DRAWING INDEX

HVAC REMODEL
PAYSON 6. 8. 10 &
STAKE CENTER

780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

DAVID L. JENSEN & ASSOCIATES

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ENVISION ENGINEERING

REGISTERED PROFESSIONAL ENGINEER No. 181307 HAL ABERCROMBIE STATE OF UTAH

PROJECT INFORMATION

REVISION:

MARK	DATE	DESCRIPTION

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ISSUE TYPE:

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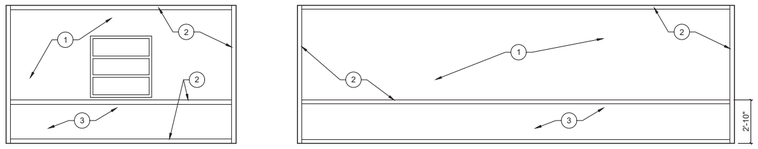
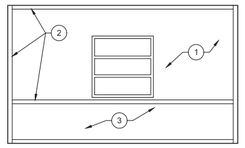
G101

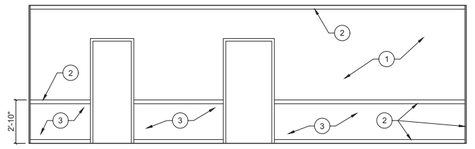


1 HIGH COUNSEL CHAMBERS
SCALE : 1/4" = 1'-0"

2 HIGH COUNSEL CHAMBERS
SCALE : 1/4" = 1'-0"



3 HIGH COUNSEL CHAMBERS
SCALE : 1/4" = 1'-0"



4 HIGH COUNSEL CHAMBERS
SCALE : 1/4" = 1'-0"

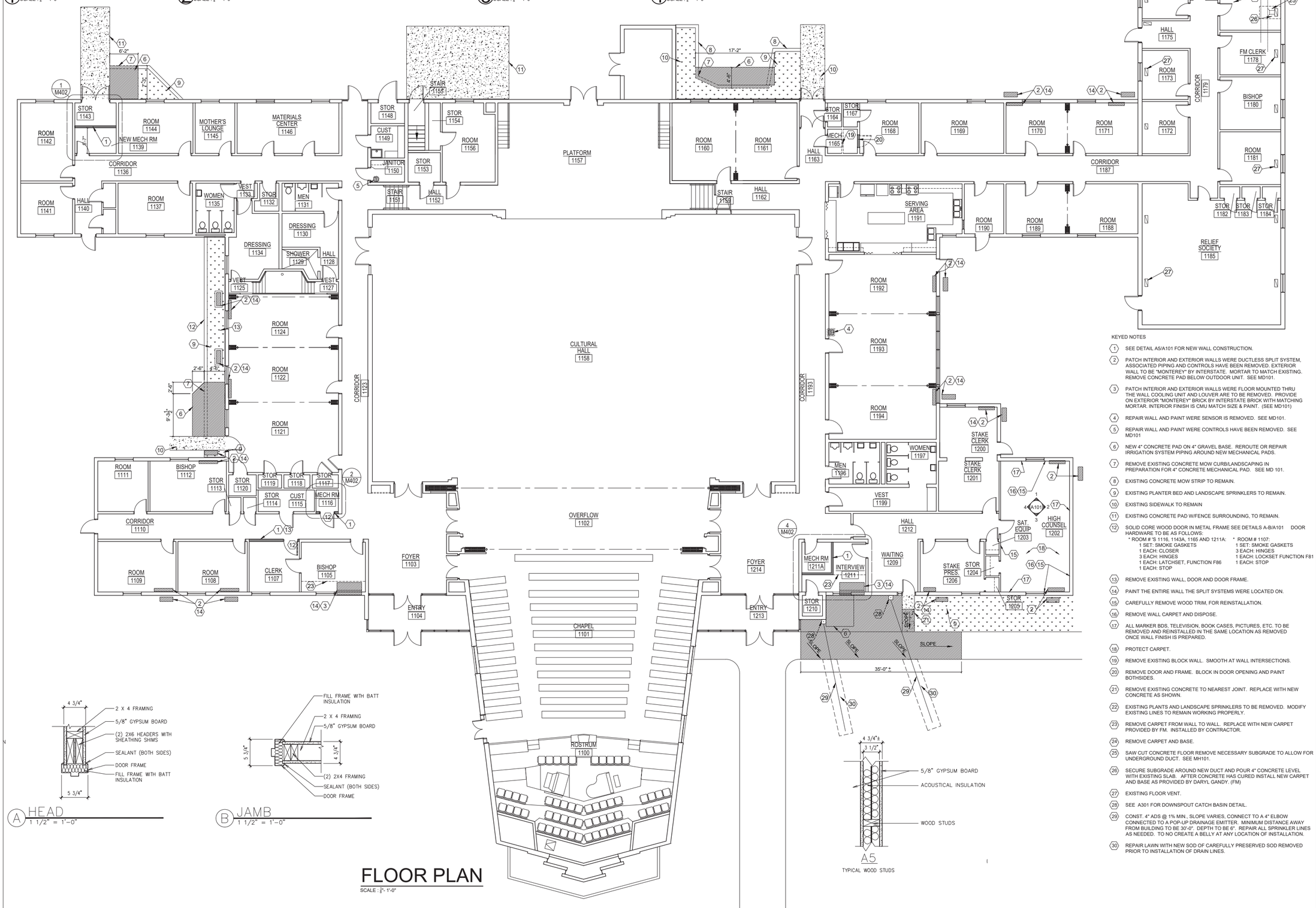
GENERAL NOTES:

1 SKIM COAT WALL, TEXTURE & PAINT.

2 REINSTALL WOOD TRIM.

3 SKIM COAT WALL FOR FLATNESS, INSTALL SISAL AS PER SPECIFICATIONS

4 REINSTALL ALL PICTURES, MONITOR, BOOK CASES, ETC. BACK IN THERE ORIGINAL LOCATIONS.



KEYED NOTES

1. SEE DETAIL A5/A101 FOR NEW WALL CONSTRUCTION.
2. PATCH INTERIOR AND EXTERIOR WALLS WERE DUCTLESS SPLIT SYSTEM, ASSOCIATED PIPING AND CONTROLS HAVE BEEN REMOVED. EXTERIOR WALL TO BE "MONTEREY" BY INTERSTATE. MORTAR TO MATCH EXISTING. REMOVE CONCRETE PAD BELOW OUTDOOR UNIT. SEE MD101.
3. PATCH INTERIOR AND EXTERIOR WALLS WERE FLOOR MOUNTED THRU THE WALL COOLING UNIT AND LOUVER ARE TO BE REMOVED. PROVIDE ON EXTERIOR "MONTEREY" BRICK BY INTERSTATE BRICK WITH MATCHING MORTAR. INTERIOR FINISH IS CMU MATCH SIZE & PAINT. (SEE MD101)
4. REPAIR WALL AND PAINT WERE SENSOR IS REMOVED. SEE MD101.
5. REPAIR WALL AND PAINT WERE CONTROLS HAVE BEEN REMOVED. SEE MD101
6. NEW 4" CONCRETE PAD ON 4" GRAVEL BASE. REROUTE OR REPAIR IRRIGATION SYSTEM PIPING AROUND NEW MECHANICAL PADS.
7. REMOVE EXISTING CONCRETE MOW CURB/LANDSCAPING IN PREPARATION FOR 4" CONCRETE MECHANICAL PAD. SEE MD 101.
8. EXISTING CONCRETE MOW STRIP TO REMAIN.
9. EXISTING PLANTER BED AND LANDSCAPE SPRINKLERS TO REMAIN.
10. EXISTING SIDEWALK TO REMAIN
11. EXISTING CONCRETE PAD W/FENCE SURROUNDING, TO REMAIN.
12. SOLID CORE WOOD DOOR IN METAL FRAME SEE DETAILS A-B/A101 DOOR HARDWARE TO BE AS FOLLOWS:
    * ROOM # 'S 1116, 1143A, 1165 AND 1211A:
      1 SET: SMOKE GASKETS
      1 EACH: CLOSER
      3 EACH: HINGES
      1 EACH: LATCHSET, FUNCTION F86
      1 EACH: STOP
    * ROOM # 1107:
      1 SET: SMOKE GASKETS
      3 EACH: HINGES
      1 EACH: LOCKSET FUNCTION F81
      1 EACH: STOP
13. REMOVE EXISTING WALL, DOOR AND DOOR FRAME.
14. PAINT THE ENTIRE WALL THE SPLIT SYSTEMS WERE LOCATED ON.
15. CAREFULLY REMOVE WOOD TRIM, FOR REINSTALLATION.
16. REMOVE WALL CARPET AND DISPOSE.
17. ALL MARKER BDS, TELEVISION, BOOK CASES, PICTURES, ETC. TO BE REMOVED AND REINSTALLED IN THE SAME LOCATION AS REMOVED ONCE WALL FINISH IS PREPARED.
18. PROTECT CARPET.
19. REMOVE EXISTING BLOCK WALL. SMOOTH AT WALL INTERSECTIONS.
20. REMOVE DOOR AND FRAME. BLOCK IN DOOR OPENING AND PAINT BOTHSIDES.
21. REMOVE EXISTING CONCRETE TO NEAREST JOINT. REPLACE WITH NEW CONCRETE AS SHOWN.
22. EXISTING PLANTS AND LANDSCAPE SPRINKLERS TO BE REMOVED. MODIFY EXISTING LINES TO REMAIN WORKING PROPERLY.
23. REMOVE CARPET FROM WALL TO WALL. REPLACE WITH NEW CARPET PROVIDED BY FM. INSTALLED BY CONTRACTOR.
24. REMOVE CARPET AND BASE.
25. SAW CUT CONCRETE FLOOR REMOVE NECESSARY SUBGRADE TO ALLOW FOR UNDERGROUND DUCT. SEE MH101.
26. SECURE SUBGRADE AROUND NEW DUCT AND POUR 4" CONCRETE LEVEL WITH EXISTING SLAB. AFTER CONCRETE HAS CURED INSTALL NEW CARPET AND BASE AS PROVIDED BY DARYL GANDY. (FM)
27. EXISTING FLOOR VENT.
28. SEE A301 FOR DOWNSPOUT CATCH BASIN DETAIL.
29. CONST. 4" ADS @ 1% MIN., SLOPE VARIES, CONNECT TO A 4" ELBOW CONNECTED TO A POP-UP DRAINAGE EMITTER. MINIMUM DISTANCE AWAY FROM BUILDING TO BE 30'-0". DEPTH TO BE 6". REPAIR ALL SPRINKLER LINES AS NEEDED. TO NO CREATE A BELLY AT ANY LOCATION OF INSTALLATION.
30. REPAIR LAWN WITH NEW SOD OF CAREFULLY PRESERVED SOD REMOVED PRIOR TO INSTALLATION OF DRAIN LINES.

A HEAD
1 1/2" = 1'-0"

B JAMB
1 1/2" = 1'-0"

A5
TYPICAL WOOD STUDS

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

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No. 130272
Lesiel Ivan Nosdol
STATE OF UTAH

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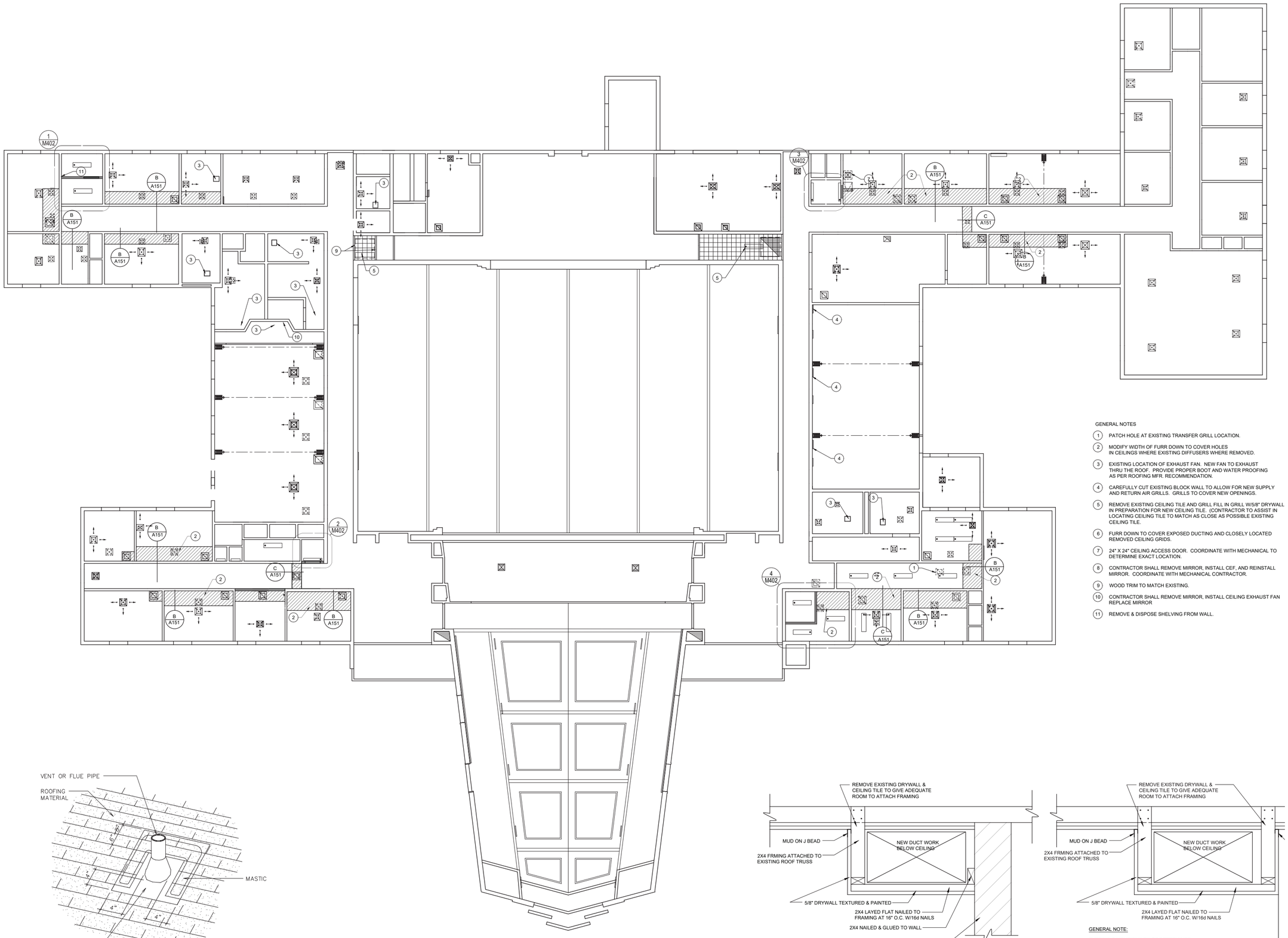
SHEET TITLE

ARCHITECTURAL FLOOR PLAN

SHEET NUMBER

A101



GENERAL NOTES

1. PATCH HOLE AT EXISTING TRANSFER GRILL LOCATION.
2. MODIFY WIDTH OF FURR DOWN TO COVER HOLES IN CEILINGS WHERE EXISTING DIFFUSERS WHERE REMOVED.
3. EXISTING LOCATION OF EXHAUST FAN. NEW FAN TO EXHAUST THRU THE ROOF. PROVIDE PROPER BOOT AND WATER PROOFING AS PER ROOFING MFR. RECOMMENDATION.
4. CAREFULLY CUT EXISTING BLOCK WALL TO ALLOW FOR NEW SUPPLY AND RETURN AIR GRILLS. GRILLS TO COVER NEW OPENINGS.
5. REMOVE EXISTING CEILING TILE AND GRILL FILL IN GRILL W/5/8" DRYWALL IN PREPARATION FOR NEW CEILING TILE. (CONTRACTOR TO ASSIST IN LOCATING CEILING TILE TO MATCH AS CLOSE AS POSSIBLE EXISTING CEILING TILE.
6. FURR DOWN TO COVER EXPOSED DUCTING AND CLOSELY LOCATED REMOVED CEILING GRIDS.
7. 24" X 24" CEILING ACCESS DOOR. COORDINATE WITH MECHANICAL TO DETERMINE EXACT LOCATION.
8. CONTRACTOR SHALL REMOVE MIRROR, INSTALL CEF, AND REINSTALL MIRROR. COORDINATE WITH MECHANICAL CONTRACTOR.
9. WOOD TRIM TO MATCH EXISTING.
10. CONTRACTOR SHALL REMOVE MIRROR, INSTALL CEILING EXHAUST FAN REPLACE MIRROR
11. REMOVE & DISPOSE SHELVING FROM WALL.

A ROOF PENETRATION
NO SCALE

REFLECTED CEILING PLAN
SCALE : 1/8"= 1'-0"

B DUCT FURRING
SCALE : 1 1/2" = 1'-0"

C DUCT FURRING
SCALE : 1 1/2" = 1'-0"

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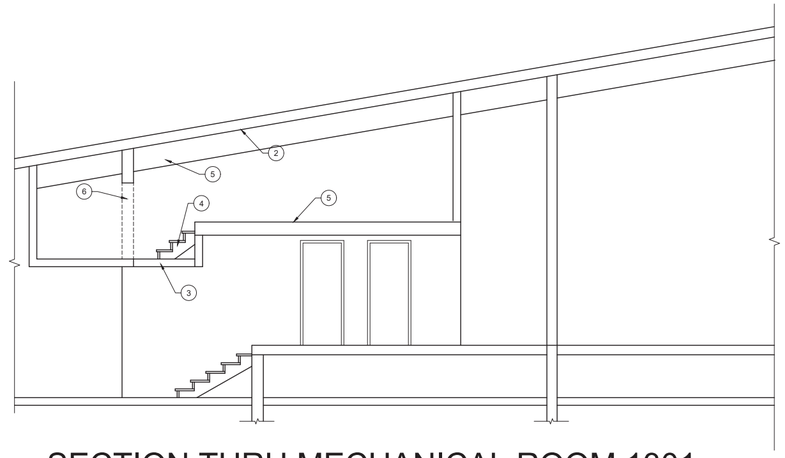
REFLECTED CEILING PLAN

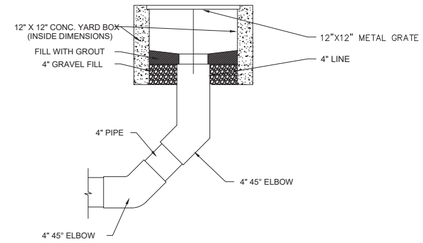
SHEET NUMBER

A151



SECTION THRU MECHANICAL ROOM 1301

SCALE: 3/4" = 1'-0"



DOWNSPOUT CATCH BASIN DETAIL

GENERAL NOTES:

1. COVER OVER OPENING WITH ¾" PLYWOOD.
2. FINISH CEILING DRYWALL TO A GA-214 LEVEL 2 AS SPECIFIED IN SECTION 09 2900, 3.2.
3. FRAME IN OPENING USING 2X8'S @ 16" O.C. PLACE WITH WOOD STEPS DOWN 29" TO MATCH FLOOR ON THE OTHER SIDE OF THE WALL.
4. STEPS TO MADE OF 2X MATERIAL W/DOUBLE STRINGERS, 10" TREADS AND EQUALLY SPACED RISERS.
5. EXISTING FRAMING.
6. EXISTING OPENING.

UPPER FLOOR PLAN

SCALE: 3/4" = 1'-0"

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SHEET TITLE

ENLARGED FLOOR PLANS
SECTION, & DETAILS

SHEET NUMBER

A301

HVAC GENERAL NOTES

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS WHICH ARE OBVIOUSLY AND REASONABLY NECESSARY TO COMPLETE THE INSTALLATION.
2. THE CONTRACTOR SHALL TAKE OUT PERMITS, PROCURE CERTIFICATES AND PAY FEES CONNECTED THEREWITH.
3. BIDDERS SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS SURROUNDING THE PROJECT PRIOR TO BIDDING.
4. THE CONTRACTOR IS REFERRED TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL PLANS AND SPECIFICATIONS. SUCH PLANS AND SPECIFICATIONS ARE CONTRACT DOCUMENTS.
5. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS.
6. ALL MECHANICAL HVAC WORK SHALL BE PREFORMED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE PREVAILING STATE MECHANICAL/PLUMBING AND BUILDING CODES AS WELL AS ALL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE THE MORE STRINGENT SHALL APPLY.
7. DIFFUSER RUN OUTS SHALL BE THE SAME AS LISTED DIFFUSER NECK SIZE, UNLESS OTHERWISE NOTED.
8. COORDINATE EXACT LOCATION OF AIR DISTRIBUTION DEVICES WITH CEILING GRID AND LIGHT FIXTURE LAYOUT.
9. ALL RECTANGULAR SUPPLY DUCT ELBOWS SHALL HAVE TURNING VANES.
10. RECTANGULAR DUCT SIZES SHOWN INDICATE REQUIRED AIRFLOW SIZES. SHEETMETAL CONTRACTOR SHALL INCREASE SIZES TO ALLOW FOR LINER.
11. NO DUCTWORK SHALL BE FABRICATED WITHOUT FIRST FIELD VERIFYING THAT THE AVAILABLE SPACE UNDER ACTUAL JOB CONDITIONS WILL PERMIT INSTALLATION OF THE DUCTWORK WITHOUT STRUCTURAL OR OTHER CONFLICTS. DUCT SIZES THAT REQUIRE ON THE JOB MODIFICATION DUE TO UNFORESEEN OBSTRUCTIONS SHALL BE MADE WITHOUT ANY ADDITIONAL COST TO THE OWNER.
12. MAINTAIN A 10'-0" BETWEEN OUTSIDE AIR INTAKES AND PLUMBING/EXHAUST VENTS.
13. WHERE RATED ASSEMBLIES ARE PENETRATED BY DUCTS, PIPES OR OTHER ITEMS, THE "F" AND "T" RATING SHALL BE MAINTAINED WITH REQUIRED UL LISTED ASSEMBLIES OR SEALANTS AS REQUIRED BY THE APPLICABLE CODE OR AUTHORITY HAVING JURISDICTION.

MECHANICAL ABBREVIATIONS

AD	ACCESS DOOR	DEMO	DEMOLITION	HTG	HEATING	PRV	PRESSURE REDUCING VALVE
AFF	ABOVE FINISHED FLOOR	DET	DETAIL	HVAC	HEATING, VENTILATING & AIR	PSI	POUNDS PER SQUARE INCH
AHU	AIR HANDLING UNIT	DH	DUCT HEATER		CONDITIONING	QTY	QUANTITY
ALT	ALTERNATE	DIA	DIAMETER	HW	HOT WATER	RA	RETURN AIR
AMB	ANBIENT	DIM	DIMENSION	HWR	HOT WATER HEATING RETURN	RAD	RADIATED
AMP	AMPERE	DIV	DIVISION	HWS	HOT WATER HEATING SUPPLY	RCP	RECIRCULATION PUMP
ANSI	AMERICAN NATIONAL	DMPR	DAMPER	HZ	HERTZ	REF	ROOFTOP EXHAUST FAN
	STANDARDS INSTITUTE	DN	DOWN	IN	INCHES	REQD	REQUIRED
APD	AIR PRESSURE DROP	DRN	DRAIN	INWC	INCHES OF WATER COLUMN	REV	REVISION
APPROX	APPROXIMATE	DS	DOWNSPOUT	INWG	INCHES OF WATER GAUGE	RH	RELATIVE HUMIDITY
ASME	AMERICAN SOCIETY OF	EA	EXHAUST AIR	IU	INDOOR UNIT	RL	REFRIGERANT LIQUID
	MECHANICAL ENGINEERS	EAT	ENTERING AIR TEMPERATURE	KW	KILOWATT	RS	REFRIGERANT SUCTION
ASL	ABOVE SEA LEVEL	EF	EXHAUST FAN	LAT	LEAVING AIR TEMPERATURE	RPBP	REDUCED PRESSURE
AVG	AVERAGE	EFF	EFFICENCY	LB	POUND		BACKFLOW PREVENTER
B	BOILER	EQ	EQUAL	LPC	LOW PRESSURE CONDENSATE	RPM	REVOLUTIONS PER MINUTE
BOD	BOTTOM OF DUCT	EQUIP	EQUIPMENT	LPS	LOW PRESSURE STEAM	SA	SUPPLY AIR
BOP	BOTTOM OF PIPE	ERV	ENERGY RECOVERY VENTILATION	LWT	LEAVING WATER TEMPERATURE	SCHED	SCHEDULE
BTU	BRITISH THERMAL UNIT	ESP	EXTERNAL STATIC PRESSURE	MAU	MAKEUP AIR UNIT	SEN	SENSIBLE
BTUH	BTU PER HOUR	ET	EXPANSION TANK	MAX	MAXIMUM	SL	SEA LEVEL
C	COMMON	EWT	ENTERING WATER TEMPERATURE	MBH	THOUSAND BRITISH THERMAL	SPEC	SPECIFICATION
C	CONVECTOR	EXH	EXHAUST		UNITS/HOUR	SQ FT	SQUARE FEET
CA	COMBUSTION AIR	EXT	EXISTING	MECH	MECHANICAL	SSHP	SPLIT SYSTEM HEAT PUMP
CAP	CAPACITY	F	FAHRENHEIT	MECH RM	MECHANICAL ROOM	STD	STANDARD
CC	COOLING COIL	F	FURNACE	MFR	MANUFACTURER	TEMP	TEMPERATURE
CEF	CEILING MTD EXHAUST FAN	FCU	FAN COIL UNIT	MIN	MINIMUM	TSP	TOTAL STATIC PRESSURE
CFM	CUBIC FEET PER MINUTE	FLR	FLOOR	MISC	MISCELLANEOUS	TSTAT	THERMOSTAT
CHWR	CHILLED WATER RETURN	FLEX	FLEXIBLE	MTD	MOUNTED	TW	TEMPERED WATER
CHWS	CHILLED WATER SUPPLY	FO	FLAT OVAL	NC	NOISE CRITERIA	TYP	TYPICAL
CO2	CARBON DIOXIDE	FPM	FEET PER MINUTE	NC	NORMALLY CLOSED	UH	UNIT HEATER
COMB	COMBUSTION	FPVAV	FAN POWERED VAV	NIC	NOT IN CONTRACT	V	VOLT
CONTR	CONTRACTOR	FT	FEET	NOM	NOMINAL	VAV	VARIABLE AIR VOLUME
CU	CONDENSING UNIT	GALV	GALVANIZED	NTS	NOT TO SCALE	VD	VOLUME DAMPER
CU FT	CUBIC FEET	GPM	GALLONS PER MINUTE	OA	OUTSIDE AIR	VERT	VERTICAL
CU YD	CUBIC YARDS	GHR	GLYCOL HEATING RETURN	OBD	OPPOSED BLADE DAMPER	VFD	VARIABLE FREQUENCY DRIVE
CUH	CABINET UNIT HEATER	GHS	GLYCOL HEATING SUPPLY	OU	OUTDOOR UNIT	VOL	VOLUME DAMPER
CV	CONSTANT VOLUME	H	FUME HOOD	P	PUMP	W/	WITH
CW	COLD WATER	HORIZ	HORIZANTAL	PCF	POUNDS PER CUBIC FEET	W/O	WITHOUT
CWR	CONDENSOR WATER RETURN	HP	HIGH PRESSURE	PD	PRESSURE DROP	WB	WET BULB
CWS	CONDENSOR WATER SUPPLY	HP	HORSEPOWER	PERF	PERFORATE(D)	WPD	WATER PRESSURE DROP
DB	DRY BULB	HP	HEAT PUMP	PH	PHASE		
DD	DUAL DUCT BOX	HPS	HIGH PRESSURE STEAM	PLUM	PLUMBING		
DEG	DEGREE FAHRENHEIT	HR	HOUR	PPM	PARTS PER MILLION		

MECHANICAL LEGEND

NOTE: NEW ITEMS SHOWN DARK, EXISTING ITEMS SHOWN LIGHT. ALL ITEMS MAY NOT APPEAR ON DRAWINGS.

SYMBOL	DESCRIPTION
	AUTOMATIC 2-WAY VALVE
	AUTOMATIC 3-WAY VALVE
	AUTOMATIC BALL FLOAT VENT
	BALL VALVE
	CAPPED END W/BALL VALVE
	CHECK VALVE
	COMBINATION BALANCING VALVE/ SHUTOFF
	DEVICE IN DROP
	DIRECTION OF SLOPE
	FLANGED BUTTERFLY VALVE
	FLANGED ECCENTRIC REDUCER
	FLANGED UNION
	FLEXIBLE CONNECTION
	FLOW DIRECTION
FM	FLOW METER
	GATE VALVE
	GLOBE VALVE
RL	REFRIGERANT PIPING - LIQUID
RS	REFRIGERANT PIPING - SUCTION
	REFRIGERANT SHUT-OFF VALVE
	EXPANSION VALVE
	MOISTURE INDICATING SIGHT GLASS
	FLEXIBLE CONNECTION
F	FILTER DRIER
	PIPE SUPPORT
	EXTERIOR PIPE SUPPORT
	EXTERIOR PIPE SUPPORT
	DIRECTION OF SLOPE DOWN
S	SUCTION LINE
L	LIQUID LINE
	TRAP. ONE PIECE FACTORY FABRICATED

SYMBOL	DESCRIPTION
	IMMERSION WELL
	INLINE PUMP
	MANUAL VENT WITH BALL VALVE
	P & T PLUG IN IMMERSION WELL
	PIPE DROP
	PIPE INLINE DROP
	PIPE INLINE RISE
	PIPE RISER
	PNEUMATIC 2-WAY VALVE
	PRESSURE GUAGE
	PRESSURE GAGE W/BALL VALVE
R	RELIEF VALVE
	SCREWED CONCENTRIC REDUCER
	STEAM TRAP
	STRAINER
	THERMOMETER
	THREADED HOSE CONNECTION
	UNION
	VENTURI
WFS	WATER FLOW SWITCH
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
HWS	HOT WATER HTG. SUPPLY
HWR	HOT WATER HTG. RETURN
HPS	HIGH PRESSURE STEAM PIPING
LPS	LOW PRESSURE STEAM PIPING
LPC	LOW PRESSURE CONDENSATE PIPING
GHS	GLYCOL HEATING SUPPLY PIPING
GHR	GLYCOL HEATING RETURN PIPING
D	DRAIN PIPING
G	NATURAL GAS PIPING
G	UNDERGROUND NATURAL GAS PIPING

SYMBOL	DESCRIPTION
	BRANCH DUCT TAKE-OFF WITH MANUAL DAMPER
	DUCT FLEXIBLE CONNECTION
	TURNING VANES
	DUCT TEE CONNECTION
	DUCT TRANSITION
	SQUARE TO ROUND DUCT TRANSITION
	AUTOMATIC DAMPER
	VOLUME DAMPER
BD	BACK-DRAFT DAMPER
	DUCT ACCESS DOOR
	RETURN AIR, RISE AND DROP
	SUPPLY AIR, RISE AND DROP
	EXHAUST AIR, RISE AND DROP
	OUTSIDE AIR, RISE AND DROP
	RELIEF AIR, RISE AND DROP
	ROUND DUCT, RISE AND DROP
	FLAT OVAL DUCT, RISE AND DROP
θ OR FO	FLAT OVAL DUCT
FD	FIRE DAMPER
FSD	FIRE SMOKE DAMPER
T	THERMOSTAT
S	SENSOR
CO2	CO2 SENSOR
J	J-BOX
X-#	AIR DEVICE
X-# \#	AIR DEVICE CFM
#	KEYED NOTE
X-#	EQUIPMENT CALLOUT
X S#	DETAIL NUMBER SHEET DETAIL APPEARS
# S#	LARGE SCALE NUMBER SHEET LARGE SCALE APPEARS
	AIR FLOW DIRECTION
TOP BOT	SECTION LETTER SHEET NUMBER
ROOM N0	ROOM NAME ROOM NUMBER
#	REVISION DELTA
	NEW CONNECTION
	ACCESS DOOR

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MECHANICAL LEGEND AND GENERAL NOTES

SHEET NUMBER

M001

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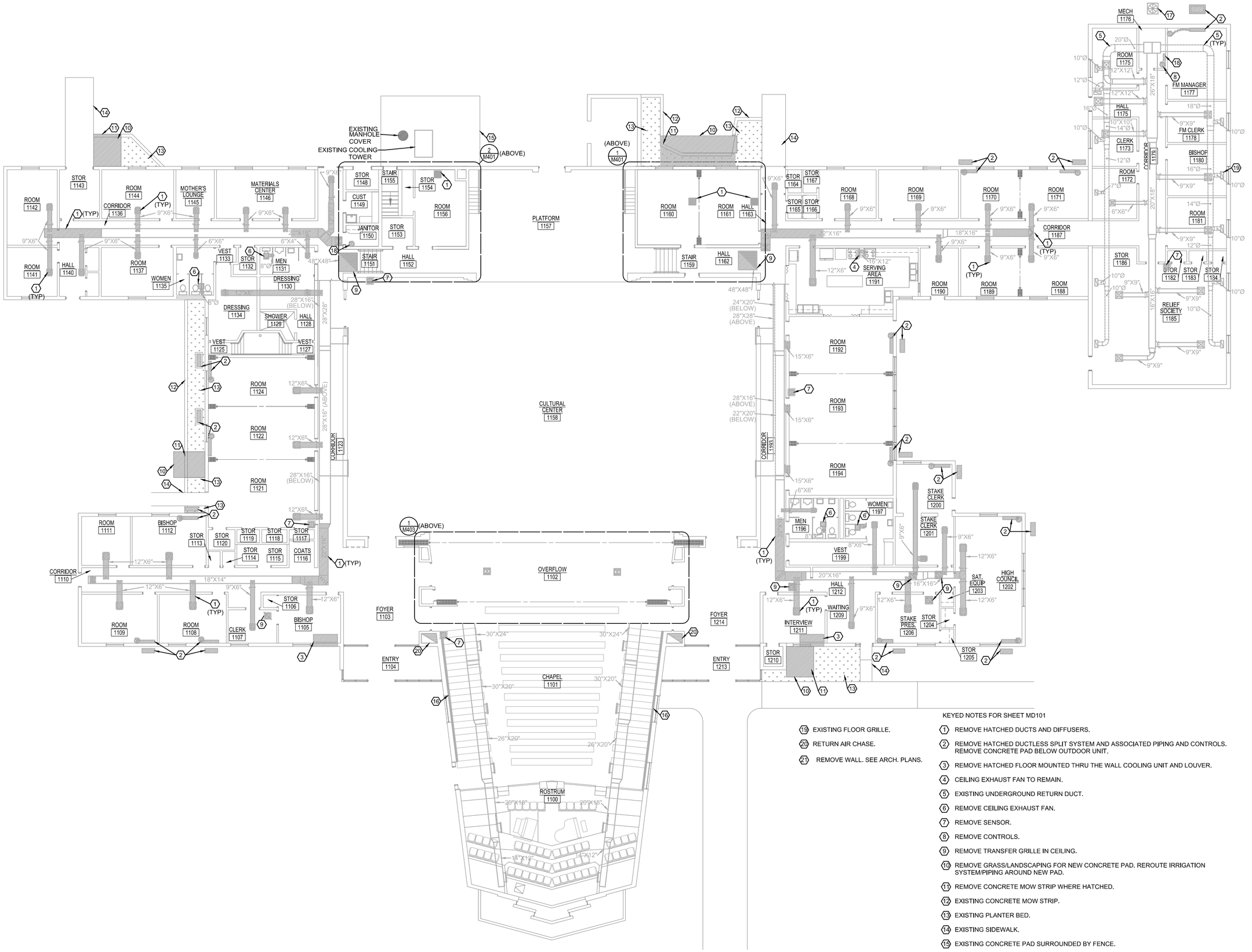

1 MECHANICAL DEMOLITION PLAN

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

N

KEYED NOTES FOR SHEET MD101

19 EXISTING FLOOR GRILLE.

20 RETURN AIR CHASE.

21 REMOVE WALL. SEE ARCH. PLANS.

1 REMOVE HATCHED DUCTS AND DIFFUSERS.

2 REMOVE HATCHED DUCTLESS SPLIT SYSTEM AND ASSOCIATED PIPING AND CONTROLS. REMOVE CONCRETE PAD BELOW OUTDOOR UNIT.

3 REMOVE HATCHED FLOOR MOUNTED THRU THE WALL COOLING UNIT AND LOUVER.

4 CEILING EXHAUST FAN TO REMAIN.

5 EXISTING UNDERGROUND RETURN DUCT.

6 REMOVE CEILING EXHAUST FAN.

7 REMOVE SENSOR.

8 REMOVE CONTROLS.

9 REMOVE TRANSFER GRILLE IN CEILING.

10 REMOVE GRASS/LANDSCAPING FOR NEW CONCRETE PAD. REROUTE IRRIGATION SYSTEM/PIPING AROUND NEW PAD.

11 REMOVE CONCRETE MOW STRIP WHERE HATCHED.

12 EXISTING CONCRETE MOW STRIP.

13 EXISTING PLANTER BED.

14 EXISTING SIDEWALK.

15 EXISTING CONCRETE PAD SURROUNDED BY FENCE.

16 RETURN AIR GRILLE.

17 EXISTING CONDENSING UNIT TO REMAIN.

18 REMOVE CONTROL PANEL.

GENERAL NOTE:
1. REPAIR AND PATCH ALL WALLS AND CEILINGS TO MATCH EXISTING.

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CONSULTANTS

STAMP

REGISTERED PROFESSIONAL ENGINEER No. 181307 WILL L. ABERCROMBIE STATE OF UTAH

PROJECT FOR

HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER

780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
1		
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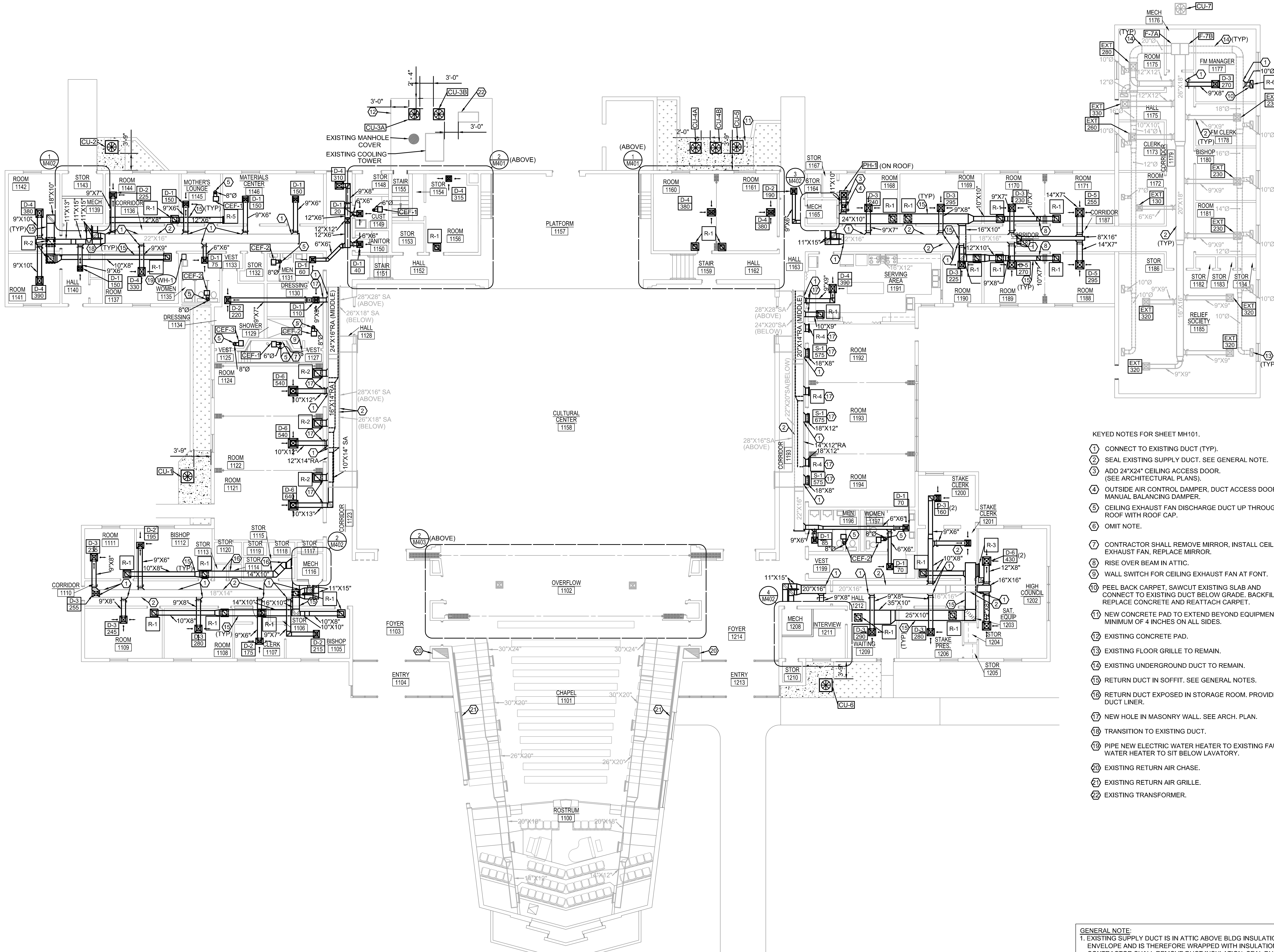
ISSUE TYPE:	BID DOCUMENTS
ISSUE DATE:	MAY 8, 2019
PROJECT NO:	18011
CAD DWG FILE:	I:\JOBS2018\18011\CAD\OKMD101.DWG
DRAWN BY:	TGA
CHECKED BY:	HLA

SHEET TITLE

MECHANICAL DEMOLITION PLAN

SHEET NUMBER

MD101



MECHANICAL REMODEL PLAN

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

N

KEYED NOTES FOR SHEET MH101.

1. CONNECT TO EXISTING DUCT (TYP).
2. SEAL EXISTING SUPPLY DUCT. SEE GENERAL NOTE.
3. ADD 24"X24" CEILING ACCESS DOOR. (SEE ARCHITECTURAL PLANS).
4. OUTSIDE AIR CONTROL DAMPER, DUCT ACCESS DOOR MANUAL BALANCING DAMPER.
5. CEILING EXHAUST FAN DISCHARGE DUCT UP THROUGH ROOF WITH ROOF CAP.
6. OMIT NOTE.
7. CONTRACTOR SHALL REMOVE MIRROR, INSTALL CEILING EXHAUST FAN, REPLACE MIRROR.
8. RISE OVER BEAM IN ATTIC.
9. WALL SWITCH FOR CEILING EXHAUST FAN AT FONT.
10. PEEL BACK CARPET, SAWCUT EXISTING SLAB AND CONNECT TO EXISTING DUCT BELOW GRADE. BACKFILL, REPLACE CONCRETE AND REATTACH CARPET.
11. NEW CONCRETE PAD TO EXTEND BEYOND EQUIPMENT A MINIMUM OF 4 INCHES ON ALL SIDES.
12. EXISTING CONCRETE PAD.
13. EXISTING FLOOR GRILLE TO REMAIN.
14. EXISTING UNDERGROUND DUCT TO REMAIN.
15. RETURN DUCT IN SOFFIT. SEE GENERAL NOTES.
16. RETURN DUCT EXPOSED IN STORAGE ROOM. PROVIDE DUCT LINER.
17. NEW HOLE IN MASONRY WALL. SEE ARCH. PLAN.
18. TRANSITION TO EXISTING DUCT.
19. PIPE NEW ELECTRIC WATER HEATER TO EXISTING FAUCET. WATER HEATER TO SIT BELOW LAVATORY.
20. EXISTING RETURN AIR CHASE.
21. EXISTING RETURN AIR GRILLE.
22. EXISTING TRANSFORMER.

GENERAL NOTE:
1. EXISTING SUPPLY DUCT IS IN ATTIC ABOVE BLDG INSULATION ENVELOPE AND IS THEREFORE WRAPPED WITH INSULATION. CONTRACTOR SHALL REMOVE DUCT INSULATION, SEAL DUCT ON ALL LONGITUDINAL AND TRANSVERSE JOINTS AND RE-INSULATE WITH 1 INCH INSULATION WRAP.
2. NEW SUPPLY DUCT IS ROUTED THROUGH ROOF TRUSS STRUCTURE ABOVE BLDG INSULATION IN ATTIC. INSULATE WITH LINER INSIDE DUCT AND 1" WRAP INSULATION ON OUTSIDE OF DUCT.
3. NEW RETURN DUCT IS ROUTED IN NEW SOFFITS BELOW CEILING PLANE. PROVIDE DUCT LINER.

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REGISTERED PROFESSIONAL ENGINEER No. 181307 HAL L. ABERCROMBIE STATE OF UTAH

PROJECT FOR

HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER

780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

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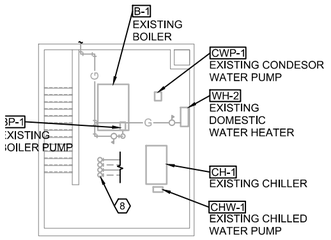
CAD DWG FILE:	I:\JOBS2018\18011\CAD\OKMH101.DWG
DRAWN BY:	TGA
CHECKED BY:	HLA

SHEET TITLE

MECHANICAL REMODEL PLAN

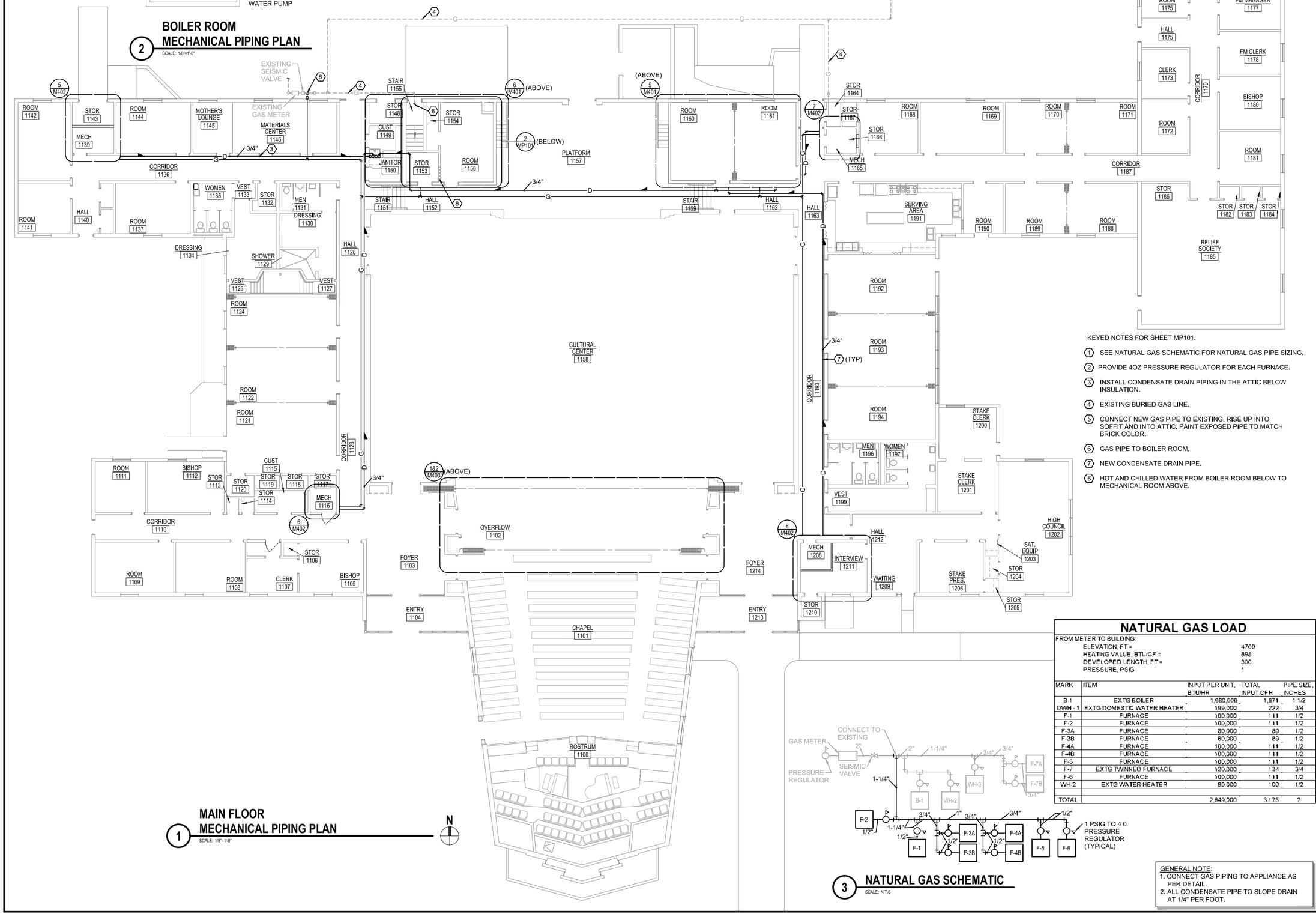
SHEET NUMBER

MH101



2 BOILER ROOM MECHANICAL PIPING PLAN

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



1 MAIN FLOOR MECHANICAL PIPING PLAN

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

N

KEYED NOTES FOR SHEET MP101.

1. SEE NATURAL GAS SCHEMATIC FOR NATURAL GAS PIPE SIZING.
2. PROVIDE 4OZ PRESSURE REGULATOR FOR EACH FURNACE.
3. INSTALL CONDENSATE DRAIN PIPING IN THE ATTIC BELOW INSULATION.
4. EXISTING BURIED GAS LINE.
5. CONNECT NEW GAS PIPE TO EXISTING, RISE UP INTO SOFFIT AND INTO ATTIC. PAINT EXPOSED PIPE TO MATCH BRICK COLOR.
6. GAS PIPE TO BOILER ROOM.
7. NEW CONDENSATE DRAIN PIPE.
8. HOT AND CHILLED WATER FROM BOILER ROOM BELOW TO MECHANICAL ROOM ABOVE.

NATURAL GAS LOAD

FROM METER TO BUILDING:
ELEVATION, FT = 4700
HEATING VALUE, BTU/CF = 898
DEVELOPED LENGTH, FT = 300
PRESSURE, PSIG 1

MARK	ITEM	INPUT PER UNIT, BTU/HR	TOTAL INPUT CFH	PIPE SIZE, INCHES
B-1	EXTG BOILER	1,680,000	1,871	1 1/2
DWH - 1	EXTG DOMESTIC WATER HEATER	199,000	222	3/4
F-1	FURNACE	100,000	111	1/2
F-2	FURNACE	100,000	111	1/2
F-3A	FURNACE	80,000	89	1/2
F-3B	FURNACE	80,000	89	1/2
F-4A	FURNACE	100,000	111	1/2
F-4B	FURNACE	100,000	111	1/2
F-5	FURNACE	100,000	111	1/2
F-7	EXTG TWINNED FURNACE	120,000	134	3/4
F-6	FURNACE	100,000	111	1/2
WH-2	EXTG WATER HEATER	90,000	100	1/2
TOTAL		2,849,000	3,173	2

3 NATURAL GAS SCHEMATIC

SCALE: N.T.S

GENERAL NOTE:
1. CONNECT GAS PIPING TO APPLIANCE AS PER DETAIL.
2. ALL CONDENSATE PIPE TO SLOPE DRAIN AT 1/4" PER FOOT.

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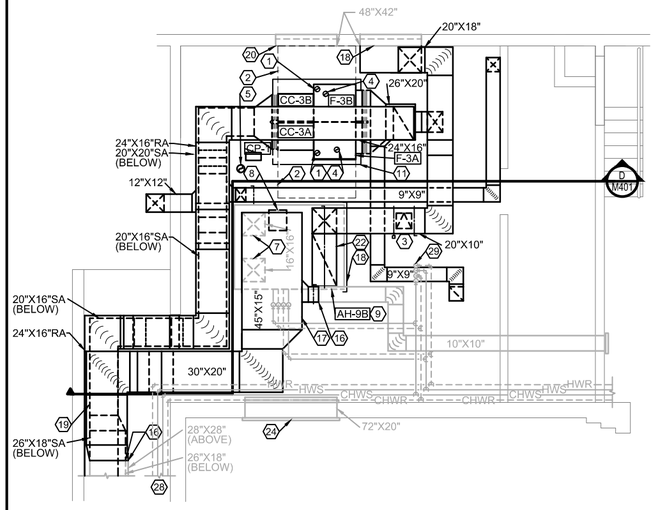
SHEET TITLE

MECHANICAL PIPING PLAN

SHEET NUMBER

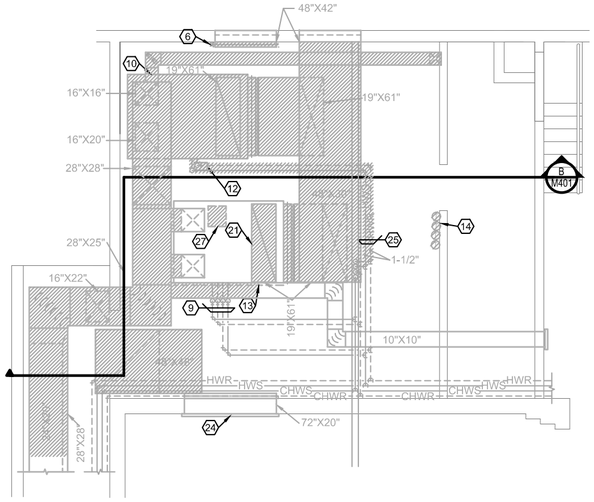
MP101



MECH 1301
MECHANICAL REMODEL PLAN

4

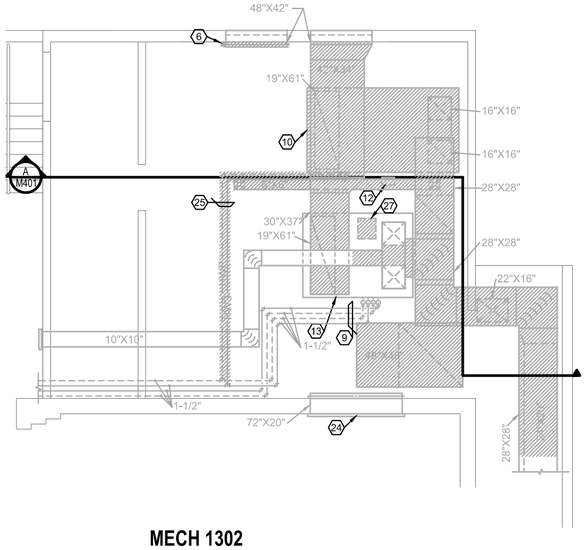
SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1301
MECHANICAL DEMOLITION PLAN

2

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"



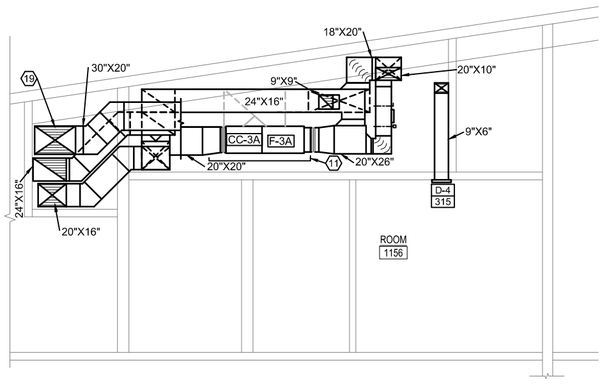
MECH 1302
MECHANICAL DEMOLITION PLAN

1

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"

KEYED NOTES FOR SHEET M401.

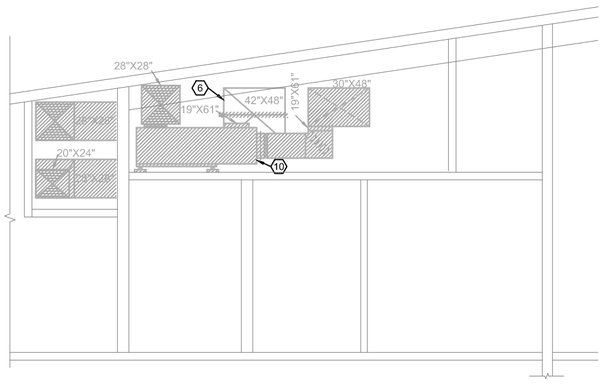
1. COMBUSTION AIR THROUGH ROOF.
2. PROVIDE 30" OF CLEARANCE.
3. OUTSIDE AIR CONTROL DAMPER, DUCT ACCESS DOOR, MANUAL BALANCE DAMPER.
4. GAS VENT THROUGH ROOF.
5. CEILING EXHAUST FAN THROUGH ROOF.
6. REMOVE EXISTING RELIEF AIR DAMPER.
7. CONNECT TO EXISTING AIR HANDLING UNIT WITH NEW FLEX CONNECTIONS APPROX. 16"X16", FIELD VERIFY.
8. NEW FAN MOTOR RATED FOR VFD.
9. REPLACE CHILLED WATER AND HEATING WATER CONTROL VALVES, SEE DETAILS 7 & 8/M502.
10. REMOVE EXISTING AIR HANDLER SHOWN CROSSHATCHED.
11. DRAIN PAN BELOW EQUIPMENT, SEE DETAIL.
12. REMOVE HEATING COIL PUMP.
13. AIR HANDLING UNIT TO REMAIN FOR CULTURAL CENTER.
14. REMOVE CONTROLS.
15. SEE NATURAL GAS SCHEMATIC FOR PIPE SIZES.
16. CONNECT TO EXISTING DUCT.
17. RISE AS HIGH AS POSSIBLE.
18. CAP OPENING AT AIR HANDLING UNIT.
19. SUPPLY AIR DUCT SERVING CULTURAL CENTER TO BE ON TOP.
20. CAP LOUVER.
21. REMOVE RETURN AIR DAMPER.
22. RISE LINED RETURN AIR DUCT SAME SIZE AS OPENING OF UNIT. CONNECT NEW OUTSIDE AIR DUCT INTO SIDE OF RETURN WITH 45 DEGREE BRANCH DUCT. INSTALL MANUAL BALANCE DAMPER ON TOP OF RETURN DUCT THAT CAN LOCK IN PLACE.
23. REMOVE OUTSIDE AIR DAMPER.
24. EXISTING CULTURAL CENTER RETURN.
25. REMOVE HEATING WATER PIPING THAT SERVED AIR HANDING UNIT.
26. CONDENSATE RECEIVER. 4 INCH DIAMETER BY 1-1/2 INCH BELL FITTING. ROUTE 1-1/2 INCH PIPE INTO CP-1.
27. REMOVE FAN MOTOR.
28. TO CHAPEL AHU-8.
29. 2-1/2" HW 2-1/2" CHW PIPING DOWN TO BOILER ROOM.



MECH 1301
MECHANICAL REMODEL SECTION

D

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1301
MECHANICAL DEMOLITION SECTION

B

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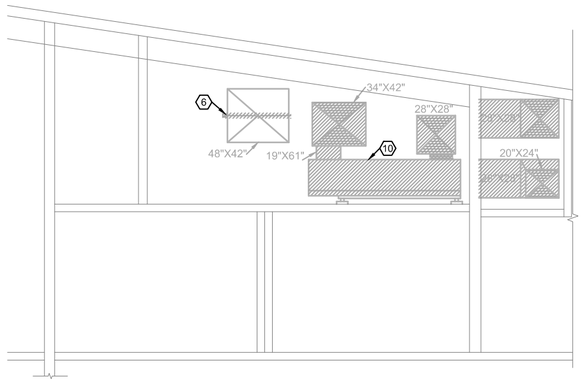
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1302
MECHANICAL DEMOLITION SECTION

A

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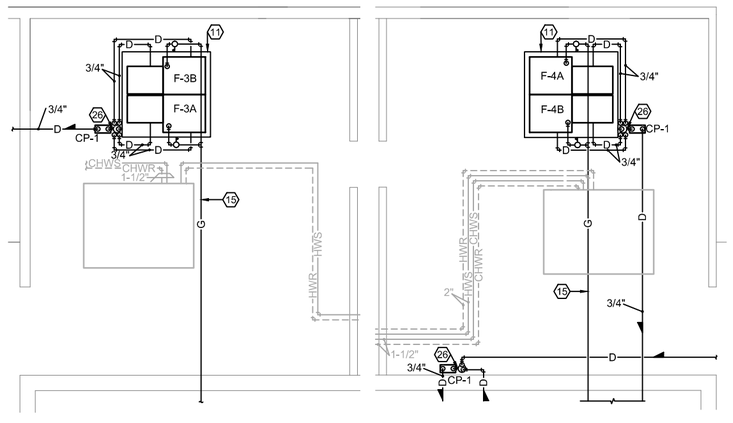
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1301
MECHANICAL PIPING REMODEL PLAN

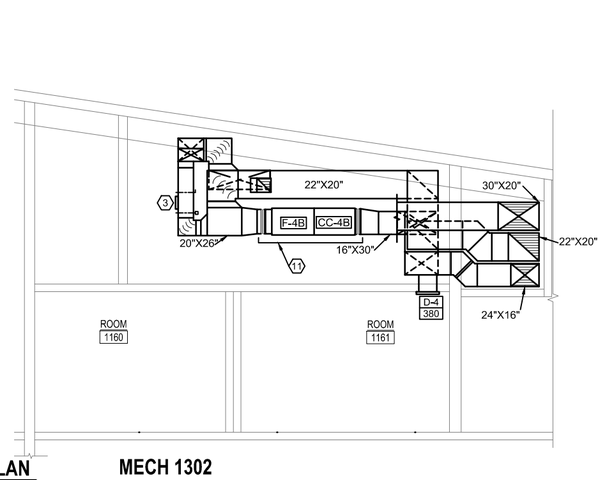
6

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"

MECH 1302
MECHANICAL PIPING REMODEL PLAN

5

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1302
MECHANICAL REMODEL SECTION

C

SCALE (30"X42" SHEET): 1/4" = 1'-0"
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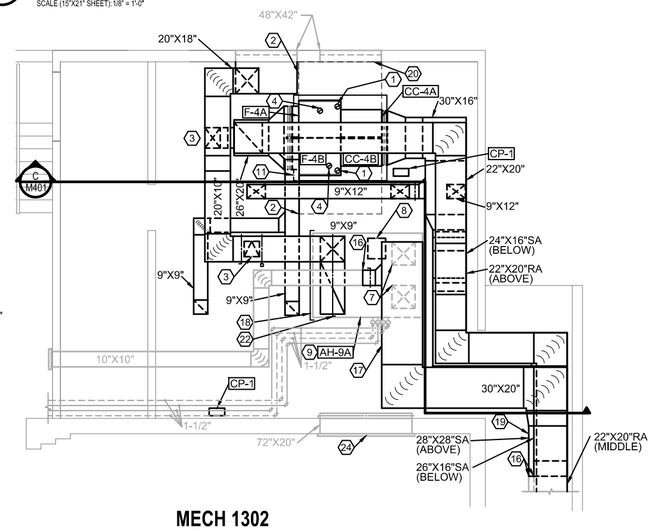

MECH 1302
MECHANICAL REMODEL PLAN

3

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"

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DRAWN BY:	TGA
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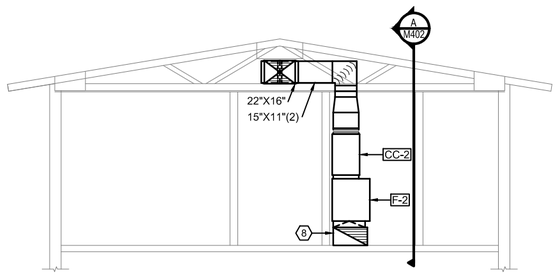
SHEET TITLE

LARGE SCALE MECHANICAL PLANS

SHEET NUMBER

M401



MECH 1139
MECHANICAL SECTION
E

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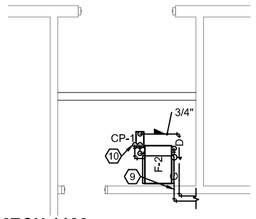
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1139
MECHANICAL PIPING PLAN
5

SCALE (30"X42" SHEET): 1/4" = 1'-0"
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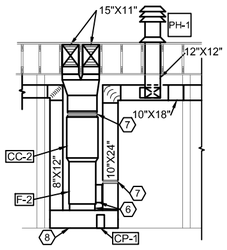

MECH 1139
MECHANICAL SECTION
A

SCALE (30"X42" SHEET): 1/4" = 1'-0"
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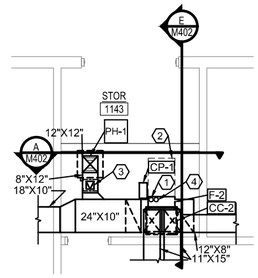

MECH 1139
MECHANICAL PLAN
1

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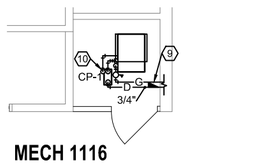

MECH 1116
MECHANICAL PIPING PLAN
6

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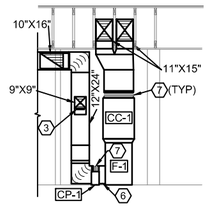

MECH 1116
MECHANICAL SECTION
B

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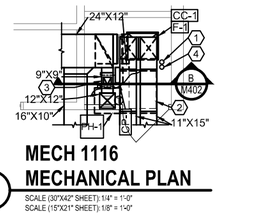

MECH 1116
MECHANICAL PLAN
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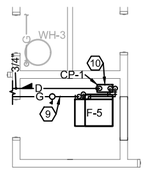

MECH 1165
MECHANICAL PIPING PLAN
7

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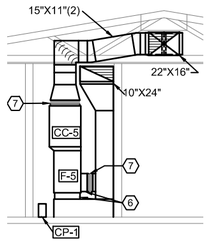

MECH 1165
MECHANICAL SECTION
C

SCALE (30"X42" SHEET): 1/4" = 1'-0"
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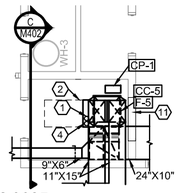

MECH 1165
MECHANICAL PLAN
3

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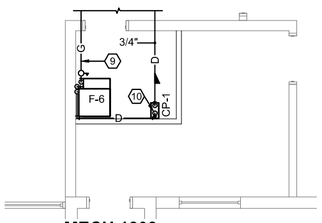
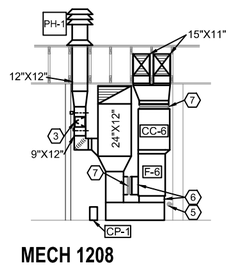


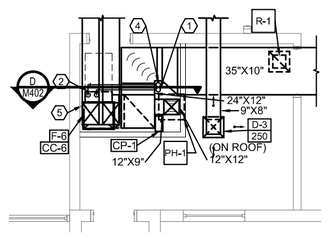
MECH 1208
MECHANICAL PIPING PLAN
8

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1208
MECHANICAL SECTION
D

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"



MECH 1208
MECHANICAL PLAN
4

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"

KEYED NOTES FOR SHEET M402.

1. VENT THROUGH ROOF.
2. PROVIDE 30" OF CLEARANCE.
3. OUTSIDE AIR CONTROL DAMPER, DUCT ACCESS DOOR, MANUAL BALANCE DAMPER.
4. GAS VENT.
5. EXT. OUTLET.
6. FILTER ACCESS DOOR.
7. FLEXIBLE EQUIPMENT CONNECTION.
8. 12" TALL RETURN AIR PLENUM BOX.
9. SEE NATURAL GAS SCHEMATIC FOR PIPE SIZING.
10. CONDENSATE PIPE FROM COOLING COIL AND FURNACE CONDENSATE INTO CP-1.
11. NEW WALL LOCATION. SEE ARCH PLAN.

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REGISTERED PROFESSIONAL ENGINEER — No. 181307 — WILL ABERCROMBIE — STATE OF UTAH

PROJECT FOR

HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER

780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
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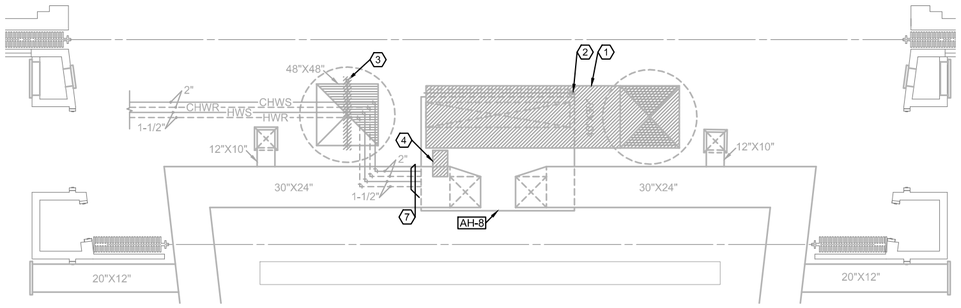
CAD DWG FILE:	I:\JOBS2018\18011\CAD\OKM402.DWG
DRAWN BY:	TGA
CHECKED BY:	HLA

SHEET TITLE

LARGE SCALE MECHANICAL PLANS

SHEET NUMBER

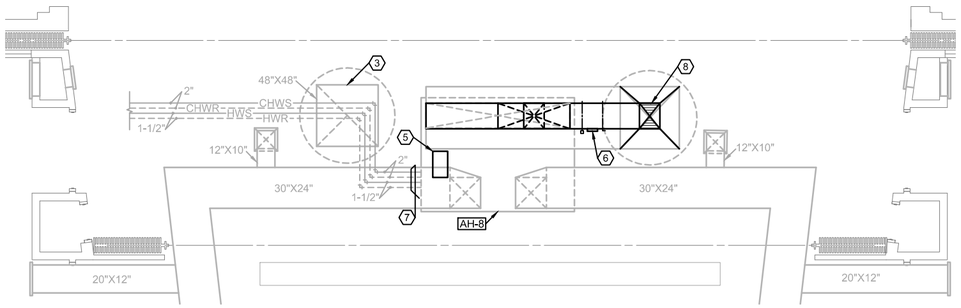
M402



OVERFLOW 1102 (ABOVE) MECHANICAL DEMOLITION PLAN

1

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"



OVERFLOW 1102 (ABOVE) MECHANICAL REMODEL PLAN

2

SCALE (30"X42" SHEET): 1/4" = 1'-0"
SCALE (15"X21" SHEET): 1/8" = 1'-0"

KEYED NOTES FOR SHEET M403.

1. REMOVE OUTSIDE AIR DUCT AND OUTSIDE AIR DAMPER. LEAVE ROOF PENETRATION AND PENTHOUSE.
2. REMOVE RETURN AIR CONTROL DAMPER ACTUATOR. PLACE MANUAL DAMPER HANDLE ON DAMPER THAT CAN LOCK IN PLACE.
3. REMOVE RELIEF AIR CONTROL DAMPER AND CAP DUCT AT CEILING.
4. REMOVE EXISTING FAN MOTOR.
5. NEW FAN MOTOR RATED FOR VFD.
6. NEW OUTSIDE AIR CONTROL DAMPER. DUCT ACCESS DOOR AND MANUAL BALANCE DAMPER.
7. REPLACE CHILLED WATER AND HEATING WATER CONTROL VALVES. SEE DETAILS 7 & 8 ON M502.
8. TRANSITION TO EXISTING OA DUCT.

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780 WEST 500 SOUTH
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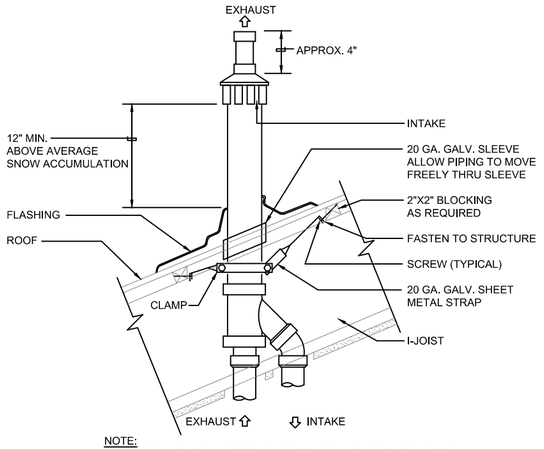
SHEET TITLE

LARGE SCALE MECHANICAL PLANS

SHEET NUMBER

M403



NOTE:
USE EXTENSION KIT NECESSARY TO ACHEIVE CLEARANCE ABOVE SNOW LEVEL.

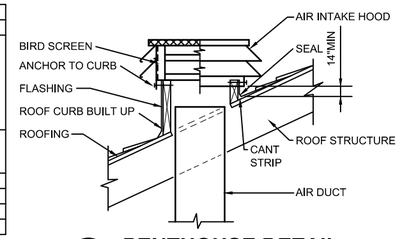
12 CONCENTRIC ROOF TERMINATION DETAIL
SCALE: N.T.S.

DIMENSION OF LONGEST SIDE, INCHES	SHEET METAL GAUGE (ALL FOUR SIDES)	TRANSVERSE REINFORCING (1)					
		MINIMUM REINFORCING ANGLE SIZE AND MAXIMUM LONGITUDINAL SPACING BETWEEN TRANSVERSE JOINTS &/OR INTERMEDIATE REINFORCING	AT JOINTS				
			MIN. H. IN.	DRIVE SLIP / PLAIN S SLIP	HEMMED S SLIP	ALTER'NT BAR SLIP	REIN-FORCED BAR SLIP
				RECOM-MENDED GAUGE	RECOM-MENDED GAUGE	RECOM-MENDED GAUGE	RECOM-MENDED GAUGE
UP THRU 12	26	NONE REQUIRED	1	26	26	24	24
13 - 18	24	NONE REQUIRED	1	24	24	24	24
19 - 30	24	1"X1"X1/8" @ 60 IN (3)	1	-	24	24	24
31 - 36	22	1"X1"X1/8" @ 60 IN (3)	1	-	-	22	22

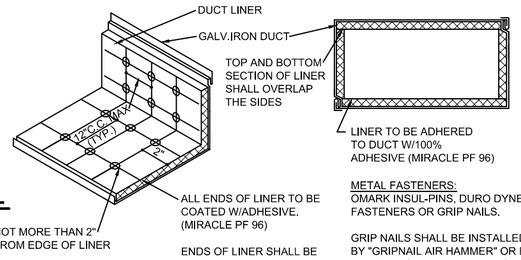
(1) TRANSVERSE REINFORCING SIZE IS DETERMINED BY DIMENSION OF SIDE TO WHICH ANGLE IS APPLICABLE

(2) LONGITUDINAL JOINTS TO BE PITTSBURGH OR SNAP LOCK TYPE.

(3) IF BAR SLIP OR REINFORCED BAR SLIP JOINTS ARE USED, ANGLE IRON REINFORCING SHALL NOT BE REQUIRED.

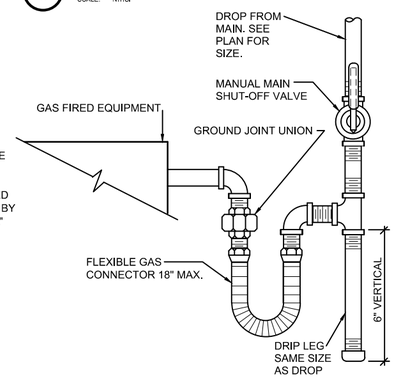


1 PENTHOUSE DETAIL
SCALE: N.T.S.

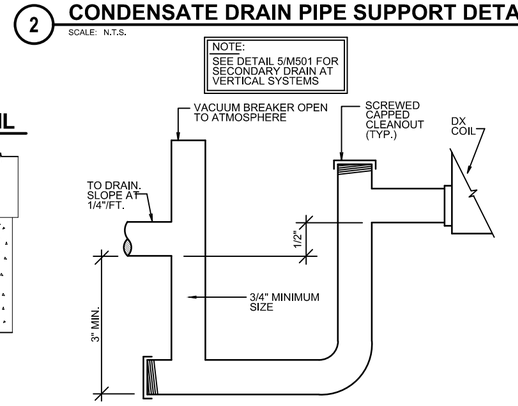


9 DUCT LINER DETAIL
SCALE: N.T.S.

6 DUCT CONSTRUCTION DETAIL
SCALE: N.T.S.

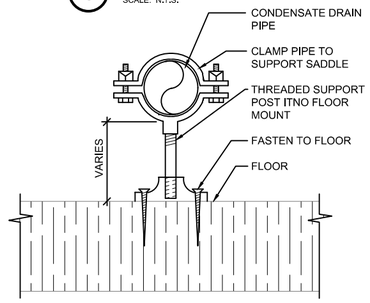


7 GAS LINE CONNECTION DETAIL
SCALE: N.T.S.



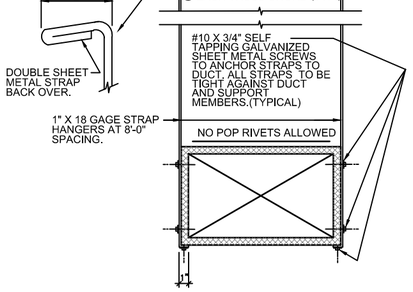
NOTE:
SEE DETAIL 5/M501 FOR SECONDARY DRAIN AT VERTICAL SYSTEMS

2 CONDENSATE DRAIN PIPE SUPPORT DETAIL
SCALE: N.T.S.

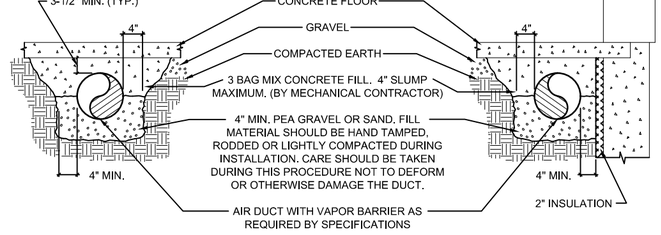


NOTE:
SUPPORT MAY BE MADE FROM ANGLE IRON OR CHANNELS FASTENED SECURELY TO FLOOR. PIPE MUST BE CLAMPED SECURELY TO SADDLE OR CROSS MEMBER OF PIPE SUPPORT.

3 DX COIL CONDENSATE DRAIN DETAIL
SCALE: N.T.S.



TYP. UNDERFLOOR DUCT

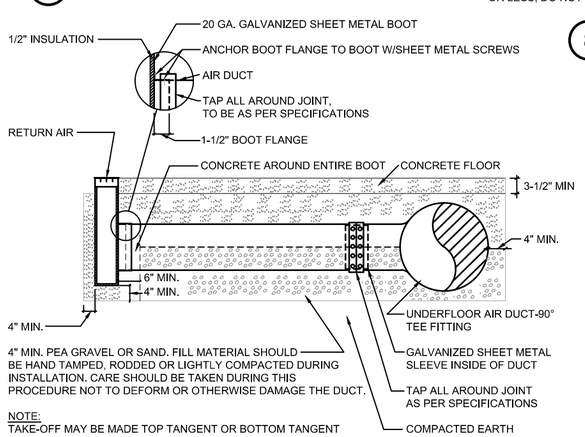


DUCT NEAR FOUNDATION

10 DUCT STRAP HANGER DETAIL
SCALE: N.T.S.

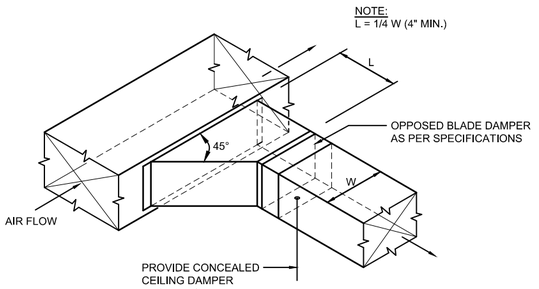
NOTE:
DETAIL APPLIES TO DUCTS WITH A DIAMETER LARGER THAN 12". IF DUCT DIAMETER IS 12" OR LESS, DO NOT PLACE CONCRETE OVER TOP HALF OF DUCT BUT USE PEA GRAVEL OR SAND.

8 UNDER FLOOR DUCT DETAILS
SCALE: N.T.S.

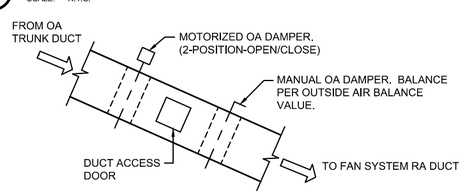


NOTE:
TAKE-OFF MAY BE MADE TOP TANGENT OR BOTTOM TANGENT

11 UNDER FLOOR DUCT & BOOT CONNECTION DETAIL
SCALE: N.T.S.



4 BRANCH DUCT TAKE-OFF & DAMPER DETAIL
SCALE: N.T.S.



5 TYPICAL MINIMUM OUTSIDE AIR DUCT DETAIL
SCALE: N.T.S.

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REGISTERED PROFESSIONAL ENGINEER No. 181307 WILL ABERCROMBIE STATE OF UTAH

PROJECT FOR
HVAC REMODEL
PAYSON 6, 8, 10 & STAKE CENTER
780 WEST 500 SOUTH
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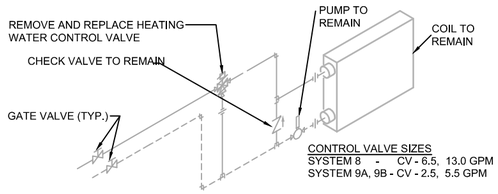
MECHANICAL DETAILS

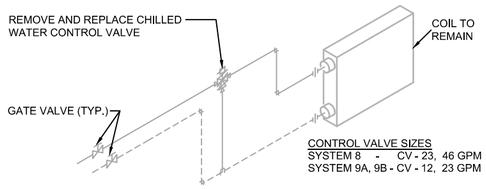
SHEET NUMBER

M501



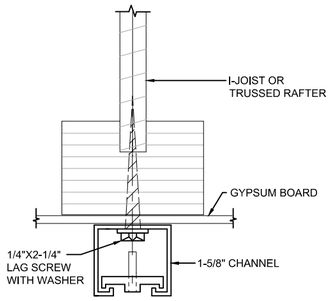
7 HOT WATER PIPING SCHEMATIC FOR HEATING COILS IN AIR HANDLING UNITS

SCALE: N.T.S.



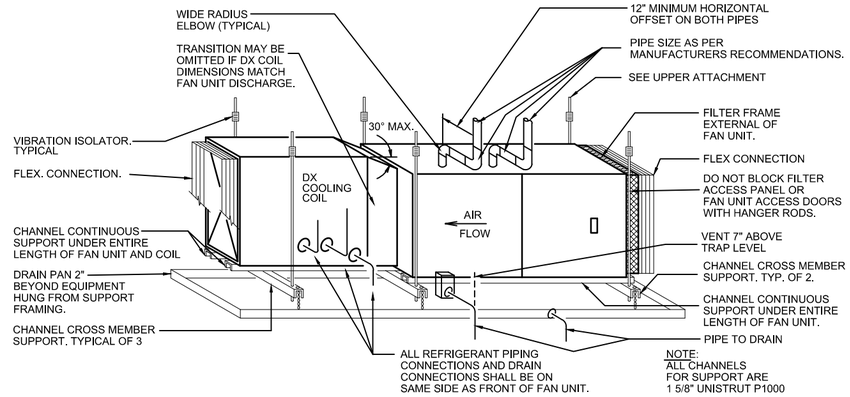
8 CHILLED WATER PIPING SCHEMATIC FOR COOLING COILS IN AIR HANDLING UNITS

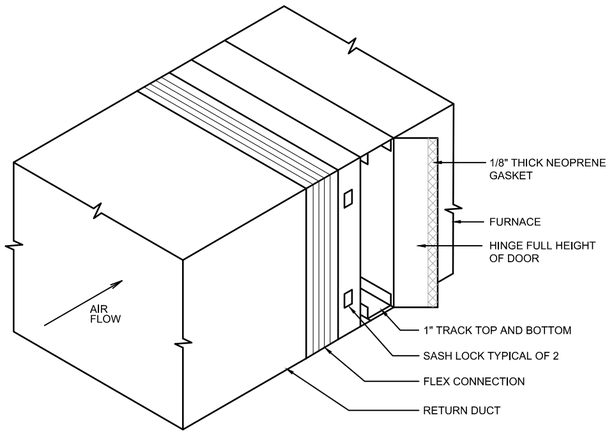
SCALE: N.T.S.



4 UPPER ATTACHMENT DETAIL

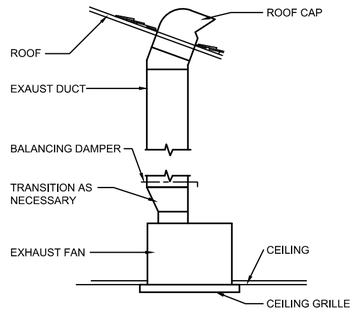
SCALE: N.T.S.





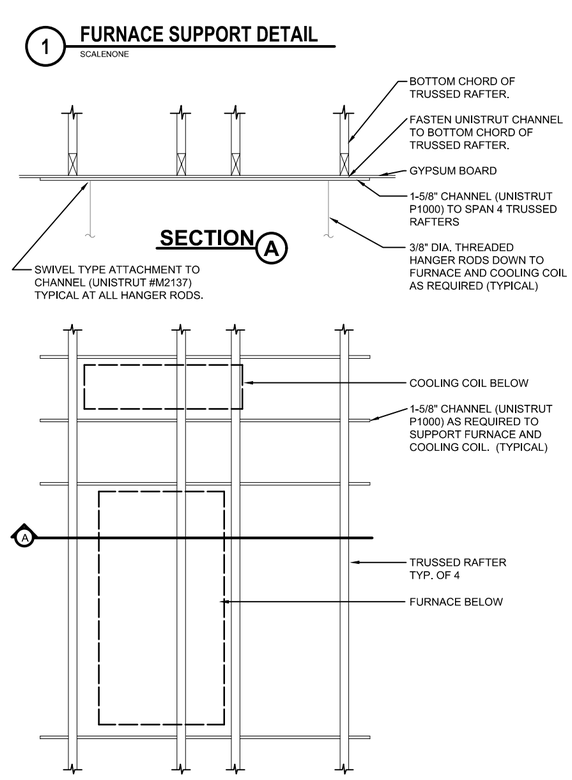
5 EXTERNAL FILTER SECTION DETAIL

SCALE: N.T.S.



6 CEILING EXHAUST FAN DETAIL

SCALE: N.T.S.

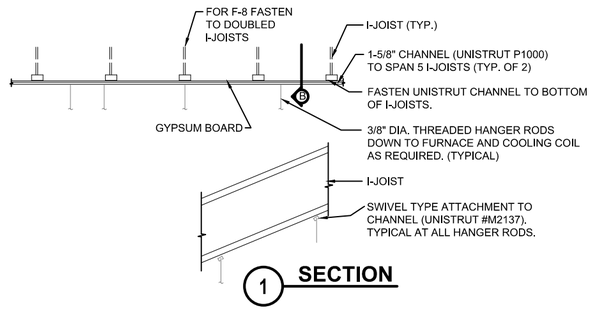


1 FURNACE SUPPORT DETAIL

SCALENONE

2 UPPER SUPPORT DETAIL

SCALE: N.T.S.



1 SECTION

3 UPPER SUPPORT DETAIL

SCALE: N.T.S.

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HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER

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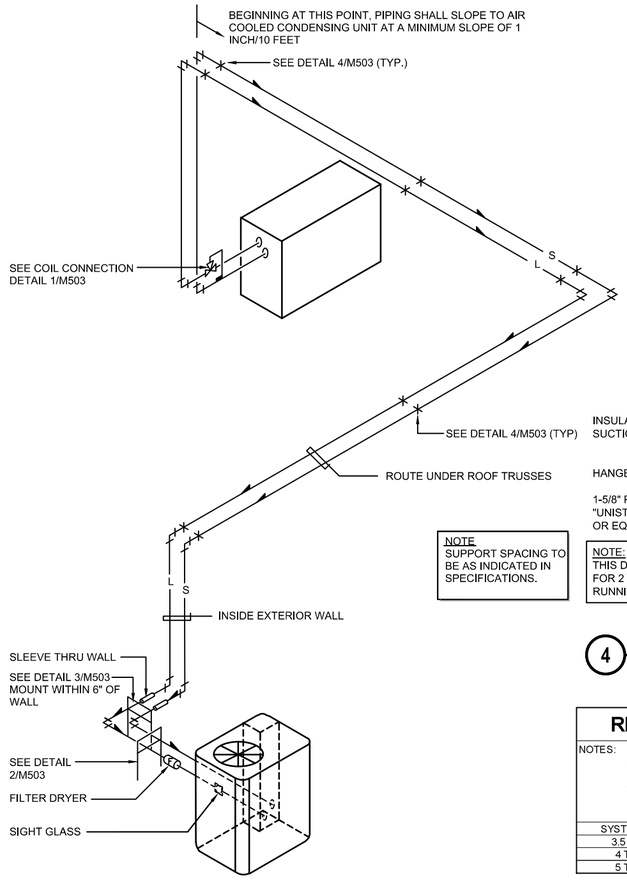
MECHANICAL DETAILS

SHEET NUMBER

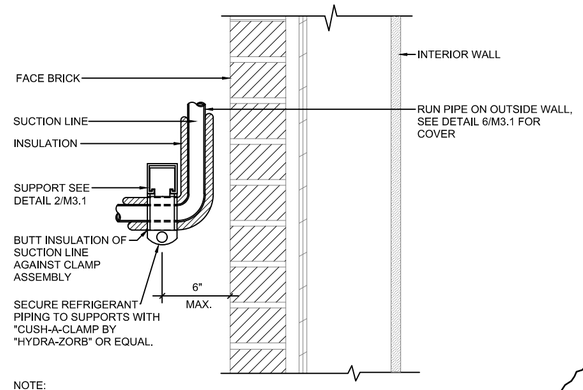
M502

REFRIGERANT PIPING LEGEND	
SYMBOL	DESCRIPTION
	EXPANSION VALVE. SEE DETAIL B/M503
	MOISTURE INDICATING SIGHT GLASS
	FLEXIBLE CONNECTION
	FILTER DRIER
	PIPE SUPPORT. SEE DETAILS C/M503 AND D/M503
	EXTERIOR PIPE SUPPORT. SEE DETAIL E/M503
	DIRECTION OF SLOPE DOWN
S	SUCTION LINE
L	LIQUID LINE



5 TYPICAL REFRIGERANT SCHEME

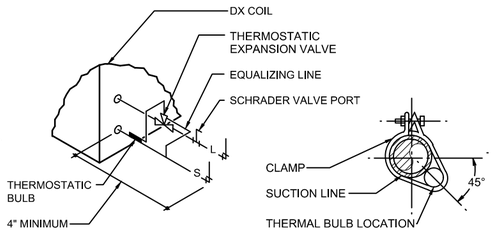
SCALE: N.T.S.



NOTE:
LIQUID LINE SIMILAR

3 REFRIGERANT PIPE SUPPORT AT WALL

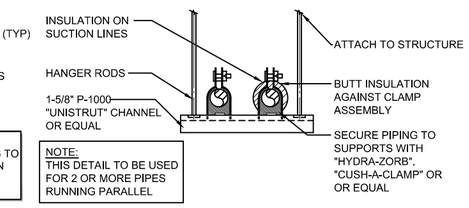
SCALE: N.T.S.



NOTES:
1. THERMOSTATIC BULB TO BE AS CLOSE TO COIL AS POSSIBLE NOT ALLOWED ON VERTICAL LINES.
2. EQUALIZING LINE SHALL BE CONNECTED IN STRAIGHT SECTION OF SUCTION LINE AFTER THERMAL BULB.(NOT ALLOWED ON VERTICAL LINES.)

1 REFRIGERANT COIL CONNECTION DETAIL

SCALE: N.T.S.



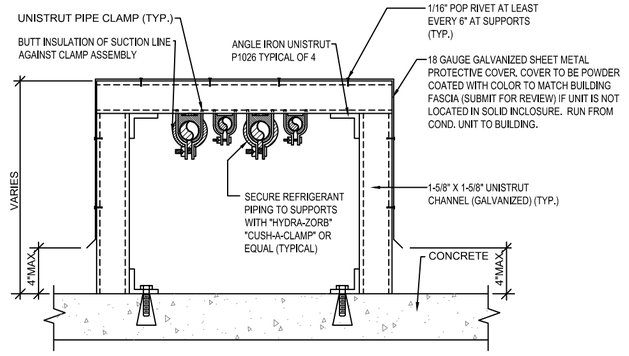
NOTE
SUPPORT SPACING TO BE AS INDICATED IN SPECIFICATIONS.

NOTE:
THIS DETAIL TO BE USED FOR 2 OR MORE PIPES RUNNING PARALLEL

4 SUSPENDED REFRIGERANT PIPE SUPPORT AT CEILING DETAIL

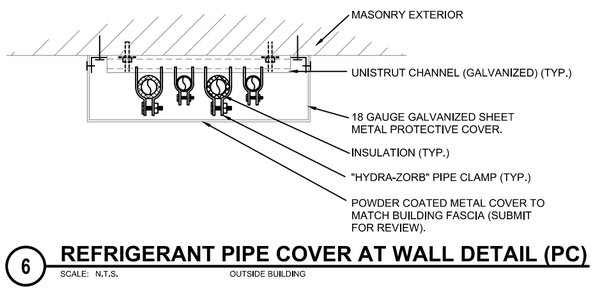
SCALE: N.T.S.

REFRIGERANT PIPING SCHEDULE		
NOTES: (1) REFRIGERANT R-410A (2) SIZES LISTED ARE FOR PIPE WITH EQUIVALENT LENGTHS UP TO 80 FEET AND LESS THAN 20 FEET VERTICAL. FOR LONGER PIPE, REFER TO MANUFACTUER'S GUIDELINES		
SYSTEM SIZE	LIQUID PIPE, DIA	SUCTION PIPE, DIA
3.5 TONS	3/8	7/8
4 TONS	3/8	7/8
5 TONS	3/8	1-1/8



2 EXTERIOR REFRIGERANT PIPE SUPPORT DETAIL

SCALE: N.T.S.



6 REFRIGERANT PIPE COVER AT WALL DETAIL (PC)

SCALE: N.T.S. OUTSIDE BUILDING

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REFRIGERANT DETAILS

SHEET NUMBER

M503

PENTHOUSE SCHEDULE

NOTES:
(1) OUTSIDE AIR
(2) PROVIDE WITH 14 INCH ROOF CURB

MARK	AIRFLOW, CFM	APD, INCHES	THROAT SIZE, INCHES	OVERALL PENTHOUSE SIZE, INCHES	CURB HEIGHT, INCHES	TEIR	COOK MODEL	REMARKS
PH-1	646	0.05	14 X 14	26 X 26 X 9	14	2	TRE	

REGISTER & GRILLE SCHEDULE (1,2,3)

NOTES:
(1) MAXIMUM NC-28 @ MAXIMUM CFM.
(2) FINISH SHALL BE BAKED ENAMEL WITH COLOR AS SELECTED BY ARCHITECT.
(3) REFER TO ARCHITECTURAL PLANS FOR MOUNTING TYPE.
(4) PROVIDE WITH OPPOSED BLADE DAMPER

MARK	TYPE	SERVICE	CFM RANGE	NECK SIZE, INCHES	MODEL	REMARKS
S-1	WALL	SUPPLY	400-675	18 X 8	TITUS 170	(4)
S-2	WALL	SUPPLY	240-360	12 X 8	TITUS 170	(4)
S-3	WALL	SUPPLY	55 - 145	8 X 4	TITUS 170	(4)
R-1	CEILING	RETURN	0-350	10 X 10	TITUS 355RL	
R-2	CEILING	RETURN	350-610	14 X 14	TITUS 355RL	
R-3	WALL	RETURN	440-875	30 X 8	TITUS 355RL	
R-4	WALL	RETURN	440-610	16 X 16	TITUS 355RL	
R-5	WALL	RETURN	0-300	12 x 6	TITUS 355RL	
R-6	FLOOR	RETURN	210 - 535	18 X 6	KRUEGER 1500	

DIFFUSER SCHEDULE

NOTES:
(1) MAXIMUM NC OF 28 @ MAXIMUM CFM
(2) FINISH SHALL BE BAKED ENAMEL WITH COLOR AS SELECTED BY ARCHITECT.
(3) ALL DIFFUSERS ARE 360 DEGREE BLOW UNLESS OTHERWISE NOTED ON PLAN.
(4) BORDER TYPE 1 (SURFACE MOUNT) TO BE USED.

MARK	TYPE	SERVICE	NECK SIZE, INCHES	CFM RANGE	MODEL	REMARKS
D -1	HARD CEILING	SUPPLY	6 X 6	0 - 155	TITUS TDC	
D -2	HARD CEILING	SUPPLY	9 X 6	155-225	TITUS TDC	
D-3	HARD CEILING	SUPPLY	9 X 9	225-300	TITUS TDC	
D-4	HARD CEILING	SUPPLY	9 X 12	300-400	TITUS TDC	
D-5	HARD CEILING	SUPPLY	12 X 12	400 - 590	TITUS 355RL	
D-6	HARD CEILING	SUPPLY	15 X 15	470 - 720	TITUS TDC	

CEILING EXHAUST FAN SCHEDULE

NOTES:
(1) CAPACITIES SHALL BE RATED AT 4,250 FEET ELEVATION.
(2) DISCONNECT SHALL BE PROVIDED BY DIVISION 26
(3) FAN SHALL TURN ON FROM WALL SWITCH BY DIVISION 26
(4) PROVIDE WITH ROOF CAP AND CURB.

MARK	AIRFLOW, CFM	EXT STATIC. IN W.C	VOLTS / HERTZ / PHASE	WATTS	WEIGHT, LBS	COOK MODEL	REMARKS
CEF - 1	75	0.50	120 / 60 / 1	85.7	13	GEMINI GC - 148	
CEF - 2	200	0.47	120 / 60 / 1	85.7	13	GEMINI GC - 188	
CEF - 3	300	0.23	120 / 60 / 1	104	24	GEMINI GC - 422	

CULTURAL CENTER AND CHAPEL AIR HANDLING UNIT SCHEDULE

NOTES:
(1) AIR HANDLING UNIT IS EXISTING TO REMAIN.
(2) MOTOR SHALL BE REPLACED WITH NEW OF SAME SIZE BUT RATED FOR A VFD. VFD SHALL BE PROVIDED BY CONTROLS CONTRACTOR.
(3) BALANCE EXISTING SYSTEM TO VALUES LISTED

MARK	DUTY	SUPPLY AIRFLOW, CFM	CHILLED WATER FLOW, GPM	HOT WATER FLOW, GPM	OUTSIDE AIR, CFM	NEW MOTOR E	NEW MOTOR HP
AH - 8	CHAPEL	10380	46	13	2075	208-60-3	5
AH - 9A	EAST CULTURAL	4550	23	5.5	1085	208-60-3	2
AH - 9B	WEST CULTURAL	4550	23	5.5	1085	208-60-3	2

FURNACE SCHEDULE

NOTES:
(1) VERTICAL FURNACE
(2) CONDENSING TYPE, 96% EFFICIENT
(3) SITE ELEVATION IS 4,250 FT
(4) EXISTING TO REMAIN. DATA FOR BALANCING.

MARK	MIN INPUT CAPACITY, BTU/HR	OUTPUT CAPACITY, BTU/HR	AIRFLOW, CFM	ESP, INCHES	ELECTRICAL REQUIREMENT VOLTS/HERTZ/PHASE	HP	OUTSIDE AIR CFM	YORK MODEL	REMARKS
F-1	100,000	95,000	1,600	0.65	120 / 60 / 1	3/4	300	TM9E100C20MP11	
F-2	100,000	95,000	2,000	0.42	120 / 60 / 1	3/4	382	TM9E100C20MP11	
F-3A	80,000	76,000	1,400	0.65	120 / 60 / 1	1/2	383	TM9E080C16MP11	
F-3B	80,000	76,000	1,400	0.65	120 / 60 / 1	1/2	383	TM9E080C16MP11	
F-4A	100,000	95,000	1,600	0.65	120 / 60 / 1	3/4	413	TM9E100C20MP11	
F-4B	100,000	95,000	1,600	0.65	120 / 60 / 1	3/4	413	TM9E100C20MP11	
F-5	100,000	95,000	2,000	0.42	120 / 60 / 1	3/4	524	TM9E100C20MP11	
F-6	100,000	95,000	2,000	0.42	120 / 60 / 1	3/4	400	TM9E100C20MP11	
F-7	NA	NA		NA	NA	NA		NA	(4)

CONDENSING UNIT SCHEDULE

NOTES:
(1) MOUNT ON GROUND ON CONCRETE PAD
(2) PROVIDE WITH LOW AMBIENT KIT TO OPERATE DOWN TO 0 DEGREES

MARK	NOMINAL CAPACITY, TONS	REQUIRED CAPACITY, TONS	REFRIGERANT	AMBIENT TEMP, DEG F	SEER	ELECTRICAL REQUIREMENTS VOLTS/HERTZ/PHASE	MCA	MOCP	YORK MODEL
CU-1	4	3.2	R-410A	95	13	208-230/60/1	28.5	50	YJCD48
CU-2	5	3.7	R-410A	95	13	208-230/60/1	34.3	60	YJCD60
CU-3A	3.5	3	R-410A	95	13	208-230/60/1	21.1	35	YJCD42
CU-3B	3.5	3	R-410A	95	13	208-230/60/1	21.1	35	YJCD42
CU-4A	4	3.3	R-410A	95	13	208-230/60/1	28.5	50	YJCD48
CU-4B	4	3.3	R-410A	95	13	208-230/60/1	28.5	50	YJCD48
CU-5	5	4.4	R-410A	95	13	208-230/60/1	34.3	60	YCJD60
CU-6	5	4	R-410A	95	13	208-230/60/1	34.3	60	YCJD60

DX COIL SCHEDULE

NOTES:
(1) HORIZONTAL ARRANGEMENT
(2) SITE ELEVATION IS 4,250 FT
(3) 40 DEGREE EVAP TEMPERATURE

MARK	TOTAL CAPACITY, BTU/HR	SENSIBLE CAPACITY, BTU/HR	ENTERING COIL CONDITIONS DRY BULB. F	ENTERING COIL CONDITIONS WET BULB. F	AIRFLOW. CFM	PRESS. DROP. INCHES	YORK MODEL
CC - 1	48	35.2	78.8	55.5	1600	0.18	FC62D
CC - 2	56.5	37.4	78.8	55.5	2000	0.29	FC62D
CC - 3A	42	30.4	80.5	56.0	1400	0.20	FC48C
CC - 3B	42	30.4	80.5	56.0	1400	0.20	FC48C
CC - 4A	48	35.2	80.2	56.0	1600	0.18	FC62D
CC - 4B	48	35.2	80.2	56.0	1600	0.18	FC62D
CC - 5	56.5	37.4	80.2	56.0	2000	0.29	FC62D
CC - 6	56.5	37.4	79	55.5	2000	0.29	FC62D

CONDENSATE PUMP SCHEDULE

NOTES:
(1) PROVIDE CHECK VALVE IN PUMP DISCHARGE

MARK	DUTY	FLOW, GPH	HEAD, FEET	ELECTRICAL REQUIREMENTS VOLTS / PHASE / HERTZ	AMPS	LITTLE GIANT MODEL	REMARKS
CP - 1	FURNACE / COOLING COIL CONDENSATE	200	10	120 / 1 / 60	2.5	VCL - 24ULS	(1)

ELECTRIC WATER HEATER SCHEDULE

NOTES:
1 THERMOSTATIC CONTROL WITH ADJUSTABLE SETTING.
2 PROVIDE WITH AMTROL ST-12-C THERMAL EXPANSION TANK.

MARK	STORAGE GALLONS	ELECTRICAL REQUIREMENTS VOLTS/HZ/PHASE	ELECTRICAL REQUIREMENTS WATTS	AMERICAN MODEL	REMARKS
WH - 1	2.5	120 / 60 / 1	1500	E1E2.5USO15V	

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CONSULTANTS

STAMP

REGISTERED PROFESSIONAL ENGINEER No. 181307 WILL L. ABERCROMBIE STATE OF UTAH

PROJECT FOR

HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER

780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
1		
2		
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ISSUE TYPE:	BID DOCUMENTS
ISSUE DATE:	MAY 8, 2019
PROJECT NO:	18011
CAD DWG FILE:	I:\JOBS2018\18011\CAD\OKM601.DWG
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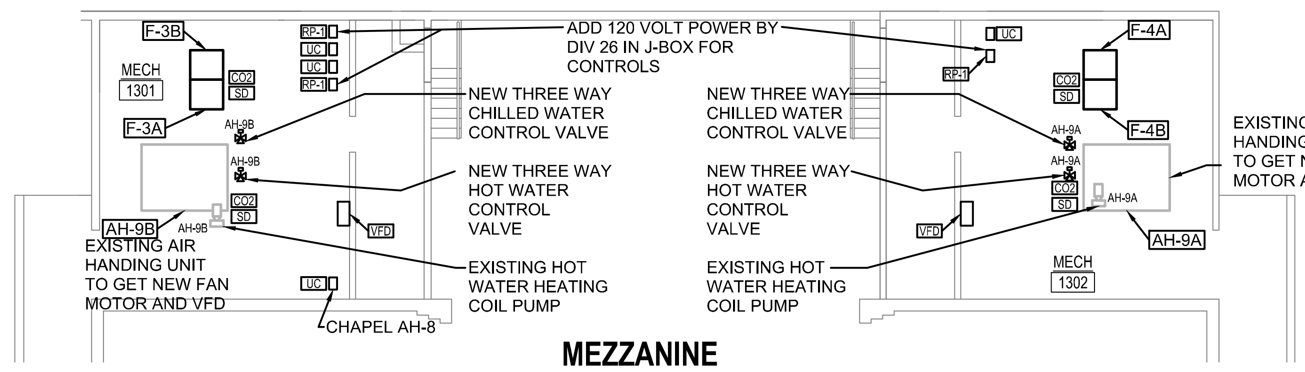
CHECKED BY:	HLA

SHEET TITLE

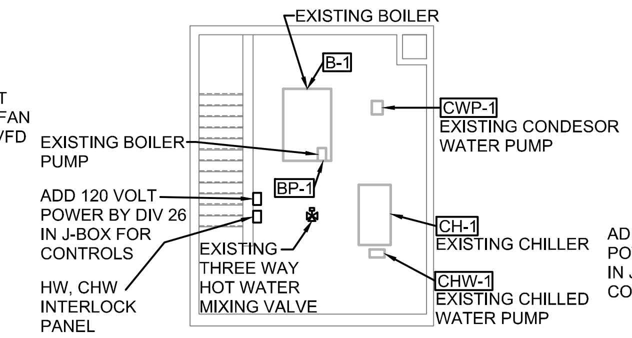
MECHANICAL SCHEDULES

SHEET NUMBER

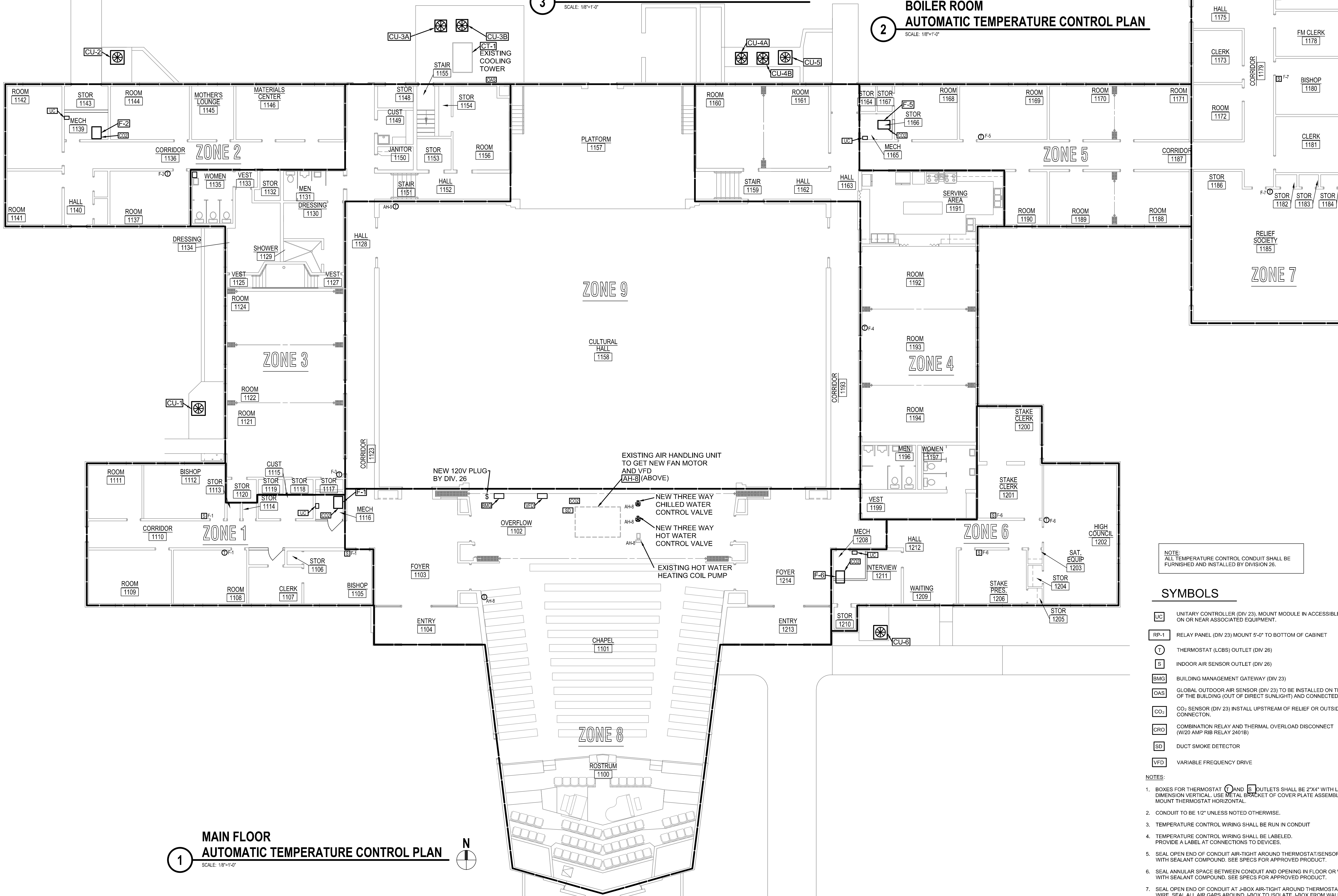
M601


F-3B
MECH 1301
F-3A
AH-9B
EXISTING AIR HANDING UNIT TO GET NEW FAN MOTOR AND VFD
RP-1
UC
CO2
SD
VFD
CHAPEL AH-8
ADD 120 VOLT POWER BY DIV 26 IN J-BOX FOR CONTROLS
NEW THREE WAY CHILLED WATER CONTROL VALVE
NEW THREE WAY HOT WATER CONTROL VALVE
EXISTING HOT WATER HEATING COIL PUMP
F-4A
F-4B
AH-9A
MECH 1302
EXISTING AIR HANDING UNIT TO GET NEW FAN MOTOR AND VFD

3
MEZZANINE AUTOMATIC TEMPERATURE CONTROL PLAN
SCALE: 1/8"=1'-0"


EXISTING BOILER
B-1
CWP-1
EXISTING CONDESOR WATER PUMP
EXISTING BOILER PUMP
BP-1
ADD 120 VOLT POWER BY DIV 26 IN J-BOX FOR CONTROLS
HW, CHW INTERLOCK PANEL
EXISTING THREE WAY HOT WATER MIXING VALVE
CH-1
EXISTING CHILLER
CHW-1
EXISTING CHILLED WATER PUMP

2
BOILER ROOM AUTOMATIC TEMPERATURE CONTROL PLAN
SCALE: 1/8"=1'-0"


CU-2
CU-3A
CU-3B
CT-1 EXISTING COOLING TOWER
OAS
CU-4A
CU-4B
CU-5
EXISTING CONDENSING UNIT
CU-7
EXISTING FURNACE
F-7A
F-7B
SD
ADD 120 VOLT POWER BY DIV 26 IN J-BOX FOR CONTROLS
RP-1
UC
MECH 1176
FM MANAGER 1177
ROOM 1175
HALL 1175
CLERK 1173
CORRIDOR 1179
FM CLERK 1178
BISHOP 1180
ROOM 1172
CLERK 1181
STOR 1186
STOR 1182
STOR 1183
STOR 1184
RELIEF SOCIETY 1185
ZONE 7
ROOM 1142
STOR 1143
ROOM 1144
MOTHER'S LOUNGE 1145
MATERIALS CENTER 1146
MECH 1139
F-2
CO2
CORRIDOR 1136
ZONE 2
ROOM 1141
HALL 1140
ROOM 1137
WOMEN 1135
VEST 1133
STOR 1132
MEN 1131
DRESSING 1130
DRESSING 1134
SHOWER 1129
VEST 1125
VEST 1127
ROOM 1124
ZONE 3
ROOM 1122
ROOM 1121
CU-1
STAIR 1155
STOR 1148
STOR 1154
CUST 1149
JANITOR 1150
STOR 1153
ROOM 1156
STAIR 1151
HALL 1152
AH-9
PLATFORM 1157
HALL 1128
ZONE 9
CULTURAL HALL 1158
CORRIDOR 1123
CORRIDOR 1193
ROOM 1160
ROOM 1161
STAIR 1159
HALL 1162
HALL 1163
STOR 1164
STOR 1167
F-5
STOR 1166
MECH 1165
ROOM 1168
ROOM 1169
ROOM 1170
ROOM 1171
ZONE 5
CORRIDOR 1187
SERVING AREA 1191
ROOM 1190
ROOM 1189
ROOM 1188
ROOM 1192
F-4
ROOM 1193
ZONE 4
ROOM 1194
MEN 1196
WOMEN 1197
VEST 1199
STAKE CLERK 1200
STAKE CLERK 1201
F-6
ZONE 6
HIGH COUNCIL 1202
SAT. EQUIP 1203
STOR 1204
STOR 1205
STAKE PRES. 1206
WAITING 1209
HALL 1212
MECH 1208
INTERVIEW 1211
STOR 1210
CU-6
FOYER 1214
ENTRY 1213
ROOM 1111
BISHOP 1112
STOR 1113
STOR 1120
CUST 1115
STOR 1119
STOR 1118
STOR 1117
STOR 1114
F-3
F-1
MECH 1116
CORRIDOR 1110
ZONE 1
STOR 1106
ROOM 1109
ROOM 1108
CLERK 1107
BISHOP 1105
NEW 120V PLUG BY DIV. 26
BMG
VFD
EXISTING AIR HANDLING UNIT TO GET NEW FAN MOTOR AND VFD
AH-8 (ABOVE)
NEW THREE WAY CHILLED WATER CONTROL VALVE
NEW THREE WAY HOT WATER CONTROL VALVE
EXISTING HOT WATER HEATING COIL PUMP
OVERFLOW 1102
FOYER 1103
ENTRY 1104
CHAPEL 1101
ZONE 8
ROSTRUM 1100
N

1
MAIN FLOOR AUTOMATIC TEMPERATURE CONTROL PLAN
SCALE: 1/8"=1'-0"

NOTE:
ALL TEMPERATURE CONTROL CONDUIT SHALL BE FURNISHED AND INSTALLED BY DIVISION 26.

SYMBOLS

UC	UNITARY CONTROLLER (DIV 23). MOUNT MODULE IN ACCESSIBLE LOCATION ON OR NEAR ASSOCIATED EQUIPMENT.
RP-1	RELAY PANEL (DIV 23) MOUNT 5'-0" TO BOTTOM OF CABINET
T	THERMOSTAT (LCBS) OUTLET (DIV 26)
S	INDOOR AIR SENSOR OUTLET (DIV 26)
BMG	BUILDING MANAGEMENT GATEWAY (DIV 23)
OAS	GLOBAL OUTDOOR AIR SENSOR (DIV 23) TO BE INSTALLED ON THE NORTH SIDE OF THE BUILDING (OUT OF DIRECT SUNLIGHT) AND CONNECTED TO ANY ZONE.
CO_2	CO_2 SENSOR (DIV 23) INSTALL UPSTREAM OF RELIEF OR OUTSIDE AIR CONNECTON.
CRO	COMBINATION RELAY AND THERMAL OVERLOAD DISCONNECT (W/20 AMP RIB RELAY 2401B)
SD	DUCT SMOKE DETECTOR
VFD	VARIABLE FREQUENCY DRIVE

NOTES:

1. BOXES FOR THERMOSTAT (T) AND [S] OUTLETS SHALL BE 2"X4" WITH LONG DIMENSION VERTICAL. USE METAL BRACKET OF COVER PLATE ASSEMBLY TO MOUNT THERMOSTAT HORIZONTAL.
2. CONDUIT TO BE 1/2" UNLESS NOTED OTHERWISE.
3. TEMPERATURE CONTROL WIRING SHALL BE RUN IN CONDUIT
4. TEMPERATURE CONTROL WIRING SHALL BE LABELED. PROVIDE A LABEL AT CONNECTIONS TO DEVICES.
5. SEAL OPEN END OF CONDUIT AIR-TIGHT AROUND THERMOSTAT/SENSOR WIRE WITH SEALANT COMPOUND. SEE SPECS FOR APPROVED PRODUCT.
6. SEAL ANNULAR SPACE BETWEEN CONDUIT AND OPENING IN FLOOR OR WALL WITH SEALANT COMPOUND. SEE SPECS FOR APPROVED PRODUCT.
7. SEAL OPEN END OF CONDUIT AT J-BOX AIR-TIGHT AROUND THERMOSTAT/SENSOR WIRE. SEAL ALL AIR GAPS AROUND J-BOX TO ISOLATE J-BOX FROM WALL CAVITY. SEAL BACK OF THERMOSTAT AROUND WIRES. PACK J-BOX TIGHT WITH GLASS FIBER BAT INSULATION. USE SEALING COMPOUND SPECIFICALLY MADE FOR REFRIGERATION AND AIR-CONDITIONING APPLICATIONS. SEE SPECIFICATIONS FOR APPROVED PRODUCTS.
8. PERMANENTLY LABEL ALL THERMOSTATS & SENSORS ON BOTH REMOVABLE COVER AND BASE AT EACH LOCATION TO INDICATE ROOM AND SYSTEM.

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REGISTERED PROFESSIONAL ENGINEER
No. 181307
HAL L. ABERCROMBIE
STATE OF UTAH

PROJECT FOR
HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER
780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
1		
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ISSUE TYPE:	BID DOCUMENTS
ISSUE DATE:	MAY 8, 2019
PROJECT NO:	18011
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DRAWN BY:	TGA
CHECKED BY:	HLA

SHEET TITLE
AUTOMATIC TEMPERATURE CONTROL PLANS

SHEET NUMBER
ME101

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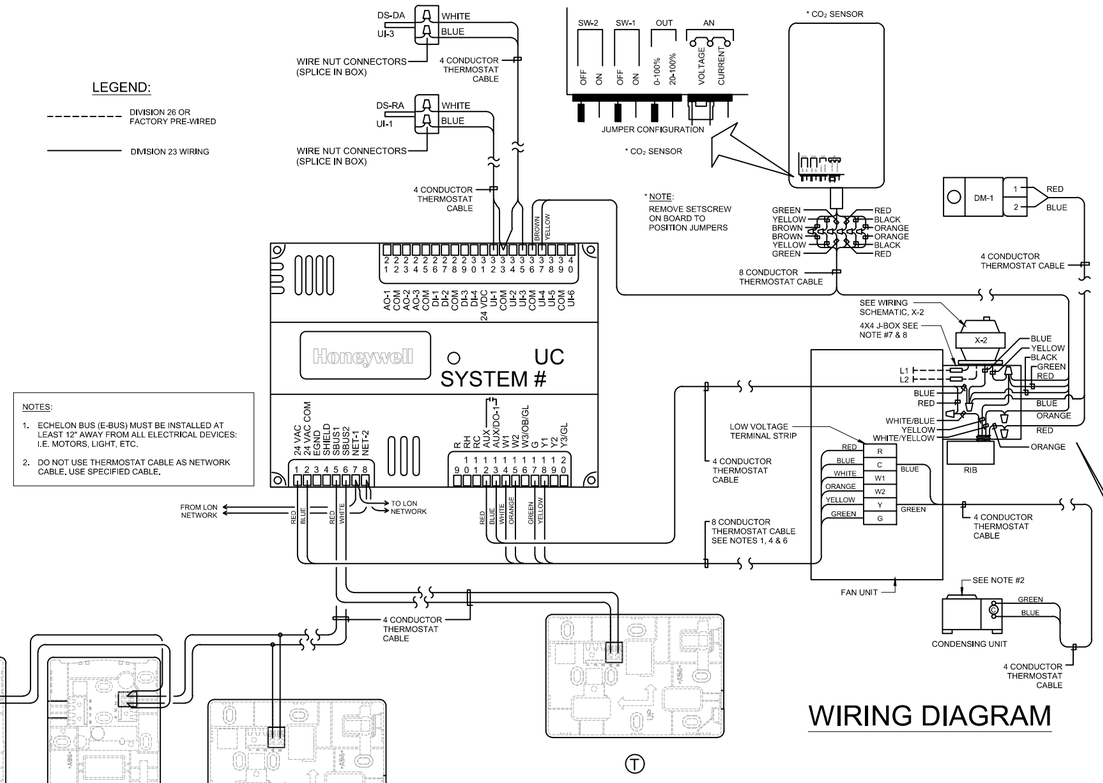


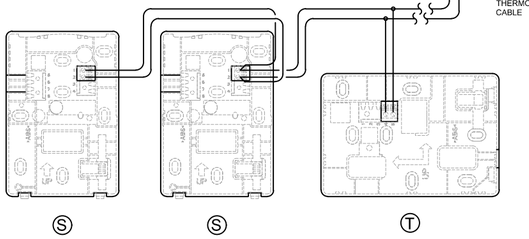
WIRING DIAGRAM

NOTES:

1. ECHELON BUS (E-BUS) MUST BE INSTALLED AT LEAST 12" AWAY FROM ALL ELECTRICAL DEVICES: I.E. MOTORS, LIGHT, ETC.
2. DO NOT USE THERMOSTAT CABLE AS NETWORK CABLE, USE SPECIFIED CABLE.

NOTES:

1. THERMOSTAT CABLE- 4, 8 OR 12 CONDUCTOR- 18 AWG SOLID COPPER WIRE INSULATED WITH HIGH DENSITY POLYETHYLENE, CONDUCTORS PARALLEL, ENCLOSED IN BROWN PVC JACKET. (NO 22 AWG CABLE ALLOWED).
2. IF COMPRESSOR UNITS HAVE THEIR OWN POWER SUPPLY IT MAY BE NECESSARY TO ADD ADDITIONAL RELAYS IN COMPRSSOR UNIT TO PROPERLY INTERFACE CONTROLS.
3. USE WIRE NUT CONNECTORS FOR SPLICING CONDUCTORS IN SPECIFIED LOCATIONS, AND TYTON TYPE CRIMP CONNECTORS FOR TERMINAL CONNECTIONS. NO TERMINAL CONNECTORS REQUIRED AT THERMOSTAT OR SENSOR.
4. DO NOT RUN ANY OTHER WIRING IN THIS CONDUIT EXCEPT THERMOSTAT CABLE.
5. VERIFY THAT FAN UNIT FAN SPEED CONTROL WIRING IS SET TO MATCH SCHEDULE SHEET AND THAT FAN OPERATES AT COOLING SPEED ONLY.
6. DO NOT SPLICE WIRE IN RUNS FROM SENSOR TO THERMOSTAT, THERMOSTAT TO FURNACE, AND THERMOSTAT TO DISCHARGE AIR SENSOR.
7. PROVIDE CHASE NIPPLE WITH PLASTIC BUSHING WHEN ATTACHING J-BOX TO EQUIPMENT.
8. PROVIDE CABLE-CLAMP SO THAT CABLES CANNOT BE PULLED OUT OF J-BOX.



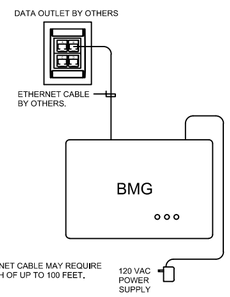
SYSTEMS: F-1, F-6

SYSTEMS: F-2, F-5

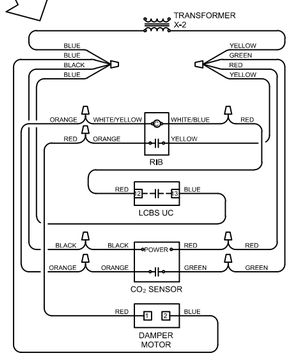
CONTROL EQUIPMENT

MARK	DESCRIPTION	CAT. NO. (1)	MARK	DESCRIPTION	CAT. NO. (1)
BMG	BUILDING MANAGEMENT GATEWAY	LGW1000 (GATEWAY) WPM-8000 (WALL PLUG)	RP-1	RELAY PANEL 24X18X6W/COVER	(2) (4)
UC	UNITARY CONTROLLER	YCRL64385R1000	DM-1	DAMPER MOTOR TWO POSITION	MS8105A1030
T	THERMOSTAT WALL MODULE	LCBS WALL MODULE	X-1	TRANSFORMER 120, 208, 240V/24V 75VA	AT175F1023
	THERMOSTAT COVER PLATE ASSEMBLY	50002883-001	X-2	TRANSFORMER 120V/24V 50VA	AT150F1022
S	REMOTE SENSOR	TR40	SD-1	DUCT SMOKE DETECTOR	(2)
G-1	THERMOSTAT GUARD	(2)	SR	SMOKE RELAY 30 AMP 120V COIL	DP2030B5003 (3)
DS	DUCT AIR SENSOR	C7041B2005	RIB	TWO POLE RELAY	RIBU1C (2)
CO_2	CO_2 SENSOR	C7232B1006	RIB 20A	TWO POLE RELAY 20 AMP	RIB2401B (6)
			OAS	GLOBAL OUTDOOR AIR SENSOR	C7041F2006 (7)
			E-BUS	ECHELON NETWORK CABLE	W221P-2001B

(1) ALL CATALOG NUMBERS SHOWN ARE HONEYWELL UNLESS NOTED OTHERWISE.
(2) SEE SPECIFICATIONS
(3) PROVIDE ENCLOSURE
(4) TO BE PURCHASED FROM AN APPROVED PER-BUILT PANEL BUILDER SEE SPECIFICATION.
(5) NOT USED.
(6) USE WITH CRO DISCONNECTFOR ELECTRIC WALL HEATER. CONTROL FROM UC.
(7) ONLY ONE REQUIRED FOR BUILDING, MAY BE CONNECTED TO ANY CONTROLLER AT NORTH SIDE.



BMG WIRING DIAGRAM



WIRING SCHEMATIC, X-2

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CONSULTANTS

STAMP

REGISTERED PROFESSIONAL ENGINEER No. 181307 JAMES L. ABERCROMBIE STATE OF UTAH

PROJECT FOR

HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER

780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
1		
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ISSUE TYPE:	BID DOCUMENTS
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CHECKED BY:	HLA

SHEET TITLE

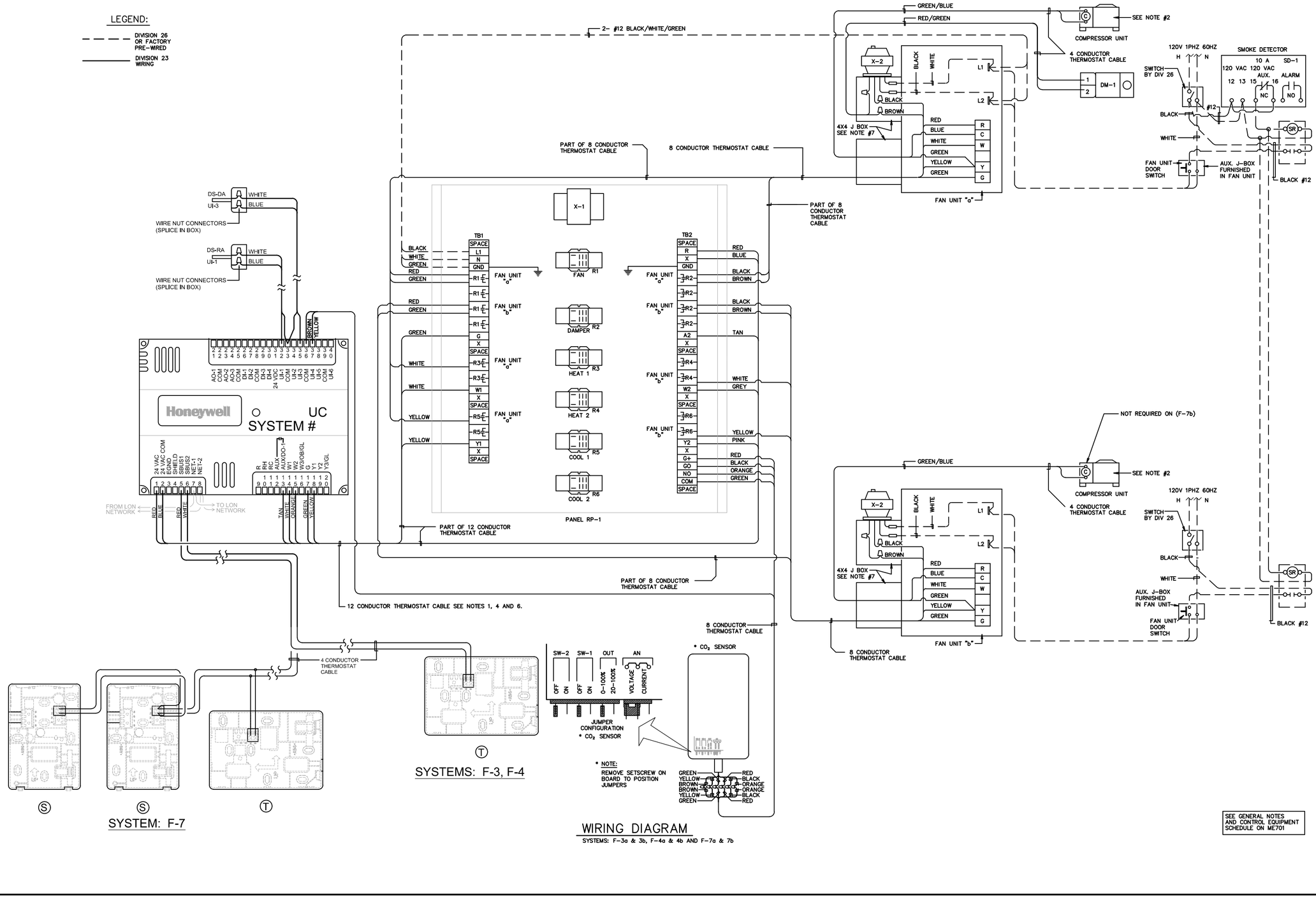
AUTOMATIC TEMPERATURE CONTROL WIRING

SHEET NUMBER

ME701

LEGEND:

- DIVISION 26 OR FACTORY PRE-WIRED
- DIVISION 23 WIRING



WIRING DIAGRAM

SYSTEMS: F-3a & 3b, F-4a & 4b AND F-7a & 7b

SEE GENERAL NOTES AND CONTROL EQUIPMENT SCHEDULE ON ME701

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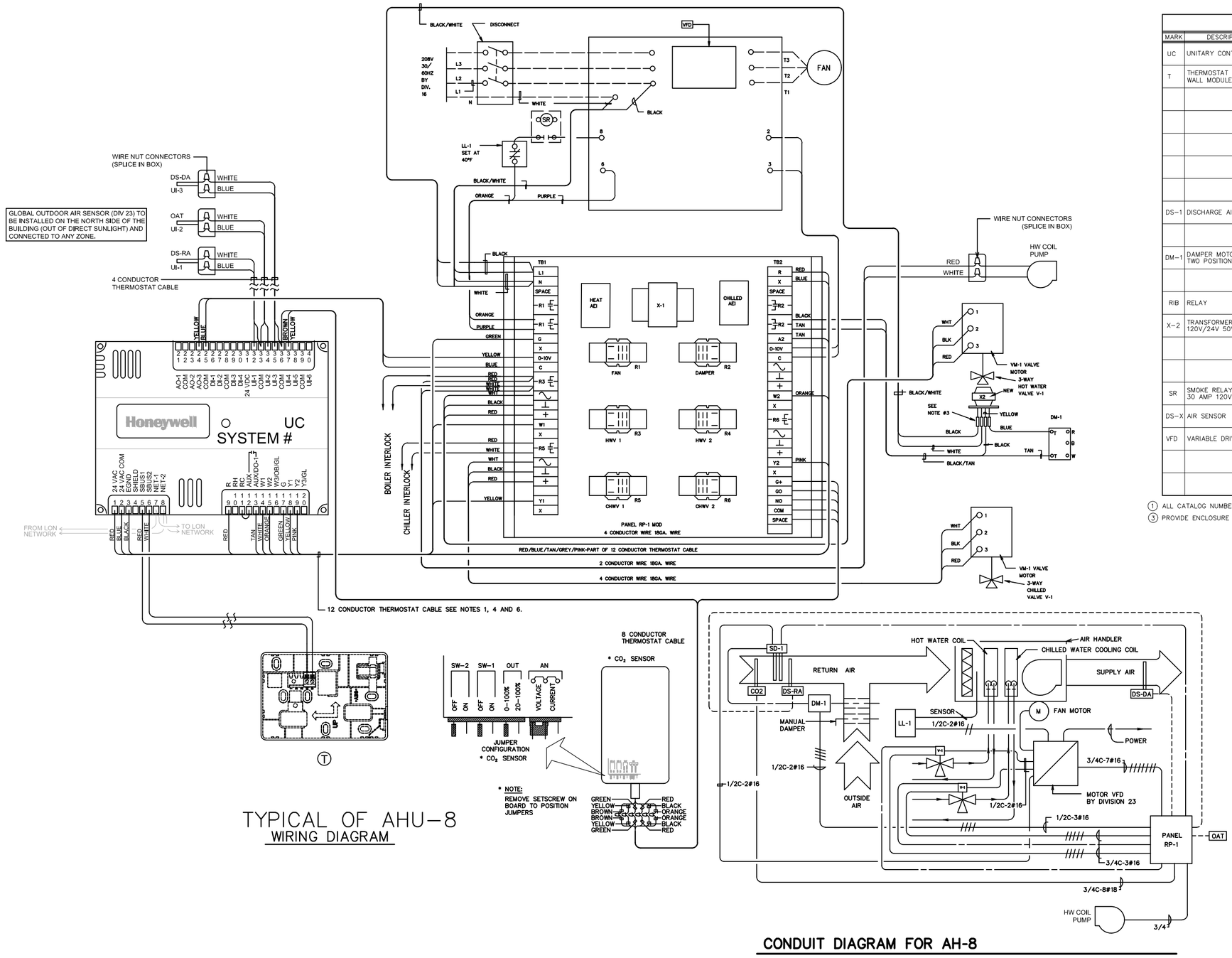
SHEET TITLE

AUTOMATIC TEMPERATURE CONTROL WIRING

SHEET NUMBER

ME702



TYPICAL OF AHU-8
WIRING DIAGRAM

CONDUIT DIAGRAM FOR AH-8

CONTROL EQUIPMENT

MARK	DESCRIPTION	CAT. NO.(1)	MARK	DESCRIPTION	CAT. NO.(1)
UC	UNITARY CONTROLLER	YCRL6438SR1000			
T	THERMOSTAT WALL MODULE	LCBS WALL MODULE			
			RP-1	RELAY PANEL 18X12X4W/COVER	(2)
			TB-1	TERMINAL STRIP	AMP
			TB-2	TERMINAL STRIP	AMP
			R1-R6	RELAY 1DEC	RH2B-UL
			S1-S6	SOCKET 1DEC	SH2B-OS
DS-1	DISCHARGE AIR SENSOR	C7041B2013	C1	MTG RAIL 1DEC	BND-1000
			X1	TRANSFORMER 120/24V 50VA	AT150F
DM-1	DAMPER MOTOR TWO POSITION	MS8105A1130	LL	LOW LIMIT SWITCH	L480G1044
RIB	RELAY	FUNCTIONAL DEVICES RIBU1C	SD-1	SMOKE DETECTOR	D4120
X-2	TRANSFORMER 120V/24V 50VA	AT150F1002	ST-1	SAMPLING TUBE	DST-3
			V-1	VALVE	VB3N
			VM-1	VALVE MOTOR	MN7505A2001
SR	SMOKE RELAY 30 AMP 120V COIL	RIB01P (3)			
DS-X	AIR SENSOR	C7041B2013	AE	VALVE CONTROL MODULE	AEI-TSCM
VFD	VARIABLE DRIVE	HVFD2			

RP-1 PANEL EQUIP. (4)

(1) ALL CATALOG NUMBERS SHOWN ARE HONEYWELL UNLESS NOTED OTHERWISE. (2) SEE SPECIFICATION.
(3) PROVIDE ENCLOSURE (4) TO BE PURCHASED FROM AN APPROVED PANEL BUILDER SEE SPECIFICATION.

NOTES:

1. THERMOSTAT CABLE-4, 8 OR 12 CONDUCTOR- 18 AWG SOLID COPPER WIRE INSULATED WITH HIGH DENSITY POLYETHYLENE. CONDUCTORS PARALLEL, ENCLOSED IN BROWN PVC JACKET. (NO 22 AWG CABLE ALLOWED).
2. IF COMPRESSOR UNITS HAVE THEIR OWN POWER SUPPLY IT MAY BE NECESSARY TO ADD ADDITIONAL RELAYS IN COMPRESSOR UNIT TO PROPERLY INTERFACE CONTROLS.
3. USE WIRE NUT CONNECTORS FOR SPLICING CONDUCTORS IN SPECIFIED LOCATIONS, AND TYTON TYPE CRIMP CONNECTORS FOR TERMINAL CONNECTIONS. NO TERMINAL CONNECTORS REQUIRED AT THERMOSTAT OR SENSOR.
4. DO NOT RUN ANY OTHER WIRING IN THIS CONDUIT EXCEPT THERMOSTAT CABLE.
5. VERIFY THAT FAN UNIT FAN SPEED CONTROL WIRING IS SET TO MATCH SCHEDULE SHEET AND THAT FAN OPERATES AT COOLING SPEED ONLY.
6. DO NOT SPLICE WIRE IN RUNS FROM SENSOR TO THERMOSTAT, THERMOSTAT TO FURNACE, AND THERMOSTAT TO DISCHARGE AIR SENSOR.
7. PROVIDE CHASE NIPPLE WITH PLASTIC BUSHING WHEN ATTACHING J-BOX TO EQUIPMENT.
8. PROVIDE CABLE-CLAMP SO THAT CABLES CANNOT BE PULLED OUT OF J-BOX.

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CONSULTANTS

STAMP

REGISTERED PROFESSIONAL ENGINEER No. 181307 WILL L. ABERCROMBIE STATE OF UTAH

PROJECT FOR
HVAC REMODEL
PAYSON 6, 8, 10 & STAKE CENTER
780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
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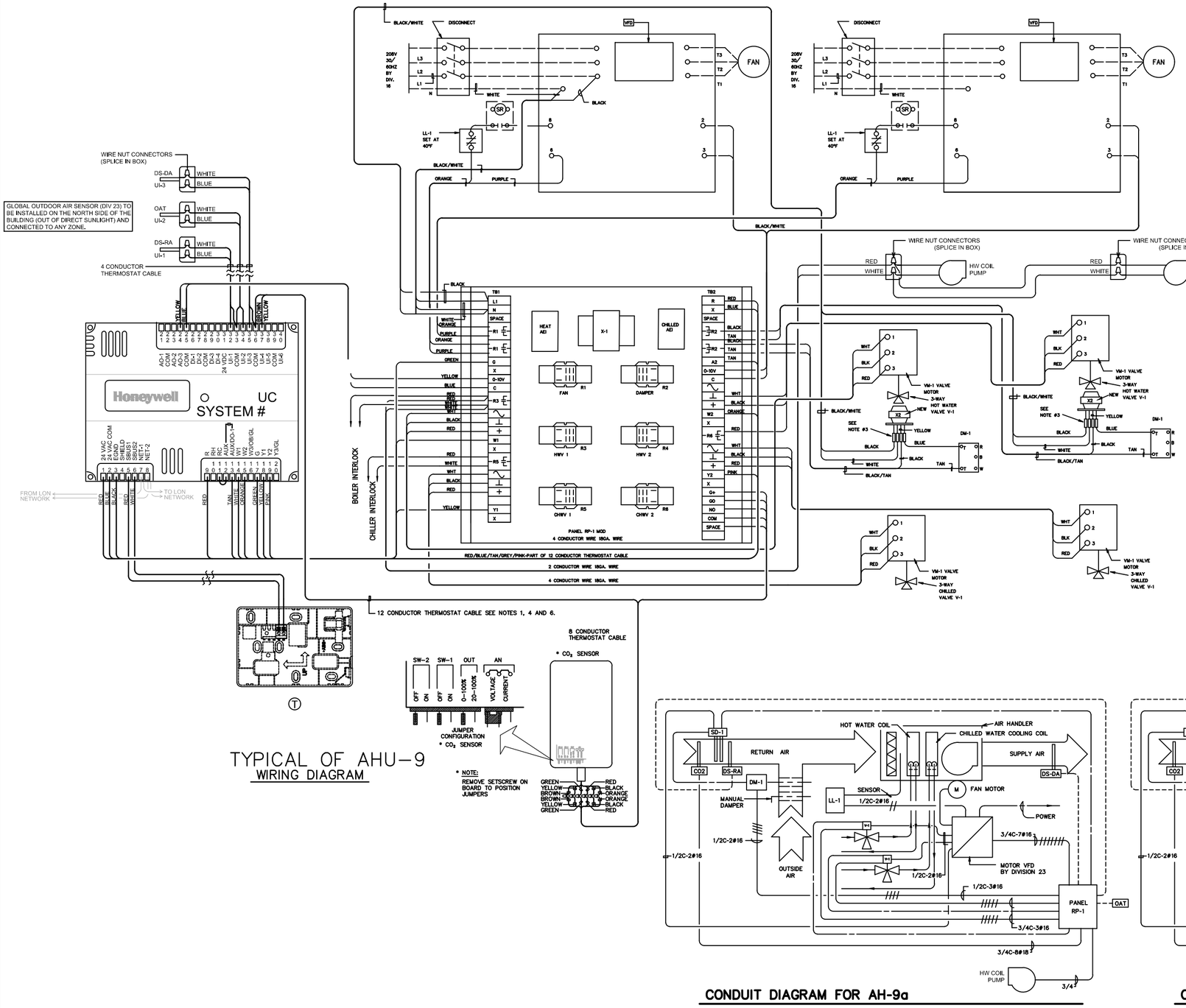
ISSUE TYPE:	BID DOCUMENTS
ISSUE DATE:	MAY 8, 2019
PROJECT NO:	18011
CAD DWG FILE:	I:\JOBS2018\18011\CAD\OKME703.DWG
DRAWN BY:	TGA
CHECKED BY:	HLA

SHEET TITLE

AUTOMATIC TEMPERATURE CONTROL WIRING

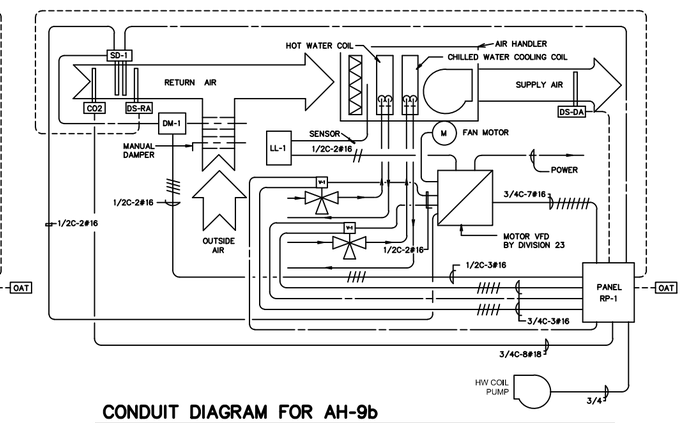
SHEET NUMBER

ME703



TYPICAL OF AHU-9
WIRING DIAGRAM

CONDUIT DIAGRAM FOR AH-9a



CONDUIT DIAGRAM FOR AH-9b

CONTROL EQUIPMENT

MARK	DESCRIPTION	CAT. NO.(1)	MARK	DESCRIPTION	CAT. NO.(1)
UC	UNITARY CONTROLLER	YORK638SR1000			
T	THERMOSTAT WALL MODULE	LCBS WALL MODULE			
			RP-1	RELAY PANEL 18X12X4W/COVER	(2)
			TB-1	TERMINAL STRIP	AMP
			TB-2	TERMINAL STRIP	AMP
			R1-R6	RELAY 1DEC	RH2B-UL
			S1-S6	SOCKET 1DEC	SH2B-OS
DS-1	DISCHARGE AIR SENSOR	C7041B2013	C1	MTG RAIL 1DEC	BND-1000
			X1	TRANSFORMER 120/24V 50VA	AT150F
DM-1	DAMPER MOTOR TWO POSITION	MS8105A1130	LL	LOW LIMIT SWITCH	L480G1044
RIB	RELAY	FUNCTIONAL DEVICES RIBU1C	SD-1	SMOKE DETECTOR	D4120
X-2	TRANSFORMER 120V/24V 50VA	AT150F1002	ST-1	SAMPLING TUBE	DST-3
			V-1	VALVE	VB3N
			VM-1	VALVE MOTOR	MN7505A2001
SR	SMOKE RELAY 30 AMP 120V COIL	RIB01P (3)			
DS-X	AIR SENSOR	C7041B2013	AE	VALVE CONTROL MODULE	AEI-TSCM
VFD	VARIABLE DRIVE	HVFD2			

(1) ALL CATALOG NUMBERS SHOWN ARE HONEYWELL UNLESS NOTED OTHERWISE. (2) SEE SPECIFICATION.
(3) PROVIDE ENCLOSURE (4) TO BE PURCHASED FROM AN APPROVED PANEL BUILDER SEE SPECIFICATION.

RP-1 PANEL EQUIP. (4)

NOTES:

1. THERMOSTAT CABLE- 4, 8 OR 12 CONDUCTOR- 18 AWG SOLID COPPER WIRE INSULATED WITH HIGH DENSITY POLYETHYLENE, CONDUCTORS PARALLEL, ENCLOSED IN BROWN PVC JACKET. (NO 22 AWG CABLE ALLOWED).
2. IF COMPRESSOR UNITS HAVE THEIR OWN POWER SUPPLY IT MAY BE NECESSARY TO ADD ADDITIONAL RELAYS IN COMPRSSOR UNIT TO PROPERLY INTERFACE CONTROLS.
3. USE WIRE NUT CONNECTORS FOR SPLICING CONDUCTORS IN SPECIFIED LOCATIONS. AND TYTON TYPE CBMP CONNECTORS FOR TERMINAL CONNECTIONS. NO TERMINAL CONNECTORS REQUIRED AT THERMOSTAT OR SENSOR.
4. DO NOT RUN ANY OTHER WIRING IN THIS CONDUIT EXCEPT THERMOSTAT CABLE.
5. VERIFY THAT FAN UNIT FAN SPEED CONTROL WIRING IS SET TO MATCH SCHEDULE SHEET AND THAT FAN OPERATES AT COOLING SPEED ONLY.
6. DO NOT SPLICE WIRE IN RUNS FROM SENSOR TO THERMOSTAT, THERMOSTAT TO FURNACE, AND THERMOSTAT TO DISCHARGE AIR SENSOR.
7. PROVIDE CHASE NIPPLE WITH PLASTIC BUSHING WHEN ATTACHING J-BOX TO EQUIPMENT.
8. PROVIDE CABLE-CLAMP SO THAT CABLES CANNOT BE PULLED OUT OF J-BOX.

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SHEET TITLE

AUTOMATIC TEMPERATURE CONTROL WIRING

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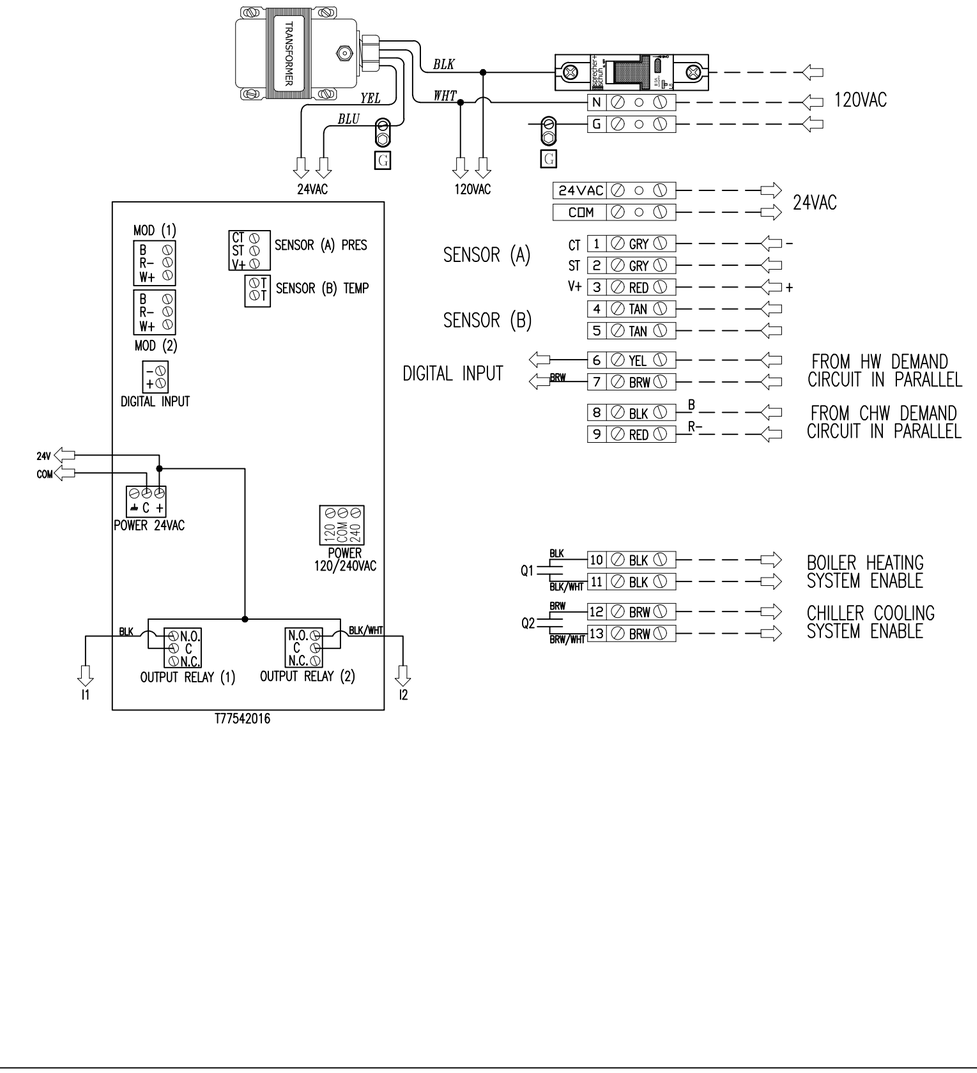
ME704

HW & CHW PANEL



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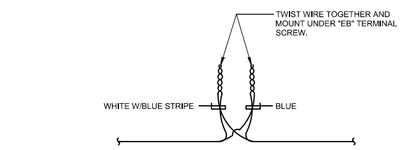
SHEET TITLE

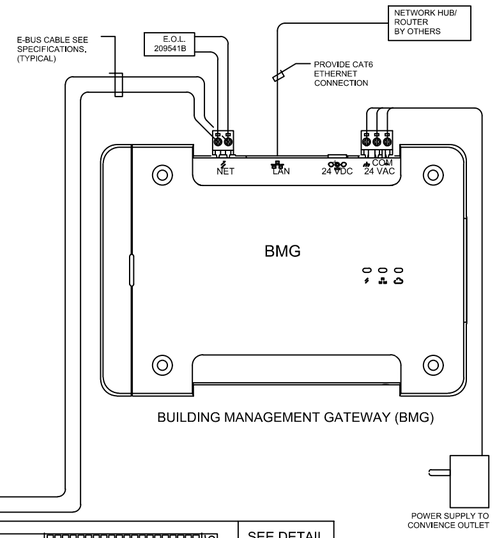
AUTOMATIC TEMPERATURE CONTROL WIRING

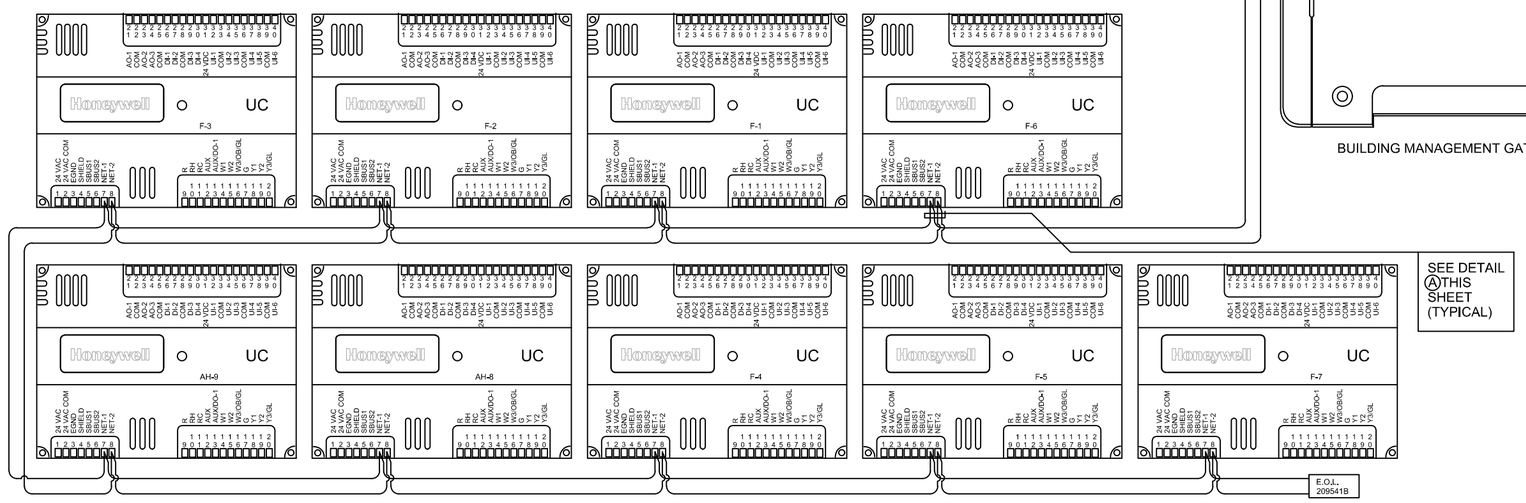
SHEET NUMBER

ME705



A E-BUS CONNECTION DETAIL
NO SCALE





E-BUS WIRING DIAGRAM

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780 WEST 500 SOUTH
PAYSON, UTAH
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AUTOMATIC TEMPERATURE CONTROL WIRING

SHEET NUMBER

ME706

ABBREVIATION SCHEDULE

NOTE: NOT ALL ABBREVIATIONS MAY BE USED.

A	ABOVE COUNTER	ISO	ISOLATED
A	AMP OR AMPS	KVA	KILO VOLT AMPERES
ADJ	ADJACENT	KW	KILOWATTS
AFF	ABOVE FINISHED FLOOR	LFMC	LIQUID-TIGHT METAL CONDUIT
AHJ	AUTHORITY HAVING JURISDICTION	LFNC	LIQUID-TIGHT NONMETAL CONDUIT
AL	ALUMINUM	MCA	MINIMUM CIRCUIT AMPS
C	CONDUIT	MLO	MAIN LUGS ONLY
CB	CIRCUIT BREAKER	N.C.	NORMALLY CLOSED
CKT	CIRCUIT	N.I.C.	NOT IN CONTRACT
C.O./S	CONVENIENCE OUTLETS	N.L.	NIGHT LIGHT
CU	COPPER	N.O.	NORMALLY OPEN
EA	EACH	O.C.	ON CENTER(S)
ELEC	ELECTRICAL	OCP	OVER CURRENT PROTECTION
EM	EMERGENCY	QTY	QUANTITY
EMT	ELECTRIC METALLIC TUBING	R	REMOVE
ENT	ELECTRIC NONMETALLIC TUBING	REQ.	REQUIREMENTS
EQUIP	EQUIPMENT	RMC	RIGID METAL CONDUIT
EWC	ELECTRIC WATER COOLER	RNC	RIGID NONMETALLIC CONDUIT
E, EX	EXISTING	RR	REMOVE AND RELOCATE
EXP	EXPLOSION PROOF	SS	SURGE SUPPRESSION
FA	FIRE ALARM	SCP	SECURITY CONTROL PANEL
FACP	FIRE ALARM CONTROL PANEL	TR	TAMPER RESISTANT
FLA	FULL LOAD AMPS	TYP	TYPICAL
FMC	FLEXIBLE METAL CONDUIT	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
FOB	FREIGHT ON BOARD	UF	UNDER FLOOR
GND	GROUND CONDUCTOR	UG	UNDERGROUND
HOA	HAND-OFF-AUTO	U.N.O.	UNLESS NOTED OTHERWISE
HP	HORSE POWER	W/	WITH
IG	ISOLATED GROUND	WP	WEATHER PROOF
IMC	INTERMEDIATE METAL CONDUIT	XFMR	TRANSFORMER
INS	INSULATED		

GENERAL PROJECT NOTES:

1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR READING AND APPLYING WHAT IS IN THE SPECIFICATIONS TO THIS PROJECT. ANYTHING THAT IS NOT INCLUDED ON THE PROJECT THAT IS CALLED OUT IN THE SPECIFICATION SHALL BE LISTED ON THE SUBSTANTIAL COMPLETION PUNCHLIST. THE CONTRACTOR WILL BE REQUIRED TO REMEDY THESE DEFICIENCIES WITHOUT ADDITIONAL COSTS TO OWNER. THERE WILL BE NO EXCEPTIONS.
2. THE CONTRACTOR MAY SCHEDULE A PRE-CONSTRUCTION MEETING , AT THEIR DISCRETION, WITH THE ELECTRICAL ENGINEER TO REVIEW THE DRAWINGS AND SPECIFICATIONS. THE MEETING SHALL BE A MAXIMUM OF ONE HOUR AND SHALL TAKE PLACE AT THE ENGINEER'S OFFICE.
3. THE FOLLOWING ITEMS ARE SOME OF THE REQUIREMENTS THAT ARE LISTED IN THE SPECIFICATIONS. THESE ITEMS ARE NOT ALL INCLUSIVE, AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE TO ALL REQUIREMENTS OF THE SPECIFICATIONS:
   - A. INSULATED THROAT CONNECTORS OR PLASTIC BUSHINGS SHALL BE UTILIZED FOR ALL CONDUIT SIZES USED ON THIS PROJECT.
   - B. A #10 AWG NEUTRAL CONDUCTOR WILL BE PROVIDED FOR ALL LIGHTING CIRCUITS.
   - C. THE CONTRACTOR IS RESPONSIBLE FOR UPSIZING CONDUCTORS FOR VOLTAGE DROP PER THE NEC REGARDLESS OF WHETHER IT IS SHOWN ON THE PLANS OR NOT.
   - D. THE CONTRACTOR SHALL LABEL ALL ELECTRICAL EQUIPMENT AS IT IS CALLED OUT IN THE SPECIFICATIONS.
   - E. THE CONTRACTOR SHALL PROVIDE SEISMIC SUPPORT AND BRACING FOR ALL LIGHT FIXTURES AND ELECTRICAL EQUIPMENT AS REQUIRED BY APPLICABLE LOCAL AND NATIONAL CODES.
4. THE CONTRACTOR SHALL FOLLOW THE PANELBOARD SCHEDULES AS INDICATED IN THE DRAWINGS. EACH CIRCUIT BREAKER HAS BEEN ASSIGNED TO A SPECIFIC AREA OF THE BUILDING. NO DEVIATION WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ELECTRICAL ENGINEER.
5. AT A MINIMUM THE CONTRACTOR SHALL INSTALL THE WIRE SIZE AS CALLED OUT ON THE PANELBOARD SCHEDULES. HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE WIRE IS SIZED LARGE ENOUGH TO ALLOW FOR VOLTAGE DROP.
6. THE CONTRACTOR SHALL VERIFY ALL MECHANICAL OVERCURRENT DEVICES FOR THE ACTUAL MECHANICAL EQUIPMENT SUPPLIED ON THE JOB, PRIOR TO RELEASE OF ANY ELECTRICAL DISTRIBUTION EQUIPMENT. CONTACT THE ELECTRICAL ENGINEER WITH ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING THE BID, AND SHALL EXAMINE ALL PHYSICAL CONDITIONS WHICH MAY BE MATERIAL TO THE PERFORMANCE OF HIS WORK. NO ADDITIONAL PAYMENTS WILL BE ALLOWED TO THE CONTRACTOR AS A RESULT OF EXTRA WORK MADE NECESSARY BY HIS FAILURE TO DO SO. ANY CASE OF DISCREPANCY OR LACK OF CLARITY SHALL BE PROMPTLY IDENTIFIED TO THE OWNER'S REPRESENTATIVE AND THE ENGINEER FOR CLARIFICATION.

GENERAL DEMOLITION NOTES:

1. UNLESS SPECIFICALLY NOTED OTHERWISE, REMOVE ALL ELECTRICAL ITEMS SHOWN IN DARK & DASHED LINES. LIGHT & SOLID ITEMS ARE TO REMAIN. DEMOLITION ITEMS ARE SHOWN TO GIVE A BASIC DESCRIPTION OF THE EXTENT OF DEMOLITION WORK, BUT MAY NOT BE INCLUSIVE. PROVIDE DEMOLITION WORK IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
   - 1.1. DISCONNECT AND REMOVE ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. REQUIRED FOR PROPER COMPLETION OF THE WORK WHETHER SHOWN OR NOT.
   - 1.2. RELOCATE, REWIRE, AND/OR RECONNECT ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. THAT FOR ANY REASON OBSTRUCTS CONSTRUCTION.
   - 1.3. LEAVE ALL EXISTING FIXTURES, DEVICES, EQUIPMENT, ETC. IN PORTIONS OF THE BUILDING NOT BEING REMODELED, IN WORKING CONDITION. RESTORE ALL INTERRUPTED BRANCH CIRCUITS, FEEDERS, ETC.
   - 1.4. REMOVE AND DISPOSE OF ALL RACEWAYS, CONDUCTORS, BOXES, DEVICES, EQUIPMENT, ETC. THAT ARE NOT TO BE REUSED. TERMINATE AT ACCESSIBLE JUNCTION BOX BY PROVIDING PROPER KNOCK-OUT CLOSURE, TAPE CONDUCTORS, LABEL AS "SPARE" WITH CIRCUIT NO., ZONE NO, OR OTHER CHARACTERISTIC IDENTIFYING SOURCE.
   - 1.5. EXISTING RACEWAYS MAY BE REUSED, IF IN PLACE, WHERE POSSIBLE, AND WHERE IN COMPLIANCE WITH THE SPECIFICATIONS AND THE INTENT OF THE CONTRACT DOCUMENTS. UPGRADE AND OR PROVIDE NEW CONDUIT SUPPORTS WHERE NECESSARY FOR ALL RACEWAYS BEING REUSED. ENSURE INTEGRITY OF EXISTING RACEWAYS BEFORE REUSE.
   - 1.6. CONCEAL ALL RACEWAY AND WIRING IN EXISTING WALLS, CEILINGS, FLOORS, ETC. THE USE OF WIREMOLD IS PERMITTED ONLY WHERE SPECIFICALLY NOTED ON DRAWING.
   - 1.7. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOFS, ETC.
   - 1.8. COORDINATE WITH OWNER WHAT EQUIPMENT SHOULD BE DISPOSED OF AND WHAT EQUIPMENT IS TO BE RETURNED TO OWNER.

LIGHTING SYMBOLS

1. LIGHT FIXTURE SYMBOLS ARE GENERAL IN NATURE AND MAY BE SHOWN ON THE DRAWINGS IN VARIOUS SIZES AND SHAPES. REFER TO THE LIGHT FIXTURE SCHEDULE FOR SPECIFICATION INFORMATION.
2. ARROWS INDICATE AIMING DIRECTION.

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
	ARM-MOUNTED SINGLE-HEAD LIGHT FIXTURE AND POLE	AS SPECIFIED OR DETAILED	
	ARM-MOUNTED DOUBLE-HEAD LIGHT FIXTURE AND POLE	AS SPECIFIED OR DETAILED	
	POST-TOP SINGLE-HEAD, LIGHT FIXTURE AND POLE	AS SPECIFIED OR DETAILED	
	WALL-MOUNTED FIXTURE	AS SPECIFIED OR DETAILED	REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT
	LIGHT BOLLARD	AS SPECIFIED OR DETAILED	
	FLOOD LIGHT	AS SPECIFIED OR DETAILED	
	RECESSED WALL FIXTURE OR STEP LIGHT	AS SPECIFIED OR DETAILED	REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT
	FLUORESCENT LIGHT FIXTURES	AS SPECIFIED OR DETAILED	
	PARABOLIC - LOUVERED LIGHT FIXTURES	AS SPECIFIED OR DETAILED	
	RECESSED INDIRECT FLUORESCENT LIGHT FIXTURES	AS SPECIFIED OR DETAILED	
	WALL-MOUNTED LINEAR FLUORESCENT LIGHT FIXTURE	AS SPECIFIED OR DETAILED	
	FLUORESCENT LINEAR WALL WASHER	AS SPECIFIED OR DETAILED	
	RECESSED DOWN LIGHT	AS SPECIFIED OR DETAILED	
	RECESSED WALL-WASHER OR DIRECTIONAL DOWNLIGHT	AS SPECIFIED OR DETAILED	IF SHOWN, ARROW INDICATES AIMING DIRECTION
	SURFACE OR PENDANT-MOUNTED LIGHT FIXTURE	AS SPECIFIED OR DETAILED	
	WALL-MOUNTED LIGHT FIXTURE	AS SPECIFIED OR DETAILED	REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT
	TRACK OR MONO-POINT LIGHT FIXTURE	AS SPECIFIED OR DETAILED	IF SHOWN, ARROW INDICATES AIMING DIRECTION
D	WALL SCONCE	AS SPECIFIED OR DETAILED	
	FLUORESCENT EGRESS LIGHT FIXTURE	AS SPECIFIED OR DETAILED	THIS IS AN EXAMPLE OF AN EGRESS LIGHT FIXTURE. EGRESS LIGHT FIXTURES ARE HALF-SHADED DIAGONALLY.
	FLUORESCENT EMERGENCY (NON-EGRESS) LIGHT FIXTURE	AS SPECIFIED OR DETAILED	THIS IN AN EXAMPLE OF AN EMERGENCY (NON-EGRESS) LIGHT FIXTURE. EMERGENCY FIXTURES ARE FULLY-SHADED.
	CEILING MOUNTED EXIT SIGN	CEILING	DARKENED PORTION OF SIGN INDICATES FACE(S). ARROW(S) INDICATE CHEVRON DIRECTION(S)
	WALL-MOUNTED EXIT SIGN	WALL ABOVE DOOR	
	WALL-MOUNTED EXIT SIGN W/ EMERGENCY LIGHT FIXTURE	WALL ABOVE DOOR	
TC	TIME CLOCK	+60"	
	EMERGENCY LIGHT FIXTURE	AS NOTED	
	ELECTRIC PHOTOCELL	N/A	MOUNT ON ROOF FACING NORTH SKY
XX	LIGHT FIXTURE CALLOUT (LETTER DENOTES FIXTURE TYPE)		

BRANCH CIRCUITING SYMBOLS

SYMBOL	DESCRIPTION	REMARKS
	1 CIRCUIT, 2 WIRE BRANCH CIRCUIT HOME RUN TO PANEL	ARROWS: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS REQUIRED. SHORT CROSS LINES: NUMBER OF SHORT CROSS LINES INDICATES NUMBER OF PHASE, TRAVELER, AND/OR SWITCHED CONDUCTORS REQUIRED IF GREATER THAN 1 (ONE). LONG CROSS LINES: NUMBER OF LONG CROSS LINES INDICATES NUMBER OF NEUTRAL CONDUCTORS REQUIRED FOR MULTI-WIRE HOME RUNS. EQUIPMENT GROUND AND ISOLATED GROUND CONDUCTORS: EQUIPMENT GROUND AND ISOLATED GROUND CONDUCTORS ARE NOT SHOWN, BUT ARE REQUIRED AS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS.
	2 CIRCUIT, 4 WIRE BRANCH CIRCUIT HOME RUN TO PANEL	
	3 CIRCUIT, 6 WIRE BRANCH CIRCUIT HOME RUN TO PANEL	
	MULTIPLE WIRE BRANCH CIRCUITING BETWEEN FIXTURES, SWITCHES, DEVICES, ETC.	
	BRANCH CIRCUITING (U.N.O.) TURNED UP OR TOWARDS OBSERVER.	
	BRANCH CIRCUITING (U.N.O.) TURNED DOWN OR AWAY FROM OBSERVER.	
	BRANCH CIRCUITING (U.N.O.) CONTINUATION	
	CONDUIT STUB-IN	CAP AND MARK
	INCOMING SERVICE	
	JUNCTION BOX	MOUNT AS NOTED. SUBSCRIPT 'F' INDICATES TO PROVIDE A FLOOR BOX WITH BLANK COVERPLATE

GEAR AND CONTROL SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
$_T	MANUAL STARTER WITH THERMAL OVERLOAD(S)	AT EQUIPMENT	
	ELECTRIC MOTOR		
	NON-FUSED DISCONNECT SWITCH	+60"	
	FUSED DISCONNECT SWITCH	+60"	
	CIRCUIT BREAKER AND ENCLOSURE	+60"	
	MAGNETIC STARTER	+60"	
	COMBINATION MAGNETIC STARTER / NON-FUSED DISCONNECT	+60"	
	COMBINATION MAGNETIC STARTER / FUSED DISCONNECT	+60"	
	COMB. MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP)	+60"	
VFD	COMB. VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP)	FLOOR OR WALL AS SPECIFIED	TOP AT +72" IF WALL MOUNTED
RVS	REDUCED VOLTAGE STARTER	FLOOR OR WALL AS SPECIFIED	TOP AT +72" IF WALL MOUNTED
	LOAD CENTER (SURFACE-MOUNTED)	TOP AT +72"	14"W X 3"D
	LOAD CENTER (FLUSH-MOUNTED)	TOP AT +72"	14"W X 3"D
	LIGHTING AND APPLIANCE PANELBOARD (SURFACE-MOUNTED)	TOP AT +72"	20"W X 6"D
	LIGHTING AND APPLIANCE PANELBOARD (FLUSH-MOUNTED)	TOP AT +72"	20"W X 6"D
	POWER DISTRIBUTION PANELBOARD	WALL	THESE SYMBOLS ARE GENERAL IN NATURE AND MAY VARY IN SIZE AND SHAPE TO SUIT APPLICATION. CROSS HATCHING INDICATES "MAIN PANELBOARD OR SWITCHBOARD" NAME IS INDICATED IN SEMI-QUOTES (I.E. 'L2A', 'MDP')
	SWITCHBOARD	FLOOR	
	METER BASE	TOP AT +72"	
	OPEN - STOP - CLOSE SWITCH	+60"	FURNISH SWITCH UNLESS FURNISHED BY ANOTHER DIVISION. INSTALL AND CONNECT COMPLETE. REFER TO RELATED SPECIFICATION SECTIONS.
T	HVAC THERMOSTAT	+60"	PROVIDED BY DIVISION 15000 U.N.O.
	HAND - OFF - AUTO SWITCH	+60"	
GF	GROUND FAULT PROTECTION		

WIRING DEVICE SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
$	SINGLE-POLE TOGGLE SWITCH	+48"	
$^a	SINGLE-POLE TOGGLE SWITCH	+48"	SUBSCRIPT KEYS SWITCH TO FIXTURES CONTROLLED.
$_2	DOUBLE-POLE TOGGLE SWITCH	+48"	
$_3	THREE-WAY TOGGLE SWITCH	+48"	
$_4	FOUR-WAY TOGGLE SWITCH	+48"	
$_K	KEY-OPERATED SINGLE-POLE TOGGLE SWITCH	+48"	
$_P	SINGLE-POLE TOGGLE SWITCH WITH PILOT LIGHT	+48"	
$_VS	WALL MOUNT VACANCY SENSOR - SEE SPECIFICATIONS	+48"	
$_TIM	TIMER SWITCH - SEE SPECIFICATIONS	+48"	
$$	(2) SINGLE-POLE TOGGLE SWITCH	+48"	DUAL LEVEL SWITCH OUTBOARD LAMPS SEPARATELY FROM INBOARD LAMPS.
$^a_LV	LOW VOLTAGE MOMENTARY CONTACT SWITCH	+48"	
$_3PM	3-POSITION MOMENTARY CONTACT SWITCH	+48"	REFER TO DETAIL UP-ON; CENTER-NEUTRAL; DOWN-OFF
$_3PN	3-POSITION MAINTAINED CONTACT SWITCH	+48"	UP-ON; CENTER-OFF; DOWN-ON
	OCCUPANCY SENSOR	AS NOTED	SEE OCCUPANCY SENSOR SCHEDULE
	SPLIT-WIRED DUPLEX RECEPTACLE	+18"	
	SIMPLEX RECEPTACLE	+18"	
	DUPLEX RECEPTACLE	+18"	
	FOURPLEX RECEPTACLE	+18"	
	125/250V RECEPTACLE	+18"	RANGE – NEMA 14-50R DRYER – NEMA 14-30R
	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE	+18"	
	GROUND FAULT CIRCUIT INTERRUPTER FOURPLEX RECEPTACLE	+18"	
	EMERGENCY DUPLEX RECEPTACLE	+18"	
	EMERGENCY FOURPLEX RECEPTACLE	+18"	
	MULTI-OUTLET ASSEMBLY	4" ABOVE BACKSPLASH	
	POWER / TELEPHONE POLE	FLOOR/CEILING	
	CORD DROP WITH DUPLEX RECEPTACLE	+18"	REFER TO DETAIL
(S-20R)	SPECIAL PURPOSE OUTLET	+18"	SUBSCRIPT IN PARENTHESIS INDICATES NEMA CONFIGURATION IF SHOWN. REFER TO DRAWINGS AND/OR EQUIPMENT SCHEDULES. CONFIRM EXACT CONFIGURATION WITH OWNER PRIOR TO INSTALLATION.

TELEPHONE / DATA SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
	TELEPHONE OUTLET	+18"	
	DATA OUTLET	+18"	
	COMBINATION TELEPHONE/DATA OUTLET	+18"	
	TELEPHONE TERMINAL BOARD	TOP AT 72"	

ELECTRICAL SYMBOL SCHEDULE GENERAL NOTES

1. MOUNT ALL OUTLETS, DEVICES, AND EQUIPMENT AT HEIGHTS INDICATED BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS. UNLESS NOTED OTHERWISE, HEIGHTS ARE GIVEN FROM FINISHED FLOOR TO CENTER OF OUTLET BOX.
2. WHERE OUTLETS, DEVICES, AND EQUIPMENT ARE NOTED BY SUBSCRIPTS, REFER TO ABBREVIATION SCHEDULE FOR DEFINED REQUIREMENTS.
3. WHERE OUTLETS, DEVICES AND EQUIPMENT ARE NOTED BY THE SUBSCRIPT 'A', MOUNT AT 4" ABOVE COUNTER. IF COUNTER HAS A BACK SPLASH, MOUNT AT 4" ABOVE BACK SPLASH. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS AND COORDINATE WITH CASEWORK SUPPLIER.
4. NOT ALL ELECTRICAL SYMBOLS MAY BE USED.

GENERAL SYMBOLS

SYMBOL	DESCRIPTION	REMARKS
XX	KEYED NOTE	
1 / E-1	DETAIL REFERENCE	TOP NUMBER INDICATES DETAIL NUMBER; BOTTOM LETTER-NUMBER INDICATES WHERE DETAIL IS SHOWN.
2 / E-2	ELEVATION REFERENCE	TOP NUMBER INDICATES ELEVATION NUMBER; BOTTOM LETTER-NUMBER INDICATES WHERE ELEVATION IS SHOWN.
3 / E-3	SECTION REFERENCE	TOP NUMBER INDICATES SECTION NUMBER; BOTTOM LETTER-NUMBER INDICATES WHERE SECTION IS SHOWN.
100	ARCHITECTURAL ROOM NUMBER	
AHU-1	EQUIPMENT NAME / NUMBER	TOP NUMBER ABBREVIATES EQUIPMENT NAME OR TYPE; BOTTOM NUMBER INDICATES EQUIPMENT NUMBER. REFER TO EQUIPMENT SCHEDULE.
1	REVISION NUMBER	USED TO DENOTE CHANGES EITHER ISSUED BY ADDENDUM OR DURING CONSTRUCTION AND TO DENOTE RECORD DRAWING CHANGES.
	BREAKLINE	USED TO BREAK DRAWINGS.

FIRE ALARM SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
BDT	BEAM DETECTOR - TRANSMITTER	4" BELOW CEILING TO TOP OF DETECTOR	
BDR	BEAM DETECTOR - RECEIVER	4" BELOW CEILING TO TOP OF DETECTOR	
EOL	END OF LINE DEVICE	MANUFACTURER RECOMMENDED	
T	TAMPER SWITCH	AT VALVE	
WI	WATER FLOW INDICATOR	ON FIRE RISER	
FSD	FIRE/SMOKE DAMPER		
	HEAT DETECTOR	CEILING	
	SMOKE DETECTOR	CEILING	
	DUCT SMOKE DETECTOR	SIDE OF DUCT	
	FIRE ALARM MANUAL STATION	+48"	
	CONTROL MODULE	AT DEVICE(S) TO BE CONTROLLED	
	MONITOR MODULE	AT DEVICE(S) TO MONITOR	
	FAN SHUTDOWN RELAY	AT FAN CONTROL PANEL	
	MAGNETIC DOOR HOLDER	COORDINATE WITH DOOR INSTALLER	COORDINATE WITH DOOR INSTALLER; SUBSCRIPT 'F' INDICATES TO MOUNT AT FLOOR LEVEL
WF	WATER FLOOD INDICATOR	FLOOR	
	AUDIO HORN	80" MIN AND 96" MAX; MEASURED FROM LENS. IF CEILING IS LESS THAN 80", MOUNT WITHIN 6" OF CEILING.	SUBSCRIPT 'WP' INDICATES THAT A WEATHER PROOF BACK BOX IS REQ. SUBSCRIPT 'C' INDICATES CEILING MOUNTING. NUMERIC SUBSCRIPT INDICATES CANDELLA RATING OF STROBE (I.E. - 15, 75, 110)
	MINI AUDIO HORN		
	FIRE ALARM VISUAL STROBE		
	FIRE ALARM AUDIO/VISUAL HORN/STROBE		
	MINI AUDIO/VISUAL HORN/STROBE		
	FIRE ALARM AUDIO SPEAKER		
	FIRE ALARM AUDIO/VISUAL SPEAKER/STROBE		
	FIRE PROTECTION SPRINKLER RISER BELL	+90"	FURNISHED BY FIRE PROTECTION CONTRACTOR AND INSTALLED AND CONNECTED BY DIV. 16000

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DAVID P. WHITTON
No. 294097
5/6/19
STATE OF UTAH

PROJECT FOR

HVAC REMODEL PAYSON 6, 8, 10 & STAKE CENTER

780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
1		
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4		
5		
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ISSUE TYPE:	BID DOCUMENTS
ISSUE DATE:	MAY 08, 2019
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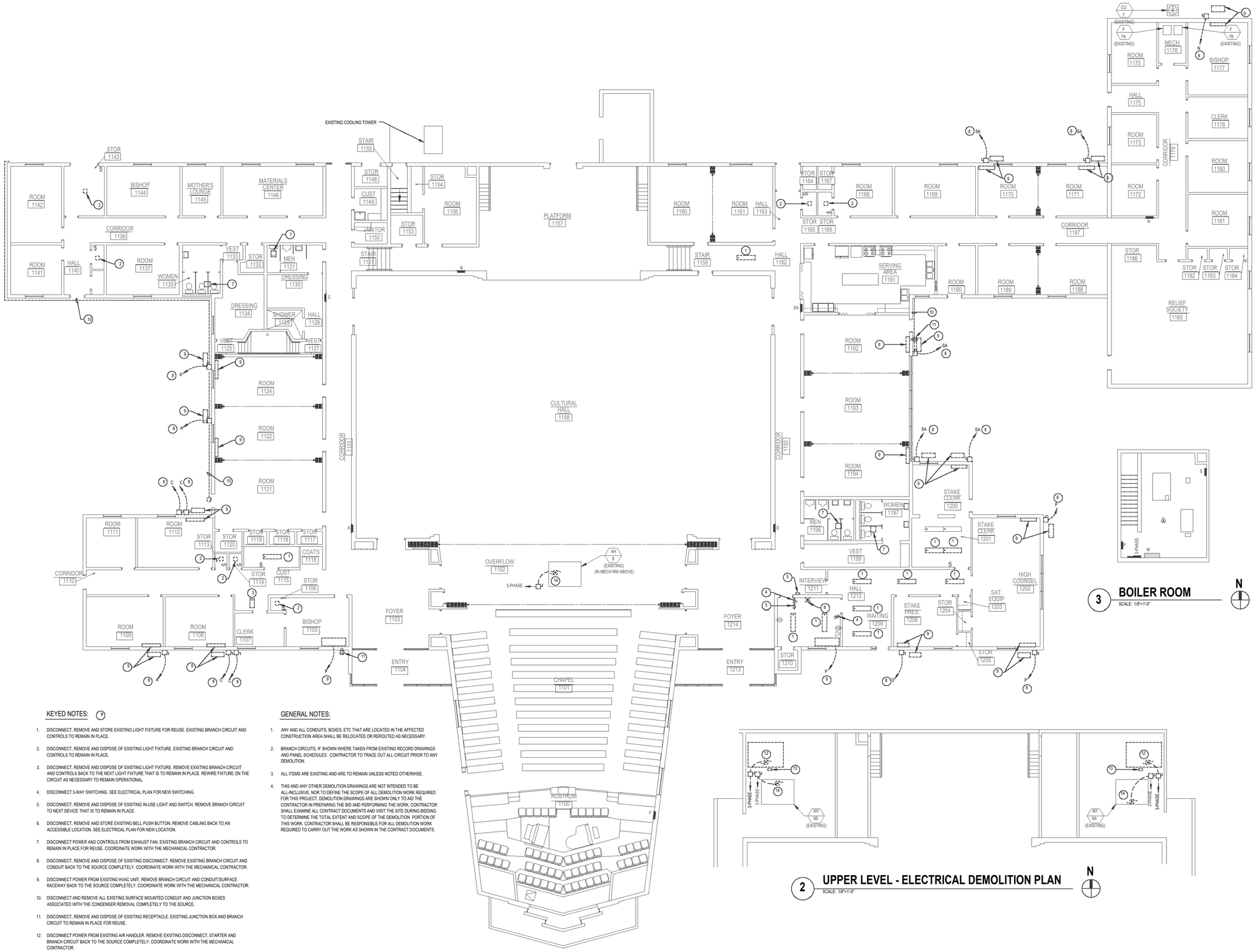
SYMBOLS AND NOTES

SHEET NUMBER

EG101



KEYED NOTES:

1. DISCONNECT, REMOVE AND STORE EXISTING LIGHT FIXTURE FOR REUSE. EXISTING BRANCH CIRCUIT AND CONTROLS TO REMAIN IN PLACE.
2. DISCONNECT, REMOVE AND DISPOSE OF EXISTING LIGHT FIXTURE. EXISTING BRANCH CIRCUIT AND CONTROLS TO REMAIN IN PLACE.
3. DISCONNECT, REMOVE AND DISPOSE OF EXISTING LIGHT FIXTURE. REMOVE EXISTING BRANCH CIRCUIT AND CONTROLS BACK TO THE NEXT LIGHT FIXTURE THAT IS TO REMAIN IN PLACE. REWIRE FIXTURE ON THE CIRCUIT AS NECESSARY TO REMAIN OPERATIONAL.
4. DISCONNECT 3-WAY SWITCHING. SEE ELECTRICAL PLAN FOR NEW SWITCHING.
5. DISCONNECT, REMOVE AND DISPOSE OF EXISTING IN-USE LIGHT AND SWITCH. REMOVE BRANCH CIRCUIT TO NEXT DEVICE THAT IS TO REMAIN IN PLACE.
6. DISCONNECT, REMOVE AND STORE EXISTING BELL PUSH BUTTON. REMOVE CABLING BACK TO AN ACCESSIBLE LOCATION. SEE ELECTRICAL PLAN FOR NEW LOCATION.
7. DISCONNECT POWER AND CONTROLS FROM EXHAUST FAN. EXISTING BRANCH CIRCUIT AND CONTROLS TO REMAIN IN PLACE FOR REUSE. COORDINATE WORK WITH THE MECHANICAL CONTRACTOR.
8. DISCONNECT, REMOVE AND DISPOSE OF EXISTING DISCONNECT. REMOVE EXISTING BRANCH CIRCUIT AND CONDUIT BACK TO THE SOURCE COMPLETELY. COORDINATE WORK WITH THE MECHANICAL CONTRACTOR.
9. DISCONNECT POWER FROM EXISTING HVAC UNIT. REMOVE BRANCH CIRCUIT AND CONDUIT/SURFACE RACEWAY BACK TO THE SOURCE COMPLETELY. COORDINATE WORK WITH THE MECHANICAL CONTRACTOR.
10. DISCONNECT AND REMOVE ALL EXISTING SURFACE MOUNTED CONDUIT AND JUNCTION BOXES ASSOCIATED WITH THE CONDENSER REMOVAL COMPLETELY TO THE SOURCE.
11. DISCONNECT, REMOVE AND DISPOSE OF EXISTING RECEPTACLE. EXISTING JUNCTION BOX AND BRANCH CIRCUIT TO REMAIN IN PLACE FOR REUSE.
12. DISCONNECT POWER FROM EXISTING AIR HANDLER. REMOVE EXISTING DISCONNECT, STARTER AND BRANCH CIRCUIT BACK TO THE SOURCE COMPLETELY. COORDINATE WORK WITH THE MECHANICAL CONTRACTOR.
13. DISCONNECT POWER FROM EXISTING PUMP. REMOVE EXISTING DISCONNECT, STARTER AND BRANCH CIRCUIT BACK TO THE SOURCE COMPLETELY. COORDINATE WORK WITH THE MECHANICAL CONTRACTOR.
14. DISCONNECT POWER FROM EXISTING AIR HANDLER. REMOVE EXISTING DISCONNECT AND STARTER. EXISTING BRANCH CIRCUIT TO REMAIN IN PLACE FOR REUSE. COORDINATE WORK WITH THE MECHANICAL CONTRACTOR.

GENERAL NOTES:

1. ANY AND ALL CONDUITS, BOXES, ETC THAT ARE LOCATED IN THE AFFECTED CONSTRUCTION AREA SHALL BE RELOCATED OR REROUTED AS NECESSARY.
2. BRANCH CIRCUITS, IF SHOWN WHERE TAKEN FROM EXISTING RECORD DRAWINGS AND PANEL SCHEDULES. CONTRACTOR TO TRACE OUT ALL CIRCUIT PRIOR TO ANY DEMOLITION.
3. ALL ITEMS ARE EXISTING AND ARE TO REMAIN UNLESS NOTED OTHERWISE.
4. THIS AND ANY OTHER DEMOLITION DRAWINGS ARE NOT INTENDED TO BE ALL-INCLUSIVE, NOR TO DEFINE THE SCOPE OF ALL DEMOLITION WORK REQUIRED FOR THIS PROJECT. DEMOLITION DRAWINGS ARE SHOWN ONLY TO AID THE CONTRACTOR IN PREPARING THE BID AND PERFORMING THE WORK. CONTRACTOR SHALL EXAMINE ALL CONTRACT DOCUMENTS AND VISIT THE SITE DURING BIDDING TO DETERMINE THE TOTAL EXTENT AND SCOPE OF THE DEMOLITION PORTION OF THIS WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION WORK REQUIRED TO CARRY OUT THE WORK AS SHOWN IN THE CONTRACT DOCUMENTS.

1 **MAIN LEVEL - ELECTRICAL DEMOLITION PLAN**
SCALE: 1/8"=1'-0"

2 **UPPER LEVEL - ELECTRICAL DEMOLITION PLAN**
SCALE: 1/8"=1'-0"

3 **BOILER ROOM**
SCALE: 1/8"=1'-0"

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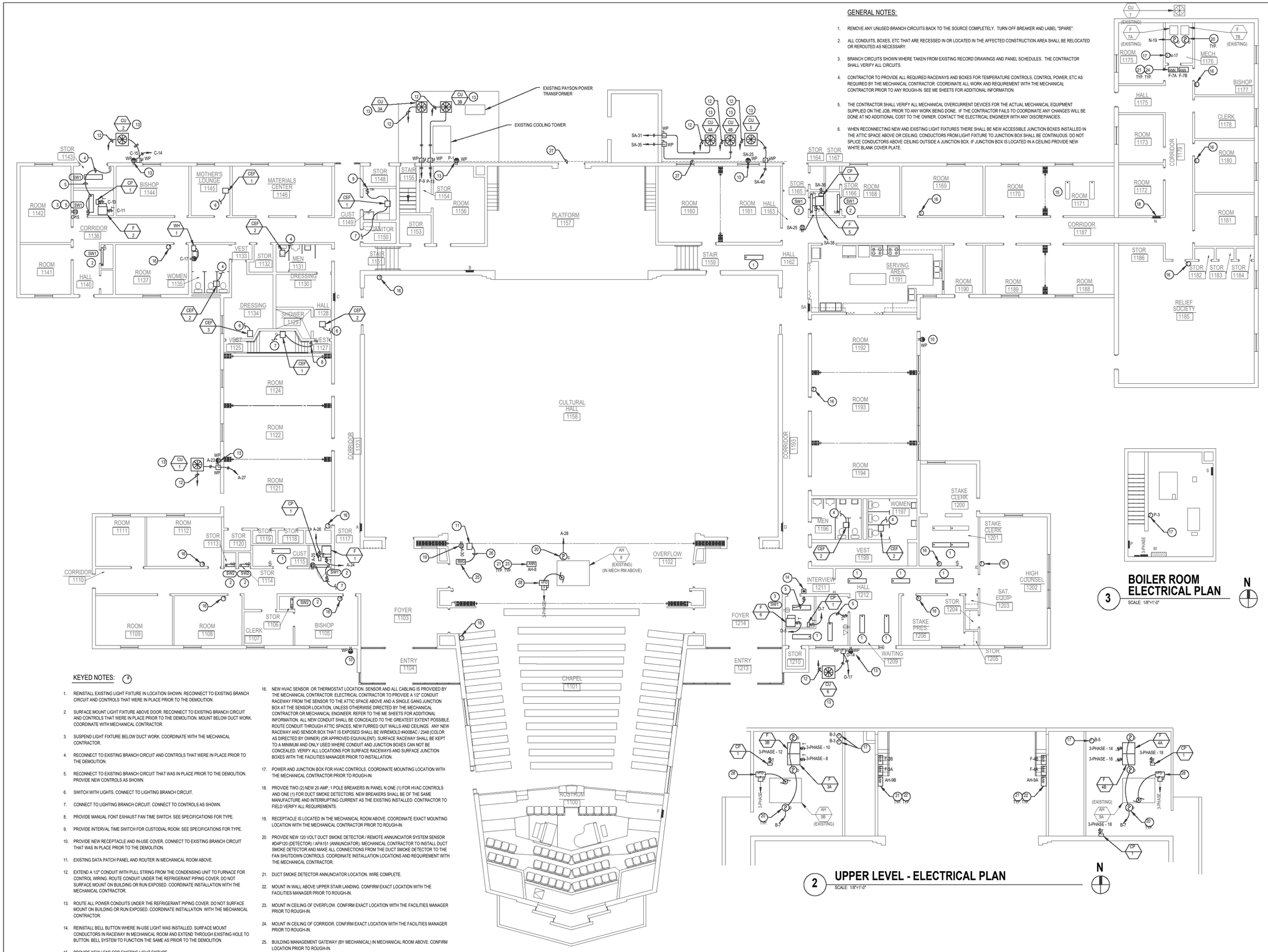

1 MAIN LEVEL - ELECTRICAL PLAN
SCALE: 1/8"=1'-0"

2 UPPER LEVEL - ELECTRICAL PLAN
SCALE: 1/8"=1'-0"

3 BOILER ROOM ELECTRICAL PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. REMOVE ANY UNUSED BRANCH CIRCUITS BACK TO THE SOURCE COMPLETELY. TURN OFF BREAKER AND LABEL "SPARE".
2. ALL CONDUITS, BOXES, ETC THAT ARE RECESSED IN OR LOCATED IN THE AFFECTED CONSTRUCTION AREA SHALL BE RELOCATED OR REROUTED AS NECESSARY.
3. BRANCH CIRCUITS SHOWN WHERE TAKEN FROM EXISTING RECORD DRAWINGS AND PANEL SCHEDULES. THE CONTRACTOR SHALL VERIFY ALL CIRCUITS.
4. CONTRACTOR TO PROVIDE ALL REQUIRED RACEWAYS AND BOXES FOR TEMPERATURE CONTROLS, CONTROL POWER, ETC AS REQUIRED BY THE MECHANICAL CONTRACTOR. COORDINATE ALL WORK AND REQUIREMENT WITH THE MECHANICAL CONTRACTOR PRIOR TO ANY ROUGH-IN. SEE ME SHEETS FOR ADDITIONAL INFORMATION.
5. THE CONTRACTOR SHALL VERIFY ALL MECHANICAL OVERCURRENT DEVICES FOR THE ACTUAL MECHANICAL EQUIPMENT SUPPLIED ON THE JOB, PRIOR TO ANY WORK BEING DONE. IF THE CONTRACTOR FAILS TO COORDINATE ANY CHANGES WILL BE DONE AT NO ADDITIONAL COST TO THE OWNER. CONTACT THE ELECTRICAL ENGINEER WITH ANY DISCREPANCIES.
6. WHEN RECONNECTING NEW AND EXISTING LIGHT FIXTURES THERE SHALL BE NEW ACCESSIBLE JUNCTION BOXES INSTALLED IN THE ATTIC SPACE ABOVE OR CEILING. CONDUCTORS FROM LIGHT FIXTURE TO JUNCTION BOX SHALL BE CONTINUOUS. DO NOT SPLICE CONDUCTORS ABOVE CEILING OUTSIDE A JUNCTION BOX. IF JUNCTION BOX IS LOCATED IN A CEILING PROVIDE NEW WHITE BLANK COVER PLATE.

KEYED NOTES:

1. REINSTALL EXISTING LIGHT FIXTURE IN LOCATION SHOWN. RECONNECT TO EXISTING BRANCH CIRCUIT AND CONTROLS THAT WERE IN PLACE PRIOR TO THE DEMOLITION.
2. SURFACE MOUNT LIGHT FIXTURE ABOVE DOOR. RECONNECT TO EXISTING BRANCH CIRCUIT AND CONTROLS THAT WERE IN PLACE PRIOR TO THE DEMOLITION. MOUNT BELOW DUCT WORK. COORDINATE WITH MECHANICAL CONTRACTOR.
3. SUSPEND LIGHT FIXTURE BELOW DUCT WORK. COORDINATE WITH THE MECHANCAL CONTRACTOR.
4. RECONNECT TO EXISTING BRANCH CIRCUIT AND CONTROLS THAT WERE IN PLACE PRIOR TO THE DEMOLITION.
5. RECONNECT TO EXISTING BRANCH CIRCUIT THAT WAS IN PLACE PRIOR TO THE DEMOLITION. PROVIDE NEW CONTROLS AS SHOWN.
6. SWITCH WITH LIGHTS. CONNECT TO LIGHTING BRANCH CIRCUIT.
7. CONNECT TO LIGHTING BRANCH CIRCUIT. CONNECT TO CONTROLS AS SHOWN.
8. PROVIDE MANUAL FONT EXHAUST FAN TIME SWITCH. SEE SPECIFICATIONS FOR TYPE.
9. PROVIDE INTERVAL TIME SWITCH FOR CUSTODIAL ROOM. SEE SPECIFICATIONS FOR TYPE.
10. PROVIDE NEW RECEPTACLE AND IN-USE COVER. CONNECT TO EXISTING BRANCH CIRCUIT THAT WAS IN PLACE PRIOR TO THE DEMOLITION.
11. EXISTING DATA PATCH PANEL AND ROUTER IN MECHANICAL ROOM ABOVE.
12. EXTEND A 1/2" CONDUIT WITH PULL STRING FROM THE CONDENSING UNIT TO FURNACE FOR CONTROL WIRING. ROUTE CONDUIT UNDER THE REFRIGERANT PIPING COVER. DO NOT SURFACE MOUNT ON BUILDING OR RUN EXPOSED. COORDINATE INSTALLATION WITH THE MECHANICAL CONTRACTOR.
13. ROUTE ALL POWER CONDUITS UNDER THE REFRIGERANT PIPING COVER. DO NOT SURFACE MOUNT ON BUILDING OR RUN EXPOSED. COORDINATE INSTALLATION WITH THE MECHANICAL CONTRACTOR.
14. REINSTALL BELL BUTTON WHERE IN-USE LIGHT WAS INSTALLED. SURFACE MOUNT CONDUCTORS IN RACEWAY IN MECHANICAL ROOM AND EXTEND THROUGH EXISTING HOLE TO BUTTON. BELL SYSTEM TO FUNCTION THE SAME AS PRIOR TO THE DEMOLITION.
15. PROVIDE NEW LENS FOR EXISTING LIGHT FIXTURE.
16. NEW HVAC SENSOR OR THERMOSTAT LOCATION. SENSOR AND ALL CABLING IS PROVIDED BY THE MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE A 1/2" CONDUIT RACEWAY FROM THE SENSOR TO THE ATTIC SPACE ABOVE AND A SINGLE GANG JUNCTION BOX AT THE SENSOR LOCATION, UNLESS OTHERWISE DIRECTED BY THE MECHANICAL CONTRACTOR OR MECHANICAL ENGINEER. REFER TO THE ME SHEETS FOR ADDITIONAL INFORMATION. ALL NEW CONDUIT SHALL BE CONCEALED TO THE GREATEST EXTENT POSSIBLE. ROUTE CONDUIT THROUGH ATTIC SPACES, NEW FURRED OUT WALLS AND CEILINGS. ANY NEW RACEWAY AND SENSOR BOX THAT IS EXPOSED SHALL BE WIREMOLD #400BAC / 2348 (COLOR AS DIRECTED BY OWNER) (OR APPROVED EQUIVALENT). SURFACE RACEWAY SHALL BE KEPT TO A MINIMUM AND ONLY USED WHERE CONDUIT AND JUNCTION BOXES CAN NOT BE CONCEALED. VERIFY ALL LOCATIONS FOR SURFACE RACEWAYS AND SURFACE JUNCTION BOXES WITH THE FACILITIES MANAGER PRIOR TO INSTALLATION.
17. POWER AND JUNCTION BOX FOR HVAC CONTROLS. COORDINATE MOUNTING LOCATION WITH THE MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
18. PROVIDE TWO (2) NEW 20 AMP, 1 POLE BREAKERS IN PANEL N ONE (1) FOR HVAC CONTROLS AND ONE (1) FOR DUCT SMOKE DETECTORS. NEW BREAKERS SHALL BE OF THE SAME MANUFACTURE AND INTERRUPTING CURRENT AS THE EXISTING INSTALLED. CONTRACTOR TO FIELD VERIFY ALL REQUIREMENTS.
19. RECEPTACLE IS LOCATED IN THE MECHANICAL ROOM ABOVE. COORDINATE EXACT MOUNTING LOCATION WITH THE MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
20. PROVIDE NEW 120 VOLT DUCT SMOKE DETECTOR / REMOTE ANNUNCIATOR SYSTEM SENSOR #DAP120 (DETECTOR) / AFA1S1 (ANNUNCIATOR). MECHANICAL CONTRACTOR TO INSTALL DUCT SMOKE DETECTOR AND MAKE ALL CONNECTIONS FROM THE DUCT SMOKE DETECTOR TO THE FAN SHUTDOWN CONTROLS. COORDINATE INSTALLATION LOCATIONS AND REQUIREMENT WITH THE MECHANICAL CONTRACTOR.
21. DUCT SMOKE DETECTOR ANNUNCIATOR LOCATION. WIRE COMPLETE.
22. MOUNT IN WALL ABOVE UPPER STAIR LANDING. CONFIRM EXACT LOCATION WITH THE FACILITIES MANAGER PRIOR TO ROUGH-IN.
23. MOUNT IN CEILING OF OVERFLOW. CONFIRM EXACT LOCATION WITH THE FACILITIES MANAGER PRIOR TO ROUGH-IN.
24. MOUNT IN CEILING OF CORRIDOR. CONFIRM EXACT LOCATION WITH THE FACILITIES MANAGER PRIOR TO ROUGH-IN.
25. BUILDING MANAGEMENT GATEWAY (BY MECHANICAL) IN MECHANICAL ROOM ABOVE. CONFIRM LOCATION PRIOR TO ROUGH-IN.
26. EXTEND ONE (1) CAT 5E (MATCH EXISTING) CABLE FROM THE BMG TO THE DATA PATCH PANEL. SEE KEYED NOTE #11. PROVIDE ALL TERMINATIONS AT PATCH PANEL AND JACK FOR CONNECTION TO BMG.
27. PROTECT EXISTING SNOW MELT SYSTEM AND POWER CONDUITS.
28. VARIABLE FREQUENCY DRIVE IS FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED AND CONNECTED BY THE ELECTRICAL CONTRACTOR. COORDINATE ALL WORK AND REQUIREMENTS WITH THE MECHANICAL CONTRACTOR PRIOR TO ANY WORK BEING DONE.

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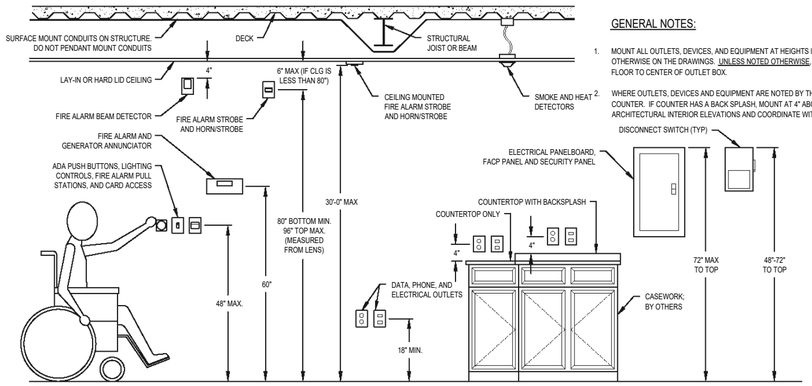
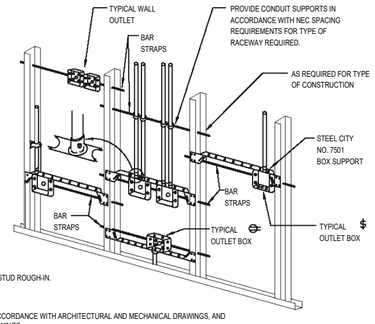


3 ADA AND EQUIPMENT MOUNTING HEIGHT DETAIL
SCALE: NONE

GENERAL NOTES:

1. MOUNT ALL OUTLETS, DEVICES, AND EQUIPMENT AT HEIGHTS INDICATED BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS. UNLESS NOTED OTHERWISE, HEIGHTS ARE GIVEN FROM FINISHED FLOOR TO CENTER OF OUTLET BOX.
2. WHERE OUTLETS, DEVICES AND EQUIPMENT ARE NOTED BY THE SUBSCRIPT 'A', MOUNT AT 4" ABOVE COUNTER. IF COUNTER HAS A BACK SPLASH, MOUNT AT 4" ABOVE BACK SPLASH. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS AND COORDINATE WITH CASEWORK SUPPLIER.



NOTES:

1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH UBC 4303 OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.

2 TYPICAL ROUGH-IN REQUIREMENTS
SCALE: NONE

IF PANEL BOARD IS FEED FROM A TRANSFORMER LOCATED IN THE SAME ROOM AS THE PANEL. THE TOTAL LENGTH OF BRANCH CIRCUITS SHALL NOT EXCEED THE FOLLOWING:

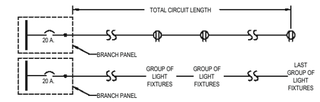
	120 VOLTS	277 VOLTS
a - USING #12 AWG	90 FT.	180 FT.
b - USING #10 AWG	150 FT.	300 FT.
c - USING #8 AWG	250 FT.	450 FT.
d - USING #6 AWG	380 FT.	700 FT.

THE ABOVE CIRCUIT LENGTHS ARE BASED ON 4% VOLTAGE DROP AT 16 AMPS LOAD AT THE END OF THE CIRCUIT. SAME WIRE SIZE SHALL BE USED FOR THE ENTIRE CIRCUIT.

IF PANELBOARD IS FEED FROM A TRANSFORMER LOCATED REMOTELY FROM THE PANEL. THE TOTAL LENGTH OF BRANCH CIRCUITS SHALL NOT EXCEED THE FOLLOWING:

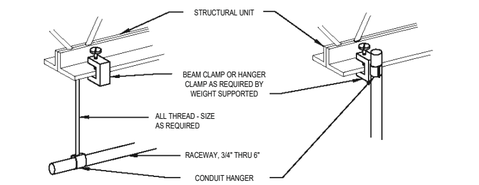
	120 VOLTS	277 VOLTS
a - USING #12 AWG	75 FT.	180 FT.
b - USING #10 AWG	125 FT.	260 FT.
c - USING #8 AWG	205 FT.	420 FT.
d - USING #6 AWG	325 FT.	660 FT.

THE ABOVE CIRCUIT LENGTHS ARE BASED ON 3% VOLTAGE DROP AT 16 AMPS LOAD AT THE END OF THE CIRCUIT. SAME WIRE SIZE SHALL BE USED FOR THE ENTIRE CIRCUIT.

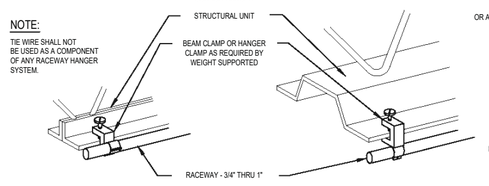


BRANCH CIRCUIT DEFINITION:
CIRCUIT ORIGINATING FROM A 20 AMP CIRCUIT BREAKER IN A BRANCH PANEL AND ENDING AT THE LAST DUPLEX OUTLET ON THE CIRCUIT OR ENDS AT THE LAST LIGHT FIXTURE.

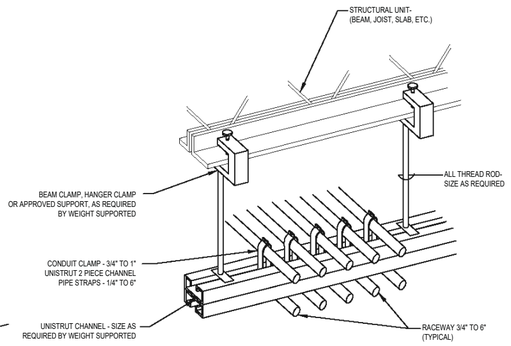
1 TYPICAL BRANCH CIRCUIT LENGTH DETAIL
SCALE: SCHEMATIC



NOTE:
TIE WIRE SHALL NOT BE USED AS A COMPONENT OF ANY RACEWAY HANGER SYSTEM.



5 TYPICAL RACEWAY DETAILS
SCALE: NONE



4 MULTIPLE RACEWAY SUPPORT DETAIL
SCALE: NONE

EQUIPMENT SCHEDULE

UNIT NAME	DESCRIPTION	LOAD	TYPE	VOLTAGE	PHASE	AMPERAGE	CONDUIT SIZE	WIRES		STARTER / DISCONNECT/ CONNECTION AT UNIT						REMARKS
								NO.	SIZE	NOTE	STARTER SIZE	DCP SIZE	DCP POLES	DISCONNECT SIZE	DISCONNECT POLES	
AH-8	AIR HANDLER	5	HP	208	3	17.5	1/2"	2	10	10A/5B	-	35	3	60	3	
AH-9A	AIR HANDLER	2	HP	208	3	7.8	1/2"	2	12	10A/5B	-	15	3	30	3	
AH-9B	AIR HANDLER	2	HP	208	3	7.8	1/2"	2	12	10A/5B	-	15	3	30	3	
CEF-1	EXHAUST FAN	85.7	WATTS	120	1	0.714	1/2"	2	12	1A	-	-	-	1 HP	1	
CEF-2	EXHAUST FAN	85.7	WATTS	120	1	0.714	1/2"	2	12	1A	-	-	-	1 HP	1	
CEF-3	EXHAUST FAN	104	WATTS	120	1	0.867	1/2"	2	12	1A	-	-	-	1 HP	1	
CU-1	CONDENSING UNIT	28.5	MCA	208	1	28.5	1"	2	8	10A	-	50	2	60	2	NEMA 3R DISCONNECT
CU-2	CONDENSING UNIT	34.3	MCA	208	1	34.3	1"	2	6	10A	-	60	2	60	2	NEMA 3R DISCONNECT
CU-3A	CONDENSING UNIT	21.1	MCA	208	1	21.1	1"	2	10	10A	-	35	2	60	2	NEMA 3R DISCONNECT
CU-3B	CONDENSING UNIT	21.1	MCA	208	1	31.1	1"	2	10	10A	-	35	2	60	2	NEMA 3R DISCONNECT
CU-4A	CONDENSING UNIT	28.5	MCA	208	1	28.5	1"	2	8	10A	-	50	2	60	2	NEMA 3R DISCONNECT
CU-4B	CONDENSING UNIT	28.5	MCA	208	1	28.5	1"	2	8	10A	-	50	2	60	2	NEMA 3R DISCONNECT
CU-5	CONDENSING UNIT	34.3	MCA	208	1	34.3	1"	2	6	10A	-	60	2	60	2	NEMA 3R DISCONNECT
CU-6	CONDENSING UNIT	34.3	MCA	208	1	34.3	1"	2	6	10A	-	60	2	60	2	NEMA 3R DISCONNECT
CP-1	CONDENSATE PUMP	2.5	AMPS	120	1	2.5	3/4"	2	12	1A	-	-	-	1 HP	1	
F-1	FURNACE	3/4	HP	120	1	13.8	3/4"	2	10	1A	-	-	-	1 HP	1	
F-2	FURNACE	3/4	HP	120	1	13.8	3/4"	2	10	1A	-	-	-	1 HP	1	
F-3A	FURNACE	1/2	HP	120	1	9.8	3/4"	2	12	1A	-	-	-	1 HP	1	
F-3B	FURNACE	1/2	HP	120	1	9.8	3/4"	2	12	1A	-	-	-	1 HP	1	
F-4A	FURNACE	3/4	HP	120	1	13.8	3/4"	2	10	1A	-	-	-	1 HP	1	
F-4B	FURNACE	3/4	HP	120	1	13.8	3/4"	2	10	1A	-	-	-	1 HP	1	
F-5	FURNACE	3/4	HP	120	1	13.8	3/4"	2	10	1A	-	-	-	1 HP	1	
F-6	FURNACE	3/4	HP	120	1	13.8	3/4"	2	10	1A	-	-	-	1 HP	1	
WH-1	WATER HEATER	1500	WATTS	120	1	12.5	3/4"	2	12	13A	-	-	-	-	-	PROVIDE CORD AND PLUG

SIZE ALL FUSES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

STARTER / DISCONNECT NOTES:

1. MANUAL STARTER WITH THERMAL OVERLOAD
2. MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION & LOW VOLTAGE RELAY / CONTACTOR FOR ATC CONTROL
3. COMBINATION MAGNETIC STARTER / FUSED DISCONNECT
4. COMBINATION MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP)
5. COMBINATION VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP)
6. REDUCED VOLTAGE STARTER
7. COMBINATION TWO-SPEED STARTER / FUSED DISCONNECT
8. COMBINATION TWO-SPEED STARTER / MOTOR CIRCUIT PROTECTOR (MCP)
9. NON-FUSED DISCONNECT SWITCH
10. FUSED DISCONNECT SWITCH
11. BREAKER AND ENCLOSURE
12. DIRECT CONNECTION
13. DUPLEX RECEPTACLE OUTLET
14. SPECIAL PURPOSE OUTLET
15. SHUNT-TRIP BREAKER AND ENCLOSURE
16. TOGGLE SWITCH
17. MAGNETIC STARTER
18. MOTOR RATED SWITCH

INSTALLATION NOTES:

A. FURNISHED, INSTALLED, & CONNECTED UNDER DIVISION 26.
B. FURNISHED & INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTIONS UNDER DIVISION 26.
C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26.
D. FURNISHED, INSTALLED, & CONNECTED UNDER ANOTHER DIVISION
E. FURNISHED BY OWNER, INSTALLED & CONNECTED BY DIVISION 26

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	SERIES	DESCRIPTION	VOLTAGE	LOAD (VA)	MOUNTING	NUMBER	LAMPS TYPE	LAMPS WATTS	LAMPS COLOR (KELVIN)	LAMPS CRI	REMARKS
SW1	LITHONIA	ZLTN	48" STRIP LIGHT 3,000 LUMENS / FROSTED ACRYLIC DIFFUSER 0-10 VOLT DIMMING-10%	120	15	SURFACE	AR	LED	15	3000	80	
SW2	LITHONIA	ZLTN	24" STRIP LIGHT 1,500 LUMENS / FROSTED ACRYLIC DIFFUSER 0-10 VOLT DIMMING-10%	120	25	SUSPENDED OR SURFACE	AR	LED	25	3000	80	

BIDDING REQUIREMENTS

1. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM.
2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS NOT ALLOWED.
3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS DISTRIBUTORS AND/OR CONTRACTORS.
4. WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.

LIGHT FIXTURE GENERAL NOTES

1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO BIDDING.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS AND LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.
3. REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE, BALLAST, AND LAMP REQUIREMENTS AND ACCEPTABLE MANUFACTURERS.
4. REFER TO ARCHITECTURAL DRAWINGS FOR LOUVER REQUIREMENTS (IF ANY).
5. CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWING. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.
6. PROVIDE DISCONNECTING MEANS FOR EACH BALLAST PER THE REQUIREMENTS OF NEC 410.130(G) AND THE SPECIFICATIONS.

LIGHT FIXTURE PRIOR APPROVAL REQUIREMENTS

1. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT.
2. PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE A MINIMUM (5) FIVE WORKING DAYS BEFORE THE BID. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.
3. PRIOR APPROVALS SHALL BE SIGNED BY A PRINCIPAL OF THE SUBMITTING ORGANIZATION STATING THAT THEY HAVE PREPARED AND/OR REVIEWED THE SUBMITTAL AND THAT THE PRODUCTS PROPOSED ARE EQUIVALENT TO THOSE SPECIFIED. ANY EXCEPTIONS SHALL BE SO NOTED.
4. ITEMS THAT ARE SUBMITTED AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). VERBAL APPROVAL WILL NOT BE GIVEN ON ANY ITEM.
5. IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN.
6. PRIOR APPROVALS SHALL CONSIST OF TWO SETS OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. FAXES ARE NOT ACCEPTABLE. ALL SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED, WITH NON-APPLICABLE INFORMATION CROSSED OUT. COMPLETE PHOTOMETRIC DATA SHALL BE PROVIDED. PRODUCTS WITHOUT PHOTOMETRIC DATA WILL BE NOT BE APPROVED.

LIGHT FIXTURE ABBREVIATION SCHEDULE

NOTE: NOT ALL ABBREVIATIONS WILL NECESSARILY BE USED.

A.F.F.	ABOVE FINISHED FLOOR
WALL@CLG.	WALL MOUNT AT CORNER OF WALL AND CEILING
CCBA	CUSTOM PAINTED COLOR AS SELECTED BY THE ARCHITECT
SCBA	STANDARD PAINTED COLOR AS SELECTED BY THE ARCHITECT
CFBA	CUSTOM FINISH AS SELECTED BY THE ARCHITECT
SFBA	STANDARD FINISH AS SELECTED BY THE ARCHITECT
MOD	MODIFY STANDARD LIGHT FIXTURE AS INDICATED

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STAMP

REGISTERED PROFESSIONAL ENGINEER DAVID P. WHITTON No. 284997 5/6/19 STATE OF UTAH

PROJECT FOR
HVAC REMODEL
PAYSON 6, 8, 10 & STAKE CENTER
780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

ISSUE TYPE:	BID DOCUMENTS
ISSUE DATE:	MAY 08, 2019
PROJECT NO:	18011
CAD DWG FILE:	
DRAWN BY:	SDK
CHECKED BY:	DPW

SHEET TITLE
DETAILS AND SCHEDULES

SHEET NUMBER
EP201

PANELBOARD SCHEDULE

PANEL NAME: D (EXISTING)
MOUNTING: RECESSED
ENCLOSURE: NEMA 1
DOOR STYLE: STANDARD
VOLTAGE: 240/120
PHASE: 1
WIRE: 3
MIN. A.I.C. RATING: VERIFY
MAINS TYPE: MLO
BUS MATERIAL: ALUMINUM
BUS RATING: 100 AMPS
MCB RATING: NONE
TVSS: NONE
NEUTRAL: 100% RATED
BRANCH OCP TYPE: BOLT-ON CBs
ISOLATED GROUND: NO

KEYED NOTE	CIRCUIT DESCRIPTION	BREAKER AMPS	POLE	LOAD TYPE	CKT #	CONNECTED LOAD/PHASE (VA) A	B	CKT #	LOAD TYPE	BREAKER AMPS	POLE	CIRCUIT DESCRIPTION	KEYED NOTE
9	HALL AND STAKE SUIT LIGHTS	20	1		1			2		20	1	HIGH COUNCIL LIGHTS	9
9	STAKE SUITE LIGHTS / OUTLETS	20	1		3			4		20	1	LIGHTS ROOM 1	9
8	FURNACE F-6	25	1	M	5	1,656		6		20	1	MENS/WOMENS LIGHTS	9
	PUMP CP-1	20	1	M	7		300	8		20	1	SOUND / CLERK	9
9	EAST HALL LIGHTS	20	1		9			10		20	1	STAKE OFFICE / FOYER OUTLETS	9
9	EAST FOYER LIGHTS	20	1		11			12		20	1	STAKE OFFICE ENTRY	9
9	MENS RESTROOM OUTLETS	20	1		13	180		14	R	20	1	EXTERIOR C.O.	
9	WOMENS RESTRM/STAKE CLERK	20	1		15			16		20	1	EWC/CULTURAL HALL EAST OUTLETS	9
8	CONDENSING UNIT CU-6	60	2	M	17	3,567		18		20	1		
-	-	-	-	M	19		3,567	20				SPACE	
					21			22					
					23			24					
	TOTAL CONNECTED LOAD PER PHASE (VA):					5,403	3,867						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (VA):					6,295	4,759						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (AMPS):					52	40						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
P	SUB-PANEL	SUB-PANEL LOADS BROKEN OUT BY LOAD CLASIFICATION BELOW			
R	RECEPTACLES	180 VA	100%	180 VA	TOTAL CONNECTED LOAD: 9,270 VA
L	LIGHTING	-	-	-	25% OF LARGEST MOTOR: 1,784 VA
C	CONTINUOUS	-	-	-	TOTAL ESTIMATED DEMAND LOAD: 11,054 VA
E	EQUIPMENT	-	-	-	TOTAL ESTIMATED DEMAND BALANCED CURRENT: 46 AMPS
M	MOTOR	9,090 VA	100%	9,090 VA	MAXIMUM ESTIMATED DEMAND PHASE CURRENT: 52 AMPS
K	KITCHEN	-	-	-	
	OTHER	-	-	-	

PANELBOARD SCHEDULE

PANEL NAME: C (EXISTING)
MOUNTING: RECESSED
ENCLOSURE: NEMA 1
DOOR STYLE: STANDARD
VOLTAGE: 240/120
PHASE: 1
WIRE: 3
MIN. A.I.C. RATING: VERIFY
MAINS TYPE: MLO
BUS MATERIAL: ALUMINUM
BUS RATING: 100 AMPS
MCB RATING: NONE
TVSS: NONE
NEUTRAL: 100% RATED
BRANCH OCP TYPE: BOLT-ON CBs
ISOLATED GROUND: NO

KEYED NOTE	CIRCUIT DESCRIPTION	BREAKER AMPS	POLE	LOAD TYPE	CKT #	CONNECTED LOAD/PHASE (VA) A	B	CKT #	LOAD TYPE	BREAKER AMPS	POLE	CIRCUIT DESCRIPTION	KEYED NOTE
9	HALL LIGHTS MATERIAL CNTR OUTLET	20	1		1			2		20	1	NORTH WEST HALL LIGHTS	9
9	MENS REST ROOM LIGHTS	20	1		3			4		20	1	LIBRARY, MOTHERS, NW HALL	9
9	FONT LIGHTS	20	1		5			6		20	1	NW HALL WOMENS, MENS MATERIAL	9
9	WOMENS DRESSING ROOM	20	1		7			8		20	1	MOTHERS RM. NW HALL , RM 19,20,21	9
9	WOMENS RESTROOM LIGHTS	20	1		9			10		20	1	HALL AND PRIMARY OUTLETS	9
8	FURNACE F-2	25	1	M	11		1,656	12		20	1	ATTIC/AIR HANDLER MECH LTS	9
8	PUMP CP-1	20	1	M	13	300	3,567	14	M	60	2	CONDENSING UNIT CU-2	8
8	MECH RM / EXTERIOR C.O.	20	1	R	15		360	16	M	-	-	-	-
8	WATER HEATER WH-1	20	1	E	17	1,500		18		20	2	SPARE	
	SPACE				19			20		-	-	-	
					21			22					
					23			24					
	TOTAL CONNECTED LOAD PER PHASE (VA):					5,367	5,583						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (VA):					6,259	6,475						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (AMPS):					52	54						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
P	SUB-PANEL	SUB-PANEL LOADS BROKEN OUT BY LOAD CLASIFICATION BELOW			
R	RECEPTACLES	360 VA	100%	360 VA	TOTAL CONNECTED LOAD: 10,950 VA
L	LIGHTING	-	-	-	25% OF LARGEST MOTOR: 1,784 VA
C	CONTINUOUS	-	-	-	TOTAL ESTIMATED DEMAND LOAD: 12,734 VA
E	EQUIPMENT	1,500 VA	100%	1,500 VA	TOTAL ESTIMATED DEMAND BALANCED CURRENT: 53 AMPS
M	MOTOR	9,090 VA	100%	9,090 VA	MAXIMUM ESTIMATED DEMAND PHASE CURRENT: 54 AMPS
K	KITCHEN	-	-	-	
	OTHER	-	-	-	

PANELBOARD SCHEDULE

PANEL NAME: A (EXISTING)
MOUNTING: RECESSED
ENCLOSURE: NEMA 1
DOOR STYLE: STANDARD
VOLTAGE: 240/120
PHASE: 1
WIRE: 3
MIN. A.I.C. RATING: VERIFY
MAINS TYPE: MLO
BUS MATERIAL: ALUMINUM
BUS RATING: 100 AMPS
MCB RATING: NONE
TVSS: NONE
NEUTRAL: 100% RATED
BRANCH OCP TYPE: BOLT-ON CBs
ISOLATED GROUND: NO

KEYED NOTE	CIRCUIT DESCRIPTION	BREAKER AMPS	POLE	LOAD TYPE	CKT #	CONNECTED LOAD/PHASE (VA) A	B	CKT #	LOAD TYPE	BREAKER AMPS	POLE	CIRCUIT DESCRIPTION	KEYED NOTE
9	CHAPEL LIGHTS WEST SIDE	20	1		1			2		20	1	PRIMARY LIGHTS	9
9	CHAPEL LIGHTS EAST SIDE	20	1		3			4		20	1	BISHOP/CLASSROOM LTS SW HALL	9
9	SOUTH WEST LIGHTS	20	1		5			6		20	1	WEST FOYER LIGHTS	9
9	SOUTH WEST BISHOP / CLERK	20	1		7			8		20	1	OVERFLOW LIGHTS	9
9	PRIMARY LIGHTS	20	1		9			10		20	1	SOUTH HALL LIGHTS	9
9	PRIMARY LIGHTS	20	1		11			12		20	1	FOYER/CLERK SW OUTLETS	9
9	WEST CHAPEL LIGHTS	20	1		13			14		20	1	BISHOPS / CLASSROOM	9
9	EAST CHAPEL LIGHTS	20	1		15			16		20	1	PRIMARY OUTLETS	9
9	PULPIT OUTLETS	20	1		17			18		20	1	BISHOPS./CLERK / CLASSROOM #26	9
9	PULPIT OUTLETS	20	1		19			20		20	1	SCOREBOARD	9
		20	1		21			22					
	MECH RM / EXTERIOR C.O.	20	1	R	23		360	24	M	25	1	FURNACE F-1	8
9	PRIMARY OUTLETS	20	1		25	300		26	M	20	1	PUMP CP-1	8
8	CONDENSING UNIT CU-1	50	2	M	27		2,964	28	E	20	1	DUCT DETECTOR	8
-	-	-	-	M	29	2,964	600	30	E	20	1	HVAC CONTROLS	8
	TOTAL CONNECTED LOAD PER PHASE (VA):					3,864	5,100						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (VA):					4,605	5,841						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (AMPS):					38	49						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
P	SUB-PANEL	SUB-PANEL LOADS BROKEN OUT BY LOAD CLASIFICATION BELOW			
R	RECEPTACLES	360 VA	100%	360 VA	TOTAL CONNECTED LOAD: 8,964 VA
L	LIGHTING	-	-	-	25% OF LARGEST MOTOR: 1,482 VA
C	CONTINUOUS	-	-	-	TOTAL ESTIMATED DEMAND LOAD: 10,446 VA
E	EQUIPMENT	720 VA	100%	720 VA	TOTAL ESTIMATED DEMAND BALANCED CURRENT: 44 AMPS
M	MOTOR	7,884 VA	100%	7,884 VA	MAXIMUM ESTIMATED DEMAND PHASE CURRENT: 49 AMPS
K	KITCHEN	-	-	-	
	OTHER	-	-	-	

PANELBOARD SCHEDULE

PANEL NAME: 3-PHASE (EXISTING)
MOUNTING: SURFACE
ENCLOSURE: NEMA 1
DOOR STYLE: STANDARD
VOLTAGE: 208Y/120
PHASE: 3
WIRE: 4
MIN. A.I.C. RATING: CONTRACTOR TO VERIFY
MAINS TYPE: MLO
BUS MATERIAL: ALUMINUM
BUS RATING: 225 AMPS
MCB RATING: NONE
SPD: NONE
NEUTRAL: 100% RATED
BRANCH OCP TYPE: BOLT-ON CBs
ISOLATED GROUND: NO

KEYED NOTE	CIRCUIT DESCRIPTION	BREAKER AMPS	POLE	LOAD TYPE	CKT #	CONNECTED LOAD/PHASE (VA) A	B	C	CKT #	LOAD TYPE	BREAKER AMPS	POLE	CIRCUIT DESCRIPTION	KEYED NOTE
9	PANEL S	60	3		1				2		40	3	WATER HEATER	9
-	-	-	-		3				4		-	-	-	-
-	-	-	-		5				6		-	-	-	-
9	CHAPEL FAN	20	3		7	1,200			8	M	20	1	FURNACE F-3A	8
-	-	-	-		9		1,200		10	M	20	1	FURNACE F-3B	8
-	-	-	-		11			300	12	M	20	1	PUMP CP-1	8
9	SOUTH FAN EAST FAN ROOM	20	3		13	1,656			14	M	25	1	FURNACE F-4A	8
-	-	-	-		15		1,656		16	M	25	1	FURNACE F-4B	8
-	-	-	-		17			600	18	M	20	1	PUMP CP-1	8
9	BOILER PUMP	20	3		19				20		20	3	SOUTH FAN WEST FAN ROOM	9
-	-	-	-		21				22		-	-	-	-
-	-	-	-		23				24		-	-	-	-
	SPACE				25				26				SPACE	
	SPACE				27				28				SPACE	
	SPACE				29				30				SPACE	
	SPACE				31				32				SPACE	
	SPACE				33				34				SPACE	
	SPACE				35				36				SPACE	
	SPACE				37				38				SPACE	
	SPACE				39				40				SPACE	
	SPACE				41				42				SPACE	
	SPACE				43				44				SPACE	
	SPACE				45				46				SPACE	
	SPACE				47				48				SPACE	
9	CHILLER MAIN FEEDER	150	3		49				50		100	3	SUB FEED	9
-	-	-	-		51				52		-	-	-	-
-	-	-	-		53				54		-	-	-	-
	TOTAL CONNECTED LOAD PER PHASE (VA):					2,856	2,856	900						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (VA):					3,270	2,856	900						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (AMPS):					27	24	8						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
P	SUB-PANEL	SUB-PANEL LOADS BROKEN OUT BY LOAD CLASIFICATION BELOW			
R	RECEPTACLES	-	-	-	TOTAL CONNECTED LOAD: 6,612 VA
L	LIGHTING	-	-	-	25% OF LARGEST MOTOR: 414 VA
C	CONTINUOUS	-	-	-	TOTAL ESTIMATED DEMAND LOAD: 7,026 VA
E	EQUIPMENT	-	-	-	TOTAL ESTIMATED DEMAND BALANCED CURRENT: 20 AMPS
M	MOTOR	6,612 VA	100%	6,612 VA	MAXIMUM ESTIMATED DEMAND PHASE CURRENT: 27 AMPS
K	KITCHEN	-	-	-	
	OTHER	-	-	-	

PANELBOARD SCHEDULE

PANEL NAME: SA (EXISTING)
MOUNTING: RECESSED
ENCLOSURE: NEMA 1
DOOR STYLE: STANDARD
VOLTAGE: 240/120
PHASE: 1
WIRE: 3
MIN. A.I.C. RATING: VERIFY
MAINS TYPE: MLO
BUS MATERIAL: ALUMINUM
BUS RATING: 225 AMPS
MCB RATING: NONE
TVSS: NONE
NEUTRAL: 100% RATED
BRANCH OCP TYPE: BOLT-ON CBs
ISOLATED GROUND: NO

KEYED NOTE	CIRCUIT DESCRIPTION	BREAKER AMPS	POLE	LOAD TYPE	CKT #	CONNECTED LOAD/PHASE (VA) A	B	CKT #	LOAD TYPE	BREAKER AMPS	POLE	CIRCUIT DESCRIPTION	KEYED NOTE
9	YOUNG WOMENS RM LIGHTS	20	1		1			2		20	1	KITCHEN LIGHTS	9
9	YOUNG WOMENS RM LIGHTS	20	1		3			4		20	1		
9	ROOM #4 LIGHTS	20	1		5			6		20	1	NORTH HALL LIGHTS	9
9	KITCHEN OUTLET	20	1		7			8		20	1	NW HALL AARONIC PRIESTHOOD LTS	9
9	KITCHEN OUTLET	20	1		9			10		20	1	NORTH CLASSROOM LTS	9
9	AARONIC PRIESTHOOD RM LTS	20	1		11			12		30	2	SPARE	
9	AARONIC PRIESTHOOD RM LTS	20	1		13			14		-	-		
9	FRIDGE / HALL OUTLETS	20	1		15			16		20	1	YOUNG WOMENS RM OUTLET	9
		20	1		17			18		20	1	KITCHEN OUTLETS	9
		20	1		19			20		20	1	KITCHEN OUTLETS	9
		20	1		21			22		20	1		
9	ROOM 4 AND 5 OUTLETS	20	1		23			24		20	1		
	MECH RM / EXTERIOR C.O.	20	1	R	25	360		26		20	1	YOUNG WOMENS RM OUTLET	9
9	STEAM	40	2		27			28		60	2	WEST RANGE	9
-	-	-	-		29			30		-	-	-	-
9	SPARE	20	2		31			32		60	2	EAST RANGE	9
-	-	-	-		33			34		-	-	-	-
9	SPARE	30	2		35		1,656	36	M	25	1	FURNACE F-5	8
-	-	-	-		37	300		38	M	20	1	PUMP CP-1	8
9	OLD HEATER UNDER SINK	-	2		39		3,567	40	M	60	2	CONDENSING UNIT CU-5	8
-	-	-	-		41	3,567		42	M	-	-	-	-
	TOTAL CONNECTED LOAD PER PHASE (VA):					4,227	5,223						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (VA):					5,119	6,115						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (AMPS):					43	51						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
P	SUB-PANEL	SUB-PANEL LOADS BROKEN OUT BY LOAD CLASIFICATION BELOW			
R	RECEPTACLES	360 VA	100%	360 VA	TOTAL CONNECTED LOAD: 9,450 VA
L	LIGHTING	-	-	-	25% OF LARGEST MOTOR: 1,784 VA
C	CONTINUOUS	-	-	-	TOTAL ESTIMATED DEMAND LOAD: 11,234 VA
E	EQUIPMENT	-	-	-	TOTAL ESTIMATED DEMAND BALANCED CURRENT: 47 AMPS
M	MOTOR	9,090 VA	100%	9,090 VA	MAXIMUM ESTIMATED DEMAND PHASE CURRENT: 51 AMPS
K	KITCHEN	-	-	-	
	OTHER	-	-	-	

PANELBOARD SCHEDULE

PANEL NAME: P (EXISTING)
MOUNTING: SURFACE
ENCLOSURE: NEMA 1
DOOR STYLE: STANDARD
VOLTAGE: 240/120
PHASE: 1
WIRE: 3
MIN. A.I.C. RATING: VERIFY
MAINS TYPE: MLO
BUS MATERIAL: ALUMINUM
BUS RATING: 225 AMPS
MCB RATING: NONE
TVSS: NONE
NEUTRAL: 100% RATED
BRANCH OCP TYPE: BOLT-ON CBs
ISOLATED GROUND: NO

KEYED NOTE	CIRCUIT DESCRIPTION	BREAKER AMPS	POLE	LOAD TYPE	CKT #	CONNECTED LOAD/PHASE (VA) A	B	CKT #	LOAD TYPE	BREAKER AMPS	POLE	CIRCUIT DESCRIPTION	KEYED NOTE
	EXTERIOR C.O.	20	1	R	1	180		2		20	1		
	HVAC CONTROLS	20	1	E	3		600	4		20	1		
		20	1		5	2,964		6	M	50	2	CONDENSING UNIT CU-4A	
		20	1		7		2,964	8	M	-	-	-	
8	CONDENSING UNIT CU-3A	35	2	M	9	2,194	2,964	10	M	50	2	CONDENSING UNIT CU-4B	
-	-	-	-	M	11		2,194	12	M	-	-	-	
8	CONDENSING UNIT CU-3B	35	2	M	13	2,194		14		30	2	SPARE	
-	-	-	-	M	15		2,194	16		-	-	-	
	SPACE				17			18				SPACE	
	SPACE				19			20				SPACE	
					21			22					
					23			24					
	TOTAL CONNECTED LOAD PER PHASE (VA):					10,496	10,916						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (VA):					11,237	11,657						
	TOTAL ESTIMATED DEMAND LOAD PER PHASE (AMPS):					94	97						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
P	SUB-PANEL	SUB-PANEL LOADS BROKEN OUT BY LOAD CLASIFICATION BELOW			
R	RECEPTACLES	180 VA	100%	180 VA	TOTAL CONNECTED LOAD: 21,412 VA
L	LIGHTING	-	-	-	25% OF LARGEST MOTOR: 1,482 VA
C	CONTINUOUS	-	-	-	TOTAL ESTIMATED DEMAND LOAD: 22,894 VA
E	EQUIPMENT	600 VA	100%	600 VA	TOTAL ESTIMATED DEMAND BALANCED CURRENT: 95 AMPS
M	MOTOR	20,632 VA	100%	20,632 VA	MAXIMUM ESTIMATED DEMAND PHASE CURRENT: 97 AMPS
K	KITCHEN	-	-	-	
	OTHER	-	-	-	

LOAD TABLE - EXISTING 120/208 V, 3 PHASE, 600 AMP SERVICE

DESCRIPTION	LOAD (KW)	LOAD (AMPS)
EXISTING LOAD (PEAK DEMAND)	68 **	188 **
EXISTING LOAD X 125%	85	263
REMOVED LOADS	75	208
NEW ADDED LOADS	80	223
TOTAL NEW SERVICE LOAD	100	278

** = PEAK DEMAND VALUE WAS RECEIVED FROM PAYSON CITY ON APRIL 15, 2019.

PANELBOARD SCHEDULE KEYED NOTES:
1. PROVIDE CLASS A GROUND FAULT INTERRUPTER TYPE CIRCUIT BREAKER.
2. PROVIDE ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER.
3. PROVIDE 30 MILLIAMPERE EQUIPMENT GROUND FAULT PROTECTOR TYPE CIRCUIT BREAKER.
4. PROVIDE SHUNT-TRIP TYPE CIRCUIT BREAKER WITH 120V COIL.
5. PROVIDE HACR RATED CIRCUIT BREAKER.
6. PROVIDE HANDLE CLAMP FOR HOLDING CIRCUIT BREAKER IN THE "ON" OR "OFF" POSITION.
7. PROVIDE SWITCHING RATED CIRCUIT BREAKER.
8. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD (WHERE PANEL IS INDICATED AS EXISTING) OF SAME MANUFACTURER AND A.I.C. RATING AS EXISTING.
9. EXISTING LOAD.

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STAMP

PROJECT FOR
HVAC REMODEL
PAYSON 6, 8, 10 & STAKE CENTER
780 WEST 500 SOUTH
PAYSON, UTAH
PROPERTY NUMBER: 504-8990

MARK	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

ISSUE TYPE: BID DOCUMENTS
ISSUE DATE: MAY 08, 2019
PROJECT NO: 18011
CAD DWG FILE:
DRAWN BY: SDK
CHECKED BY: DPW

SHEET TITLE
SCHEDULES

SHEET NUMBER
EP202