ELECTRICAL SYMBOL LEGEND (NOT ALL SYMBOLS APPLY TO THIS PROJECT)

UPDATED: 09/07/2016

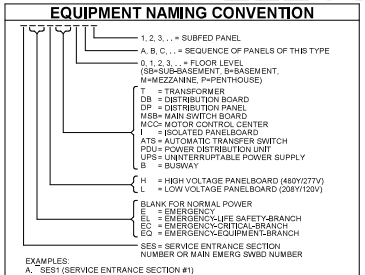
ABBREVIATIONS

ABBREV.	DEFINITION
A	AMPS, AMPERE, AMPERAGE
AC	ABOVE COUNTER
A/C	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CURRENT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ATSC	AUTOMATIC TRANSFER SWITCH CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CLOCK
CLF	CURRENT LIMITING FUSE
CO	CONDUIT ONLY
CU	COPPER
D	DIMMING
DC	DIRECT CURRENT
DL	DAY-LIGHTING
DIA	DIAMETER
E	EMERGENCY
EC	EMERGENCY, CRITICAL
EG	ENGINE GENERATOR
EL	EMERGENCY, LIFE SAFETY
EQ	EMERGENCY, EQUIPMENT
EX	EXISTING
FUT	FUTURE
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FDR	FEEDER
FMS	FACILITY MANAGEMENT SYSTEM
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
G.O.R GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFP	GROUND FAULT PROTECTION
GND	GROUND,
HOA	HAND-OFF-AUTOMATIC,
HP	HORSEPOWER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPS
KVAR	KILOVOLT AMPS REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR,
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT PROTECTION
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MIN	MINIMUM
MM	MIXED MEDIA
MTS	MANUAL TRANSFER SWITCH
MVA	MEGAVOLT AMPS
N	NEW
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NORMAL
NM	NEW MEXICO
NO	NORMALLY OPEN
O/H	OVERHEAD
P	POLE
PA	PUBLIC ADDRESS
PC	PHOTOCELL
PH	PHASE
PMCS	POWER MONITORING AND CONTROL SYSTEM
R	REMOVED/REMOVAL
RC	ROOM CONTROLLER
RSC	RIGID STEEL CONDUIT
SEC	SECURITY
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
TEMP	TEMPORARY
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP.	TYPICAL
UC	UNDER COUNTER
U/G	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS' LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLTS, VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
W	WALL MOUNTED
WG	WEATHERPROOF AND GFCI
WP	WEATHERPROOF
XFER	TRANSFER
XFMR (TRANSF)	TRANSFORMER

REFERENCE TAGS

SYMBOL	DEFINITION
⬡	KEYED NOTE REFERENCE
VAV-9	MECHANICAL EQUIPMENT REFERENCE
+44"	DENOTES MOUNTING HEIGHT AFF
▭	KITCHEN EQUIPMENT REFERENCE
⬭	MEDICAL EQUIPMENT REFERENCE

EQUIPMENT NAMING CONVENTION



EXAMPLES:
A. SES1 (SERVICE ENTRANCE SECTION #1)
B. 1H1A (SERVED FROM SES#1, 480/277 NORMAL, LEVEL 1, FIRST BOARD)
C. 1EQH1A (SERVED FROM MAIN EMER SWBD #1, 480/277 EQUIP POWER, LEVEL 1, FIRST BOARD)

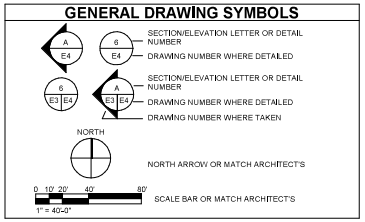
RACEWAY & CONDUCTORS

BRANCH CIRCUIT GENERAL INFORMATION:

BRANCH CIRCUITS FROM OVERCURRENT PROTECTION (20A) TO FURTHEST DEVICE SHALL NOT EXCEED 75 FEET FOR #12AWG COPPER AND 150 FEET FOR #10AWG COPPER, MEASURED ALONG CONDUCTORS ROUTING PATH. BRANCH CIRCUITS EXCEEDING 150 FEET WILL BE SIZED SO THAT VOLTAGE DROP DOES NOT EXCEED 3%.

SYMBOL	DESCRIPTION
| = GROUND | = HOT/PHASE | = NEUTRAL ? = SWITCH LEG	CONDUCTOR IDENTIFICATION SYMBOLS. REFER TO PLANS FOR COMBINATION USE. CONDUCTOR IDENTIFICATION MOSTLY USED IN HOMERUN LOCATION, BUT CAN ALSO BE USED IN BRANCH CIRCUITING WHERE APPLIED. GROUND CONDUCTORS WILL BE INSTALLED IN ALL RACEWAYS WHETHER SHOWN OR NOT.
LA-1	HOMERUN FROM EQUIPMENT LOCATION, THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKER(S). CONDUCTOR IDENTIFICATION SYMBOL INDICATES NUMBER OF CONDUCTORS IN HOMERUN. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
LA-1,3 LA-5,7,9	HOMERUN FROM EQUIPMENT LOCATION, THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKER(S). SYMBOL REPRESENTS A MULTI-BRANCH CIRCUIT. NUMBER OF CONDUCTORS IN HOMERUN WILL INCLUDE A SEPARATE NEUTRAL FOR EACH CIRCUIT PHASE CONDUCTOR, MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
LA-1,3 LA-5,7,9	HOMERUN FROM EQUIPMENT LOCATION, THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL TWO OR THREE POLE CIRCUIT BREAKERS. CONDUCTOR IDENTIFICATION SYMBOL INDICATES NUMBER OF CONDUCTORS IN HOMERUN. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. NEUTRAL MAY BE USED WHERE INDICATED ON PLAN. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.
	CONCEALED RACEWAY BETWEEN DEVICES AND OR EQUIPMENT IN WALLS OR IN CEILING SPACE
	UNDERGROUND RACEWAY BETWEEN DEVICES AND OR EQUIPMENT
	EXPOSED RACEWAY BETWEEN DEVICES AND OR EQUIPMENT ON WALLS OR CEILINGS
DOWN UP	CONDUIT TURNS
	CONDUIT STUBBED AND CAPPED
B	BUSWAY
G	GROUNDING CONDUCTOR
	CABLE TRAY - POWER AND TELECOMMUNICATIONS
T	TELECOMMUNICATIONS RACEWAY
D	DATA RACEWAY
V/D	VOICE/DATA COMBINATION RACEWAY
FA	FIRE ALARM RACEWAY

GENERAL DRAWING SYMBOLS



DEMOLITION

SYMBOL	DESCRIPTION	NOTES
	DASHED SYMBOL INDICATES EXISTING DEVICE OR EQUIPMENT TO BE REMOVED	REFER TO DEMOLITION PLANS FOR ADDITIONAL INFORMATION
R	REMOVE EXISTING RACEWAY IN ALL ACCESSIBLE AREAS, CAPPED AND ABANDONED IF IN UNACCESSIBLE AREA	
	SOLID SYMBOL, LIGHTER IN COLOR INDICATES EXISTING DEVICE OR EQUIPMENT TO REMAIN	
EX	EXISTING CONDUIT TO BE REUSED	

DEVICES

DEVICE INDICATOR LETTER "X" EQUALS DESIGNATION BELOW (TYPICAL FOR MOST RECEPTACLE TYPES):
- BLANK FOR NORMAL POWER
- G = GFCI RATED
- IG = ISOLATED GROUND
- T = TAMPERPROOF
- WG= WEATHERPROOF AND GFCI
- WP = WEATHERPROOF (IN-USE COVER)
- CL = CLOCK
- TV = TELEVISION

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
X	IN FLOOR DUPLEX RECEPTACLE, CONFIGURATION AS INDICATED ON PLANS	FLOOR	VARIES
X	IN FLOOR DOUBLE DUPLEX (QUADPLEX) RECEPTACLE, CONFIGURATION AS INDICATED ON PLANS		
X	IN FLOOR EMERGENCY DUPLEX RECEPTACLE, CONFIGURATION AS INDICATED ON PLANS		
X	IN FLOOR EMERGENCY DOUBLE DUPLEX (QUADPLEX) RECEPTACLE, CONFIGURATION AS INDICATED ON PLANS		
X	COMBINATION DUPLEX RECEPTACLE AND COMMUNICATIONS FLOORBOX, DEVICE CONFIGURATION AS INDICATED ON PLANS.		
X	CEILING MOUNTED DUPLEX RECEPTACLE	CEILING	FLUSH
X	CEILING MOUNTED DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	CEILING MOUNTED EMERGENCY DUPLEX RECEPTACLE		
X	CEILING MOUNTED EMERGENCY DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	COMBINATION POWER/COMMUNICATION IN CEILING OUTLET. CONFIGURATION AS INDICATED ON PLANS		
X	SIMPLEX RECEPTACLE	WALL, UON	+18", UON
X	DUPLEX RECEPTACLE		
X	DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	EMERGENCY DUPLEX RECEPTACLE		
X	EMERGENCY DOUBLE DUPLEX (QUADPLEX) RECEPTACLE		
X	SPECIAL PURPOSE RECEPTACLE. NEMA CONFIGURATION AND AMPERAGE AS NOTED ON PLANS		
	MULTI-OUTLET ASSEMBLY (SURFACE MOUNTED RACEWAY)	VARIES SEE PLANS	VARIES SEE PLANS
	COMBINATION POWER/COMMUNICATION POLE. CONFIGURATION AS NOTED ON PLANS		
J	WALL MOUNTED CODE SIZE J-BOX	VARIES SEE PLANS	VARIES SEE PLANS
J	CODE SIZE JUNCTION BOX		
P	CODE SIZE PULLBOX (OR AS SIZED ON PLAN)		
	PUSHBUTTON (EMERGENCY POWER OFF - EPO)		
PC	PHOTOCELL		
	LIGHTNING PROTECTION AIR TERMINAL	ROOF	VARIES
T	THERMOSTAT	WALL	+44" UON
30/3R	ENCLOSED CIRCUIT BREAKER. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON	VARIES	VARIES
30/1	NON-FUSED DISCONNECT SWITCH. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON		
30/3R	FUSED DISCONNECT SWITCH. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON		
0/1	MOTOR STARTER. STARTER SIZE INDICATED BY NUMBER/NEMA ENCLOSURE RATING, SINGLE SPEED UON		
1/30/3R	COMBINATION FUSIBLE DISCONNECT SWITCH AND MOTOR STARTER. NEMA STARTER SIZE/AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE UON		
5	MOTOR, NUMBER INDICATES HORSEPOWER RATING FOR 1HP AND LARGER	N/A	N/A
F	MOTOR, "F" INDICATES FRACTIONAL HORSEPOWER		

EQUIPMENT

SYMBOL	DESCRIPTION
MSB	MAIN SWITCHBOARD. DASHED LINES INDICATE CLEARANCES.
DB	DISTRIBUTION BOARD OR PANEL. DASHED LINES INDICATE CLEARANCES.
H1A	FLUSH MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
L1A	SURFACE MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
MCC	MOTOR CONTROL CENTER. DASHED LINES INDICATE CLEARANCES.
T1A	DRY TYPE TRANSFORMER (15kVA OR ABOVE), WITH EQUIPMENT TAG (TAG INSIDE OR OUTSIDE, DEPENDING ON SIZE). IN MOST CASES, ACTUAL SIZE SHOWN ON PLANS (ELECTRICAL ROOMS).
T	DRY TYPE TRANSFORMER (LESS THAN 15kVA), WITH NO EQUIPMENT TAG. SIZE, TYPE AND LOCATION NOTED ON PLANS.
VFD	VARIABLE FREQUENCY DRIVE
UPS-A	UNINTERRUPTABLE POWER SUPPLY. DASHED LINES INDICATE CLEARANCES.
ATS-1	AUTOMATIC TRANSFER SWITCH. DASHED LINES INDICATE CLEARANCES.
G	GROUND BAR

LIGHTING

REFER TO LUMINAIRE SCHEDULE FOR ALL LUMINAIRE TYPES WHETHER WALL MOUNTED OR CEILING MOUNTED.

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
	HATCHING INDICATES EMERGENCY LIGHTING. HATCH WILL BE MODIFIED FOR EACH LUMINAIRE TYPE. EMERGENCY LUMINAIRE DESIGNATED WITH "E" IN TYPE DESIGNATION.	VARIES	REFER TO LIGHTING SCHEDULE
3 A a	RECESSED MOUNTED LUMINAIRE. SMALL CASE "a" DENOTES SWITCHING, NUMBER "3" DENOTES BRANCH CIRCUITING. SYMBOL "A" DENOTES LUMINAIRE TYPE	CEILING	
	SURFACE MOUNTED LUMINAIRE. LUMINAIRE TYPE AS INDICATED ON PLANS		
	LINEAR DIRECT/INDIRECT LUMINAIRE. CABLE OR STEM MOUNTED		
	DOWN LIGHT LUMINAIRE; CEILING MOUNTED		
	WALL MOUNTED LUMINAIRES	WALL	
	TRACK MOUNTED LUMINAIRES	SURFACE	
	STRIP LUMINAIRE		
WALL CEILING	EXIT LUMINAIRE, SHADED SIDE INDICATES FACE SIDE. PROVIDE DIRECTIONAL ARROW(S) AS INDICATED ON PLANS	VARIES	
WALL CEILING	DOUBLE FACE EXIT LUMINAIRE, SHADED SIDE INDICATES FACE SIDE. PROVIDE DIRECTIONAL ARROW(S) AS INDICATED ON PLANS		
	EMERGENCY BATTERY PACK LUMINAIRE (BUG-EYE/FROG-EYE)		
	SINGLE HEAD, POLE MOUNTED LUMINAIRE	EXTERIOR	AS DETAILED
	DOUBLE HEAD, POLE MOUNTED LUMINAIRE		
$X	DEVICE INDICATOR LETTER, "X" EQUALS DESIGNATION BELOW: (TYPICAL FOR MOST SWITCH TYPES): a = SMALL CASE LETTER DENOTES SWITCHING CONTROL; 2 = DOUBLE POLE TOGGLE SWITCH; 3 = THREE-WAY TOGGLE SWITCH; 4 = FOUR-WAY TOGGLE SWITCH; P = PILOT LIGHT TOGGLE SWITCH; M = MOMENTARY CONTACT SWITCH; K = KEY OPERATED SWITCH; WP = WEATHERPROOF TOGGLE SWITCH; T = MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD PROTECTION; D = DIMMER SWITCH; TW= TWIST TIMER SWITCH	WALL	+44" UON
OS	WALL MOUNTED OCCUPANCY SENSOR; TYPE AS INDICATED ON PLANS		
OS	CEILING MOUNTED OCCUPANCY SENSOR; TYPE AS INDICATED ON PLANS	CEILING	SURFACE
DL	DAY-LIGHTING SENSOR; TYPE AS INDICATED ON PLANS		
RC	ROOM CONTROLLER; TYPE AS INDICATED ON PLANS		

UTILITIES

SYMBOL	DESCRIPTION
	DISTRIBUTION POLE FOR OVERHEAD ELECTRICAL OR COMMUNICATIONS AS INDICATED ON PLAN.
X X X	OVERHEAD UTILITY AND OR SYSTEM DISTRIBUTION. 3PH = THREE PHASE 1PH = SINGLE PHASE P = ELECTRICAL PRIMARY S = ELECTRICAL SECONDARY T = TELECOMMUNICATION TV = TELEVISION E = EMERGENCY POWER ATSC = AUTOMATIC TRANSFER SWITCH CONTROL N = NEW EX = EXISTING
X X X	UNDERGROUND UTILITY AND OR SYSTEM DISTRIBUTION.
UT	UTILITY OR FACILITY TRANSFORMER
S	PAD MOUNTED SWITCH
CC	CONNECTION CABINET (UTILITY METER MOUNT)
PM	PRIMARY SITE METER ENCLOSURE
ME	METER ENCLOSURE. EITHER ON BUILDING OR ON UTILITY EQUIPMENT
CT	CT ENCLOSURE. EITHER ON BUILDING OR ON UTILITY EQUIPMENT
MH	MANHOLE - POWER OR COMMUNICATION AS INDICATED ON PLANS
HH	HAND HOLE - POWER OR COMMUNICATION AS INDICATED ON PLANS
EG	ENGINE GENERATOR
TP	TELECOMMUNICATION PEDESTAL
TVP	TELEVISION PEDESTAL

FIRE ALARM

SYMBOL	DESCRIPTION	MOUNTING LOC.	MOUNTING HT.
FACP	FIRE ALARM CONTROL PANEL	WALL	-
FATC	FIRE ALARM TERMINAL CABINET (EQUIPMENT NAMING CONVENTION PER PLANS)		
FAA	FIRE ALARM ANNUNCIATOR PANEL	WALL	+44"
F	PULL STATION		
FC	FIREMAN'S TELEPHONE OUTLET		
F	HORN NOTIFICATION	WALL	+80" UON
S	SPEAKER NOTIFICATION		
C	CHIME NOTIFICATION		
C S	COMBINATION SPEAKER AND CHIME NOTIFICATION		
S	SPEAKER/HORN WITH STROBE LIGHT		
S	STROBE LIGHT ONLY		
B	BELL (GONG)		
S	PHOTOELECTRIC SMOKE DETECTOR	CEILING	SURFACE
I	IONIZATION SMOKE DETECTOR		
R/F	COMBINATION RATE OF RISE / FIXED TEMPERATURE		
F	FIXED TEMPERATURE. TEMPERATURE AS NOTED ON PLANS OR SPECIFICATIONS		
R	RATE OF RISE ONLY		
BT	BEAM TRANSMITTER	CEILING OR WALL	VARIES
BR	BEAM RECEIVER		
U	UNDER FLOOR SMOKE DETECTOR	UNDER FLOOR	SEE PLANS
	DUCT DETECTOR	AT DUCT	SEE PLANS
	FIRE/SMOKE DAMPER		
PS	PRESSURE SWITCH	PIPE	VARIES
TS	TAMPER SWITCH		
FS	FLOW SWITCH		
PIV	POST INDICATOR VALVE		
M	MAGNETIC DOOR HOLDER	VARIES	SEE PLANS
R	CONTROL RELAY		
MM	MONITOR MODULE		
	REMOTE ALARM INDICATING LIGHT		
R	ADDRESSABLE/SUPERVISED RELAY		

ONE-LINE DIAGRAM

SYMBOL	DESCRIPTION
300 / 400	CIRCUIT BREAKER; TRIP SETTING/FRAME SIZE OR NO. OF POLES, SETTINGS AND PROTECTION AS NOTED ON PLANS
300 / 400	DRAWOUT CIRCUIT BREAKER (TRIP SETTING / FRAME SIZE)
300 / 400	MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER (TRIP SETTING / FRAME SIZE)
T1A 75kVA K-4 208Y/120V Δ 480V	TRANSFORMER, TRANSFORMER NAME; TRANSFORMER kVA RATING, PRIMARY VOLTAGE AND WIRING CONFIGURATION, SECONDARY VOLTAGE, K RATING (IF APPLICABLE)
3000/5	CURRENT TRANSFORMER, NUMBER "3000/5" DENOTES RATIO.
	POTENTIAL TRANSFORMER.
300A	DISCONNECT SWITCH, "300A" DENOTES AMPERAGE RATING
300A	FUSE, "300A" DENOTES AMPERAGE RATING
G	GROUND FAULT PROTECTION
ST	SHUNT TRIP OPERATOR
	GROUND CONNECTION
	TRANSFER SWITCH, SEE PLANS FOR TYPE OF SWITCH
	SURGE ARRESTOR
SPD	SURGE PROTECTIVE DEVICE
KW	KILOWATT METER
M	ELECTRONIC METER
K1	KIRK KEY INTERLOCK No.1
R1	RELAY No.1
AS	AMMETER SWITCH
A	AMMETER
VS	VOLTMETER SWITCH
V	VOLTMETER
	DELTA CONNECTED
	WYE CONNECTED
	GENERATOR
VFD	VFD CONNECTION
M	MOTOR CONNECTION
UPS	UPS

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NMSU ALAMAGORDO
REIDLINGER SCIENCE
CENTER HVAC UPGRADES

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION
DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION

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REVIEWED BY:	Checker
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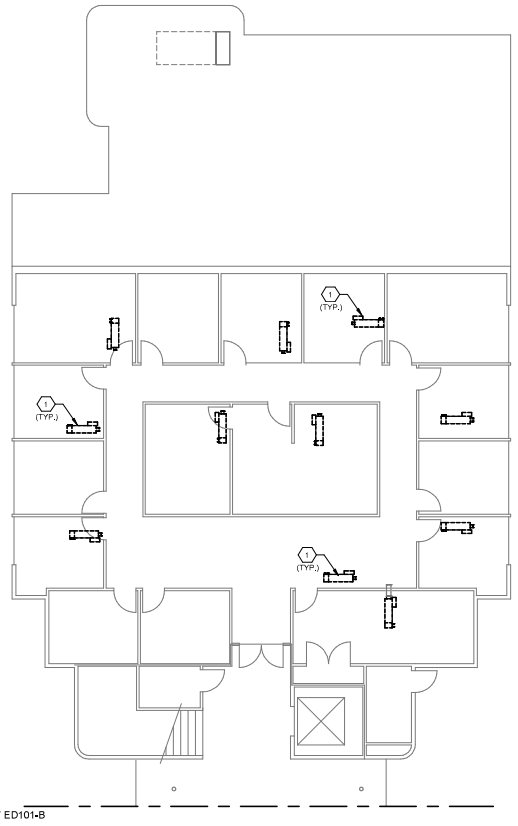
DRAWING TITLE:
ELECTRICAL LEGEND

DRAWING NO:
E-001

DRAWING OF



A1 ELECTRICAL FIRST FLOOR DEMOLITION PLAN - AREA A

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

0' 4' 8' 16'

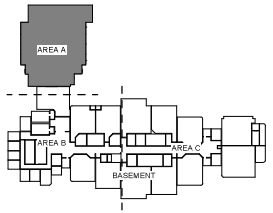
GENERAL SHEET NOTES

A. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PROJECT PRIOR TO THE BID OPENING, TO ALLOW THEM TO SUBMIT A COMPLETE BID WITHIN THE SCOPE OF THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS ARISING DURING THE BID PERIOD, IN REGARD TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF THE WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.
B. COORDINATE THE EXTENT OF DEMOLITION WITH ARCHITECTURAL DRAWINGS AND OWNER.
C. COORDINATE EXISTING UNDERGROUND/OVER HEAD ELECTRICAL CONDUITS AND CIRCUIT LOCATIONS IN FIELD TO AVOID CONFLICTS.
D. CONTRACTOR TO FIELD VERIFY ALL UNDERGROUND AND OVERHEAD ELECTRICAL AND DATA UTILITY LOCATIONS PRIOR TO EXCAVATION.
E. CONTRACTOR SHALL MAINTAIN ALL CIRCUIT AND CONDUIT CONTINUITY TO ALL EXISTING DEVICES WHICH ARE TO REMAIN. PROVIDE ALL FIELD CIRCUIT VERIFICATION AS REQUIRED TO ENSURE CONTINUITY AS MAINTAINED.

KEYNOTES

1. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE. IF BRANCH CIRCUIT NO LONGER IN USE MARK AS SPARE. COORDINATE EXTENT OF DEMOLITION WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

KEYPLAN



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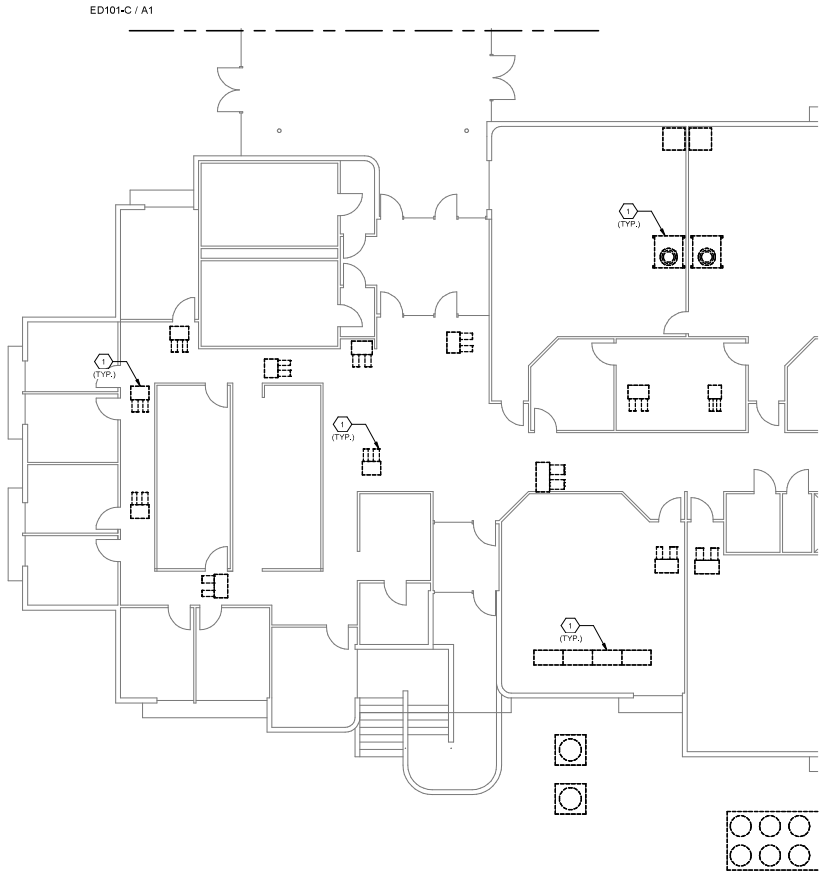
ELECTRICAL FIRST FLOOR DEMOLITION PLAN - AREA A

DRAWING NO:
ED101-A

DRAWING OF



A1 ELECTRICAL FIRST FLOOR DEMOLITION PLAN - AREA B

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

0' 4' 8' 16'

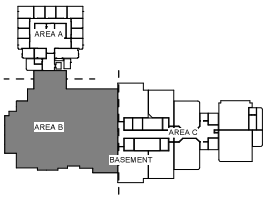
GENERAL SHEET NOTES

A. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PROJECT PRIOR TO THE BID OPENING, TO ALLOW THEM TO SUBMIT A COMPLETE BID WITHIN THE SCOPE OF THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS ARISING DURING THE BID PERIOD, IN REGARD TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF THE WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.
B. COORDINATE THE EXTENT OF DEMOLITION WITH ARCHITECTURAL DRAWINGS AND OWNER.
C. COORDINATE EXISTING UNDERGROUND/OVER HEAD ELECTRICAL CONDUITS AND CIRCUIT LOCATIONS IN FIELD TO AVOID CONFLICTS.
D. CONTRACTOR TO FIELD VERIFY ALL UNDERGROUND AND OVERHEAD ELECTRICAL AND DATA UTILITY LOCATIONS PRIOR TO EXCAVATION.
E. CONTRACTOR SHALL MAINTAIN ALL CIRCUIT AND CONDUIT CONTINUITY TO ALL EXISTING DEVICES WHICH ARE TO REMAIN. PROVIDE ALL FIELD CIRCUIT VERIFICATION AS REQUIRED TO ENSURE CONTINUITY AS MAINTAINED.

KEYNOTES

1. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE. IF BRANCH CIRCUIT NO LONGER IN USE MARK AS SPARE. COORDINATE EXTENT OF DEMOLITION WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

KEYPLAN



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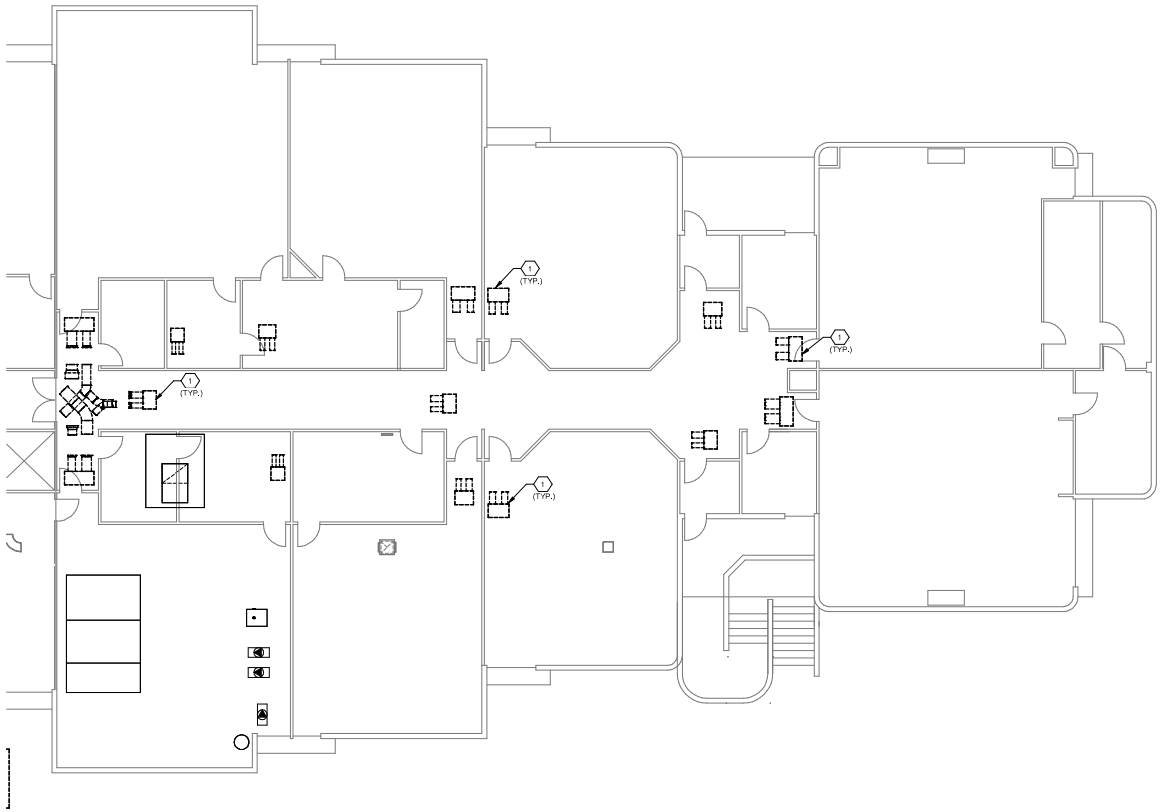
ED101-B

DRAWING OF

1 POWER FOURTH FLOOR PLAN
SCALE: 3/32" = 1'-0"

A1 / ED101-B



A1 ELECTRICAL FIRST FLOOR DEMOLITION PLAN - AREA C
SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

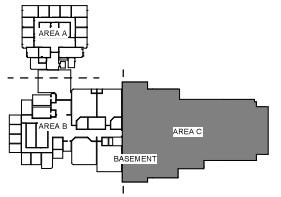
GENERAL SHEET NOTES

A. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PROJECT PRIOR TO THE BID OPENING. TO ALLOW THEM TO SUBMIT A COMPLETE BID WITHIN THE SCOPE OF THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS ARISING DURING THE BID PERIOD, IN REGARD TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF THE WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.
B. COORDINATE THE EXTENT OF DEMOLITION WITH ARCHITECTURAL DRAWINGS AND OWNER.
C. COORDINATE EXISTING UNDERGROUND/OVER HEAD ELECTRICAL CONDUITS AND CIRCUIT LOCATIONS IN FIELD TO AVOID CONFLICTS.
D. CONTRACTOR TO FIELD VERIFY ALL UNDERGROUND AND OVERHEAD ELECTRICAL AND DATA UTILITY LOCATIONS PRIOR TO EXCAVATION.
E. CONTRACTOR SHALL MAINTAIN ALL CIRCUIT AND CONDUIT CONTINUITY TO ALL EXISTING DEVICES WHICH ARE TO REMAIN. PROVIDE ALL FIELD CIRCUIT VERIFICATION AS REQUIRED TO ENSURE CONTINUITY AS MAINTAINED.

KEYNOTES

1. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE. IF BRANCH CIRCUIT NO LONGER IN USE MARK AS SPARE. COORDINATE EXTENT OF DEMOLITION WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

KEYPLAN



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PROJECT

NMSU ALAMAGORDO REIDLINGER SCIENCE CENTER HVAC UPGRADES

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION
DOCUMENTS

REVISIONS

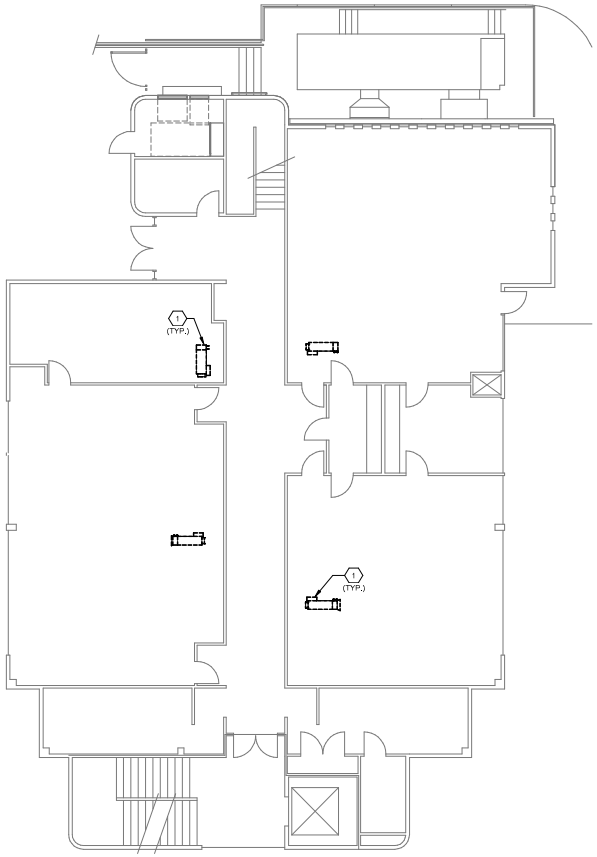
NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	03/29/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
ELECTRICAL FIRST FLOOR DEMOLITION PLAN - AREA C

DRAWING NO:
ED101-C

DRAWING OF



A1 ELECTRICAL SECOND FLOOR DEMOLITION PLAN - AREA A

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

0' 4' 8' 16'

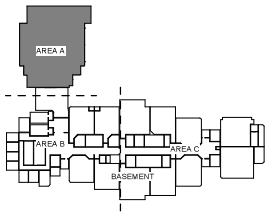
GENERAL SHEET NOTES

A. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PROJECT PRIOR TO THE BID OPENING, TO ALLOW THEM TO SUBMIT A COMPLETE BID WITHIN THE SCOPE OF THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS ARISING DURING THE BID PERIOD, IN REGARD TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF THE WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.
B. COORDINATE THE EXTENT OF DEMOLITION WITH ARCHITECTURAL DRAWINGS AND OWNER.
C. COORDINATE EXISTING UNDERGROUND/OVER HEAD ELECTRICAL CONDUITS AND CIRCUIT LOCATIONS IN FIELD TO AVOID CONFLICTS.
D. CONTRACTOR TO FIELD VERIFY ALL UNDERGROUND AND OVERHEAD ELECTRICAL AND DATA UTILITY LOCATIONS PRIOR TO EXCAVATION.
E. CONTRACTOR SHALL MAINTAIN ALL CIRCUIT AND CONDUIT CONTINUITY TO ALL EXISTING DEVICES WHICH ARE TO REMAIN. PROVIDE ALL FIELD CIRCUIT VERIFICATION AS REQUIRED TO ENSURE CONTINUITY AS MAINTAINED.

KEYNOTES

1. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE. IF BRANCH CIRCUIT NO LONGER IN USE MARK AS SPARE. COORDINATE EXTENT OF DEMOLITION WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

KEYPLAN



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2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95% CONSTRUCTION DOCUMENTS

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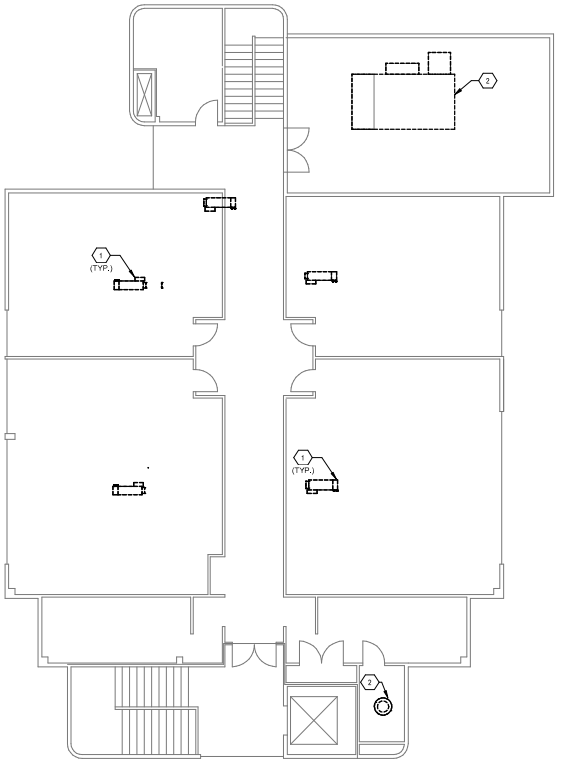
DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	03/29/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
ELECTRICAL SECOND FLOOR DEMOLITION PLAN - AREA A

DRAWING NO:
ED102-A

DRAWING OF



A1 ELECTRICAL THIRD FLOOR DEMOLITION PLAN - AREA A

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

0' 4' 8' 16'

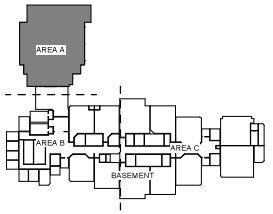
GENERAL SHEET NOTES

A. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PROJECT PRIOR TO THE BID OPENING, TO ALLOW THEM TO SUBMIT A COMPLETE BID WITHIN THE SCOPE OF THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS ARISING DURING THE BID PERIOD, IN REGARD TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF THE WORK OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.
B. COORDINATE THE EXTENT OF DEMOLITION WITH ARCHITECTURAL DRAWINGS AND OWNER.
C. COORDINATE EXISTING UNDERGROUND/OVER HEAD ELECTRICAL CONDUITS AND CIRCUIT LOCATIONS IN FIELD TO AVOID CONFLICTS.
D. CONTRACTOR TO FIELD VERIFY ALL UNDERGROUND AND OVERHEAD ELECTRICAL AND DATA UTILITY LOCATIONS PRIOR TO EXCAVATION.
E. CONTRACTOR SHALL MAINTAIN ALL CIRCUIT AND CONDUIT CONTINUITY TO ALL EXISTING DEVICES WHICH ARE TO REMAIN. PROVIDE ALL FIELD CIRCUIT VERIFICATION AS REQUIRED TO ENSURE CONTINUITY AS MAINTAINED.

KEYNOTES

1. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE. COORDINATE EXTENT OF DEMOLITION WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.
2. EQUIPMENT LOCATED ON ROOF ABOVE. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED. REMOVE ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE. COORDINATE EXTENT OF DEMOLITON WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

KEYPLAN



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2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

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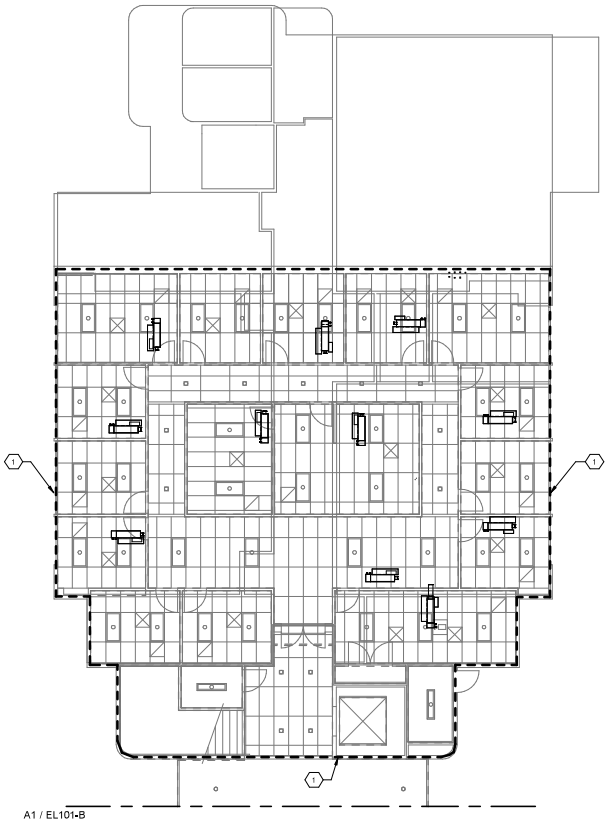
PROJECT NUMBER:	8797

DRAWING TITLE:
ELECTRICAL THIRD FLOOR DEMOLITION PLAN - AREA A

DRAWING NO:
ED103-A

DRAWING OF



A1 LIGHTING FIRST FLOOR PLAN - AREA A

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

0' 4' 8' 16'

GENERAL SHEET NOTES

A. DISCONNECT AND REMOVE ITEMS, DEVICES, OR EQUIPMENT IN THE AREA OF DEMOLITION OR SPECIFICALLY SHOWN ON DEMOLITION PLANS OR INDICATED FOR REMOVAL ON A COMBINATION DEMOLITION/NEW WORK PLAN. REMOVAL TO INCLUDE ALL ASSOCIATED: DISCONNECT SWITCHES, STARTERS, CONTROLS, BOXES; EXPOSED PORTIONS OF RACEWAYS THAT WILL BECOME EMPTY AFTER REMOVING THE WIRING TO DEMOLISHED EQUIPMENT. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED. LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX. MAINTAIN POWER TO LOADS THAT ARE TO REMAIN, IN OR ADJACENT TO THE AREA OF DEMOLITION, BUT FEED FROM CIRCUITS ALSO USED IN THE AREA OF DEMOLITION. INTERCEPT AND EXTEND WIRING AS REQUIRED. CLEARLY MARK BREAKERS IN EXISTING PANEL AS "SPARE" FOR DEMOLISHED CIRCUITS AND UPDATE PANEL SCHEDULES.

B. PROVIDE ALL NECESSARY SUPPORTS, IN A CODE COMPLIANT MANNER, FOR EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. PROVIDE PERMANENT SUPPORTS WHERE REQUIRED AND PROVIDE ALL TEMPORARY SUPPORTS WHERE REQUIRED TO FACILITATE AND ACCOMMODATE PHASING OF CONSTRUCTION.

C. REMOVE ALL EXISTING ABANDONED EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED BY NEW CONSTRUCTION; LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX AND END POINTS.

D. ITEMS SHOWN IN THE AREA OF DEMOLITION ARE INDICATIVE OF EXISTING QUANTITY AND LOCATION OF EXISTING ITEMS. VERIFY ACTUAL QUANTITIES AND INCLUDE IN BID.

E. COORDINATE EXTENT OF DEMOLITION WORK WITH ARCHITECTURAL DRAWINGS.

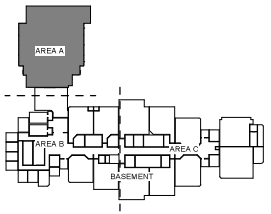
F. MAINTAIN EQUIPMENT, DEVICES AND WIRING AS REQUIRED TO ACCOMMODATE PHASING OF PROJECT. PROVIDE TEMPORARY MEASURES AND FEEDS AS NECESSARY TO ACCOMMODATE PHASING OF PROJECT.

G. DISCONNECTION OF MECHANICAL EQUIPMENT TO INCLUDE ALL ASSOCIATED SYSTEMS INCLUDING BUT NOT LIMITED TO: WIRING, LINE VOLTAGE CONTROLS & INTERLOCKS, STARTERS, DISCONNECT SWITCHES.

KEYNOTES

1. REMOVE EXISTING LUMINAIRES WITHIN BOUNDARY AS REQUIRED TO FACILITATE EXISTING MECHANICAL EQUIPMENT DEMOLITION AND NEW MECHANICAL EQUIPMENT INSTALLATION. CAREFULLY CLEAN AND STORE FOR REUSE IN REMODEL. STORED EXISTING FIXTURES TO BE INSTALLED BACK IN ORIGINAL LOCATION IN CEILINGS. COORDINATE LOCATION WITH NEW MECHANICAL EQUIPMENT. EXTEND EXISTING BRANCH CIRCUIT CONDUIT AND WIRE AS REQUIRED. COORDINATE FIXTURE LOCATIONS WITH MECHANICAL, SECURITY AND FIRE ALARM SYSTEMS MOUNTED IN CEILINGS. REFER TO ARCHITECTURAL PLANS FOR CEILING CONFIGURATION..

KEYPLAN



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REIDLINGER SCIENCE
CENTER HVAC UPGRADES

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION
DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	03/29/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
LIGHTING FIRST FLOOR PLAN - AREA A

DRAWING NO:
EL101-A

DRAWING OF

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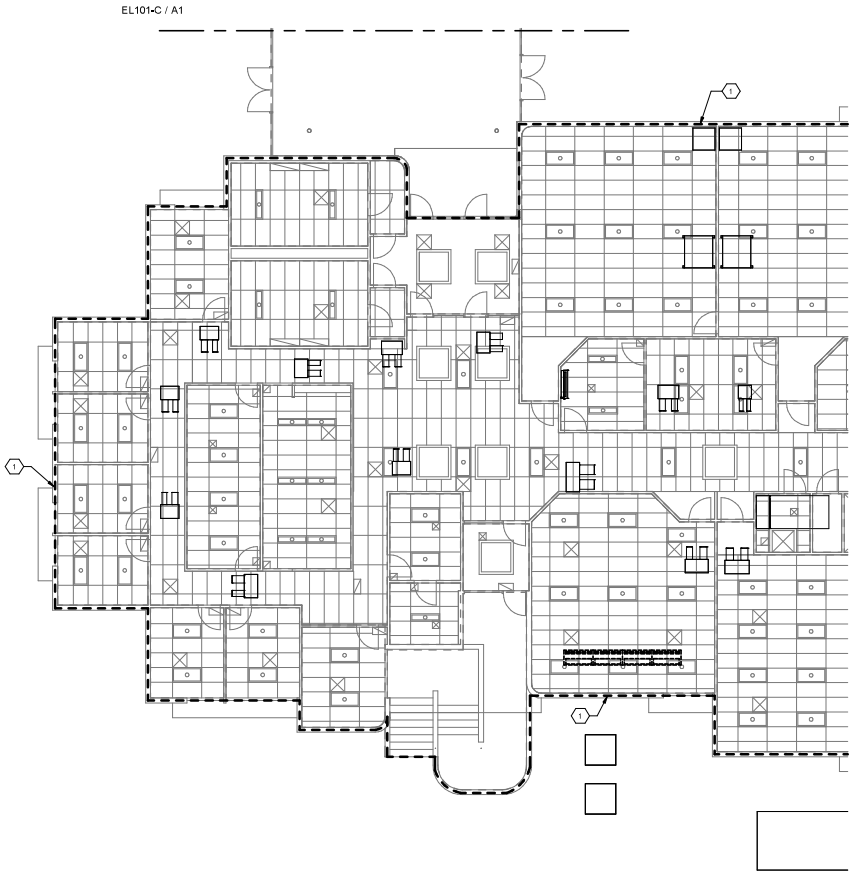


A1 LIGHTING FIRST FLOOR PLAN - AREA B

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

0' 4' 8' 16'

GENERAL SHEET NOTES

A. DISCONNECT AND REMOVE ITEMS, DEVICES, OR EQUIPMENT IN THE AREA OF DEMOLITION OR SPECIFICALLY SHOWN ON DEMOLITION PLANS OR INDICATED FOR REMOVAL ON A COMBINATION DEMOLITION/NEW WORK PLAN. REMOVAL TO INCLUDE ALL ASSOCIATED: DISCONNECT SWITCHES, STARTERS, CONTROLS, BOXES; EXPOSED PORTIONS OF RACEWAYS THAT WILL BECOME EMPTY AFTER REMOVING THE WIRING TO DEMOLISHED EQUIPMENT. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED. LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX. MAINTAIN POWER TO LOADS THAT ARE TO REMAIN. IN OR ADJACENT TO THE AREA OF DEMOLITION, BUT FEED FROM CIRCUITS ALSO USED IN THE AREA OF DEMOLITION, INTERCEPT AND EXTEND WIRING AS REQUIRED. CLEARLY MARK BREAKERS IN EXISTING PANEL AS "SPARE" FOR DEMOLISHED CIRCUITS AND UPDATE PANEL SCHEDULES.

B. PROVIDE ALL NECESSARY SUPPORTS, IN A CODE COMPLIANT MANNER, FOR EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. PROVIDE PERMANENT SUPPORTS WHERE REQUIRED AND PROVIDE ALL TEMPORARY SUPPORTS WHERE REQUIRED TO FACILITATE AND ACCOMMODATE PHASING OF CONSTRUCTION.

C. REMOVE ALL EXISTING ABANDONED EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED BY NEW CONSTRUCTION; LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX AND END POINTS.

D. ITEMS SHOWN IN THE AREA OF DEMOLITION ARE INDICATIVE OF EXISTING QUANTITY AND LOCATION OF EXISTING ITEMS. VERIFY ACTUAL QUANTITIES AND INCLUDE IN BID.

E. COORDINATE EXTENT OF DEMOLITION WORK WITH ARCHITECTURAL DRAWINGS.

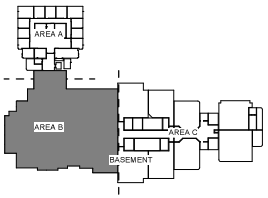
F. MAINTAIN EQUIPMENT, DEVICES AND WIRING AS REQUIRED TO ACCOMMODATE PHASING OF PROJECT. PROVIDE TEMPORARY MEASURES AND FEEDS AS NECESSARY TO ACCOMMODATE PHASING OF PROJECT.

G. DISCONNECTION OF MECHANICAL EQUIPMENT TO INCLUDE ALL ASSOCIATED SYSTEMS INCLUDING BUT NOT LIMITED TO: WIRING, LINE VOLTAGE CONTROLS & INTERLOCKS, STARTERS, DISCONNECT SWITCHES.

KEYNOTES

1. REMOVE EXISTING LUMINAIRES WITHIN BOUNDARY TO FACILITATE EXISTING MECHANICAL EQUIPMENT DEMOLITION AND NEW MECHANICAL EQUIPMENT AND CEILING INSTALLATION, CAREFULLY CLEAN AND STORE FOR REUSE. COORDINATE REINSTALLATION OF STORED EXISTING FIXTURES IN NEW CEILINGS WITH LOCATION OF NEW MECHANICAL EQUIPMENT AND NEW CEILING LAYOUT. EXTEND EXISTING BRANCH CIRCUIT CONDUIT AND WIRE AS REQUIRED. COORDINATE FIXTURE LOCATIONS WITH MECHANICAL, SECURITY AND FIRE ALARM SYSTEMS MOUNTED IN CEILINGS. REFER TO ARCHITECTURAL PLANS FOR NEW CEILING CONFIGURATION.

KEYPLAN



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CENTER HVAC UPGRADES

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION
DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION

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REVIEWED BY:	Checker
DATE:	03/29/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
LIGHTING FIRST FLOOR PLAN - AREA B

DRAWING NO:
EL101-B

DRAWING OF

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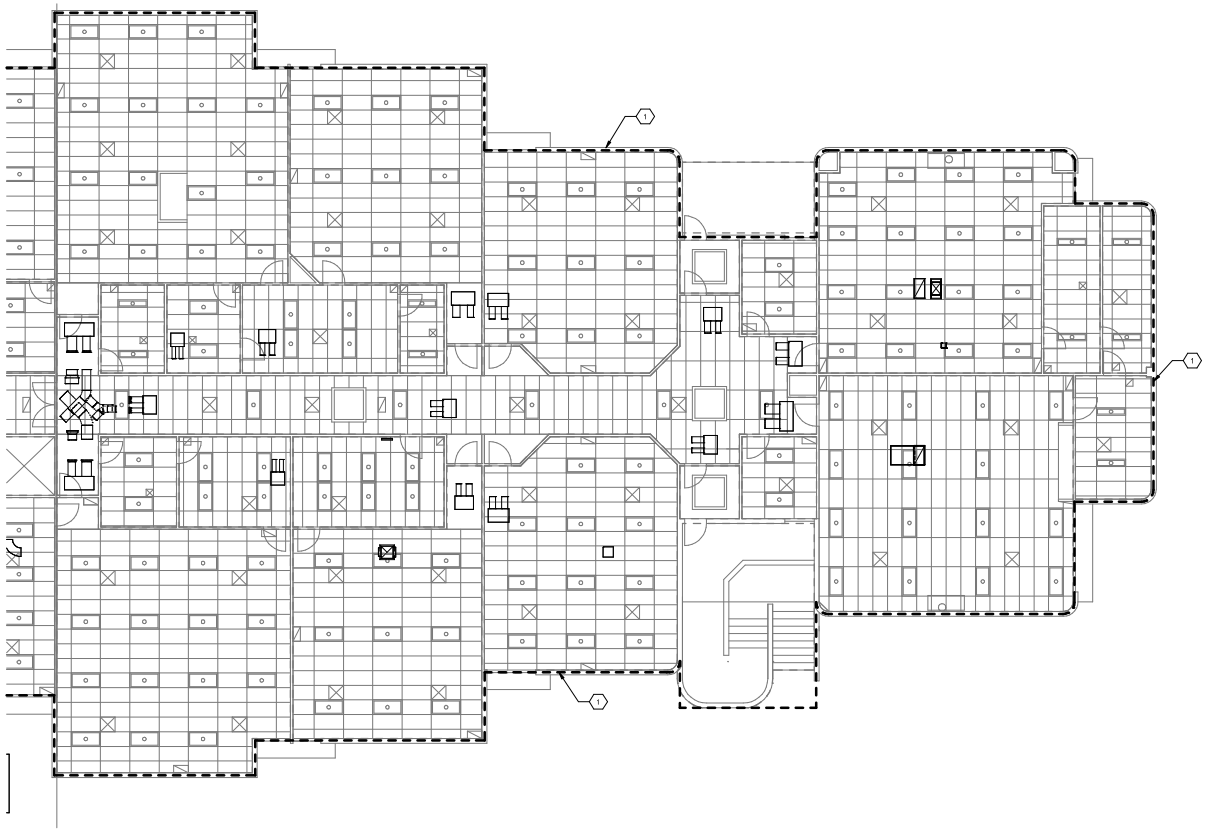

A1 LIGHTING FIRST FLOOR PLAN - AREA C
SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL SHEET NOTES

A. DISCONNECT AND REMOVE ITEMS, DEVICES, OR EQUIPMENT IN THE AREA OF DEMOLITION OR SPECIFICALLY SHOWN ON DEMOLITION PLANS OR INDICATED FOR REMOVAL ON A COMBINATION DEMOLITION/NEW WORK PLAN. REMOVAL TO INCLUDE ALL ASSOCIATED: DISCONNECT SWITCHES, STARTERS, CONTROLS, BOXES; EXPOSED PORTIONS OF RACEWAYS THAT WILL BECOME EMPTY AFTER REMOVING THE WIRING TO DEMOLISHED EQUIPMENT. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED. LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX. MAINTAIN POWER TO LOADS THAT ARE TO REMAIN, IN OR ADJACENT TO THE AREA OF DEMOLITION, BUT FEED FROM CIRCUITS ALSO USED IN THE AREA OF DEMOLITION. INTERCEPT AND EXTEND WIRING AS REQUIRED. CLEARLY MARK BREAKERS IN EXISTING PANEL AS "SPARE" FOR DEMOLISHED CIRCUITS AND UPDATE PANEL SCHEDULES.
B. PROVIDE ALL NECESSARY SUPPORTS, IN A CODE COMPLIANT MANNER, FOR EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. PROVIDE PERMANENT SUPPORTS WHERE REQUIRED AND PROVIDE ALL TEMPORARY SUPPORTS WHERE REQUIRED TO FACILITATE AND ACCOMMODATE PHASING OF CONSTRUCTION.
C. REMOVE ALL EXISTING ABANDONED EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED BY NEW CONSTRUCTION; LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX AND END POINTS.
D. ITEMS SHOWN IN THE AREA OF DEMOLITION ARE INDICATIVE OF EXISTING QUANTITY AND LOCATION OF EXISTING ITEMS. VERIFY ACTUAL QUANTITIES AND INCLUDE IN BID.
E. COORDINATE EXTENT OF DEMOLITION WORK WITH ARCHITECTURAL DRAWINGS.
F. MAINTAIN EQUIPMENT, DEVICES AND WIRING AS REQUIRED TO ACCOMMODATE PHASING OF PROJECT. PROVIDE TEMPORARY MEASURES AND FEEDS AS NECESSARY TO ACCOMMODATE PHASING OF PROJECT.
G. DISCONNECTION OF MECHANICAL EQUIPMENT TO INCLUDE ALL ASSOCIATED SYSTEMS INCLUDING BUT NOT LIMITED TO: WIRING, LINE VOLTAGE CONTROLS & INTERLOCKS, STARTERS, DISCONNECT SWITCHES.

KEYNOTES

1. REMOVE EXISTING LUMINAIRES WITHIN BOUNDARY TO FACILITATE EXISTING MECHANICAL EQUIPMENT DEMOLITION AND NEW MECHANICAL EQUIPMENT AND CEILING INSTALLATION. CAREFULLY CLEAN AND STORE FOR REUSE. COORDINATE REINSTALLATION OF STORED EXISTING FIXTURES IN NEW CEILINGS WITH LOCATION OF NEW MECHANICAL EQUIPMENT AND NEW CEILING LAYOUT. EXTEND EXISTING BRANCH CIRCUIT CONDUIT AND WIRE AS REQUIRED. COORDINATE FIXTURE LOCATIONS WITH MECHANICAL, SECURITY AND FIRE ALARM SYSTEMS MOUNTED IN CEILINGS. REFER TO ARCHITECTURAL PLANS FOR NEW CEILING CONFIGURATION.

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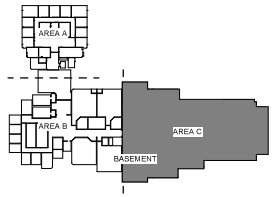

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95%
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LIGHTING FIRST FLOOR PLAN - AREA C

DRAWING NO:
EL101-C

DRAWING OF

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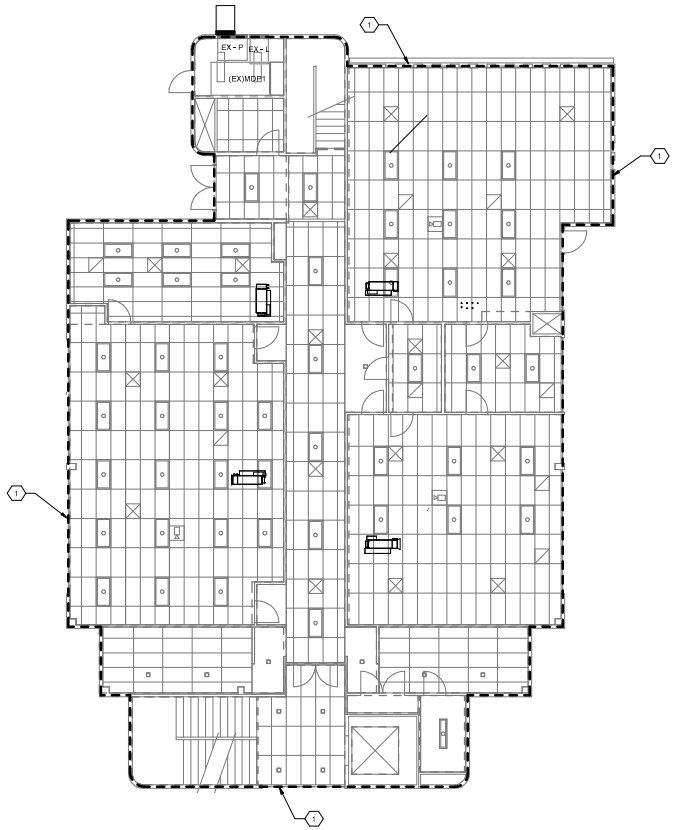


A1 LIGHTING SECOND FLOOR PLAN - AREA A

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

0' 4' 8' 16'

GENERAL SHEET NOTES

A. DISCONNECT AND REMOVE ITEMS, DEVICES, OR EQUIPMENT IN THE AREA OF DEMOLITION OR SPECIFICALLY SHOWN ON DEMOLITION PLANS OR INDICATED FOR REMOVAL ON A COMBINATION DEMOLITION/NEW WORK PLAN. REMOVAL TO INCLUDE ALL ASSOCIATED: DISCONNECT SWITCHES, STARTERS, CONTROLS, BOXES; EXPOSED PORTIONS OF RACEWAYS THAT WILL BECOME EMPTY AFTER REMOVING THE WIRING TO DEMOLISHED EQUIPMENT. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED. LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX. MAINTAIN POWER TO LOADS THAT ARE TO REMAIN IN OR ADJACENT TO THE AREA OF DEMOLITION, BUT FEED FROM CIRCUITS ALSO USED IN THE AREA OF DEMOLITION. INTERCEPT AND EXTEND WIRING AS REQUIRED. CLEARLY MARK BREAKERS IN EXISTING PANEL AS "SPARE" FOR DEMOLISHED CIRCUITS AND UPDATE PANEL SCHEDULES.

B. PROVIDE ALL NECESSARY SUPPORTS, IN A CODE COMPLIANT MANNER, FOR EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. PROVIDE PERMANENT SUPPORTS WHERE REQUIRED AND PROVIDE ALL TEMPORARY SUPPORTS WHERE REQUIRED TO FACILITATE AND ACCOMMODATE PHASING OF CONSTRUCTION.

C. REMOVE ALL EXISTING ABANDONED EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED BY NEW CONSTRUCTION; LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX AND END POINTS.

D. ITEMS SHOWN IN THE AREA OF DEMOLITION ARE INDICATIVE OF EXISTING QUANTITY AND LOCATION OF EXISTING ITEMS. VERIFY ACTUAL QUANTITIES AND INCLUDE IN BID.

E. COORDINATE EXTENT OF DEMOLITION WORK WITH ARCHITECTURAL DRAWINGS.

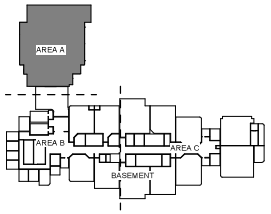
F. MAINTAIN EQUIPMENT, DEVICES AND WIRING AS REQUIRED TO ACCOMMODATE PHASING OF PROJECT. PROVIDE TEMPORARY MEASURES AND FEEDS AS NECESSARY TO ACCOMMODATE PHASING OF PROJECT.

G. DISCONNECTION OF MECHANICAL EQUIPMENT TO INCLUDE ALL ASSOCIATED SYSTEMS INCLUDING BUT NOT LIMITED TO: WIRING, LINE VOLTAGE CONTROLS & INTERLOCKS, STARTERS, DISCONNECT SWITCHES.

KEYNOTES

1. REMOVE EXISTING LUMINAIRES WITHIN BOUNDARY AS REQUIRED TO FACILITATE EXISTING MECHANICAL EQUIPMENT DEMOLITION AND NEW MECHANICAL EQUIPMENT INSTALLATION. CAREFULLY CLEAN AND STORE FOR REUSE IN REMODEL. STORED EXISTING FIXTURES TO BE INSTALLED BACK IN ORIGINAL LOCATION IN CEILINGS. COORDINATE LOCATION WITH NEW MECHANICAL EQUIPMENT. EXTEND EXISTING BRANCH CIRCUIT CONDUIT AND WIRE AS REQUIRED. COORDINATE FIXTURE LOCATIONS WITH MECHANICAL, SECURITY AND FIRE ALARM SYSTEMS MOUNTED IN CEILINGS. REFER TO ARCHITECTURAL PLANS FOR CEILING CONFIGURATION..

KEYPLAN



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CENTER HVAC UPGRADES

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION
DOCUMENTS

REVISIONS

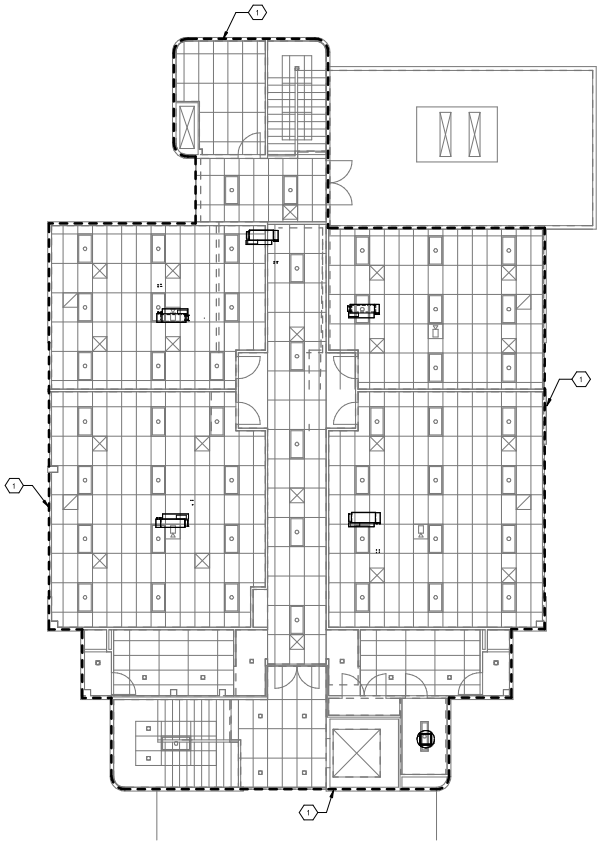
NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	03/29/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
LIGHTING SECOND FLOOR PLAN - AREA A

DRAWING NO:
EL102-A

DRAWING OF



A1 LIGHTING THIRD FLOOR PLAN - AREA A

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

0' 4' 8' 16'

GENERAL SHEET NOTES

A. DISCONNECT AND REMOVE ITEMS, DEVICES, OR EQUIPMENT IN THE AREA OF DEMOLITION OR SPECIFICALLY SHOWN ON DEMOLITION PLANS OR INDICATED FOR REMOVAL ON A COMBINATION DEMOLITION/NEW WORK PLAN. REMOVAL TO INCLUDE ALL ASSOCIATED: DISCONNECT SWITCHES, STARTERS, CONTROLS, BOXES; EXPOSED PORTIONS OF RACEWAYS THAT WILL BECOME EMPTY AFTER REMOVING THE WIRING TO DEMOLISHED EQUIPMENT. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED. LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX. MAINTAIN POWER TO LOADS THAT ARE TO REMAIN, IN OR ADJACENT TO THE AREA OF DEMOLITION, BUT FEED FROM CIRCUITS ALSO USED IN THE AREA OF DEMOLITION. INTERCEPT AND EXTEND WIRING AS REQUIRED. CLEARLY MARK BREAKERS IN EXISTING PANEL AS "SPARE" FOR DEMOLISHED CIRCUITS AND UPDATE PANEL SCHEDULES.

B. PROVIDE ALL NECESSARY SUPPORTS, IN A CODE COMPLIANT MANNER, FOR EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. PROVIDE PERMANENT SUPPORTS WHERE REQUIRED AND PROVIDE ALL TEMPORARY SUPPORTS WHERE REQUIRED TO FACILITATE AND ACCOMMODATE PHASING OF CONSTRUCTION.

C. REMOVE ALL EXISTING ABANDONED EXISTING ELECTRICAL RACEWAYS, WIRING, CABLE, DEVICES AND EQUIPMENT WHERE CEILINGS, WALLS, OR STRUCTURE ARE REMOVED. RACEWAYS MAY BE ABANDONED WHERE THEY ARE CONCEALED BY NEW CONSTRUCTION; LABEL ALL ABANDONED RACEWAYS AT EACH JUNCTION BOX AND END POINTS.

D. ITEMS SHOWN IN THE AREA OF DEMOLITION ARE INDICATIVE OF EXISTING QUANTITY AND LOCATION OF EXISTING ITEMS. VERIFY ACTUAL QUANTITIES AND INCLUDE IN BID.

E. COORDINATE EXTENT OF DEMOLITION WORK WITH ARCHITECTURAL DRAWINGS.

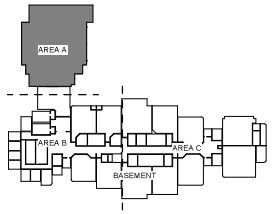
F. MAINTAIN EQUIPMENT, DEVICES AND WIRING AS REQUIRED TO ACCOMMODATE PHASING OF PROJECT. PROVIDE TEMPORARY MEASURES AND FEEDS AS NECESSARY TO ACCOMMODATE PHASING OF PROJECT.

G. DISCONNECTION OF MECHANICAL EQUIPMENT TO INCLUDE ALL ASSOCIATED SYSTEMS INCLUDING BUT NOT LIMITED TO: WIRING, LINE VOLTAGE CONTROLS & INTERLOCKS, STARTERS, DISCONNECT SWITCHES.

KEYNOTES

1. REMOVE EXISTING LUMINAIRES WITHIN BOUNDARY AS REQUIRED TO FACILITATE EXISTING MECHANICAL EQUIPMENT DEMOLITION AND NEW MECHANICAL EQUIPMENT INSTALLATION. CAREFULLY CLEAN AND STORE FOR REUSE IN REMODEL. STORED EXISTING FIXTURES TO BE INSTALLED BACK IN ORIGINAL LOCATION IN CEILINGS. COORDINATE LOCATION WITH NEW MECHANICAL EQUIPMENT. EXTEND EXISTING BRANCH CIRCUIT CONDUIT AND WIRE AS REQUIRED. COORDINATE FIXTURE LOCATIONS WITH MECHANICAL, SECURITY AND FIRE ALARM SYSTEMS MOUNTED IN CEILINGS. REFER TO ARCHITECTURAL PLANS FOR CEILING CONFIGURATION..

KEYPLAN



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2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

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LIGHTING THIRD FLOOR PLAN - AREA A

DRAWING NO:
EL103-A

DRAWING OF

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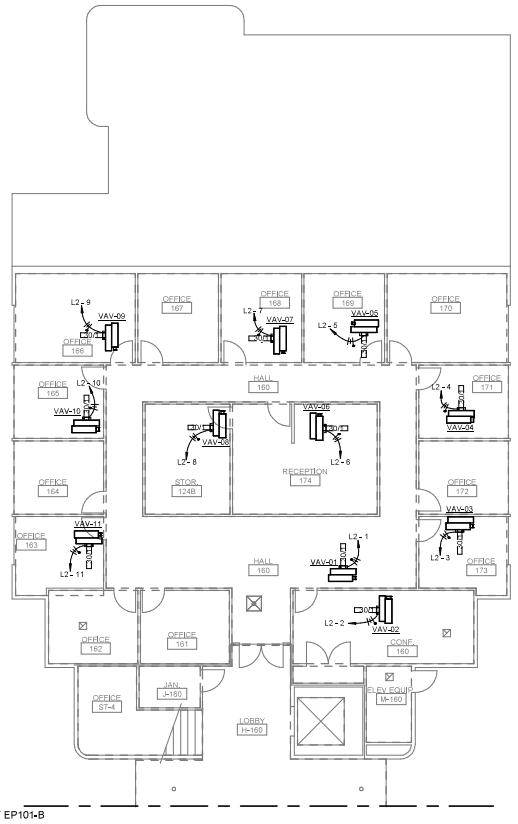


A1 / EP101-B

A1 POWER FIRST FLOOR PLAN - AREA A

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

0' 4' 8' 16'

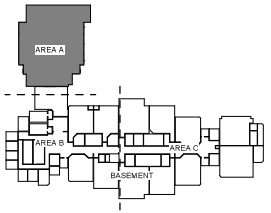
GENERAL SHEET NOTES

A. EACH BRANCH CIRCUIT IS TO HAVE IT'S OWN NEUTRAL WIRE AND NOT SHARE A NEUTRAL WITH OTHER CIRCUITS.
B. ALL ELECTRICAL WIRING DEVICES ARE TO BE RECESSED (FLUSH MOUNTED) UNLESS NOTED OTHERWISE OR OTHERWISE DIRECTED BY OWNER.
C. PROVIDE 2#10AWG+1#10AWG WIRING FOR ALL 20A BRANCH CIRCUITS LONGER THAN 75 FEET. PROVIDE 2#8AWG AND 1#10 GROUND BEYOND 150'.
D. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO BID. WHERE DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND DOCUMENTS OCCUR, NOTIFY THE ENGINEER AS NEEDED.
E. ALL RECEPTACLE MOUNTING HEIGHTS ARE TO BE FIELD VERIFIED WITH THE FURNITURE AND EQUIPMENT VENDOR/OWNER.
F. ALL CONDUCTORS SHALL BE #12 COPPER IN 3/4" CONDUIT MINIMUM, UNLESS INDICATED OTHERWISE.

KEYNOTES

1. XXXX.

KEYPLAN



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DRAWING NO:
EP101-A

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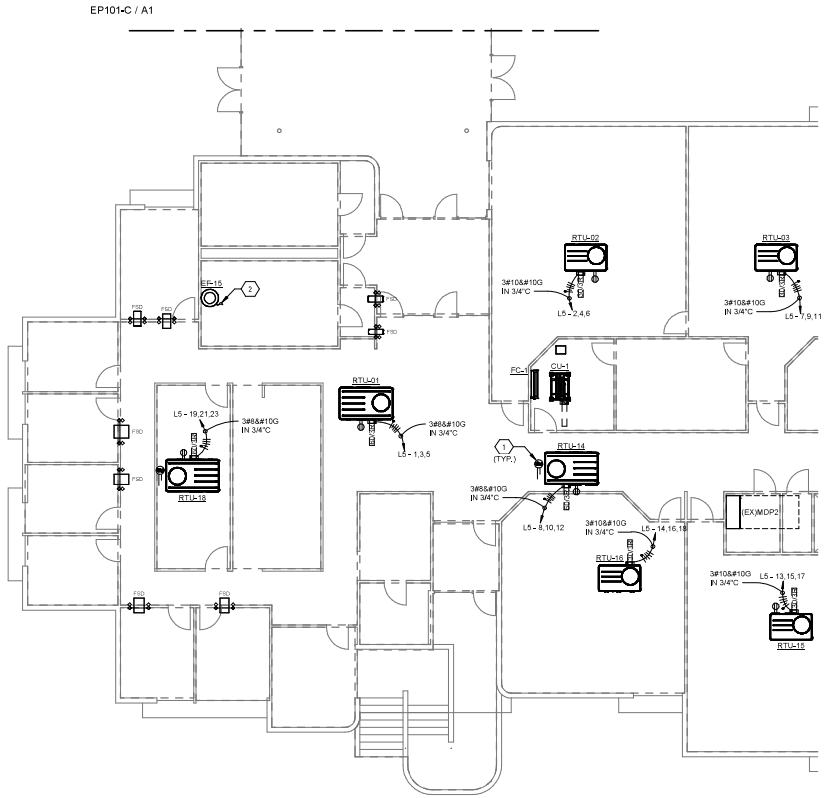

A1 POWER FIRST FLOOR PLAN - AREA B

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

0' 4' 8' 16'

GENERAL SHEET NOTES

A. EACH BRANCH CIRCUIT IS TO HAVE IT'S OWN NEUTRAL WIRE AND NOT SHARE A NEUTRAL WITH OTHER CIRCUITS.
B. ALL ELECTRICAL WIRING DEVICES ARE TO BE RECESSED (FLUSH MOUNTED) UNLESS NOTED OTHERWISE OR OTHERWISE DIRECTED BY OWNER.
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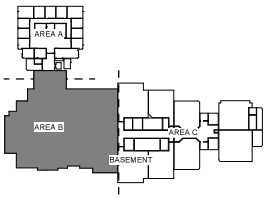
D. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO BID. WHERE DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND DOCUMENTS OCCUR, NOTIFY THE ENGINEER AS NEEDED.
E. ALL RECEPTACLE MOUNTING HEIGHTS ARE TO BE FIELD VERIFIED WITH THE FURNITURE AND EQUIPMENT VENDOR/OWNER.
F. ALL CONDUCTORS SHALL BE #12 COPPER IN 3/4" CONDUIT MINIMUM, UNLESS INDICATED OTHERWISE.

KEYNOTES

1. NEW RTU DUCT DETECTORS TO BE INTEGRATED INTO EXISTING FIRE ALARM SYSTEM.
2. NEW EXHAUST FAN TO REPLACE EXISTING. REUSE EXISTING EXHAUST FAN CIRCUIT. PROVIDE NEW DISCONNECTING MEANS AS INDICATED.

KEYPLAN



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POWER FIRST FLOOR PLAN - AREA B

DRAWING NO:
EP101-B

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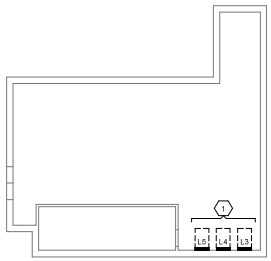
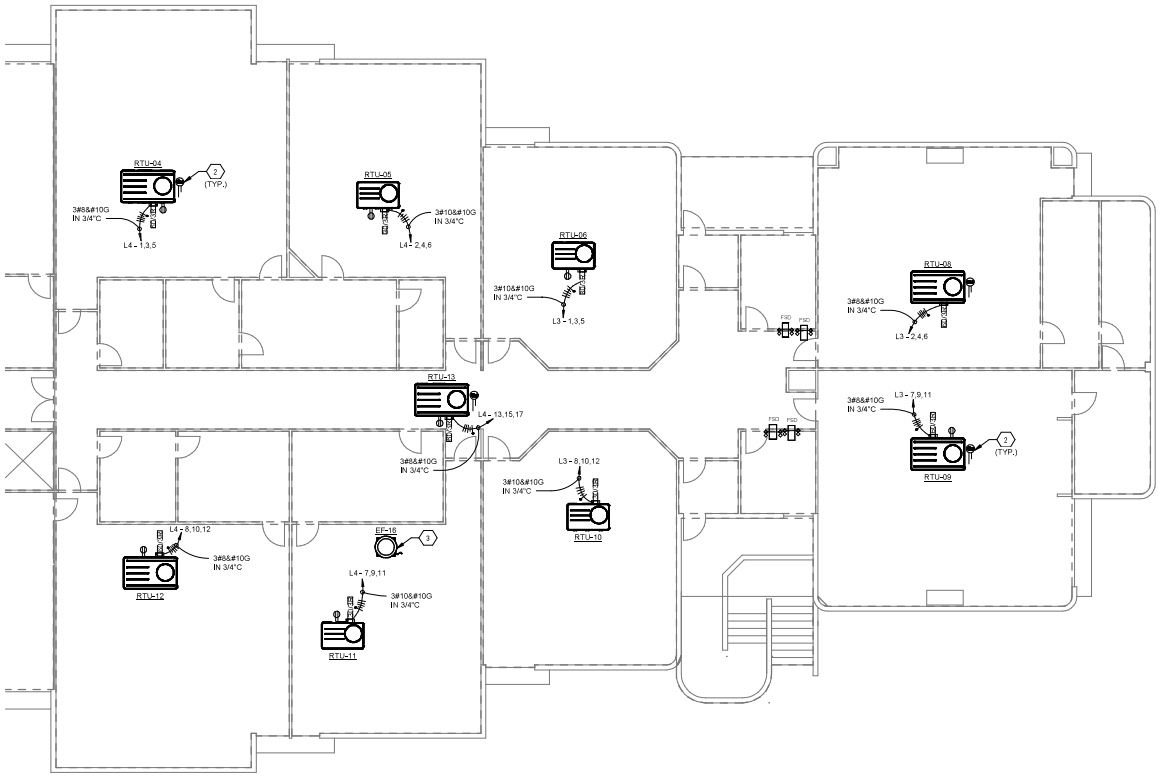


1 POWER BASEMENT PLAN
SCALE: 3/32" = 1'-0"

A1 / EP101-B



A1 POWER FIRST FLOOR PLAN - AREA C
SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

GENERAL SHEET NOTES

A. EACH BRANCH CIRCUIT IS TO HAVE IT'S OWN NEUTRAL WIRE AND NOT SHARE A NEUTRAL WITH OTHER CIRCUITS.
B. ALL ELECTRICAL WIRING DEVICES ARE TO BE RECESSED (FLUSH MOUNTED) UNLESS NOTED OTHERWISE OR OTHERWISE DIRECTED BY OWNER.
C. PROVIDE 2#10AWG+1#10AWG WIRING FOR ALL 20A BRANCH CIRCUITS LONGER THAN 75 FEET. PROVIDE 2#8AWG AND 1#10 GROUND BEYOND 150'.
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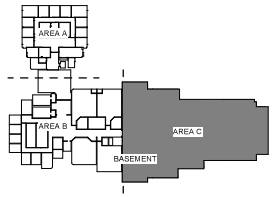
E. ALL RECEPTACLE MOUNTING HEIGHTS ARE TO BE FIELD VERIFIED WITH THE FURNITURE AND EQUIPMENT VENDOR/OWNER.
F. ALL CONDUCTORS SHALL BE #12 COPPER IN 3/4" CONDUIT MINIMUM, UNLESS INDICATED OTHERWISE.

KEYNOTES

1. NEW ELECTRICAL PANELS TO SERVE NEW RTUS, REFER TO DRAWING E-501 FOR ADDITIONAL INFORMATION, COORDINATE ROUTING OF PANEL FEEDERS WITH EXISTING CONDITIONS IN FIELD.
2. NEW RTU DUCT DETECTORS TO BE INTEGRATED INTO EXISTING FIRE ALARM SYSTEM.
3. NEW EXHAUST FAN TO REPLACE EXISTING. REUSE EXISTING EXHAUST FAN CIRCUIT. PROVIDE NEW DISCONNECTING MEANS AS INDICATED.

KEYPLAN



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POWER FIRST FLOOR PLAN - AREA C

DRAWING NO:
EP101-C

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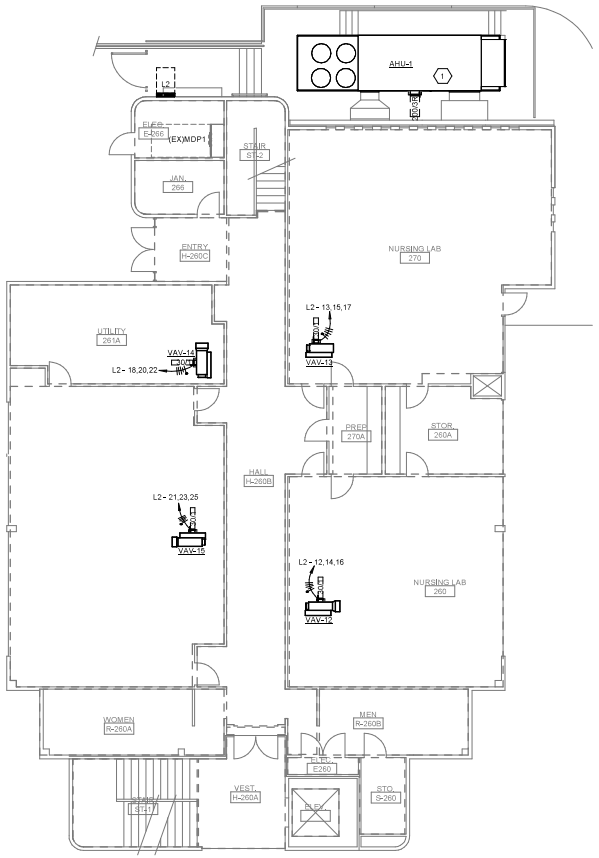


A1 POWER SECOND FLOOR PLAN - AREA A

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

0' 4' 8' 16'

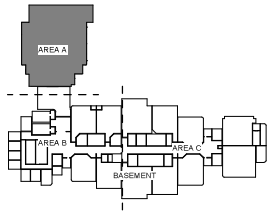
GENERAL SHEET NOTES

A. EACH BRANCH CIRCUIT IS TO HAVE IT'S OWN NEUTRAL WIRE AND NOT SHARE A NEUTRAL WITH OTHER CIRCUITS.
B. ALL ELECTRICAL WIRING DEVICES ARE TO BE RECESSED (FLUSH MOUNTED) UNLESS NOTED OTHERWISE OR OTHERWISE DIRECTED BY OWNER.
C. PROVIDE 2#10AWG+1#10AWG WIRING FOR ALL 20A BRANCH CIRCUITS LONGER THAN 75 FEET. PROVIDE 2#8AWG AND 1#10 GROUND BEYOND 150'.
D. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO BID. WHERE DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND DOCUMENTS OCCUR, NOTIFY THE ENGINEER AS NEEDED.
E. ALL RECEPTACLE MOUNTING HEIGHTS ARE TO BE FIELD VERIFIED WITH THE FURNITURE AND EQUIPMENT VENDOR/OWNER.
F. ALL CONDUCTORS SHALL BE #12 COPPER IN 3/4" CONDUIT MINIMUM, UNLESS INDICATED OTHERWISE.

KEYNOTES

1. UTILIZE EXISTING FRAME SPACE IN EXISTING PANEL MDF-1 FOR NEW AIR HANDLER CIRCUIT BREAKER. REFER TO SHEET E-601 FOR EQUIPMENT CIRCUITING INFORMATION.

KEYPLAN



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POWER SECOND FLOOR PLAN - AREA A

DRAWING NO:
EP102-A

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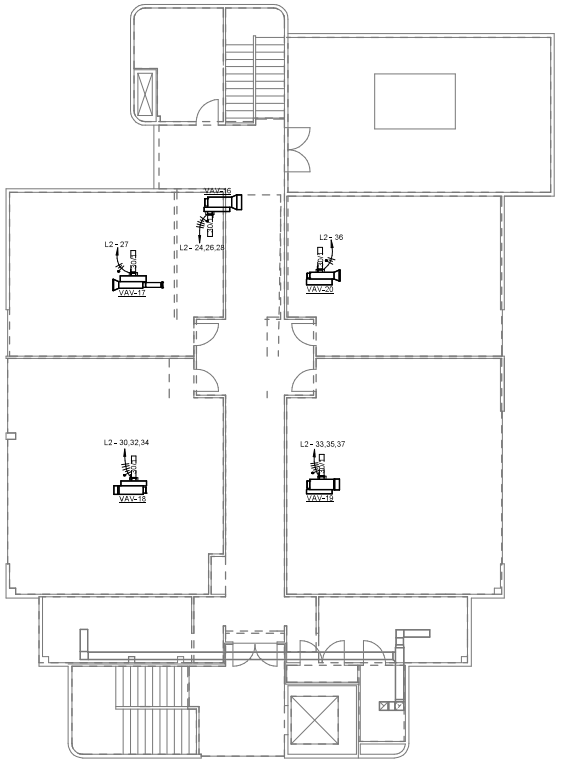

A1 POWER THIRD FLOOR PLAN - AREA A

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

0' 4' 8' 16'

GENERAL SHEET NOTES

A. EACH BRANCH CIRCUIT IS TO HAVE IT'S OWN NEUTRAL WIRE AND NOT SHARE A NEUTRAL WITH OTHER CIRCUITS.
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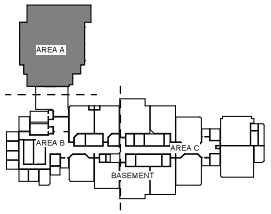
KEYNOTES

1. XXXX.

KEYPLAN



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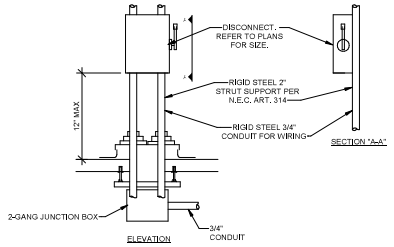
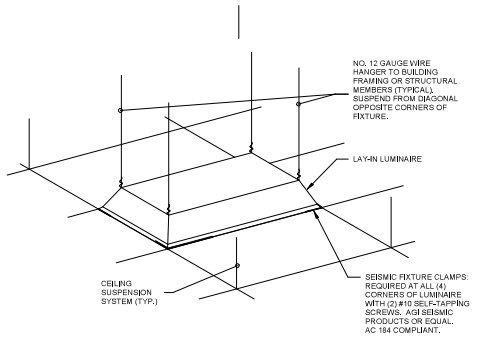


NOTE: REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR SECURELY ATTATCHING TO ROOF STRUCTURE AND FLASHING

2 UNISTRUT MOUNTED DISCONNECT DETAIL

SCALE: NO SCALE



1 LAY-IN LUMINAIRE SUPPORT DETAIL

SCALE: N.T.S.

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DRAWING TITLE:
ELECTRICAL DETAIL SHEET

DRAWING NO:
E-501

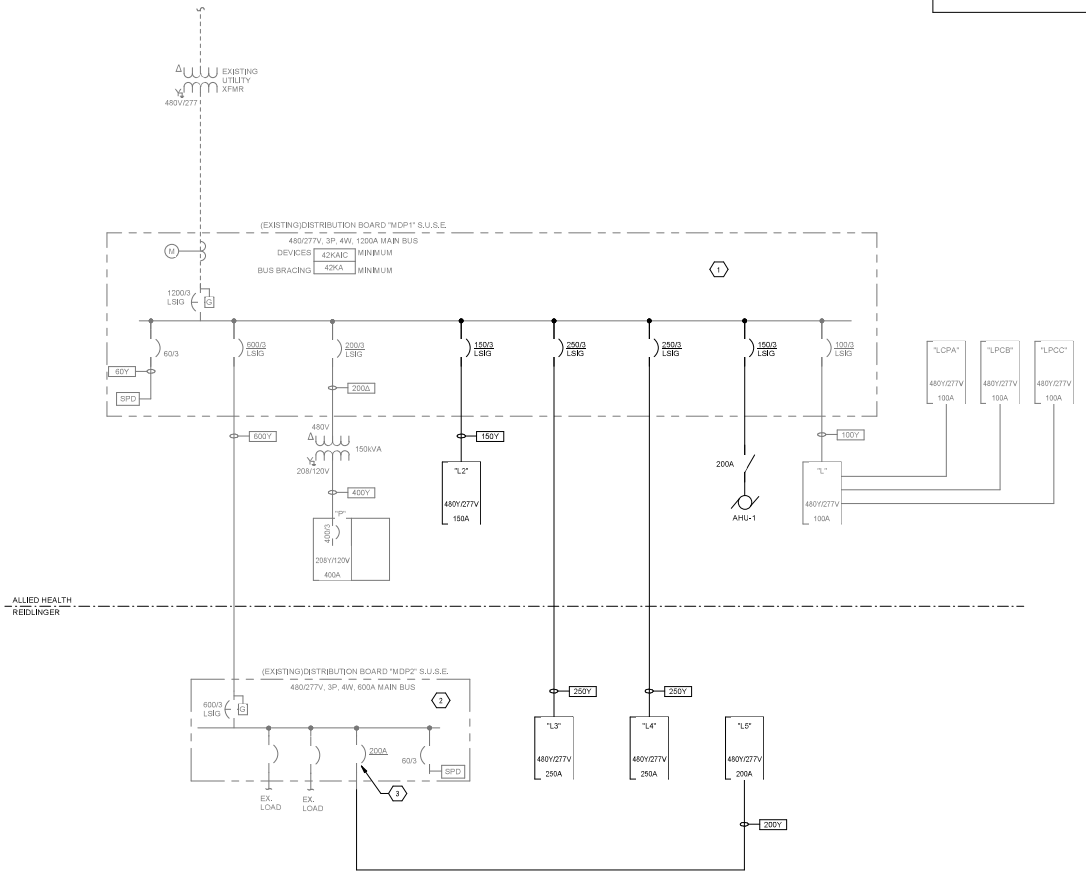
DRAWING OF

KEYNOTES

1. EXISTING ALLIED HEALTH MAIN SWITCHBOARD "MDP1" TO REMAIN.
2. EXISTING REIDLINGER MAIN SWITCHBOARD TO REMAIN.
3. EXISTING 200A FUSED SWITCH SERVING CHILLER TO BE REUSED TO FEED NEW 200A 480V PANEL 'LS'. EXTEND NEW CONDUIT AND WIRE TO NEW PANEL LOCATION. REFER TO DRAWING EP101-C FOR PANEL LOCATION.

GENERAL SHEET NOTES

A. INFORMATION SHOWN IS DIAGRAMMATIC, AND IS NOT INTENDED TO REPRESENT PHYSICAL ARRANGEMENTS OR LOCATIONS, ROUTING, CONNECTIONS AND PHYSICAL LAYOUTS ARE TO BE PER FIELD CONDITIONS AND AS INDICATED ELSEWHERE IN THE ELECTRICAL PLANS.
B. THE ELECTRICAL CONTRACTOR SHALL SUBMIT A COORDINATION REPORT PROVIDED BY SELECTED EQUIPMENT MANUFACTURER. THIS REPORT IS TO BE SUBMITTED, REVIEWED AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO EQUIPMENT BEING ORDERED, PURCHASED AND INSTALLED. THE CONTRACTOR SHALL PROVIDE, AT NO ADDED COST, A SELECTIVELY COORDINATED SYSTEM INCLUDING REQUIRED INCREASES IN EACH SIZES OF EQUIPMENT INCLUDING:PANELBOARDS, OR SWITCHBOARDS OR REQUIRED OVER CURRENTPROTECTIVE DEVICES.
C. COORDINATE AND SCHEDULE ALL POWER OUTAGES WITH OWNER 10 DAYS AHEAD OF NEEDED OUTAGE. SUBMIT A DETAILED SCHEDULE OF SEQUENCE OF EVENT FOR OUTAGE AND WORK TO OCCUR DURING OUTAGE. ALL OUTAGES ARE TO OCCUR DURING NON-STANDARD WORK HOURS UNLESS SPECIFICALLY ALLOWED BY OWNER.
D. SKM COORDINATION STUDY WILL BE REQUIRED TO BE PROVIDED BY EQUIPMENT SUPPLIER PRIOR TO ORDERING EQUIPMENT, INCLUDE EXISTING BREAKERS TO BE REVISED IN STUDY.
E. ALL BREAKER SETTINGS TO BE VERIFIED PRIOR TO COMPLETION OF WORK.
F. PROVIDE #6 BONDING CONDUCTOR BETWEEN ALL PANELBOARD GROUND BARS IN COMMON ELECTRICAL ROOM TO MEET THE REQUIREMENTS OF N.E.C. 250.



1 ELECTRICAL ONE LINE DIAGRAM - NEW WORK
SCALE: 1/8" = 1'-0"

COPPER FEEDER SCHEDULE

NOTE: ALL CONDUCTORS ARE COPPER, TYPE THWN/THHN UNLESS OTHERWISE NOTED.

DESIGNATION	CONDUCTORS	GROUND	CONDUIT	NOTES
THREE PHASE THREE WIRE & GROUND FEEDER				
20Δ	3#12	12	3/4"	
25Δ	3#10	10	3/4"	
30Δ	3#10	10	3/4"	
35Δ	3#8	10	3/4"	
40Δ	3#8	10	3/4"	
45Δ	3#8	10	3/4"	
50Δ	3#8	10	3/4"	
60Δ	3#6	10	1"	
70Δ	3#4	8	1 1/4"	
80Δ	3#4	8	1 1/4"	
90Δ	3#2	8	1 1/4"	
100Δ	3#2	8	1 1/4"	
125Δ	3#1/0	6	1 1/2"	
150Δ	3#1/0	6	1 1/2"	
175Δ	3#2/0	6	2"	
200Δ	3#3/0	6	2"	
225Δ	3#4/0	4	2 1/2"	
250Δ	3-250 KCMIL	4	3"	
300Δ	3-350 KCMIL	4	3"	
350Δ	3-500 KCMIL	2	4"	
400Δ	(2) 3#3/0	(2) 2	(2) 2"	
450Δ	(2) 3#4/0	(2) 2	(2) 2 1/2"	
500Δ	(2) 3-250 KCMIL	(2) 2	(2) 3"	
575Δ	(2) 3-300 KCMIL	(2) 1	(2) 3"	
600Δ	(2) 3-350 KCMIL	(2) 1	(2) 3"	
700Δ	(2) 3-500 KCMIL	(2) 1/0	(2) 4"	
800Δ	(3) 3-300 KCMIL	(3) 1/0	(3) 3"	
1000Δ	(3) 3-400 KCMIL	(3) 2/0	(3) 3"	
1200Δ	(4) 3-350 KCMIL	(4) 3/0	(4) 4"	
1600Δ	(5) 3-400 KCMIL	(5) 4/0	(5) 4"	
2000Δ	(6) 3-400 KCMIL	(6) 250 KCMIL	(6) 4"	
2500Δ	(7) 3-500 KCMIL	(7) 350 KCMIL	(7) 4"	
3000Δ	(8) 3-500 KCMIL	(8) 400 KCMIL	(8) 4"	
4000Δ	(11) 3-500 KCMIL	(11) 500 KCMIL	(11) 4"	
THREE PHASE FOUR WIRE & GROUND FEEDER				
20Y	4#12	12	3/4"	
25Y	4#10	10	3/4"	
30Y	4#10	10	3/4"	
35Y	4#8	10	3/4"	
40Y	4#8	10	3/4"	
45Y	4#8	10	3/4"	
50Y	4#8	10	3/4"	
60Y	4#6	10	1"	
70Y	4#4	8	1 1/4"	
80Y	4#4	8	1 1/4"	
90Y	4#2	8	1 1/4"	
100Y	4#2	8	1 1/4"	
125Y	4#1/0	6	1 1/2"	
150Y	4#1/0	6	2"	
175Y	4#2/0	6	2"	
200Y	4#3/0	6	2"	
225Y	4#4/0	4	2 1/2"	
250Y	4-250 KCMIL	4	3"	
300Y	4-350 KCMIL	4	3"	
350Y	4-500 KCMIL	2	4"	
400Y	(2) 4#3/0	(2) 2	(2) 2"	
450Y	(2) 4#4/0	(2) 2	(2) 2 1/2"	
500Y	(2) 4-250 KCMIL	(2) 2	(2) 3"	
575Y	(2) 4-300 KCMIL	(2) 1	(2) 3"	
600Y	(2) 4-350 KCMIL	(2) 1	(2) 3"	
700Y	(2) 4-500 KCMIL	(2) 1/0	(2) 4"	
800Y	(3) 4-300 KCMIL	(3) 1/0	(3) 3"	
1000Y	(3) 4-400 KCMIL	(3) 2/0	(3) 3"	
1200Y	(4) 4-250 KCMIL	(4) 3/0	(4) 4"	
1600Y	(5) 4-400 KCMIL	(5) 4/0	(5) 4"	
2000Y	(6) 4-400 KCMIL	(6) 250 KCMIL	(6) 4"	
2500Y	(7) 4-500 KCMIL	(7) 350 KCMIL	(7) 4"	
3000Y	(8) 4-500 KCMIL	(8) 400 KCMIL	(8) 4"	
4000Y	(11) 4-500 KCMIL	(11) 500 KCMIL	(11) 4"	
5000Y	(14) 4-500 KCMIL	(14) 500 KCMIL	(14) 4"	

EQUIPMENT BONDING JUMPER FOR SEPARATELY DERIVED SYSTEMS PER NEC 250.66 (PROVIDE CONDUCTOR GROUND BELOW INSTEAD OF FEEDER GROUND FOR THREE PHASE, 4-WIRE SYSTEMS INDICATED ABOVE)

DESIGNATION	GROUND
20YS THRU 100YS	8
125YS THRU 150YS	6
175YS THRU 200YS	4
225YS THRU 300YS	2
350YS THRU 600YS	1/0
600YS THRU 700YS	2/0
800YS THRU 5000YS	3/0

THREE PHASE FOUR WIRE 200% NEUTRAL & GROUND FEEDER				
100E	3#2, 1#4/0 NEUTRAL	8	2"	
150E	3#2/0, 2#2/0 NEUT.	6	2"	
225E	3-250 KCMIL, 2-250 KCMIL NEUT.	4	2 1/2"	
350E	(2) 3#3/0, (2) 2#3/0 NEUT.	(2) 2	(2) 2 1/2"	
400E	(2) 3#4/0, (2) 2#4/0 NEUT.	(2) 2	(2) 2 1/2"	
500E	(2) 3-350 KCMIL, (2) 2-350 KCMIL NEUT.	(2) 2	(2) 3"	

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PROJECT

NMSU ALAMAGORDO
REIDLINGER SCIENCE
CENTER HVAC UPGRADES
2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION
DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	03/29/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
ELECTRICAL
ONE-LINE DIAGRAM

DRAWING NO:
E-601

DRAWING OF

Bridgers & Paxton Project No. 8797 3/29/2024 8:52:04 AM D:\Revit 2023\Projects\8797_MEP_REIDLINGER SCIENCE CENTER_VA.Stacy.rvt

Branch Panel: L3

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 250 A

Notes:

CKT	Circuit Description	Notes	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Notes	Circuit Description	CKT
1	MTR ROOF RTU-06		25 A	3	4877	7316					3	35 A		MTR ROOF RTU-08	2
3	–		–	–			4877	7316			–	–		–	4
5	–		–	–					4877	7316	–	–		–	6
7	MTR ROOF RTU-09		35 A	3	7316	4877					3	25 A		MTR ROOF RTU-10	8
9	–		–	–			7316	4877			–	–		–	10
11	–		–	–					7316	4877	–	–		–	12
13															14
15															16
17															18
19															20
21															22
23															24
25															26
27															28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
			Total Load:		24387 VA		24387 VA		24387 VA						
			Total Amps:		88 A		88 A		88 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
MTR	73162 VA	100.00%	73162 VA		
				Total Conn. Load:	73162 VA
				Total Est. Demand:	73162 VA
				Total Conn. Current:	88 A
				Total Est. Demand Current:	88 A

Notes:

Branch Panel: L2

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 150 A
MCB Rating: 150 A

Notes:

CKT	Circuit Description	Notes	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Notes	Circuit Description	CKT
1	MTR HALL 160 VAV-01		15 A	1	1507	2504					1	15 A		MTR CONF. 160 VAV-02	2
3	MTR OFFICE 173 VAV-03		15 A	1			1507	4011			1	20 A		MTR OFFICE 171 VAV-04	4
5	MTR OFFICE 169 VAV-05		15 A	1					997	1507	1	15 A		MTR RECEPTION 174 VAV-06	6
7	MTR OFFICE 168 VAV-07		15 A	1	997	997					1	15 A		MTR STOR. 124B VAV-08	8
9	MTR OFFICE 166 VAV-09		15 A	1			997	1507			1	15 A		MTR OFFICE 165 VAV-10	10
11	MTR OFFICE 163 VAV-11		15 A	1					997	1995	3	15 A		MTR NURSING LAB 260 VAV-12	12
13	MTR NURSING LAB 270 VAV-13		15 A	3	2173	1995					–	–		–	14
15	–		–	–			2173	1995			–	–		–	16
17	–		–	–					2173	3326	3	20 A		MTR UTILITY 261A VAV-14	18
19					3326						–	–		–	20
21	MTR SCIENCE LAB 261 VAV-15		15 A	3			2173	3326			–	–		–	22
23	–		–	–					2173	1840	3	15 A		MTR CLASSRM, 361 VAV-16	24
25	–		–	–	2173	1840					–	–		–	26
27	MTR CLASSRM, 361 VAV-17		20 A	1			4011	1840			–	–		–	28
29										1995	3	15 A		MTR CLASSRM, 360 VAV-18	30
31						1995					–	–		–	32
33	MTR CLASSRM, 363 VAV-19		15 A	3			1995	1995			–	–		–	34
35	–		–	–					1995	4011	1	20 A		MTR CLASSROOM 364 VAV-20	36
37	–		–	–	1995										38
39															40
41															42
			Total Load:		21502 VA		27530 VA		23009 VA						
			Total Amps:		78 A		100 A		84 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
MTR	72041 VA	100.00%	72041 VA		
				Total Conn. Load:	72041 VA
				Total Est. Demand:	72041 VA
				Total Conn. Current:	87 A
				Total Est. Demand Current:	87 A

Notes:

Branch Panel: L5

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 200 A
MCB Rating: 200 A

Notes:

CKT	Circuit Description	Notes	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Notes	Circuit Description	CKT
1	MTR ROOF RTU-01		35 A	3	7094	4877					3	25 A		MTR ROOF RTU-02	2
3	–		–	–			7094	4877			–	–		–	4
5	–		–	–					7094	4877	–	–		–	6
7	MTR ROOF RTU-03		25 A	3	4877	10420					3	50 A		MTR ROOF RTU-14	8
9	–		–	–			4877	10420			–	–		–	10
11	–		–	–					4877	10420	–	–		–	12
13	MTR ROOF RTU-15		25 A	3	4877	4877					3	25 A		MTR ROOF RTU-16	14
15	–		–	–			4877	4877			–	–		–	16
17	–		–	–					4877	4877	–	–		–	18
19	MTR ROOF RTU-18		35 A	3	7316										20
21	–		–	–			7316								22
23	–		–	–					7316						24
25															26
27															28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
			Total Load:		44341 VA		44341 VA		44341 VA						
			Total Amps:		160 A		160 A		160 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
MTR	133022 VA	100.00%	133022 VA		
				Total Conn. Load:	133022 VA
				Total Est. Demand:	133022 VA
				Total Conn. Current:	160 A
				Total Est. Demand Current:	160 A

Notes:

Branch Panel: L4

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Spaces: 42

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 250 A

Notes:

CKT	Circuit Description	Notes	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Notes	Circuit Description	CKT
1	MTR ROOF RTU-04		50 A	3	10420	4877					3	25 A		MTR RTU-05	2
3	–		–	–			10420	4877			–	–		–	4
5	–		–	–					10420	4877	–	–		–	6
7	MTR ROOF RTU-11		25 A	3	4877	7094					3	35 A		MTR ROOF RTU-12	8
9	–		–	–			4877	7094			–	–		–	10
11	–		–	–					4877	7094	–	–		–	12
13	MTR ROOF RTU-13		35 A	3	7316										14
15	–		–	–			7316								16
17	–		–	–					7316						18
19															20
21															22
23															24
25															26
27															28
29															30
31															32
33															34
35															36
37															38
39															40
41															42
			Total Load:		34586 VA		34586 VA		34586 VA						
			Total Amps:		125 A		125 A		125 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
MTR	103757 VA	100.00%	103757 VA		
				Total Conn. Load:	103757 VA
				Total Est. Demand:	103757 VA
				Total Conn. Current:	125 A
				Total Est. Demand Current:	125 A

Notes:

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PROJECT

NMSU ALAMAGORDO
REIDLINGER SCIENCE
CENTER HVAC UPGRADES
2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION
DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	03/29/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
ELECTRICAL
SCHEDULES

DRAWING NO:
E-701

DRAWING OF

NMSU ALALAMAGORDO

NMSU ALAMAGORDO REIDLINGER HVAC UPGRADES
2400 N. SCENIC DRIVE, ALAMAGORDO, NEW MEXICO 88310

95% CONSTRUCTION DOCUMENTS

APRIL, 2024

RECOMMENDED CONSTRUCTION SEQUENCE:

PHASE #1 - ALLIED HEALTH AIR HANDLER, FMS CONTROLS, VAV BOX REPLACEMENT

- INSTALL ELECTRICAL PANELS & RACEWAYS FOR POWER TO NEW HVAC EQUIPMENT.
- BUILD NEW CMU SOUND WALL, CONCRETE WORK, AND NEW GROUND UNIT ENCLOSURE.
- REMOVE EXISTING VAV BOXES W/HW REHEAT WITH NEW VAV BOXES W/ELEC HEAT AND CONNECT TO NEW POWER CIRCUITS. WORK DONE 1 BY 1 TO MINIMIZE DISTRUPTION TO OCCUPANTS.
- PARTIALLY REMOVE & CAP HW PIPING ASSOCIATED WITH EXISTING VAV BOXES. ADD ALTERNATIVE#1 TO REMOVE ALL HW & CHW PIPING FROM BUILDING. DRAIN FLUIDS PER EPA REQUIREMENTS.
- REPLACE EXISTING VAV BOX CONTROLS AND TEMPORARILY MAKE OPERATIONAL WITH EXISTING AIR HANDLING UNIT. WORK DONE 1 BY 1 TO MINIMIZE DISTRUPTION TO OCCUPANTS.
- INSTALL NEW PACKAGED VAV AIR HANDLING UNIT WITH ELECTRIC HEAT.
- INSTALL CATWALK / MAINTENANCE STAND BESIDE AIRHANDLING UNIT.
- INSTALL POWER AND CONTROLS FOR NEW PACKAGED VAV UNIT.
- INSTALL SOUND BATTING TO ENCLOSURE.
- INSTALL NEW OPENINGS IN EXTERIOR WALL FOR DUCTWORK, PATCH EXISTING OPENINGS.
- REMOVE EXISTING ROOF MOUNTED VAV AIR HANDING UNIT AND DUCTWORK FROM UNIT TO CEILING SPACE.
- REMOVE ALL HW & CHW PIPING TO EXISTING AIR HANDLING UNIT. DRAIN PER EPA REQUIREMENTS.
- INSTALL NEW DUCTWORK AND SOUND ATTENUATORS FROM NEW GROUND MOUNTED UNIT TO CONNECTION POINTS INSIDE BLUILDING.
- COMPLETE CONTROLS ON AIR HANDLING UNIT AND VAV BOXES.
- TEST & BALANCE UNIT AND VAV BOXES.

PHASE #2- REIDLINGER SCIENCE CENTER, PACKAGED ROOF TOP UNIT, FMS CONTROLS AND DUCTWORK REPLACEMENT (DONE IN A ZONE BY ZONE METHOD TO MINIMIZE BUILDING DISRUPTION TO OCCUPANTS).

- REMOVE CEILINGS, DUAL DUCT MIXING BOXES, GRILLES, DIFFUSERS.
- REINFORCE ROOF STRUCTURE BAR JOISTS AT EACH NEW PACKAGED ROOF TOP UNIT LOCATION.
- REMOVE EXISTING AIR COMPRESSORS AND VACUUMN PUMP AT BASEMENT MECHANICAL ROOM.
- INSTALL NEW ELECTRICAL PANELS & RACEWAYS TO NEW ROOF TOP UNITS.
- INSTALL NEW SUPPLY & RETURN DUCTWORK.
- INSTALL NEW ROOF OPENINGS FOR NEW ROOF TOP UNITS, DUCTWORK CURBS.
- INSTALL QUICK FRAME SUPPORTS AT ROOF OPENINGS.
- INSTALL NEW PACKAGED ROOF TOP UNITS ON NEW ROOF CURBS. CONNECT DUCTWORK TO ROOF CURB AND DUCTWORK BELOW ROOF.
- INSTALL USER INTERFACE, ZONE TEMPERATURE SENSOR, (CO2 SENSORS WHERE NOTED.)
- INSTALL POWER AND CONTROLS TO NEW UNITS. MAKE OPERATIONAL.
- REMOVE AND REPLACE EXISTING ROOF TOP EXHAUST FANS.
- PATCH & REPAIR ROOF AT NEW ROOF TOP EQUIPMENT LOCATIONS. INSTALL TPO WALK PADS AT NEW ROOF TOP UNIT LOCATIONS.
- EXTEND CONTROL WIRING / NETWORK WIRING TO ALLIED HEALTH AND NEW ROOF TOP UNITS. NEW FSM PANEL(S) TO BE LOCATED IN BASEMENT MECHANICAL ROOM.
- AT APPROXIMATELY 50% REMOVAL OF EXISTING DUAL DUCT MIXING BOXES AND INSTALL OF NEW ROOF TOP UNITS- REMOVE AND DEMOLISH EXISTING DUAL DUCT UNIT IN BASEMENT. REMOVE ALL ASSOCIATED DUCTWORK.
- REMOVE ALL HW & CHW PIPING FROM BASEMENT TO FIRST FLOOR MAINS TO ALLIED HEALTH BUILDING, DRAIN ALL FLUIDS ACCORDING TO EPA REQUIRMENTS.
- REMOVE EXISTING AIR COOLED CHILLER, BOILER, PUMPS, VENTING AND ASSOCIATED PIPING.
- COMPLETE DEMOLITION AND INSTALLATION OF NEW REMAINING ROOF TOP UNITS PER NOTES ABOVE.
- COMPLETE TESTING AND BALANCE OF ALL UNITS.
- COMPLETE FMS GRAPHICS AND USER ACCESS.

PROJECT AREA

NOT TO SCALE

SHEET INDEX	
Sheet Number	Sheet Name
M-001	MECHANICAL LEGEND
MD100	MECHANICAL BASEMENT FLOOR DEMOLITION PLAN
MD101	MECHANICAL FIRST FLOOR DEMOLITION PLAN
MD101-A	MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA A
MD101-B	MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA B
MD101-C	MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA C
MD102-A	MECHANICAL SECOND FLOOR DEMOLITION PLAN - AREA A
MD103-A	MECHANICAL THIRD FLOOR DEMOLITION PLAN - AREA A
MH100	HVAC BASEMENT FLOOR PLAN
MH101	HVAC FIRST FLOOR PLAN
MH101-A	HVAC FIRST FLOOR PLAN - AREA A
MH101-B	HVAC FIRST FLOOR PLAN - AREA B
MH101-C	HVAC FIRST FLOOR PLAN - AREA C
MH102-A	HVAC SECOND FLOOR PLAN - AREA A
MH103-A	HVAC THIRD FLOOR PLAN - AREA A
MH131	MECHANICAL ROOF PLAN
M-501	MECHANICAL DETAILS
M-502	MECHANICAL DETAILS
M-503	MECHANICAL DETAILS
M-701	MECHANICAL SCHEDULES
M-702	MECHANICAL SCHEDULES
M-703	MECHANICAL SCHEDULES

MECHANICAL: 22

MI001	MECHANICAL CONTROLS LEGEND
MI601	MECHANICAL CONTROLS DIAGRAMS
MI602	MECHANICAL CONTROLS SEQUENCE OF OPERATIONS

MECHANICAL CONTROLS: 3

E-001	ELECTRICAL LEGEND
EL101-A	LIGHTING FIRST FLOOR PLAN - AREA A
EL101-B	LIGHTING FIRST FLOOR PLAN - AREA B
EL101-C	LIGHTING FIRST FLOOR PLAN - AREA C
EL102-A	LIGHTING SECOND FLOOR PLAN - AREA A
EL103-A	LIGHTING THIRD FLOOR PLAN - AREA A
EP101	POWER FIRST FLOOR PLAN
E-601	ELECTRICAL ONE-LINE DIAGRAM
ED-601	ELECTRICAL DEMOLITION ONE-LINE DIAGRAMS

ELECTRICAL: 9

Grand total: 34

OWNER:

NEW MEXICO STATE UNIVERSITY
2400 SCENIC DRIVE
ALAMAGORDO, NM 88310

MEP ENGINEER:

BRIDGERS & PAXTON CONSULTING ENGINEERS
4600 C MONTGOMERY BLVD. NE
ALBUQUERQUE, NM 87109

ARCHITECT:

JESS HOLMES, FAIA, LLC
524 W. MAIN ST.
ARTESIA, NM 88210

STRUCTURAL ENGINEER:

JOEL D SMITH, PE
110 W. COUNTRY CLUB, Ste. 3
ROSWELL, NM 88201

BRIDGERS & PAXTON
4600 C Montgomery Blvd, NE
Albuquerque, NM 87109
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PROJECT

NMSU ALAMAGORDO
REIDLINGER SCIENCE CENTER HVAC UPGRADES
2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95% CONSTRUCTION DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	04/02/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
MEP DRAWING INDEX

DRAWING NO:
G-001

DRAWING OF

MECHANICAL SYMBOL LEGEND

ABBREVIATIONS

ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTIC LINING
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CONT.	CONTINUATION
D	DRAIN
DX	DIRECT EXPANSION
ENT	ENTERING
EXH	EXHAUST
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
°F	DEGREES FAHRENHEIT
FB	FLAT BOTTOM
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
F.G.	FILTER GAUGE
FLEX	FLEXIBLE
FPM	FEET PER MINUTE
FS	FLOOR SINK
FT	FLAT TOP
FT.	FEET
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HD	HAND DAMPER (VOLUME DAMPER)
HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)
IN	INCHES
KW	KILOWATT
KWH	KILOWATT HOUR
MA	MAIN AIR (CONTROLS)
MCC	MOTOR CONTROL CENTER
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER (QUANTITY)
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAGE
QTY	QUANTITY
QUAD	QUADRANT
R.A.	RETURN AIR
Rh	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
SCD	SMOKE CONTROL DAMPER
SP	STATIC PRESSURE (INCHES OF WATER)
SDVV	SINGLE DUCT VARIABLE VOLUME
ST	SOUND TRAP
TOPT	TOP OF PIPE TRAPEZE
TP	TOTAL PRESSURE (INCHES OF WATER)
TYP.	TYPICAL
V	VOLTS
VAC	VOLTS, ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VTR	VENT THRU ROOF

DUCTWORK SYMBOLS

- FLEXIBLE DUCT
- ACOUSTICAL DUCT LINING
- MANUAL BALANCING DAMPER (HD)
- FIRE DAMPER (FRD)
- SMOKE DAMPER (SMD)
- COMBINATION FIRE/SMOKE DAMPER (FSD)
- 1 HR. FIRE BARRIER
- 2HR. FIRE BARRIER
- SMOKE BARRIER
- 2HR. SMOKE BARRIER

  (VERIFY WITH ARCHITECTURAL DRAWINGS)
- CONNECT NEW DUCT TO EXISTING DUCT
- EXISTING DUCT TO BE REMOVED
- FLEXIBLE CONNECTION
- RISE IN DUCT
- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EXCEPT TRANSFER AIR SOUND ELBOW)
- SHORT RADIUS ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EXCEPT TRANSFER AIR SOUND ELBOW)
- STANDARD LONG RADIUS ELBOW
- SUPPLY DUCT
- RETURN DUCT
- EXHAUST DUCT
- STAMPED FACE CEILING DIFFUSERS
- CEILING SUPPLY AIR DIFFUSERS
- PERFORATED FACE CEILING DIFFUSERS
- CEILING EXHAUST REGISTER
- CEILING RETURN AIR REGISTER OR GRILLE
- SIDEWALL EXHAUST OR RETURN AIR GRILLE OR REGISTER
- SIDEWALL SUPPLY REGISTER
- DUCT TRANSITION
- DUCT TRANSITION FROM RECTANGULAR TO ROUND
- 24x12 — INDICATES A 24"x12" RECTANGULAR DUCT (WIDTH x DEPTH)
- 12"Ø — INDICATES A 12" ROUND DUCT
- 24x12Ø — INDICATES A 24"x12" FLAT OVAL DUCT (WIDTH x DEPTH)
- DUCT MOUNTED SMOKE DETECTOR
- DUCT MOUNTED STATIC PRESSURE PROBE
- ACCESS DOOR
- T — ROOM THERMOSTAT/TEMP. TRANSMITTER LOCATION ONLY SEE CONTROL DRAWINGS FOR TYPE
- CO2 — ROOM CARBON DIOXIDE TRANSMITTER LOCATION ONLY SEE CONTROL DRAWINGS FOR TYPE

VALVE SYMBOLS

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- 3-WAY MODULATING CONTROL VALVE
- 2-WAY CONTROL VALVE
- SAFETY VALVE OR PRESSURE RELIEF VALVE
- SOLENOID VALVE
- 3/4" BALL VALVE WITH ADAPTER TO 3/4" HOSE THREAD
- DIAPHRAGM VALVE
- BUTTERFLY VALVE
- BALL VALVE
- VALVE IN RISE
- WATER FLOW MEASURING DEVICE
- CIRCUIT SETTER

PIPING SYMBOLS

MECHANICAL PIPING

HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
D	DRAIN
CD	CONDENSATE DRAIN
V	VENT
MU	MAKE-UP WATER
RS	REFRIGERATION SUCTION
RL	REFRIGERATION LIQUID
R	REFRIGERATION
DOWN	DIRECTION PITCH
	DIRECTION OF FLOW
	EXISTING
	DEMO

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS APPLY TO THIS PROJECT

FITTING SYMBOLS

- ELBOW - DOWN
- ELBOW - UP
- PIPE RISE-DROP
- ELBOW - DROP TO TEE
- TEE - DROP FROM TEE
- END CAP
- FLEX CONNECTION
- PIPE REDUCER - CONCENTRIC
- PIPE REDUCER - ECCENTRIC
- PIPE STRAINER
- UNION - SCREWED
- AIR VENT - AUTOMATIC
- AIR VENT - MANUAL
- GAUGE - DIFFERENTIAL
- GAUGE - PRESSURE
- GAUGE - PRESSURE WITH COCK
- GAUGE - TEMPERATURE
- PIPE ANCHOR
- PIPE EXPANSION JOINT
- PIPE GUIDE
- SENSOR - FLOW
- SWITCH - FLOW
- SWITCH HUMIDITY
- SWITCH - PRESSURE
- SWITCH - TEMPERATURE
- TEMPERATURE - PRESSURE TEST FITTING
- THERMOMETER
- THERMOMETER WELL
- BASKET STRAINER
- STEAM TRAP INVERTED BUCKET
- METER - TOTALIZING BTU
- METER - TOTALIZING FLOW

SECTION SYMBOL

SECTION LOCATION — A1 — DRAWING NUMBER WHERE DETAILED — M301

DETAIL SYMBOL

DETAIL LOCATION — x#/x### — DRAWING NUMBER WHERE DETAILED

SECTION AND DETAIL TITLES

SECTION LETTER LOCATION — A1 SECTION SCALE

DETAIL NUMBER LOCATION — A1 DETAIL SCALE

EQUIPMENT SYMBOLS

- LETTERS REFER TO THE EQUIPMENT TYPE
- XX-## — NUMBERS REFER TO SPECIFIC EQUIPMENT
- SYMBOL INDICATES EQUIPMENT IDENTIFIED IN EQUIPMENT SCHEDULE
- ##x## — SIDEWALL GRILLE DIMENSION WHERE SHOWN ON PLANS
- XX-# — SYMBOL INDICATES GRILLE OR DIFFUSER IDENTIFIED IN EQUIPMENT SCHEDULE
- ### — CFM

GENERAL NOTES

A. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILINGS, UNLESS OTHERWISE NOTED.

B. PROVIDE ACCESS PANELS OR DOORS IN INACCESSIBLE CEILINGS AND/OR CHASES FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, COILS, FANS, CONTROLS, ETC. THEY SHALL BE FURNISHED UNDER DIVISION 23 AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATION. ACCESS DOOR RATING SHALL MATCH CLASSIFICATION OF WALL AND CEILING FIRE RATING.

C. WATER PIPE CONNECTIONS TO WATER COILS SHALL BE MADE SO THERE WILL BE COUNTER FLOW BETWEEN WATER AND AIR.

D. COORDINATE THE LOCATION OF ALL DIFFUSERS, GRILLES, REGISTERS, ACCESS DOORS, ETC., WITH THE ARCHITECTURAL REFLECTED CEILING PLAN(S).

E. ALL ROUND RUNOUTS AND DROPS TO DIFFUSERS SHALL BE THE SAME NOMINAL SIZE AS THE SCHEDULED DIFFUSER NECK SIZE.

F. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. ALL DUCT SIZES SHOWN ON DRAWINGS ARE NET INSIDE DIMENSIONS. PROVIDE ONE INCH ACOUSTICAL LINING (TYPE DS INSULATION) IN LOW VELOCITY RECTANGULAR DUCTWORK FOR THE FIRST 10 DIAMETERS OF DUCTWORK CONNECTED TO DEVICE, OR AS INDICATED ON DRAWINGS, WHICHEVER IS GREATER. FOR THE REMAINDER OF THIS DUCTWORK PROVIDE AS INDICATED IN THE INSULATION SPECIFICATIONS.

G. PROVIDE 1/2" MANUAL AIR VENTS AT ALL HIGH POINTS OF CLOSED SYSTEM PIPING AND 1/2" MANUAL DRAIN VALVES WITH HOSE CONNECTION AT LOW POINTS AS REQUIRED TO PROVIDE COMPLETE SYSTEM DRAINAGE. WHERE DRAIN VALVES OCCUR ABOVE CEILING AREAS AND IN AREAS OUTSIDE MECHANICAL RANGE PROVIDE HOSE CONNECTION ON VALVE.

H. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS, EXCEPT TRANSFER AIR SOUND ELBOWS.

I. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FIRE RATED AND/OR SMOKE RATED WALLS AND ASSEMBLIES. PROVIDE APPROVED FIRE DAMPERS IN ALL REQUIRED PENETRATIONS FOR DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS. ALL PIPE AND DUCTWORK PENETRATIONS OF FIRE, SMOKE AND FULL HEIGHT WALLS SHALL BE CAULKED AIRTIGHT TO THE ADJACENT STRUCTURE BY MEANS OF U.L. APPROVED FIRE PROOF CAULKING MATERIAL.

J. CONTRACTOR SHALL COORDINATE ALL DUCTWORK, PIPING, PLUMBING AND FIRE PROTECTION PIPING WITH STRUCTURAL AND ELECTRICAL SYSTEMS AND SHALL PROVIDE NECESSARY OFFSETS TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.

K. CONTRACTOR SHALL FURNISH ALL NECESSARY STRUCTURES, INSERTS, SLEEVES, AND HANGING DEVICES FOR INSTALLATION OF MECHANICAL AND PLUMBING EQUIPMENT, DUCTWORK AND PIPING, ETC. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND ALL BUILDING TRADES TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.

L. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY MISCELLANEOUS ANGLES, CHANNELS, UNISTRUT, ETC., AS MAY BE REQUIRED TO ADEQUATELY SUPPORT THE MECHANICAL PIPING, DUCTWORK, EQUIPMENT IN A MANNER APPROVED BY THE ARCHITECT, WHICH WILL NOT OVERLOAD THE BUILDING STRUCTURAL SYSTEM.

M. CONTRACTOR SHALL PROVIDE RETURN AIR OR TRANSFER AIR OPENINGS IN FULL HEIGHT WALLS SIZED AT 350 FPM (UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE DRAWINGS) TO CREATE AND/OR MAINTAIN A RETURN AIR PATH AS REQUIRED. FIRE DAMPERS AND/OR SMOKE DAMPERS SHALL BE PROVIDED IN SUCH OPENINGS WHERE REQUIRED BY NOTE "J".

N. SEAL ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, DUCT WALL PENETRATIONS AND FITTING CONNECTIONS ON ALL DUCT SYSTEMS.

O. MECHANICAL ITEMS SUCH AS ROOF DRAINS, FLOOR DRAINS, PLUMBING FIXTURES, ETC. SHOWN ON THE ARCHITECTURAL DRAWINGS BUT NOT SHOWN ON THE MECHANICAL DRAWINGS SHALL BE INCLUDED IN THIS PROJECT. THESE ITEMS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR INCLUSION IN ADDENDUM.

GENERAL DEMO NOTES

A. THE DEMOLITION DRAWINGS REFLECT INFORMATION ON EXISTING BUILDING SERVICES GATHERED BY SITE INSPECTION, DISCUSSIONS WITH MAINTENANCE PERSONNEL AND PREVIOUS CONSTRUCTION DRAWINGS. THE EXACT LOCATION, ARRANGEMENT, AND SIZES OF PIPE LINES AND DUCTWORK IN THE EXISTING BUILDING MAY BE DIFFERENT FROM THAT SHOWN ON THESE DRAWINGS.

B. THE CONTRACTOR SHALL COORDINATE THE SHUTDOWN OF EXISTING BUILDING SERVICES FOR REMOVALS WITH OWNER AUTHORIZED REPRESENTATIVE AND SHALL CONFORM TO THEIR REQUIREMENTS.

C. DISRUPTION OF NORMAL FACILITY ACTIVITIES ARE TO BE KEPT TO AN ABSOLUTE MINIMUM. DUST, DEBRIS, AND FUMES SHALL BE CONTROLLED SO AS NOT TO AFFECT THE HEALTH AND SAFETY OF OCCUPIED AREAS WITHIN THE FACILITY WHICH ARE OUTSIDE THE AREA OF WORK. COORDINATE WITH THE ARCHITECT AND THE OWNER'S REPRESENTATIVE WITH REGARD TO ALL ACTIVITIES TO BE CONDUCTED OUTSIDE OF THE SUITE REMODEL AREA WHICH MAY AFFECT THE OPERATION OF THE FACILITY.

D. THE CONTRACTOR SHALL PROVIDE TEMPORARY VENTILATION (MAINTAIN WORK ZONE AT NEGATIVE PRESSURE), FILTRATION, AIR PURIFIERS, DUST SCREENS, ETC., FOR ALL WORK AREAS AFFECTED BY DEMOLITION FOR NEW INSTALLATION TO MINIMIZE DUST AND FUMES.

E. THE CONTRACTOR SHALL PRESENT AN AREA BY AREA WORK PLAN WELL IN ADVANCE TO THE ARCHITECT AND THE OWNER'S AUTHORIZED REPRESENTATIVE FOR APPROVAL PRIOR TO BEGINNING WORK. THE WORK PLAN SHALL INCLUDE AN OUTLINE OF ALL ACTIVITIES OF ALL SUBCONTRACTORS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S AUTHORIZED REPRESENTATIVE TO ESTABLISH ACCEPTABLE ROUTING AND ACCESS WITHIN THE FACILITY FOR MATERIALS REQUIRED FOR THE NEW INSTALLATION.

F. SEE SPECIFICATION SECTION 230593, TESTING, ADJUSTING, & BALANCING OR MECHANICAL SYSTEMS FOR ADDITIONAL DESCRIPTION AND REQUIREMENTS.

G. ALL TEST AND MEASUREMENT TRAVERSE LOCATIONS SHALL BE CLEARLY NOTED ON FLOOR PLANS WHICH SHALL BE INCLUDED WITH THE TEST AND MEASUREMENT DATA.

H. ALL DATA OBTAINED VIA TESTING AND MEASURING OF THE EXISTING AIR HANDLING UNIT, AND THE ASSOCIATED RETURN/RELIEF FAN, SUPPLY AIR DUCTS, EXHAUST, AND RETURN AIR DUCTS PRIOR TO COMMENCING THE DEMOLITION AND/OR NEW WORK SCOPE OF WORK SHALL BE UTILIZED TO ESTABLISH NEW HVAC SYSTEM PERFORMANCE AND BALANCE DATA FOR THE RENOVATION. DATA SHALL BE FORWARDED TO THE PROJECT ENGINEER FOR REVIEW AND COMMENT PRIOR TO COMMENCING DEMOLITION AND/OR NEW WORK ASSOCIATED WITH THE FACILITY RENOVATION.

I. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL TRADES INCLUDING MECHANICAL, PLUMBING, ELECTRICAL, FURNITURE, AND ARCHITECTURAL. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT PRIOR TO START OF WORK.

J. ALL NEW TO EXISTING DUCT CONNECTIONS SHALL BE FIELD VERIFIED PRIOR TO ORDERING AND FABRICATING NEW DUCTWORK OR DAMPERS

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REIDLINGER SCIENCE CENTER HVAC UPGRADES
2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95% CONSTRUCTION DOCUMENTS

REVISIONS

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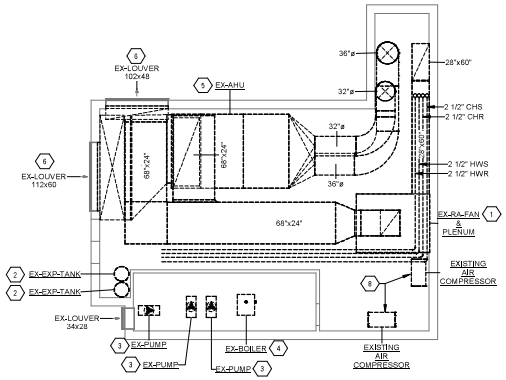
PROJECT NUMBER:	8797

DRAWING TITLE: MECHANICAL LEGEND

DRAWING NO: M-001

DRAWING OF



A1 MECHANICAL BASEMENT FLOOR DEMOLITION PLAN

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

0' 4' 8' 16'

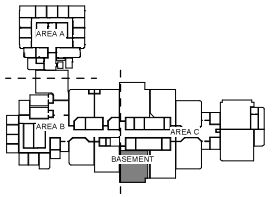
GENERAL SHEET NOTES

A. DASHED LINES INDICATE OUTLINE OF ITEMS TO BE REMOVED AND DEMOLISHED.
B. ALL DUCTWORK TO BE REMOVED AND DEMOLISHED.
C. ALL HW & CHW PIPING TO BE REMOVED AND DEMOLISHED.
D. ALL FMS/DDC CONTROLS TO BE REMOVED AND DEMOLISHED.

KEYNOTES

1. REMOVE AND DEMOLISH RETURN AIR FAN AND PLENUM.
2. REMOVE AND DEMOLISH EXISTING EXPANSION TANK.
3. REMOVE AND DEMOLISH EXISTING HW AND CHW PUMPS.
4. REMOVE AND DEMOLISH EXISTING HW BOILER.
5. REMOVE AND DEMOLISH EXISTING DUAL DUCT AIR HANDLING UNIT.
6. PROVIDE SHEET METAL CAP TO INTERIOR FACE OF LOUVER.
7. LOWER COMBUSTION AIR LOUVER TO REMAIN OPEN AND ACTIVE FOR EXISTING DOMESTIC WATER HEATER. BLANK OFF UPPER COMBUSTION AIR LOUVER.
8. REMOVE AND DEMOLISH EXISTING AIR COMPRESSORS / VACUUM PUMP.

KEYPLAN



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DRAWING TITLE:
MECHANICAL
BASEMENT FLOOR
DEMOLITION PLAN

DRAWING NO:

MD100

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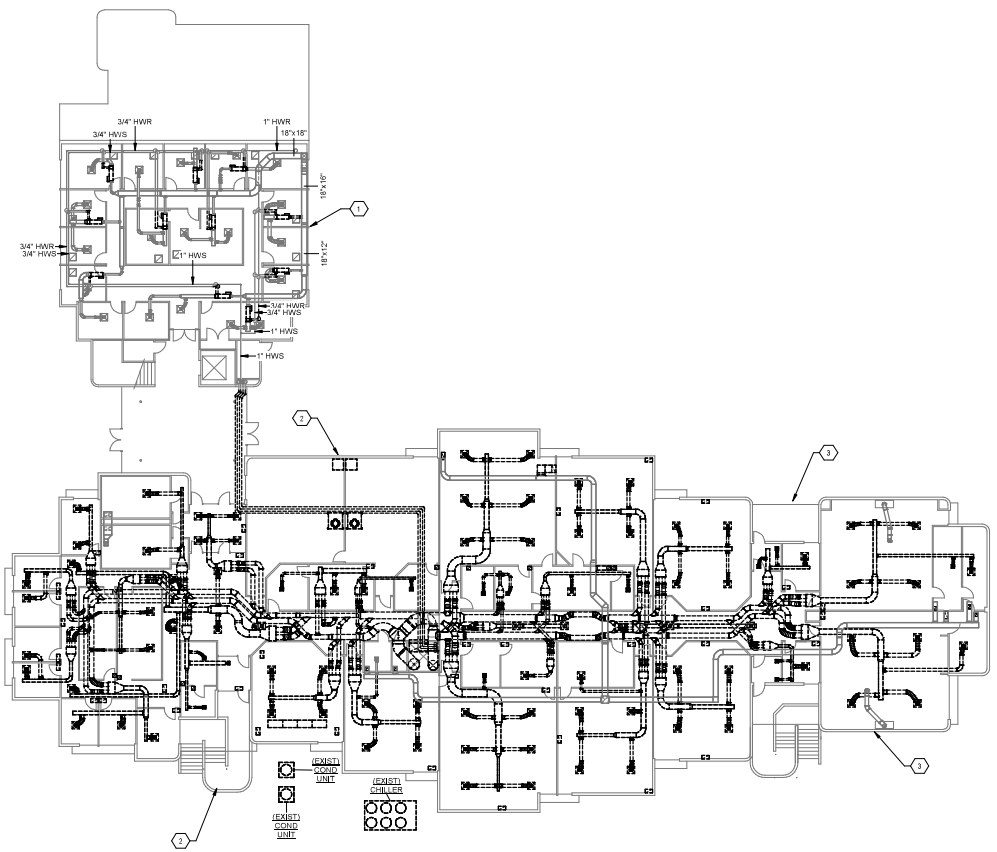


A1 MECHANICAL FIRST FLOOR DEMOLITION PLAN

SCALE: 1/16" = 1'-0"

0' 4' 8' 16'

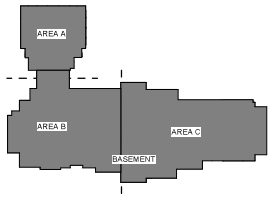
GENERAL SHEET NOTES

A. ALL DASHED INDICATE OUTLINE OF EQUIPMENT TO BE REMOVED AND DEMOLISHED.
B. REIDLINGER SCIENCE CENTER - REMOVE AND DEMOLISH ALL HVAC EQUIPMENT, INCLUDING DUAL DUCT VAV BOXES, PIPING, DUCTWORK, GRILLES, DIFFUSERS, AND CONTROLS.
C. ALLIED HEALTH CENTER- REMOVE AND DEMOLISH ONLY VAV BOXES WITH HOT WATER REHEAT COILS. HW & CHW PIPING, CONTROLS, AIRHANDLING UNIT. SOME DUCTWORK DEMOLITION REQUIRED AT VAV BOXES AND AIR HANDLING UNIT TO FACILITATE INSTALLATION OF NEW VAV BOXES WITH ELECTRIC HEAT AND AIR HANDLING UNIT WITH ELECTRIC HEAT.

KEYNOTES

1. SEE SHEET MD101-A FOR DEMOLITION WORK THIS AREA.
2. SEE SHEET MD101-B FOR DEMOLITION WORK THIS AREA.
3. SEE SHEET MD101-C FOR DEMOLITION WORK THIS AREA.

KEYPLAN



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MECHANICAL FIRST FLOOR DEMOLITION PLAN

DRAWING NO:
MD101

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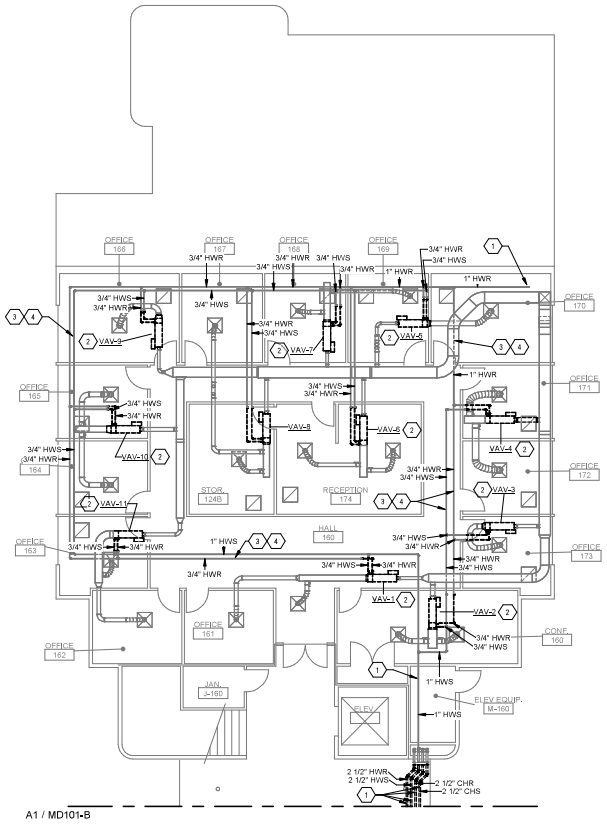


A1 / MD101-B

A1 MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA A

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

0' 4' 8' 16'

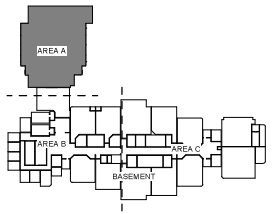
GENERAL SHEET NOTES

A. ALLIED HEALTH CENTER- REMOVE AND DEMOLISH ONLY VAV BOXES WITH HOT WATER REHEAT COILS, HW & CHW PIPING, CONTROLS, AIRHANDLING UNIT, SOME DUCTWORK DEMOLITION REQUIRED AT VAV BOXES AND AIR HANDLING UNIT TO FACILITATE INSTALLATION OF NEW VAV BOXES WITH ELECTRIC HEAT AND AIR HANDLING UNIT WITH ELECTRIC HEAT.
B. ALL DASHED INDICATE OUTLINES OF EQUIPMENT TO BE REMOVED AND DEMOLISHED.

KEYNOTES

1. REMOVE AND DEMOLISH EXISTING HW & CHW PIPING.
2. REMOVE AND DEMOLISH EXISTING VAV BOX WITH HW REHEAT COIL. DISCONNECT/DEMOLISH HW PIPING AT VAV BOX AND CAP.
3. BASE BID - EXISTING PIPING TO REMAIN ABANDONED IN PLACE.
4. ADDITIVE ALTERNATE #1 - REMOVE AND DEMOLISH ALL EXISTING HW AND CHW PIPING IN ALLIED HEALTH BLDG.

KEYPLAN



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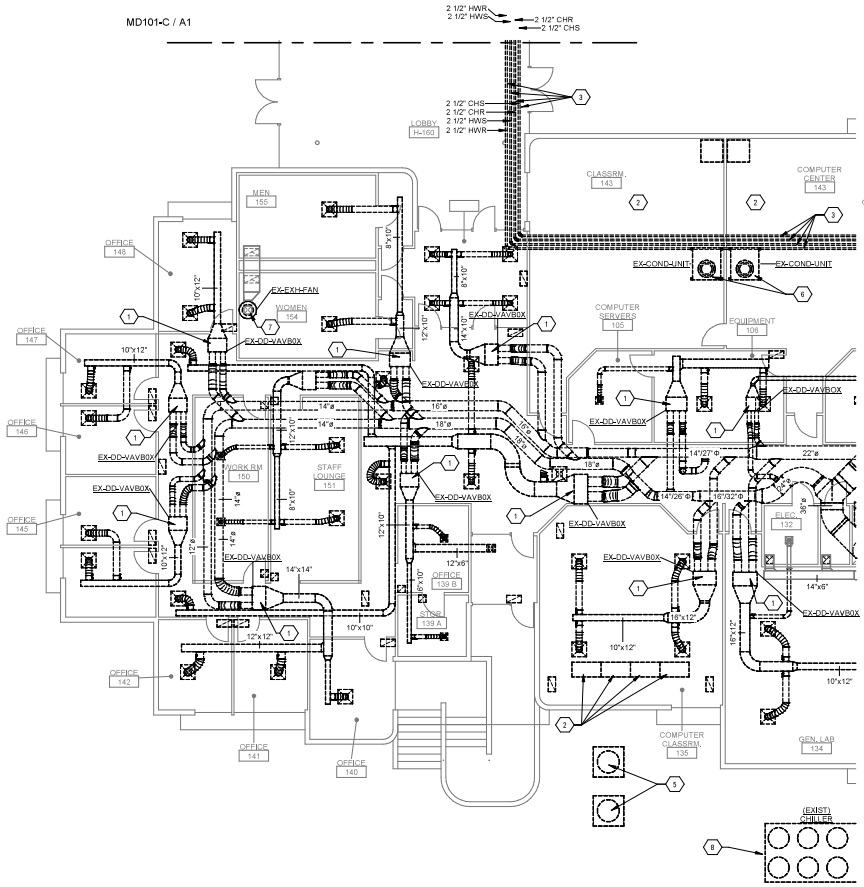
MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA A

DRAWING NO:
MD101-A

DRAWING OF



A1 MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA B

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

0' 4' 8' 16'

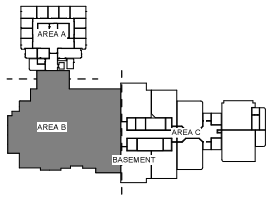
GENERAL SHEET NOTES

A. ALL DASHED INDICATE OUTLINES OF EQUIPMENT TO BE REMOVED AND DEMOLISHED.
B. REIDLINGER SCIENCE CENTER - REMOVE AND DEMOLISH ALL HVAC EQUIPMENT, INCLUDING DUAL DUCT VAV BOXES, PIPING, DUCTWORK, GRILLES, DIFFUSERS, AND CONTROLS.
C. REMOVE AND DEMOLISH ALL CEILINGS AND GRID. ALL CEILINGS TO BE REPLACED WITH NEW AFTER HVAC WORK IS COMPLETE.
D. ALL LIGHT FIXTURES TO BE CAREFULLY REMOVED FROM CEILINGS AND BE REUSED / INSTALLED AT NEW CEILINGS.

KEYNOTES

1. REMOVE AND DEMOLISH EXISTING DUAL DUCT VAV BOX.
2. REMOVE AND DEMOLISH FOUR EXISTING DX SPLIT SYSTEM FAN COILS THIS ROOM.
3. REMOVE AND DEMOLISH EXISTING HW & CHW PIPING.
4. NOT USED.
5. REMOVE AND DEMOLISH EXISTING GROUND MOUNTED CONDENSING UNIT AND REFRIGERANT PIPING, ELECTRICAL AND CONTROL WIRING TO INDOOR FAN COIL UNIT.
6. REMOVE AND DEMOLISH EXISTING ROOF MOUNTED CONDENSING UNIT.
7. REMOVE AND REPLACE EXISTING ROOF MOUNTED EXHAUST FAN.
8. REMOVE AND DEMOLISH EXISTING AIR COOLED CHILLER.

KEYPLAN



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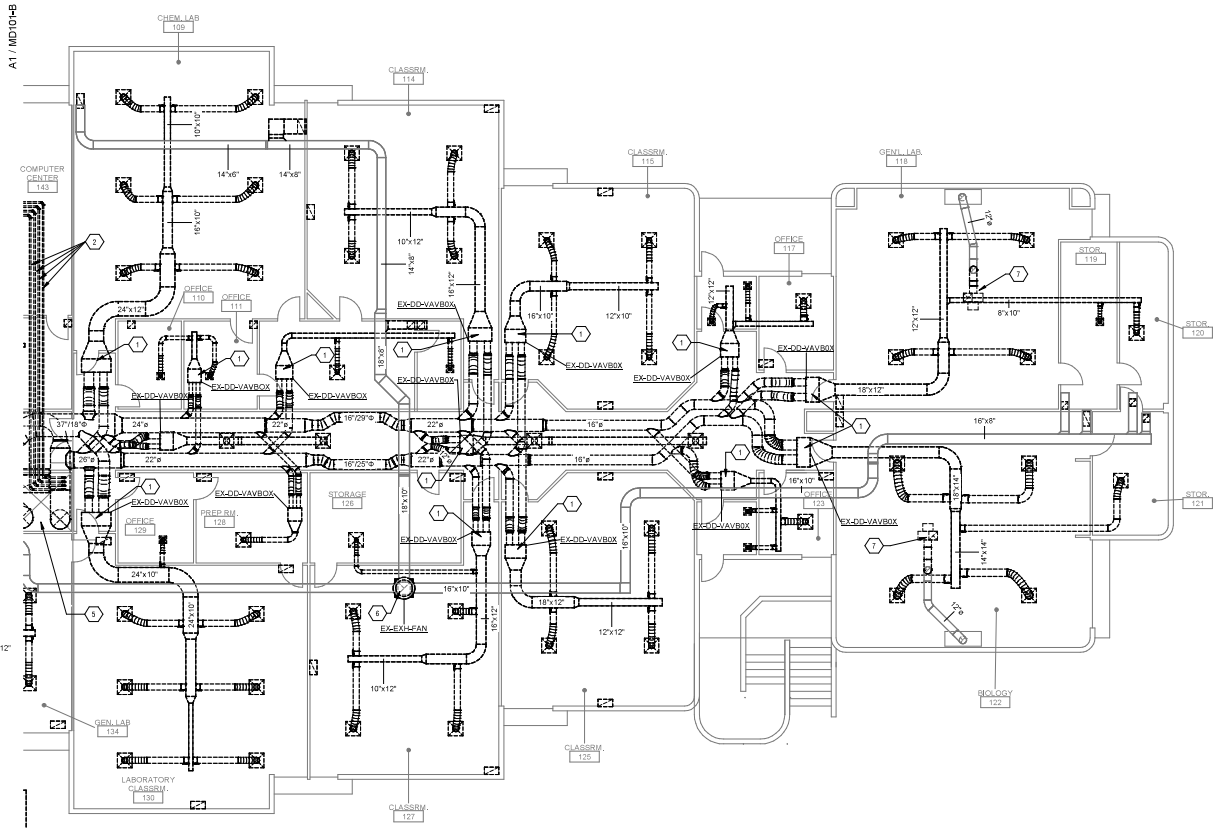
MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA B

DRAWING NO:
MD101-B

DRAWING OF



A1 MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA C

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

0' 4' 8' 16'

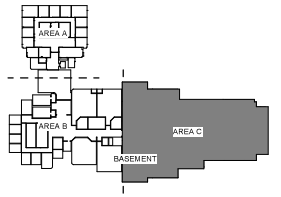
GENERAL SHEET NOTES

A. ALL DASHED INDICATE OUTLINES OF EQUIPMENT TO BE REMOVED AND DEMOLISHED.
B. REIDLINGER SCIENCE CENTER - REMOVE AND DEMOLISH ALL HVAC EQUIPMENT, INCLUDING DUAL DUCT VAV BOXES, PIPING, DUCTWORK, GRILLES, DIFFUSERS, AND CONTROLS.
C. REMOVE AND DEMOLISH ALL CEILINGS AND GRID. ALL CEILINGS TO BE REPLACED WITH NEW AFTER HVAC WORK IS COMPLETE.
D. ALL LIGHT FIXTURES TO BE CAREFULLY REMOVED FROM CEILINGS AND BE REUSED / INSTALLED AT NEW CEILINGS.

KEYNOTES

1. REMOVE AND DEMOLISH EXISTING DUAL DUCT VAV BOX.
2. REMOVE AND DEMOLISH EXISTING HW & CHW PIPING.
3. REMOVE AND REPLACE EXISTING ROOF MOUNTED EXHAUST FAN.
4. NOT USED.
5. MECHANICAL CHASE DOWN TO BASEMENT MECHANICAL ROOM WHERE DUAL DUCT AIR HANDLER, BOILERS, PUMPS ARE LOCATED.
6. REMOVE AND REPLACE EXISTING ROOF MOUNTED EXHAUST FAN.
7. REMOVE AND REPLACE EXISTING ROOF MOUNTED FUME HOOD EXHAUST FAN.

KEYPLAN



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2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

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CONSTRUCTION
DOCUMENTS

REVISIONS

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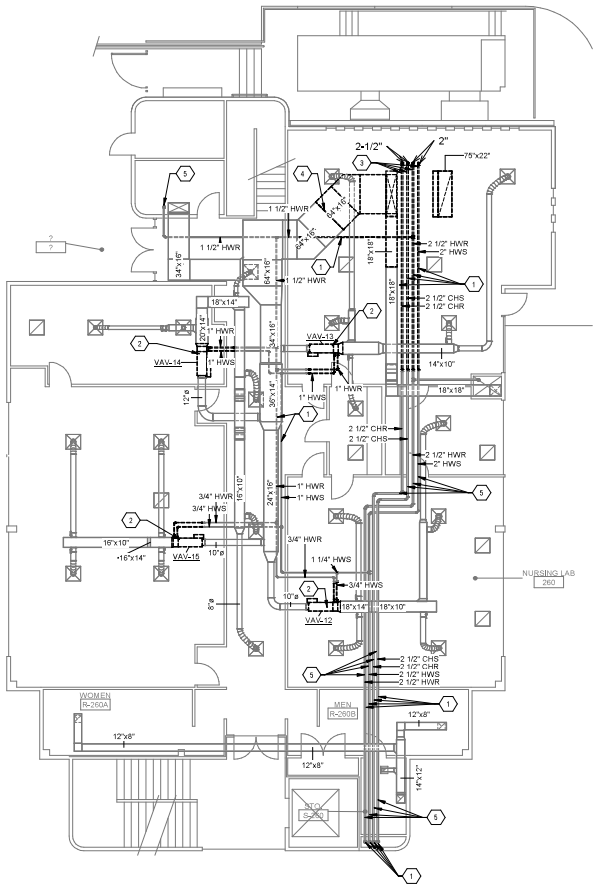
DRAWING TITLE:
MECHANICAL FIRST FLOOR DEMOLITION PLAN - AREA C

DRAWING NO:
MD101-C

DRAWING OF



A1 MECHANICAL SECOND FLOOR DEMOLITION PLAN - AREA A

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

0' 4' 8' 16'

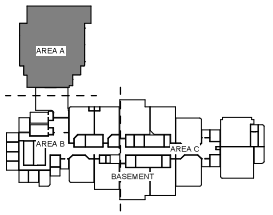
GENERAL SHEET NOTES

A. ALLIED HEALTH CENTER- REMOVE AND DEMOLISH ONLY VAV BOXES WITH HOT WATER REHEAT COILS, HW & CHW PIPING, CONTROLS, AIR-HANDLING UNIT, SOME DUCTWORK DEMOLITION REQUIRED AT VAV BOXES AND AIR HANDLING UNIT TO FACILITATE INSTALLATION OF NEW VAV BOXES WITH ELECTRIC HEAT AND AIR HANDLING UNIT WITH ELECTRIC HEAT.
B. ALL DASHED INDICATE OUTLINES OF EQUIPMENT TO BE REMOVED AND DEMOLISHED.

KEYNOTES

1. BASE BID-REMOVE AND DEMOLISH EXISTING HW & CHW PIPING AND CAP.
2. REMOVE AND DEMOLISH EXISTING VAV BOX WITH HW REHEAT COIL. DISCONNECT/DEMOLISH HW PIPING AT VAV BOX AND CAP.
3. BASE BID-DISCONNECT AND REMOVE HW & CHILLED WATER PIPING UP TO ROOF MOUNTED AIR HANDLING UNIT.
4. DISCONNECT EXISTING SUPPLY DUCT FROM AIR HANDLING AND DEMOLISH THIS SECTION DUCT. NEW DUCTWORK FROM NEW AIR HANDLING UNIT TO CONNECT TO EXISTING DUCTWORK AT THIS LOCATION.
5. ADDITIVE ALTERNATE #1 - REMOVE AND DEMOLISH ALL EXISTING HW AND CHW PIPING IN ALLIED HEALTH BLDG.

KEYPLAN



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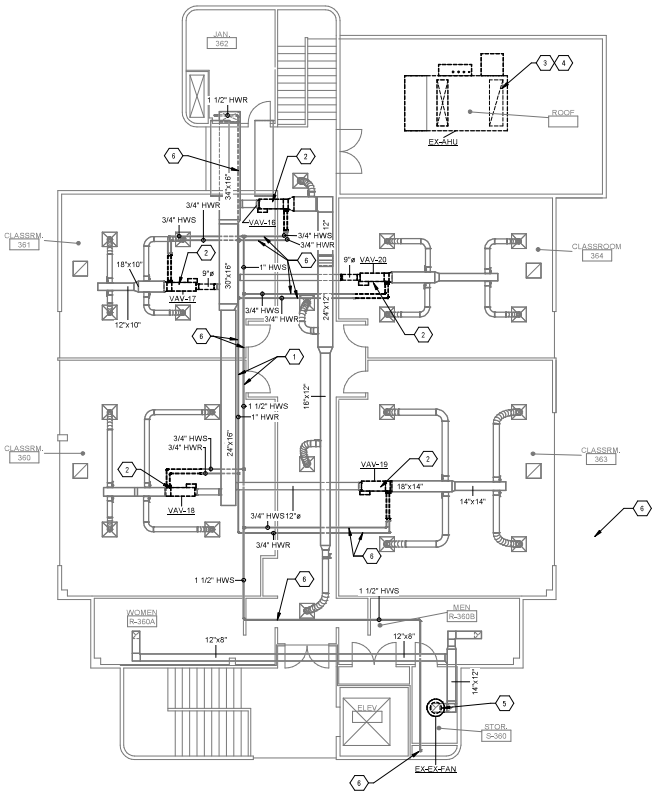
MECHANICAL SECOND FLOOR DEMOLITION PLAN - AREA A

DRAWING NO:
MD102-A

DRAWING OF



A1 MECHANICAL THIRD FLOOR DEMOLITION PLAN - AREA A

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

0' 4' 8' 16'

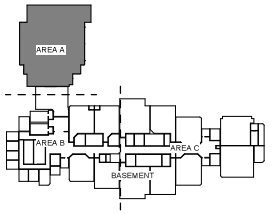
GENERAL SHEET NOTES

A. ALLIED HEALTH CENTER- REMOVE AND DEMOLISH ONLY VAV BOXES WITH HOT WATER REHEAT COILS, HW & CHW PIPING, CONTROLS, AIR-HANDLING UNIT., SOME DUCTWORK DEMOLITION REQUIRED AT VAV BOXES AND AIR HANDLING UNIT TO FACILITATE INSTALLATION OF NEW VAV BOXES WITH ELECTRIC HEAT AND AIR HANDLING UNIT WITH ELECTRIC HEAT.
B. ALL DASHED INDICATE OUTLINES OF EQUIPMENT TO BE REMOVED AND DEMOLISHED.

KEYNOTES

1. DELETED.
2. REMOVE AND DEMOLISH EXISTING VAV BOX WITH HW REHEAT COIL. DISCONNECT/DEMOLISH HW PIPING AT VAV BOX AND CAP.
3. REMOVE AND DEMOLISH EXISTING ROOF MOUNTED AIR HANDLING UNIT WITH HOT WATER AND CHILLED WATER COILS.
4. PATCH AND REPAIR ROOF DECKING, INSULATION AND MEMBRANCE TO MATCH EXISTING.
5. REMOVE AND REPLACE EXISTING ROOF MOUNTED EXHAUST FAN.
6. ADDITIVE ALTERNATE #1 - REMOVE AND DEMOLISH ALL EXISTING HW AND CHW PIPING IN ALLIED HEALTH BLDG.

KEYPLAN



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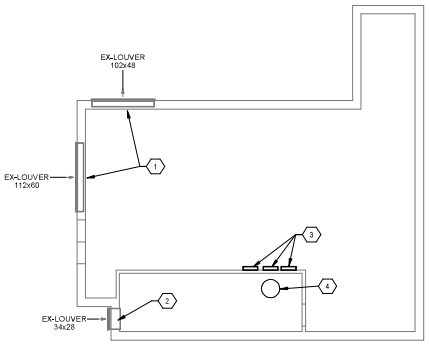
DRAWING TITLE:
MECHANICAL THIRD FLOOR DEMOLITION PLAN - AREA A

DRAWING NO:
MD103-A

DRAWING OF



A1 HVAC BASEMENT FLOOR PLAN

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

0' 4' 8' 16'

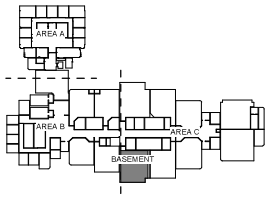
GENERAL SHEET NOTES

A. XXXX.

KEYNOTES

1. BLANK OFF EXISTING OPENING WITH SHEET METAL.
2. BLANK OFF UPPER COMBUSTION AIR LOUVER. LOWER LOUVER TO REMAIN OPEN FOR DOMESTIC WATER HEATER.
3. PROPOSED LOCATION FOR NEW FMS SYSTEM CONTROL PANELS. COORDINATE SIZE AND QTY WITH DIV 25 CONTROLS CONTRACTOR.
4. EXISTING WATER HEATER TO REMAIN.

KEYPLAN



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HVAC BASEMENT FLOOR PLAN

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MH100

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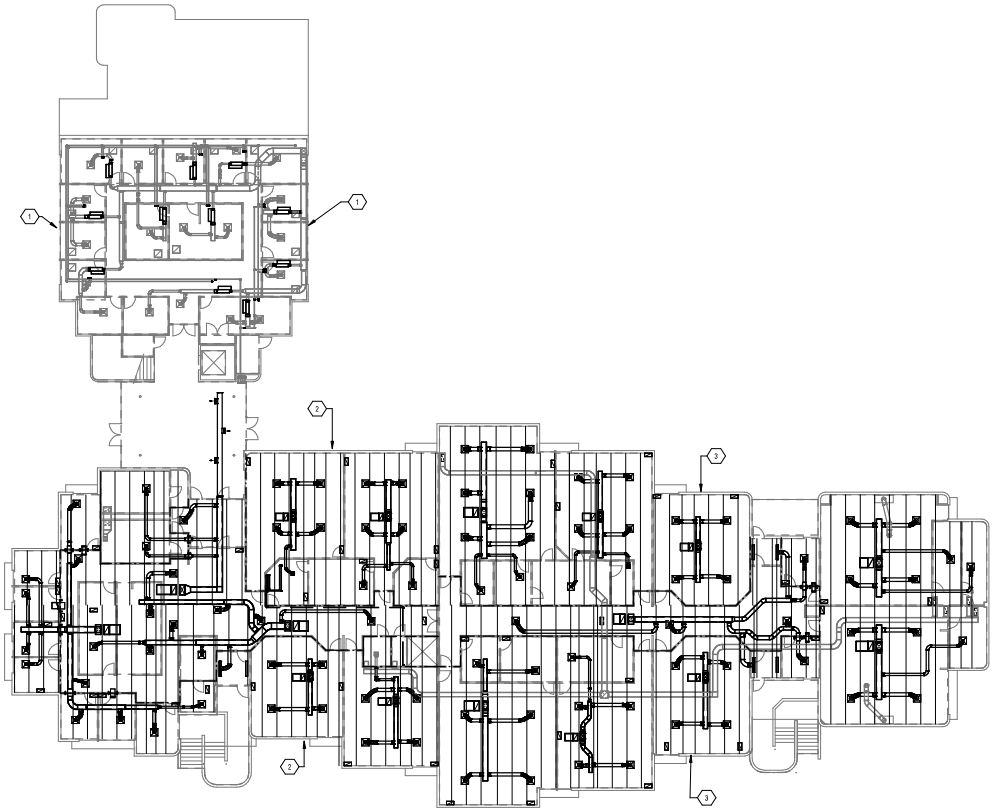


A1 HVAC FIRST FLOOR PLAN

SCALE: 1/16" = 1'-0"

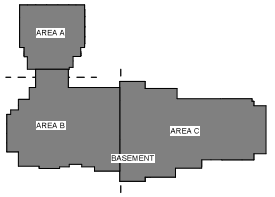
0' 4' 8' 16'

GENERAL SHEET NOTES

KEYNOTES

1. SEE SHEET MH101-A FOR NEW WORK THIS AREA.
2. SEE SHEET MH101-B FOR NEW WORK THIS AREA.
3. SEE SHEET MH101-C FOR NEW WORK THIS AREA.

KEYPLAN



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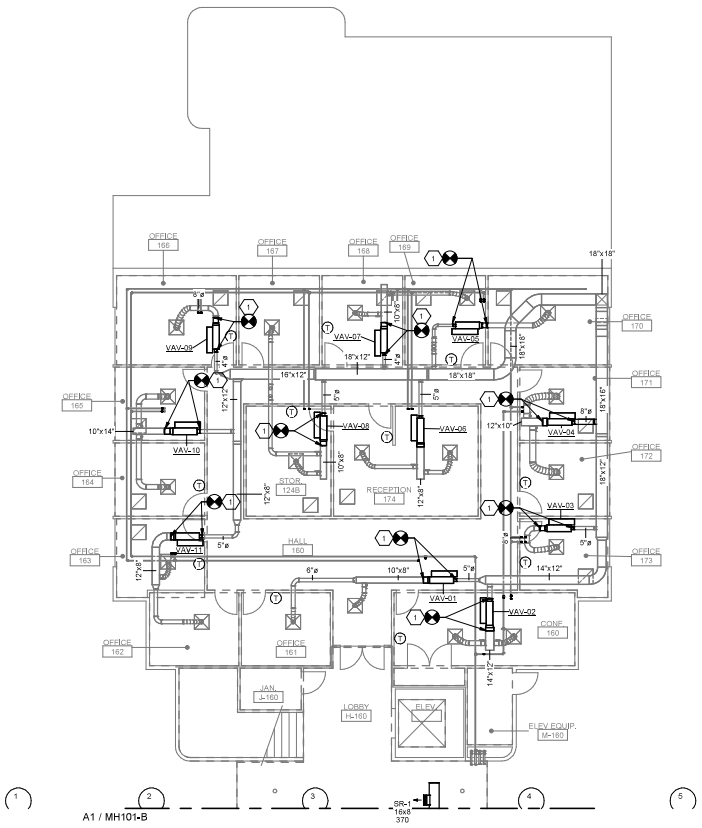
HVAC FIRST FLOOR PLAN

DRAWING NO:

MH101

DRAWING OF



A1 HVAC FIRST FLOOR PLAN - AREA A

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

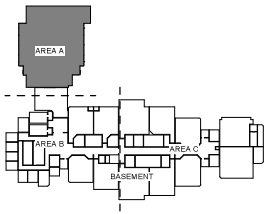
0' 4' 8' 16'

GENERAL SHEET NOTES

KEYNOTES

1. INSTALL NEW TERMINAL UNIT WITH ELECTRIC REHEAT COIL AT LOCATION WHERE EXISTING TERMINAL UNIT WITH HOT WATER REHEAT WAS INSTALLED. PROVIDE DUCT TRANSITIONS AT INLET SIDE AND DISCHARGE AS REQUIRED TO CONNECT NEW TERMINAL UNIT TO EXISTING DUCTWORK.

KEYPLAN



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HVAC FIRST FLOOR PLAN - AREA A

DRAWING NO:
MH101-A

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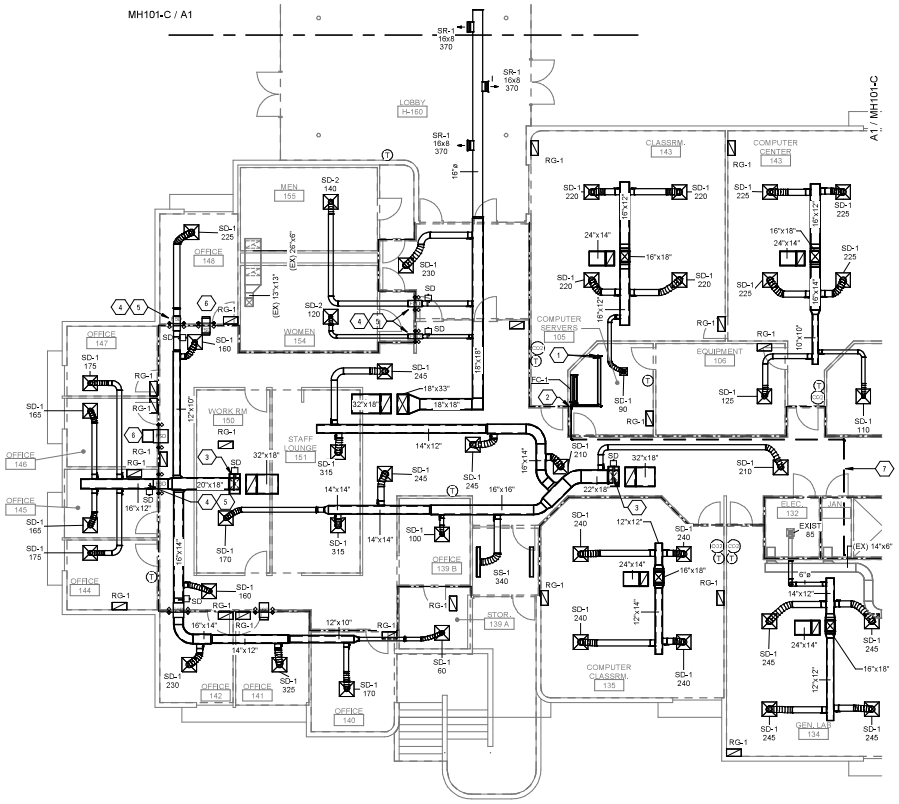


A1 HVAC FIRST FLOOR PLAN - AREA B

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

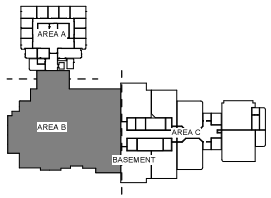
0' 4' 8' 16'

GENERAL SHEET NOTES

KEYNOTES

1. 3/8" REFRIGERANT LIQUID AND 5/8" REFRIGERANT SUCTION LINE, CONNECTION AND EXTEND PIPING FROM INDOOR FAN COIL UNIT FC-1 UP THROUGH ROOF AND PIPING VAULT AND CONNECT TO CONDENSING UNIT CU-1.
2. FC-1 INDOOR FAN COIL UNIT WITH CONDENSATE PUMP. INSTALL ON WALL APPROXIMATELY 86" A.F.F. ROUTE 3/4" CONDENSATE PIPING FROM CONDENSATE PUMP TO MOP SINK IN JANITOR CLOSET.
3. INSTALL SMOKE DETECTOR AND SAMPLING TUBES FURNISHED BY DIV 28 INTO DUCTWORK POWER BY DIV. 26 AND FIRE ALARM WIRING BY DIV. 28. SMOKE DETECTOR SHALL INTERLOCKED WITH ROOF TOP UNIT TO SHUT DOWN ROOF TOP UNIT WHEN SMOKE IS DETECTED IN SUPPLY DUCT.
4. INSTALL SMOKE DETECTOR FURNISHED BY DIV 28 IN SUPPLY DUCT NEAR FIRE/SMOKE DAMPER.
5. PROVIDE ACCESS DOOR IN DUCTWORK NEAR FIRE SMOKE DAMPER AT FIRE WALL PENETERATION. DAMPER SHALL CLOSE WHEN SMOKE IS DETECTED IN SUPPLY DUCT.
6. INTERLOCK OPERATION OF FIRE SMOKE DAMPER OPERATION WITH AREA SMOKE DECTORS IN CORRIDOR, DAMPER SHALL CLOSE WHEN SMOKE IS DETECTED IN CORRIDOR.
7. 3/4" CONDENSATE DRAIN IN CEILING. ROUTE TO MOP SINK IN JANITOR CLOSET.

KEYPLAN



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HVAC FIRST FLOOR PLAN - AREA B

DRAWING NO:
MH101-B

DRAWING OF

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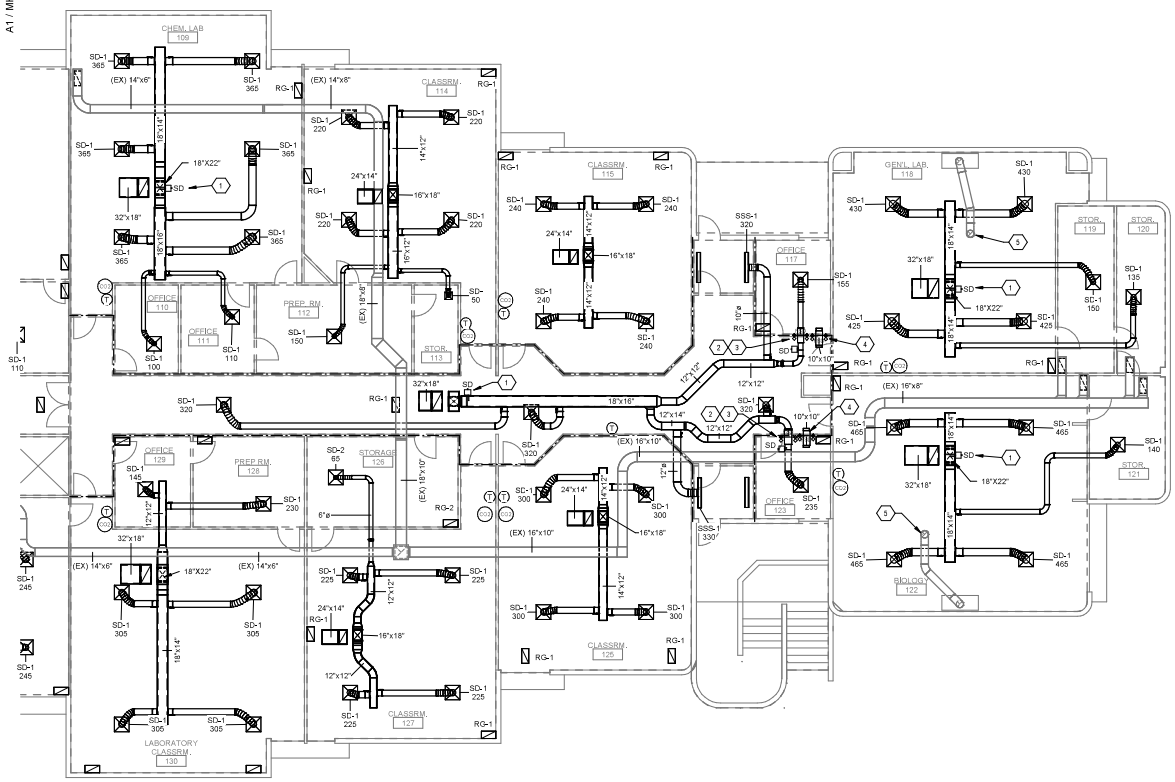


A1 HVAC FIRST FLOOR PLAN - AREA C

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

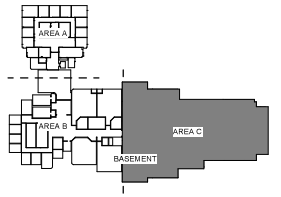
0' 4' 8' 16'

GENERAL SHEET NOTES

KEYNOTES

1. INSTALL SMOKE DETECTOR AND SAMPLING TUBES FURNISHED BY DIV 28 INTO DUCTWORK POWER BY DIV. 26 AND FIRE ALARM WIRING BY DIV. 28. SMOKE DETECTOR SHALL INTERLOCKED WITH ROOF TOP UNIT TO SHUT DOWN ROOF TOP UNIT WHEN SMOKE IS DETECTED IN SUPPLY DUCT.
2. INSTALL SMOKE DETECTOR FURNISHED BY DIV 28 IN SUPPLY DUCT NEAR FIRE/SMOKE DAMPER.
3. PROVIDE ACCESS DOOR IN DUCTWORK NEAR FIRE SMOKE DAMPER AT FIRE WALL PENETERATION. DAMPER SHALL CLOSE WHEN SMOKE IS DETECTED IN SUPPLY DUCT.
4. INTERLOCK OPERATION OF FIRE SMOKE DAMPER OPERATION WITH AREA SMOKE DECTORS IN CORRIDOR, DAMPER SHALL CLOSE WHEN SMOKE IS DETECTED IN CORRIDOR.
5. EXISTING FUME HOOD EXHAUST UP THROUGH ROOF.

KEYPLAN



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HVAC FIRST FLOOR PLAN - AREA C

DRAWING NO:
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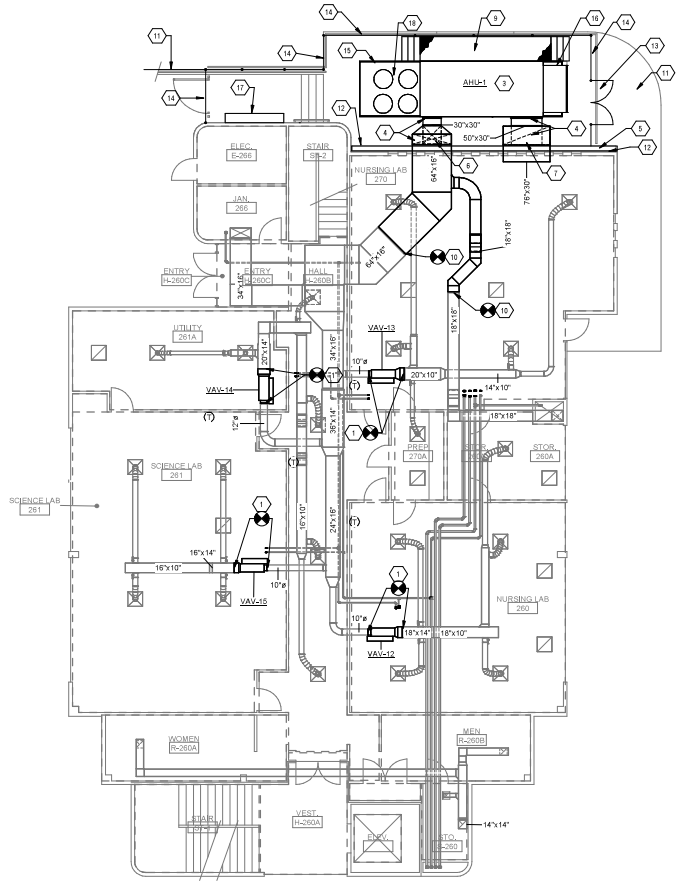


A1 HVAC SECOND FLOOR PLAN - AREA A

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

0' 4' 8' 16'

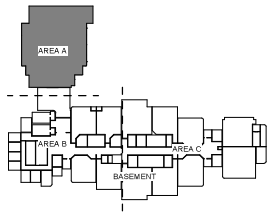
GENERAL SHEET NOTES

A. THIS PORTION OF BUILDING IS BUILT INTO THE SIDE OF A HILL. THE NEW AIR HANDLER IS LOCATED ON A SIDEWALK AREA NEAR A DRIVE/PARKING LOT LEVEL. THE AIR HANDLER IS ON THE UPSIDE OF THE HILL WITH THE SECOND FLOOR FLUSH WITH THE DRIVE / PARKING LOT ELEVATION.

KEYNOTES

1. INSTALL NEW TERMINAL UNIT WITH ELECTRIC REHEAT COIL AT LOCATION WHERE EXISTING TERMINAL UNIT WITH HOT WATER REHEAT WAS INSTALLED. PROVIDE DUCT TRANSITIONS AT INLET SIDE AND DISCHARGE AS REQUIRED TO CONNECT NEW TERMINAL UNIT TO EXISTING DUCTWORK.
2. THIS PORTION OF BUILDING IS BUILT INTO THE SIDE OF A HILL. THE NEW AIR HANDLING UNIT IS LOCATED ON A SIDEWALK AREA NEAR A DRIVE/PARKING LOT LEVEL. THE AIR HANDLER IS ON THE UPSIDE OF THE HILL WITH THE SECOND FLOOR FLUSH WITH THE DRIVE / PARKING LOT ELEVATION.
3. INSTALL AIR HANDLING UNIT ON 46" TALL INSULATED PLENUM CURB WITH SUPPLY AND RETURN AIR DUCT CONNECTIONS AT SIDE OF PLENUM CURB.
4. CONNECT AND OFFSET SUPPLY AND RETURN AIR DUCTS HORIZONATALLY FROM FROM AIR HANDLER UNIT PLENUM CURB. PROVIDE FLEXIBLE DUCT CONNECTIONS AT PLENUM CURB. ELBOW DUCTWORK UP VERTICALLY AND TRANSITION TO DUCT SIZES INDICATED. ELBOW DUCTWORK HORIZONTALLY AND PENETRATE NEW SOUND WALL AND EXISTING EXTERIOR WALL AT CEILING SPACE OF SECOND FLOOR.
5. NEW 13 FT TALL MASS WALL ADDED AT EXISTING EXTERIOR WALL WITH BRD HUSH CORE+HUSH QUILT ACOUSTIC PANEL SYSTEM APPLIED TO MASS WALL TO MITIGATE RADIATED SOUND FROM NEW AIR HANDLING UNIT. REFER TO ARCHITECTURAL DRAWINGS FOR WALL DETAILS.
6. PROVIDE SOUND ATTENUATOR IN VERTICAL SECTION OF SUPPLY DUCTWORK.
7. PROVIDE SOUND ATTENUATOR IN VERTICAL SECTION OF RETURN DUCTWORK.
8. PROVIDE NEW CMU WALL - 13 FT TALL.
9. PROVIDE 46" TALL X 40" WIDE CATWALK AT SIDE OF UNIT.
10. CONNECT NEW SUPPLY AIR DUCT TO EXISTING SUPPLY AIR DUCTWORK.
11. EXISTING SIDE WALK / STREET CURB.
12. BRD HUSH CORE + HUSH QUILTED ACOUSTIC PANEL SYSTEM APPLIED TO NEW CMU BLOCK WALL.
13. NEW FENCING WITH 6 FT GATED OPENING.
14. NEW FENCING .
15. PROVIDE ISOLATED CONCRETE PAD - SIZED TO MATCH FOOT PRINT OF AIR HANDLING UNIT. (CONFIRM THIS IS REQUIRED.)
16. DEMO STREET CURB AND EXTEND CONCRETE TO EDGE OF NEW FENCE.
17. PROPOSED LOCATION OF NEW ELECTRICAL PANELS.
18. PROVIDE HUSH CORE ACOUSTIC BLANKET WRAP TO COMPRESSORS FOR SOUND MITIGATION.

KEYPLAN



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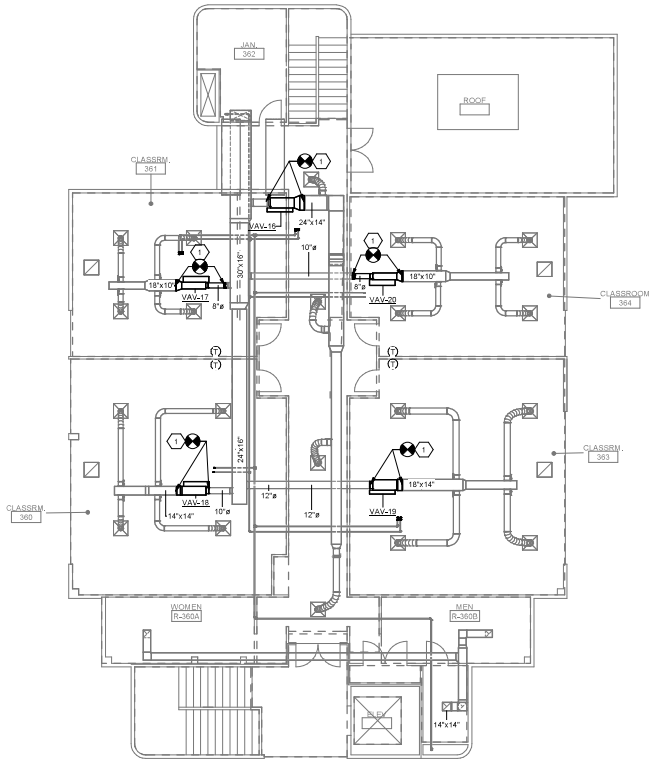


A1 HVAC THIRD FLOOR PLAN - AREA A

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

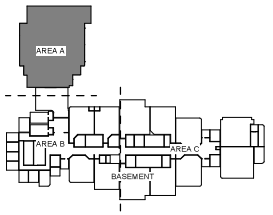
0' 4' 8' 16'

GENERAL SHEET NOTES

KEYNOTES

1. INSTALL NEW TERMINAL UNIT WITH ELECTRIC REHEAT COIL AT LOCATION WHERE EXISTING TERMINAL UNIT WITH HOT WATER REHEAT WAS INSTALLED. PROVIDE DUCT TRANSITIONS AT INLET SIDE AND DISCHARGE AS REQUIRED TO CONNECT NEW TERMINAL UNIT TO EXISTING DUCTWORK.

KEYPLAN



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DATE:	04/02/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
HVAC THIRD FLOOR PLAN - AREA A

DRAWING NO:
MH103-A

DRAWING OF

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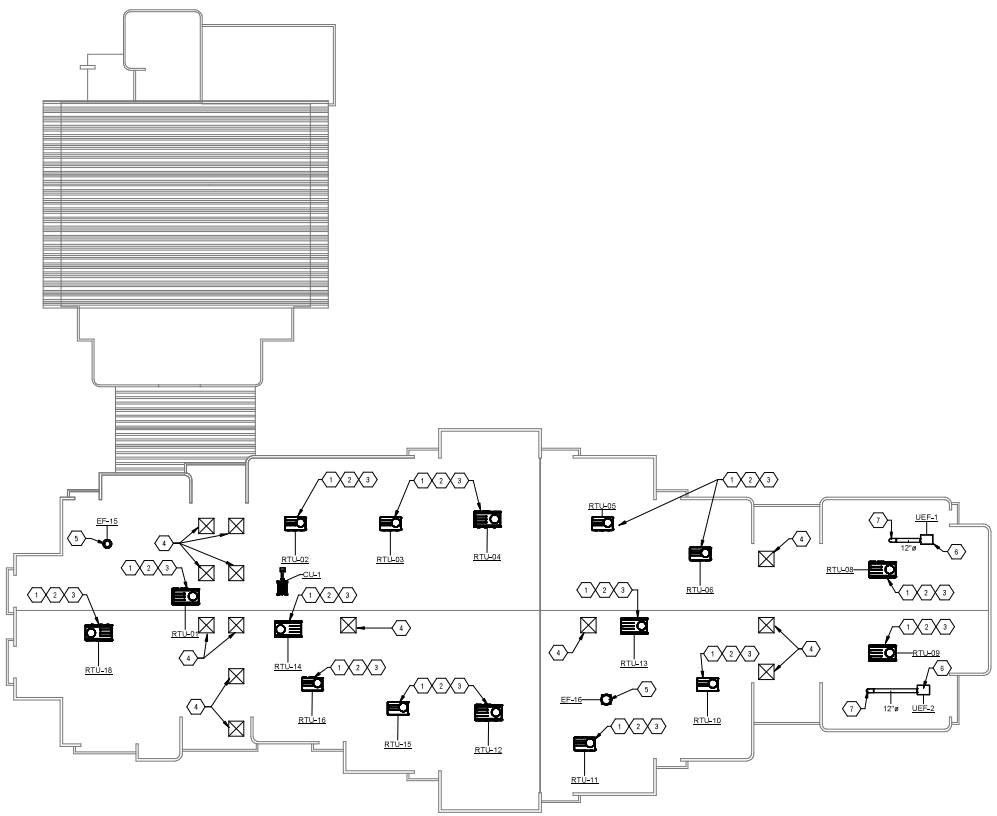


A1 MECHANICAL ROOF PLAN

SCALE: 1/16" = 1'-0"

0' 4' 8' 16'

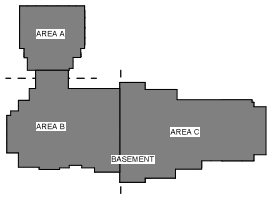
GENERAL SHEET NOTES

A. XXXX.

KEYNOTES

1. INSTALL NEW ROOF TOP UNIT ON 16" TALL ROOF CURB. REMOVE ROOF MEMBRANE AND INSULATION AND ANCHOR ROOF CURB TO ROOF DECK.
2. ROOF TOP UNIT TO BE LOCATED AND SUPPORTED BY TWO BARJOISTS, REINFORCE BAR JOISTS PER STRUCTURAL DRAWINGS.
3. PATCH AND REPAIR ROOF TO BE WEATHERPROOF.
4. EXISTING SKYLITE.
5. REPLACE EXISTING EXHAUST WITH NEW.
6. REPLACE EXISTING LAB EXHAUST FAN WITH NEW UTILITY EXHAUST FAN. INSTALL ON 2 THYCURB RAILS ANCHORED TO METAL ROOF DECK. PROVIDE BASE RAIL AND VIBRATION ISOLATORS. EXTEND 12" DISCHARGE STACK UP 10 FT ABOVE ROOF DECK. PROVIDE GUY WIRE SUPPORT.
7. PROVIDE NEW 12" DIA STAINLESS STEEL EXHAUST DUCTWORK FROM FAN AND CONNECT TO EXISTING 12" DIA EXHAUST DUCT AT ROOF PENETRATION.

KEYPLAN



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REVISIONS

NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	04/02/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
MECHANICAL ROOF PLAN

DRAWING NO:

MH131

DRAWING OF

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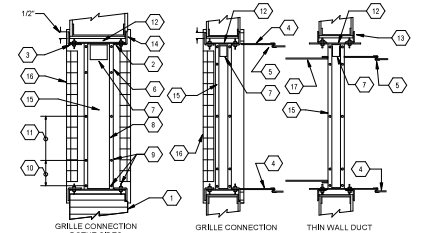
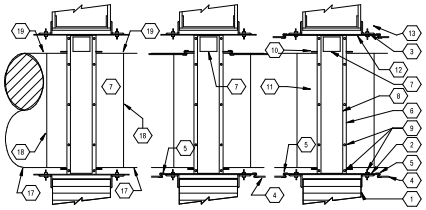


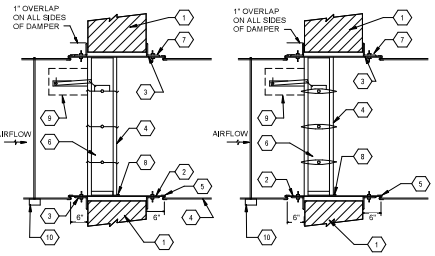


KEYNOTES

1. WALL (OR FLOOR)
2. SLEEVE - SEE INSTALLATION NOTES
3. MOUNTING ANGLES CONTINUOUS AROUND SLEEVE WITH WELDED JOINTS
4. SQUARE OR RECTANGULAR DUCT
5. BREAKAWAY DUCT CONNECTION
6. FIRE DAMPER FRAME
7. FIRE DAMPER CURTAIN TYPE SQUARE OF RECTANGULAR
8. CURTAIN TRACT
9. BOLT, SCREW, RIVET, OR TACK WELDED CONNECTION
10. CORNER SPACING PER MANUFACTURE'S INSTALLATION INSTRUCTION
11. INTERMEDIATE SPACING PER MANUFACTURE'S INSTALLATION INSTRUCTION
12. 1/8" PER LINEAR FOOT BOTH DIMENSIONS, AND 1/4" MINIMUM
13. PROVIDE MINIMUM OVERLAP OF STRUCTURAL OPENING PER MANUFACTURE'S INSTALLATION INSTRUCTIONS
14. ALTERNATE MOUNTING ANGLE METHOD AS REQUIRED BY GRILLE
15. MAXIMUM WIDTH 1-7/8" RUSKIN MODEL IBDT OR APPROVED EQUAL
16. GRILLE OR REGISTER WITH A MIN. 1/2" OVERLAP., GRILLE OR REGISTER SHALL BE STEEL MINIMUM 26 GAGE FRAME THICKNESS AND SHALL NOT BE ATTACHED DIRECTLY TO WALL
17. ROUND OR OVAL DUCT
18. ROUND OR OVAL DUCT COLLAR FURNISHED WITH RECTANGULAR DAMPER ASSEMBLY
19. ROUND OR OVAL DUCT BREAKAWAY CONNECTION WITH EITHER DRAWBAND OR SHEET METAL SCREWS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

A1 FIRE DAMPER DETAIL - CURTAIN TYPE

SCALE = NONE



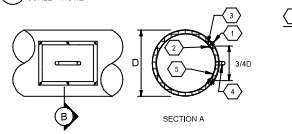
KEYNOTES

1. WALL OR FLOOR
2. SLEEVE - SEE MANUFACTURER'S INSTALLATION NOTES
3. MOUNTING ANGLES CONTINUOUS AROUND SLEEVE WITH MINIMUM 1" OVERLAP
4. SQUARE OR RECTANGULAR DAMPER FRAME FOR ROUND OR OVAL DUCTS, PROVIDE DUCT TRANSITION
5. BREAKAWAY DUCT CONNECTION - SEE MANUFACTURER'S INSTALLATION NOTES
6. INSTALL DAMPER ASSEMBLY PER MANUFACTURER'S INSTALLATION INSTRUCTIONS
7. 1/4" MINIMUM EXPANSION CLEARANCE - SEE MANUFACTURER'S INSTALLATION NOTES
8. APPROVED SEALING MATERIAL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS
9. U.L. APPROVED DAMPER ACTUATOR ASSEMBLY WITH MOUNTING BRACKET,ELECTRIC FUSE LINK, AND OPERATING JACK SHAFT LINKAGE, DAMPER ACTUATOR SHALL BE MOUNTED ON DUCT OUTSIDE AIR STREAM\
10. INTEGRAL FACTORY WIRED FOR SINGLE POINT POWER CONNECTION, NO FLOW SMOKE DETECTOR WITH BUILT-IN TEST SWITCH RATED FOR 0-3000 FPM, MOUNTED INTERNALLY TO THE DAMPER SLEEVE.

* FUSIBLE ROD IS NOT REQUIRED FOR SMOKE DAMPER APPLICATION

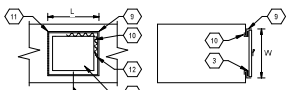
A1 FIRE DAMPER, SMOKE DAMPER, AND COMBINATION FIRE SMOKE DAMPER DETAILS

SCALE = NONE



W X L	ROUND DUCT DIAMETER	FLAT OVAL DUCT MAJOR AXIS WHEN MOUNTED ON MAJOR AXIS	FLAT OVAL DUCT MINOR AXIS WHEN MOUNTED ON MAJOR AXIS
8" X 12"	8" - 12"	8" - 16"	8" - 11"
12" X 12"	13" X 18"	17" - 24"	12" - 13"
14" X 20"	19" +	25" +	14" +

ROUND OR FLAT OVAL DUCT, 8" +



DUCT DIMENSION ON WHICH ACCESS DOOR IS PLACED	OUTSIDE FRAME W X L
6" - 8"	5" X 12"
9" - 12"	8" X 8"
13" - 15"	12" X 12"
16" - 33"	14" X 14"
34" - 66"	(2) 14" X 14"
67" +	(3) 14" X 14"

RECTANGULAR DUCTS

NOTE:
DUCT ACCESS DOORS SHALL BE PROVIDED AT EACH FIRE DAMPER, SMOKE DAMPER, COMBINATION FIRE/SMOKE DAMPER AND DUCT MOUNTED EQUIPMENT, AS REQUIRED FOR DUCT CLEANING AND INSPECTION

A1 DUCT ACCESS DOOR DETAIL

SCALE = NONE

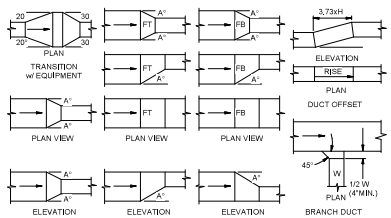
KEYNOTES

1. BOLT AND WING NUT AT MAX. 3" O.C.
2. TACK WELD BOLT TO DUCT
3. PROVIDE GASKET BETWEEN DUCT AND ACCESS DOOR
4. HANDLE
5. INSULATE COVER AS REQUIRED BY DUCT INSULATION SPEC.
6. MIN. 20 GA FRAME WELDED TO DUCT
7. PRESSURE SENSITIVE LATCH FOR VACUUM RELEASE
8. RETAINER CHAIN
9. MIN. 22 GA GALV. STEEL FRAME
10. FRAME SECURED TO DUCT WITH 5/8" NOTCHED KNOCK-OVER EDGES ON ALL SIDES
11. CONTINUOUS HINGE
12. CAM LATCH
13. MIN. 22 GA DOOR

1. DAMPER ASSEMBLY INSTALLATION SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS. DAMPERS SHALL BE FURNISHED BY THE MANUFACTURER WITH UL APPROVED DAMPER ACTUATOR AND FUSE LINK IN ACCORDANCE WITH SPECIFICATIONS.
2. OPENINGS IN FLOOR OR WALLS SHALL BE LARGER THAN THE DAMPER BY 1/8" FOR EACH LINEAR FOOT IN HEIGHT AND WIDTH OF THE DAMPER TO ALLOW FOR THERMAL EXPANSION, BUT THE OPENING SHALL NOT BE LESS THAN REQUIRED TO MAINTAIN A MINIMUM OF 1/4" CLEARANCE BETWEEN THE SLEEVE AND WALL ON ALL SIDES. IN INSTALLATIONS WHERE THE OPENING BETWEEN THE WALL AND SLEEVE REQUIRES FILLER MATERIAL (SEE NFPA 90A) THE FILLER MATERIAL SHALL BE OF FLEXIBLE CONSISTENCY TO ALLOW FOR EXPANSION OF THE FIRE DAMPER-ASSEMBLY.
3. THE FOLDED BLADE ASSEMBLY SHALL ALWAYS BE POSITIONED AT THE TOP WHEN THE DAMPER IS PLACED IN A WALL OPENING.
4. THE DAMPER SHALL BE POSITIONED IN THE OPENING SO THE HORIZONTAL CLEARANCE ALLOWED FOR EXPANSION IS EQUALLY DIVIDED AT BOTH SIDES OF THE DAMPER.
5. THE DAMPER SHALL BE POSITIONED IN THE OPENING SO THAT NO PART OVERLAPS THE PLANE FORMED BY EITHER SIDE OF THE WALL OF THE FIRE RATED FLOOR ASSEMBLY.
6. THE DUCT SHALL NOT BE CONTINUOUS THROUGH THE WALL OPENING, BUT SHALL BE CONNECTED TO THE DAMPER (OR SLEEVE DEPENDING UPON THE STYLE OF DAMPER) ON EITHER SIDE OF THE WALL.
7. APPROVED RECTANGULAR DUCT BREAKAWAY CONNECTIONS ARE: PLAIN 'S' SLIP. HEMMED 'S' SLIP, DOUBLE 'S' SLIP, INSIDE SLIP JOINT, STANDING 'S'. STANDING 'S' ANGLE OR BAR REINFORCED, STANDING 'S' ALTERNATE AND DRIVE SLIP JOINT. FLANGED CONNECTION SYSTEMS MANUFACTURED BY DUCTMATE, NEXUS, WARD TDC(LOCK FORMER) AND TDF (ENGLE) MAY BE USED FOR BREAKAWAY CONNECTIONS WHERE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. APPROVED ROUND AND FLAT OVAL BREAKAWAY CONNECTIONS SHALL BE EITHER 4" WIDE DRAW BAND OR #10 SHEET METAL SCREWS, SPACED EQUALLY AROUND THE CIRCUMFERENCE OF THE DUCT IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. DO NOT BOLT, SCREW, RIVET, TACK WELD, ETC., DUCT CONNECTIONS TO THE DUCT-SLEEVE. SEAL DUCT CONNECTIONS WITH HARDCAST INC.
8. DAMPER FRAME MAY BE OF DESIGN AND LENGTH AS TO FUNCTION AS THE SLEEVE IF SO TESTED AND LABELED BY UL. OTHERWISE, THE SLEEVE SHALL BE CONTINUOUS THROUGH THE WALL WITH ALL WELDED SEAMS AND SHALL EXTEND A MINIMUM DISTANCE BEYOND THE PLANES FORMED BY BOTH WALLS OR FLOOR ASSEMBLY, EQUAL TO THE WIDTH OF THE RETAINING ANGLES, BUT SHALL NOT BE GREATER THAN WALL WIDTH PLUS MOUNTING ANGLE DIMENSIONS PLUS 8".
9. THE SLEEVE GAUGE SHALL BE EQUAL TO OR HEAVIER THAN THE GAUGE OF THE DUCT AS DEFINED BY THE APPROPRIATE SMACNA DUCT CONSTRUCTION STANDARD. BUT THE SLEEVE SHALL BE NOT LESS THAN REQUIRED TO PROVIDE INSTALLATION EQUIVALENT TO THE DAMPER MANUFACTURER'S UL TEST AND INSTALLATION INSTRUCTIONS.
10. THE FIRE DAMPER SHALL BE BOLTED, SCREWED, RIVETED, OR TACK WELDED TO THE SLEEVE AND THE SPACING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
11. THE SLEEVE-FIRE DAMPER ASSEMBLY SHALL BE THEN HELD IN PLACE IN THE WALL (OR FLOOR BY MOUNTING ANGLES, (MINIMUM OF 1-1/2" X 16 GAUGE, BUT NOT LESS THAN REQUIRED SLEEVE GAUGE AND MANUFACTURER'S INSTALLATION INSTRUCTIONS) ON BOTH SIDES OF WALL OR FLOOR ASSEMBLY. THESE MOUNTING ANGLES SHALL BE WELDED TO THE SLEEVE AT A SPACING IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. MOUNTING ANGLES SHALL OVERLAP THE WALL A MINIMUM OF ONE (1) INCH ON ALL SIDES AND SHALL NOT BE ATTACHED TO THE WALL.
12. WHEN MULTIPLE SECTIONS OF STEEL DAMPERS ARE JOINTED, THE CONNECTIONS SHALL BE ON BOTH SIDES OF DAMPER CURTAIN, AT A MAXIMUM DISTANCE OF 2" FROM ANY OF THE FOUR CORNERS AND A MAXIMUM SPACING OF 12" O.C. WITH A MINIMUM OF TWO CONNECTIONS IN EACH SIDE, TOP AND BOTTOM.
13. PROVIDE DUCT ACCESS DOORS AT ALL FIRE DAMPER LOCATIONS OF SUFFICIENT SIZE TO ALLOW EASY INSPECTION AND RESETTING OF DAMPER LINKAGES. PROVIDE CEILING ACCESS DOORS IN ALL GYP. BOARD, PLASTER, OR CONCEALED SPLINE CEILINGS TO SERVICE ALL REQUIRED DUCT ACCESS DOORS. PROVIDE ACCESS DOORS IN ALL WALLS OR FLOORS THAT BLOCK ACCESS TO DUCT DOOR PROVIDING ACCESS TO THE FIRE DAMPER. DUCT ACCESS FOR SMALL FIRE DAMPERS 6" SQUARE DIAMETER AND LESS, MAY BE PROVIDED BY MEANS OF REMOVABLE FLEXIBLE DUCT SUBJECT TO THE APPROVAL OF THE BUILDING CODE AUTHORITY HAVING JURISDICTION.
14. ALL FIRE DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH THE FOLLOWING: UL STANDARD 555 FIRE DAMPERS; UL STANDARD 555S SMOKE DAMPERS AND LABELED AS UL LEAKAGE CLASS 1; NFPA STANDARD 90A AND 90B; CURRENT ADOPTED INTERNATIONAL BUILDING CODE AND THE CURRENT ADOPTED INTERNATIONAL MECHANICAL.
15. COMBINATION FIRE AND SMOKE DAMPERS SHALL BE MULTIBLADE TYPE DAMPER CERTIFIED AND LABELED IN ACCORDANCE WITH UL 555 CLASSIFICATION AND UL 555S CLASSIFICATION AS LEAKAGE CLASS.

A1 FIRE DAMPER INSTALLATION NOTES

SCALE = NONE



NOTES
- ANGLE A=30 MAXIMUM WHEN AIR FLOWS IN DIRECTION OF ARROWS. (SUPPLY AIR)
- ANGLE A=15 WHEN AIR FLOWS IN OPPOSITE DIRECTION OF ARROWS (R.A. OR EXHAUST)

A1 LOW PRESSURE DUCT FITTING DETAIL

SCALE = NONE

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MECHANICAL DETAILS

DRAWING NO:
M-501

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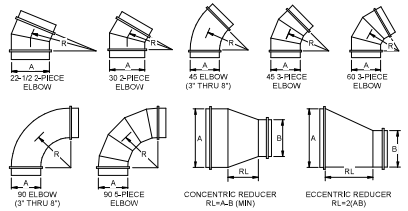
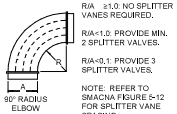
ROUND FITTINGS



NOTE: SEE SPECIFICATIONS FOR DUCT MATERIALS AND CONSTRUCTION

RECTANGULAR FITTINGS



R/A ≥1.0: NO SPLITTER VANES REQUIRED.

R/A=1.0: PROVIDE MIN. 2 SPLITTER VALVES.

R/A=0.1: PROVIDE 3 SPLITTER VALVES.

NOTE: REFER TO SMACNA FIGURE 5-12 FOR SPLITTER VANE SPACING

NOTES:
SQUARE ELBOWS WITH VANES TO BE CONSTRUCTED PER SMACNA

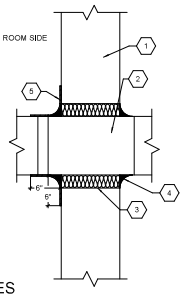
USE SINGLE THICKNESS VANES, 2" RADIUS, 1-1/2" SPACING, WITHOUT TRAILING EDGES

L=1/4D, BUT NOT LESS THAN 5"

NOTE:
L=1/4D, BUT NOT LESS THAN 5"

NOTE:
L=1/4D, BUT NOT LESS THAN 5"

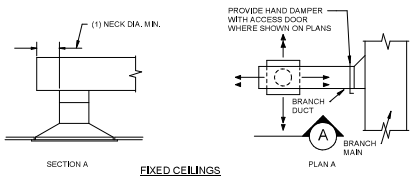
A1 MEDIUM PRESSURE AND ROUND DUCT FITTINGS
SCALE = NONE



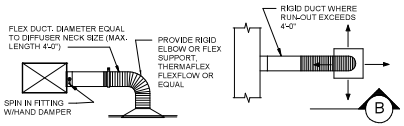
KEYNOTES

1. FAN ROOM WALL - REFER TO ARCHITECTURAL DRAWINGS FOR CONSTRUCTION TYPE.
2. DUCT POSITIONED SUCH THAT THERE IS NO PHYSICAL CONTACT BETWEEN THE DUCT AND THE WALL. ENSURE A GAP OF " TO " ON ALL SIDES.
3. FIBERGLASS OR MINERAL WOOL TYPE INSULATION.
4. NON-HARDENING RESILIENT CAULK - CONTINUOUS.
5. MASS LOADED VINYL SIMILAR TO KINETICS KNM 100RB WITH A SURFACE DENSITY OF NO LESS THAN 1.0 LB/SQ-FT. ADHERE TO THE DUCT AND ADJACENT WALL WITH AN ADHESIVE RECOMMENDED BY THE VINYL MANUFACTURER.

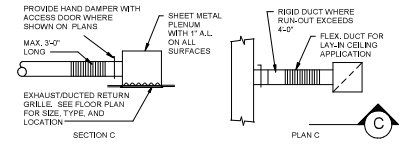
A1 FAN ROOM WALL PENETRATION DETAIL
SCALE = NONE



FIXED CEILINGS



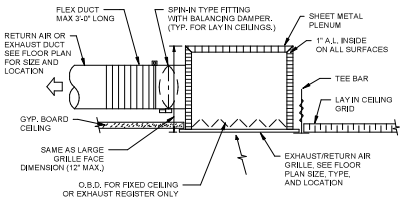
LAY-IN CEILINGS



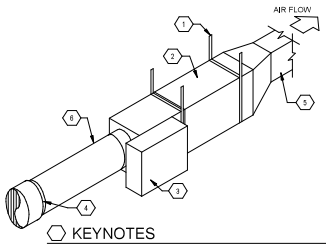
RETURN/EXHAUST REGISTER FOR LAY-IN AND FIXED CEILINGS

NOTE:
PROVIDE BALANCING DAMPER IN SUPPLY AND EXHAUST DUCTS REGARDLESS WHETHER SHOWN ON DRAWINGS

A1 DIFFUSER AND REGISTER CONNECTION DETAIL
SCALE = NONE



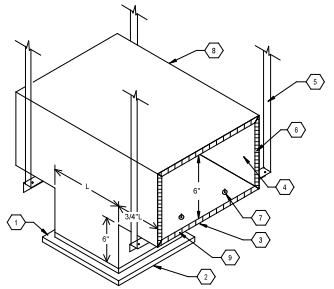
A1 RETURN AIR AND EXHAUST REGISTER DETAIL
SCALE = NONE



KEYNOTES

1. METAL STRAP SUPPORT FROM STRUCTURE (TYPICAL)
2. SOUND ATTENUATOR WHERE SCHEDULED IS TO BE 3'-0" LONG AND LINED WITH 1"-1" LB. DENSITY ACOUSTIC LINER
3. CONTROLS ENCLOSURE
4. TRANSITION FROM 2" LARGESR DUCT DIAMETER THAN VALVE CONNECTION SIZE
5. LOW VELOCITY DUCTWORK TO DISTRIBUTION
6. HIGH VELOCITY RIGID SUPPLY DUCT 3 FT. MINIMUM STRAIGHT RUN PRIOR TO TERMINAL UNIT CONNECTION. SEE SCHEDULE FOR VALVE AND DUCT SIZE

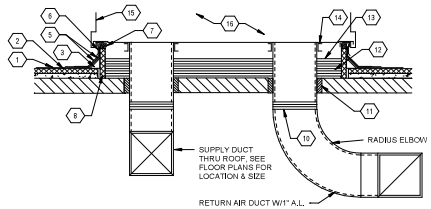
A1 SINGLE DUCT VAV TERMINAL UNIT
SCALE = NONE



KEYNOTES

1. SECURE SOUND TEE TO RETURN GRILLE
2. RETURN AIR GRILLE IN CEILING. SEE PLANS AND SCHEDULE FOR SIZE AND TYPE.
3. COORDINATE SOUND TEE INSTALLATION WITH STRUCTURE, LIGHTS, AND OTHER OBSTRUCTIONS.
4. MAINTAIN SAME FREE AREA AS GRILLE. (MINIMUM)
5. SUPPORT FROM STRUCTURE SIMILAR TO DUCTWORK.
6. CONSTRUCT SOUND TEE OF 1" THICK RIGID ACOUSTIC INSULATION.
7. PINS THRU DUCT BOARD.
8. FURNISH AND INSTALL SOUND TEE FOR EACH RETURN GRILLE UNLESS NOTED OTHERWISE ON DRAWINGS.
9. SEAL ALL EXPOSED FIBERGLASS/DUCT BOARD ENDS WITH DUCT LINER EDGE SEALER

A1 RETURN AIR SOUND TEE DETAIL
SCALE = NONE



KEYNOTES

1. EXISTING LIGHTWEIGHT PUMICE CONCRETE
2. EXISTING RIGID INSULATION, VERIFY THICKNESS
3. NEW FIBROUS CANT STRIP
4. REPLACE ROOFING BENEATH UNIT WITH LIKE MATERIAL
5. FLASHING
6. COUNTERFLASHING
7. SEAL STRIP
8. ROOF CURB FOR EQUIPMENT
9. EQUIPMENT SUPPORT CURB AS REQUIRED
10. FLEX DUCT CONNECTOR
11. SEAL SPACE BETWEEN DUCT AND ROOF OPENING WITH 3 LB DENSITY FIBERGLASS
12. 4 LAYERS OF 1/2" GYPBOARD BELOW UNIT ON ROOF DECK (CONTINUOUS)
13. INSTALL 4 LAYERS OF 1", 3 LB DENSITY FIBERGLASS DUCT BOARD BETWEEN UNIT AND GYPBOARD (CONTINUOUS)
14. INSTALL RUBBER GASKETS BETWEEN DUCT FLANGE AND UNIT
15. WHERE SPRING ISOLATION CURB IS SPECIFIED REFER TO DETAIL X/MX
16. WHERE COMPRESSOR SECTION IS OUTSIDE OF CURB, A SIMILAR SOUND ATTENUATION ENCLOSURE BELOW COMPRESSORS SHALL BE PROVIDED. THE CONTRACTOR SHALL SUBMIT DRAWINGS FOR PROPOSED METHOD, FOR APPROVAL, PRIOR TO INSTALLATION

A1 ROOF CURB DETAIL
SCALE = NONE

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NMSU ALAMAGORDO REIDLINGER SCIENCE CENTER HVAC UPGRADES

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

95%
CONSTRUCTION DOCUMENTS

REVISIONS

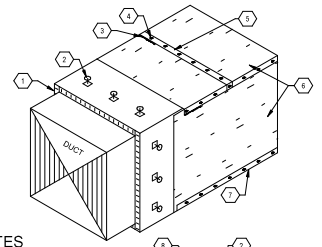
NO.	DATE	DESCRIPTION

DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	04/02/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
MECHANICAL DETAILS

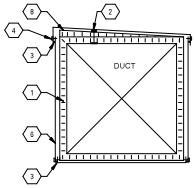
DRAWING NO:
M-502

DRAWING OF



KEYNOTES

1. MINIMUM 2" TYPE I-8 INSULATION, SEE SPECS.
2. STICK PINS AND WASHERS 12" O.C. UNDER ALUMINUM JACKET.
3. USE CAULKING TO SEAL JOINTS.
4. SCREWS FOR OVERLAPPED JOINTS. 3'-6" O.C.
5. OVERLAPPED JOINTS. OVERLAP ALUMINUM 2"-3".
6. .016" ALUMINUM JACKET WITH VAPOR BARRIER.
7. BREAK ALL CORNERS, NO FIELD BENDS.
8. TAPERED INSULATION ON ONE SIDE. SLOPE TOP INSULATION AND ALUMINUM CAP 1/2" PER FOOT.



NOTE:

- TAKE CARE TO ENSURE STICK PINS DO NOT PROTRUDE THROUGH ALUMINUM JACKET. IF STICK PIN PROTRUDES THROUGH ALUMINUM JACKET USE S.S.DOMED WASHER AND CAULK. NO FLAT WASHERS TO BE USED.
- BOTTOM ALUMINUM CAP MUST BE INSTALLED FIRST TO PROVIDE FOR A MOUNTING SURFACE FOR ALUMINUM SIDES.
- ALUMINUM SIDES SHALL BE MOUNTED SECOND. SCREW INTO BOTTOM ALUMINUM CAP.
- LASTLY, INSTALL TOP ALUMINUM CAP. SCREW INTO FLAT ALUMINUM SIDES AND SEAL JOINTS WITH CAULKING.

A1 EXTERIOR DUCT INSULATION DETAIL

SCALE = NONE

PROJECT MECHANICAL DESIGN CRITERIA:

1. ASHRAE CLIMATE ZONE (TABLE C301.1): [4B] [5B] [OTHER]
2. INTERIOR DESIGN CONDITIONS (SECTION C302.1):
   a. HEATING: 72°F
   b. COOLING: 75°F
3. CALCULATIONS OF HEATING AND COOLING LOADS (SECTION C403.1.1): PER ASHRAE STANDARD 183
4. SYSTEM DESIGN (SECTION C403.2):
   a. ZONE ISOLATION PROVIDED FOR ALL ZONES > 25,000 S.F. AND PER FLOOR.
   b. MECHANICAL VENTILATION PROVIDED IN ACCORDANCE WITH CHAPTER 4 OF THE IMC.

MECHANICAL AND SERVICE WATER HEATING SYSTEMS AND EQUIPMENT TYPES, SIZES AND EFFICIENCIES:

REFER TO MECHANICAL & PLUMBING EQUIPMENT SCHEDULES, DRAWINGS AND SCHEMATICS.

ECONOMIZER DESCRIPTION:

AIRSIDE ECONOMIZER, FIXED DRY BULB TYPE WITH HIGH LIMIT SHUTOFF OF T_{DA} > 75°F.

EQUIPMENT AND SYSTEM CONTROLS:

REFER TO MECHANICAL & PLUMBING EQUIPMENT SCHEDULES, CONTROLS DRAWINGS & SEQUENCES OF OPERATION.

FAN MOTOR HORSEPOWER (HP) AND CONTROLS:

REFER TO MECHANICAL EQUIPMENT SCHEDULES, CONTROLS DRAWINGS & SEQUENCES OF OPERATION.

1. MAXIMUM HP NOT TO EXCEED TABLE C403.8.1(1).
2. FAN CONTROLS PER SECTION C403.8.9.

DUCT SEALING, DUCT AND PIPE INSULATION AND LOCATION:

1. SUPPLY AND RETURN AIR DUCT INSULATION SHALL MEET OR EXCEED THE MINIMUM VALUES LISTED IN SECTION C403.11.1. REFER TO SPECIFICATION SECTION 23 0700 FOR REQUIREMENTS.
   a. UNCONDITIONED SPACES WITHIN THE BUILDING: R-6
   b. OUTSIDE THE BUILDING: (R-8 (CLIMATE ZONES 1-4)) (R-12 (CLIMATE ZONES 5-8)).
2. SUPPLY AND RETURN DUCTWORK SHALL BE SEALED IN ACCORDANCE WITH SECTION C403.11.2. REFER TO SPECIFICATION 23 3000 FOR REQUIREMENTS.
3. PIPE INSULATION SHALL MEET THE REQUIREMENTS OF SECTION 403.11.3 AND THE TABLE BELOW. REFER TO SPECIFICATION SECTION 23 0700 FOR REQUIREMENTS.

TEMP RANGE	TEMP. (F)	INSULATION TYPE	VAPOR SEALED	PIPE SIZE				
				< 1	1 TO 1-1/4	1.5 TO 3	4 & 6	≥ 8
TR-1	< 40	P-1 OR P-4	YES	0.5	1.0	1.0	1.0	1.5
TR-2	40-60	P-1 OR P-4	YES	0.5	0.5	1.0	1.0	1.0
TR-3	61 - 104	P-1	YES	0.5	0.5	0.5	0.5	0.5
TR-4	105 - 140	P-1	NO	1.0	1.0	1.5	1.5	1.5
TR-5	141 - 200	P-1	NO	1.5	1.5	2.0	2.0	2.0
TR-6	201 - 250	P-1	NO	2.5	2.5	2.5	3.0	3.0
TR-7	251 - 350	P-1	NO	3.0	4.0	4.5	4.5	4.5
TR-8	OVER 350	P-1	NO	4.5	5.0	5.0	5.0	5.0

A1 2018 IECC COMPLIANCE NOTES

SCALE = NONE

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MECHANICAL
DETAILS

DRAWING NO:
M-503

DRAWING OF

ALL SELECTIONS ARE BASED ON 4,300 FT. ABOVE SEA LEVEL.

PACKAGED ROOFTOP UNIT HEATPUMP+ELECT HT

SYMBOL	TRANE MODEL NO.	TYPE	AREA SERVED	SUPPLY FAN			COOLING PERFORMANCE								HEATING PERFORMANCE			MINIMUM OUTSIDE AIR (CFM)	FILTER	OPERATING WEIGHT (LBS.)	ELECTRICAL					NOTES
				CFM	EXT. SP (IN. WC)	FAN BHP	NOMINAL CAPACITY (TONS)	EER @ ARI	NET TOTAL COOLING (MBH)	NET SENSIBLE COOLING (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	HEAT PUMP+ELEC (MBH)	EAT DB (°F)	LAT DB (°F)		TYPE		V	PH	HZ	MCA	MOP	
RTU-01	WHC048H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		1,600	0.5	0.48	4	13.0	45.2	45.2	86.8	61.8	61.2	52.8	66.54	50.4	88.9	130	MERV13	1,100	480	3	60	32	35	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-02	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		970	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	430	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-03	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		1,135	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	405	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-04	WHC074H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		2,400	0.5	0.44	6	12.1	73.0	73.0	86.8	61.8	58.2	52.1	107.7	50.4	91.8	1200	MERV13	1,220	480	3	60	47	50	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-05	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		1080	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	426	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-06	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		960	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	394	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-08	WHC060H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		2,000	0.5	0.61	5	12.9	56.9	56.9	86.8	61.8	61.1	52.3	75.92	50.4	85.4	1000	MERV13	1,100	480	3	60	33	35	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-09	WHC060H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		2,000	0.5	0.61	5	12.9	56.9	56.9	86.8	61.8	61.1	52.3	75.92	50.4	85.4	1000	MERV13	1,100	480	3	60	33	35	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-10	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		1,200	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	345	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-11	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		960	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	400	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-12	WHC048H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		1,600	0.5	0.48	4	13.0	45.2	45.2	86.8	61.8	61.2	52.8	66.54	50.4	88.9	536	MERV13	1,100	480	3	60	32	35	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-13	WHC060H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		2,000	0.5	0.61	5	12.9	56.9	56.9	86.8	61.8	61.1	52.3	75.92	50.4	85.4	105	MERV13	1,100	480	3	60	33	35	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-14	WHC074H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		2,400	0.5	0.44	6	12.1	73.0	73.0	86.8	61.8	58.2	52.1	107.7	50.4	91.8	305	MERV13	1,220	480	3	60	47	50	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-15	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		1,040	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	387	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-16	WHC036H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		960	0.5	0.39	3	12.5	33.7	33.7	86.8	61.8	60.9	52.9	38.9	50.4	85.1	377	MERV13	800	480	3	60	22	25	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES
RTU-18	WHC060H4	(HEAT PUMP) W/SUPPLEMENTAL ELEC HEAT		2,000	0.5	0.61	5	12.9	56.9	56.9	86.8	61.8	61.1	52.3	75.92	50.4	85.4	124	MERV13	1,100	480	3	60	33	35	SEE SPECIFICATION 23 7413 FOR COMPONENTS AND ACCESSORIES

SPLIT SYSTEM INDOOR UNITS

SYMBOL	TRANE MODEL NO.	LOCATION	AREA SERVED	INDOOR UNIT						COOLING CAPACITY			HEATING RATED CAPACITY (BTUH)	WEIGHT (LBS.)	NOTES
				SUPPLY AIRFLOW (CFM)	MOTOR DATA				SEER2	CAPACITY (BTUH)	EAT DB/ WB (DEG F)	AMBIENT DB/WB (DEG F)			
					VOLT	PHASE	HZ	POWER							
FC-1	TPKA0A0241KA80A	COMPUTER SERVER ROOM	COMPUTER SERVER ROOM	705	208	1	60	POWER FROM CU-1	21.3	24,000	80/67	95	18,300	51	FURNISH WITH SI30-230 Condensate Pump, Touch MA Remote Controller Thermostat

INDOOR FAN COIL UNIT UNIT AT ALLIED HEALTH ELEVATOR EQUIP ROOM - SAME AS ABOVE

SPLIT SYSTEM OUTDOOR UNITS

SYMBOL	TRANE MODEL NO.	LOCATION	AREA SERVED	COOLING RATED CAPACITY (BTUH)	HEATING RATED CAPACITY (BTUH) @ 17 F AMBIENT	ELECTRICAL DATA					COMPRESSORS				WEIGHT (LBS.)	CORRESPONDING SERVICE INDOOR UNIT	NOTES
						VOLT	PHASE	HZ	MCA	BREAKER SIZE	COMPRESSOR TYPE	REFR. TYPE	LIQUID LINE	SUCTION LINE			
CU-1	TRUZA0241HA70NA	ROOF	COMPUTER SERVER ROOM	24,000	18,300	208	1	60	19	25	INVERTER-driven twin rotary	R-410A	3/8"	5/8"	180	FC-1	FURNISH WITH QSMS1201M Condensing Unit Stand, WB-PA5 Wind Baffle, HG-A6 Hail Guard

COND UNIT AT ALLIED HEALTH ELEVATOR EQUIP ROOM - SAME AS ABOVE

EXHAUST FANS-REIDLINGER

SYMBOL	GREENHECK MODEL NO.	LOCATION	AREA SERVED	TYPE	CFM	S.P. (IN. WC)	FAN RPM	BHP	MOTOR DATA					OPERATING WEIGHT (LBS.)	NOTES
									HP	VOLT	PHASE	HZ	FLA		
EF-15	XXXX	ROOF	WOMENS 154, MENS 155	CENTRIFIGAL	600	0.5			0.25	120	1	60		60	
EF-16	XXXX	ROOF	MULTIPLE STORAGE ROOMS	CENTRIFIGAL	2265	0.7			0.5	120	1	60		100	

UTILITY EXHAUST FAN FOR CHEM LAB 109-6 FT FUME HOOD ~ 1200 CFM @ 1" WC EXT STATIC
UTILITY EXHAUST FAN FOR BIO LAB 122- 5 FT FUME HOOD - 1000 CFM @ 1" WC EXT STATIC
UTILITY EXHAUST FAN FOR GEN LAB 118- 5 FT FUME HOOD - 1000 CFM @ 1" WC EXT STATIC
CENT ROOF EXHAUST -ALLIED HEALTH RESTROOMS- 1600 CFM @ 0.8" EXT STATIC

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NO.	DATE	DESCRIPTION

DRAWN BY: Author
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DATE: 04/02/2024
PROJECT NUMBER: 8797
DRAWING TITLE:
MECHANICAL SCHEDULES

DRAWING NO:
M-701

DRAWING OF

ALL SELECTIONS ARE BASED ON 4,300 FT. ABOVE SEA LEVEL.

PACKAGED VAV AIR HANDLING UNIT - AHU-1

SYMBOL	TRANE MODEL NO.	COOLING MAX AIRFLOW (CFM)	MIN AIRFLOW (CFM)	SUPPLY FAN BHP	EXHAUST FAN BHP	GROSS COOL (TONS)	NET TOTAL COOL (MBH)	NET SENSIBLE COOL (MBH)	COOL EAT DB / WB (DEG F)	COOL LAT DB / W (DEG F)	ELEC HEAT CONTROL	HEATING KW	HEATING (MBH)	HEAT EAT (DEG F)	HEAT LAT (DEG F)	VOLTAGE	PHASE	HERTZ	MCA AMPS	MOP AMPS	WEIGHT LBS	NOTES
AHU-1	RE040BB43**AA3D1D251001E0A2A1******A*00*0**1B11**	14,210	6,570	12,0	2,3	40	435	413	86 / 64	52,3 / 51,9	SCR MODULATING	60	204,9	21	53,8	480	3	60	128,3	150	11,500	

FURNISH WITH ELEC DISCONNECT SWITCH, EFLEX COMPRESSORS, SUPPLY & EXHAUST FAN VFD'S, ECONOMIZER, DEMAND CONTROL VENTILATION AND OVERIDE, CO2 SENSOR, BACNET INTERFACE, 46" TALL PLENUM CURB.

TERMINAL UNIT W/ELECTRIC REHEAT

SYMBOL	TRANE MODEL NO.	INLET DIAMETER INCHES	COOLING MIN AIRFLOW CFM	COOLING MAX AIRFLOW CFM	HEATING MIN AIRFLOW CFM	HEATING MAX AIRFLOW CFM	HEATING KW	HEATING MBH	ELEC HEAT CONTROL	ELECTRIC HEAT STAGES	VOLTAGE	PHASE	HERTZ	MCA AMPS	MOP AMPS	WEIGHT LBS	NOTES
VAV-01	VCEF05	5	100	230	175	230	1,5	5,12	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	6,8	15	82	
VAV-02	VCEF08	8	185	560	250	560	2,5	8,54	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	11,3	15	85	
VAV-03	VCEF05	5	80	245	175	245	1,5	5,12	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	6,8	15	82	
VAV-04	VCEF08	8	200	620	450	620	4,0	13,66	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	18,1	20	85	
VAV-05	VCEF04	4	70	210	115	210	1,0	3,41	SSR SOLID STATE RELAY PULSE MOD	1	277	1	60	4,5	15	82	
VAV-06	VCEF05	5	105	240	175	240	1,5	5,12	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	6,8	15	82	
VAV-07	VCEF04	4	70	210	115	210	1,0	3,41	SSR SOLID STATE RELAY PULSE MOD	1	277	1	60	4,5	15	82	
VAV-08	VCEF05	5	80	240	115	210	1,0	3,41	SSR SOLID STATE RELAY PULSE MOD	1	277	1	60	4,5	15	82	
VAV-09	VCEF04	4	70	210	115	210	1,0	3,41	SSR SOLID STATE RELAY PULSE MOD	1	277	1	60	4,5	15	82	
VAV-10	VCEF06	6	105	340	175	340	1,5	5,12	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	6,8	15	82	
VAV-11	VCEF05	5	85	255	115	255	1,0	3,41	SSR SOLID STATE RELAY PULSE MOD	1	277	1	60	4,5	15	67	
VAV-12	VCEF10	10	600	1245	600	1245	6,0	20,49	SSR SOLID STATE RELAY PULSE MOD	2	480	3	60	9,0	15	101	
VAV-13	VCEF10	10	670	1055	670	1055	6,5	22,2	SSR SOLID STATE RELAY PULSE MOD	2	480	3	60	9,8	15	101	
VAV-14	VCEF12	12	960	1550	960	1550	10,0	34,15	SSR SOLID STATE RELAY PULSE MOD	2	480	3	60	15,0	20	115	
VAV-15	VCEF10	10	645	1080	645	1080	6,5	22,2	SSR SOLID STATE RELAY PULSE MOD	2	480	3	60	9,8	15	101	
VAV-16	VCEF12	12	575	1740	575	1740	5,5	18,78	SSR SOLID STATE RELAY PULSE MOD	2	480	3	60	8,3	15	115	
VAV-17	VCEF08	8	415	800	415	800	4,0	13,66	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	18,1	20	85	
VAV-18	VCEF10	10	580	1060	580	1060	6,0	20,49	SSR SOLID STATE RELAY PULSE MOD	2	480	3	60	9,0	15	101	
VAV-19	VCEF12	12	580	1440	580	1440	6,0	20,49	SSR SOLID STATE RELAY PULSE MOD	2	480	3	60	9,0	15	115	
VAV-20	VCEF08	8	400	880	400	880	4,0	13,66	SSR SOLID STATE RELAY PULSE MOD	2	277	1	60	18,1	20	85	

FURNISH WITH ELEC DISCONNECT SWITCH, 480VAC/24VAC @ 50 VA, 24VAC DAMPER ACTUATOR, INTEGRAL SOUND ATTENUATOR, AND 1" FOIL FACED INSULATION.

SOUND ATTENUATOR SCHEDULE

GENERAL UNIT DATA								DYNAMIC INSERTION LOSS (dB) - OCTAVE BAND - HZ								PHYSICAL DATA						
SYMBOL	MANUFACTURER	MODEL NO.	SERVICE	AIRFLOW (CFM)	VELOCITY (FPM)	PRESS DROP PER ASTM-E477 (IN. W.G.)	PRESS DROP W/ SYSTEM EFFECTS (IN. W.G.)	63	125	250	500	1K	2K	4K	8K	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	CASING WIDTH (IN)	CASING HEIGHT (IN)	WEIGHT (LBS)	REFER TO SPEC. SECTION (XXXXXX)

AHU-1 SUPPLY DUCT
AHU-1 RETURN DUCT

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DATE:	04/02/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
MECHANICAL
SCHEDULES

DRAWING NO:
M-702

DRAWING OF

INSTRUMENTATION SOCIETY OF AMERICA TABLE

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURING OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USER CHOICE	USER CHOICE	USER CHOICE
C	CONDUCTIVITY			CONTROL (13)	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR PRIMARY ELEMENT		
F	FLOW RATE	RATIO FRACTION			
G	GAUGE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTION	MOMENTARY			MIDDLE INTERMEDIATE
N	HUMIDITY		USER DEFINED	USER DEFINED	USER DEFINED
O	USER CHOICE		ORIFICE RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI-VARIABLE		MULTI-FUNCTION	MULTI-FUNCTION	MULTI-FUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-AXIS		RELAY, COMPUTE CONVERT	
Z	POSITION DIMENSION	Z-AXIS		DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENTATION TYPE ABBREVIATION LIST

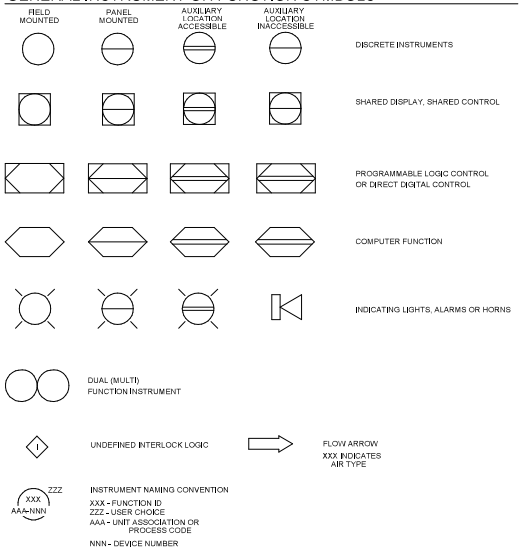
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
AA	ANALYTICAL ALARM	LA	LEVEL ALARM	VA	VIBRATION ALARM
AE	ANALYTICAL ELEMENT	LC	LEVEL CONTROLLER (STAND ALONE)	VS	VIBRATION SWITCH
AET	ANALYTICAL ELEMENT TRANSMITTER	LCV	LEVEL CONTROL VALVE		
AI	ANALYTICAL INDICATOR	LE	LEVEL ELEMENT	XV	SOLENOID VALVE
AC	ANALYTICAL CONTROLLER	LIC	LEVEL INDICATING CONTROLLER		
AIC	ANALYTICAL INDICATING CONTROLLER	LIT	LEVEL INDICATING TRANSMITTER	YA	EQUIPMENT ALARM
AT	ANALYTICAL TRANSMITTER	LS	LEVEL SWITCH	YI	EQUIPMENT STATUS
AIT	ANALYTICAL INDICATING CONTROLLER	LT	LEVEL TRANSMITTER	YCD	SMOKE DAMPER
ACV	ANALYTICAL CONTROL VALVE	LY	LEVEL SIGNAL CONVERTER	YS	SMOKE DETECTOR
AY	ANALYTICAL SIGNAL CONVERTER				
		MV	MANUAL HAND VALVE	ZC	POSITION CONTROL
EI	VOLTAGE INDICATOR			ZI	POSITION INDICATOR
EA	VOLTAGE ALARM	NT	HUMIDITY TRANSMITTER	ZS	POSITION SWITCH
ES	VOLTAGE SWITCH (CONTROL RELAY)				
ESL	VOLTAGE SWITCH LOW (24 VAC OR LESS)	PA	PRESSURE ALARM		
E	VOLTAGE TRANSMITTER	PCV	PRESSURE CONTROL VALVE	VA	VIBRATION ALARM
EY	VOLTAGE SIGNAL CONVERTER	PDI	PRESSURE DIFFERENTIAL INDICATOR	VS	VIBRATION SWITCH
		PDS	PRESSURE DIFFERENTIAL SWITCH		
FA	FLOW ALARM	PDT	PRESSURE DIFFERENTIAL TRANSMITTER		
FCV	FLOW CONTROL VALVE	PI	PRESSURE INDICATOR		
FE	FLOW ELEMENT	PIS	PRESSURE INDICATING SWITCH		
FET	FLOW ELEMENT/TRANSMITTER	PIT	PRESSURE INDICATING TRANSMITTER		
FI	FLOW INDICATOR	PS	PRESSURE SWITCH		
FIT	FLOW INDICATING TRANSMITTER	PT	PRESSURE TRANSMITTER		
FS	FLOW SWITCH	PY	PRESSURE SIGNAL CONVERTER		
FT	FLOW TRANSMITTER				
FY	FLOW SIGNAL CONVERTER	SC	SPEED CONTROL		
		SCM	SPEED CONTROL MANUAL		
HK	MANUAL VARIABLE CONTROL				
HS	HAND SWITCH	TA	TEMPERATURE ALARM		
HSI	HAND SWITCH INDICATOR	TC	TEMPERATURE CONTROLLER		
		TCV	TEMPERATURE CONTROL VALVE		
II	CURRENT INDICATOR	TE	TEMPERATURE ELEMENT		
IA	CURRENT ALARM	TET	TEMPERATURE ELEMENT TRANSMITTER		
IS	CURRENT SWITCH	TI	TEMPERATURE INDICATOR		
IT	CURRENT TRANSMITTER	TIT	TEMPERATURE INDICATING TRANSMITTER		
IY	CURRENT SIGNAL CONVERTER	TIC	TEMPERATURE INDICATING CONTROLLER		
		TS	TEMPERATURE SWITCH		
JIT	POWER INDICATING TRANSMITTER	TSL	FREEZE STAT		
JY	POWER SIGNAL CONVERTER	TT	TEMPERATURE TRANSMITTER		
KC	TIME CLOCK				

FMS SYSTEM OPERATING CONSTRAINTS

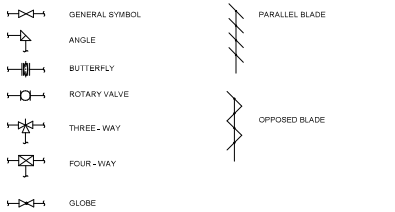
THE FMS CONTROL SYSTEM SHALL OPERATE WITHIN THE FOLLOWING SYSTEM CONSTRAINTS FOR CONTROL:

SUPPLY AIR DRYBULB TEMPERATURE	+/- 0.5°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
MIXED AIR DRYBULB TEMPERATURE	+/- 0.5°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
WATER TEMPERATURE	+/- 0.5°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
DUCT STATIC PRESSURE	+/- 0.1" W.C. OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
SUPPLY/ RETURN AIR VOLUME	+/- 2.5% OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
OUTSIDE AIR/ RELIEF AIR VOLUME	+/- 2.5% OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
BUILDING PRESSURE	+/- 0.01" W.C. OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
ROOM TEMPERATURE	+/- 1.0°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
ROOM AIR VOLUME	+/- 2.5% OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
HUMIDITY LEVEL	+/- 2.5% R.H. OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
WATER TEMPERATURE	+/- 1.0°F OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL
WATER DIFFERENTIAL PRESSURE	+/- 1.0 PSI OF SETPOINT WITH HUNTING OF < 5% OF THE CONTROL SIGNAL

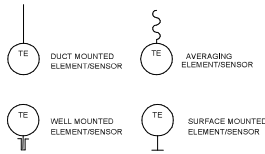
GENERAL INSTRUMENT OR FUNCTION SYMBOLS



CONTROL VALVE BODY/ DAMPER SYMBOLS

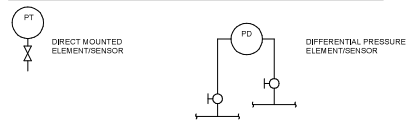


TEMPERATURE

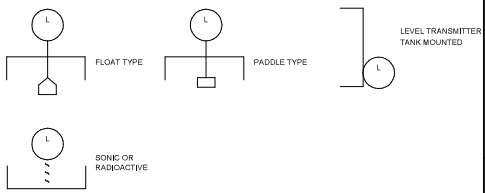


CURRENT

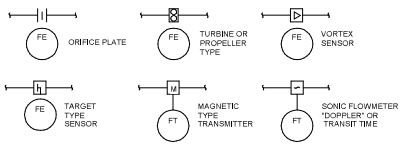
PRESSURE



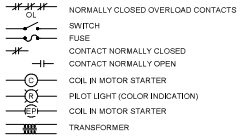
LEVEL



FLOW



LADDER DIAGRAM SYMBOLS



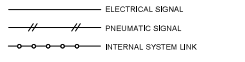
ABBREVIATIONS

IA	INSTRUMENTATION AIR
DDC	DIRECT DIGITAL CONTROL
C	COMMON VALVE PORT
F.O	FAIL OPEN
F.C	FAIL CLOSED
SR	SPRING RANGE
TR	THROTTLING RANGE
PH	PREHEAT
HR	HEAT RECOVERY
CPA	CONTROL POINT ADJUSTMENT
SPDT	SINGLE POLE DOUBLE THROW
DPDT	DOUBLE THROW DOUBLE POLE
DA	DIRECT ACTING
RA	REVERSE ACTING

PROCESS CODES

TW	COOLING TOWER OR CONDENSER WATER
CHW	CHILLED WATER
SCHW	SECONDARY CHILLED WATER
HW	HOT WATER
SHW	SECONDARY HOT WATER
STM	STEAM

LINE LEGEND



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REVISIONS

NO.	DATE	DESCRIPTION

DRAWN BY:	Author
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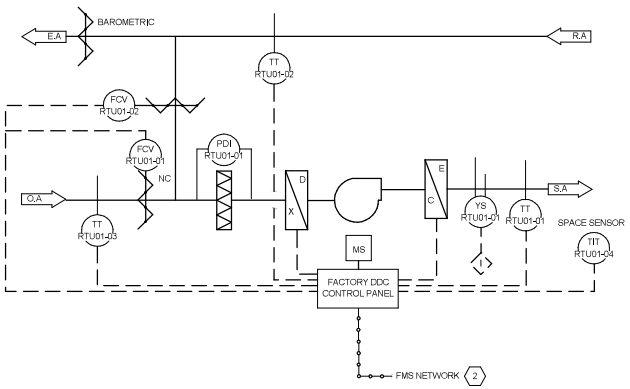
DATE:	04/02/2024
PROJECT NUMBER:	8797

DRAWING TITLE:
MECHANICAL
CONTROLS LEGEND

DRAWING NO:
MI001

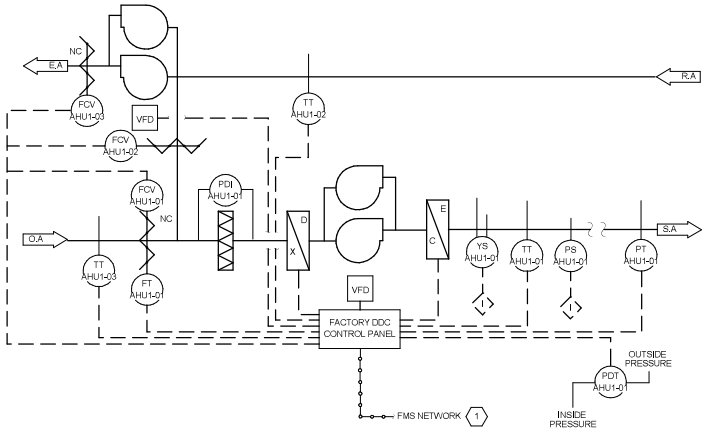
DRAWING OF



EACH AIR HANDLING UNIT SHALL BE FURNISHED WITH FACTORY DDC CONTROLS FOR THE AIR HANDLING UNIT. THE AIR HANDLING UNIT SHALL BE CONNECTED TO THE FMS THROUGH A FMS COMMUNICATIONS TRUNK USING A BACNET COMMUNICATIONS CONNECTION. THE CONTRACTOR SHALL PROVIDE INSTALLATION FOR ALL FIELD INSTALLED DEVICES FURNISHED WITH THE MECHANICAL EQUIPMENT. REFER TO SPECIFICATIONS FOR MORE INFORMATION. REFER TO SEQUENCE OF OPERATIONS FOR CONTROL FUNCTIONALITY.

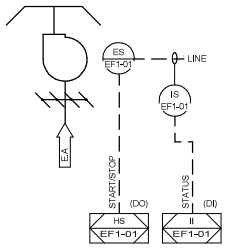
PACKAGED ROOFTOP AIR HANDLING UNIT RTU-01 CONTROL DIAGRAM

(TYPICAL FOR RTU-02 THRU RTU-18)

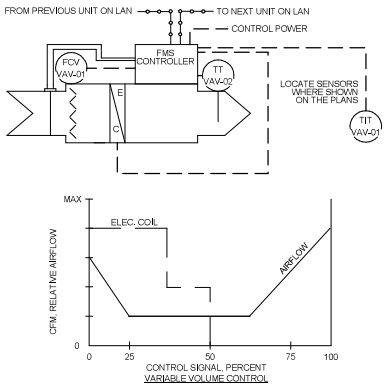


EACH AIR HANDLING UNIT SHALL BE FURNISHED WITH FACTORY DDC CONTROLS FOR THE AIR HANDLING UNIT. THE AIR HANDLING UNIT SHALL BE CONNECTED TO THE FMS THROUGH A FMS COMMUNICATIONS TRUNK USING A BACNET COMMUNICATIONS CONNECTION. THE CONTRACTOR SHALL PROVIDE INSTALLATION FOR ALL FIELD INSTALLED DEVICES FURNISHED WITH THE MECHANICAL EQUIPMENT. REFER TO SPECIFICATIONS FOR MORE INFORMATION. REFER TO SEQUENCE OF OPERATIONS FOR CONTROL FUNCTIONALITY.

PACKAGED ROOFTOP AIR HANDLING UNIT AHU-1 CONTROL DIAGRAM



TYPICAL EXHAUST FAN CONTROL DIAGRAM



EACH TERMINAL UNIT SHALL BE EQUIPPED WITH ITS OWN STAND ALONE CONTROLLER WHICH SHALL HAVE THE CAPABILITIES DESCRIBED IN THE SPECIFICATION. THE WIRING SHOWN IS PROVIDED AS A GENERAL DESCRIPTION AND IS NOT AS A DETAILED WIRING DIAGRAM WHICH VARIES WITH THE MANUFACTURER.

TYPICAL VAV TERMINAL UNIT WITH ELECTRIC REHEAT CONTROL DIAGRAM

KEYED NOTES

1. THE PACKAGED ROOFTOP UNITS SHALL BE CONNECTED TO THE FMS NETWORK THROUGH A BACNET NETWORK CONNECTION AS INDICATED. THE CONTRACTOR SHALL COORDINATE WITH THE UNIT MANUFACTURER AND SUBMIT A PROPOSED LIST OF POINTS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. THE FOLLOWING POINTS SHALL BE INTEGRATED INTO AND MONITORED BY THE FMS IF AVAILABLE IN THE UNIT CONTROLLER:

   A. SYSTEM SETPOINTS
   B. SYSTEM DIAGNOSTICS
   C. SYSTEM SENSOR INPUTS
   D. SUPPLY FAN MODE STATUS
   E. FAN STATUSES
   F. FAN SPEEDS
   G. UNIT HEAT/COOL MODE
   H. EXHAUST DAMPER POSITION
   I. ECONOMIZER POSITION
   J. ECONOMIZER MINIMUM POSITION SETPOINT.
   K. ECONOMIZER SETPOINT
   L. ON/OFF STATUS OF COMPRESSORS
   M. HEATING OUTPUT
   N. REFRIGERANT EVAPORATOR TEMPERATURE
   O. SATURATED CONDENSER TEMPERATURE
   P. VENTILATION OVERRIDE MODE STATUS
   Q. OUTSIDE AIR VOLUME
   R. OUTSIDE AIR TEMPERATURE
   S. RETURN AIR TEMPERATURE
   T. SUPPLY AIR TEMPERATURE
   U. SUPPLY AIR STATIC PRESSURE
   V. SPACE DIFFERENTIAL PRESSURE

   THE FOLLOWING POINTS SHALL BE INTEGRATED INTO AND CONTROLLED BY THE FMS:

   A. SUPPLY AIR TEMPERATURE SETPOINT
   B. SUPPLY AIR STATIC PRESSURE SETPOINT
   C. SPACE DIFFERENTIAL PRESSURE SETPOINT
   D. HEATING ENABLE/DISABLE
   E. COOLING ENABLE/DISABLE
   F. ENONOMIZER ENABLE/DISABLE
   G. ECONOMIZER SETPOINT
   H. ECONOMIZER MINIMUM POSITION SETPOINT
   I. ACTIVATION OF VENTILATION OVERRIDE
   J. DIAGNOSTICS RESET
   K. UNIT PRIORITY SHUTDOWN
   L. SUPPLY FAN MODE

2. THE PACKAGED ROOFTOP UNITS SHALL BE CONNECTED TO THE FMS NETWORK THROUGH A BACNET NETWORK CONNECTION AS INDICATED. THE CONTRACTOR SHALL COORDINATE WITH THE UNIT MANUFACTURER AND SUBMIT A PROPOSED LIST OF POINTS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. THE FOLLOWING POINTS SHALL BE INTEGRATED INTO AND MONITORED BY THE FMS IF AVAILABLE IN THE UNIT CONTROLLER:

   A. SYSTEM SETPOINTS
   B. SYSTEM DIAGNOSTICS
   C. SYSTEM SENSOR INPUTS
   D. SUPPLY FAN MODE STATUS
   E. SUPPLY FAN STATUS
   F. UNIT HEAT/COOL MODE
   G. ZONE TEMPERATURE
   H. ECONOMIZER POSITION
   I. ECONOMIZER MINIMUM POSITION SETPOINT.
   J. ECONOMIZER SETPOINT
   K. ON/OFF STATUS OF COMPRESSORS
   L. HEATING OUTPUT
   M. REFRIGERANT EVAPORATOR TEMPERATURE
   N. SATURATED CONDENSER TEMPERATURE
   O. VENTILATION OVERRIDE MODE STATUS
   P. OUTSIDE AIR TEMPERATURE
   Q. RETURN AIR TEMPERATURE
   R. SUPPLY AIR TEMPERATURE

   THE FOLLOWING POINTS SHALL BE INTEGRATED INTO AND CONTROLLED BY THE FMS:

   A. COOLING SETPOINT
   B. HEATING SETPOINT
   C. ZONE TEMPERATURE SETPOINT
   D. ZONE VALUES
   E. HEATING ENABLE/DISABLE
   F. COOLING ENABLE/DISABLE
   G. ENONOMIZER ENABLE/DISABLE
   H. ECONOMIZER SETPOINT
   I. ECONOMIZER MINIMUM POSITION SETPOINT
   J. ACTIVATION OF VENTILATION OVERRIDE
   K. DIAGNOSTICS RESET
   L. UNIT PRIORITY SHUTDOWN
   M. SUPPLY FAN MODE

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PROJECT NUMBER:	8797

DRAWING TITLE:
MECHANICAL CONTROLS DIAGRAMS

DRAWING NO:
MI601

DRAWING OF

General

System Status Display
The FMS shall provide operating status for all systems controlled by the FMS. The displays shall include all points indicated on the drawings and any others required to achieve the sequence of operations. The FMS shall be able to integrate system diagnostics into control action decisions. The shall also include the ability to designate individual units as being in maintenance mode to avoid generating alarms. All system control and status events shall be recorded, at the operator's selection, in the FMS event log to facilitate troubleshooting. All detected alarms or failures shall initiate an alarm within the FMS.

Power Failure Recovery
The FMS shall contain a power failure recovery mode (operator adjustable). The power failure recovery capability shall return the system to its last state (before the building lost power).

Occupancy Control
The FMS shall be setup with an occupancy schedule for different areas of the building. The owner shall be interviewed by the contractor at start-up to establish these schedules. Some areas of the building shall be setup to be continuously occupied.

Emergency Outdoor Air Override
The FMS shall have an emergency outdoor air override switch on the main graphic at the operator workstation which will allow the operator to shutdown the outside air intake dampers and relief dampers for all air handling units in the event that toxic odors are detected outside. When the outside air and relief dampers fully close, the return air damper shall fully open. The outside air intake dampers for all units shall remain closed until the operator resets the override.

Single Zone Rooftop Air Handling Units RTU-01 thru RTU-18

General
The air handling unit shall be furnished with a complete factory packaged DDC control system. The FMS shall integrate the air handling unit controls into the FMS using an open protocol communication network connection between the two systems. The following sequence of operations shall be used as a design basis guideline for control of the unit however the exact sequence of operations shall be in accordance with the manufacturer's standard factory sequence of control for the specified unit. Refer to the air handling unit manufacturer's submittal and O&M manual for exact sequence details.

Mixed Air Damper Control
The air handling unit control system shall modulate the mixed air dampers to maintain the supply air temperature at set point. Whenever the outside air temperature is greater than the return air temperature and mechanical cooling is required, the mixed air dampers shall be in their normal position (full return air with minimum outside air). When the air handling unit is stopped, the control system shall close all outside air dampers and the relief damper and open the return air damper.

Minimum Outside Air Control
The minimum outside air volume shall be controlled by the air handling unit control system through the minimum outside air damper position setpoint set by the test and balance contractor. The control system shall not modulate the outside air damper below minimum outside air damper positon setpoint when operating in an occupied mode. If the air handling unit is stopped, the control system shall close the damper.

Temperature Control
The air handling unit control system shall stage the electric coil and stage the condensing unit to maintain the space temperature setpoint. The air handling unit control system shall prevent simultaneous heating and cooling. The cooling setpoints shall be 76 °F (adjustable) for occupied periods and 85°F (adjustable) during unoccupied periods. The heating setpoints shall be 72°F (adjustable) for occupied periods and 55°F (adjustable) for unoccupied periods.

Supply Fan Control
The supply fan shall be started and stopped by the FMS system based on an occupancy schedule for the space programmed into the FMS. The fan shall operate continuously during occupied periods. If during unoccupied periods, the space temperature rises above the unoccupied cooling setpoint or falls below the unoccupied heating setpoint, the air handling unit shall start and operate to change the space temperature 2°F (adjustable) before stopping. If during unoccupied periods, the space occupancy switch is activated, the air handling unit shall start and operate for a period of two hours before stopping.

Supply Fan Monitoring
The fan operation shall be indicated to the air handling unit control system through a current switch or other flow indicator. If an alarm condition is detected, the FMS shall initiate an alarm.

Smoke Detector
A smoke detector located in the supply air stream, shall stop the fan through the fire alarm system if an alarm condition is detected. When the fan is stopped, the air handling unit control system shall position the dampers to their normal state.

Start/Stop Optimization and Morning Warm-Up
The FMS shall be programmed with a self-adjusting start/stop optimization sequence which shall provide the optimum start time for the unit in order to have the space temperature at the occupied setpoint when scheduled occupancy is to occur each day. If the space requires heating to reach the occupied space temperature setpoint, the FMS shall operate the unit using a morning warm-up cycle. During the morning warm-up cycle, the unit shall operate with the outside air and relief air damper closed with the return air damper fully open. The unit shall operate the electric heating coil to maintain the space temperature at setpoint. Once the space temperature occupied setpoint is reached, the unit shall return to normal occupied control.

VAV Air Handling Unit AHU-1

General
The air handling unit shall be furnished with a complete factory packaged DDC control system. The FMS shall integrate the air handling unit controls into the FMS using an open protocol communication network connection between the two systems. The following sequence of operations shall be used as a design basis guideline for control of the unit however the exact sequence of operations shall be in accordance with the manufacturer's standard factory sequence of control for the specified unit. Refer to the air handling unit manufacturer's submittal and O&M manual for exact sequence details.

Mixed Air Damper Control
The air handling unit control system shall modulate the mixed air dampers to maintain the supply air temperature at set point. Whenever the outside air temperature is greater than the return air temperature and mechanical cooling is required, the mixed air dampers shall be in their normal position (full return air with minimum outside air). When the air handling unit is stopped, the control system shall close all outside air dampers and the relief damper and open the return air damper.

Minimum Outside Air Control
The minimum outside air volume shall be controlled by the air handling unit control system through the outside air flow measuring damper which measures the outside air volume. The control system shall not modulate the outside air volume damper below minimum outside air volume setpoint. If the air handling unit is stopped, the control system shall close the damper. The FMS shall trend and log the outside air volume being brought in by the air handling unit.

Supply Air Temperature Setpoint Control
The air handling unit control system shall control the air handling unit to maintain an adjustable supply air temperature setpoint. The supply air temperature setpoint shall be reset by the FMS from 55°F (adjustable) to 75°F (adjustable) based on the demand of the terminal units served by it so that at least one terminal unit is in full cooling (max airflow setpoint) and still maintaining the room temperature setpoint.

Supply Air Static Setpoint Control
The FMS shall reset the static pressure setpoint using a trim and respond logic within the range of 0,5" w.g. to 1,5" w.g. When the fan is off, the setpoint shall be 1,0" w.g. Once the fan is started, the setpoint shall be trimmed by 0,04" w.g. every two minutes if there are two or fewer zone pressure requests. If there are more than two zone pressure requests, respond by increasing the setpoint by 0,06" w.g. A zone pressure request is generated when a VAV damper is greater than 95% open until it drops to 80% open. All setpoints shall be adjustable through the operator workstation.

Supply Air Temperature Control
The air handling unit control system shall modulate the electric heater and stage the condensing unit to maintain the supply air temperature setpoint. The air handling unit control system shall prevent simultaneous heating and cooling.

Supply Fan Control
The supply fan VFD shall be started and stopped by the FMS system based on an occupancy schedule for the space programmed into the FMS. The fan shall operate continuously during occupied periods. If during unoccupied periods, any of the space temperatures rise above the unoccupied cooling setpoint or fall below the unoccupied heating setpoint, the air handling unit shall start and operate to change the space temperature 2°F (adjustable) before stopping. If during unoccupied periods, any of the space occupancy switches are activated, the air handling unit shall start and operate for a period of two hours before stopping.

Supply Fan VFD Control
The air handling unit control system shall modulate the VFD to maintain the supply duct static pressure at setpoint for the duct static pressure sensor which is farthest below setpoint. The ramp of the VFD shall be adjusted to restrict the rate of change of the VFD output to sixty seconds for a zero to one hundred percent control signal change.

Supply Fan Monitoring
The VFD operation shall be indicated to the air handling unit control system through a set of contacts in the VFD. If an alarm condition is detected, the FMS shall initiate an alarm.

Relief Fan VFD Control
The relief fan shall operate whenever the supply fan operates and the space pressure is above setpoint. The air handling unit control system shall modulate the relief fan to maintain the differential pressure measured in the space and the outside air pressure at a positive space pressure of 0,05" w.c. (adjustable).

Relief Fan Monitoring
The VFD operation shall be indicated to the air handling unit control system through a set of contacts in the VFD. If an alarm condition is detected, the FMS shall initiate an alarm.

Smoke Detector
A smoke detector located in the supply air stream, shall stop the fans through the fire alarm system if an alarm condition is detected. When the fans are stopped, the air handling unit control system shall position the dampers to their normal state.

Start/Stop Optimization and Morning Warm-Up
The FMS shall be programmed with a self-adjusting start/stop optimization sequence which shall provide the optimum start time for the unit in order to have the space temperature at the occupied setpoint when scheduled occupancy is to occur each day. If the spaces require heating to reach the occupied space temperature setpoints, the FMS shall operate the unit using a morning warm-up cycle. During the morning warm-up cycle, the unit shall operate with the outside air and relief air damper closed with the return air damper fully open. The FMS shall raise supply air temperature setpoint to the heating maximum temperature and the unit controls shall operate the electric duct heater to maintain the supply air temperature at setpoint. Once the space temperature occupied setpoints are reached, the unit shall return to normal occupied control. During morning warm-up, the terminal units shall operate at their maximum airflow setpoints until their space temperature setpoints are reached. Terminal units which do not require heating or have reached their occupied setpoints, shall operate with their dampers closed.

Variable Air Volume Terminal Units w/ Electric Reheat

Each terminal unit shall modulate the supply air damper to maintain the space temperature conditions. If the zone requires cooling, the supply air damper shall be modulated between the minimum and maximum cooling air flows to maintain the space temperature at the cooling setpoint of 76 °F (adjustable) for occupied periods and 85°F (adjustable) during unoccupied periods. If the zone calls for heating, the supply air damper shall be modulated to a minimum and the electric heat shall be staged on to maintain the space temperature at the heating setpoint of 72°F (adjustable) for occupied periods and 55°F for unoccupied periods. If additional heating is required when the electric heat is fully staged on, the supply air damper shall be modulated to meet the room temperature requirements. If during an unoccupied period the space occupancy switch is activated, the space shall return to the occupied setpoints for a period of two hours before switch back to the unoccupied state.

General Exhaust Fans

Exhaust Fan Control
Each fan shall operate based on the occupancy schedule in the FMS. The fan shall operate continuously during occupied periods.

Exhaust Fan Monitoring
The fan operation shall be indicated to the FMS through a current switch installed on the motor. If a fan failure is detected, the FMS shall stop the fan and initiate an alarm

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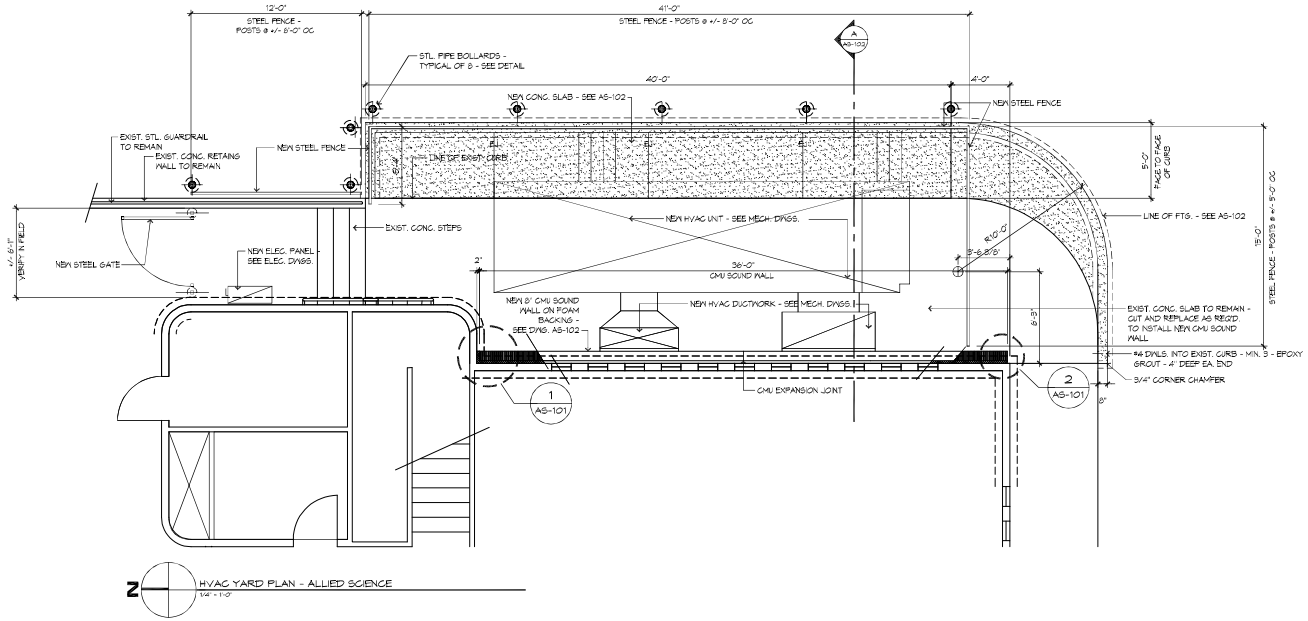
DRAWN BY:	Author
REVIEWED BY:	Checker
DATE:	04/02/2024
PROJECT NUMBER:	8797

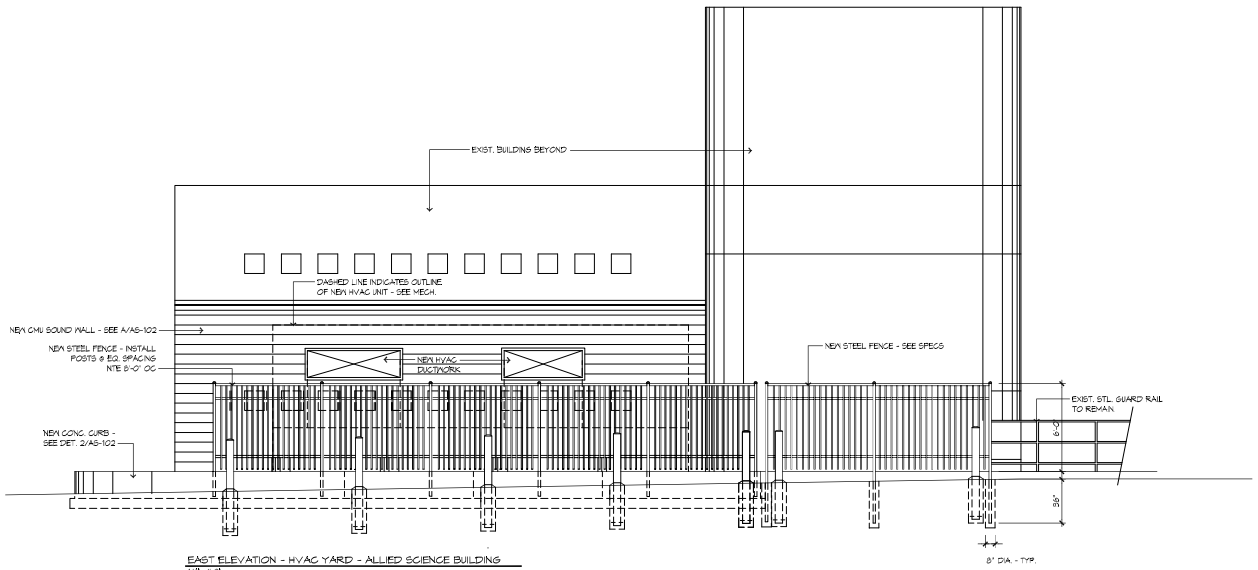
DRAWING TITLE:
MECHANICAL CONTROLS SEQUENCE OF OPERATIONS

DRAWING NO:
MI602

DRAWING OF



2 HVAC YARD PLAN - ALLIED SCIENCE
1/4" = 1'-0"



EAST ELEVATION - HVAC YARD - ALLIED SCIENCE BUILDING
1/4" = 1'-0"

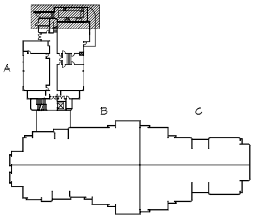
GENERAL SHEET NOTES

A. XXXX.

KEYNOTES

1. XXXX.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

DRAWN BY:	JH FAIA
REVIEWED BY:	JH FAIA
DATE:	3-25-2024
PROJECT NUMBER:	

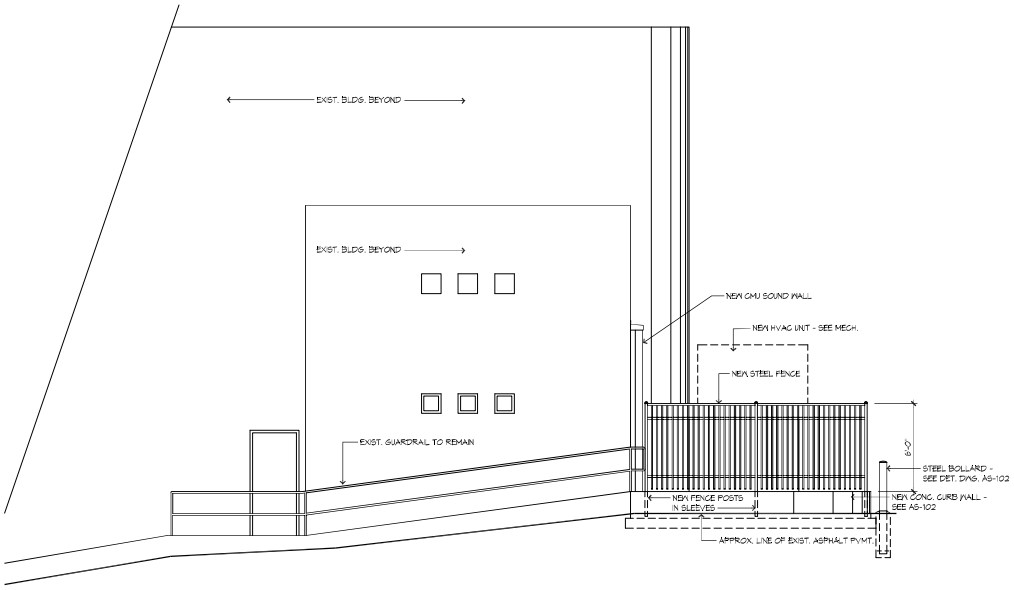
DRAWING TITLE:

ALLIED SCIENCE
2nd FLOOR HVAC
YARD ENCLOSURE
PLAN & ELEVATION

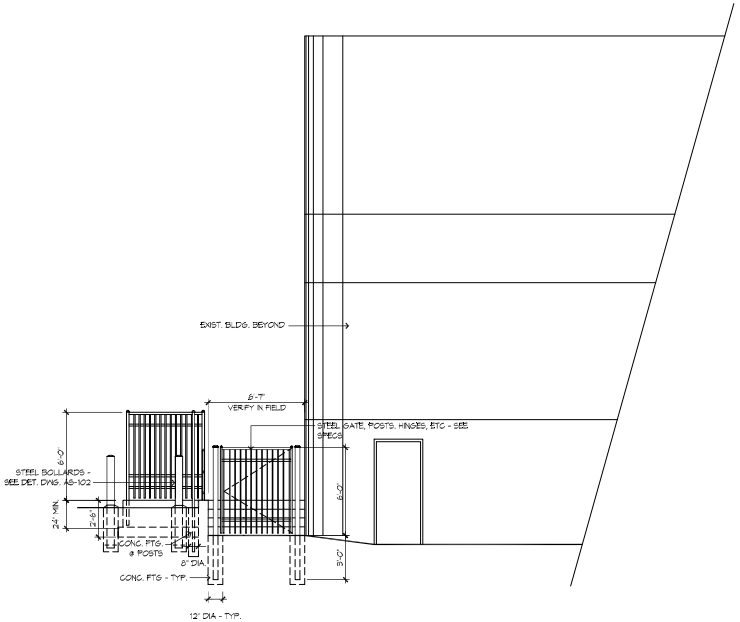
DRAWING NO:

AS-100

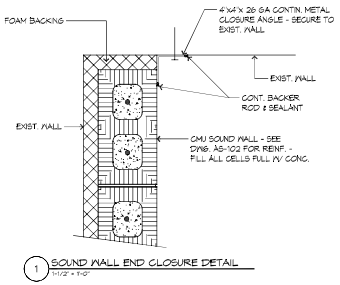
DRAWING OF



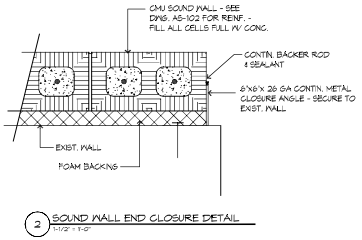
SOUTH ELEVATION - ALLIED SCIENCE HVAC YARD ENCLOSURE



NORTH ELEVATION - ALLIED SCIENCE HVAC YARD ENCLOSURE



1 SOUND WALL END CLOSURE DETAIL



2 SOUND WALL END CLOSURE DETAIL

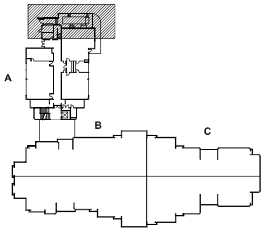
GENERAL SHEET NOTES

A. XXXX.

KEYNOTES

1. XXXX.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

DRAWN BY:	JH FAIA
REVIEWED BY:	JH FAIA
DATE:	3-28-2024
PROJECT NUMBER:	

DRAWING TITLE:

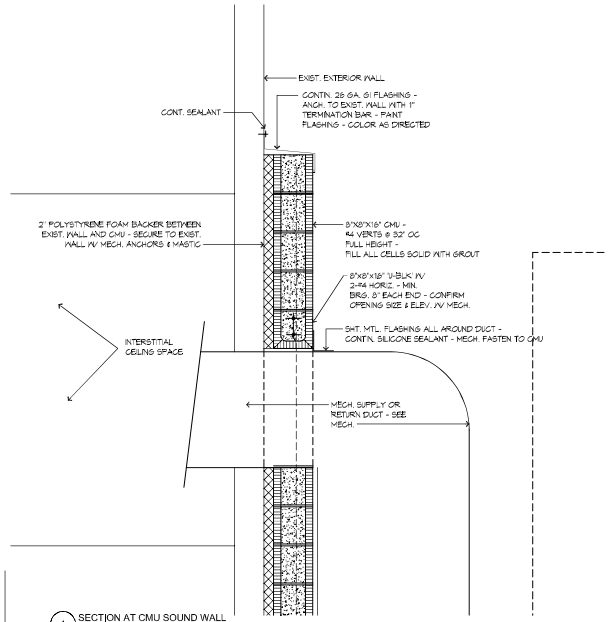
ALLIED SCIENCE
2nd FLOOR HVAC
YARD ENCLOSURE
ELEVATIONS/DETAILS

DRAWING NO:

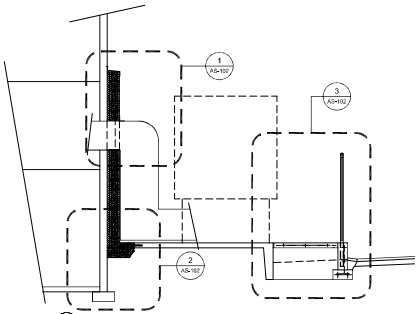
AS-101

DRAWING OF

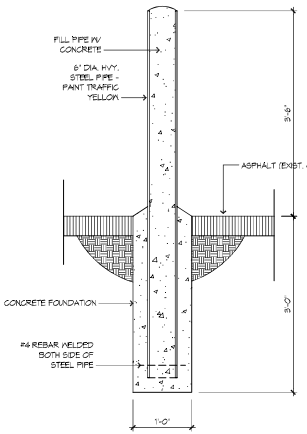
Bridgers & Paxton Project No: ####.##



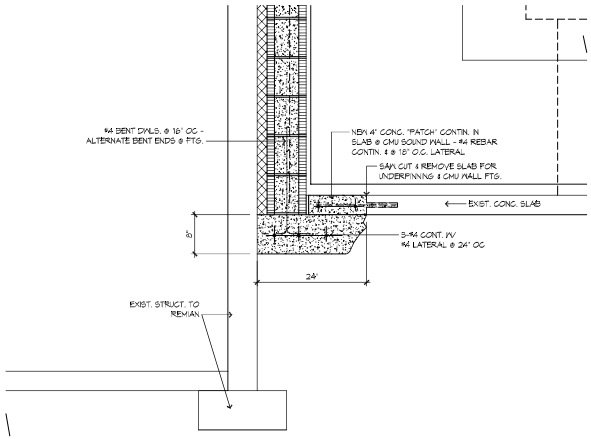
1 SECTION AT CMU SOUND WALL
1" = 1'-0"



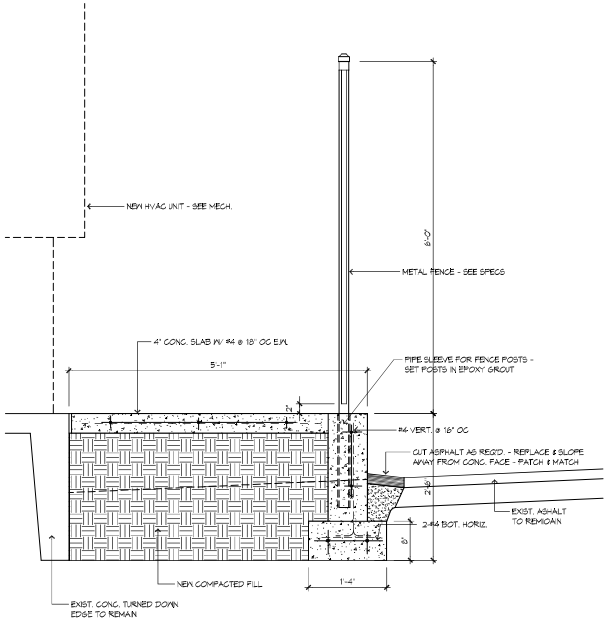
A SECTION AT NEW HVAC YARD ENCLOSURE
1" = 1'-0"



4 BOLLARD DETAIL
1/2" = 1'-0"



2 SECTION AT CMU SOUND WALL
1" = 1'-0"



3 SECTION AT NEW HVAC YARD ENCLOSURE
1" = 1'-0"

GENERAL SHEET NOTES

A. XXXX.

KEYNOTES

1. XXXX.

KEYPLAN

CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

DRAWN BY:	JH FAIA
REVIEWED BY:	JH FAIA
DATE:	3-26-2024
PROJECT NUMBER:	

DRAWING TITLE:

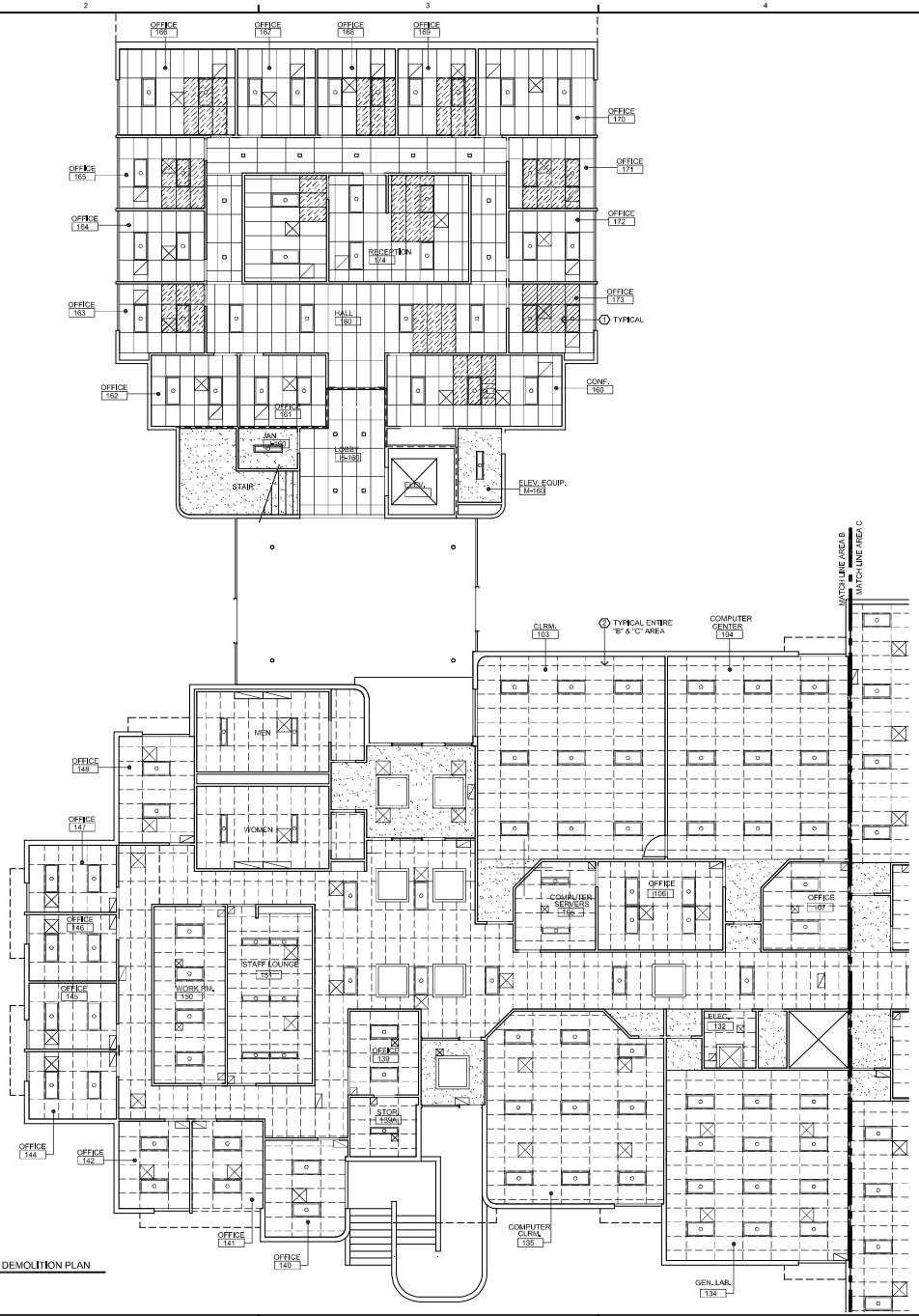
ALLIED SCIENCE
2nd FLOOR HVAC
YARD ENCLOSURE
SECTIONS/DETAILS

DRAWING NO:

AS-102

DRAWING OF

Bridgers & Paxton Project No: ####.##



CEILING LEGEND

- EXIST. 24"x48" LED LIGHT TROFFER TO REMAIN
- EXIST. 12"x48" LED LIGHT TROFFER TO REMAIN
- EXIST. 24"X24" HVAC SUPPLY REGISTER TO REMAIN
- EXIST. 12"x12" HVAC SUPPLY REGISTER TO REMAIN
- EXIST. 24"x24" HVAC RETURN AIR GRILLE TO REMAIN
- EXIST. 12"x24" HVAC RETURN AIR GRILLE TO REMAIN
- EXIST. 12"x12" HVAC RETURN AIR GRILLE TO REMAIN
- EXIST. 12"x48" HVAC RETURN AIR GRILLE TO REMAIN
- EXIST. RECESSED LED LIGHT FIXTURE TO REMAIN
- EXIST. SUSPENDED PROJECTOR UNIT TO REMAIN
- EXIST. SUSPENDED CEILING TILES AND GRID TO BE DEMOLISHED

N

AREAS A & B - GROUND FLOOR REFLECTED CEILING DEMOLITION PLAN
1/8" = 1'-0"

GENERAL DRAWING NOTES

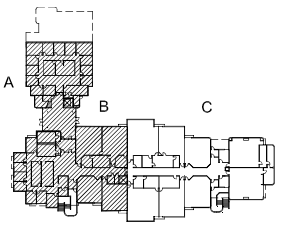
A. XXXX.

KEYNOTES

1 DASHED AREAS INDICATE SUSPENDED ACOUSTICAL CEILING GRID, ACOUSTICAL TILES, HVAC REGISTERS AND LIGHT FIXTURES TO BE REMOVED TO PROVIDE ACCESS TO HVAC FAN COIL UNITS ABOVE CEILING. FOLLOWING REMOVAL AND REPLACEMENT OF HVAC UNITS, INSTALL NEW SUSPENSION SYSTEM, CEILING TILES AND EXISTING HVAC REGISTERS AND LIGHT FIXTURES IN SAME LOCATION AS THAT WHICH WAS REMOVED. TYPICAL ALL THREE FLOORS OF THE ALLIED HEALTH WING, AREA "A" SHOWN ON THESE DRAWINGS.

2 DASHED LINES SHOWN FOR AREAS "B" AND "C" INDICATE EXISTING CEILING GRID AND ACOUSTICAL TILES TO BE REMOVED TO PROVIDE ACCESS TO CEILING FOR REMOVAL OF EXISTING DUCTWORK AND INSTALLATION OF NEW HVAC SYSTEM. TO GREATEST DEGREE POSSIBLE, LEAVE EXISTING LIGHT FIXTURES IN PLACE DURING RE-CONSTRUCTION OF HVAC SYSTEM - REPLACE ANY DAMAGED OR OTHERWISE INOPERABLE LIGHT FIXTURES UPON COMPLETION OF RE-INSTALLATION. PROVIDE ALL NEW SUSPENSION GRID AND ACOUSTICAL TILES IN SAME LOCATION AS THAT WHICH WAS REMOVED.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

DRAWN BY:	JW, FAIA
REVIEWED BY:	JW, FAIA
DATE:	3-29-2024
PROJECT NUMBER:	8797

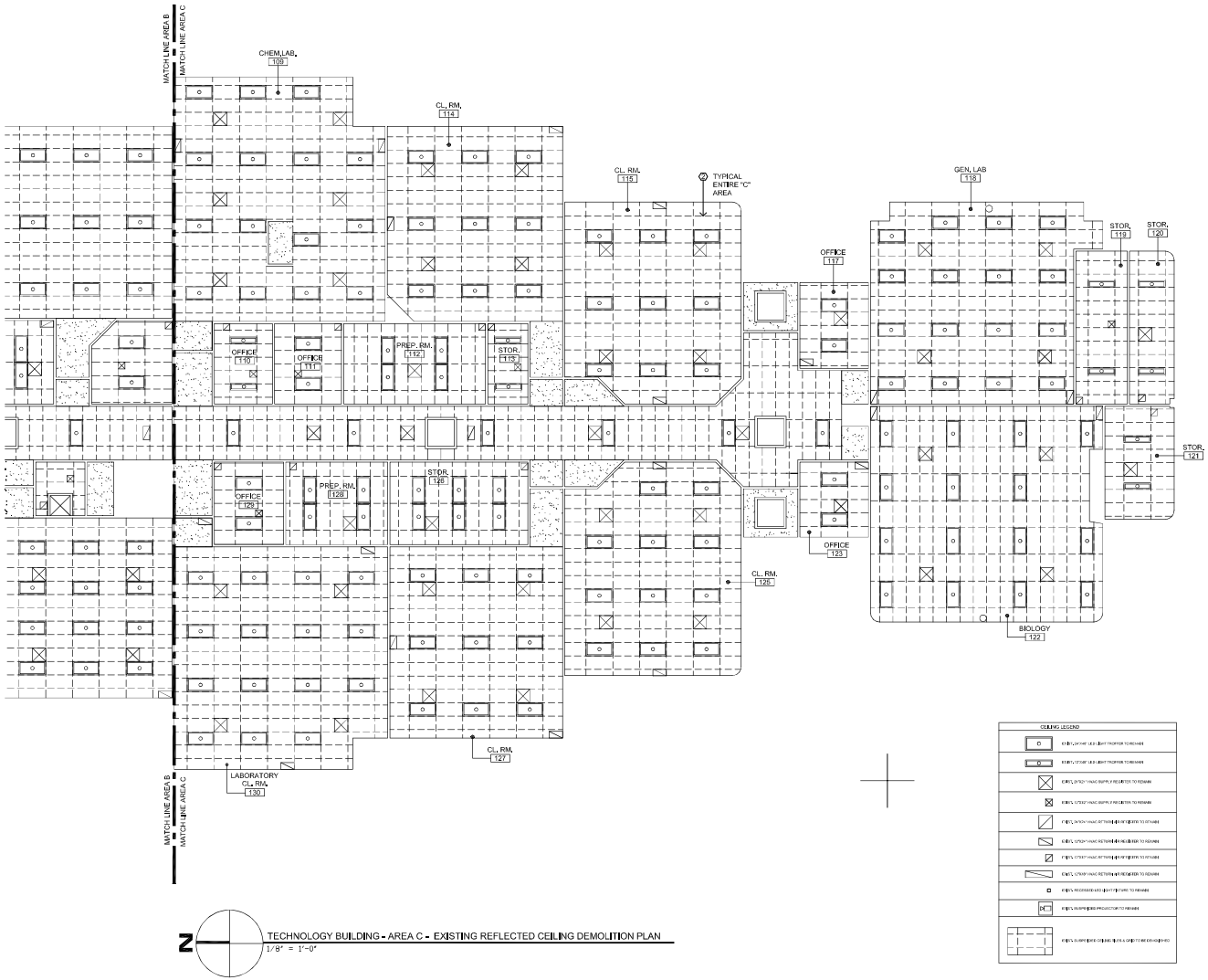
DRAWING TITLE:

AREAS A & B - GROUND FLOOR RCP - DEMO

DRAWING NO:

AD-100

DRAWING OF



TECHNOLOGY BUILDING - AREA C - EXISTING REFLECTED CEILING DEMOLITION PLAN
1/8" = 1'-0"

GENERAL SHEET NOTES

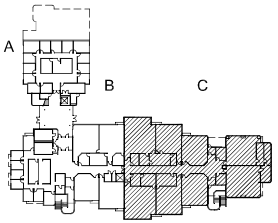
A. XXXX.

KEYNOTES

1 DASHED AREAS INDICATE SUSPENDED ACOUSTICAL CEILING GRID, ACOUSTICAL TILES, HVAC REGISTERS AND LIGHT FIXTURES TO BE REMOVED TO PROVIDE ACCESS TO HVAC FAN COIL UNITS ABOVE CEILING. FOLLOWING REMOVAL AND REPLACEMENT OF HVAC UNITS, INSTALL NEW SUSPENSION SYSTEM, CEILING TILES AND EXISTING HVAC REGISTERS AND LIGHT FIXTURES IN SAME LOCATION AS THAT WHICH WAS REMOVED. TYPICAL ALL THREE FLOORS OF THE ALLIED HEALTH WING, AREA "A" SHOWN ON THESE DRAWINGS.

2 DASHED LINES SHOWN FOR AREAS "B" AND "C" INDICATE EXISTING CEILING GRID AND ACOUSTICAL TILES TO BE REMOVED TO PROVIDE ACCESS TO CEILING FOR REMOVAL OF EXISTING DUCTWORK AND INSTALLATION OF NEW HVAC SYSTEM. TO GREATEST DEGREE POSSIBLE, LEAVE EXISTING LIGHT FIXTURES IN PLACE DURING RE-CONSTRUCTION OF HVAC SYSTEM - REPLACE ANY DAMAGED OR OTHERWISE INOPERABLE LIGHT FIXTURES UPON COMPLETION OF RE-INSTALLATION. PROVIDE ALL NEW SUSPENSION GRID AND ACOUSTICAL TILES IN SAME LOCATION AS THAT WHICH WAS REMOVED.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

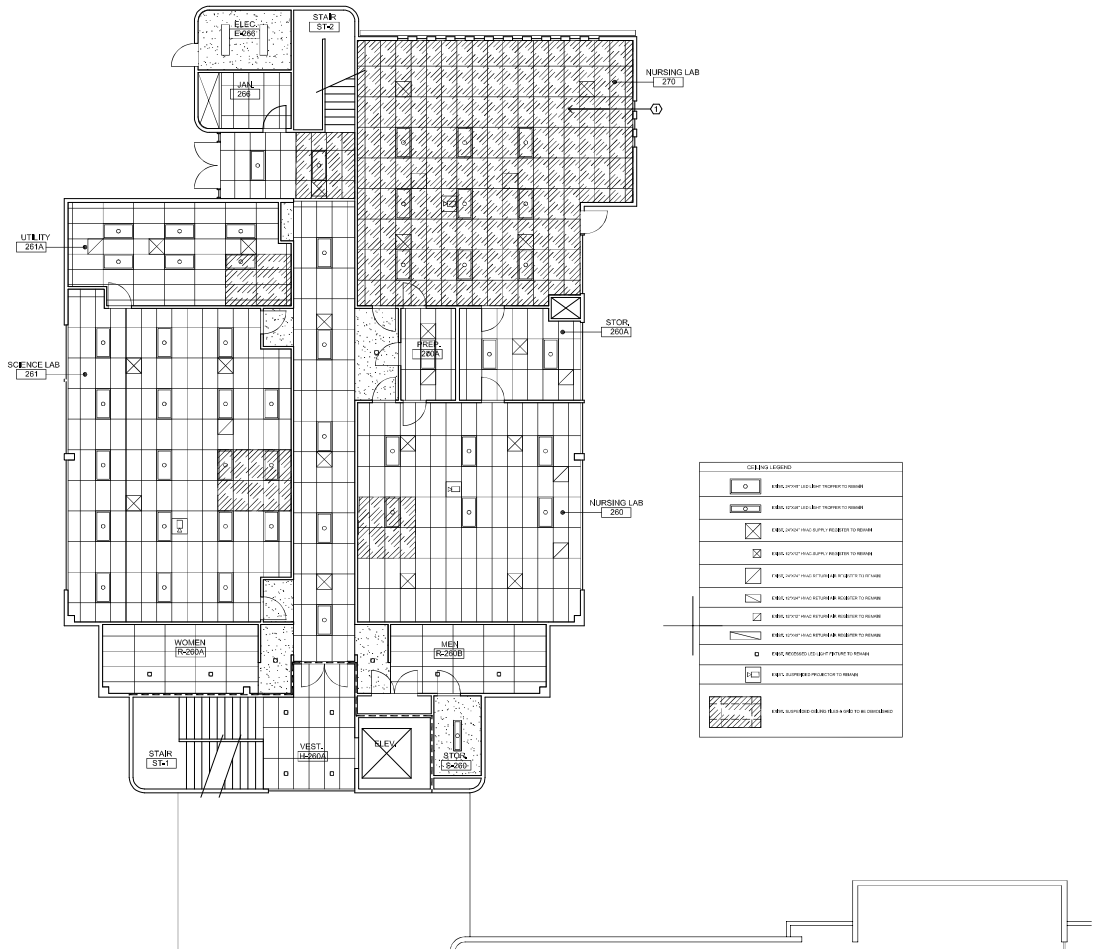
DRAWN BY:	JH, FAIA
REVIEWED BY:	JH, FAIA
DATE:	3-29-2024
PROJECT NUMBER:	8797

DRAWING TITLE:
TECHNOLOGY BUILDING - AREA C EXIST. REFLECTED CEILING DEMO PLAN

DRAWING NO:

AD-101

DRAWING OF



N

ALLIED SCIENCE - AREA A - SECOND FLOOR EXISTING REFLECTED CEILING PLAN

1/8" = 1'-0"

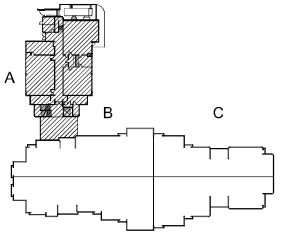
GENERAL SHEET NOTES

A. XXXX.

KEYNOTES

1 DASHED AREAS INDICATE SUSPENDED ACOUSTICAL CEILING GRID, ACOUSTICAL TILES, HVAC REGISTERS AND LIGHT FIXTURES TO BE REMOVED TO PROVIDE ACCESS TO HVAC FAN COIL UNITS ABOVE CEILING. FOLLOWING REMOVAL AND REPLACEMENT OF HVAC UNITS, INSTALL NEW SUSPENSION SYSTEM, CEILING TILES AND EXISTING HVAC REGISTERS AND LIGHT FIXTURES IN SAME LOCATION AS THAT WHICH WAS REMOVED. TYPICAL ALL THREE FLOORS OF THE ALLIED HEALTH WING, AREA "A" SHOWN ON THESE DRAWINGS.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

DRAWN BY:	JH, FAM
REVIEWED BY:	JH, FAM
DATE:	3-29-2024
PROJECT NUMBER:	8797

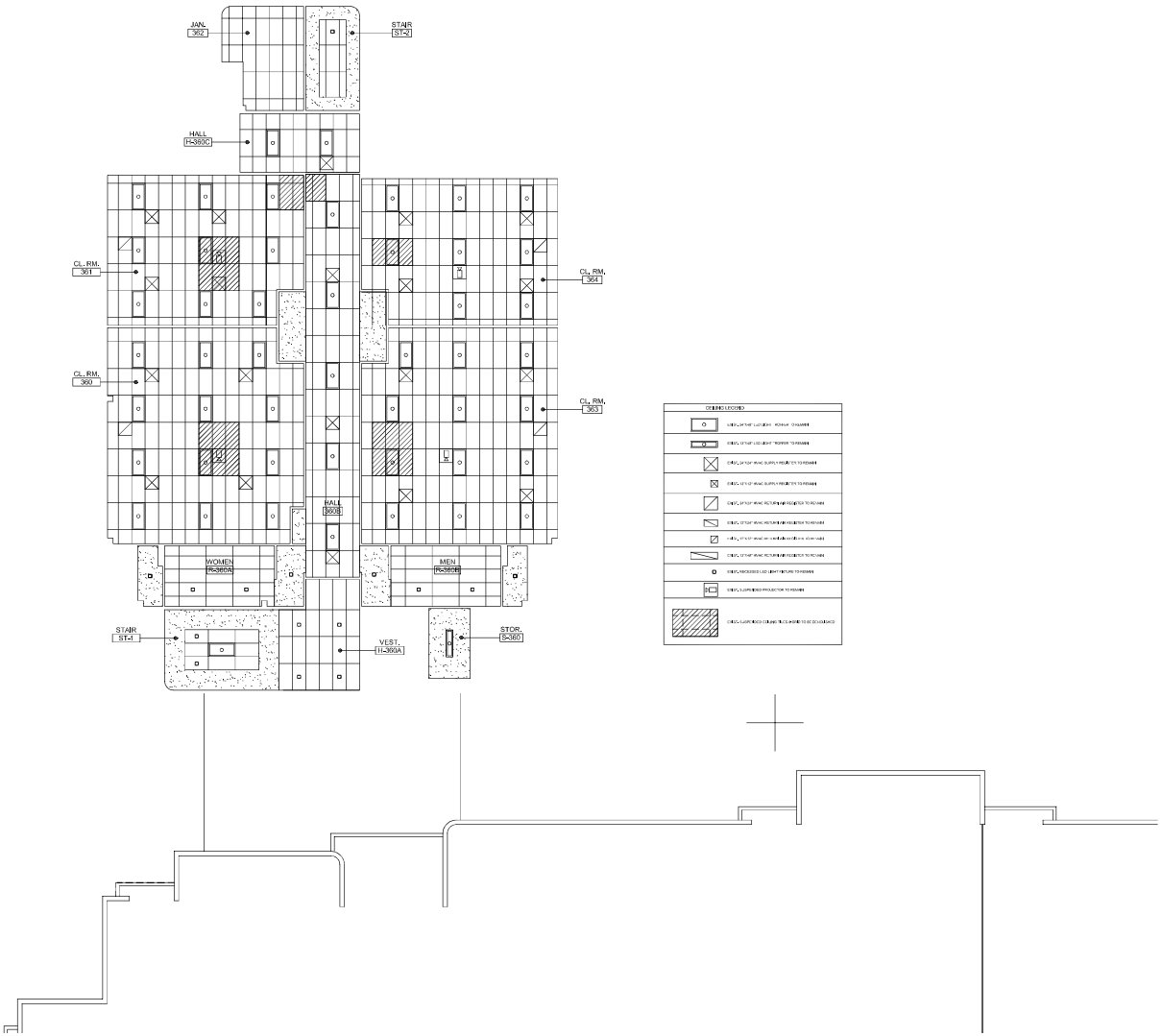
DRAWING TITLE:

ALLIED SCIENCE
AREA A - SECOND
FLOOR RCP DEMO

DRAWING NO:

AD-102

DRAWING OF



ALLIED SCIENCE - AREA A - EXISTING THIRD FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"

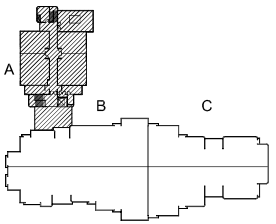
GENERAL SHEET NOTES

A. XXXX.

KEYNOTES

1 DASHED AREAS INDICATE SUSPENDED ACOUSTICAL CEILING GRID, ACOUSTICAL TILES, HVAC REGISTERS AND LIGHT FIXTURES TO BE REMOVED TO PROVIDE ACCESS TO HVAC FAN COIL UNITS ABOVE CEILING. FOLLOWING REMOVAL AND REPLACEMENT OF HVAC UNITS, INSTALL NEW SUSPENSION SYSTEM, CEILING TILES AND EXISTING HVAC REGISTERS AND LIGHT FIXTURES IN SAME LOCATION AS THAT WHICH WAS REMOVED. TYPICAL ALL THREE FLOORS OF THE ALLIED HEALTH WING, AREA "A" SHOWN ON THESE DRAWINGS.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

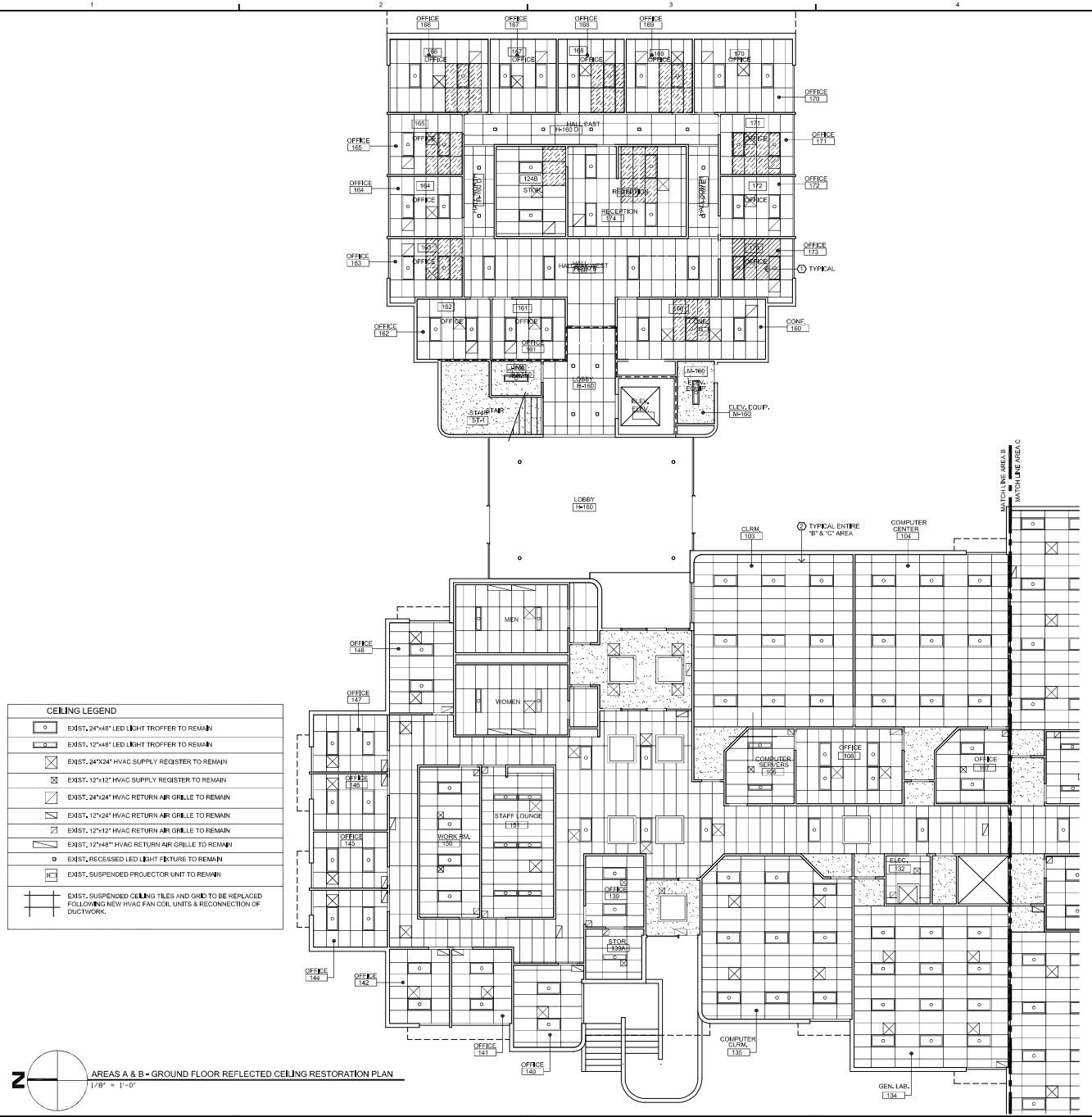
DRAWN BY:	JH, FAIA
REVIEWED BY:	JH, FAIA
DATE:	3-29-2024
PROJECT NUMBER:	8797

DRAWING TITLE:
ALLIED SCIENCE AREA A - THIRD FLOOR RCP DEMO

DRAWING NO:

AD-103

DRAWING OF



CEILING LEGEND

	EXIST. 24"x48" LED LIGHT TROFFER TO REMAIN
	EXIST. 12"x48" LED LIGHT TROFFER TO REMAIN
	EXIST. 24"X24" HVAC SUPPLY REGISTER TO REMAIN
	EXIST. 12"x12" HVAC SUPPLY REGISTER TO REMAIN
	EXIST. 24"x24" HVAC RETURN AIR GRILLE TO REMAIN
	EXIST. 12"x24" HVAC RETURN AIR GRILLE TO REMAIN
	EXIST. 12"x12" HVAC RETURN AIR GRILLE TO REMAIN
	EXIST. 12"x48"" HVAC RETURN AIR GRILLE TO REMAIN
	EXIST. RECESSED LED LIGHT FIXTURE TO REMAIN
PC	EXIST. SUSPENDED PROJECTOR UNIT TO REMAIN
	EXIST. SUSPENDED CEILING TILES AND GRID TO BE REPLACED FOLLOWING NEW HVAC FAN COIL UNITS & RECONNECTION OF DUCTWORK.

2 AREAS A & B - GROUND FLOOR REFLECTED CEILING RESTORATION PLAN
1/8" = 1'-0"

GENERAL DRAWING NOTES

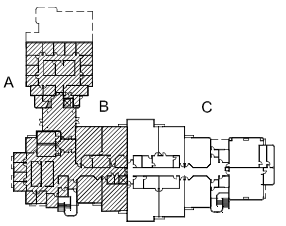
A. XXXX.

KEYNOTES

1 DASHED AREAS INDICATE SUSPENDED ACOUSTICAL CEILING GRID, ACOUSTICAL TILES, HVAC REGISTERS AND LIGHT FIXTURES TO BE REMOVED TO PROVIDE ACCESS TO HVAC FAN COIL UNITS ABOVE CEILING. FOLLOWING REMOVAL AND REPLACEMENT OF HVAC UNITS, INSTALL NEW SUSPENSION SYSTEM, CEILING TILES AND EXISTING HVAC REGISTERS AND LIGHT FIXTURES IN SAME LOCATION AS THAT WHICH WAS REMOVED. TYPICAL ALL THREE FLOORS OF THE ALLIED HEALTH WING, AREA "A" SHOWN ON THESE DRAWINGS.

2 GRID LINES SHOWN FOR AREAS "B" AND "C" INDICATE EXISTING CEILING GRID AND ACOUSTICAL TILES TO BE REPLACED WITH NEW FOLLOWING INSTALLATION OF NEW HVAC FAN COIL UNITS AND RECONNECTION OF DUCTWORK.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

DRAWN BY:	JH, FAIA
REVIEWED BY:	JH, FAIA
DATE:	3-29-2024
PROJECT NUMBER:	8797

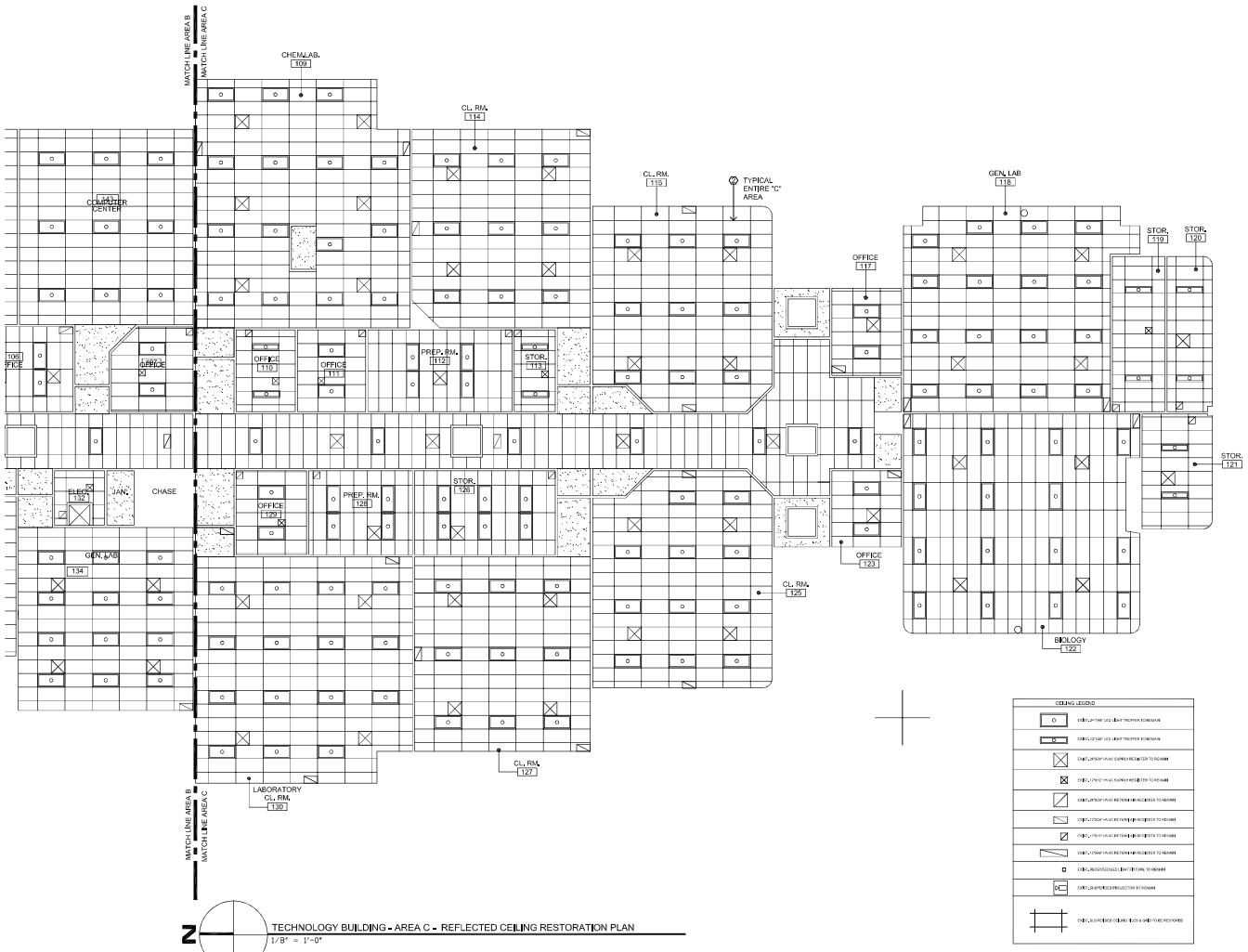
DRAWING TITLE:

AREAS A & B - GROUND FLOOR RCP RESTORATION PLAN

DRAWING NO:

AR-100

DRAWING OF



2 TECHNOLOGY BUILDING - AREA C - REFLECTED CEILING RESTORATION PLAN
1/8" = 1'-0"

CEILING LEGEND

	EXIST. 2'X4' LED LIGHT TROFFER TO REMAIN
	EXIST. 2'X2' LED LIGHT TROFFER TO REMAIN
	EXIST. 2'X2'/2'X4' HVAC SUPPLY REGISTER TO REMAIN
	EXIST. 12"X12" HVAC SUPPLY REGISTER TO REMAIN
	EXIST. 24"X24" HVAC RETURN / EXHAUST REGISTER TO REMAIN
	EXIST. 12"X12" HVAC RETURN / EXHAUST REGISTER TO REMAIN
	EXIST. 2'X2'/2'X4' HVAC RETURN / EXHAUST REGISTER TO REMAIN
	EXIST. 24"X12" HVAC RETURN / EXHAUST REGISTER TO REMAIN
	EXIST. RECESSED LED LIGHTING TO REMAIN
RC	EXIST. SURFACE MOUNT PROJECTOR TO REMAIN
	EXIST. SUSPENDED CEILING TILES & GRID TO BE RESTORED

GENERAL SHEET NOTES

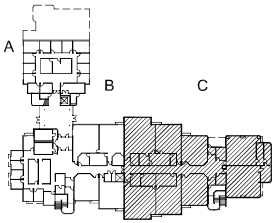
A. XXXX.

KEYNOTES

1 DASHED AREAS INDICATE SUSPENDED ACOUSTICAL CEILING GRID, ACOUSTICAL TILES, HVAC REGISTERS AND LIGHT FIXTURES TO BE REMOVED TO PROVIDE ACCESS TO HVAC FAN COIL UNITS ABOVE CEILING. FOLLOWING REMOVAL AND REPLACEMENT OF HVAC UNITS, INSTALL NEW SUSPENSION SYSTEM, CEILING TILES AND EXISTING HVAC REGISTERS AND LIGHT FIXTURES IN SAME LOCATION AS THAT WHICH WAS REMOVED. TYPICAL ALL THREE FLOORS OF THE ALLIED HEALTH WING, AREA "A" SHOWN ON THESE DRAWINGS.

2 GRID LINES SHOWN FOR AREAS "B" AND "C" INDICATE EXISTING CEILING GRID AND ACOUSTICAL TILES TO BE REPLACED WITH NEW FOLLOWING INSTALLATION OF NEW HVAC FAN COIL UNITS AND RECONNECTION OF DUCTWORK.

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

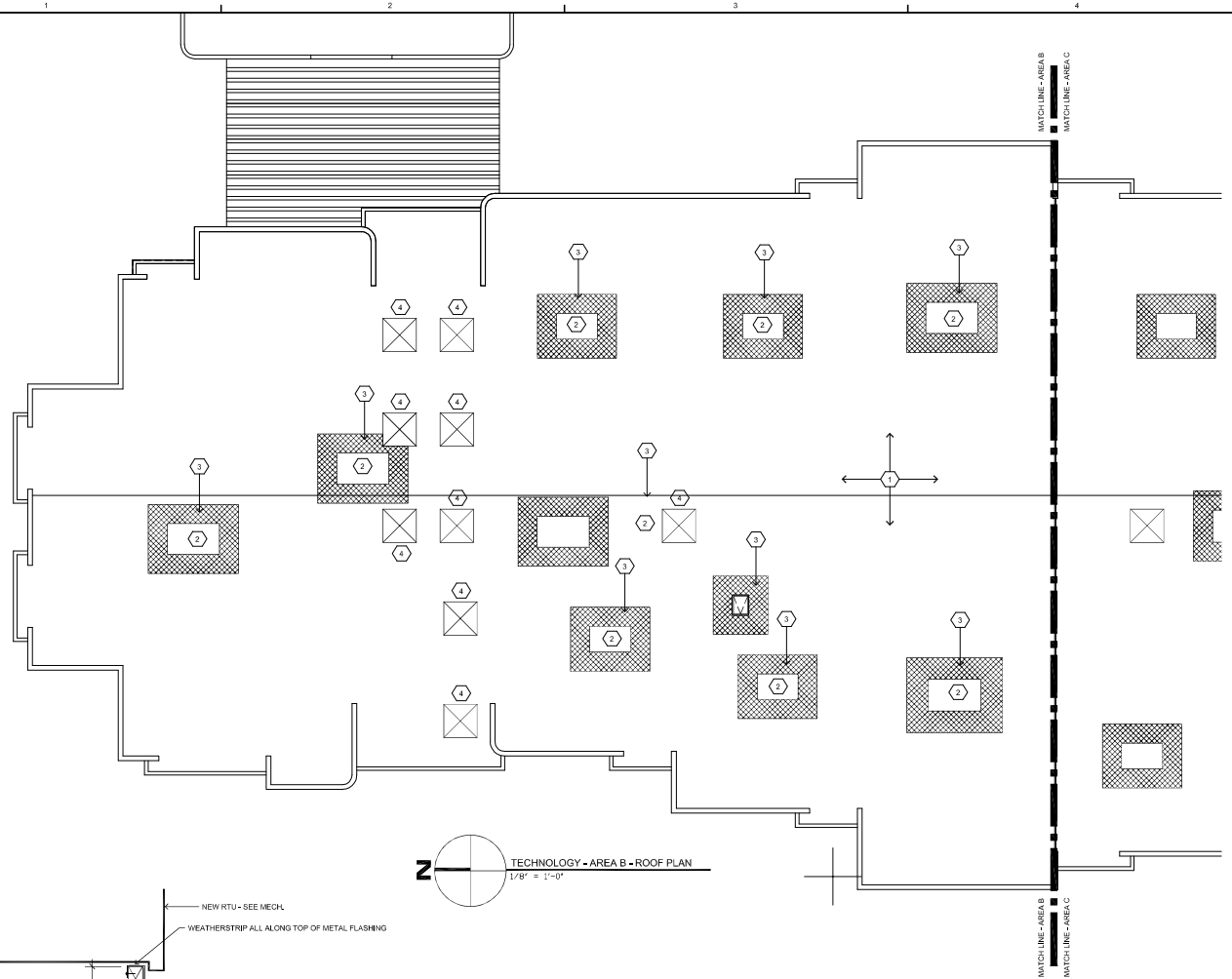
DRAWN BY:	JH, FAIA
REVIEWED BY:	JH, FAIA
DATE:	3-29-2024
PROJECT NUMBER:	8797

DRAWING TITLE:
TECHNOLOGY BUILDING - AREA C RESTORED RCP PLAN

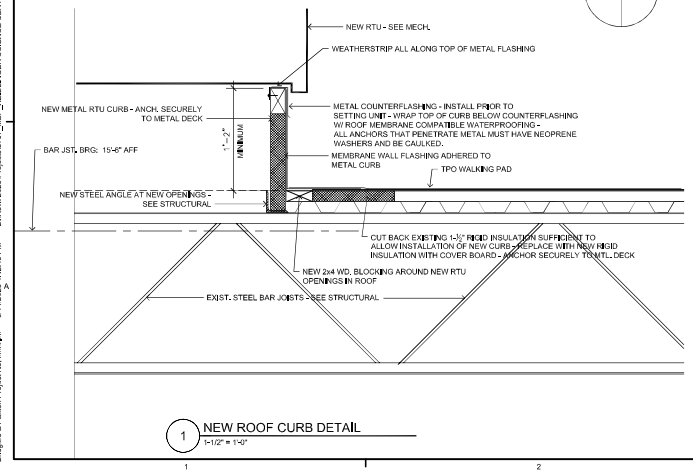
DRAWING NO:

AR-101

DRAWING OF



2 TECHNOLOGY - AREA B - ROOF PLAN
1/8" = 1'-0"



1 NEW ROOF CURB DETAIL
1-1/2" = 1'-0"

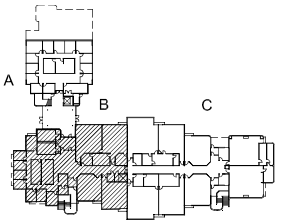
GENERAL DRAWING NOTES

A. XXXX.

KEYNOTES

1. EXISTING TPO ROOFING TO REMAIN - PROTECT FROM DAMAGE DURING INSTALLATION OF NEW RTU'S, PATCH ANY DAMAGED AREAS TO SATISFACTION OF THE OWNER.
2. NEW ROOFTOP MECHANICAL UNITS - SEE MECHANICAL DRAWINGS - FLASH ALL ROOF CURBS WITH TPO ROOFING MATERIAL AS REQUIRED BY TPO MANUFACTURER. CUT & REMOVE METAL DECK AS WELL AS ROOFING & ROOF INSULATION FOR NEW OPENINGS - REPAIR AND REPLACE RIGID INSULATION AS REQUIRED AND APPLY NEW TPO AS REQUIRED FOR COMPLETE INSTALLATION. - SEE DETAIL 1 THIS DRAWING.
3. NEW TPO WALK PADS PER SPECIFICATIONS.
4. EXISTING SKYLIGHT TO REMAIN

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

NO.	DATE	DESCRIPTION

95% CONSTRUCTION DOCUMENTS

DRAWN BY:	JH, FAIA
REVIEWED BY:	JH, FAIA
DATE:	3-29-2024
PROJECT NUMBER:	8797

DRAWING TITLE:
TECHNOLOGY BLDG.
AREA B -
ROOF PLAN

DRAWING NO:

ARF-100

DRAWING OF

TECHNOLOGY - AREA C - ROOF PLAN
1/8" = 1'-0"

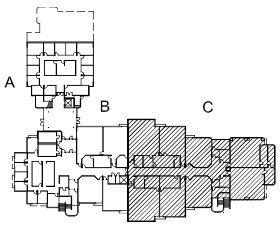
GENERAL DRAWING NOTES

A. XXXX.

KEYNOTES

1. EXISTING TPO ROOFING TO REMAIN - PROTECT FROM DAMAGE DURING INSTALLATION OF NEW RTU'S, PATCH ANY DAMAGED AREAS TO SATISFACTION OF THE OWNER.
2. NEW ROOFTOP MECHANICAL UNITS - SEE MECHANICAL DRAWINGS - FLASH ALL ROOF CURBS WITH TPO ROOFING MATERIAL AS REQUIRED BY TPO MANUFACTURER. CUT & REMOVE METAL DECK AS WELL AS ROOFING & ROOF INSULATION FOR NEW OPENINGS - REPAIR AND REPLACE RIGID INSULATION AS REQUIRED AND APPLY NEW TPO AS REQUIRED FOR COMPLETE INSTALLATION. - SEE DETAIL 1/A100RF
3. NEW TPO WALK PADS PER SPECIFICATIONS.
4. EXISTING SKYLITE TO REMAIN

KEYPLAN



CONSULTANTS

SEAL

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ALAMAGORDO, NEW MEXICO

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DRAWING TITLE:
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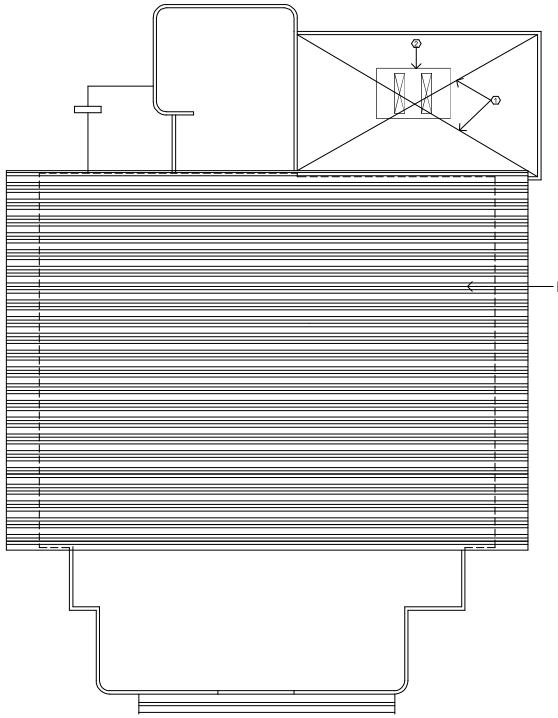
AREA C -
ROOF PLAN

DRAWING NO:

ARF-101

DRAWING OF



2 ALLIED SCIENCE - AREA A - ROOF DEMOLITION & REPAIR PLAN
1/8" = 1'-0"

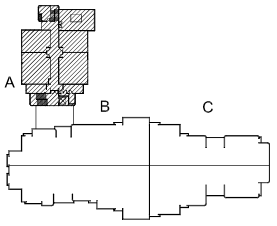
GENERAL DRAWING NOTES

A. XXXX.

KEYNOTES

1. EXISTING TPO ROOFING TO REMAIN - PROTECT FROM DAMAGE DURING INSTALLATION OF NEW RTU'S, PATCH ANY DAMAGED AREAS TO SATISFACTION OF THE OWNER.
2. EXISTING ROOF TOP HVAC UNIT TO BE REPLACED - PATCH OPENINGS IN ROOF WITH MATERIALS TO MATCH EXISTING, INCLUDING METAL ROOF DECK, RIGID INSULATION AND TPO ROOFING - SEE MECHANICAL DRAWINGS

KEYPLAN



CONSULTANTS

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PROJECT

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2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

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DRAWING TITLE:
ALLIED SCIENCE BUILDING - AREA A - ROOF DEMO & REPAIR PLAN

DRAWING NO:

ARF-102

DRAWING OF

GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED ON STRUCTURAL DRAWINGS. IN CASE OF CONFLICT BETWEEN GSN, DETAILS AND PLANS, THE GREATER REQUIREMENTS GOVERN.

CODE:

COMPLY WITH 2021 INTERNATIONAL BUILDING CODE.

STRUCTURAL STEEL:

FOR ALL STRUCTURAL STEEL FABRICATION AND CONSTRUCTION LATEST AISC HANDBOOKS AND CODES SHALL APPLY. ALL STEEL FABRICATION IS REQUIRED TO BE COMPLETED BY AN APPROVED STEEL FABRICATOR RECOGNIZED BY THE BUILDING DEPARTMENT.

ASTM A-36, EXCEPT AS FOLLOWS: WIDE FLANGE SECTIONS, ASTM A992 GRADE 50; PIPE SECTIONS, ASTM A-53 GRADE B; TUBE SECTIONS, ASTM A-500 GRADE B.

ANCHOR BOLTS, ASTM A-307 UNO; HIGH STRENGTH BOLTS, A-325-X OR A-325-SC PER SCHEDULES. MINIMUM EMBEDMENT OF ALL BOLTS IN GROUT OR CONCRETE SHALL BE 8" INCLUDING BOLT HEAD OR 5" WITH A STD HOOK. WELDED ANCHORS AND SHEAR CONNECTORS SHALL BE ICC APPROVED.

UNLESS OTHERWISE NOTED MINIMUM CONNECTION SHALL BE: (2) 3/4" DIAMETER BOLTS OR 3/16" FILLET WELD 4" LONG, USING 1/4" CONNECTION MATERIAL AND DETAILED TO MINIMIZE BENDING IN THE CONNECTION.

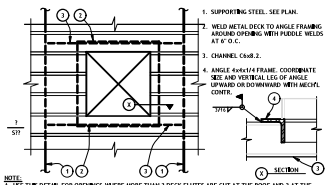
WELDING:

ALL CONSTRUCTION AND TESTING PER AMERICAN WELDING SOCIETY CODES AND RECOMMENDATIONS. ALL WELDING SHALL BE BY WELDERS HOLDING CURRENT VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN TYPE OF WELD CALLED FOR.

ALL BUTT WELDED SPLICES IN MATERIAL THICKER THAN 5/16" SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY, TO CERTIFY CONNECTION AS MEETING OR EXCEEDING STRENGTH OF MATERIALS SPLICED.

ALL WELDING OF REINFORCING SHALL CONFORM TO THE "STRUCTURAL WELDING CODES-REINFORCING STEEL" AWS D1.4, CURRENT EDITION.

ALL WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE "STRUCTURAL WELDING CODES-STEEL" AWS D1.1, CURRENT EDITION.

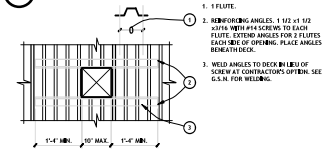


NOTE:
A. USE THIS DETAIL FOR OPENINGS WHERE MORE THAN 2 DECK FLUTES ARE CUT AT THE ROOF AND 2 AT THE FLOOR.

B. WHEN CLEAR DISTANCE BETWEEN EDGE OF BEAM (BEAM NORMAL TO DECK) AND EDGE OF OPENING IS LESS THAN 9", PARALLEL CHANNEL MAY BE OMITTED.

C. ALL OPENINGS AND THEIR FRAMING PER ABOVE ARE NOT NECESSARILY SHOWN ON FRAMING PLANS. SEE MECH'L OR ARCH'L DRAWINGS FOR SIZE AND LOCATION OF OPENINGS.

1 LARGE OPENING IN METAL DECK

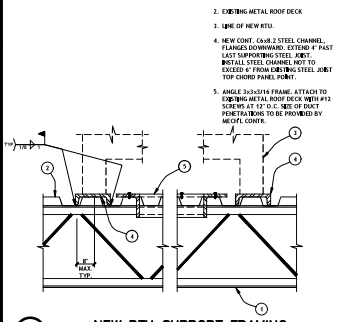


NOTE:
A. REINFORCING ANGLES NOT REQUIRED AT OPENINGS LESS THAN 5" OR WHEN 1 DECK FLUTE IS CUT.

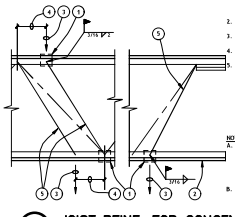
B. USE UP TO 10" WIDE WHEN NO MORE THAN 2 DECK FLUTES HAVE BEEN CUT. DECK SHALL BE CONT. OVER MINIMUM 1 ADJACENT SPAN.

C. SEE S1.0 FOR LARGE OPENINGS IN METAL DECK.

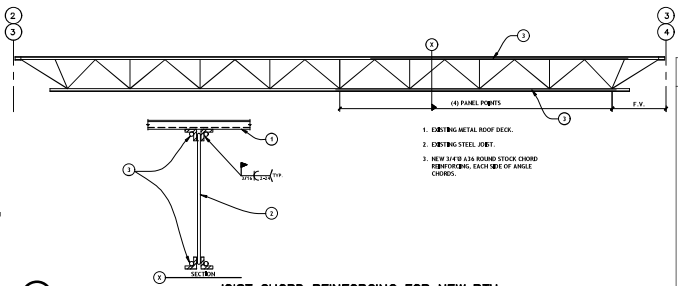
2 SMALL OPENING IN METAL ROOF DECK



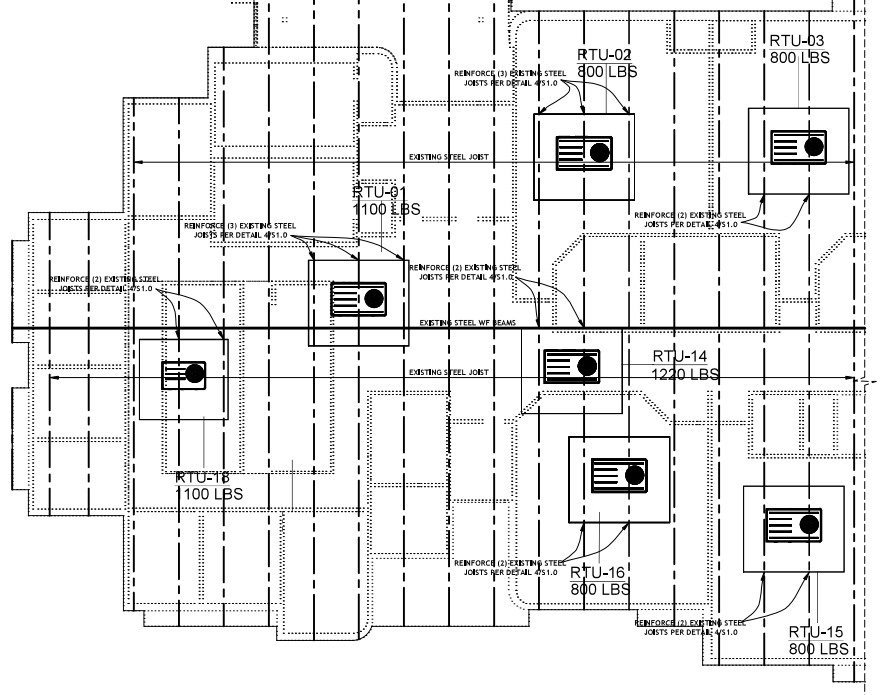
3 NEW RTU SUPPORT FRAMING



4 JOIST REINF. FOR CONCENTRATED LOAD



5 JOIST CHORD REINFORCING FOR NEW RTU

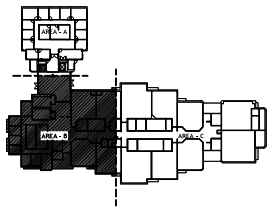


NEW RTU – AREA B ROOF PLAN

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

NORTH

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION

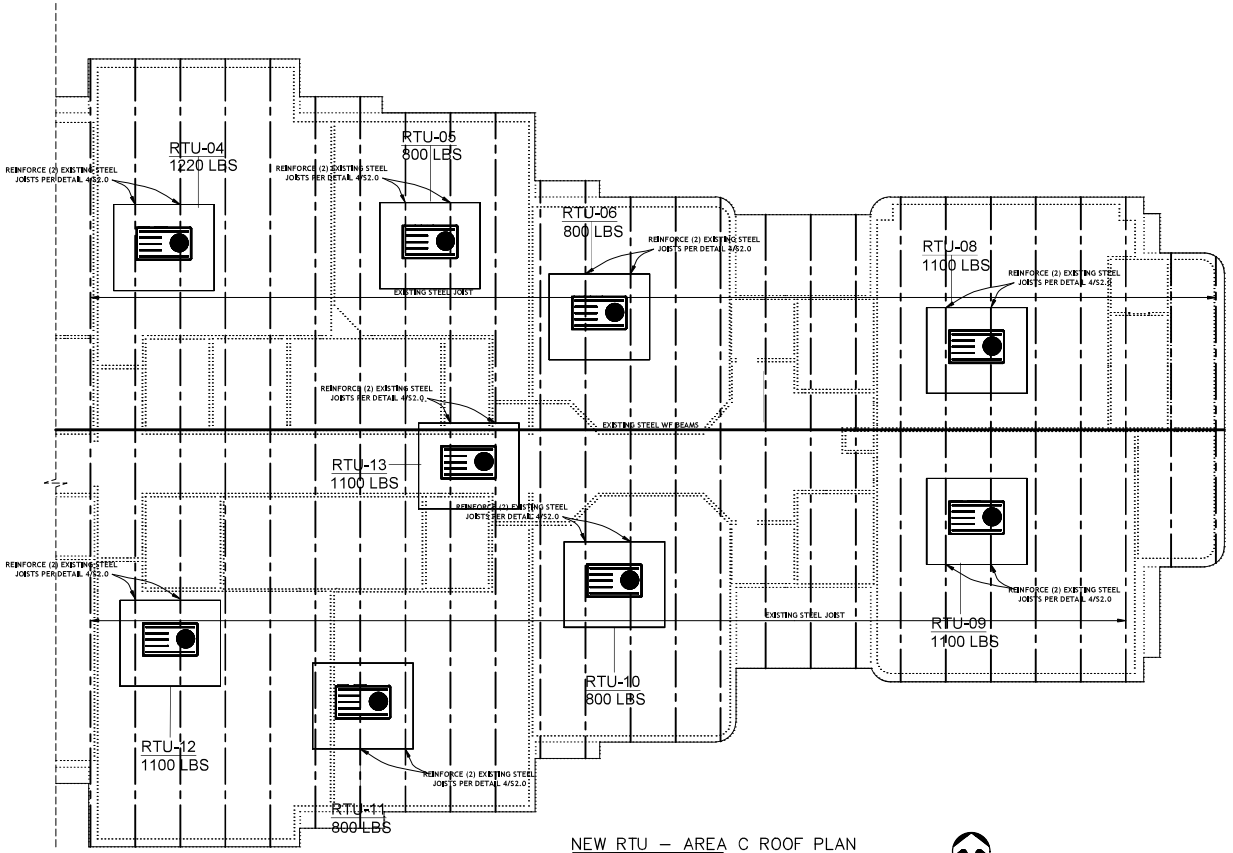
2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

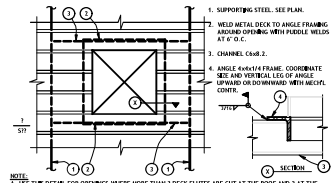
NO.	DATE	DESCRIPTION

DRAWN BY:	HS
REVIEWED BY:	JS
DATE:	12/7/2023
PROJECT NUMBER:	23-084
DRAWING TITLE:	
DRAWING NO:	S1.0
DRAWING	OF



NEW RTU – AREA C ROOF PLAN

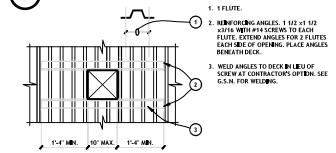
SCALE: 1/8"=1'-0"



1. SUPPORTING STEEL. SEE PLAN.
2. WELD METAL DECK TO ANGLE FRAMING AROUND OPENING WITH PUDDLE WELDS AT 6" O.C.
3. CHANNEL C6x8.2.
4. ANGLE 4x4x1/4 FRAME. COORDINATE SIZE AND VERTICAL LEG OF ANGLE UPWARD OR DOWNWARD WITH MECH'L CONTR.

NOTE:
A. USE THIS DETAIL FOR OPENINGS WHERE MORE THAN 2 DECK FLUTES ARE CUT AT THE ROOF AND 2 AT THE FLOOR.
B. WHEN CLEAR DISTANCE BETWEEN EDGE OF BEAM (BEAM NORMAL TO DECK) AND EDGE OF OPENING IS LESS THAN 5", PARALLEL CHANNEL MAY BE OMITTED.
C. ALL OPENINGS AND THEIR FRAMING PER ABOVE ARE NOT NECESSARILY SHOWN ON FRAMING PLANS. SEE MECH'L OR ARCH'L DRAWINGS FOR SIZE AND LOCATION OF OPENINGS.

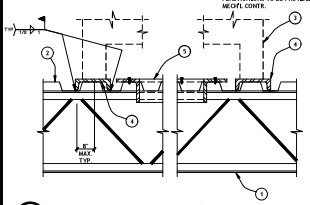
1 LARGE OPENING IN METAL DECK



1. 1 FLUTE.
2. REINFORCING ANGLES. 1 1/2 x1 1/2 x3/16 WITH #14 SCREWS TO EACH FLUTE. EXTEND ANGLES FOR 2 FLUTES EACH SIDE OF OPENING. PLACE ANGLES BENEATH DECK.
3. WELD ANGLES TO DECK IN LIEU OF SCREW AT CONTRACTOR'S OPTION. SEE G.S.N. FOR WELDING.

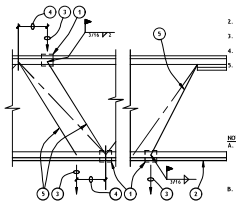
NOTE:
A. REINFORCING ANGLES NOT REQUIRED AT OPENINGS LESS THAN 5" OR WHEN 1 DECK FLUTE IS CUT.
B. USE UP TO 10" WIDE WHEN NO MORE THAN 2 DECK FLUTES HAVE BEEN CUT. DECK SHALL BE CONT. OVER MINIMUM 1 ADJACENT SPAN.
C. SEE 1/S1.0 FOR LARGE OPENINGS IN METAL DECK.

2 SMALL OPENING IN METAL ROOF DECK



1. EXISTING STEEL JOIST.
2. EXISTING METAL ROOF DECK
3. LINE OF NEW RTU.
4. NEW CONT. C6x8.2 STEEL CHANNEL, FLANGES DOWNWARD. EXTEND 4' PAST LAST SUPPORTING STEEL JOIST. INSTALL STEEL CHANNEL NOT TO EXCEED 6" FROM EXISTING STEEL JOIST TOP CHORD PANEL POINT.
5. ANGLE 3x3x3/16 FRAME. ATTACH TO EXISTING METAL ROOF DECK WITH #12 SCREWS AT 12" O.C. SIDE OF DUCT PENETRATIONS TO BE PROVIDED BY MECH'L CONTR.

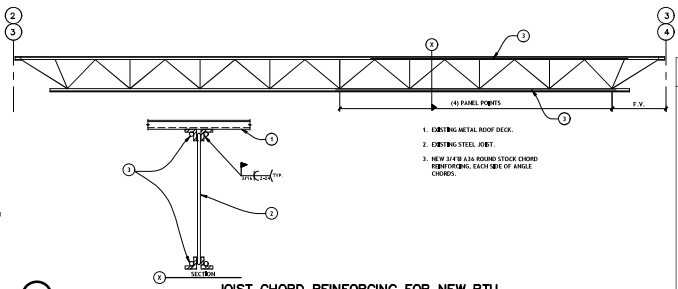
3 NEW RTU SUPPORT FRAMING



1. SPACER PLATE BETWEEN CHORD ANGLES. WELD TO EACH ANGLE TOP AND BOTTOM W/ 3/16 FILLET.
2. JOIST EXTENSION AS REQUIRED.
3. CONCENTRATED LOAD ON JOIST.
4. GREATER THAN 4".
5. SEE NOTE BELOW.

NOTE:
A. WHERE CENTER OF LOAD IS MORE THAN 8" FROM JOIST PANEL POINT, ADD EXTRA WEB MEMBER; ANGLE 2x2x3/16" TO CHORD PANEL POINT EACH SIDE OF JOISTS.
B. DETAIL REQUIRED WHERE CONCENTRATED LOAD IS >200#

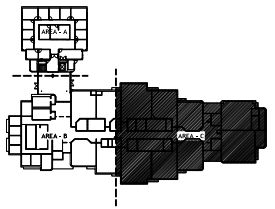
4 JOIST REINF. FOR CONCENTRATED LOAD



1. EXISTING METAL ROOF DECK.
2. EXISTING STEEL JOIST.
3. NEW 3/4"Ø A36 ROUND STOCK CHORD REINFORCING, EACH SIDE OF ANGLE CHORDS.

5 JOIST CHORD REINFORCING FOR NEW RTU

KEYPLAN



CONSULTANTS

SEAL

PROJECT

REIDLINGER ADDITION
2400 N. SCENIC DRIVE
ALAMAGORDO, NEW MEXICO

Project Status

REVISIONS

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DRAWN BY:	HS
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DATE:	12/7/2023
PROJECT NUMBER:	23-084
DRAWING TITLE:	
DRAWING NO:	S2.0
DRAWING	OF

Bridgers & Paxton Project No. ######## 9/14/2023 4:42:45 PM D:\Revit 2023\Projects\8797_MEP_REIDLINGER SIDENCE CENTER_cameyers.rvt