HVAC IMPROVEMENTS AT JOHN H. SHARY ELEMENTARY

FOR SHARYLAND INDEPENDENT SCHOOL DISTRICT - CSP #1819-12

2300 GLASSCOCK DR., MISSION, TX 78574

SHARYLAND
INDEPENDENT SCHOOL DISTRICT
Excellence is our Tradition

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100% CONSTRUCTION DOCUMENTS

HALFF AVO #31981WA05

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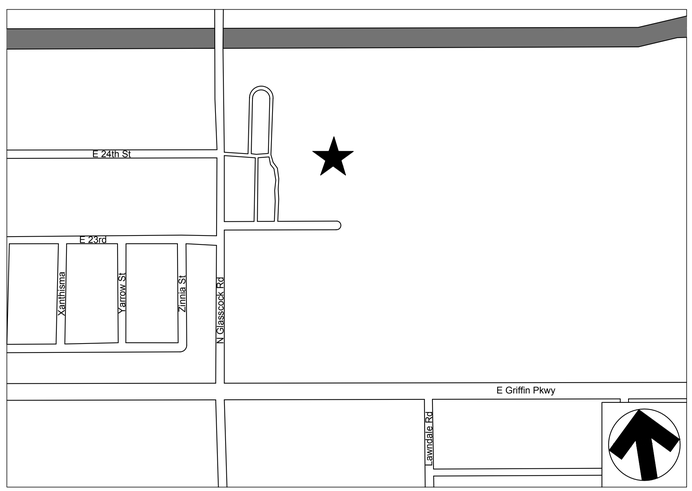

Sheet List Table

JOHN H. SHARY ELEMENTARY SCHOOL
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Revision No.	Date	Description

STATE OF TEXAS
HUGO H. AVILA
90071
LICENSED
PROFESSIONAL ENGINEER
6-14-18

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title
MECHANICAL COVER SHEET

G001
Sheet Number

File Name: i:\31000s\31981\WA05\CADD\G001-CO-31981.005.dwg
Current Tab (Layout): G001 User: AH3365
Printed Date: 6/14/2018 2:36:21 PM

MECHANICAL GENERAL LEGEND

DUCTWORK SYMBOLS

DESCRIPTION	SINGLE LINE	DOUBLE LINE
ACCESS DOOR	AD	AD
BACKDRAFT DAMPER	BDD	BDD
FIRE DAMPER	F	F
FLEXIBLE CONNECTION	FC	FC
MOTORIZED DAMPER	M	M
CONTROL DAMPER	CD M	CD M
VOLUME DAMPER, MANUAL	VD	VD
DUCT ELBOW WITH TURNING VANES		
DUCT SECTION – SUPPLY AIR		
DUCT SECTION – EXHAUST AIR		
DUCT SECTION – RETURN, OUTSIDE, OR RELIEF AIR		
DUCT, INCLINED DROP		
DUCT, INCLINED RISE		
FLEXIBLE DUCT – ROUND	8"ø	8"ø
DUCT TRANSITION	14/10 10/10	14/10 10/10
DUCT TRANSITION (SQUARE OR RECTANGULAR TO ROUND)	10/10 8"ø	12/12 8"ø
RECTANGULAR DUCT, SIZE IN INCHES, FIRST DIMENSION IS SIDE SHOWN (NET CLEAR INSIDE DIMENSION)	10/14	10/14
ROUND DUCT, DIAMETER IN INCHES (NET CLEAR INSIDE DIMENSION)	8"ø	8"ø
AIR FLOW IN DIRECTION OF ARROW		
45° BRANCH TAKE-OFFS		
CONICAL LATERAL BRANCH TAKE-OFFS		
CEILING SUPPLY DIFFUSERS		
CEILING RETURN GRILLE/REGISTER		
CEILING EXHAUST FAN (EF-_)		EF-_
CEILING EXHAUST GRILLE/REGISTER		
SIDEWALL SUPPLY GRILLE/REGISTER		
SIDEWALL RETURN/EXHAUST GRILLE/REGISTER		
EXTRACTOR		
DUCT TEE WITH SPLITTER DAMPER		
DOOR UNDERCUT	UC	UC
DOOR LOUVER	L	L

MISCELLANEOUS SYMBOLS

- P — DUCT STATIC PRESSURE SENSOR
- SD — DUCT SMOKE DETECTOR
- CO_2 — CARBON DIOXIDE SENSOR
- NEW CONNECTION TO EXISTING
- H — HUMIDISTAT
- RH — RELATIVE HUMIDITY SENSOR
- T — THERMOSTAT OR TEMPERATURE SENSOR (MOUNT 48" AFF)
- T — DUCT TEMPERATURE SENSOR
- TC — TIME CLOCK
- F — FREEZESTAT
- A – 200 / 12 X 8 — DIFFUSER, GRILLE OR REGISTER MARK; AIR FLOW (CFM); RECTANGULAR FACE SIZE (WHERE APPLICABLE)
- 01 / M2.01 — DIRECTION OF SECTION; IDENTIFYING NUMBER OR LETTER FOR SECTIONS.; NUMBER OF REFERENCE DRAWING WHERE SECTION IS SHOWN.
- 01 / M2.01 — IDENTIFYING NUMBER OR LETTER FOR DETAILS.; NUMBER OF REFERENCE DRAWING WHERE DETAIL IS SHOWN.
- ENLARGED DETAIL REFERENCE
- MATCHLINE
- FABRIC DUCT
- METAL DUCT

AIRFLOW DIAGRAM SYMBOLS

- C — COOLING COIL
- H — HEATING COIL
- LOUVER
- BDD — BACKDRAFT DAMPER
- FD/SD — FIRE/SMOKE DAMPER
- AFMS — AIR FLOW MEASURING STATION
- M — MOTORIZED OPPOSED BLADE DAMPER
- M — MOTORIZED PARALLEL BLADE DAMPER
- FAN STARTER
- FAN
- FAN WITH ADJUSTABLE FREQUENCY MOTOR CONTROLLER

GENERAL ABBREVIATIONS

AAV	AUTOMATIC AIR VALVE
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AMB	AMBIENT
APD	AIR PRESSURE DROP
BD	BLOWDOWN
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLV	BALANCING VALVE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BV	BALL VALVE
CAP	CAPACITY
CCMS	CENTRAL CONTROL MONITORING SYSTEM
CENT	CENTRIFUGAL
CMBST	COMBUSTION AIR
CL	CENTERLINE
CV	CONTROL VALVE OR CONSTANT VOLUME
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
D	DIFFUSER OR DAMPER
DB	DRY BULB
DEG	DEGREES
DIA	DIAMETER
DN	DOWN
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRYBULB TEMPERATURE
EFF	EFFICIENCY
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
FCV	FLOW CONTROL VALVE
FLA	FULL LOAD AMP
FLEX	FLEXIBLE
FM	FLOW METER
FWL	FIXED WALL LOUVER
GR	GRILLE
GV	GATE VALVE
HZ	CYCLES PER SECOND (HERTZ)
kW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRYBULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MVD	MOTORIZED VOLUME DAMPER
MW	MAKE UP WATER
NC	NORMALLY CLOSED
NK	NECK
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
PD	PRESSURE DROP
PH	PHASE
PI	PRESSURE INDICATOR
PRV	PRESSURE RELIEF VAVLE
PS	PRESSURE SENSOR
PSV	PRESSURE SAFETY VALVE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PV	PLUG VALVE
PCW	PRIMARY CHILLED WATER
PCWS	PRIMARY CHILLED WATER SUPPLY
PCWR	PRIMARY CHILLED WATER RETURN
PCWP	PRIMARY CHILLED WATER PUMP
RED	REDUCER
REG	REGISTER
RH	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SENS	SENSIBLE
SL	SOUND LINING
SD	SMOKE DETECTOR
SOV	SOLENOID OPERATED VALVE OR SHUT-OFF VALVE
SP	STATIC PRESSURE
SS	STAINLESS STEEL
SCW	SECONDARY CHILLED WATER
SCWS	SECONDARY CHILLED WATER SUPPLY
SCWR	SECONDARY CHILLED WATER RETURN
SCWP	SECONDARY CHILLED WATER PUMP
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TS	TEMPERATURE SENSOR
TSTAT	THERMOSTAT
TSP	TOTAL STATIC PRESSURE
UNO	UNLESS NOTED OTHERWISE
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
WB	WET BULB
WPD	WATER PRESSURE DROP
WTR	WATER
WxHxL	WIDTH BY HEIGHT BY LENGTH

EQUIPMENT ABBREVIATIONS

AHU	AIR HANDLING UNIT
ACU	AIR CONDENSING UNIT
ACCU	AIR COOLED CONDENSING UNIT
AS	AIR SEPARATOR
B	BOILER
BCU	BLOWER COIL UNIT
CC	COOLING COIL
CF	CHEMICAL FEEDER
CH	CHILLER
CP	CONDENSOR PUMP
CRAC	COMPUTER ROOM AIR CONDITIONER
CRCU	COMPUTER ROOM CONDENSING UNIT
CT	COOLING TOWER
CWP	CHILLED WATER PUMP
EDH	ELECTRIC DUCT HEATER
DC	DUST COLLECTOR
EF	EXHAUST FAN
EH	ELECTRIC HEATER
ET	EXPANSION TANK
F	FILTER
FCU	FAN COIL UNIT
FCCU	FAN COIL CONDENSING UNIT
FPB	FAN POWER BOX
GFUH	GAS FIRED UNIT HEATER
HC	HOT WATER HEATING COIL
HWP	HOT WATER PUMP
OAH	OUTSIDE AIR HOOD
L	LOUVER
P	PUMP
PP	PRIMARY PUMP
PTAC	PACKAGE TERMINAL AIR CONDITIONING
RH	RELIEF HOOD
RHEF	RELIEF HOOD EXHAUST FAN
RTU	ROOF TOP UNIT
SDB	SINGLE DUCT BOX
SP	SECONDARY PUMP
ST	CHILLED WATER STORAGE TANK
VAV	VARIABLE AIR VOLUME BOX
VFD	VARIABLE FREQUENCY DRIVE

GENERAL MECHANICAL NOTES

1. INFORMATION ON THIS PLAN HAS BEEN OBTAINED FROM EXISTING DRAWINGS AND SITE SURVEY. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND/OR ARCHITECT.
2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR PERFORMING THE WORK IN FULL COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES UNDER THIS SECTION OF THE CONTRACT. IF THE CONTRACTOR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPLIANCE WITH THE APPLICABLE LOCAL CODES, HE SHALL INFORM THE ARCHITECT PRIOR TO CONSTRUCTION START FOR DIRECTION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET APPLICABLE LOCAL CODES, AND REWORK SHALL BE AT CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL HANG AND INSTALL ALL DUCTWORK TIGHT WITH THE BUILDING STRUCTURE WHEN FEASIBLE TO ACCOMMODATE NEW CEILINGS. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH ARCHITECTURAL AND ELECTRICAL DESIGN. ALL DUCTWORK SHALL BE MODIFIED AS NECESSARY AND REQUIRED TO FIT AROUND BUILDING STRUCTURES, ARCHITECTURAL BUILD-OUT AND ELECTRICAL CABLE TRAY INSTALLATIONS. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.
4. CONTRACTOR SHALL INSTALL ALL EXHAUST SYSTEMS, INCLUDING FANS AND EXHAUST DUCTS. PROVIDE COMPLETE NEW SYSTEMS AS INDICATED.
5. CONTRACTOR SHALL PROVIDE ALL CEILING DIFFUSERS AS SHOWN. CONNECT EACH DIFFUSER TO THE MAIN DISTRIBUTION DUCT WITH A FLEX-DUCT SECTION; CONNECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAIL. EACH FLEX-DUCT CONNECTION SHALL INCLUDE A BUTTERFLY DAMPER TO BE INSTALLED AT THE TRUNK DUCT.
6. CONTRACTOR SHALL PROVIDE ALL DUCTWORK REQUIRED TO COMPLETE THE HVAC SYSTEM. TIE IN BRANCH DUCTS TO MAIN DUCTS WITH SHEET METAL FLANGES. FLANGE CONNECTION SHALL BE FASTENED WITH CRIMPED SHEET METAL STRIPS AND SEALED WITH SILICONE CAULK.
7. CONTRACTOR SHALL SUPPLY AND INSTALL FIRE DAMPERS AND ACCESS DOORS IN THE HORIZONTAL DUCTS WHERE THEY PENETRATE FIRE BARRIERS.
8. CONTRACTOR SHALL PROVIDE FIRE DAMPERS IN ALL DIFFUSERS AND GRILLES LOCATED IN FIRE RATED CEILINGS. ALL HALLWAY DIFFUSERS AND GRILLES SHALL BE INSTALLED WITH FIRE DAMPERS. ALL DIFFUSERS AND GRILLES SHOWN WITH A CIRCLED "F" SHALL BE EQUIPPED WITH FIRE DAMPERS.
9. ALL OPENINGS CUT IN MASONRY AND PLASTER WALLS OR CONCRETE FLOORS SHALL BE CORE DRILLED OR SAWED WHEN POSSIBLE. CONTRACTOR SHALL CHECK BUILDING CONSTRUCTION BEFORE MAKING PENETRATIONS TO AVOID CUTTING THROUGH STRUCTURAL BEAMS AND REINFORCING. CONTRACTOR SHALL INFORM THE ENGINEER IF REINFORCING IS CUT OR DAMAGED WHILE MAKING OPENINGS. CONTRACTOR SHALL REINFORCE ALL OPENINGS AS REQUIRED BY DRAWINGS AND SPECIFICATIONS. PATCH AND SEAL OPENINGS WITH 6000 PSI CEMENT GROUT. INSTALL DECORATIVE TRIM (EQUIPMENT FLANGES, FRAMING OR ESCUTCHEONS) AROUND OPENINGS IN FINISHED AREAS. COORDINATE ALL CUTTING AND PATCHING WITH THE OTHER TRADES.
10. ON ANY WORK SHOWN ON MECHANICAL DRAWINGS REQUIRING DEMOLITION OF EXISTING OR NEW BUILDING STRUCTURES AND FINISHES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE NECESSARY DEMOLITION. CONTRACTOR SHALL PATCH AND REPAIR ALL DEMOLITION WORK. PATCHING SHALL BE COMPLETED WITH THE SAME MATERIALS AS THE SURROUNDING AREAS, OR WITH ARCHITECT-APPROVED PATCHING MATERIALS. REPAIRS SHALL BE COMPLETED ACCORDING TO ARCHITECTURAL SPECIFICATIONS. ALL REFINISHING SHALL BE APPROVED BY THE ARCHITECT.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE INSTALLATION OF THE AIR DISTRIBUTION SYSTEM SHOWN. DUCTWORK, DUCT ACCESSORIES AND CONTROLS SHOWN AND REQUIRED SHALL BE SUPPLIED AND INSTALLED. ALL INSTALLATION WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE CODES, INCLUDING NFPA 90A AND 90B.
12. CONTRACTOR SHALL BALANCE ALL AIR DISTRIBUTION SYSTEMS TO ACHIEVE THE AIR VOLUME REQUIREMENTS INDICATED. BALANCING SHALL INCLUDE ADJUSTMENT OF ALL MANUAL VOLUME DAMPERS, SPLITTER DAMPERS, ZONE DAMPERS (IF REQUIRED), AND BUTTERFLY DAMPERS. CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A COMPLETE BALANCING REPORT WHICH INCLUDES VOLUME, ROOM REFERENCE AND ZONE VOLUME TOTALS.
13. MOUNT ALL THERMOSTATS (SENSORS) 48" ABOVE THE FINISHED FLOOR LEVEL UNLESS NOTED OTHERWISE THERMOSTATS SHOWN SHALL BE IN CONTROL OF THE ZONE SYSTEM WHICH IS SUPPLYING AIR TO THE AREA WHERE THE THERMOSTAT IS LOCATED. CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF EACH THERMOSTAT WITH THE ROOM FINISHES AND USES. CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONTROL VOLTAGE WIRING AND CONDUIT FOR THERMOSTAT (DDC CONTROL) INSTALLATION.
14. CONTRACTOR SHALL COORDINATE THE FINAL LOCATIONS OF ALL CEILING DIFFUSERS WITH LIGHTING INSTALLATIONS AND ARCHITECTURAL REFLECTED CEILING PLANS. MOVE THE DIFFUSER LOCATIONS IF REQUIRED TO AVOID OBSTRUCTIONS FROM DUCTWORK AND LIGHT FIXTURES. COORDINATE RELOCATION WITH ENGINEER.
15. CONTRACTOR SHALL INSTALL NEW REFRIGERANT PIPING FLUSH WITH THE BUILDING STRUCTURE AND MECHANICAL ROOM BOUNDARIES AS SHOWN. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH DUCTS AND ELECTRICAL CONDUIT. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.
16. ALL PIPING SHALL BE INSULATED AND JACKETED. REFER TO THE SPECIFICATIONS. CONDENSER COILS ARE TO BE COATED IN ACCORDANCE WITH THE SPECIFICATIONS
17. VERIFY THE LOCATION OF ALL WALLS, PARTITIONS, DOORS, CABINETS, AND CEILINGS FROM ACTUAL FIELD MEASUREMENTS.
18. PROVIDE SMOKE DETECTOR AND SHUTDOWN CONTROLS ON AIR HANDLERS AND SUPPLY FANS. SMOKE DETECTORS SHALL BE PROVIDED, INSTALLED AND WIRED FOR SHUT DOWN BY DIVISION 16. PROVIDE BOTH SUPPLY AND RETURN SIDE DEVICES.

COMMISSIONING NOTES

1. COMMISSIONING AGENCY
A COMMISSIONING AGENCY WILL BE CONTRACTED DIRECTLY WITH AND BY THE OWNER FOR THIS PROJECT. THE COMMISSIONING AGENCY HAS OVERALL RESPONSIBILITY FOR PLANNING AND COORDINATING THE COMMISSIONING PROCESS. HOWEVER COMMISSIONING INVOLVES ALL PARTIES TO THE DESIGN AND CONSTRUCTION PROCESS, INCLUDING THE CONTRACTOR.

2. CONCTRACTOR RESPONSIBILITY
THE MECHANICAL SPECIFICATIONS DEFINES THE CONTRACTOR'S RESPONSIBILITIES WITH RESPECT TO THE COMMISSIONING PROCESS. EACH CONTRACTOR AND SUB-CONTRACTOR SHALL REVIEW THE SPECIFICATION SECTIONS, AND SHALL INCLUDE IN THEIR BIDS FOR CARRYING OUT THE WORK DESCRIBED, AS IT APPLIES TO EACH DIVISION AND SECTION OF THOSE SPECIFICATIONS, INDIVIDUALLY AND COLLECTIVELY.

3. DESCRIPTION OF WORK
THE PURPOSE OF THE COMMISSIONING PROCESS IS TO PROVIDE THE OWNER/OPERATOR OF THE FACILITY WITH ASSURANCE THAT THE BUILDING ENVELOPE, MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS HAVE BEEN INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS, AND OPERATE WITHIN THE PERFORMANCE GUIDELINES SET OUT IN THE DESIGN INTENT DOCUMENTS AND THE SPECIFICATIONS. THE COMMISSIONING AGENCY WILL PROVIDE THE OWNER WITH AN UNBIASED, OBJECTIVE VIEW OF THE SYSTEM'S INSTALLATION, OPERATION, AND PERFORMANCE. THE COMMISSIONING PROCESS DOES NOT TAKE AWAY OR REDUCE THE RESPONSIBILITY OF THE INSTALLING CONTRACTORS TO PROVIDE A FINISHED PRODUCT THAT IS INSTALLED AND FULLY FUNCTIONAL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. COMMISSIONING IS INTENDED TO ENHANCE THE QUALITY OF SYSTEM START-UP AND AID IN THE ORDERLY COMPLETION AND TRANSFER OF SYSTEMS FOR BENEFICIAL USE BY THE OWNER. THE COMMISSIONING AGENCY WILL BE THE LEADER OF THE COMMISSIONING TEAM, PLANNING AND COORDINATING ALL COMMISSIONING ACTIVITIES IN CONJUNCTION WITH THE DESIGN PROFESSIONALS, SUBCONTRACTORS, MANUFACTURERS AND EQUIPMENT SUPPLIERS. THE GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, ALL DIVISION 22 AND 23 SUB-CONTRACTORS, AND THE ELECTRICAL CONTRACTOR, DIVISION 26 & 28, SHALL BE RESPONSIBLE FOR COOPERATING, AND COORDINATING THEIR WORK, WITH THE COMMISSIONING AGENCY. EACH SHALL ALSO BE RESPONSIBLE FOR CARRYING OUT ALL THE PHYSICAL ACTIVITIES REQUIRED FOR INSTALLATION OF COMPONENTS AND SYSTEMS AND FOR OPERATING THEM DURING THE COMMISSIONING PROCESS AS REQUIRED BY THE PROJECT SPECIFICATIONS.

4. COMMISSIONING PLAN
THE PROJECT COMMISSIONING PLAN SHALL BE DEVELOPED BY THE COMMISSIONING AGENCY AND SHALL INCLUDE THE FOLLOWING:

A. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES.

B. A LISTING OF THE SPECIFIC EQUIPMENT OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.

C. FUNCTIONS TO BE TESTED INCLUDING CALIBRATIONS AND ECONOMIZER CONTROLS. OTHER TEST LISTED ON THE CONSTRUCTION DOCUMENTS.

D. CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED. TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.

E. MEASURABLE CRITERIA FOR PERFORMANCE.

REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL COMMISSIONING PLAN REQUIREMENTS.

5. PROJECT CLOSEOUT PROCEDURES
CONTRACTOR SHALL BE AWARE THAT ALL SYSTEMS SHOULD HAVE TEST AND BALANCE WORK COMPLETED PRIOR TO THE ONSET OF MECHANICAL SYSTEMS COMMISSIONING. CONTRACTOR SHALL BE FURTHER AWARE THAT MECHANICAL AND PLUMBING FINAL INSPECTIONS SHALL NOT OCCUR PRIOR TO COMPLETION, SUBMISSION AND ACCEPTANCE OF A PRELIMINARY COMMISSIONING REPORT.

6. REQUIRED DOCUMENTS

THE FOLLOWING DOCUMENTS SHALL BE PROVIDE TO THE BUILDING OWNER WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATE OF OCCUPANCY.

A. FINAL AS BUILT DRAWINGS
B. OPERATING AND MAINTENANCE MANUALS
C. FINAL CERTIFIED TEST AND BALANCE REPORT
D. FINAL COMMISSIONING REPORT

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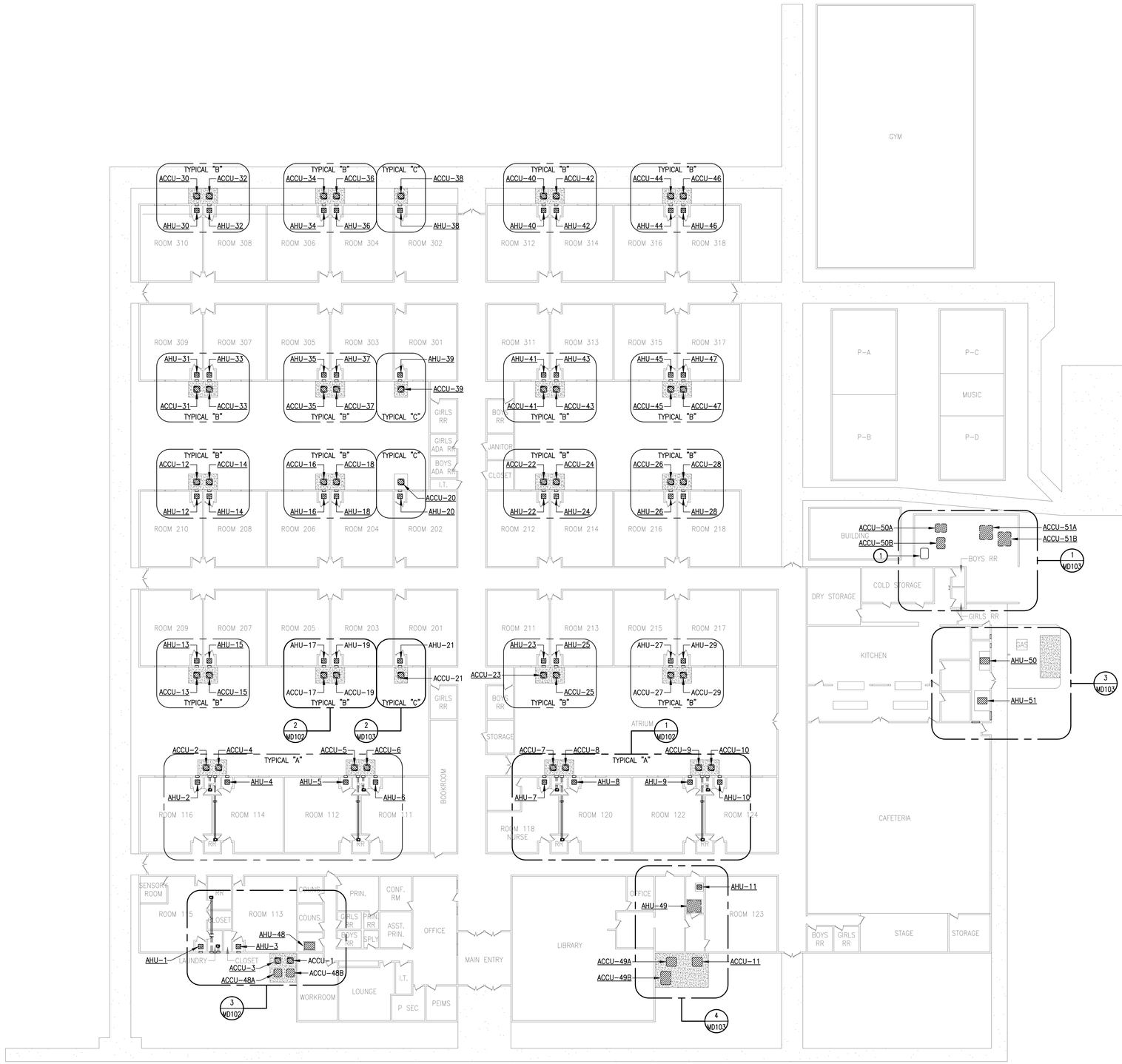
Sheet Title

MECHANICAL GENERAL LEGEND

M001

Sheet Number

File Name: i:\31000s\31981\WADS\CADD\M001-GL-31981.05.dwg
Current Tab (Layout): M001 User: AH3365
Printed Date: 6/14/2018 2:36:28 PM



1 MECHANICAL OVERALL DEMOLITION PLAN
SCALE: 1"=20'

GENERAL NOTES:

A. REFER TO M001 FOR MECHANICAL GENERAL NOTES.

LEGEND

– – – – – EXISTING MECHANICAL EQUIPMENT TO BE DEMOLISHED

——— EXISTING MECHANICAL EQUIPMENT TO REMAIN

KEY NOTES: (#)

1. EXISTING UNIT TO REMAIN

GENERAL DEMO NOTES

A. INFORMATION ON THE PLAN HAS BEEN OBTAINED FROM EXISTING DRAWINGS AND SITE SURVEY. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.

B. THE CONTRACTOR IS FULLY RESPONSIBLE FOR PERFORMING THE DEMOLITION WORK UNDER THIS SECTION OF THE PROJECT IN FULL COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES. IF THE CONTRACTOR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPLIANCE WITH THE APPLICABLE CODES, HE SHALL INFORM THE ENGINEER PRIOR TO CONSTRUCTION START FOR DIRECTION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET CODE REQUIREMENTS AND REWORK SHALL BE AT CONTRACTOR'S EXPENSE. APPLICABLE CODES AND STANDARDS ON DEMOLITION WORK SHALL INCLUDE THOSE PUBLISHED BY OSHA AND EPA. AN ASBESTOS SURVEY SHALL BE KEPT ON SITE AT ALL TIMES PER TEXAS DEPARTMENT OF HEALTH REQUIREMENTS.

C. ALL DUST PRODUCTION, SMOKE PRODUCTION AND NOISE SHALL BE SUBJECT TO REAL TIME REVIEW BY THE ENGINEER. WORK SHALL BE SHUT DOWN DURING CRITICAL ACTIVITIES BY FORMAL REQUEST FROM THE DESIGNATED AUTHORITY OR CONTRACTING ENGINEER. WORK IN DUSTY AREAS SHALL BE CONTROLLED WITH TEMPORARY PARTITIONS. FLAME CUTTING SHALL BE MINIMIZED TO ELIMINATE SMOKE PRODUCTION. PROVIDE FIRE EXTINGUISHERS IN THE IMMEDIATE AREA.

D. GENERAL CONTRACTOR SHALL BE ADVISED OF ALL NEW PROPOSED ROOF AND WALL OPENINGS BY ANY SUB-CONTRACTOR.

E. ON ANY WORK SHOWN ON MECHANICAL DRAWINGS WHICH REQUIRES DEMOLITION OF BUILDING STRUCTURES AND FINISHES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE NECESSARY DEMOLITION. CONTRACTOR SHALL PATCH AND REPAIR ALL BUILDING DAMAGE CREATED BY DEMOLITION WORK. PATCHING SHALL BE COMPLETED WITH THE SAME MATERIALS AS THE SURROUNDING AREAS, OR WITH APPROVED PATCHING MATERIALS.

F. ALL OPENINGS CUT IN MASONRY AND PLASTER WALLS OR CONCRETE FLOORS SHALL BE CORE-DRILLED OR SAWED WHEN POSSIBLE. CONTRACTOR SHALL CHECK BUILDING CONSTRUCTION WITH STRUCTURAL ENGINEER BEFORE MAKING PENETRATIONS TO AVOID CUTTING THROUGH STRUCTURAL BEAMS AND REINFORCING. CONTRACTOR SHALL INFORM THE ENGINEER IF REINFORCING IS CUT OR DAMAGED WHILE MAKING OPENINGS AS REQUIRED BY DRAWINGS AND SPECIFICATIONS. PATCH AND SEAL OPENINGS WITH 8000 PSI CEMENT GROUT. INSTALL DECORATIVE TRIM (EQUIPMENT FLANGES, FRAMING, OR ESCUTCHEONS) AROUND OPENINGS IN FINISHED AREAS. COORDINATE ALL CUTTING AND PATCHING WITH THE OTHER TRADES.

G. ALL SURFACES COVERED BY "SPRAY POLY" AND PROTECTED BY TEMPORARY PARTITIONS SHALL REMAIN PROTECTED THROUGHOUT THE PROJECT. REMOVE THE PROTECTIVE BARRIERS ONLY AFTER THE NEW EQUIPMENT PIPING AND DUCTWORK IS INSTALLED. PATCH AND MAINTAIN THE PROTECTIVE BARRIERS DURING CONSTRUCTION. COVER ALL EQUIPMENT OPENINGS WITH 4 MIL. POLY AND DUCT TAPE IN PLACE.

H. ALL NEW ROOF PENETRATIONS SHALL BE ROUTED THRU ANY EXISTING OPENING WHEREVER POSSIBLE. LARGER AND NEW OPENINGS SHALL BE KEPT TO A MINIMUM.

I. CONTRACTOR SHALL REMOVE AND RETURN ANY AND ALL EXISTING EQUIPMENT/MATERIALS TO OWNER. OWNER SHALL HAVE FULL RIGHT OF OWNERSHIP UNLESS SPECIFIED OTHERWISE. IF THE OWNER WAIVES THIS OPTION, ANY EQUIPMENT, MATERIAL, ETC SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

J. CONTRACTOR SHALL KEEP THE ENTIRE MEP DEMOLITION SITE CLEAN AT ALL TIMES.

K. CONTRACTOR AND OWNER SHALL BE FULLY RESPONSIBLE TO IDENTIFY ANY AND ALL ASBESTOS PRESENT IN THE BUILDING PRIOR TO DEMOLITION AS REQUIRED BY LAW.

L. COORDINATION AMONG OTHER CONSTRUCTION DISCIPLINES PRIOR TO DEMOLITION IS MANDATORY.

M. CONTRACTOR SHALL IDENTIFY ALL WATER CONNECTION LINES, NATURAL GAS LINES AND SANITARY SEWER LINES PRIOR TO COMMENCING DEMOLITION WORK.

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TBPE FIRM #312

Revision No.	Date	Description

STATE OF TEXAS
HUGO H. AVILA
90071
LICENSED PROFESSIONAL ENGINEER
6-14-18

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title
MECHANICAL OVERALL DEMOLITION PLAN

MD101
Sheet Number

File Name: I:\31000s\31981\WA05\CADD\MD101-OP-31981.05.dwg
Current Tab (Layout): MD101 User: AH3365
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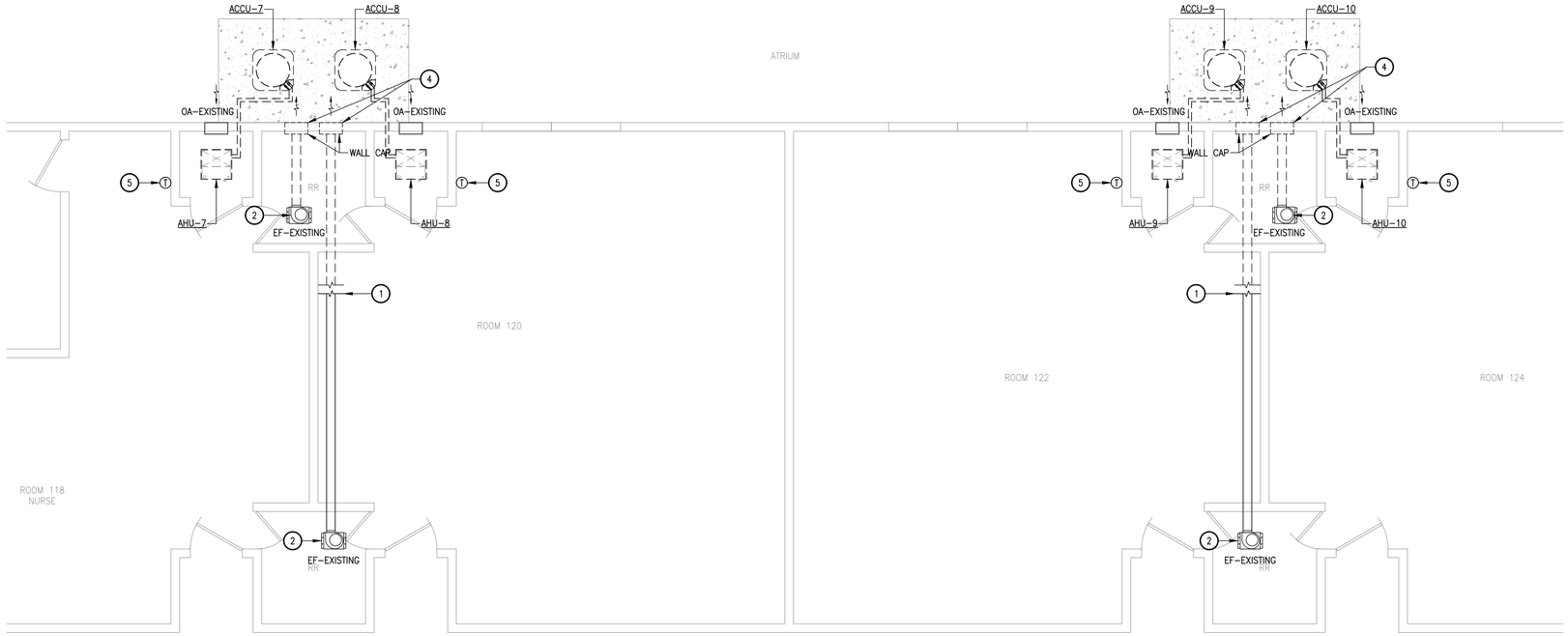
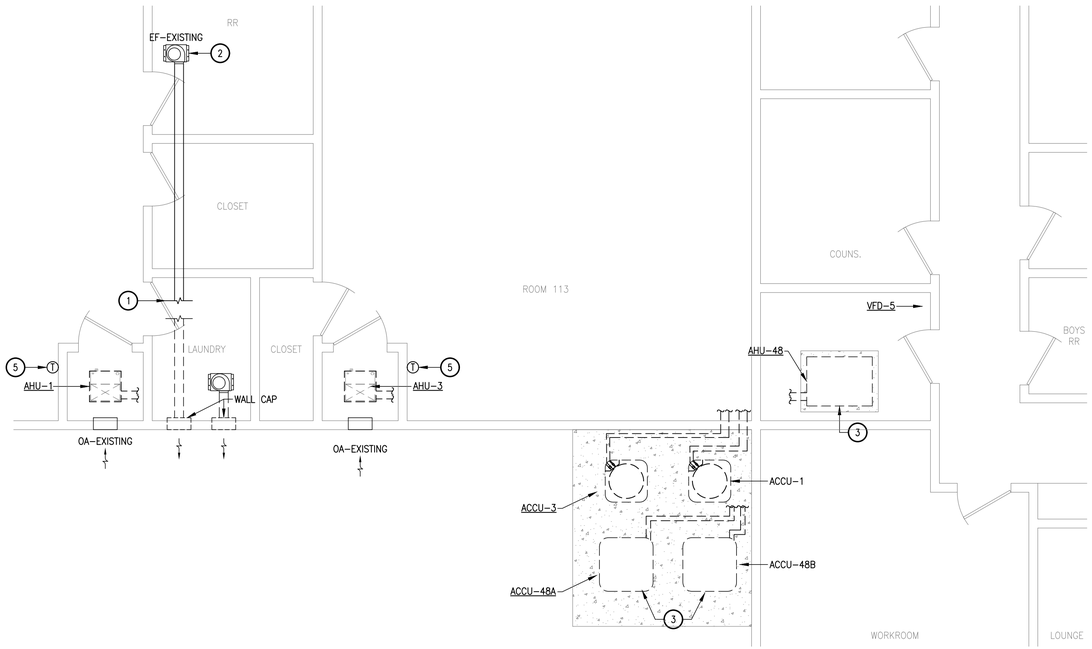
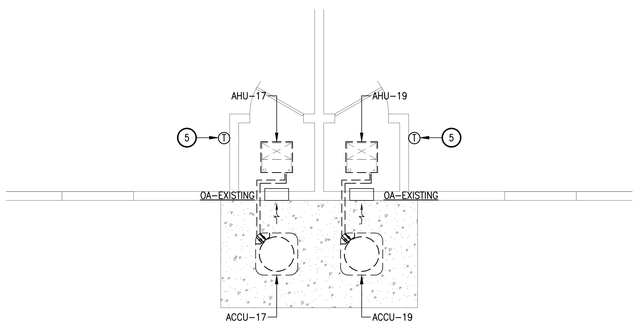


1 MECHANICAL DEMOLITION PLAN - TYPICAL CLASSROOM LAYOUT 'A'
SCALE: 1/4" = 1'-0"



3 MECHANICAL DEMOLITION PLAN - NORTH WEST MECHANICAL YARD - ADMINISTRATION - RM 115 - RM 113
SCALE: 1/4" = 1'-0"



2 MECHANICAL DEMOLITION PLAN - TYPICAL CLASSROOM LAYOUT 'B'
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. REFER TO M001 FOR MECHANICAL GENERAL NOTES.

B. DEMOLISH REFERENCE LINES.

LEGEND

- - - - - - EXISTING MECHANICAL EQUIPMENT TO BE DEMOLISHED

———— EXISTING MECHANICAL EQUIPMENT TO REMAIN

KEY NOTES: (#)

1. CONTRACTOR SHALL DEMOLISH EXHAUST DUCT WORK TO THIS POINT.
2. EXISTING EXHAUST FAN TO REMAIN.
3. THIS UNIT TO BE DEMOLISHED IN ALTERNATE BID #1.
4. CONTRACTOR SHALL PATCH OPENING TO MATCH EXISTING.
5. CONTRACTOR SHALL DEMOLISH EXISTING THERMOSTAT.

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title

MECHANICAL DEMOLITION PLAN

MD102

Sheet Number

File Name: i:\31000s\31981\WA05\CADD\MD102-DP-31981.05.dwg
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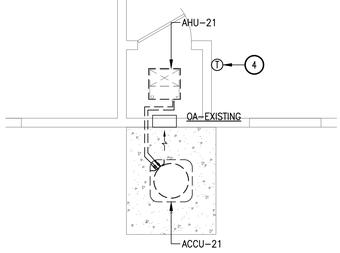
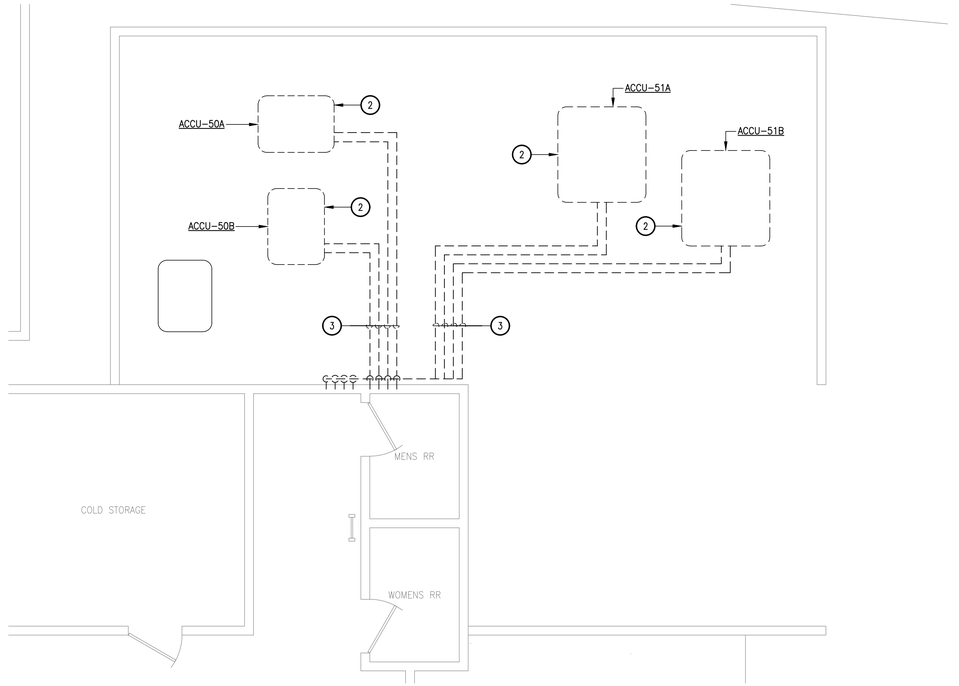
Printed Date: 6/14/2018 2:36:47 PM



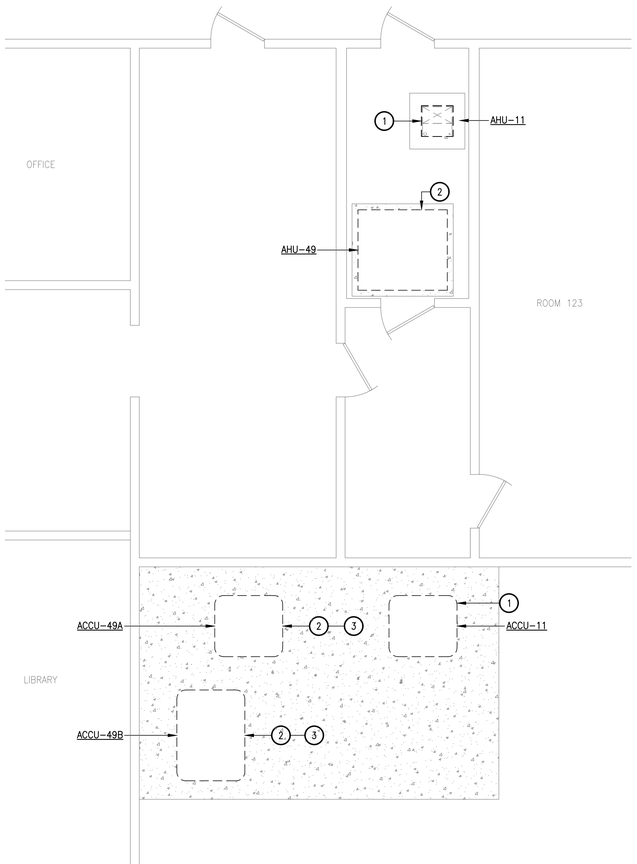
2 MECHNAICAL DEMOLITION PLAN - TYPICAL CLASSROOM LAYOUT 'C'

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



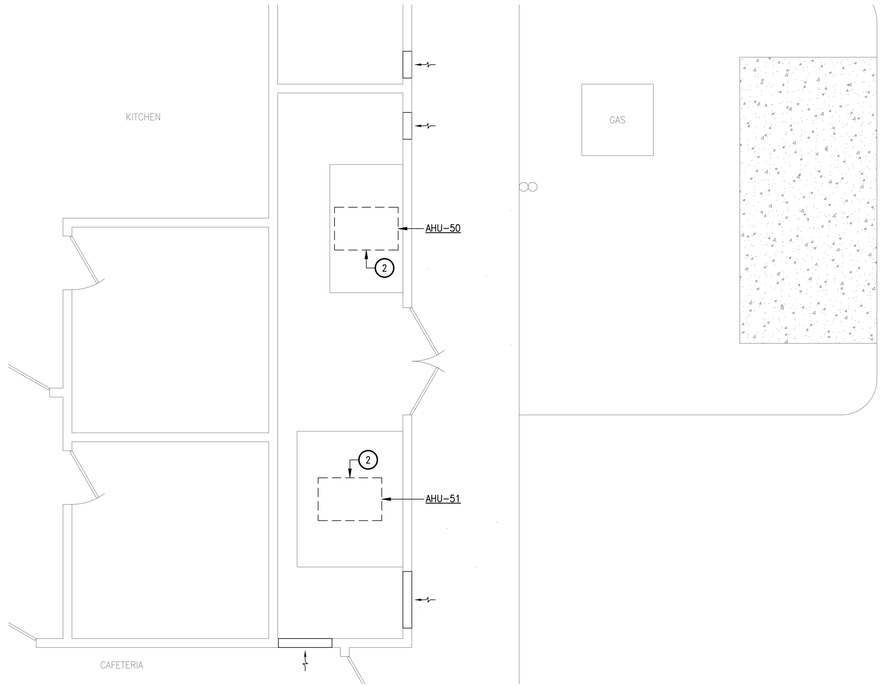
1 MECHANICAL DEMOLITION PLAN - SOUTH MECHANICAL YARD

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



4 MECHANICAL DEMOLITION PLAN - SOUTH WEST MECHANICAL YARD & RM 123

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



3 MECHANICAL DEMOLITION PLAN - SOUTH MECHANICAL ROOM

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

GENERAL NOTES:

A. REFER TO M001 FOR MECHANICAL GENERAL NOTES.

B. ROUTE CONDENSATE TO NEAREST DRAIN.

C. EXTERIOR REFRIGERANT LINES SHALL BE JACKETED AND INSULATED WTIH CELLULAR GLASS INSULATION.

LEGEND

- - - - - - EXISTING MECHANICAL EQUIPMENT TO BE DEMOLISHED

——— EXISTING MECHANICAL EQUIPMENT TO REMAIN

KEY NOTES: (#)

1. THIS WORK TO BE DONE UNDER BASE BID.
2. THIS UNIT TO BE DEMOLISHED UNDER ALTERNATE BID #1.
3. DEMOLISH FULL RUN OF REFRIGERANT LINES UNDER ALTERNATE BID #1.
4. CONTRACTOR SHALL DEMOLISH EXISTING THERMOSTAT.

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6-14-18

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title

MECHANICAL DEMOLITION PLAN

MD103

Sheet Number

File Name: i:\31000s\31981\WA05\CADD\MD103-DP-31981.05.dwg
Current Tab (Layout): MD103 User: AH3365
Printed Date: 6/14/2018 2:47:51 PM

GENERAL NOTES:

A. REFER TO M001 FOR MECHANICAL GENERAL NOTES.

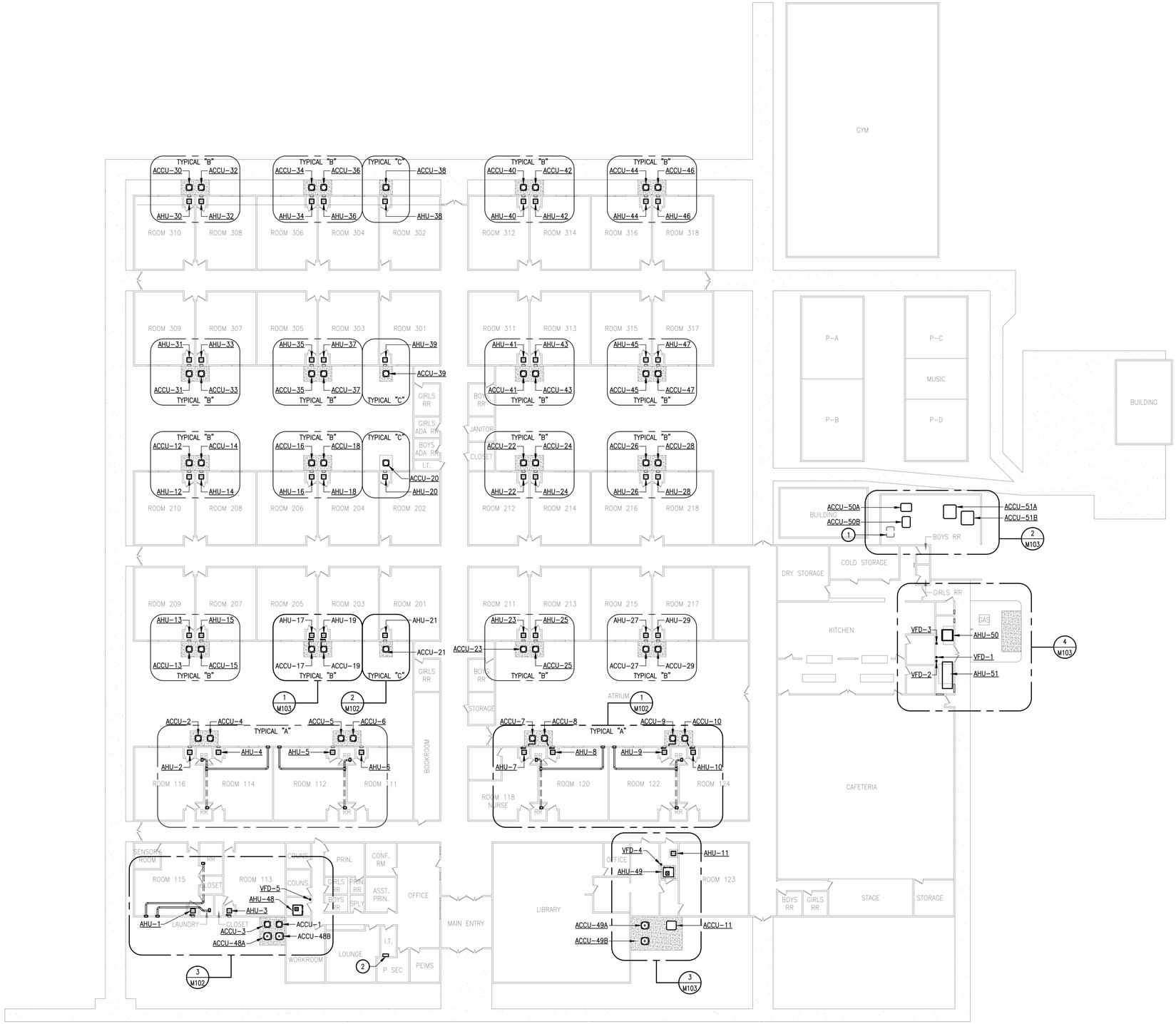
LEGEND

– – – – – EXISTING MECHANICAL EQUIPMENT TO REMAIN

——— NEW MECHANICAL EQUIPMENT

KEY NOTES:

1. EXISTING UNIT TO REMAIN
2. NEW BAS CONTROLLER PROVIDED BY CONTRACTOR.



1 MECHANICAL OVERALL PLAN
SCALE: 1"=20'

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title

MECHANICAL OVERALL PLANS

M101

Sheet Number

File Name: i:\31000s\31981\W405\CADD\M101-OP-31981.05.dwg
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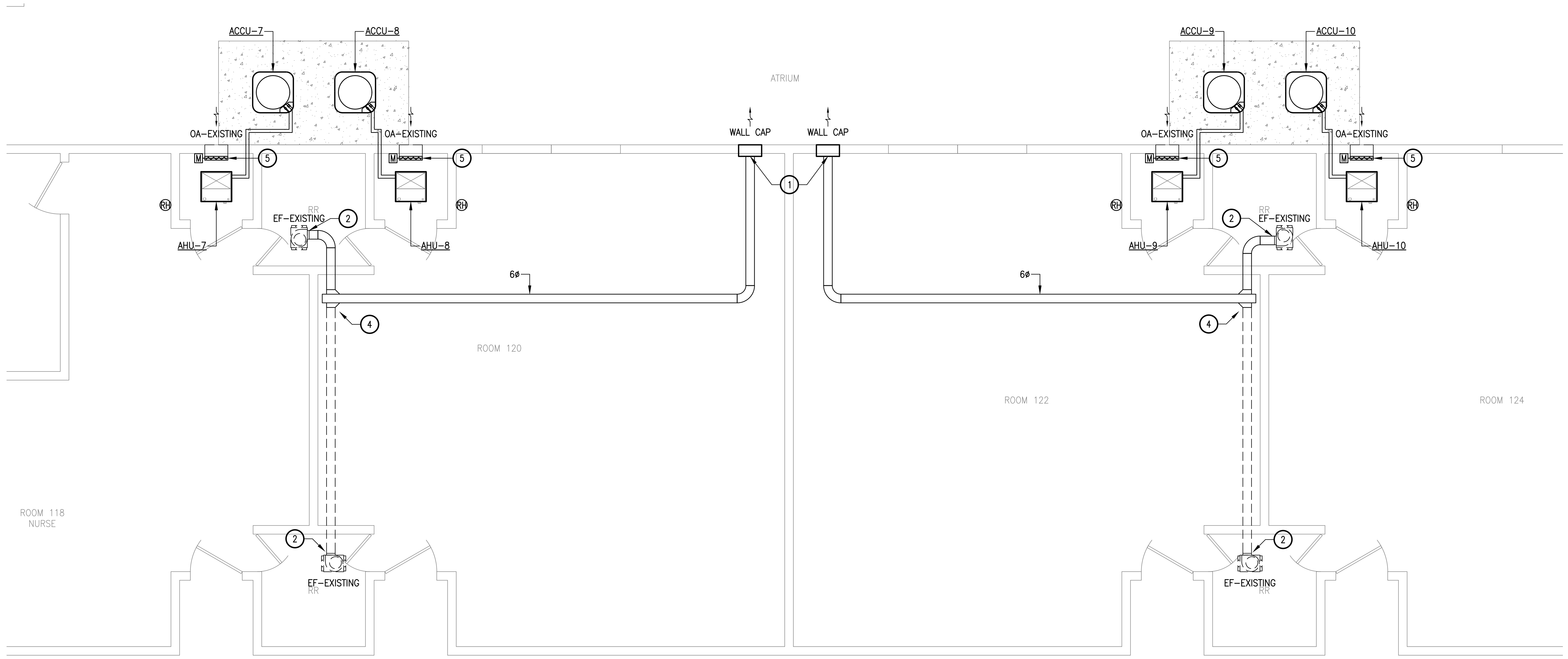
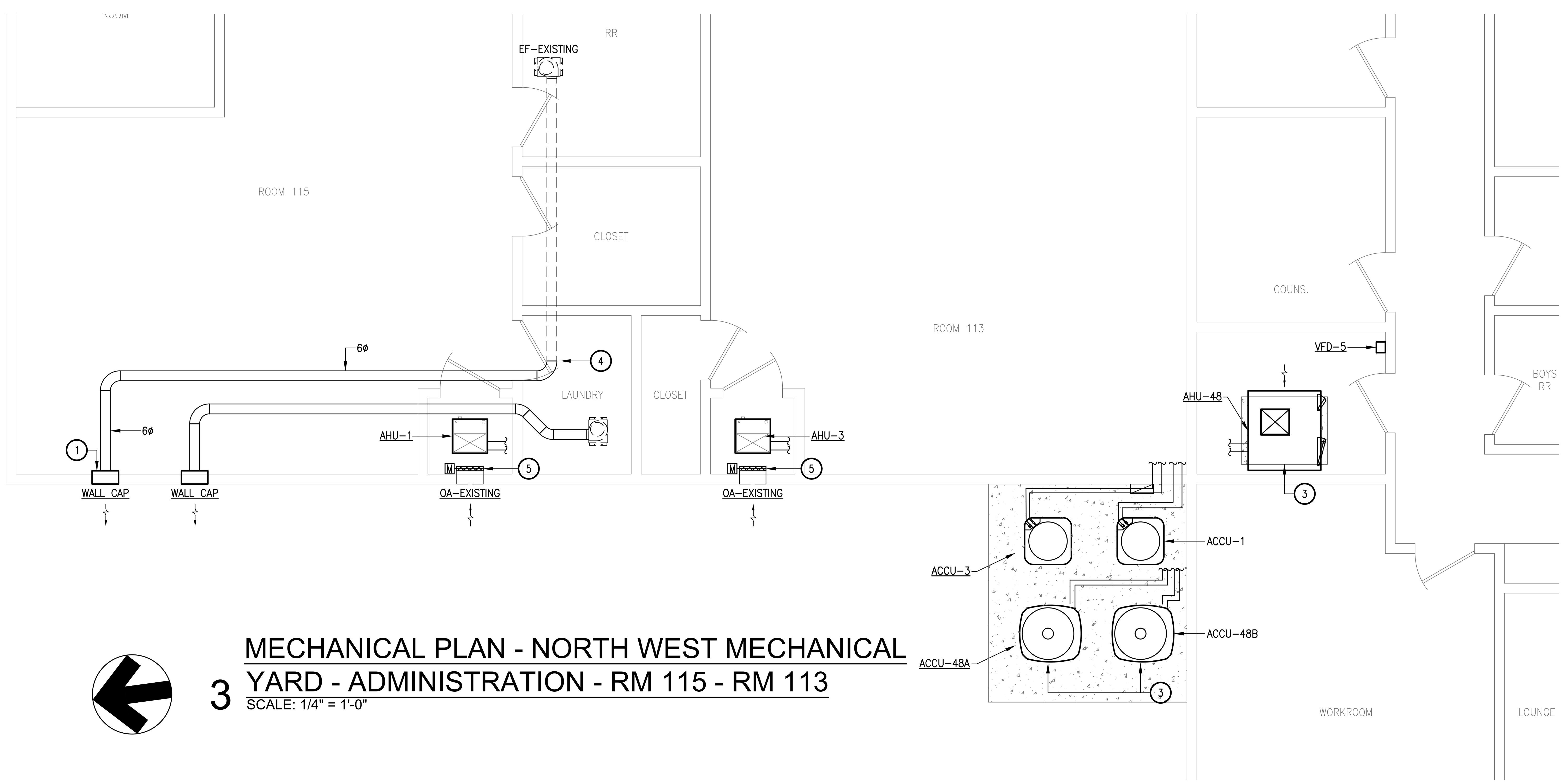
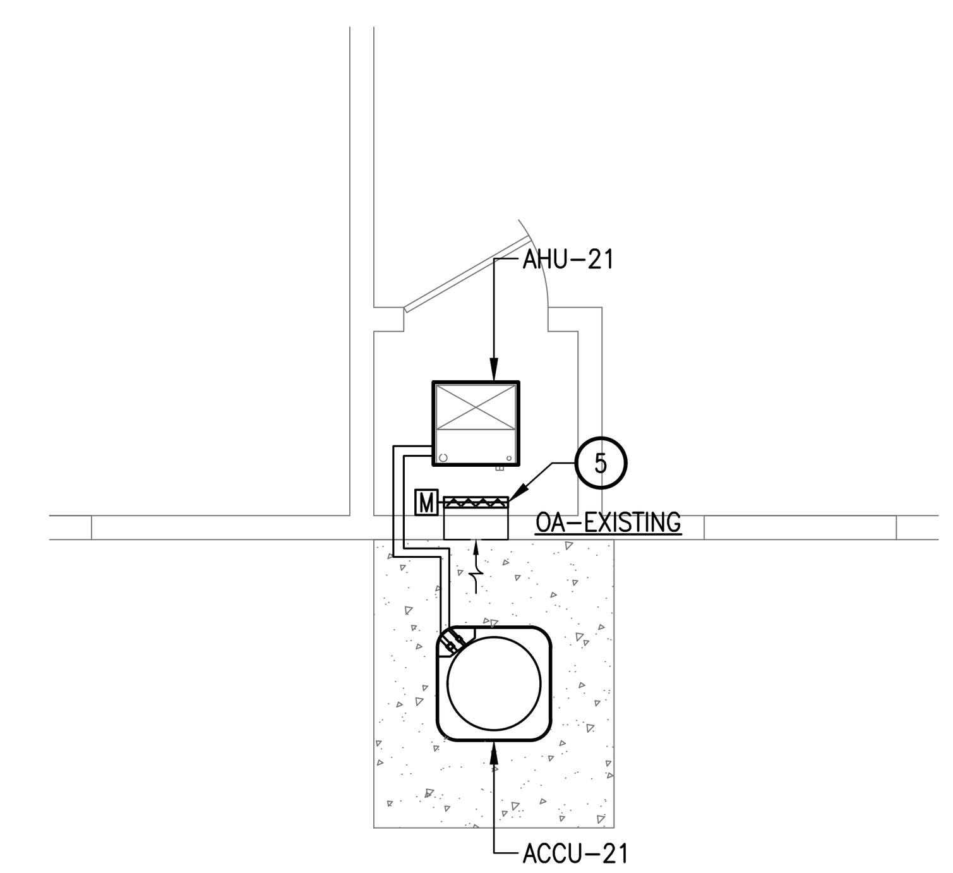


1 MECHANICAL PLAN - TYPICAL CLASSROOM LAYOUT 'A'
SCALE: 1/4" = 1'-0"



3 MECHANICAL PLAN - NORTH WEST MECHANICAL YARD - ADMINISTRATION - RM 115 - RM 113
SCALE: 1/4" = 1'-0"



2 MECHANICAL PLAN - TYPICAL CLASSROOM LAYOUT 'C'
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. REFER TO M001 FOR MECHANICAL GENERAL NOTES.

B. ROUTE CONDENSATE TO NEAREST DRAIN.

LEGEND

- - - - - - EXISTING MECHANICAL EQUIPMENT TO REMAIN

——— NEW MECHANICAL EQUIPMENT

KEY NOTES: (#)

1. CONTRACTOR SHALL PROVIDE AND INSTALL WALL CAP EQUAL TO L.COOK WCA. WALL CAP SHALL BE A MINIMUM OF 10FT FROM AHU OUTSIDE AIR INTAKE.
2. CONTRACTOR SHALL PROVIDE AND INSTALL BACKDRAFT DAMPER FOR CEILING MOUNTED EXHAUST FAN.
3. THIS UNIT TO BE BID AS ALTERNATE #1.
4. CONTRACTOR SHALL CONNECT TO EXISTING DUCT.
5. CONTRACTOR SHALL PROVIDE AND INSTALL MOTORIZED DAMPER ON OUTSIDE AIR INTAKE.

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Revision

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STATE OF TEXAS
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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title
MECHANICAL PLAN

M102
Sheet Number

File Name: i:\31000s\31981\WA05\CADD\M102-HP-31981.05.dwg
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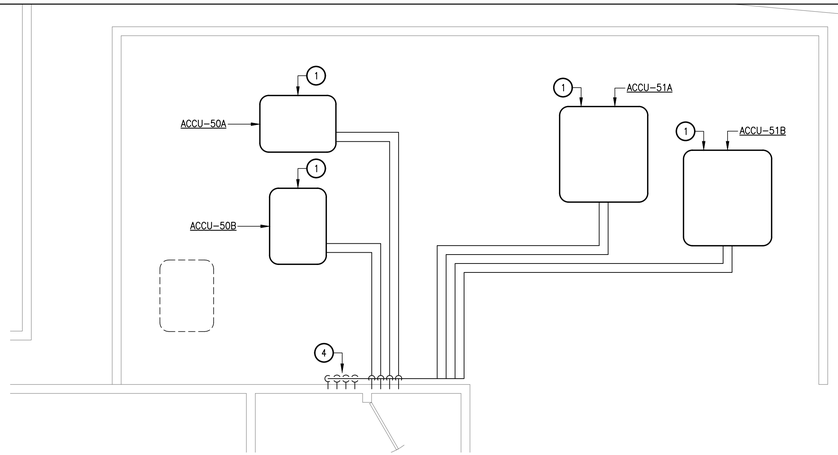
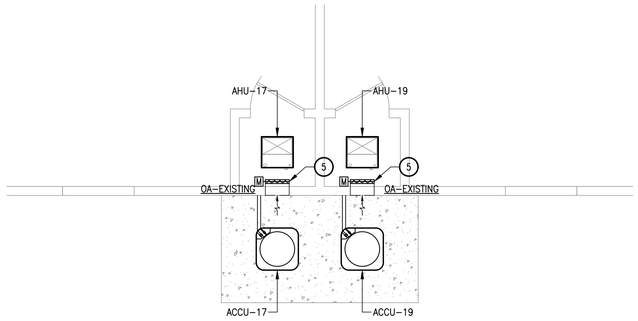
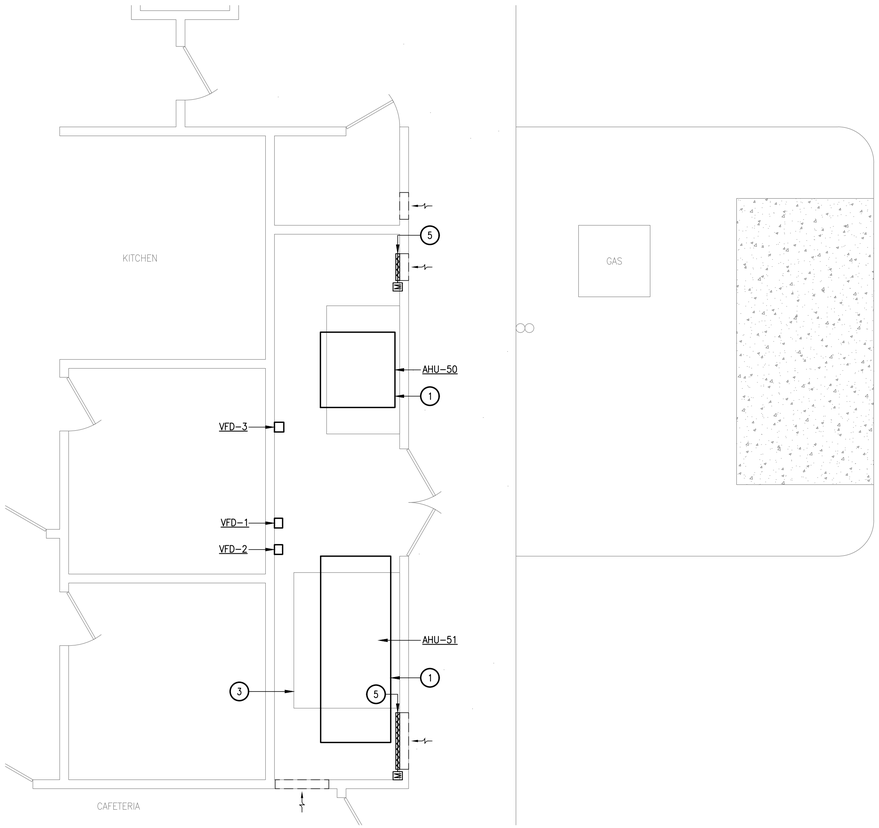
Printed Date: 6/14/2018 2:37:20 PM



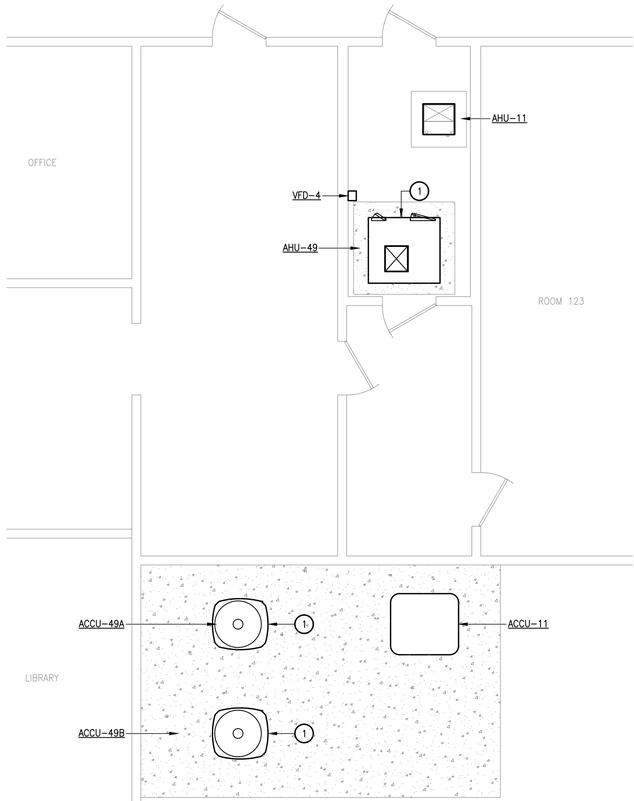
2 MECHANICAL PLAN - SOUTH MECHANICAL YARD
SCALE: 1/4" = 1'-0"



1 MECHANICAL PLAN - TYPICAL CLASSROOM LAYOUT 'B'
SCALE: 1/4" = 1'-0"



4 MECHANICAL PLAN - SOUTH MECHANICAL ROOM
SCALE: 1/4" = 1'-0"



3 MECHANICAL PLAN - SOUTH WEST MECHANICAL YARD & RM 123
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

A. REFER TO M001 FOR MECHANICAL GENERAL NOTES.

B. ROUTE CONDENSATE TO NEAREST DRAIN.

LEGEND

- - - - - EXISTING MECHANICAL EQUIPMENT TO REMAIN

——— NEW MECHANICAL EQUIPMENT

KEY NOTES: (#)

1. THIS UNIT TO BE BID AS ALTERNATE #1.
2. CONNECT TO EXISTING DUCT.
3. CONTRACTOR SHALL MODIFY EQUIPMENT PAD TO EXTEND 4 INCHES ON ALL SIDES ON NEW AHU. TO BE PART OF ALTERNATE #1.
4. REFRIGERANT LINES SHALL PENETRATE THROUGH EXISTING OPENINGS. OPENINGS SHALL BE WATER TIGHT.
5. CONTRACTOR SHALL PROVIDE AND INSTALL MOTORIZED DAMPER ON OUTSIDE AIR INTAKE.

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Revision No.	Date	Description

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6-19-18

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title

MECHANICAL PLAN

M103

Sheet Number

File Name: i:\31000s\31981\WA05\CADD\M103-HP-31981.05.dwg
Current Tab (Layout): M103 User: AH3365
Printed Date: 6/14/2018 2:57:34 PM

SPLIT DX HEAT PUMP UNIT SCHEDULE

AIR HANDLING UNIT																				CONDENSING UNIT									SYSTEM EFFICIENCY		
TAG	MANUFACTURER	MODEL	SERVICE	L x W x H (in)	WEIGHT (LBS)	AIRFLOW (CFM)	OUTSIDE AIR (CFM)	E.S.P. (in. WC)	POWER (HP)	SENSIBLE CAPACITY (BTUH)	TOTAL CAPACITY (BTUH)	EAT–DB °F	EAT–WB °F	LAT–DB °F	LAT–WB °F	HEATING EAT °F	HEATING LAT MIN.°F	HEATING LAT MAX.°F	VOLTAGE / PHASE	MCA	MOCP	TAG	MANUFACTURER	MODEL	L x W x H (in)	WEIGHT (LBS)	AMBIENT AIR TEMP. °F	VOLTAGE / PHASE	MCA	MOCP	EER	SEER	NOTES
AHU 1–8, 12–19, 21–47	LENNOX	CBA27UHE–042	CLASSROOM	59 X 22 X 25	186	815	340	0.8	1	23400	37300	86.5	71.2	55.4	54.3	59.8	85	95	208/1	28	30	AHU 1–8, 12–19, 21–47	LENNOX	14HPX–042	33 X 33 X 38	272	98	208/1	24.2	40	12.5	15	ALL
AHU 9–11,20	LENNOX	CBA27UHE–048	COMPUTER LAB	59 X 22 X 25	186	1100	340	0.8	1	31200	45800	82.6	68.5	55.9	54.7	59.8	85	95	208/1	28	30	AHU 9–11,20	LENNOX	14HPX–048	33 X 33 X 38	273	98	208/1	29	50	12.5	15	ALL

NOTES:
1. CONTRACTOR TO PROVIDE CONCRETE PAD FOR CONDENSING UNITS.
2. PROVIDE WITH SINGLE POINT POWER FOR INDOOR UNIT AND INDEPENDENT SINGLE POINT POWER FOR OUTDOOR UNIT.
3. UNIT TO INCLUDE VARIABLE SPEED ECM MOTOR.
4. PROVIDE HUMIDISTAT WITH INTEGRATED HUMIDITY CONTROL.
5. PROVIDE HAIL GUARDS FOR CONDENSING UNIT.
6. PROVIDE 7 DAY TOUCH SCREEN LCD THERMOSTAT.

SPLIT DX UNIT SCHEDULE

AIR HANDLING UNIT																	CONDENSING UNIT										SYSTEM EFFICIENCY		
TAG	MANUFACTURER	MODEL	SERVICE	L x W x H (in)	WEIGHT (LBS)	AIRFLOW (CFM)	OUTSIDE AIR (CFM)	E.S.P. (in. WC)	POWER (HP)	SENSIBLE CAPACITY (BTUH)	TOTAL CAPACITY (BTUH)	EAT–DB °F	EAT–WB °F	LAT–DB °F	LAT–WB °F	VOLTAGE / PHASE	MCA	MOCP	TAG	MANUFACTURER	MODEL	L x W x H (in)	WEIGHT (LBS)	AMBIENT AIR TEMP. °F	VOLTAGE / PHASE	MCA	MOCP	EER	SEER	NOTES
AHU–48	TRANE	CSAA060	ADMINISTRATION	60 x 52 x 76	841	3000	275	1	3	63.4	74.4	77.7	93.7	55	53.7	208/3	6	15	ACCU–48A,48B	TRANE	4TTR7	39 X 35 X 51	312	98	208/1	37	60	12.5	17	ALL
AHU–49	TRANE	CSAA060	LIBRARY	60 x 64 x 76	841	3000	480	1	3	68.6	93.8	79.2	66.1	55.7	54.5	208/3	6	15	ACCU–49A,49B	TRANE	4TTR7	39 X 35 X 51	312	98	208/1	37	60	12.5	17	ALL
AHU–50	TRANE	CSAA	KITCHEN	50 X 50.5 X 75.5	997	3650	3000	1	5	132.3	221	97	77	54.5	53.9	208/3	9	15	ACCU–50A,50B	TRANE	TTA180	52 X 96 X 48	648	98	208/3	67	110	11	12.8	ALL
AHU–51	TRANE	TCFS	CAFETERIA	125 X 47 X 87	2590	8000	4080	1	2 X 2.5	269.3	458.6	87.4	72.8	55	54.4	208/3	20	25	ACCU–51A,51B	TRANE	TTA300	96 X 48 X 57	857	98	208/3	103	125	11.2	12	ALL

NOTES:
1. CONTRACTOR TO PROVIDE CONCRETE PAD FOR CONDENSING UNITS.
2. PROVIDE WITH INDEPENDENT SINGLE POINT POWER FOR INDOOR UNIT AND FUSED DISCONNECT. INDEPENDENT SINGLE POINT POWER FOR OUTDOOR UNIT.
3. PROVIDE WITH INDEPENDENT SINGLE POINT POWER FOR OUTDOOR UNIT AND FUSED DISCONNECT.
4. PROVIDE HUMIDISTAT WITH INTEGRATED HUMIDITY CONTROL.
5. PROVIDE HAIL GUARDS FOR CONDENSING UNIT.
6. PROVIDE 7 DAY TOUCH SCREEN LCD THERMOSTAT.

VFD SCHEDULE

MARK	SERVES	EQUIP	HP	INPUT VOLT/PH	OUTPUT VOLT/PH	MOUNTING	ENCLOSURE	MANUF.	MODEL	HxWxD (IN.)	NOTES
VFD–1	AHU–51	SUPPLY FAN	3	208/3	208/3	WALL	NEMA 1	YASKAWA	E7	11.02 X 5.51 X 6.3	1, 2
VFD–2	AHU–51	SUPPLY FAN	3	208/3	208/3	WALL	NEMA 1	YASKAWA	E7	11.02 X 5.51 X 6.3	1, 2
VFD–3	AHU–50	SUPPLY FAN	5	208/3	208/3	WALL	NEMA 1	YASKAWA	E7	11.02 X 5.51 X 7.1	1, 2
VFD–4	AHU–49	SUPPLY FAN	3	208/3	208/3	WALL	NEMA 1	YASKAWA	E7	11.02 X 5.51 X 6.3	1, 2
VFD–5	AHU–48	SUPPLY FAN	3	208/3	208/3	WALL	NEMA 1	YASKAWA	E7	11.02 X 5.51 X 6.3	1, 2

NOTES:
1. VFD SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR.
2. PROVIDE BACNET DEVICE FOR INTERFACE WITH DDC SYSTEM. COORDINATE WITH OWNER'S DDC CONTRACTOR PRIOR TO RELEASE.
3. PROVIDE WITH AUXILARY CONTACT FOR DISCONNECT SWITCH INTERFACE.

HVAC DUCTWORK MATERIALS SCHEDULE

SERVICE	SHAPE	METAL TYPE	DUCT TYPE	JOINTS	W.G.	INSULATION			
						CONDITIONED SPACES	UNCONDITIONED SPACED	OUTDOORS	NOTE
SUPPLY LOW PRESSURE CONCEALED	ROUND/OVAL	GALVANIZED	SPIRAL	MASTIC & COUPLING	1"	2" AND 1.5LB/CF DENSITY	2" AND 1.5LB/CF DENSITY	N/A	
	RECTANGULAR	GALVANIZED	SINGLE WALL	SLIPS AND DRIVES	1"	2" AND 1.5LB/CF DENSITY	2" AND 1.5LB/CF DENSITY	RIGID: 3" AND 1.5LB/CF DENSITY	W/ FLEXCLAD 400 JACKET OUTDOORS
SUPPLY LOW PRESSURE EXPOSED	ROUND/OVAL	GALVANIZED	DOUBLE WALL WITH INSULATION	MASTIC & COUPLING	1"	DOUBLE WALL W/ INTERSTITUAL	DOUBLE WALL W/ INTERSTITUAL	N/A	
	RECTANGULAR	GALVANIZED	DOUBLE WALL WITH INSULATION	SLIPS AND DRIVES	1"	DOUBLE WALL W/ INTERSTITUAL	DOUBLE WALL W/ INTERSTITUAL	RIGID: 3" AND 1.5LB/CF DENSITY	W/ FLEXCLAD 400 JACKET OUTDOORS
RETURN AIR CONCEALED	ROUND	GALVANIZED	SPIRAL	MASTIC & COUPLING	–1"	2" AND 1.5LB/CF DENSITY	2" AND 1.5LB/CF DENSITY	N/A	
	RECTANGULAR	GALVANIZED	SINGLE WALL	SLIPS AND DRIVES	–1"	2" AND 1.5LB/CF DENSITY	2" AND 1.5LB/CF DENSITY	RIGID: 3" AND 1.5LB/CF DENSITY	W/ FLEXCLAD 400 JACKET OUTDOORS
RETURN AIR EXPOSED	ROUND	GALVANIZED	DOUBLE WALL WITH INSULATION	MASTIC & COUPLING	–1"	NONE	DOUBLE WALL W/ INTERSTITUAL	N/A	
	RECTANGULAR	GALVANIZED	DOUBLE WALL WITH INSULATION	SLIPS AND DRIVES	–1"	NONE	DOUBLE WALL W/ INTERSTITUAL	RIGID: 3" AND 1.5LB/CF DENSITY	W/ FLEXCLAD 400 JACKET OUTDOORS
OUTSIDE AIR	ROUND	GALVANIZED	SPIRAL	MASTIC & COUPLING	–1"	2" AND 1.5LB/CF DENSITY	2" AND 1.5LB/CF DENSITY	NONE	
	RECTANGULAR	GALVANIZED	SINGLE WALL	SLIPS AND DRIVES	–1"	2" AND 1.5LB/CF DENSITY	2" AND 1.5LB/CF DENSITY	NONE	
GENERAL EXHAUST	ROUND	GALVANIZED	SPIRAL	MASTIC & COUPLING	–1"	NONE	2" AND 1.5LB/CF DENSITY	N/A	

HVAC PIPING MATERIALS SCHEDULE

SERVICE	SIZE	PIPE	FITTINGS	JOINTS	HANGERS	INSULATION		
						CONDITIONED SPACES	UNCONDITIONED SPACES	OUTDOORS
CONDENSATE	ALL	TYPE M COPPER	WROT COPPER	95–5 SOLDER	COPPER PLATED	3/4" FLEXIBLE ELASTOMERIC – PVC JACKET	3/4" FLEXIBLE ELASTOMERIC – PVC JACKET	3/4" FLEXIBLE ELASTOMERIC – ALUMINUM JACKET
REFRIGERANT	0–4"	TYPE L COPPER ACR	WROT COPPER LONG RAD.	SILFOS	COPPER PLATED	1" FLEXIBLE ELASTOMERIC	1" FLEXIBLE ELASTOMERIC	1" FLEXIBLE ELASTOMERIC
	5" & UP	TYPE L COPPER ACR	WROT COPPER LONG RAD.	SILFOS	COPPER PLATED	1" FLEXIBLE ELASTOMERIC	1" FLEXIBLE ELASTOMERIC	1" FLEXIBLE ELASTOMERIC

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Revision No.	Date	Description

STATE OF TEXAS
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6-14-18

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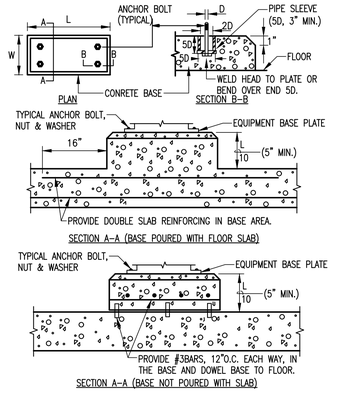
Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title
MECHANICAL SCHEDULES

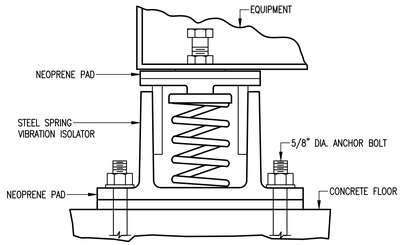
M201
Sheet Number

File Name: i:\31000s\31981\WA05\CADD\M201-SC-31981.05.dwg
Current Tab (Layout): M201 User: AH3365
Printed Date: 6/14/2018 2:37:41 PM



NOTE:
1. THIS DETAIL APPLIES TO EQUIPMENT NOT SPECIFIED TO BE MOUNTED ON SPRING ISOLATED BASES.
2. L AND W DIMENSIONS SHALL BE 6 INCHES GREATER THAN THE EQUIPMENT BASE PLATE.

03 EQUIPMENT PAD DETAIL
N.T.S.

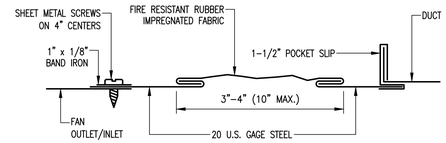


VIBRATION ISOLATION NOTES:

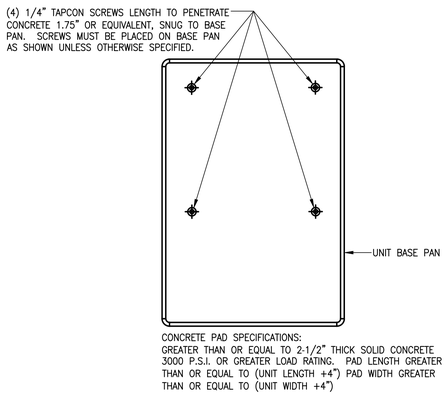
A. ALL PIPING THAT IS CONNECTED TO EQUIPMENT SHALL BE SUPPORTED FROM RESILIENT CEILING HANGERS OR FROM FLOOR–MOUNTED RESILIENT SUPPORTS. (SPRING AND NEOPRENE IN SERIES) THE FIRST 3 HANGERS NEXT TO THE EQUIPMENT SHALL HAVE A MIN. STATIC DEFLECTION EQUAL TO ONE HALF OF THE STATIC DEFLECTION OF THE EQUIPMENT MOUNTING SYSTEM. BEYOND THE THIRD PIPE SUPPORT A STATIC DEFLECTION OF 1/4" TO 1/2" WILL BE UTILIZED.

B. PIPES PASSING THROUGH THE MECHANICAL EQUIPMENT ROOMS WALLS SHALL BE PROVIDED A 1 INCH CLEARANCE BETWEEN THE PIPE AND PIPE SLEEVE INSTALLED IN THE WALL. THE PIPE SHALL BE SUPPORTED EITHER SIDE OF THE WALL SO THAT THE PIPE DOES NOT REST ON THE SLEEVE. THE CLEARANCE SPACE SHALL BE FILLED WITH FIBEROUS FILLER MATERIAL AND SEALED WITH A NON–HARDENING CAULKING COMPOUND AT BOTH WALL SURFACES OR AS REQUIRED FOR FIRE STOPPING IN FIRE WALLS.

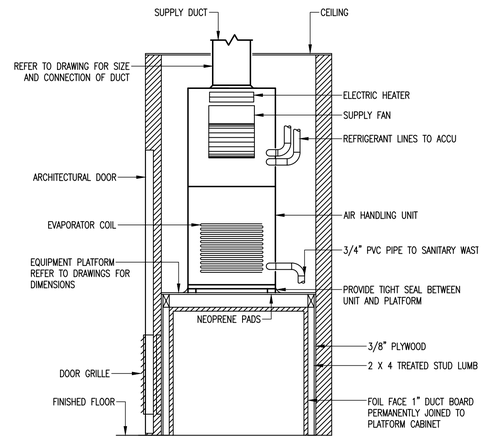
02 VIBRATION ISOLATION
N.T.S.



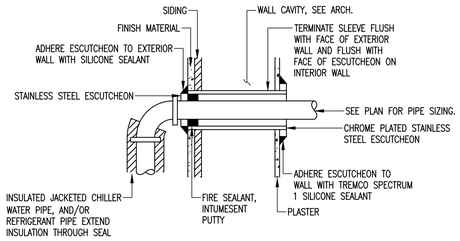
01 FLEXIBLE CONNECTION
N.T.S.



06 CONDENSING UNIT CONCRETE MOUNTING
N.T.S.



05 FAN COIL - SECTION VIEW
N.T.S.



04 TYP. EXTERIOR WALL PENETRATION
N.T.S.

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Revision No.	Date	Description

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6-14-18

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

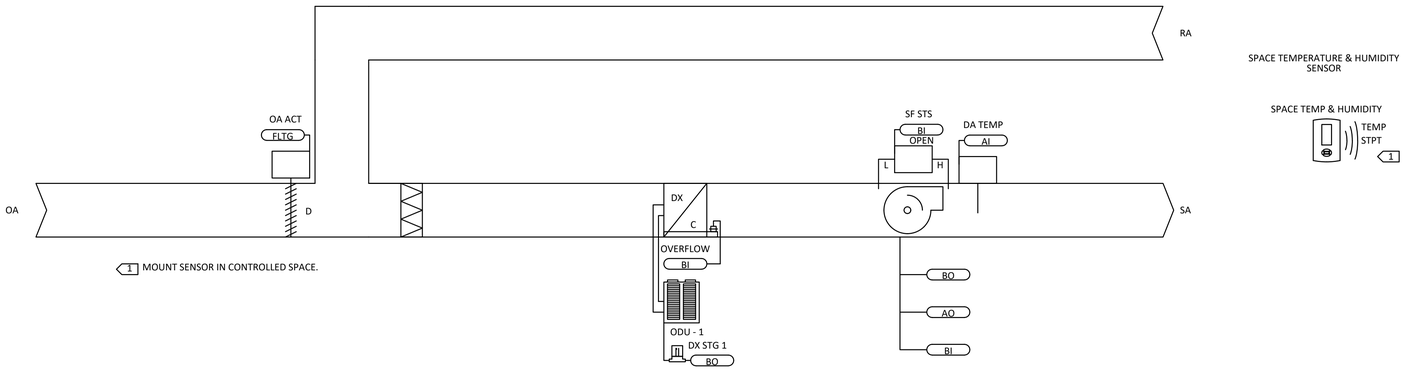
Sheet Title
MECHANICAL DETAILS

M202
Sheet Number

File Name: i:\31000s\31981\WA05\CADD\M202–DT–31981.05.dwg
Current Tab (Layout): M202 User: AH3365
Printed Date: 6/14/2018 2:37:50 PM

TYPICAL FOR 43

CLASSROOMS DX SPLIT 1 ~ 43



Sequence of Operations
DX Split 1 ~ 43 Flow

Building Automation System Interface:
The Building Automation System (BAS) shall send the controller Occupied Bypass, Morning Warm-up / Pre-Cool, Occupied / Unoccupied and Heat / Cool modes. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

Occupied Mode:
During occupied periods the supply fan shall run continuously and the outside air damper shall open to maintain minimum ventilation requirements. The DX cooling and heating modes shall operate accordingly to maintain the active space temperature setpoint.

Optimal Start:
The BAS shall monitor the scheduled occupied time, occupied space setpoints and space temperature to calculate when the optimal start occurs.

Morning Warm-Up Mode:
During optimal start, if the space temperature is below the occupied heating setpoint a morning warm-up mode shall be activated. When morning warm-up is initiated the unit shall enable the heat pump mode. The outside air damper shall remain closed. When the space temperature reaches the occupied heating setpoint (adj.), the unit shall transition to the occupied mode.

Optimal Stop:
The BAS shall monitor the scheduled unoccupied time, occupied setpoints and space temperature to calculate when the optimal stop occurs. When the optimal stop mode is active the unit controller shall maintain the space temperature to the space temperature offset setpoint.

Occupied Bypass:
The BAS shall monitor the status of the "on" and "cancel" buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.).

Space Temperature Control:
The space temperature shall be maintained between the occupied cooling setpoint of 74.0 deg. F (adj.) and the occupied heating setpoint of 71.0 deg. F (adj.). The unit shall transition to the cooling mode when the space temperature rises one degree above the occupied cooling setpoint of 74.0 deg. F (adj.). The unit shall transition to the heating mode when the space temperature drops one degree below the occupied heating setpoint of 74.0 deg. F (adj.).

Condensate Overflow Monitoring:
If the condensate level reaches the trip point, a condensate overflow diagnostic shall be annunciated at the BAS. To prevent the condensate drain pan from overflowing and causing water damage to the building the fan shall be disabled and the DX cooling shall be disabled.

Filter Timer:
The fan-run time (hrs) shall be compared to the filter maintenance timer setpoint. Once the setpoint is reached a filter timer alarm diagnostic shall be annunciated at the BAS. When the diagnostic is cleared, the filter-maintenance timer is reset to zero, and the timer begins accumulating fan-run time again.

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Revision No.	Date	Description

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6-14-18

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title

MECHANICAL CONTROLS

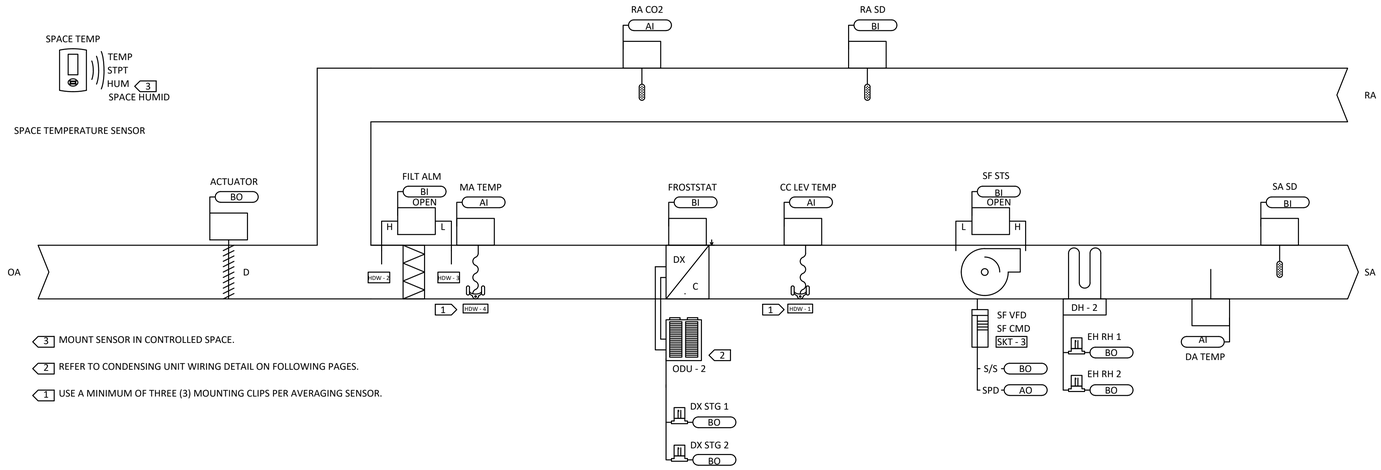
M301

Sheet Number

File Name: i:\31000s\31981\W405\CADD\M301.dwg
Current Tab (Layout): M301 User: AH3365
Printed Date: 6/14/2018 2:37:57 PM

TYPICAL FOR 4
(AHU 48 ~ 51)

AHU 48 ~ 51



3 MOUNT SENSOR IN CONTROLLED SPACE.

2 REFER TO CONDENSING UNIT WIRING DETAIL ON FOLLOWING PAGES.

1 USE A MINIMUM OF THREE (3) MOUNTING CLIPS PER AVERAGING SENSOR.

Sequence of Operations
SZVAV AHU – 48 ~ 51 Flow

Building Automation System Interface:
The Building Automation System (BAS) shall send the controller Occupied Bypass, Morning Warm-up/Pre-Cool, Occupied/Unoccupied and Heat/Cool modes. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

Optimal Start:
The BAS shall monitor the scheduled occupied time, occupied space setpoints and space temperature to calculate when the optimal start occurs.

Occupied Bypass:
The BAS shall monitor the status of the "on" and "cancel" buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.).

Heat/Cool Mode:
When the space temperature rises above the occupied cooling setpoint the mode shall transition to cooling. When the space temperature falls below the occupied heating setpoint the mode shall transition to heating. When the space temperature is above the occupied cooling setpoint or below the occupied heating setpoint the mode shall remain in its last state. If the space temperature sensor fails the mode shall remain in its last state and an alarm shall be annunciated at the BAS. If the local and communicated setpoints fail the controller shall disable the supply fan and an alarm shall be annunciated at the BAS.

Supply Air Temperature Reset Control:
On a rise in space temperature (+2.0 deg. F adj. or greater) above the space cooling setpoint (74.0 deg. F adj.); the supply fan speed shall modulate from minimum (50% adj.) to maximum (or design) air flow to maintain space cooling temperature setpoint while keeping the discharge air temperature setpoint at minimum (55.0 deg. F adj.).
As space temperature decreases below 76.0 deg. F (space cooling setpoint 74.0 deg. F + 2.0 deg. F); the fan speed shall be locked at minimum air flow and the discharge air temperature setpoint remains at minimum.
When space temperature decreases to 75.0 deg. F (cooling setpoint of 74.0 deg. F adj. + 1.0 deg. F) or below for a period of time (default 1 min. adj.); the fan speed shall remain at minimum, the discharge air temperature setpoint remains at minimum, and control enters into discharge air temperature setpoint reset mode.
As space temperature continues to drop below 75.0 deg. F (space temperature cooling setpoint + 1.0 deg. F); the fan speed shall remain at minimum and the discharge air temperature setpoint shall be reset from minimum (55.0 deg. F adj.) to maximum (65.0 deg. F adj.) as space temperature drops from 75.0 deg. F to 74.0 deg. F to maintain the space cooling temperature setpoint.
On a continued drop of space temperature below the space cooling temperature setpoint (74.0 deg. F adj.) through (71.0 deg. F adj.) the space temperature control shall be within its deadband; the fan speed remains at minimum and discharge air setpoint of (65.0 deg. F adj.) for cooling.
As space temperature decreases to the heating setpoint (71.0 deg. F adj.) the control shall switch to the heating discharge air temperature reset. In the heating mode, the staged heat will be enabled; the supply fan shall remain at minimum air flow and the discharge air temperature setpoint shall be reset from 70.0 deg. F to 90.0 deg. F as the space temperature drops from 71.0 deg. F to 70.0 deg. F.
As space temperature continues to decrease to heating setpoint (71.0 deg. F adj.) - 1.0 deg. F; the discharge air temperature setpoint shall remain at maximum (90.0 deg. F adj.), the fan shall be modulated from minimum to maximum air flow to maintain the space temperature heating setpoint.
When the space temperature increases the reverse control shall be implemented.

Occupied Humidity Control:
If the space relative humidity is greater than 50% (adj.), the DX cooling shall stage to maintain space relative humidity setpoint of 50% (adj.) and the electric heat shall stage to maintain the discharge air temperature setpoint. Mode shall terminate when the space relative humidity falls below the relative humidity setpoint of 50% (adj.) minus 3% (adj.). If the space relative humidity sensor fails, the dehumidification sequence shall be terminated and an alarm shall be annunciated at the BAS.

Supply Fan:
The supply fan shall be enabled while in the occupied mode and cycled on during the unoccupied mode. The unit controller shall vary the supply fan speed to optimize minimum fan speed in all cooling and heating modes. A differential pressure switch shall monitor the differential pressure across the fan. If the switch does not open within 30 seconds after a request for fan operation a fan failure alarm shall be annunciated, the unit shall stop, requiring a manual reset.

Filter Status:
A differential pressure switch shall monitor the differential pressure across the filter when the fan is running. If the switch closes during normal operation a dirty filter alarm shall be annunciated at the BAS.

Automatic Shutdown Control:
Upon detection of smoke at any of the duct mounted S.D. (furnished, installed, and wired for shutdown by division 26), motor shall be de-energized. Upon detection of air below 36 deg., the freeze stat shall de-energize the ahu motor and cause the outside air damper to close fully.

Outside Air Damper:
The Outside air damper shall open and close when cooling is initiated.

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Revision No.	Date	Description

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6-14-18

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title

MECHANICAL CONTROLS

M302

Sheet Number

File Name: i:\31000s\31981\WA05\CADD\M302.dwg
Current Tab (Layout): M302 User: AH3047
Printed Date: 6/14/2018 3:12:25 PM

ELECTRICAL GENERAL LEGEND

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

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
	POWER	
	SINGLE RECEPTACLE – 20A/125V/1P/3W/G NEMA 5–20R	15" AFF
	DUPLEX RECEPTACLE – 20A/125V/1P/3W/G NEMA 5–20R	15" AFF
30A	220 RECEPTACLE – 250V/2P/3W/G (RATING AS INDICATED)	15" AFF
WP	DUPLEX RCPT. GFI/WATER PROOF – 20A/125V/1P/3W/G NEMA 5–20R	15" AFF
	QUADRAPLEX RECEPTACLE (TWO DUPLEX RCPTS. UNDER ONE COVERPLATE)	15" AFF
	ISOLATED GROUND QUADRAPLEX RECEPTACLE (TWO DUPLEX RCPTS. UNDER ONE COVERPLATE)	15" AFF
	ISOLATED GROUND DUPLEX RECEPTACLE – 20A/125V NEMA 5–20R	15" AFF
E	DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT	15" AFF
	FLOOR MOUNTED DUPLEX RECEPTACLE – FLUSH MOUNTED UNO	–
IG	ISOLATED GROUND FLOOR MOUNTED DUPLEX RECEPTACLE FLUSH MOUNTED UNO	–
	DUPLEX RCPT. SPLIT–WIRED – 20A/125V/1P/3W/G NEMA 5–20R	15" AFF
	SPECIAL PURPOSE RECEPTACLE (NEMA NO. OR RATING AS INDICATED)	15" AFF
J J	JUNCTION BOX – SIZE & MOUNTING AS REQUIRED	15" AFF
	MULTIOUTLET ASSEMBLY – LENGTH AND OUTLET SPACING AS INDICATED	–
30/–/3	DISCONNECT SWITCH – 30/–/3 INDICATES 30A, 3–POLE, NONFUSED; 30/30/3 INDICATES 30A, 3–POLE, 30A FUSE	AS REQD.
30/3	CIRCUIT BREAKER DISCONNECT SWITCH – THERMAL MAGNETIC CB IN NEMA 1 ENCL; AMPS/POLES AS INDICATED	–
30/30/3	DISCONNECT SWITCH – 30/30/3 INDICATES 30A, 3–POLE, 30A FUSE	AS REQD.
2	MOTOR STARTER FVNR UNO; NUMBER INDICATES NEMA SIZE	AS REQD.
2	COMBINATION MOTOR CONTROLLER/DISCONNECT SWITCH	AS REQD.
	PANELBOARD	AS REQD.
	TRANSFORMER	–
	MOTOR	–
~	SINGLE LINE CONTINUATION	–
	CIRCUIT HOME RUN TO PANELBOARD (2 #12, 1 #12G, 3/4"C. 20A/1P CB UNO)	–
X,X,X	THREE SINGLE POLE DEVICE CIRCUIT NUMBERS	–
X/X/X	MULTI–POLE DEVICE CIRCUIT NUMBERS	–
		–

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
	FIRE ALARM	
F	FIRE ALARM PULL STATION – ROUGH–IN ONLY	–
F	FIRE ALARM AUDIBLE/VISUAL SIGNAL – ROUGH–IN ONLY	48" AFF
F	FIRE ALARM AUDIBLE SIGNAL – ROUGH–IN ONLY	80" AFF
F	FIRE ALARM VISUAL SIGNAL – ROUGH–IN ONLY	80" AFF
FS	FIRE ALARM SPRINKLER FLOW SWITCH – ROUGH–IN ONLY	80" AFF
TS	FIRE ALARM SPRINKLER TAMPER SWITCH – ROUGH–IN ONLY	–
R	SPRINKLER SYSTEM REGULATOR RELAY	–
S	FIRE ALARM SMOKE DETECTOR CEILING OR WALL MOUNTED – ROUGH–IN ONLY	–
H	HEAT DETECTOR CEILING OR WALL MOUNTED – ROUGH–IN ONLY	80" AFF
	DUCT SMOKE DETECTOR – ROUGH–IN ONLY	–
FACP	FIRE ALARM CONTROL PANEL	–
FAAP	FIRE ALARM ANNUNCIATOR PANEL	–
F	FIRE ALARM BELL BUZZER	–
	COMMUNICATION	
2/2	TELEPHONE/DATA OUTLET. WALL MOUNTED – STUB 3/4" C. ABOVE ACCESSIBLE CEILING	15" AFF
2	TELEPHONE OUTLET. WALL MOUNTED – STUB 3/4" C. ABOVE ACCESSIBLE CEILING	15" AFF
2	DATA OUTLET. WALL MOUNTED – STUB 3/4" C. ABOVE ACCESSIBLE CEILING	15" AFF
2/2	FLOOR MOUNTED TELEPHONE/DATA OUTLET – FLUSH MOUNTED UNO	–
2	FLOOR MOUNTED TELEPHONE OUTLET – FLUSH MOUNTED UNO	–
2	FLOOR MOUNTED DATA OUTLET – FLUSH MOUNTED UNO	–
SC	SOUND CONSOLE (RACK)	48" AFF
S S	P.A. SPEAKER, CEILING OR WALL MOUNTED	–
M M	MICROPHONE OUTLET	9" BFC, UNO
DBL	CLOCK – SINGLE OR DOUBLE FACE	–
W	WIRELESS ACCESS POINT	–
TV TV	TELEVISION OUTLET. CLG. OR WALL MOUNTED – STUB 3/4" C. ABOVE ACCESSIBLE CEILING	–
	PUSHBUTTON FOR INTERCOM CALL IN	–
	BUZZER/BELL	48" AFF
	TELEPHONE BOARD	–
	CABLE TRAY	–

GENERAL ABBREVIATIONS

ABS	ABOVE BACK SPLASH	EX	EXISTING	MTD	MOUNT OR MOUNTED	NL	NIGHT LIGHT	SW	SWITCH
AFF	ABOVE FINISHED FLOOR	F	FUSE	MTG	MOUNTING	NO (N.O.)	NORMALLY OPEN	UF	UNDERFLOOR
BFC	BELOW FINISHED CEILING	G	GROUND (EQUIPMENT)	NC (N.C.)	NORMALLY CLOSED	RCPT(S)	RECEPTACLE(S)	UG	UNDERGROUND
C	CONDUIT	GFI	GROUND FAULT INTERRUPTER	NF	NONFUSED	PNL	PANEL	WG	WIRE GUARD
CB	CIRCUIT BREAKER	H	HORIZONTAL MOUNTING	NIC	NOT IN CONTRACT	SO (S.O.)	SPACE ONLY	WP	WEATHERPROOF
CLG	CEILING	IC	INTERRUPTING CAPACITY	TYP	TYPICAL	SP	SPARE	XFMR	TRANSFORMER
EC	EMPTY CONDUIT	IG	ISOLATED GROUND	EP	ELECTRICAL PRIMARY	ST (S.T.)	SHUNT TRIP	UNO	UNLESS NOTED OTHERWISE

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

ELECTRICAL GENERAL NOTES

ELECTRICAL DEMOLITION NOTES

A. THE CONTRACTOR IS FULLY RESPONSIBLE FOR PERFORMING THE DEMOLITION WORK UNDER THIS SECTION OF THE PROJECT IN FULL COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, FEDERAL CODES. IF THE CONTRACTOR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPLIANCE WITH THE APPLICABLE CODES, HE SHALL INFORM THE ENGINEER PRIOR TO CONSTRUCTION START FOR DIRECTION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET CODE REQUIREMENTS AND REWORK SHALL BE AT CONTRACTOR'S EXPENSE. APPLICABLE CODES AND STANDARDS ON DEMOLITION WORK SHALL INCLUDE THOSE PUBLISHED BY OSHA AND EPA. AN ASBESTOS SURVEY SHALL BE KEPT ON SITE AT ALL TIMES PER TEXAS DEPARTMENT OF HEALTH REQUIREMENTS.
B. ALL DUST PRODUCTION, SMOKE PRODUCTION AND NOISE SHALL BE SUBJECT TO REAL TIME REVIEW BY THE SCHOOL. WORK SHALL BE SHUT DOWN DURING CRITICAL ACTIVITIES BY FORMAL REQUEST FROM THE DESIGNATED AUTHORITY. WORK IN DUSTY AREAS SHALL BE CONTROLLED WITH TEMPORARY PARTITIONS. FLAME CUTTING SHALL BE MINIMIZED TO ELIMINATE SMOKE PRODUCTION. PROVIDE FIRE EXTINGUISHERS IN THE IMMEDIATE AREA.
C. FOR ANY WORK SHOWN ON ELECTRICAL DRAWINGS WHICH REQUIRES DEMOLITION OF BUILDING STRUCTURES AND FINISHES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE NECESSARY DEMOLITION. CONTRACTOR SHALL PATCH AND REPAIR ALL BUILDING DAMAGE CREATED BY DEMOLITION WORK. PATCHING SHALL BE COMPLETED WITH THE SAME MATERIALS AS THE SURROUNDING AREAS, OR WITH OWNER APPROVED PATCHING MATERIALS.
D. ALL OPENINGS CUT IN MASONRY AND PLASTER WALLS OR CONCRETE FLOORS SHALL BE CORE–DRILLED OR SAWED WHEN POSSIBLE. PATCH AND SEAL OPENINGS WITH 8000 PSI CEMENT GROUT. INSTALL DECORATIVE TRIM (EQUIPMENT FLANGES, FRAMING, OR ESCUTCHEONS) AROUND OPENINGS IN FINISHED AREAS. COORDINATE ALL CUTTING AND PATCHING WITH THE OTHER TRADES.
E. ALL SURFACES COVERED BY "SPRAY POLY" AND PROTECTED BY TEMPORARY PARTITIONS SHALL REMAIN PROTECTED THROUGHOUT THE PROJECT. REMOVE THE PROTECTIVE BARRIERS ONLY AFTER THE NEW DEVICES, JUNCTION BOXES AND CONDUITS ARE INSTALLED. PATCH AND MAINTAIN THE PROTECTIVE BARRIERS DURING CONSTRUCTION. COVER ALL EQUIPMENT OPENINGS WITH 4 MIL. POLY AND DUCT TAPE IN PLACE.
F. CONTRACTOR SHALL KEEP THE ENTIRE MEP DEMOLITION SITE CLEAN AT ALL TIMES.
G. CONTRACTOR AND OWNER SHALL BE FULLY RESPONSIBLE TO IDENTIFY ANY AND ALL ASBESTOS PRESENT IN THE BUILDING PRIOR TO DEMOLITION AS REQUIRED BY LAW.
H. COORDINATION AMONG OTHER CONSTRUCTION DISCIPLINES PRIOR TO DEMOLITION IS MANDATORY.
I. ANY DAMAGE TO EXISTING FLOORING, DRAINAGE OR EXISTING STRUCTURES SHALL BE REPAIRED TO PRE–CONSTRUCTION CONDITION AT CONTRACTOR'S EXPENSE.
J. ALL DAMAGE TO BE REPAIRED AT CONTRACTOR'S EXPENSE. ALL COSTS FOR INTERRUPTION OF GAS, ELECTRICAL, COMMUNICATIONS AND/OR WATER SERVICE DUE TO CONTRACTOR'S WORK SHALL BE BORNE BY THE CONTRACTOR.
K. DEMOLITION, REMOVAL & DISPOSAL OF ALL EXCESS CONCRETE, RUBBLE, ETC. TO BE DONE IN A LEGAL MANNER AT CONTRACTOR'S EXPENSE.
L. CONTRACTOR SHALL REMOVE AND RETURN ANY AND ALL EXISTING EQUIPMENT/MATERIALS TO OWNER. OWNER SHALL HAVE FULL RIGHT OF OWNERSHIP UNLESS SPECIFIED OTHERWISE. IF THE OWNER WAIVES THIS OPTION, ANY EQUIPMENT, MATERIAL, ETC. SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
M. ANY EXISTING ELECTRICAL EQUIPMENT TO BE RE–USED THAT GETS DAMAGED DURING DEMOLITION SHALL BE REPLACED WITH ONE OF EQUAL OR GREATER GRADE.

MECHANICAL EQUIPMENT NOTES

A. REFER TO EQUIPMENT CONNECTION SCHEDULE FOR WIRING TO MECHANICAL EQUIPMENT SHOWN ON THIS SHEET.
B. FOR MECHANICAL EQUIPMENT, FURNISH AND INSTALL BRANCH CIRCUIT AND DISCONNECTING MEANS PER MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
C. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ALL POWER SOURCE WIRING IN ACCORDANCE WITH ARCHITECTURAL MILLWORK.
D. CONTRACTOR SHALL VERIFY ALL REQUIREMENTS BEFORE ANY ROUGH–IN IN ORDER TO COORDINATE MANUFACTURER'S DRAWINGS FOR EQUIPMENT LOCATION AND INSTALLATION ACCESSORIES.
E. COORDINATE RUNS FOR CONDUIT UP IN JOIST AND FOR SUSPENDING REQUIREMENTS IN ACCORDANCE STRUCTURAL PLANS.
F. REFER TO DIVISION 15 FOR EXACT LOCATION OF ALL MECHANICAL EQUIPMENT. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE WITH MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE. SOME EQUIPMENT LOCATED ON ROOF.
G. COORDINATE ALL ROOF PENETRATIONS WITH CONTRACTOR AND ALL OTHER TRADES. SEAL ALL ROOF PENETRATIONS AS RECOMMENDED BY THE WARRANTY SYSTEM. VERIFY WITH CONTRACTOR.
H. ELECTRICAL CONTRACTOR SHALL PROVIDE J–BOX AND ONE INCH CONDUIT (1"C) FOR H.V.A.C. CONTROLS AND THERMOSTATS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
I. ELECTRICAL CONTRACTOR SHALL PROVIDE STARTERS, RELAYS, CONTACTORS AND THE REQUIRED ELECTRICAL ACCESSORIES FOR AN OPERABLE MECHANICAL SYSTEM.
J. ALL ELECTRICAL CONDUIT AND WIRING SHALL BE CONCEALED. IF NOT POSSIBLE PROVIDE SURFACE MOUNT STEEL RACEWAY. STEEL RACEWAY SHALL BE WIREMOLD #V2100 SERIES. PROVIDE ALL RELATED #V2100 SERIES ACCESSORIES FOR AN OPERABLE SYSTEM.
K. ALL CABLES ABOVE CEILING SHALL BE PLENUM RATED.

ELECTRICAL SPECIAL SYSTEMS PLAN NOTES

A. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ALL POWER SOURCE WIRING IN ACCORDANCE WITH ARCHITECTURAL MILLWORK. ALL INSTALLATIONS SHALL COMPLY WITH ADA REQUIREMENTS.
B. ELECTRICAL CONTRACTOR SHALL VERIFY ALL REQUIREMENTS BEFORE ANY ROUGH–IN IN ORDER TO COORDINATE MANUFACTURER'S DRAWINGS FOR EQUIPMENT LOCATION AND INSTALLATION ACCESSORIES.
C. COORDINATE RUNS FOR CONDUIT UP IN JOIST AND FOR SUSPENDING REQUIREMENTS IN ACCORDANCE WITH STRUCTURAL PLANS.
D. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL HAVE SOUND RETARDING/ABSORBING INTUMESCENT FIRE STOP MATERIAL.
E. FURNISH DUCT SMOKE DETECTOR FOR SUPPLY AND RETURN DUCTS. COORDINATE EXACT LOCATION IN ACCORDANCE MECHANICAL DRAWINGS.
F. ALL DEVICES SHOWN ON DRAWINGS ARE SYMBOLIC ONLY. THE ENTIRE FIRE ALARM SYSTEM. SHALL BE IN FULL COMPLIANCE AND MEET ALL CODES AND REQUIREMENTS OF THE LOCAL ADMINISTRATIVE AUTHORITY. ANY MODIFICATIONS REQUIRED TO PROVIDE COMPLIANCE SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT/ENGINEER.
G. FIRE ALARM LICENSE HOLDER SHALL ASSUME ALL RESPONSIBILITY FOR DESIGN AND SUBMIT DRAWINGS TO AUTHORITY HAVING JURISDICTION (AHJ) AND ABIDE BY ALL OTHER REQUIREMENTS PER NFPA.
H. ALL CABLES ABOVE CEILING SHALL BE PLENUM RATED.
I. CONDUITS SHALL BE REAMED AND COMPLETED WITH CONNECTORS AND INSULATED BUSHINGS AT BOTH ENDS.
J. BETWEEN ANY TWO PULL POINTS THERE SHALL BE NO CONDUIT WITH GREATER THAN 180 DEGREES OF BENDS OR EQUIVALENT.
K. WHERE CONDUIT LENGTH EXCEEDS 100FT AND/OR TWO 90 DEGREE BENDS OR EQUIVALENT PROVIDE PULL BOXES AS REQUIRED.
L. ALL ZONE CONDUITS (HOME RUN) FOR LOW VOLTAGE COMMUNICATIONS CABLING SHALL BE MARKED AT THEIR TERMINUS WITH A TAG THAT IDENTIFIES "FIRE ALARM, DATA, INTERCOM, ETC" (ROOM NAME AND NUMBER) WHERE THE OTHER END OF THE CONDUIT TERMINATES.
M. THE CONTRACTOR SHALL INCLUDE IN HIS BID TO THE SCHOOL DISTRICT MATERIAL AND LABOR REQUIRED TO FURNISH AND INSTALL SMOKE DUCT DETECTORS TO THE AHU'S. FURNISH AND INSTALL TESTING SWITCH. FURNISH LABEL OF AHU SERVED TO EACH TESTING SWITCH.

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Revision No.	Date	Description

STATE OF TEXAS
GABRIEL BENAVIDES JR.
119255
LICENSED PROFESSIONAL ENGINEER
6-14-2018

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title
ELECTRICAL GENERAL LEGEND

E001
Sheet Number

File Name: \\mcoavo\mca_vol1\31000s\31981\WA05\CADD\E001-GL-31981.005.dwg
Current Tab (Layout): E001 ELECTRICAL GENERAL LEGEND User: AH2753
Printed Date: 6/14/2018 2:12:26 PM

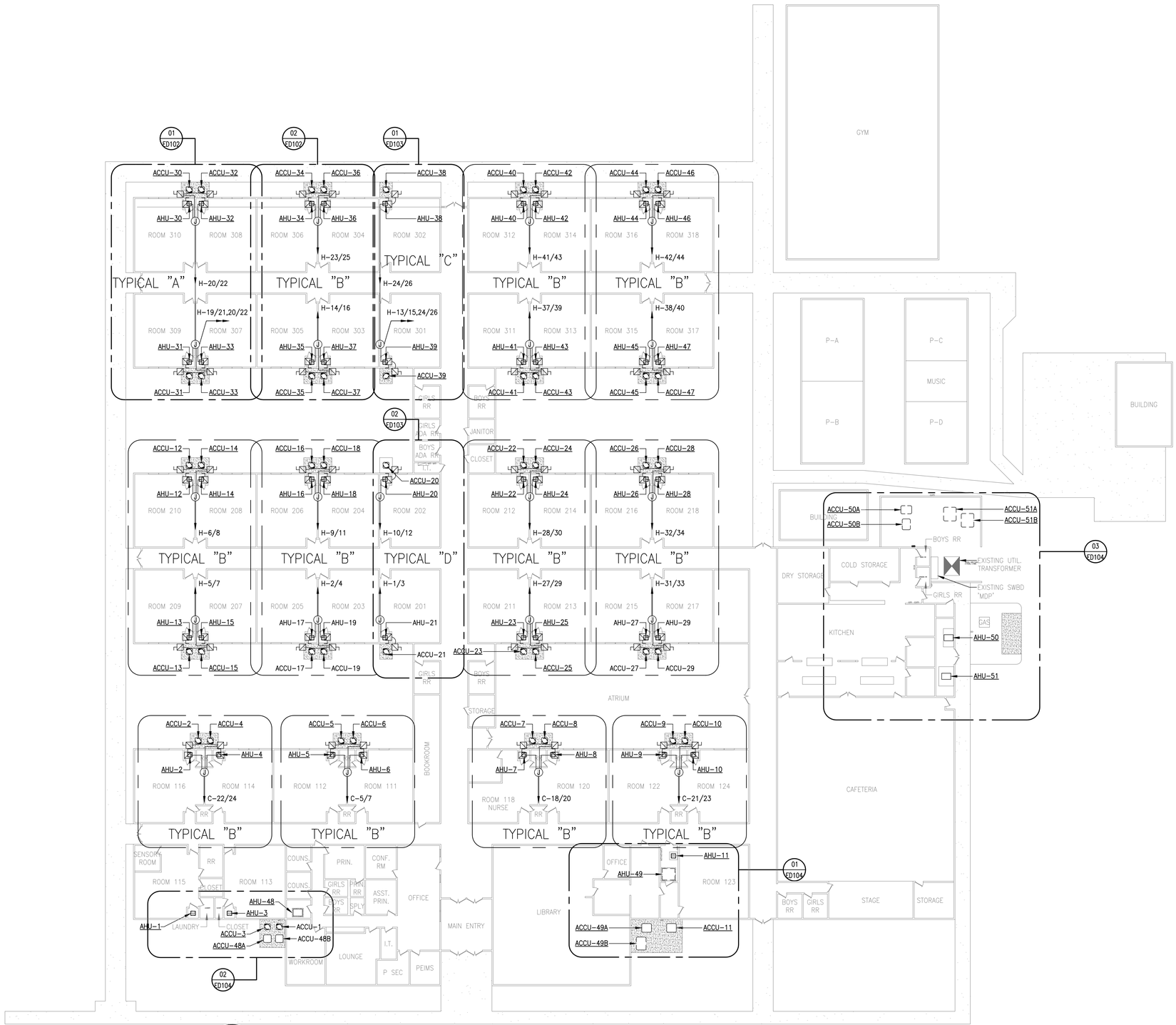
GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.

LEGEND

--------- EXISTING HVAC EQUIPMENT

———— EXISTING ELECTRICAL EQUIPMENT



01 ELECTRICAL DOMOLITION PLAN - OVERALL

SCALE: 1"=20'

File Name: \\mcaavo\mca_vol1\31000s\31981\WA05\CADD\ED101-OP-31981.005.dwg
Current Tab (Layout): ED101 ELECTRICAL DEMOLITION PLAN - OVERALL User: AH2753
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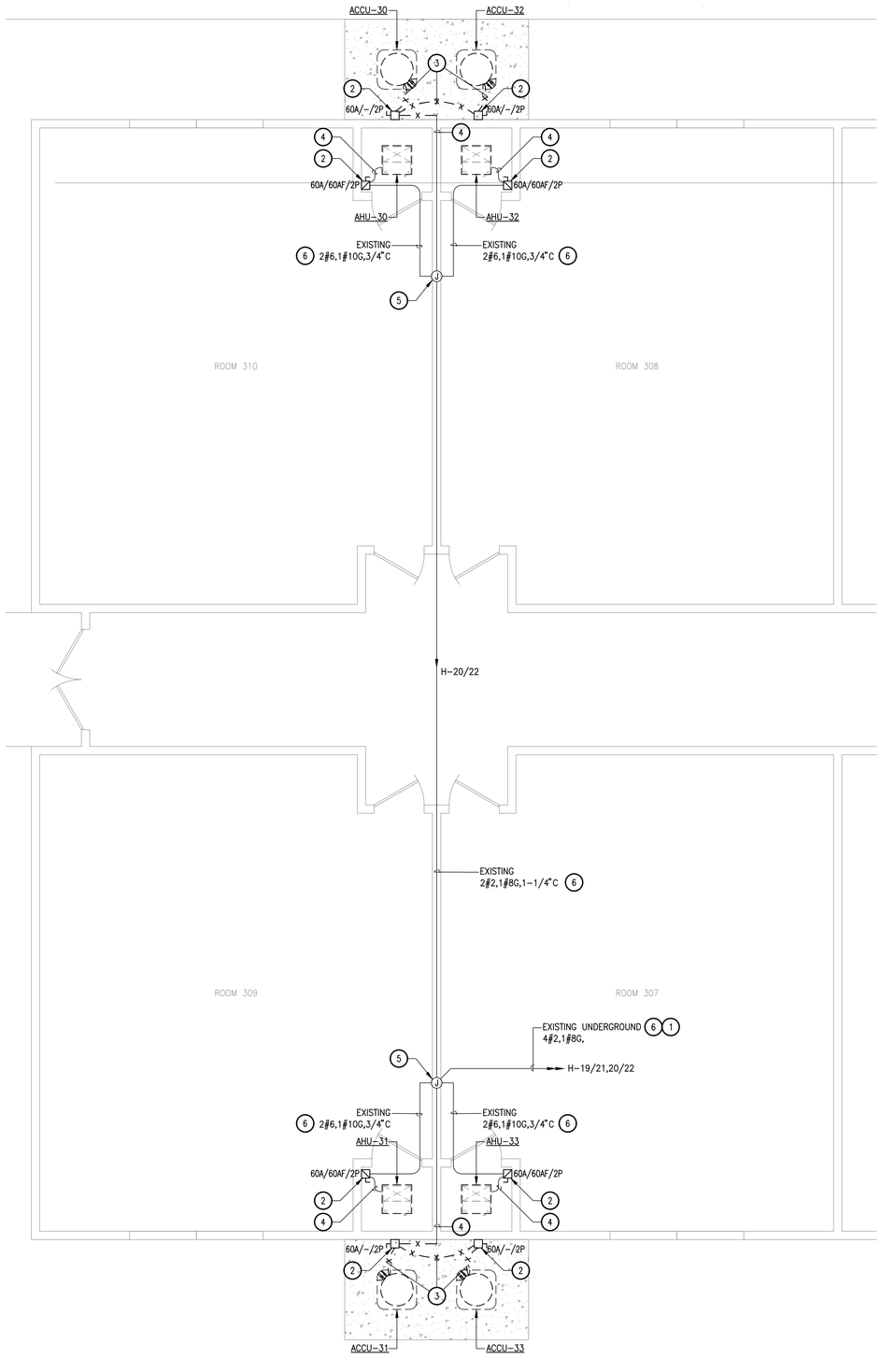
Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title

ELECTRICAL DEMOLITION PLAN - OVERALL

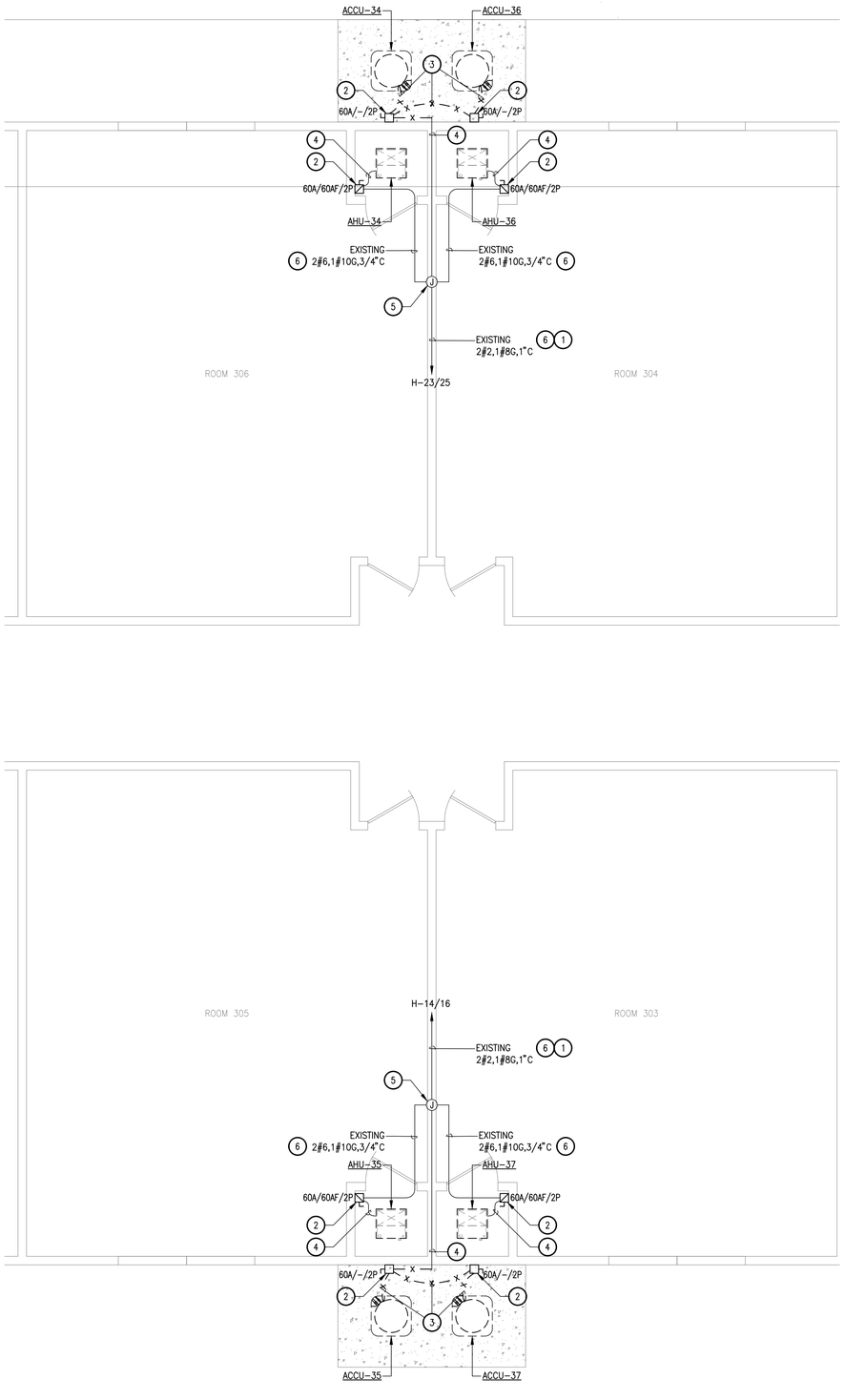
ED101

Sheet Number



01 ELECTRICAL DEMOLITION PLAN - TYPICAL CLASSROOM LAYOUT 'A'

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



02 ELECTRICAL DOMOLITION PLAN - TYPICAL CLASSROOM LAYOUT 'B'

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

GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.

KEY NOTES:

1. EXISTING HOMERUN MAY BE UNDERGROUND OR ABOVE CEILING DEPENDING ON THE CLASSROOMS' LOCATION. FIELD VERIFY PRIOR TO COMMENCING WORK.
2. EXISTING DISCONNECT SWITCH TO BE REMOVED.
3. EXISTING CONDUIT AND CONDUCTORS TO BE REMOVED.
4. EXISTING CONDUCTORS TO BE REMOVED. EXISTING CONDUIT TO REMAIN.
5. EXISTING 10"X10"X6" JUNCTION BOX TO REMAIN. FIELD VERIFY EXACT LOCATION OF JUNCTION BOX.
6. EXISTING CONDUIT AND CONDUCTORS TO REMAIN.

LEGEND

———— EXISTING ELECTRICAL EQUIPMENT TO REMAIN

– x — x – EXISTING ELECTRICAL EQUIPMENT TO BE DEMOLISHED

– – – – – EXISTING HVAC EQUIPMENT TO BE DEMOLISHED

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title

ELECTRICAL DEMOLITION PLAN

ED102

Sheet Number

File Name: \\mcoavo\mco_vol1\31000s\31981\WA05\CADD\ED102-PW-31981.005.dwg
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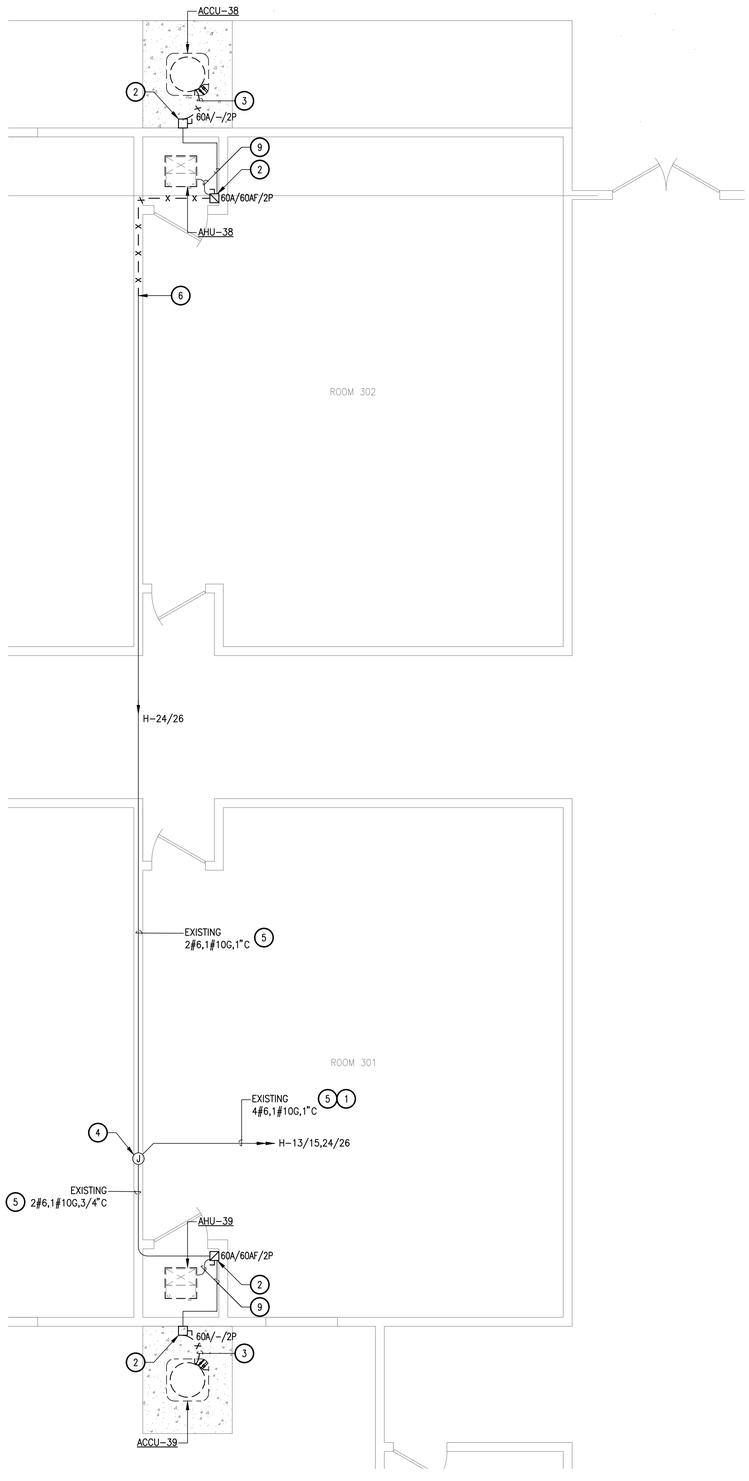
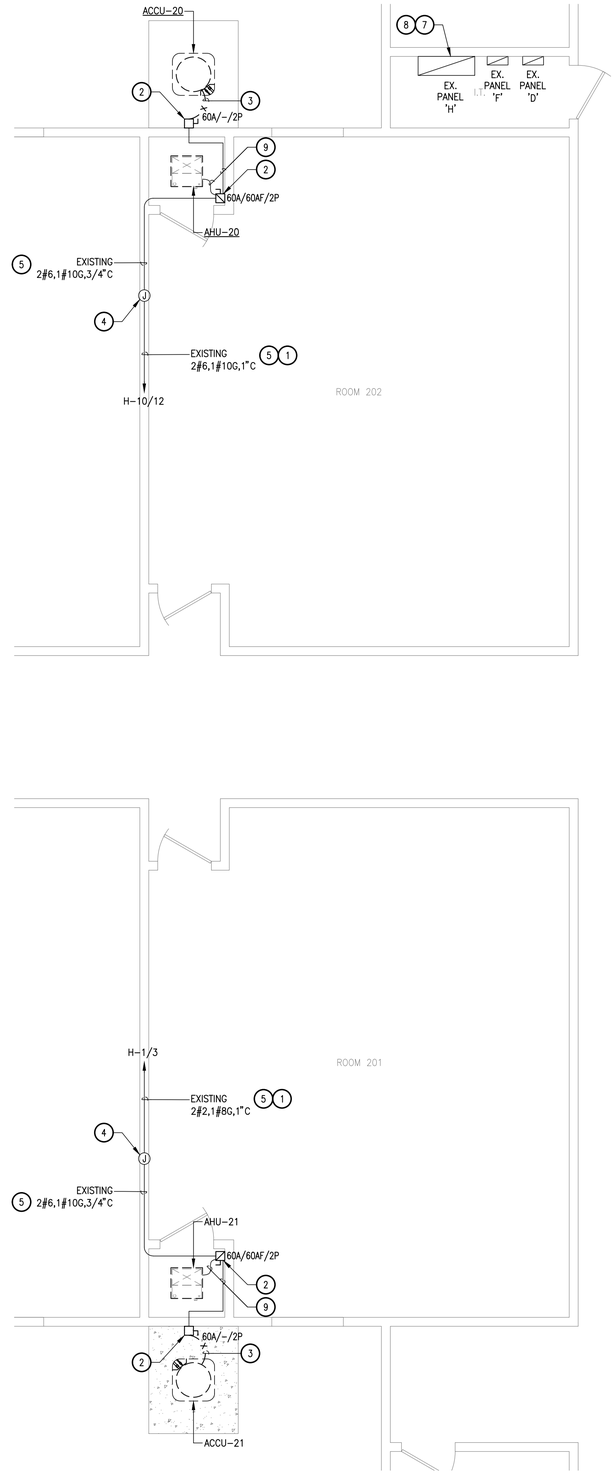


01 ELECTRICAL DOMOLITION PLAN - TYPICAL CLASSROOM LAYOUT 'C'

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



02 ELECTRICAL DOMOLITION PLAN - TYPICAL CLASSROOM LAYOUT 'D'

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

GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.

KEY NOTES:

1. EXISTING HOMERUN MAY BE UNDERGROUND OR ABOVE CEILING DEPENDING ON THE CLASSROOMS' LOCATION. FIELD VERIFY PRIOR TO COMMENCING WORK.
2. EXISTING DISCONNECT SWITCH TO BE REMOVED.
3. EXISTING CONDUIT AND CONDUCTORS TO BE REMOVED.
4. EXISTING 10"X10"X6" JUNCTION BOX TO REMAIN. FIELD VERIFY EXACT LOCATION OF JUNCTION BOX.
5. EXISTING CONDUIT AND CONDUCTORS TO REMAIN.
6. EXISTING CONDUIT SHALL BE CUT AT THIS APPROXIMATE LOCATION AND REMOVED. EXISTING CONDUCTORS SHALL BE PULLED BACK TO PREVIOUS EXISTING JUNCTION BOX PRIOR TO CUTTING THE CONDUIT. IF THE EXISTING CONDUCTORS ARE DAMAGED, REPLACE CONDUCTORS WITH EQUAL SIZE AND QUANTITY OF CONDUCTORS. REFER TO SHEET E103 DETAIL 01 FOR NEW REQUIREMENTS.
7. EXISTING PANELBOARD TO BE MODIFIED. REFER TO PANEL SCHEDULES FOR MODIFICATIONS.
8. REMOVE EXISTING (3) SETS OF 3#3/0, 2#6G FROM PANEL 'H' TO SWITCHBOARD 'MDP'. EXISTING CONDUIT TO BE ABANDONED. REFER TO SHEET E101 KEYNOTES 1 AND 2 FOR NEW REQUIREMENTS.
9. EXISTING CONDUCTORS TO BE REMOVED. EXISTING CONDUIT TO REMAIN.

LEGEND

———— EXISTING ELECTRICAL EQUIPMENT TO REMAIN

— x — x — EXISTING ELECTRICAL EQUIPMENT TO BE DEMOLISHED

– – – – – EXISTING HVAC EQUIPMENT TO BE DEMOLISHED

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
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Sheet Title

ELECTRICAL DEMOLITION PLAN

ED103

Sheet Number

File Name: \\mcoavo\mco_vol1\31000s\31981\WA05\CADD\ED103-PW-31981.005.dwg
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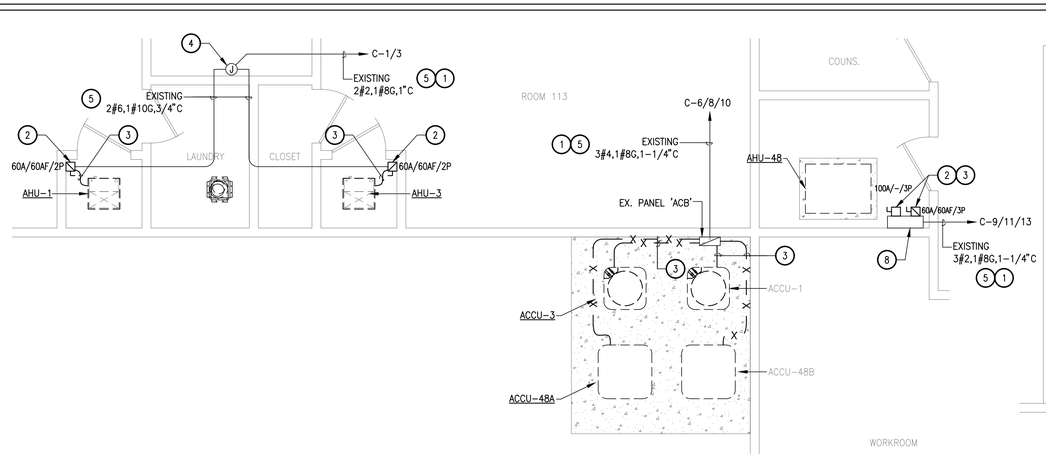

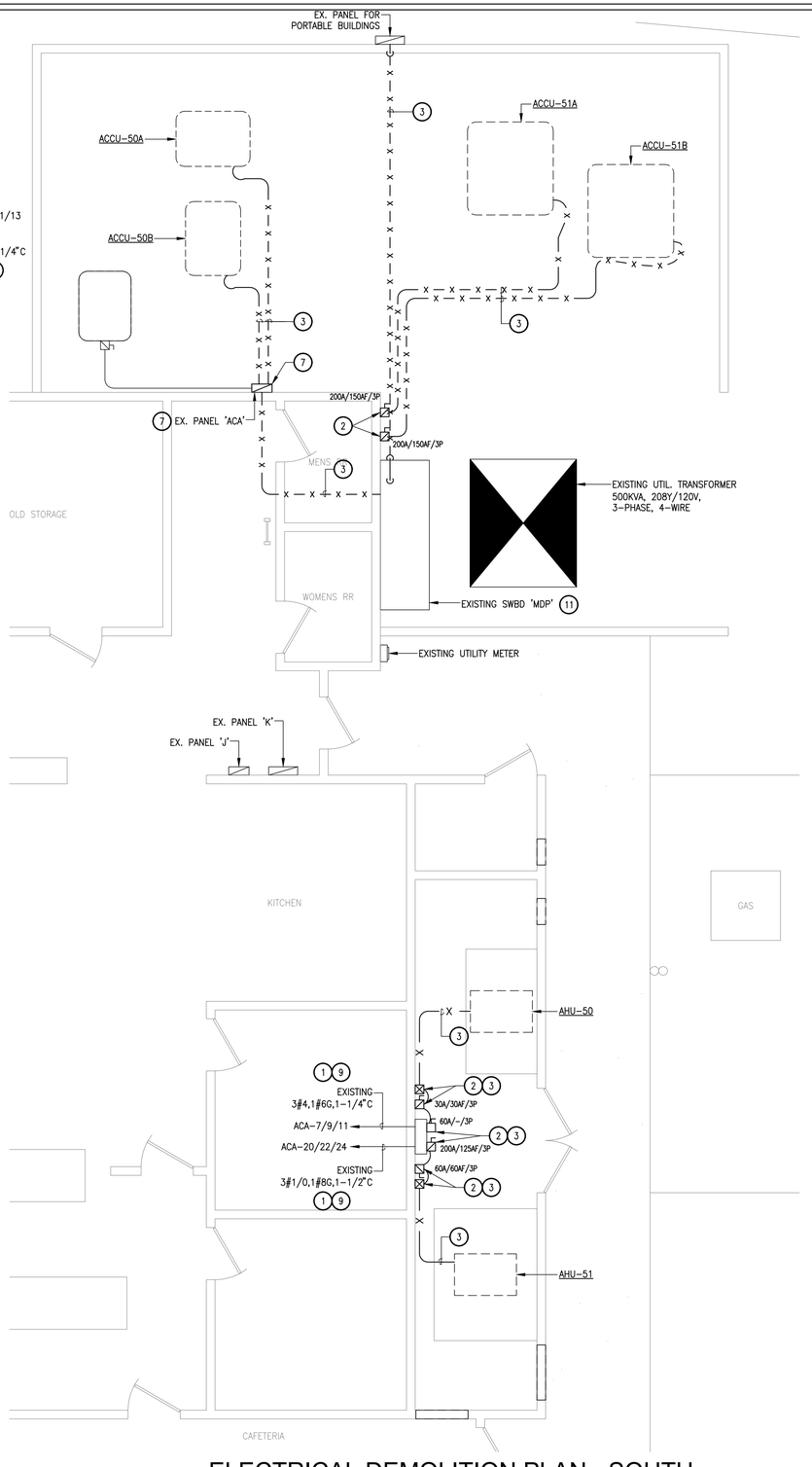

02 ELECTRICAL DOMOLITION PLAN - NORTH WEST MECHANICAL YARD

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

01 ELECTRICAL DOMOLITION PLAN - SOUTH WEST MECHANICAL YARD

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

03 ELECTRICAL DEMOLITION PLAN - SOUTH MECHANICAL YARD & SOUTH MECHANICAL ROOM

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

GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.

KEY NOTES:

1. EXISTING HOMERUN MAY BE UNDERGROUND OR ABOVE CEILING DEPENDING ON THE CLASSROOMS' LOCATION. FIELD VERIFY PRIOR TO COMMENCING WORK.
2. EXISTING DISCONNECT SWITCH TO BE REMOVED.
3. EXISTING CONDUIT AND CONDUCTORS TO BE REMOVED.
4. EXISTING 10"X10"X6" JUNCTION BOX TO REMAIN. FIELD VERIFY EXACT LOCATION OF JUNCTION BOX.
5. EXISTING CONDUIT AND CONDUCTORS TO REMAIN.
6. EXISTING PANELBOARD TO BE MODIFIED. REFER TO PANEL SCHEDULES FOR MODIFICATIONS.
7. EXISTING PANELBOARD TO BE DEMOLISHED.
8. EXISTING WIREWAY TO REMAIN. ALL TAP FEEDERS FROM WIREWAY TO DISCONNECTS AND HVAC EQUIPMENT TO BE REMOVED.
9. EXISTING CONDUIT TO REMAIN. EXISTING CONDUCTORS TO BE REMOVED.
10. FIELD LOCATE ALL CONDUIT, CONDUCTORS, DISCONNECT SWITCHES, AND MOTOR STARTERS ASSOCIATED WITH AHU-49 AND REMOVE ALL THE WAY BACK TO PANEL 'C'. REMOVE ELECTRIC DUCT HEATER.
11. EXISTING MAIN SWITCHBOARD TO BE MODIFIED. REFER TO PANEL SCHEDULES FOR MODIFICATIONS.

LEGEND

——— EXISTING ELECTRICAL EQUIPMENT TO REMAIN

– x — x – EXISTING ELECTRICAL EQUIPMENT TO BE DEMOLISHED

– – – – – EXISTING HVAC EQUIPMENT TO BE DEMOLISHED

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title

ELECTRICAL DEMOLITION PLAN

ED104

Sheet Number

File Name: \\mcoavo\mco_vol1\31000s\31981\WA05\CADD\ED104-PW-31981.005.dwg
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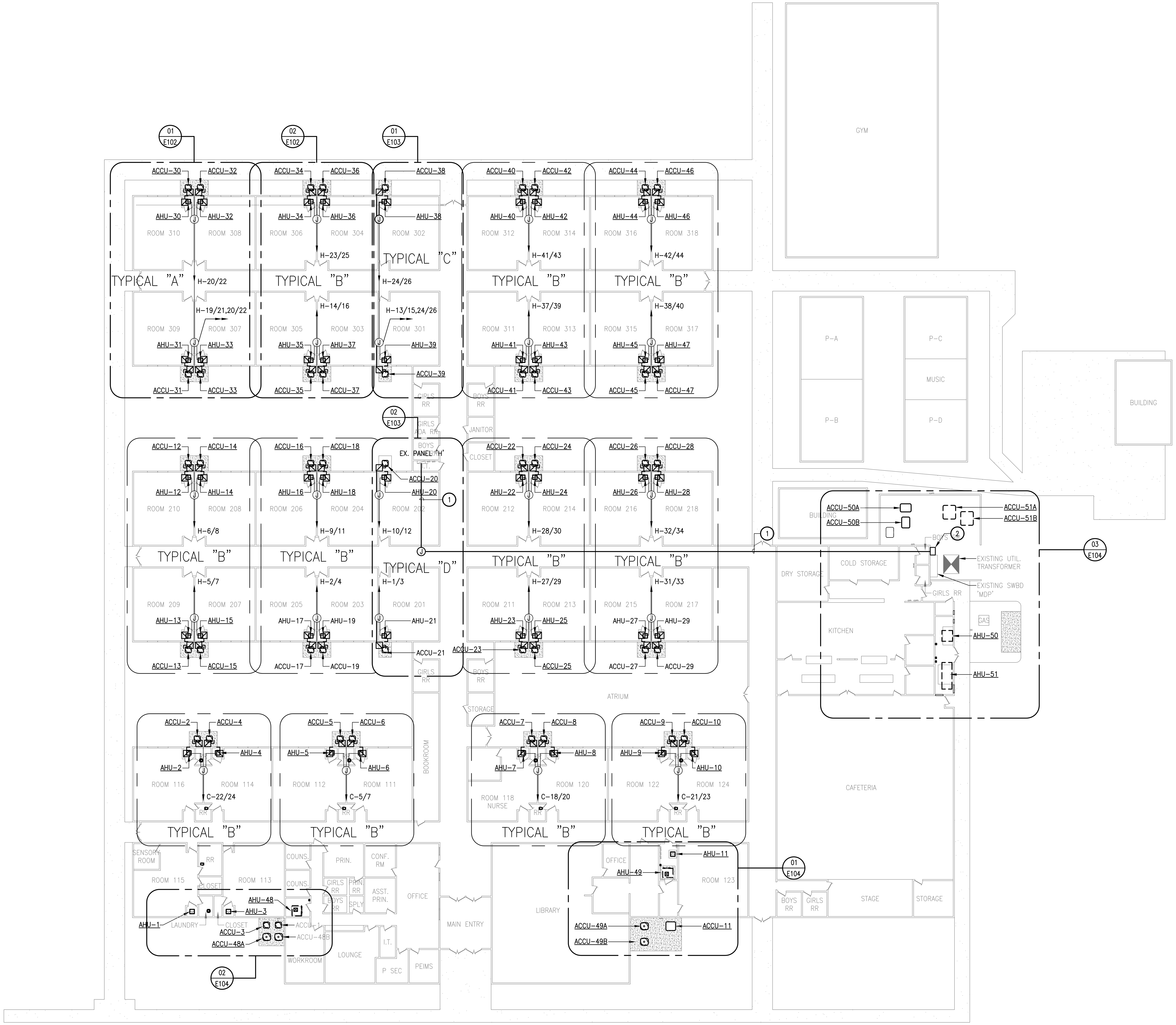

01 ELECTRICAL POWER PLAN - OVERALL

SCALE: 1"=20'

GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.

KEY NOTES:

1. FURNISH AND INSTALL (3) SETS OF 3#500, 1#2G, IN NEW 3"C IN PLENUM SPACE. CONTRACTOR SHALL SEAL ALL WALL PENETRATIONS WITH FIRE STOPPING INTUMESCENT MATERIAL.
2. FURNISH AND INSTALL (2) NEW NEMA 4X, 316-SS, 36"X36"X24" JUNCTION BOXES ADJACENT TO SWITCHBOARD 'MDP'. ROUTE NEW FEEDERS FOR PANEL 'H' THROUGH JUNCTION BOXES AND INTO BUILDING AT PLENUM SPACE.

LEGEND

- EXISTING HVAC EQUIPMENT
- EXISTING ELECTRICAL EQUIPMENT
- PROPOSED HVAC EQUIPMENT
- PROPOSED ELECTRICAL EQUIPMENT

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6-14-2018

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Drawn By:	JM/MG
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Scale:	AS NOTED

Sheet Title

ELECTRICAL POWER PLAN - OVERALL

E101

Sheet Number

File Name: \\mcaavo\mca_vol1\31000s\31981\WA05\CADD\E101-OP-31981.005.dwg
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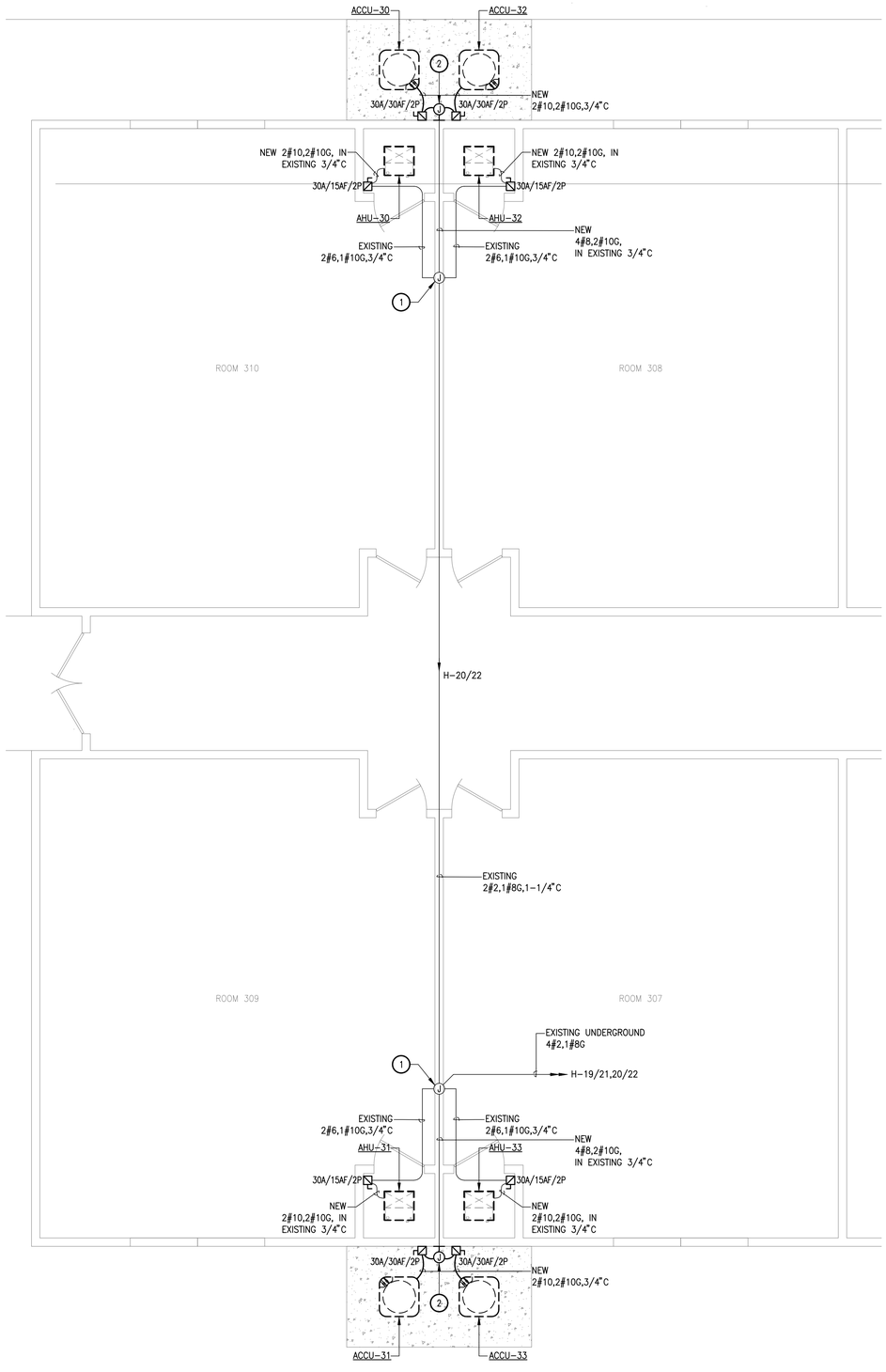
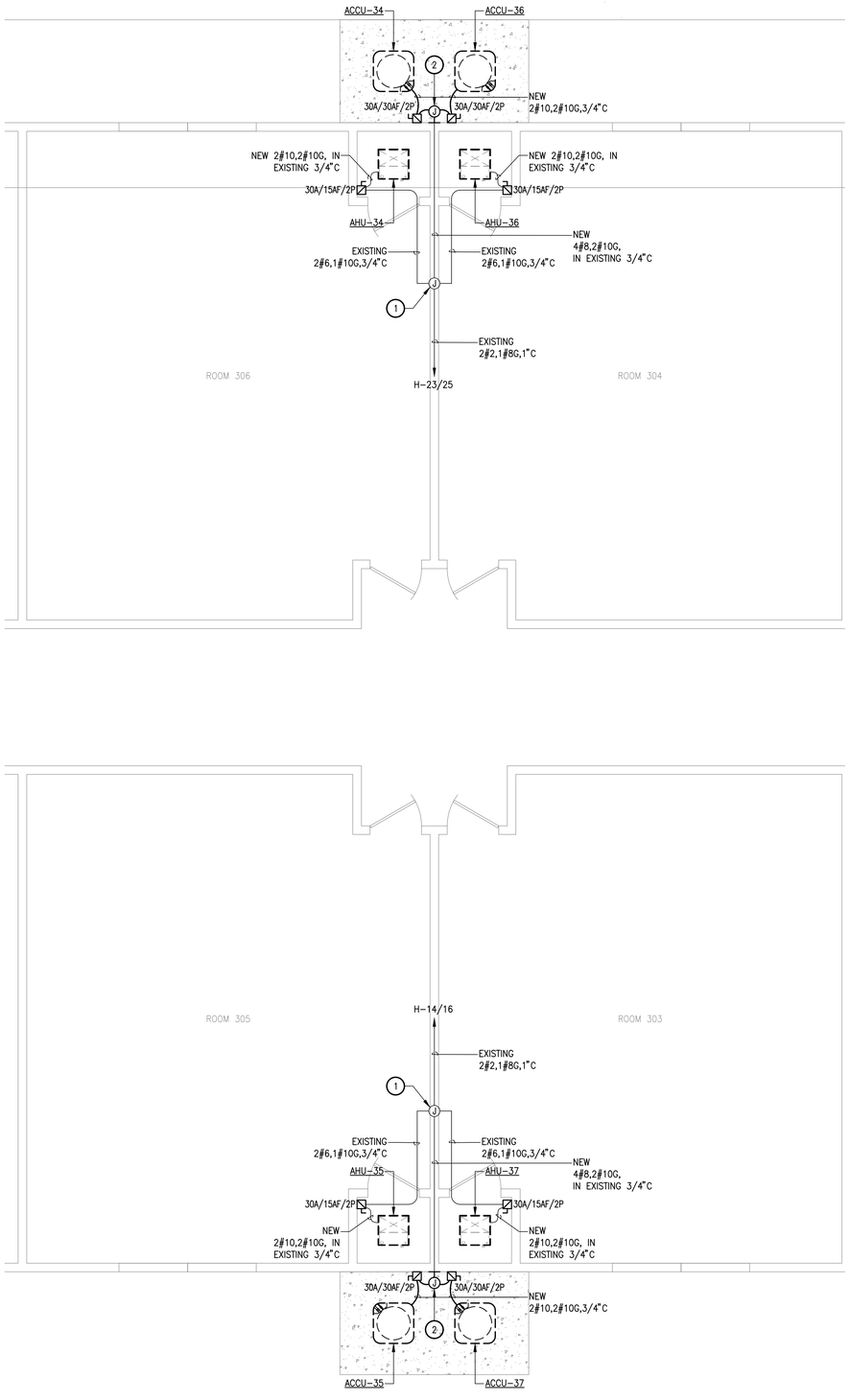
Printed Date: 6/14/2018 2:13:48 PM



01 ELECTRICAL POWER PLAN - TYPICAL CLASSROOM LAYOUT 'A'

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



02 ELECTRICAL POWER PLAN - TYPICAL CLASSROOM LAYOUT 'B'

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

GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.
B. ALL HVAC EQUIPMENT DISCONNECTING MEANS SHALL BE EQUIPPED WITH FUSES SIZED PER NEC 2017.

KEY NOTES:

1. FURNISH AND INSTALL TERMINAL BLOCK IN EXISTING 10"X10"X6" JUNCTION BOX. EXISTING BRANCH FEEDERS AND TAP CONDUCTORS SHALL BE CONNECTED TO NEW TERMINAL BLOCK FOR ADEQUATE TAPPING OF FEEDERS.
2. FURNISH AND INSTALL NEW 6"X6"X4" GALVANIZED WEATHER TIGHT JUNCTION BOX AT EXISTING CONDUIT WALL PENETRATION.

LEGEND

- EXISTING HVAC EQUIPMENT
- EXISTING ELECTRICAL EQUIPMENT
- PROPOSED HVAC EQUIPMENT
- PROPOSED ELECTRICAL EQUIPMENT
- PROPOSED ELECTRICAL CONDUIT

JOHN H. SHARY
JOHN H. SHARY ELEMENTARY SCHOOL
HVAC IMPROVEMENTS
2300 N. GLASSCOCK RD., MISSION, TX 78574

HALFF
5000 WEST MILITARY, SUITE 100
MAILING ADDRESS: P.O. BOX 8503
TEL: (956) 664-0288
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TBPE FIRM #F-312

Revision No.	Date	Description

STATE OF TEXAS
GABRIEL BENAVIDES JR.
119255
LICENSED
PROFESSIONAL ENGINEER
6-14-2018

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

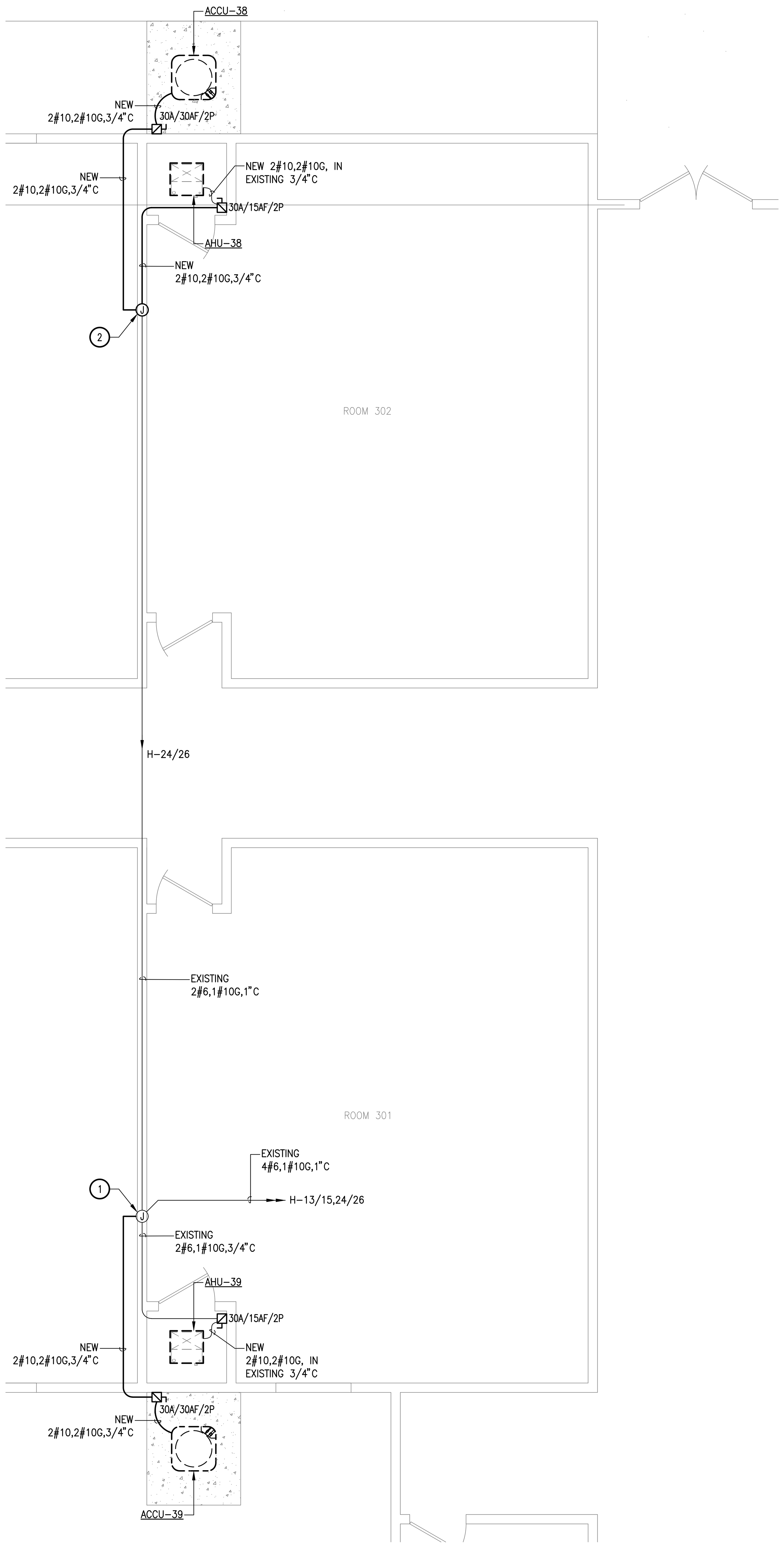
Sheet Title

ELECTRICAL POWER PLAN

E102

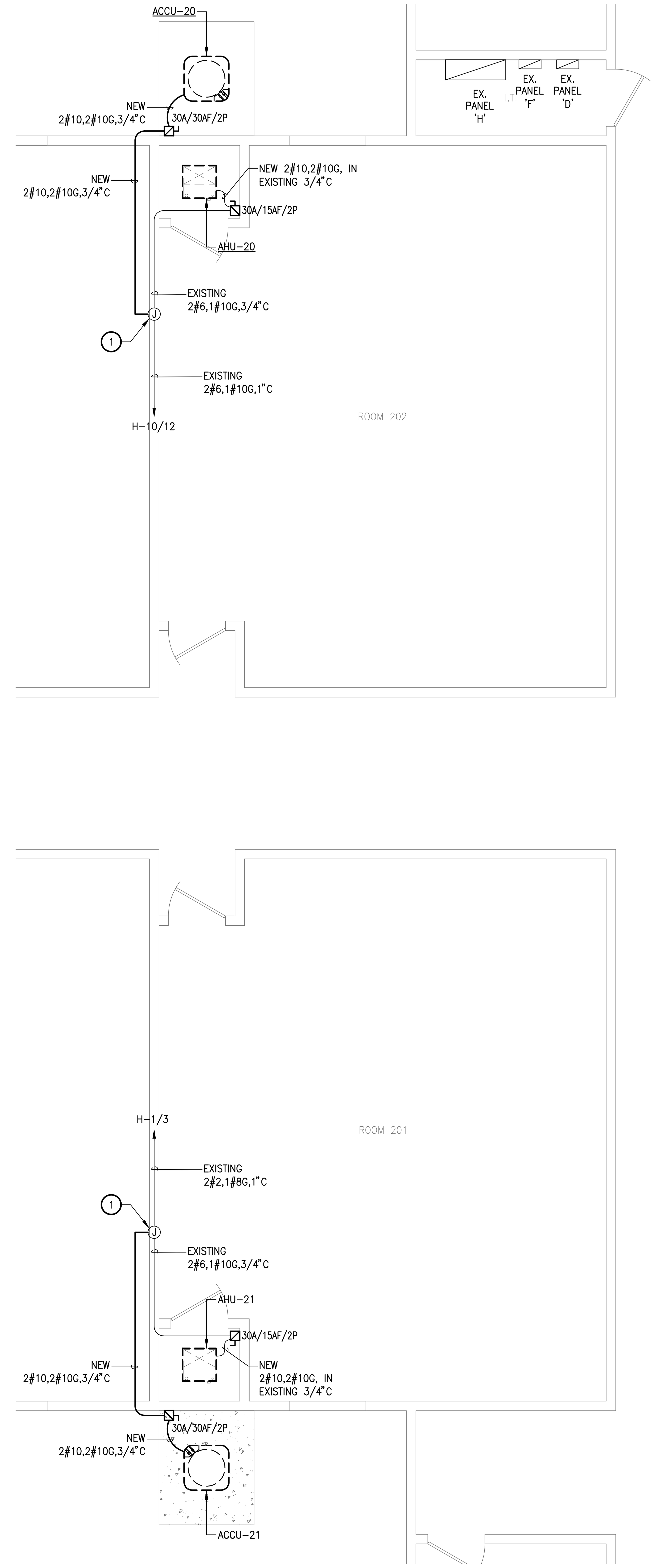
Sheet Number

File Name: \\mcoavo\mco_vol1\31000s\31981\WA05\CADD\E102-PW-31981.005.dwg
Current Tab (Layout): E102 ELECTRICAL POWER PLAN User: AH2753
Printed Date: 6/14/2018 2:14:03 PM



01 ELECTRICAL POWER PLAN - TYPICAL CLASSROOM LAYOUT 'C'

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



02 ELECTRICAL POWER PLAN - TYPICAL CLASSROOM LAYOUT 'D'

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

GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.
B. ALL HVAC EQUIPMENT DISCONNECTING MEANS SHALL BE EQUIPPED WITH FUSES SIZED PER NEC 2017.

KEY NOTES:

1. FURNISH AND INSTALL TERMINAL BLOCK IN EXISTING 10"X10"X6" JUNCTION BOX. EXISTING BRANCH FEEDERS AND TAP CONDUCTORS SHALL BE CONNECTED TO NEW TERMINAL BLOCK FOR ADEQUATE TAPPING OF FEEDERS.
2. FURNISH AND INSTALL NEW 10"X10"X6" JUNCTION BOX WITH TERMINAL BLOCK ABOVE CEILING.

LEGEND

- EXISTING HVAC EQUIPMENT
- EXISTING ELECTRICAL EQUIPMENT
- PROPOSED HVAC EQUIPMENT
- PROPOSED ELECTRICAL EQUIPMENT
- PROPOSED ELECTRICAL CONDUIT

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Revision No.	Date	Description

STATE OF TEXAS
GABRIEL BENAVIDES JR.
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LICENSED
PROFESSIONAL ENGINEER
6-14-2018

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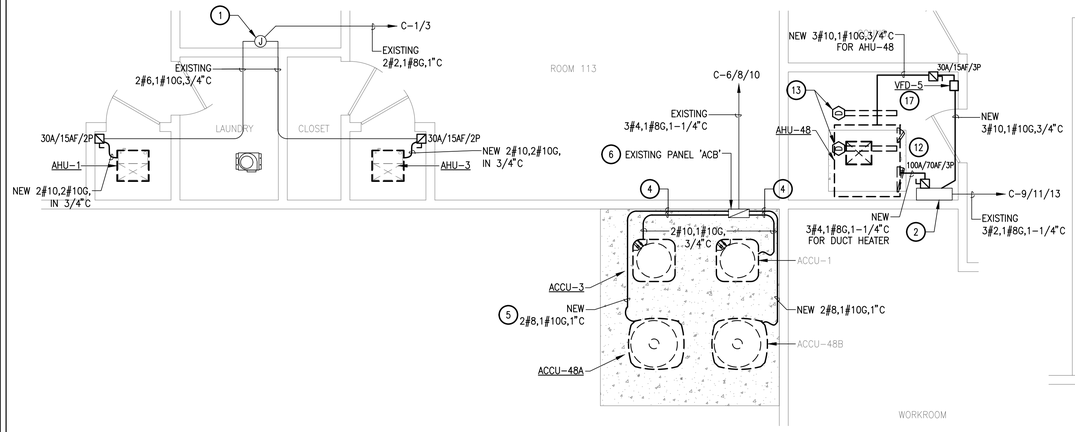
Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title
ELECTRICAL POWER PLAN

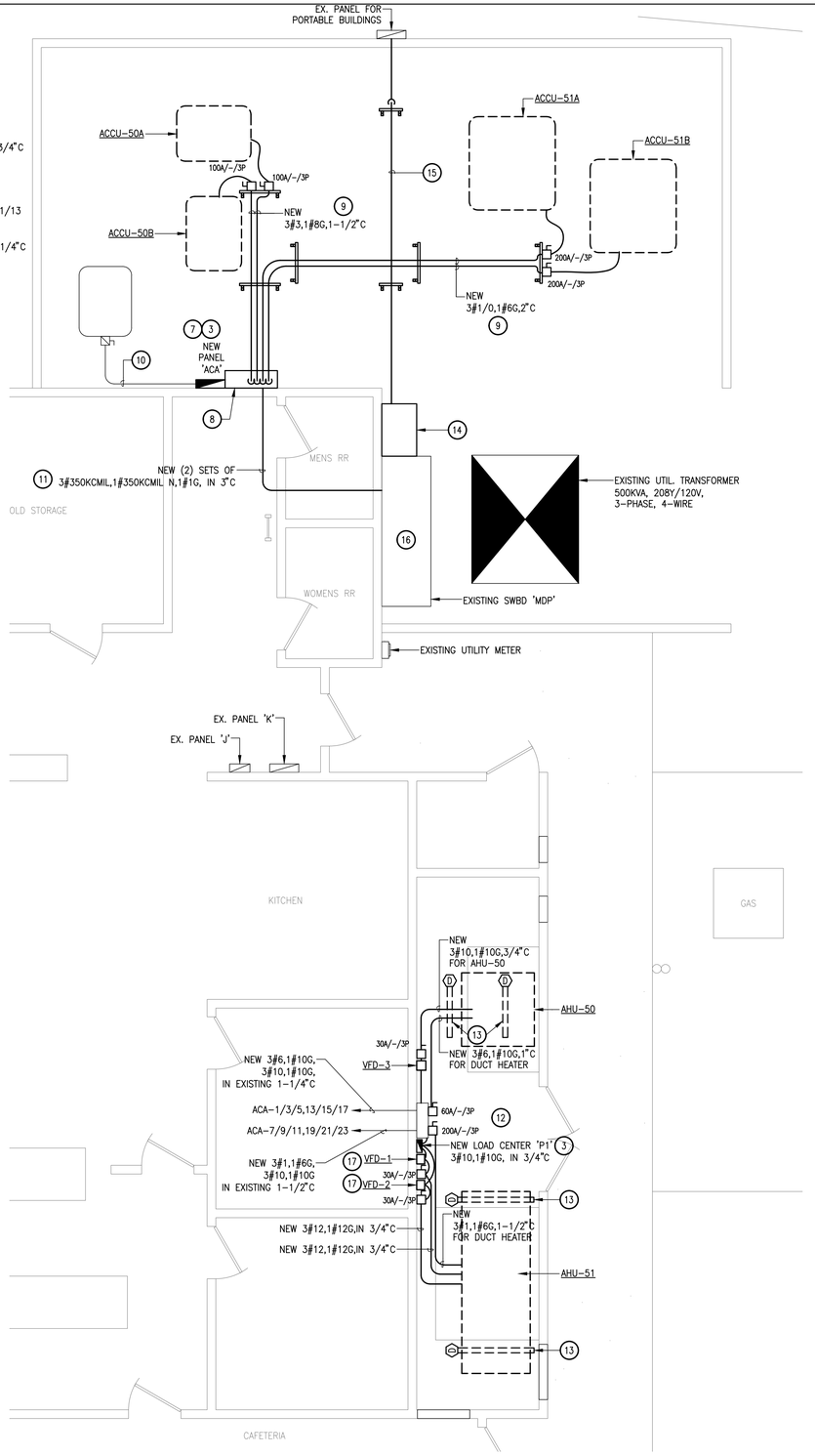
E103
Sheet Number

File Name: \\mcasvs\mca_vol1\31000s\31981\WA05\CADD\E103-PW-31981.005.dwg
Current Tab (Layout): E103 ELECTRICAL POWER PLAN User: AH2753
Printed Date: 6/14/2018 2:14:19 PM



02 ELECTRICAL POWER PLAN - NORTH WEST MECHANICAL YARD

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



01 ELECTRICAL POWER PLAN - SOUTH WEST MECHANICAL YARD

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

03 ELECTRICAL POWER PLAN - SOUTH MECHANICAL YARD & SOUTH MECHANICAL ROOM

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

GENERAL NOTES:

A. REFER TO E001 FOR ELECTRICAL GENERAL NOTES.
B. ALL HVAC EQUIPMENT DISCONNECTING MEANS SHALL BE EQUIPPED WITH FUSES SIZED PER NEC 2017.

KEY NOTES:

1. FURNISH AND INSTALL TERMINAL BLOCK IN EXISTING 10"X10"X6" JUNCTION BOX. EXISTING BRANCH FEEDERS AND TAP CONDUCTORS SHALL BE CONNECTED TO NEW TERMINAL BLOCK FOR ADEQUATE TAPPING OF FEEDERS.
2. FURNISH AND INSTALL TERMINAL BLOCK IN EXISTING WIREWAY. EXISTING BRANCH FEEDERS AND NEW TAP CONDUCTORS SHALL BE CONNECTED TO NEW TERMINAL BLOCK FOR ADEQUATE TAPPING OF FEEDERS.
3. PROPOSED NEW PANELBOARD. REFER TO PANEL SCHEDULES FOR NEW CIRCUITS.
4. INSTALL CONDUIT SURFACE TO THE EXTERIOR WALL. PROVIDE WITH MOUNTING HARDWARE AND FASTENERS OF GALVANIZED MATERIAL.
5. FURNISH AND INSTALL CONDUIT SUPPORT TYPE CADDY#PSF6C WITH UNISTRUT CONDUIT CLAMP AT EVERY 5'-0". HARDWARE SHALL BE OF GALVANIZED MATERIAL. CONDUIT SHALL NOT BE INSTALLED DIRECTLY ON GROUND.
6. FURNISH AND INSTALL A NEW 10"X10"X24" WIREWAY WITH TERMINAL BLOCK.
7. NEW PANEL 'ACA' SHALL BE INSTALLED NORTH OF EXISTING LOCATION TO BE CLEAR OF HVAC PIPING WALL PENETRATION.
8. FURNISH AND INSTALL A 12"X12"X36" WIREWAY FROM NEW PANEL 'ACA' TO EXISTING CONDUIT WALL PENETRATIONS. FIELD VERIFY HEIGHT OF CONDUIT WALL PENETRATIONS FOR WIREWAY INSTALLATION HEIGHT.
9. CONDUIT FOR CONDENSING UNITS SHALL BE INSTALLED AT A MINIMUM OF 7'-0" HEIGHT ON EQUIPMENT RACK SUPPORTS.
10. RECONNECT EXISTING CONDUIT AND CONDUCTORS FOR EXISTING CONDENSING UNIT TO NEW PANEL 'ACA'.
11. NEW CONDUIT FOR PANEL 'ACA' SHALL BE INSTALLED ALONG THE SAME ROUTE AS DEMOLISHED CONDUIT. CONTRACTOR SHALL FIELD VERIFY THIS ROUTING.
12. DISCONNECT SWITCHES SHALL NOT BE USED AS JUNCTION BOXES AND/OR TAP TERMINATION. EACH DISCONNECT SWITCH SHALL CONTAIN ITS DEDICATED RACEWAY.
13. FURNISH AND INSTALL DUCT SMOKE DETECTORS ON BOTH SUPPLY AND RETURN SIDES OF THE UNIT. PROVIDE CONDUIT AND WIRING AND CONNECT TO EXISTING FA SYSTEM.
14. FURNISH AND INSTALL (2) NEW 36"X36"X24" JUNCTION BOXES ADJACENT TO SWITCHBOARD 'MDP'. ROUTE NEW FEEDERS FOR PANEL 'H' THROUGH JUNCTION BOXES AND INTO BUILDING AT PLENUM SPACE.
15. FURNISH AND INSTALL NEW 3#350KCMIL,1#350KCMIL N, 1#2G, IN 3"C FROM SWITCHBOARD 'MDP' TO PORTABLE BUILDINGS PANEL.
16. CONTRACTOR SHALL FURNISH AND INSTALL WEATHER PROOF COVERS FOR ALL REMAINING CONDUIT OPENINGS AT SWITCHBOARD 'MDP'. CONFIRM WITH SWITCHBOARD MANUFACTURER REQUIREMENTS TO MAINTAIN A NEMA 3R WEATHER TIGHT RATING.
17. REFER TO MECHANICAL DRAWINGS FOR FAN STARTER SPECIFICATIONS. INSTALLATION OF STARTERS BY DIVISION 26.

LEGEND

- EXISTING HVAC EQUIPMENT
- EXISTING ELECTRICAL EQUIPMENT
- PROPOSED HVAC EQUIPMENT
- PROPOSED ELECTRICAL EQUIPMENT
- PROPOSED ELECTRICAL CONDUIT

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TBPELS FIRM #F-10118

Revision No.	Date	Description

STATE OF TEXAS
GABRIEL BENAVIDES JR.
119255
LICENSED PROFESSIONAL ENGINEER
6-14-2018

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Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title
ELECTRICAL POWER PLAN

E104
Sheet Number

File Name: \\mcoavo\mco_vol1\31000s\31981\WA05\CADD\E104-PW-31981.005.dwg
Current Tab (Layout): E104 ELECTRICAL POWER PLAN User: AH2753
Printed Date: 6/14/2018 2:14:42 PM

EXISTING SWITCHBOARD 'MDP'

LOCATION: EXTERIOR — VOLTS: 208 — A.I.C. RATING: 65,000
FED FROM: UTILITY — PHASES: 3 — MAINS TYPE: M.C.B.
MOUNTING: PAD MOUNTED — WIRES: 4 — MAINS RATING: 3000A
ENCLOSURE: NEMA 3R — MCB RATING: 3000A

CKT	CIRCUIT DESCRIPTION	# OF POLES	TRIP RATING	LOAD	REMARKS
1	PANEL 'J'	3	225A	---	NOTE 1
2	PORTABLE BUILDINGS	3	400A	---	NOTE 1
3	PANEL 'ACA'	3	225A	83147	
4	PANEL 'D'	3	225A	---	NOTE 1
5	PANEL 'A'	3	225A	---	NOTE 1
6	PANEL 'G'	3	225A	---	NOTE 1
7	PANEL 'H'	3	600A	391373	
8	PANEL 'K'	3	1000A	---	NOTE 1
9	EXISTING LOAD	3	60A	---	NOTE 1
10	PAVILLION	3	300A	---	NOTE 1
11	EXISTING LOAD	3	300A	---	NOTE 1
12	PANEL 'B'	3	300A	---	NOTE 1
13	PANEL 'C'	3	600A	202653	

NET CALCULATED DEMAND = 1095210 VA
@208Y/120V,3PH = 3040.00 A

NOTES:
1. INFORMATION FOR THIS PANEL IS NOT PART OF THIS SCOPE OF WORK. TOTAL CALCULATED LOAD IS BASED ON EXISTING FEEDER TOTAL CAPACITY. CALCULATED LOAD IS FOR LOAD ESTIMATE COMPARISSON PURPOSES ONLY.

MODIFIED SWITCHBOARD 'MDP'

LOCATION: EXTERIOR — VOLTS: 208 — A.I.C. RATING: 65,000
FED FROM: UTILITY — PHASES: 3 — MAINS TYPE: M.C.B.
MOUNTING: PAD MOUNTED — WIRES: 4 — MAINS RATING: 3000A
ENCLOSURE: NEMA 3R — MCB RATING: 3000A

CKT	CIRCUIT DESCRIPTION	# OF POLES	TRIP RATING	LOAD	REMARKS
1	PANEL 'J'	3	225A	---	NOTE 1
2	PORTABLE BUILDINGS	3	400A	---	NOTE 1
3	PANEL 'ACA'	3	600A	200260	NOTE 2
4	PANEL 'D'	3	225A	---	NOTE 1
5	PANEL 'A'	3	225A	---	NOTE 1
6	PANEL 'G'	3	225A	---	NOTE 1
7	PANEL 'H'	3	1000A LSI	210226	NOTE 2
8	PANEL 'K'	3	1000A	---	NOTE 1
9	EXISTING LOAD	3	60A	---	NOTE 1
10	PAVILLION	3	300A	---	NOTE 1
11	EXISTING LOAD	3	300A	---	NOTE 1
12	PANEL 'B'	3	300A	---	NOTE 1
13	PANEL 'C'	3	600A	147691	NOTE 2

NET CALCULATED DEMAND = 976213 VA
@208Y/120V,3PH = 2709.70 A

NOTES:
1. INFORMATION FOR THIS PANEL IS NOT PART OF THIS SCOPE OF WORK. TOTAL CALCULATED LOAD IS BASED ON EXISTING FEEDER TOTAL CAPACITY. CALCULATED LOAD IS FOR LOAD ESTIMATE COMPARISSON PURPOSES ONLY.
2. CONTRACTOR SHALL FURNISH AND INSTALL NEW BREAKER IN EXISTING SWITCHBOARD. IF NEW BREAKER FRAME DOES NOT FIT IN EXISTING LOCATION, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HARDWARE NEEDED TO INSTALL IN ANOTHER SPACE WITHIN SWITCHBOARD 'MDP'. BREAKER SHALL MATCH EXISTING SWITCHBOARD A.I.C. RATING.

ELECTRICAL LOAD ESTIMATE

EXISTING HVAC ELECTRICAL LOAD

PANEL 'ACA' = 83147 VA
PANEL 'C' = 202653 VA
PANEL 'H' = 391373 VA

NET CALCULATED DEMAND = 677173 VA
@ 208Y/120V 3 PH = 1880 A

REVISED HVAC ELECTRICAL LOAD

PANEL 'ACA' = 200260 VA
PANEL 'C' = 147691 VA
PANEL 'H' = 210226 VA

NET CALCULATED DEMAND = 558176 VA
@ 208Y/120V 3 PH = 1549 A

TOTAL LOAD SUMMARY

EXISTING SERVICE ENTRANCE CAPACITY OF (8) SETS OF 500MCM: 3040 A

EXISTING HVAC LOAD DECREASED BY: 118997 VA
330 A

THEREFORE, IT IS ESTIMATED THAT EXISTING ELECTRICAL SERVICE IS ADEQUATE.

EXISTING PANELBOARD 'H'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
1200A MAIN LUGS ONLY
BUSES: 1200 A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: IT ROOM
MOUNTING: SURFACE
Isc = 22,000 A RMS SYM AVAILABLE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	5366	AHU & ACCU-21	50/2	1	A	2	100/2	AHU & ACCU-17, AHU & ACCU-19	0	0	10733
0	0	5366	"	–	3	B	4	–	"	0	0	10733
0	0	10733	AHU & ACCU-13, AHU & ACCU-15	100/2	5	C	6	100/2	AHU & ACCU-12, AHU & ACCU-14	0	0	10733
0	0	10733	"	–	7	A	8	–	"	0	0	10733
0	0	10733	AHU & ACCU-16, AHU & ACCU-18	100/2	9	B	10	50/2	AHU & ACCU-20	0	0	5366
0	0	10733	"	–	11	C	12	–	"	0	0	5366
0	0	5366	AHU & ACCU-39	50/2	13	A	14	100/2	AHU & ACCU-35, AHU & ACCU-37	0	0	10733
0	0	5366	"	–	15	B	16	–	"	0	0	10733
0	0		SPACE	–	17	C	18	–	SPACE	0	0	
0	0	10733	AHU & ACCU-31, AHU & ACCU-33	100/2	19	A	20	100/2	AHU & ACCU-30, AHU & ACCU-32	0	0	10733
0	0	10733	"	–	21	B	22	–	"	0	0	10733
0	0	10733	AHU & ACCU-34, AHU & ACCU-36	100/2	23	C	24	50/2	AHU & ACCU-38	0	0	5366
0	0	10733	"	–	25	A	26	–	"	0	0	5366
0	0	10733	AHU & ACCU-23, AHU & ACCU-25	100/2	27	B	28	100/2	AHU & ACCU-22, AHU & ACCU-24	0	0	10733
0	0	10733	"	–	29	C	30	–	"	0	0	10733
0	0	10733	AHU & ACCU-27, AHU & ACCU-29	100/2	31	A	32	100/2	AHU & ACCU-26, AHU & ACCU-28	0	0	10733
0	0	10733	"	–	33	B	34	–	"	0	0	10733
0	0		SPACE	–	35	C	36	–	SPACE	0	0	
0	0	10733	AHU & ACCU-41, AHU & ACCU-43	100/2	37	A	38	100/2	AHU & ACCU-45, AHU & ACCU-47	0	0	10733
0	0	10733	"	–	39	B	40	–	"	0	0	10733
0	0	10733	AHU & ACCU-40, AHU & ACCU-42	100/2	41	C	42	100/2	AHU & ACCU-44, AHU & ACCU-46	0	0	10733
0	0	10733	"	–	43	A	44	–	"	0	0	10733
0	0		SPACE	–	45	B	46	30/2	AC CUSTODIAN ROOM	0	0	2496
0	0		SPACE	–	47	C	48	–	"	0	0	2496
0	0		SPACE	–	49	A	50	–	SPACE	0	0	
0	0		SPACE	–	51	B	52	–	SPACE	0	0	
0	0		SPACE	–	53	C	54	–	SPACE	0	0	

VA:L (LIGHTING) 0 CONNECTED — 0 DEMAND
VA:R (RECEPTACLES) 0 CONNECTED — 0 DEMAND
VA:O (OTHER) 455770 CONNECTED — 455770 DEMAND
VA: TOTAL 455770 CONNECTED — 455770 DEMAND
AMPS: TOTAL 1265 CONNECTED — 1265 DEMAND

L	R	O		TOTAL			
0	0	155626	VA CONNECTED TO A PHASE	155626	VA =	1297	AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	0	136656	VA CONNECTED TO B PHASE	136656	VA =	1139	AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	99091	VA CONNECTED TO C PHASE	99091	VA =	826	AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	0	391373	TOTAL	391373	VA		

MODIFIED PANELBOARD 'H'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
1200A MAIN LUGS ONLY
BUSES: 1200 A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: IT ROOM
MOUNTING: SURFACE
Isc = 22,000 A RMS SYM AVAILABLE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	2839	AHU & ACCU-21	50/2	1	A	2	100/2	AHU & ACCU-17, AHU & ACCU-19	0	0	5678
0	0	2839	"	–	3	B	4	–	"	0	0	5678
0	0	5678	AHU & ACCU-13, AHU & ACCU-15	100/2	5	C	6	100/2	AHU & ACCU-12, AHU & ACCU-14	0	0	5678
0	0	5678	"	–	7	A	8	–	"	0	0	5678
0	0	5678	AHU & ACCU-16, AHU & ACCU-18	100/2	9	B	10	50/2	AHU & ACCU-20	0	0	3245
0	0	5678	"	–	11	C	12	–	"	0	0	3245
0	0	2839	AHU & ACCU-39	50/2	13	A	14	100/2	AHU & ACCU-35, AHU & ACCU-37	0	0	5678
0	0	2839	"	–	15	B	16	–	"	0	0	5678
0	0		SPACE	–	17	C	18	–	SPACE	0	0	
0	0	5678	AHU & ACCU-31, AHU & ACCU-33	100/2	19	A	20	100/2	AHU & ACCU-30, AHU & ACCU-32	0	0	5678
0	0	5678	"	–	21	B	22	–	"	0	0	5678
0	0	5678	AHU & ACCU-34, AHU & ACCU-36	100/2	23	C	24	50/2	AHU & ACCU-38	0	0	2839
0	0	5678	"	–	25	A	26	–	"	0	0	2839
0	0	5678	AHU & ACCU-23, AHU & ACCU-25	100/2	27	B	28	100/2	AHU & ACCU-22, AHU & ACCU-24	0	0	5678
0	0	5678	"	–	29	C	30	–	"	0	0	5678
0	0	5678	AHU & ACCU-27, AHU & ACCU-29	100/2	31	A	32	100/2	AHU & ACCU-26, AHU & ACCU-28	0	0	5678
0	0	5678	"	–	33	B	34	–	"	0	0	5678
0	0		SPACE	–	35	C	36	–	SPACE	0	0	
0	0	5678	AHU & ACCU-41, AHU & ACCU-43	100/2	37	A	38	100/2	AHU & ACCU-45, AHU & ACCU-47	0	0	5678
0	0	5678	"	–	39	B	40	–	"	0	0	5678
0	0	5678	AHU & ACCU-40, AHU & ACCU-42	100/2	41	C	42	100/2	AHU & ACCU-44, AHU & ACCU-46	0	0	5678
0	0	5678	"	–	43	A	44	–	"	0	0	5678
0	0		SPACE	–	45	B	46	30/2	AC CUSTODIAN ROOM	0	0	2496
0	0		SPACE	–	47	C	48	–	"	0	0	2496
0	0		SPACE	–	49	A	50	–	SPACE	0	0	
0	0		SPACE	–	51	B	52	–	SPACE	0	0	
0	0		SPACE	–	53	C	54	–	SPACE	0	0	

VA:L (LIGHTING) 0 CONNECTED — 0 DEMAND
VA:R (RECEPTACLES) 0 CONNECTED — 0 DEMAND
VA:O (OTHER) 244296 CONNECTED — 244296 DEMAND
VA: TOTAL 244296 CONNECTED — 244296 DEMAND
AMPS: TOTAL 678 CONNECTED — 678 DEMAND

L	R	O		TOTAL			
0	0	82337	VA CONNECTED TO A PHASE	82337	VA =	686	AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	0	73882	VA CONNECTED TO B PHASE	73882	VA =	616	AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	54007	VA CONNECTED TO C PHASE	54007	VA =	450	AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	0	210226	TOTAL	210226	VA		

EXISTING PANELBOARD 'ACA'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
225A MAIN LUGS ONLY
BUSES: 225A; NEUTRAL – 100%; EQUIPMENT GROUND
LOCATION: EXTERIOR SOUTH MECHANICAL YARD
MOUNTING: SURFACE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0		SPACE	–	1	A	2	–	SPACE	0	0	
0	0		SPACE	–	3	B	4	–	SPACE	0	0	
0	0		SPACE	–	5	C	6	–	SPACE	0	0	
0	0	6207	AHU-50 & ELECTRIC DUCT HEATER	100/3	7	A	8	50/3	ACCU-50A	0	0	0
0	0	6207	"	–	9	B	10	–	"	0	0	0
0	0	6207	"	–	11	C	12	–	"	0	0	0
0	0	7699	CONDENSING UNIT (WALK-IN COOLERS)	80/3	13	A	14	50/3	ACCU-50B	0	0	0
0	0	7699	"	–	15	B	16	–	"	0	0	0
0	0	7699	"	–	17	C	18	–	"	0	0	0
					19	A	20	150/3	AHU-51 & ELECTRIC DUCT HEATER	0	0	13810
					21	B	22	–		0	0	13810
					23	C	24	–		0	0	13810

VA:L (LIGHTING) 0 CONNECTED — 0 DEMAND
VA:R (RECEPTACLES) 0 CONNECTED — 0 DEMAND
VA:O (OTHER) 83147 CONNECTED — 83147 DEMAND
VA: TOTAL 83147 CONNECTED — 83147 DEMAND
AMPS: TOTAL 231 CONNECTED — 231 DEMAND

L	R	O		TOTAL			
0	0	27716	VA CONNECTED TO A PHASE	27716	VA =	231	AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	0	27716	VA CONNECTED TO B PHASE	27716	VA =	231	AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	27716	VA CONNECTED TO C PHASE	27716	VA =	231	AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	0	83147	TOTAL	83147	VA		

NEW PANELBOARD 'ACA'

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE
600A MAIN LUGS ONLY
BUSES: 600 A; NEUTRAL 100%; EQUIPMENT GROUND
LOCATION: EXTERIOR SOUTH MECHANICAL YARD
MOUNTING: SURFACE, NEMA 3R
Isc = 35,000 A RMS SYM AVAILABLE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	2009	AHU-50	25/3	1	A	2	90/3	ACCU-50A	0	0	7843
0	0	2009	"	–	3	B	4	–	"	0	0	7843
0	0	2009	"	–	5	C	6	–	"	0	0	7843
0	0	2165	LOAD CENTER 'P1'	30/3	7	A	8	90/3	ACCU-50B	0	0	7843
0	0	2165	"	–	9	B	10	–	"	0	0	7843
0	0	2165	"	–	11	C	12	–	"	0	0	7843
0	0	5000	EDH-3	60/3	13	A	14	125/3	ACCU-51A	0	0	11067
0	0	5000	"	–	15	B	16	–	"	0	0	11067
0	0	5000	"	–	17	C	18	–	"	0	0	11067
0	0	12000	EDH-4	125/3	19	A	20	125/3	ACCU-51B	0	0	11067
0	0	12000	"	–	21	B	22	–	"	0	0	11067
0	0	12000	"	–	23	C	24	–	"	0	0	11067
0	0	7699	CONDENSING UNIT (WALK-IN COOLERS)	80/3	25	A	26	20/1	GFCI RECEPTACLE	0	180	
0	0	7699	"	–	27	B	28		SPACE	0	0	
0	0	7699	"	–	29	C	30		SPACE	0	0	

VA:L (LIGHTING) 0 CONNECTED — 0 DEMAND
VA:R (RECEPTACLES) 180 CONNECTED — 180 DEMAND
VA:O (OTHER) 200080 CONNECTED — 200080 DEMAND
VA: TOTAL 200260 CONNECTED — 200260 DEMAND
AMPS: TOTAL 556 CONNECTED — 556 DEMAND

L	R	O		TOTAL			
0	180	66693	VA CONNECTED TO A PHASE	66873	VA =	557	AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	0	66693	VA CONNECTED TO B PHASE	66693	VA =	556	AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	66693	VA CONNECTED TO C PHASE	66693	VA =	556	AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	180	200080	TOTAL	200260	VA		

GENERAL NOTES:

A. ALL BREAKER UNUSED SPACES SHALL BE PROVIDED WITH BREAKER SPACE COVERS.

LEGEND

(hatched box) EXISTING CIRCUIT BREAKER TO BE REPLACED. UPDATE CIRCUIT DIRECTORY. NEW KAIC RATING SHALL MATCH EXISTING PANELBOARD'S KAIC RATING.

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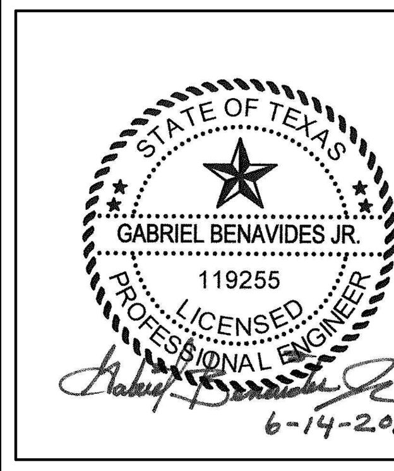
Revision No.	Date	Description



Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title
ELECTRICAL SCHEDULES I

E201
Sheet Number

File Name: \\mcasvc\mca_vol1\1000s\31981\WA05\CADD\E201-SC-31981.005.dwg
Current Tab (Layout): E201 ELECTRICAL SCHEDULES I User: AH2753
Printed Date: 6/14/2018 2:14:53 PM

EXISTING PANELBOARD 'C'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
600A MAIN LUGS ONLY
BUSES: 600A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: EAST (FRONT) MECHANICAL ROOM
MOUNTING: SURFACE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	10733	AHU-1, AHU-3	100/2	1	A	2	50/2	AHU-11	0	0	5366
0	0	10733	"	–	3	B	4	–	"	0	0	5366
0	0	10733	AHU & ACCU-5, AHU & ACCU-6	100/2	5	C	6	80/3	PANEL 'ACB'	0	0	7332
0	0	10733	"	–	7	A	8	–	"	0	0	3536
0	0	7566	AHU-48 & ELECTRIC DUCT HEATER	100/3	9	B	10	–	"	0	0	3796
0	0	7566	"	–	11	C	12	80/3	PANEL 'ACC'	0	0	7592
0	0	7566	"	–	13	A	14	–	"	0	180	4368
0	0	8902	AHU-49 & ELECTRIC DUCT HEATER	100/3	15	B	16	–	"	0	0	3224
0	0	8902	"	–	17	C	18	100/2	AHU & ACCU-7, AHU & ACCU-8	0	0	10733
0	0	8902	"	–	19	A	20	–	"	0	0	10733
0	0	10733	AHU & ACCU-9, AHU & ACCU-10	100/2	21	B	22	100/2	AHU & ACCU-2, AHU & ACCU-4	0	0	10733
0	0	10733	"	–	23	C	24	–	"	0	0	10733
0	540		COPY MACHINE	20/2	25	A	26	20/2	COPY MACHINE	0	540	
0	540		"	–	27	B	28	–	"	0	540	
1000	0		MARQUEE LIGHT	20/1	29	C	30	30/1	MARQUEE LIGHTS	2000	0	

VA:L (LIGHTING)	3000	CONNECTED	3750	DEMAND
VA:R (RECEPTACLES)	2340	CONNECTED	2340	DEMAND
VA:O (OTHER)	197313	CONNECTED	197313	DEMAND
VA: TOTAL	202653	CONNECTED	203403	DEMAND
AMPS: TOTAL	563	CONNECTED	565	DEMAND

L	R	O		TOTAL		
0	1260	61937	VA CONNECTED TO A PHASE	63197	VA =	527 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	1080	61053	VA CONNECTED TO B PHASE	62133	VA =	518 AMPS CONNECTED TO B PHASE @ 120 VOLTS
3000	0	74323	VA CONNECTED TO C PHASE	77323	VA =	644 AMPS CONNECTED TO C PHASE @ 120 VOLTS
3000	2340	197313	TOTAL	202653	VA	

EXISTING PANELBOARD 'ACB'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
100A MAIN LUGS ONLY
BUSES: 100A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: EXTERIOR NORTH WEST MECHANICAL YARD
MOUNTING: SURFACE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	1768	ACCU-1	50/2	1	A	2	50/2	ACCU-48B	0	0	1768
0	0	1768	"	–	3	B	4	–	"	0	0	1768
0	0	1612	ACCU-3	50/2	5	C	6	50/2	ACCU-48A	0	0	2184
0	0	1612	"	–	7	A	8	–	"	0	0	2184
0	0		SPACE		9	B	10		SPACE	0	0	
0	0		SPACE		11	C	12		SPACE	0	0	
0	0		SPACE		13	A	14		SPACE	0	0	
0	0		SPACE		15	B	16		SPACE	0	0	
0	0		SPACE		17	C	18		SPACE	0	0	

VA:L (LIGHTING)	0	CONNECTED	0	DEMAND
VA:R (RECEPTACLES)	0	CONNECTED	0	DEMAND
VA:O (OTHER)	14664	CONNECTED	14664	DEMAND
VA: TOTAL	14664	CONNECTED	14664	DEMAND
AMPS: TOTAL	41	CONNECTED	41	DEMAND

L	R	O		TOTAL		
0	0	7332	VA CONNECTED TO A PHASE	7332	VA =	61 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	0	3536	VA CONNECTED TO B PHASE	3536	VA =	29 AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	3796	VA CONNECTED TO C PHASE	3796	VA =	32 AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	0	14664	TOTAL	14664	VA	

EXISTING PANELBOARD 'ACC'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
100A MAIN LUGS ONLY
BUSES: 100 A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: EXTERIOR SOUTH WEST MECHANICAL YARD
MOUNTING: SURFACE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	1456	ACCU-11	50/2	1	A	2	40/2	ACCU-49A	0	0	2912
0	0	1456	"	–	3	B	4	–	"	0	0	2912
0	0	3224	ACCU-49B	60/2	5	C	6	60/3	EXISTING LOAD (OFF)	0	0	
0	0	3224	"	–	7	A	8	–	"	0	0	
0	180		EXISTING LOAD	20/1	9	B	10	–	"	0	0	
0	0		SPACE		11	C	12		SPACE	0	0	
0	0		SPACE		13	A	14		SPACE	0	0	
0	0		SPACE		15	B	16		SPACE	0	0	
0	0		SPACE		17	C	18		SPACE	0	0	

VA:L (LIGHTING)	0	CONNECTED	0	DEMAND
VA:R (RECEPTACLES)	180	CONNECTED	180	DEMAND
VA:O (OTHER)	15184	CONNECTED	15184	DEMAND
VA: TOTAL	15364	CONNECTED	15364	DEMAND
AMPS: TOTAL	43	CONNECTED	43	DEMAND

L	R	O		TOTAL		
0	0	7592	VA CONNECTED TO A PHASE	7592	VA =	63 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	180	4368	VA CONNECTED TO B PHASE	4548	VA =	38 AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	3224	VA CONNECTED TO C PHASE	3224	VA =	27 AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	180	15184	TOTAL	15364	VA	

NEW LOAD CENTER 'P1'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
30A MAIN BREAKER
BUSES: MAIN – 50A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: KITCHEN MECHANICAL ROOM
MOUNTING: SURFACE, NEMA 1

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	1083	AHU-51 FAN 1	20/3	1	A	2	20/3	AHU-51 FAN 2	0	0	1083
0	0	1083	"	–	3	B	4	–	"	0	0	1083
0	0	1083	"	–	5	C	6	–	"	0	0	1083
0	0		SPACE		7	A	8		SPACE	0	0	
0	0		SPACE		9	B	10		SPACE	0	0	

VA:O (OTHER)	6496	CONNECTED	6496	DEMAND
VA: TOTAL	6496	CONNECTED	6496	DEMAND
AMPS: TOTAL	18	CONNECTED	18	DEMAND

L	R	O		TOTAL		
0	0	2165	VA CONNECTED TO A PHASE	2165	VA =	18 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	0	2165	VA CONNECTED TO B PHASE	2165	VA =	18 AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	2165	VA CONNECTED TO C PHASE	2165	VA =	18 AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	0	6496	TOTAL	6496	VA	

MODIFIED PANELBOARD 'C'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
600A MAIN LUGS ONLY
BUSES: 600A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: EAST (FRONT) MECHANICAL ROOM
MOUNTING: SURFACE

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	1581	AHU-1, AHU-3	20/2	1	A	2	20/2	AHU-11	0	0	790
0	0	1581	"	–	3	B	4	–	"	0	0	790
0	0	5678	AHU & ACCU-5, AHU & ACCU-6	100/2	5	C	6	80/3	PANEL 'ACB'	0	0	10754
0	0	5678	"	–	7	A	8	–	"	0	0	5377
0	0	7939	AHU-48 & EDH-1	100/3	9	B	10	–	"	0	0	5377
0	0	7939	"	–	11	C	12	80/3	PANEL 'ACC'	0	0	8705
0	0	7939	"	–	13	A	14	–	"	0	180	5377
0	0	9275	AHU-49 & EDH-2	100/3	15	B	16	–	"	0	0	3328
0	0	9275	"	–	17	C	18	100/2	AHU & ACCU-7, AHU & ACCU-8	0	0	5678
0	0	9275	"	–	19	A	20	–	"	0	0	5678
0	0	6490	AHU & ACCU-9, AHU & ACCU-10	100/2	21	B	22	100/2	AHU & ACCU-2, AHU & ACCU-4	0	0	5678
0	0	6490	"	–	23	C	24	–	"	0	0	5678
0	540		COPY MACHINE	20/2	25	A	26	20/2	COPY MACHINE	0	540	
0	540		"	–	27	B	28	–	"	0	540	
1000	0		MARQUEE LIGHT	20/1	29	C	30	30/1	MARQUEE LIGHTS	2000	0	

VA:L (LIGHTING)	3000	CONNECTED	3750	DEMAND
VA:R (RECEPTACLES)	2340	CONNECTED	2340	DEMAND
VA:O (OTHER)	142351	CONNECTED	142351	DEMAND
VA: TOTAL	147691	CONNECTED	148441	DEMAND
AMPS: TOTAL	410	CONNECTED	412	DEMAND

L	R	O		TOTAL		
0	1260	41696	VA CONNECTED TO A PHASE	42956	VA =	358 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	1080	40458	VA CONNECTED TO B PHASE	41538	VA =	346 AMPS CONNECTED TO B PHASE @ 120 VOLTS
3000	0	60197	VA CONNECTED TO C PHASE	63197	VA =	527 AMPS CONNECTED TO C PHASE @ 120 VOLTS
3000	2340	142351	TOTAL	147691	VA	

MODIFIED PANELBOARD 'ACB'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
80A MAIN BREAKER
BUSES: MAIN – 100A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: EXTERIOR NORTH WEST MECHANICAL YARD
MOUNTING: SURFACE, NEMA 3R

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	2049	ACCU-1	30/2	1	A	2	40/2	ACCU-48B	0	0	3328
0	0	2049	"	–	3	B	4	–	"	0	0	3328
0	0	2049	ACCU-3	30/2	5	C	6	40/2	ACCU-48A	0	0	3328
0	0	2049	"	–	7	A	8	–	"	0	0	3328
0	0		SPACE		9	B	10		SPACE	0	0	
0	0		SPACE		11	C	12		SPACE	0	0	
0	0		SPACE		13	A	14		SPACE	0	0	
0	0		SPACE		15	B	16		SPACE	0	0	
0	0		SPACE		17	C	18		SPACE	0	0	

VA:L (LIGHTING)	0	CONNECTED	0	DEMAND
VA:R (RECEPTACLES)	0	CONNECTED	0	DEMAND
VA:O (OTHER)	21507	CONNECTED	21507	DEMAND
VA: TOTAL	21507	CONNECTED	21507	DEMAND
AMPS: TOTAL	60	CONNECTED	60	DEMAND

L	R	O		TOTAL		
0	0	10754	VA CONNECTED TO A PHASE	10754	VA =	90 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	0	5377	VA CONNECTED TO B PHASE	5377	VA =	45 AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	5377	VA CONNECTED TO C PHASE	5377	VA =	45 AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	0	21507	TOTAL	21507	VA	

MODIFIED PANELBOARD 'ACC'

VOLTAGE: 208Y/120 VOLT 3 PHASE 3 WIRE
80A MAIN BREAKER
BUSES: MAIN – 100A; NO NEUTRAL; EQUIPMENT GROUND
LOCATION: EXTERIOR SOUTH WEST MECHANICAL YARD
MOUNTING: SURFACE, NEMA 3R

VA:L	VA:R	VA:O	LOAD	BKR	CKT	PH	CKT	BKR	LOAD	VA:L	VA:R	VA:O
0	0	2049	ACCU-11	30/2	1	A	2	40/2	ACCU-49A	0	0	3328
0	0	2049	"	–	3	B	4	–	"	0	0	3328
0	0	3328	ACCU-49B	40/2	5	C	6	60/3	SPARE	0	0	
0	0	3328	"	–	7	A	8	–	"	0	0	
0	180		GFI EXTERIOR RECEPTACLE	20/1	9	B	10	–	"	0	0	
0	0		SPACE		11	C	12		SPACE	0	0	
0	0		SPACE		13	A	14		SPACE	0	0	
0	0		SPACE		15	B	16		SPACE	0	0	
0	0		SPACE		17	C	18		SPACE	0	0	

VA:L (LIGHTING)	0	CONNECTED	0	DEMAND
VA:R (RECEPTACLES)	180	CONNECTED	180	DEMAND
VA:O (OTHER)	17410	CONNECTED	17410	DEMAND
VA: TOTAL	17590	CONNECTED	17590	DEMAND
AMPS: TOTAL	49	CONNECTED	49	DEMAND

L	R	O		TOTAL		
0	0	8705	VA CONNECTED TO A PHASE	8705	VA =	73 AMPS CONNECTED TO A PHASE @ 120 VOLTS
0	180	5377	VA CONNECTED TO B PHASE	5557	VA =	46 AMPS CONNECTED TO B PHASE @ 120 VOLTS
0	0	3328	VA CONNECTED TO C PHASE	3328	VA =	28 AMPS CONNECTED TO C PHASE @ 120 VOLTS
0	180	17410	TOTAL	17590	VA	

GENERAL NOTES:

A. ALL BREAKER UNUSED SPACES SHALL BE PROVIDED WITH BREAKER SPACE COVERS.

LEGEND

EXISTING CIRCUIT BREAKER TO BE REPLACED. UPDATE CIRCUIT DIRECTORY. NEW KAIC RATING SHALL MATCH EXISTING PANELBOARD'S KAIC RATING.

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No.	Date	Revision Description

STATE OF TEXAS
GABRIEL BENAVIDES JR.
119255
LICENSED
PROFESSIONAL ENGINEER
6-14-2018

Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JM/MG
Checked By:	GB
Scale:	AS NOTED

Sheet Title
ELECTRICAL SCHEDULES II

E202
Sheet Number

File Name: \\mcavs\mca_vol1\31000s\31981\WA05\CADD\E202-SC-31981.005.dwg
Current Tab (Layout): E202 ELECTRICAL SCHEDULES II User: AH2753
Printed Date: 6/14/2018 2:15:03 PM

AHU CONNECTION SCHEDULE

CIRCUIT DESIGNATION

RTU SCHEDULE			DISCONNECTING MEANS AND/OR
UNIT MARK	CIRCUIT	NOTES	TAP CONDUCTOR SIZE
AHU-1	C-1/3	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-2	C-22/24	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-3	C-1/3	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-4	C-22/24	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-5	C-5/7	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-6	C-5/7	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-7	C-18/20	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-8	C-18/20	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-9	C-21/23	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-10	C-21/23	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-11	C2/4	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-12	H-6/8	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-13	H-5/7	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-14	H-6/8	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-15	H-5/7	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-16	H-9/11	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-17	H-2/4	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-18	H-9/11	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-19	H-2/4	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-20	H-10/12	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-21	H-1/3	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-22	H-28/30	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-23	H-27/29	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-24	H-28/30	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-25	H-27/29	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-26	H-32/34	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-27	H-31/33	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-28	H-32/34	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-29	H-31/33	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-30	H-20/22	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-31	H-19/21	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-32	H-20/22	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-33	H-19/21	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-34	H-23/25	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-35	H-14/16	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-36	H-23/25	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-37	H-14/16	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-38	H-24/26	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-39	H-13/15	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-40	H-41/43	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-41	H-37/39	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-42	H-41/43	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-43	H-37/39	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-44	H-42/44	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-45	H-38/40	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-46	H-42/44	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-47	H-38/40	1	30A/15AF/2P DISC. SWITCH, NEMA 1 - 2#10,1#10G
AHU-48	C-9/11/13	1	30A/15AF/3P DISC. SWITCH, NEMA 1 - 3#10,1#10G
AHU-49	C-15/17/19	1	30A/15AF/3P DISC. SWITCH, NEMA 1 - 3#10,1#10G
AHU-50	ACA-1/3/5	1	30A/-/3P DISC. SWITCH, NEMA 1 - 3#10,1#10G
AHU-51	P1-1/3/5	1	30A/-/3P DISC. SWITCH, NEMA 1 - 3#12,1#12G
	P1-2/4/6	1	30A/-/3P DISC. SWITCH, NEMA 1 - 3#12,1#12G

NOTES

1. REFER TO ELECTRICAL POWER PLANS FOR CONDUIT SIZE.

ACCU CONNECTION SCHEDULE

CIRCUIT DESIGNATION

RTU SCHEDULE			DISCONNECTING MEANS AND/OR
UNIT MARK	CIRCUIT	NOTES	TAP CONDUCTOR SIZE
ACCU-1	ACB-1/3	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-2	C-22/24	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-3	ACB-5/7	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-4	C-22/24	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-5	C-5/7	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-6	C-5/7	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-7	C-18/20	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-8	C-18/20	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-9	C-21/23	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-10	C-21/23	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-11	ACC-1/3	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-12	H-6/8	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-13	H-5/7	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-14	H-6/8	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-15	H-5/7	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-16	H-9/11	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-17	H-2/4	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-18	H-9/11	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-19	H-2/4	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-20	H-10/12	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-21	H-1/3	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-22	H-28/30	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-23	H-27/29	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-24	H-28/30	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-25	H-27/29	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-26	H-32/34	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-27	H-31/33	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-28	H-32/34	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-29	H-31/33	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-30	H-20/22	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-31	H-19/21	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-32	H-20/22	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-33	H-19/21	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-34	H-23/25	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-35	H-14/16	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-36	H-23/25	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-37	H-14/16	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-38	H-24/26	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-39	H-13/15	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-40	H-41/43	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-41	H-37/39	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-42	H-41/43	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-43	H-37/39	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-44	H-42/44	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-45	H-38/40	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-46	H-42/44	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-47	H-38/40	1	30A/30AF/2P DISC. SWITCH, NEMA 3R - 2#10,1#10G
ACCU-48A	ACB-2/4	1	40A/2P CIRCUIT BREAKER - 2#8,1#10G
ACCU-48B	ACB-6/8	1	40A/2P CIRCUIT BREAKER - 2#8,1#10G
ACCU-49A	ACC-2/4	1	40A/2P CIRCUIT BREAKER - 2#8,1#10G
ACCU-49B	ACC-5/7	1	40A/2P CIRCUIT BREAKER - 2#8,1#10G
ACCU-50A	ACA-2/4/6	1	100A/-/3P DISC. SWITCH, NEMA 3R - 3#3,1#8G, 1-1/2"C
ACCU-50B	ACA-8/10/12	1	100A/-/3P DISC. SWITCH, NEMA 3R - 3#3,1#8G, 1-1/2"C
ACCU-51A	ACA-14/16/18	1	200A/-/3P DISC. SWITCH, NEMA 3R - 3#1/0,1#6G, 2"C
ACCU-51B	ACA-20/22/24	1	200A/-/3P DISC. SWITCH, NEMA 3R - 3#1/0,1#6G, 2"C

NOTES

1. REFER TO ELECTRICAL POWER PLANS FOR CONDUIT SIZE.

EDH CONNECTION SCHEDULE

CIRCUIT DESIGNATION

RTU SCHEDULE			DISCONNECTING MEANS AND/OR
UNIT MARK	CIRCUIT	NOTES	TAP CONDUCTOR SIZE
EDH-1	C-9/11/13	1	100A/70AF/3P DISC. SWITCH, NEMA 1 - 3#4,1#8G, 1-1/4"C
EDH-2	C-15/17/19	1	100A/90AF/3P DISC. SWITCH, NEMA 1 - 3#3,1#8G, 1-1/4"C
EDH-3	ACA-13/15/17	1	60A/-/3P DISC. SWITCH, NEMA 1 - 3#6,1#10G, 1"C
EDH-4	ACA-19/21/23	1	100A/70AF/3P DISC. SWITCH, NEMA 1 - 3#4,1#8G, 1-1/4"C

NOTES

1. FIELD VERIFY EXISTING DUCT HEATER RATING PRIOR TO INSTALLATION OF ELECTRICAL CONDUCTORS.

JOHN H. SHARY ELEMENTARY SCHOOL
HVAC IMPROVEMENTS
2300 N. GLASSCOCK RD., MISSION, TX 78574

HALFF
5000 WEST MILITARY, SUITE 100
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FAX (956) 664-0282
TBPE FIRM #F-312

Revision No.	Date	Description

STATE OF TEXAS
GABRIEL BENAVIDES JR.
119255
LICENSED PROFESSIONAL ENGINEER
6-14-2018

Project No.:	31981.005
Issued:	06/14/2018
Drawn By:	JB,KG
Checked By:	HA
Scale:	AS NOTED

Sheet Title
ELECTRICAL SCHEDULES III

E203
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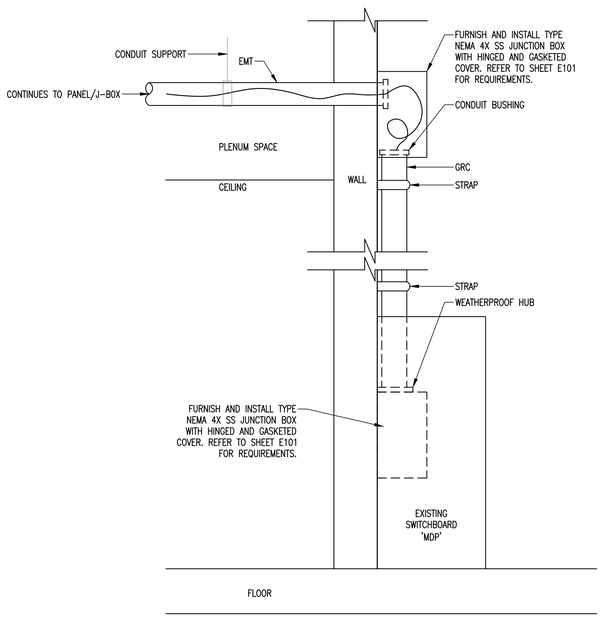
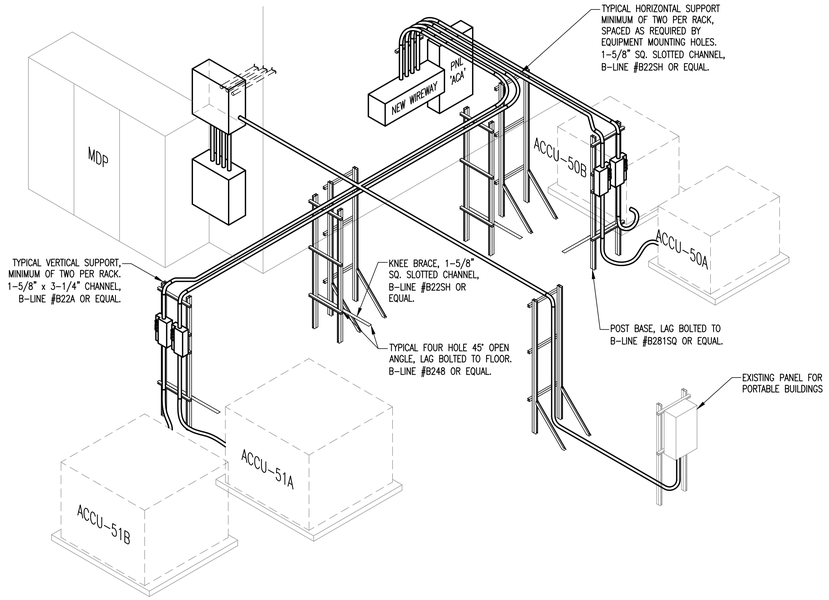


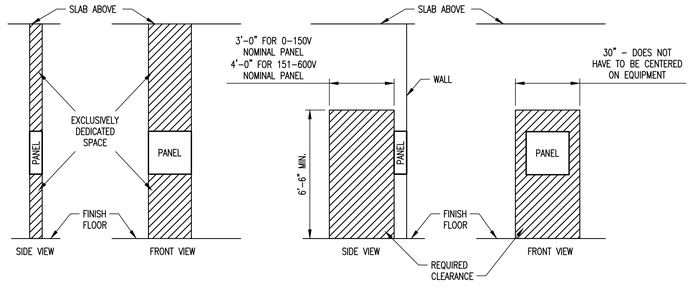
05 CONDUIT RISER AT SWITCHBOARD 'MDP'
N.T.S.



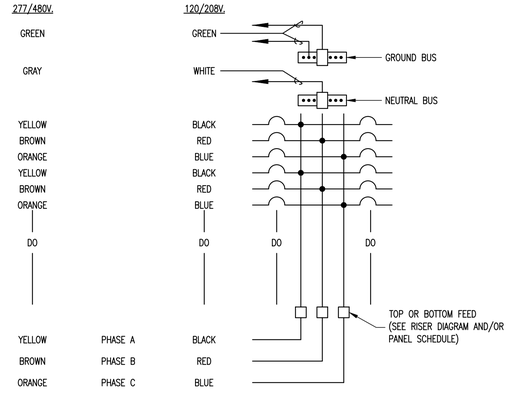
02 FREE STANDING EQUIPMENT RACK CONSTRUCTION & CONDUIT ROUTING DETAIL
N.T.S.

GENERAL NOTES:

A. ALL CONDUIT SUPPORTS AND HARDWARE SHALL BE OF STAINLESS STEEL MATERIAL.



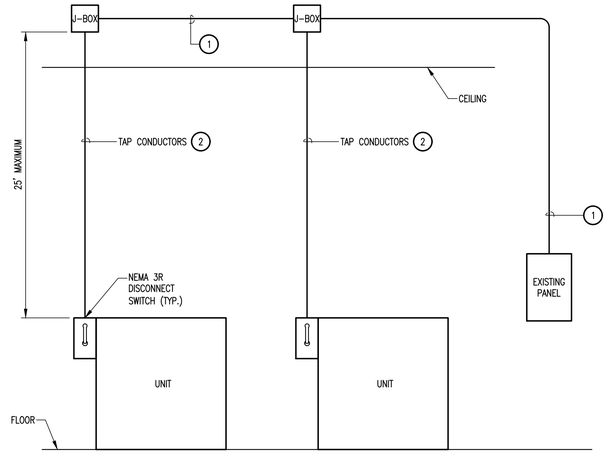
04 TYPICAL PANELBOARD REQUIRED CLEARANCE
N.T.S.



03 TYPICAL PANEL COLOR CODE
N.T.S.

KEY NOTES:

1. SIZE FEEDER BASED ON PANEL BRANCH CIRCUIT BREAKER SIZE. SUM OF THE LOADS CONNECTED TO THE FEEDER SHALL NOT EXCEED THE RATING OF THE OVERCURRENT PROTECTIVE DEVICE CAPACITY.
2. PROVIDE SHORT-CIRCUIT AND OVERCURRENT PROTECTION FOR TAP CONDUCTORS AS PER NEC.



01 TYPICAL TAP RULE FOR TWO UNITS
N.T.S.

JOHN H. SHARY
JOHN H. SHARY ELEMENTARY SCHOOL
HVAC IMPROVEMENTS
2300 N. GLASSCOCK RD., MISSION, TX 78574

HALFF
5000 WEST MILITARY, SUITE 100
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FAX (956) 664-0525
TBPE FIRM #F-312

Revision No.	Date	Description

STATE OF TEXAS
GABRIEL BENAVIDES JR.
119255
LICENSED
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6-14-2018

Project No.:	31981.005
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Scale:	AS NOTED

Sheet Title

ELECTRICAL DETAILS

E204

Sheet Number

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