50	3/4"
"N"	BE9843	3 pair RS485 Cable	.36	3/4"
"S"	M56871	DB CAT5 Cable	.193	3/4"
"P"	225	2 conductor power cable	.189	3/4"
"E"		CAT 5E or 6		3/4"
"F"	05024BAG3	50 pair unshielded		3"
"L"	05024BKT3	50 pair plenum unshielded		3"
"Q"	84180250	2 conductor cable		3/4"
"T"	30-100-60	Audio cable		
"V"	CA1468-600	Video cable		

BACKBOXES

"A"	STANDARD 4-11/16" SQUARE BOX, 1-1/2" DEEP (UNIVERSAL # 72151 OR EQUAL) WITH A 3/4" RAISED SINGLE DEVICE PLASTER COVER (UNIVERSAL # 72-C-14 OR EQUAL)
"B"	STANDARD 4-11/16" SQUARE BOX, 2-1/8" DEEP (UNIVERSAL # 72171 OR EQUAL) WITH A 3/4" RAISED SINGLE DEVICE PLASTER COVER (UNIVERSAL # 72-C-14 OR EQUAL)
"C"	STANDARD 4-11/16" SQUARE BOX, 1-1/2" DEEP (UNIVERSAL # 72151 OR EQUAL) WITH A 3/4" RAISED TWO DEVICE PLASTER COVER (UNIVERSAL # 72-C-18 OR EQUAL)
"D"	STANDARD 4-11/16" SQUARE BOX, 2-1/8" DEEP (UNIVERSAL # 72171 OR EQUAL) WITH A 3/4" RAISED TWO DEVICE PLASTER COVER (UNIVERSAL # 72-C-18 OR EQUAL)
"E"	STANDARD TWO GANG BOX, 1-5/8" DEEP (APPLETON # 2G-5075 OR EQUAL) WITH A 3/4" RAISED TWO GANG PLASTER COVER (UNIVERSAL # 2GC-75 OR EQUAL)
"F"	STANDARD TWO GANG BOX, 2-1/2" DEEP (STEEL CITY H-2-BD OR EQUAL) WITH A 3/4" RAISED TWO GANG PLASTER COVER (UNIVERSAL # 2GC OR EQUAL)
"G"	STANDARD THREE GANG BOX, 1-5/8" DEEP (APPLETON # 3G-5075 OR EQUAL) WITH A 3/4" RAISED THREE GANG PLASTER COVER (UNIVERSAL # 3GC-75 OR EQUAL)
"H"	STANDARD THREE GANG BOX, 2-1/2" DEEP (STEEL CITY H-8-BD OR EQUAL) WITH A 3/4" RAISED THREE GANG PLASTER COVER (UNIVERSAL # 3GC OR EQUAL)

LOW VOLTAGE SYSTEM COORDINATION SCHEDULE

SYSTEM	FUPNISHED BY	INSTALLED BY	SPECIFICATION SECTION #
OUTLETS ANd FACEPLATES	DIV 27	DIV 27	27 15 00
VOICE/DATA CABLE TERMINATIONS	DIV 27	DIV 27	27 15 00
VOICE/DATA CABLE MANAGEMENT	DIV 27	DIV 27	27 15 00
EQUIPMENT RACKS	DIV 27	DIV 27	27 11 00
GROUNDING AND BONDING TELCO SYSTEMS AND EQUIPMENT			27 15 00
BUILDING GROUND BUS BAR	DIV 26	DIV 26	26 05 26
CONNECTION TO COMMUNICATION EQUIPMENT AND RACKS	DIV 27	DIV 27	27 11 00
FIRE STOP COMMUNICATIONS FLOOR AND WALL SLEEVES	DIV 27	DIV 27	27 15 00
CONDUIT, BACKBOXES, AND PLYWOOD BACKBOARD	DIV 26	DIV 26	26 05 33
COMMUNICATION CABLE SUPPORT J-HOOK TREE	DIV 26	DIV 26	26 05 33
CONDUIT WALL SLEEVES	DIV 26	DIV 26	26 05 33
DIV 26 – DIVISION 26 CONTRACTOR			
DIV 27 – DIVISION 27 CONTRACTOR			

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KEY PLAN

COLORADO LICENSED 31031 PROFESSIONAL ENGINEER 8/24/06

Revisions

2△	ADDENDUM #2	08/24/06

06-124732
CITY OF AURORA
BUILDING DIVISION
APPROVED AS NOTED
DATE APPROVED SEP 25 2006

NO.	ISSUE	DATE

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GENERAL INFORMATION COMMUNICATION

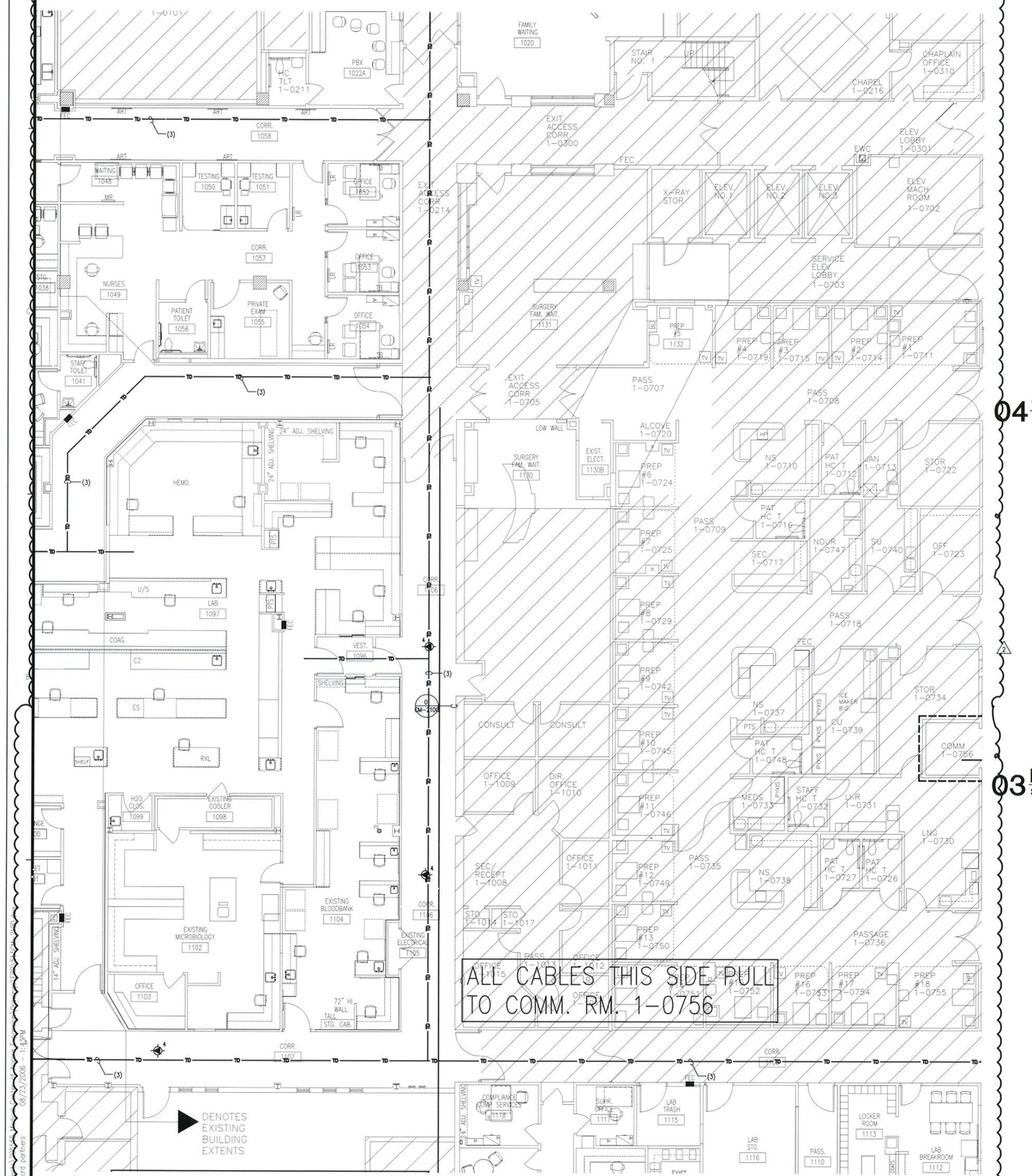
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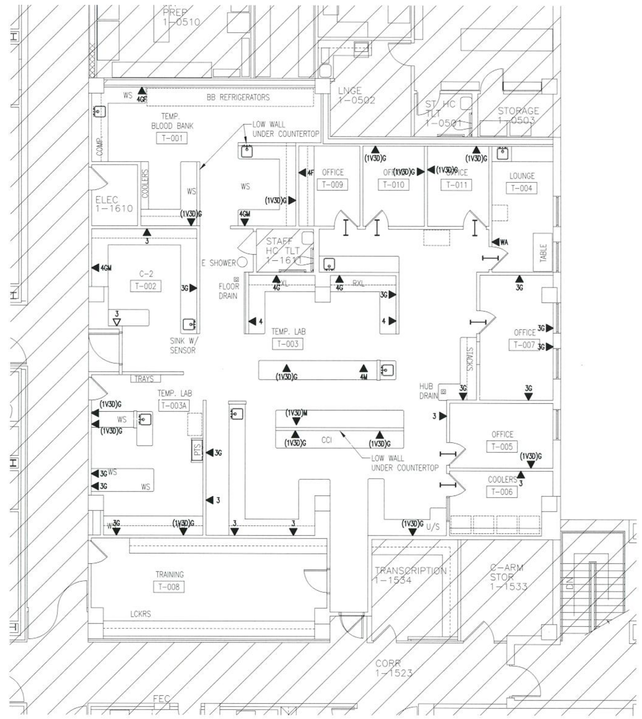
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Dan Seeley, cord partners



01 COMMUNICATIONS - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 COMMUNICATIONS - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"

03 NOT USED
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A. ALL CABLES THIS PAGE, ROUTED IN RACEWAY SYSTEM TYP.

LEGEND NOTES

1 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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214.775.8200 Fax: 214.775.8201
www.perkinswill.com

Medical Center of Aurora

South Campus
Private Room Expansion
Aurora, Colorado

HCA

Project # 306660001

In association with:

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MEP

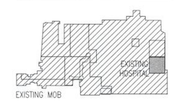
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KEY PLAN
FIRST FLOOR



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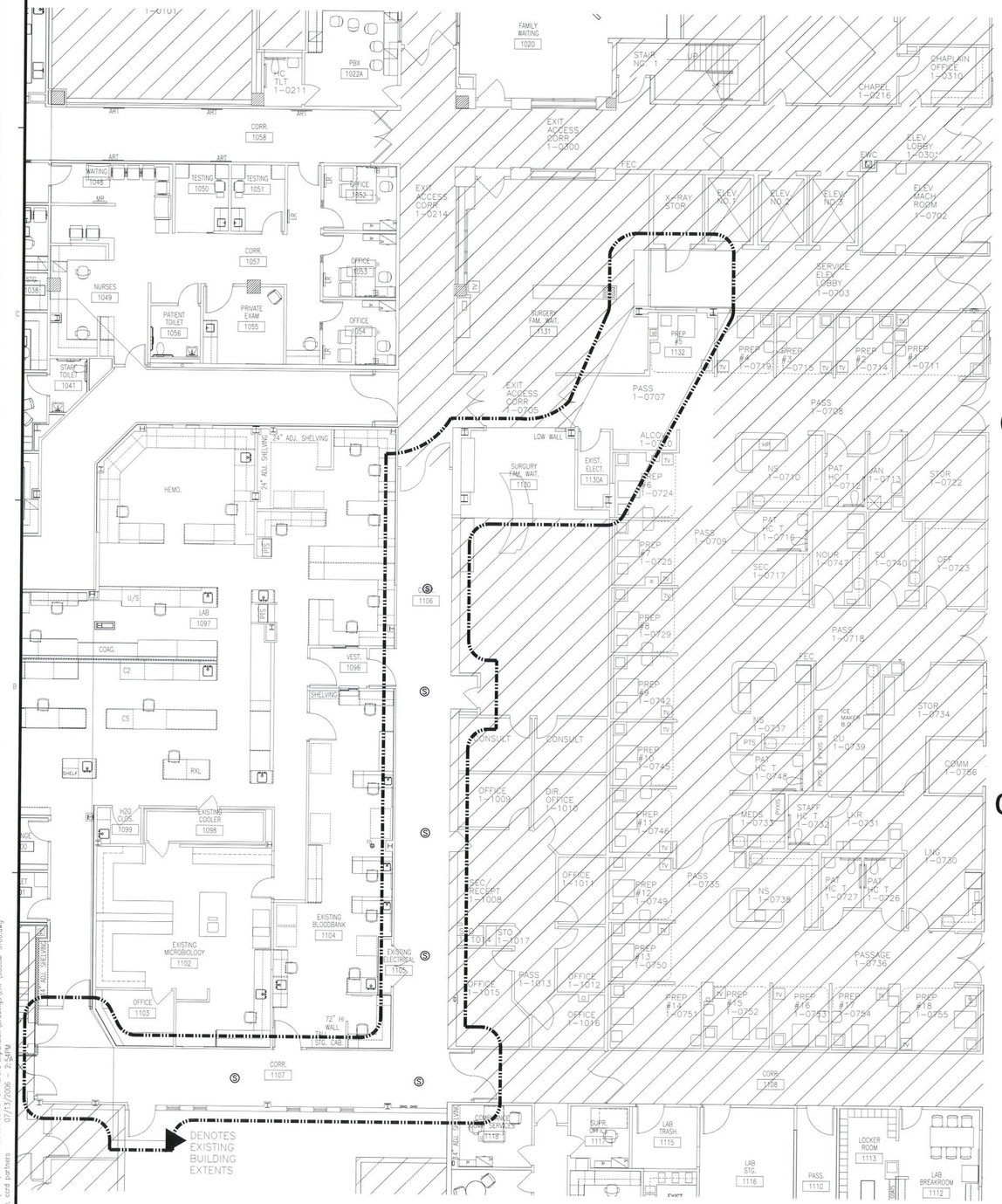
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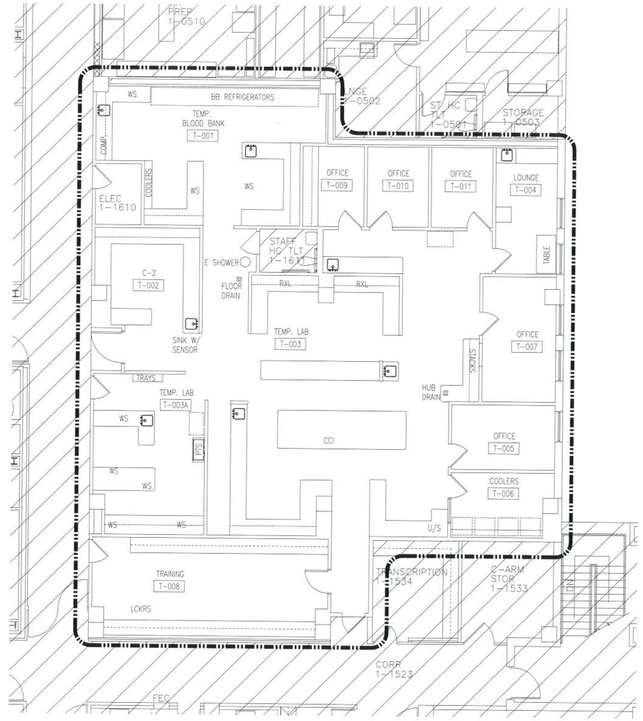
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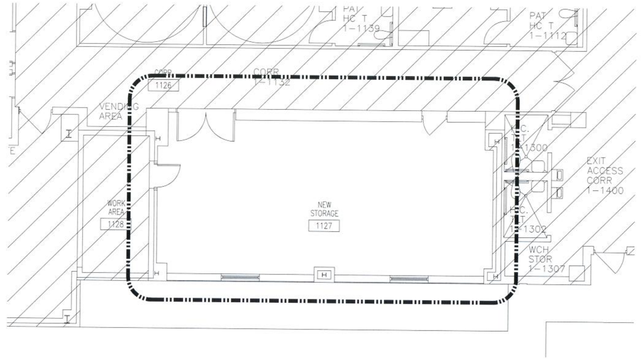
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01 LOW VOLTAGE - FIRST FLOOR - EXIT CORRIDOR 'A'
SCALE: 1/8" = 1'-0"



04 LOW VOLTAGE - FIRST FLOOR - TEMP LAB
SCALE: 1/8" = 1'-0"



03 LOW VOLTAGE - FIRST FLOOR - BED STORAGE
SCALE: 1/8" = 1'-0"

02 NOT USED
SCALE: 1/8" = 1'-0"

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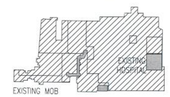
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LOW VOLTAGE PLAN FIRST FLOOR

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