MECHANICAL GENERAL NOTES:

1. WORK IN THIS SECTION INCLUDES THE PROVIDING OF LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AUTHORITIES HAVING JURISDICTION.

2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS.

3. SCALED AND FIGURED DIMENSIONS ARE APPROXIMATE AND ARE FOR ESTIMATING PURPOSES ONLY. BEFORE PROCEEDING WITH WORK, CHECK AND VERIFY ALL DIMENSIONS.

4. MAKE ADJUSTMENTS THAT MAY BE NECESSARY OR REQUIRED IN ORDER TO RESOLVE SPACE PROBLEMS.

5. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW JERSEY UNIFORM CONSTRUCTION CODE AND ADOPTED (AS AMENDED) SUB CODES STANDARDS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- INTERNATIONAL BUILDING CODE NEW JERSEY EDITION/ 2021
- NAPHCC NATIONAL STANDARD PLUMBING CODE / 2021
- NFPA 70 NATIONAL ELECTRIC CODE / 2020
- ASHRAE 90.1-2010 ENERGY CODE
- INTERNATIONAL MECHANICAL CODE / 2021
- INTERNATIONAL FUEL GAS CODE / 2021

6. CONTRACTOR SHALL BE RESPONSIBLE TO APPLY FOR AND PROCURE ALL REQUIRED PERMITS, CERTIFICATES AND AGENCY APPROVALS. ALL DOCUMENTS REQUIRED IN ADDITION TO THE CONTRACT DOCUMENTS SHALL BE PROVIDED BY THE CONTRACTOR. PROVIDE COPIES OF ALL REQUIRED CERTIFICATIONS AND APPROVALS TO THE OWNER.

7. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE AND PROFESSIONAL MANNER CONSISTENT WITH ALL APPLICABLE INDUSTRY STANDARDS. SYSTEM INSTALLATIONS SHALL CONFORM WITH ALL APPLICABLE INDUSTRY STANDARDS.

8. BEFORE SUBMITTING PROPOSAL THE CONTRACTOR SHALL VISIT AND CAREFULLY EXAMINE THOSE PORTIONS OF THE SITE AND/OR PRESENT BUILDINGS AFFECTED BY THIS WORK SO AS TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND THE DIFFICULTIES ASSOCIATED WITH THE EXECUTION OF THE WORK. THESE DIFFICULTIES INCLUDE AVAILABILITY OF THE EQUIPMENT AND MATERIALS. REPORT IN WRITING ANY CONDITIONS WHICH MIGHT ADVERSELY AFFECT THEIR WORK.

9. NO CONSIDERATION OR ADDITIONAL PAYMENTS WILL BE GRANTED FOR ANY ALLEGED MISUNDERSTANDING OF THE MATERIALS TO BE FURNISHED OR WORK TO BE DONE, IT BEING UNDERSTOOD THAT THE SUBMISSION OF A PROPOSAL IS AN AGREEMENT TO ALL CONDITIONS REFERRED TO HEREIN OR INDICATED ON THE PLANS.

10. COORDINATE WITH OWNER AND GENERAL CONTRACTOR SCHEDULING OF ALL WORK SUCH THAT ANY REQUIRED OVERTIME IS INCLUDED AT NO ADDITIONAL COST.

11. PROVIDE THREE SETS OF OPERATION AND MAINTENANCE MANUALS COVERING ALL INSTALLED EQUIPMENT ITEMS TO THE OWNER. THE O&M MANUALS SHALL ALSO INCLUDE AS-BUILT DRAWINGS AND BALANCING REPORT.

12. CONTRACTOR SHALL ENGAGE THE SERVICES OF AN APPROVED TESTING AND BALANCING CONTRACTOR WITH NEBB OR AABC CERTIFICATION. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL NECESSARY ADJUSTMENTS TO OBTAIN FLOW RATES AS INDICATED ON DRAWINGS. PROVIDE A FINAL TEST REPORT INCLUDING BUT NOT LIMITED TO THE FOLLOWING: CFM, STATIC PRESSURE, COOLING/HEATING COIL DISCHARGE TEMPERATURE, & FINAL FAN RPM.

13. THE CONTRACTOR SHALL LABEL ALL PIPING AND EQUIPMENT.

14. CONTRACTOR SHALL MAKE TESTS AT HIS OWN EXPENSE, AS REQUIRED BY OWNER AND/OR ANY INSPECTION DEPARTMENT. TEST SHALL BE MADE TO VERIFY WHETHER THE SYSTEM AND EQUIPMENT INSTALLED COMPLY WITH THE SPECIFICATIONS AND ARE IN PROPER WORKING ORDER.

15. AS A PART OF THIS CONTRACT, ALL WORK AND EQUIPMENT FURNISHED AND INSTALLED SHALL BE COVERED UNDER A FULL TWO YEAR GUARANTEE. THE WARRANTY SHALL COMMENCE ON THE DATE OF THE OWNER'S FINAL ACCEPTANCE.

16. PROVIDE DIELECTRIC ISOLATORS BETWEEN DISSIMILAR METALS.

17. IT IS NOT INTENDED THAT THE PLANS OR SPECIFICATIONS SHOW OR STATE EVERY DETAILED REQUIREMENT OF THE WORK, BUT RATHER THAT THEY FURNISH ADEQUATE INFORMATION FOR THE CONTRACTOR TO MAKE COMPLETELY APPROVED INSTALLATION.

18. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING, WITHOUT ADDITIONAL CHARGE, ANY EXISTING WORK DAMAGED BY HIM DURING THE COURSE OF THIS CONSTRUCTION.

19. MECHANICAL CONTRACTOR SHALL PROVIDE NECESSARY CONTROLS AND INSTALLATION OF EQUIPMENT SUPPLIED BY THE UNIT MANUFACTURER TO MEET THE OPERATIONAL REQUIREMENTS OF THE MANUFACTURER SPECIFICATION. THE BAS MANUFACTURER WILL PROVIDE THE CONTROLS AND INSTALLATION REQUIRED TO MEET THE SEQUENCE OF OPERATION. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE BMS CONTRACTOR TO PROVIDE A COMPLETE FUNCTIONING SYSTEM.

20. CONTRACTOR SHALL LEAVE ALL SYSTEMS IN PROPER WORKING ORDER AND SHALL, WITHOUT ADDITIONAL CHARGE, REPLACE ANY WORK, MATERIALS, OR EQUIPMENT FURNISHED AND INSTALLED BY HIM UNDER HIS CONTRACT WHICH DEVELOPS DEFECTS, EXCEPT FROM ORDINARY WEAR AND TEAR, WITHIN TWO (2) YEARS FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.

21. (RESERVED)

22. ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF AS PER THE DIRECTION OF OWNER.

23. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL MAJOR MANUFACTURED ITEMS REQUIRED ON THIS PROJECT. PURCHASE OR INSTALLATION OF EQUIPMENT OR SYSTEM COMPONENTS PRIOR TO APPROVAL OF SHOP DRAWINGS IS FORBIDDEN. APPROVAL OF SHOP OR SETTING DRAWINGS SHALL ONLY BE CONSTRUED TO APPLY TO GENERAL LAYOUT AND CONFORMANCE TO THE DESIGN CONCEPT OF THE PROJECT AND FOR COMPLIANCE WITH THE GENERAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE RESPONSIBILITY FOR ANY DEVIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL REMAIN THE CONTRACTOR'S UNLESS HE HAS, IN WRITING, SPECIFICALLY CALLED ATTENTION TO SUCH DEVIATIONS AT THE TIME OF SUBMISSION AND HAS RECEIVED WRITTEN APPROVAL OF SUCH DEVIATIONS FROM THE OWNER.

24. CONTRACTOR SHALL PROVIDE PRODUCT DATA INCLUDING INSTALLATION AND STARTUP INSTRUCTIONS FOR ALL EQUIPMENT PROVIDED BY HIM. SUBMITTALS SHALL INCLUDE PERFORMANCE DATA, DETAILED SHOP DRAWINGS, WIRING DIAGRAMS AND MAINTENANCE INSTRUCTIONS.

25. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.

26. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL SHAPES, HANGER RODS, STRAPS, ETC. REQUIRED FOR ALL SYSTEM INSTALLATIONS. PROVIDE ALL SEISMIC RESTRAINTS AS REQUIRED BY THE INTERNATIONAL BUILDING CODE.

27. PROVIDE ALL CUTTING AND PATCHING AS REQUIRED. COORDINATE THIS WORK WITH THE CONSTRUCTION MANAGER.

28. SEAL ALL EXTERIOR WALL PENETRATIONS WEATHER TIGHT. PROVIDE FIRE RATED SLEEVES AT ALL FIRE WALL PENETRATIONS AND SEAL AROUND ALL PIPE WITH FIRE STOP SEALANT. COORDINATE PENETRATIONS AND FIRE STOPPING WITH THE CONSTRUCTION MANAGER.

29. AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE TO THE OWNER COMPLETE AND ACCURATE "AS CONSTRUCTED DOCUMENTATION" FOR ALL SYSTEMS INSTALLED OR ALTERED UNDER THIS CONTRACT.

MECHANICAL GENERAL SPECIFICATIONS:

PART 1 - GENERAL

GENERAL:

A. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, EQUIPMENT, SERVICES AND FACILITIES REQUIRED FOR THE HVAC MODIFICATION WORK AND OTHER MECHANICAL WORK AS SHOWN ON THIS DOCUMENTS. ALL FIXTURES, DEVICES AND EQUIPMENT SHOWN, NOTED OR REQUIRED ON THE DRAWINGS, AND/OR CONTAINED HEREIN SHALL BE FURNISHED, INSTALLED, TESTED AND MADE READY FOR SATISFACTORY OPERATION.

B. THE MECHANICAL CONTRACTOR IS TO COORDINATE WITH OTHER TRADES AND OWNER FOR EQUIPMENT LOCATIONS AND CLEARANCES REQUIRED FOR EQUIPMENT. CONTRACTOR TO COORDINATE AND MODIFY LAYOUT ACCORDINGLY.

C. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL PERMITS, CERTIFICATES, INSPECTIONS, ETC. AND PAY ALL FEES LEVIED BY STATE, LOCAL AND MUNICIPAL AUTHORITIES HAVING JURISDICTION OVER WORK DONE UNDER THIS CONTRACT.

SHOP DRAWING SUBMITTAL:

A. THE CONTRACTOR SHALL SUBMIT, IN A TIMELY MANNER, ALL SUBMITTALS FOR APPROVAL BY THE ENGINEER. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR INSTALL ANY MATERIALS UNTIL THE ENGINEER HAS MADE FINAL APPROVAL ON THE SUBMITTALS.

B. PREPARE COORDINATION DRAWINGS TO A SCALE OF 1/4"=1'-0" OR LARGER, DETAILING MAJOR ELEMENTS, COMPONENTS, AND SYSTEMS OR MECHANICAL EQUIPMENT AND MATERIALS IN RELATIONSHIP WITH OTHER SYSTEMS, INSTALLATIONS, AND BUILDING COMPONENTS.

C. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
1. HVAC EQUIPMENT
2. DUCTWORK
3. BMS CONTROLS

COORDINATION:

A. POWER WIRING TO MECHANICAL EQUIPMENT, MOTOR CONTROLLERS AND CONTROL PANELS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

B. HVAC CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.

C. ALL NON-FACTORY FURNISHED MOTOR CONTROLLERS, MOTOR STARTERS AND DISCONNECTS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.

D. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE WITH LOCKABLE HANDLE. DISCONNECTS FOR ALL ELECTRICALLY DRIVEN HVAC EQUIPMENT SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

PART 2 - PRODUCT

REFER TO BOOK SPECIFICATION.

PART 3 - TESTING, ADJUSTING AND BALANCING

A. BEFORE COMMENCING WITH THE BALANCING OF THE EXISTING BUILDING HOT WATER SYSTEM, THE SYSTEM SHALL BE THOROUGHLY LEAK FREE AND ANY AIR PRESENT SHALL BE VENTED AND PURGED.

B. CLEANING THE AIR SYSTEMS:
1. BEFORE FINAL ADJUSTMENT AND BALANCING, CHEESE CLOTH SHALL BE PLACED OVER EACH DUCT OPENING FOR ENTRAINING PARTICLES DURING THE CLEANING OPERATION. OPERATE ALL SYSTEMS FOR A MINIMUM OF FOUR (4) HOURS. AFTER THIS PERIOD, REMOVE ALL FILTERS. CLEAN ALL SUPPLY DUCTS, GRILLES AND REGISTERS, IN ALL UNITS, USING A VACUUM CLEANER AND BRUSH. FILTERS SHALL BE REPLACED.

C. BALANCING THE AIR SYSTEMS:
1. OPERATE ALL SYSTEMS FOR AS LONG AS NECESSARY TO TEST AIR FLOW AT ALL OPENINGS. ADJUST DAMPERS, FANS, AND SHEAVES UNTIL EVEN DISTRIBUTION AND REQUIRED CFM OF AIR IS OBTAINED THROUGHOUT. SUBMIT FOR APPROVAL FOUR (4) TEST REPORTS SHOWING ALL PERTINENT OPERATING DATA SUCH AS CFM AND FPM AT EACH OUTLET, FAN RPM, MOTOR CURRENT, ETC., SHALL BE SUBMITTED FOR PERMANENT RECORD. DURING ADJUSTING PERIOD, MAKE ALL NECESSARY SETTINGS AND ADJUSTMENTS OF TEMPERATURE REGULATING EQUIPMENT. TEST REPORTS SHALL BE CERTIFIED BY A NEBB OR AABS LICENSED PROFESSIONAL ENGINEER WHO SHALL BE A MEMBER OF THE BALANCING FIRM.

D. PERFORMANCE:
1. AIR DISTRIBUTION DEVICES OF MANUFACTURERS OTHER THAN THOSE SCHEDULED SHALL MATCH DESIGN, FEATURES, CAPACITY AND DIMENSIONS OF MODEL NUMBER SCHEDULED. AIR DISTRIBUTION DEVICES SHALL BE SELECTED FOR PROPER THROW WITH A MAXIMUM NC LEVEL OF 30. BALANCE ALL NEW DIFFUSERS TO AIR QUANTITIES INDICATED. ALL DIFFUSERS ARE INDICATED BY A TAG INDICATING THE DIFFUSER MARK, NECK SIZE, AND CFM. DIFFUSERS SHALL BE AS SCHEDULED ON THE MECHANICAL DRAWINGS AND/OR ON THE AIR DISTRIBUTION DEVICE SCHEDULE.

PART 4 - INSTALLATION

EQUIPMENT INSTALLATION:

A. INSTALL EQUIPMENT IN STRICT COMPLIANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTION.

B. INSTALL EQUIPMENT IN STRICT COMPLIANCE WITH STATE AND LOCAL CODES AND APPLICABLE NFPA STANDARDS.

C. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES AROUND SIDES AND OVER TOP OF EQUIPMENT.

D. INSTALL COMPONENTS THAT WERE REMOVED FROM EQUIPMENT FOR SHIPPING PURPOSES.

E. INSTALL COMPONENTS THAT WERE FURNISHED LOOSE WITH EQUIPMENT FOR FIELD INSTALLATION.

F. PROVIDE ALL ELECTRICAL CONTROL AND POWER INTERCONNECT WIRING.

G. COORDINATE EXACT LOCATION OF ALL THERMOSTATS WITH OWNER.

ABBREVIATIONS

A.L	ACOUSTICAL LINING
AC	AIR CONDITIONING
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
APPROX	APPROXIMATE
ATC	AUTOMATIC TEMPERATURE CONTROL
ATM	ATMOSPHERE
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNITS
CA	COMPRESSED AIR
CD	CEILING DIFFUSER
CFM	CUBIC FEET OF AIR PER MINUTE
CHW	CHILLED WATER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CL EL	CENTERLINE ELEVATION
CMPR	COMPRESSOR
COND	CONDENSER
CP	CONTROL PANEL
CT	COOLING TOWER
CW	COLD WATER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DRAIN
DB	DECIBEL
DB	DRY BULB
DEG	DEGREE
DIA, Ø	DIAMETER
EC	ELECTRICAL CONTRACTOR
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EFF	EFFICIENCY
ENT	ENTERING
ER	EXHAUST REGISTER
ERHC	ELECTRIC REHEAT COIL
EWT	ENTERING WATER TEMPERATURE
EX	EXHAUST
EXIST.	EXISTING
EXP	EXPANSION
F	FAHRENHEIT
FA	FACE AREA
FC	FLEXIBLE CONNECTION
FD	FLOOR DRAIN
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FP	FREEZING POINT
FPM	FEET PER MINUTE
FPU	FAN POWERED UNIT
FRP	FIBERGLASS REINFORCED PLASTIC
FSD	FIRE AND SMOKE DAMPER
FT	FEET
G.C.	GENERAL CONTRACTOR
GA	GAGE OR GAUGE
GPM	GALLONS PER MINUTE
HE	HEAT EXCHANGER
HP	HORSEPOWER
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HZ	HERTZ
IN.	INCHES
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
M.C.	MECHANICAL CONTRACTOR
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
OA	OUTSIDE AIR
P	PUMP
PC	PUMPED CONDENSATE
PD	PRESSURE DROP
PER	PERFORATED CEILING DIFFUSER
PH	PHASE
PRESS	PRESSURE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R/B	REMOVE AND BLANK OFF
RA	RETURN AIR
RAG	RETURN AIR GRILL
RCVR	RECEIVER
RD	RETURN AIR DIFFUSER
RECIRC	RECIRCULATE
REG	REGISTER
REV	REVOLUTIONS
RH	RELATIVE HUMIDITY
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SAD	SUPPLY AIR DIFFUSER
SAG	SUPPLY AIR GRILLE
SAR	SUPPLY AIR REGISTER
SD	SMOKE DETECTOR
SD	SUPPLY AIR DIFFUSER
SF	SUPPLY FAN
SP	STATIC PRESSURE
T	THERMOSTAT
TAD	TRANSFER AIR DIFFUSER
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLT
V	VENT
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VOL	VOLUME
W	WATT
W	WASTE
W/M	WIRE MESH
WB	WET BULB
WT	WEIGHT

HVAC SYMBOL LEGEND

- DEMOLITION WORK NOTES
- NEW WORK NOTES
- SUPPLY AIR DUCT
- RETURN AIR DUCT
- NEW AIR DIFFUSER
- EXISTING AIR DIFFUSER
- 2-WAY AIR DIFFUSER
- 2-WAY AIR DIFFUSER
- EXISTING SUPPLY AIR DIFFUSER TO BE REMOVED
- NEW RETURN AIR REGISTER
- POINT OF NEW CONNECTION
- THERMOSTAT (T-STAT)
- EXISTING DUCTWORK TO REMAIN
- EXISTING DUCTWORK TO BE REMOVED
- NEW DUCTWORK
- PIPE DROP
- FLEXIBLE DUCT
- FIRE ALARM SYSTEM DUCT MOUNTED PHOTOELECTRIC SMOKE DETECTOR, FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- POINT OF TERMINATION
- FIRE DAMPER
- VOLUME DAMPER

MECHANICAL DRAWING LIST:

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CERTIFICATE OF AUTHORIZATION: #24GA28138200

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SIGNATURE NOT VALID WITHOUT RAISED SEAL — DATE

Project
HVAC UPGRADES FOR
STOCKTON UNIVERSITY LAKESIDE LODGE
101 VERA KING FERRIS DRIVE, GALLOWAY, NJ 08205

Project Bid Date

Revisions — By — Date

Sheet Title
MECHANICAL COVERSHEET

Drawn By: MW/GB
Chk'd By: MW/GB
I OF 11

Sheet No.
M-0

Project No.
HRG-XXXXX

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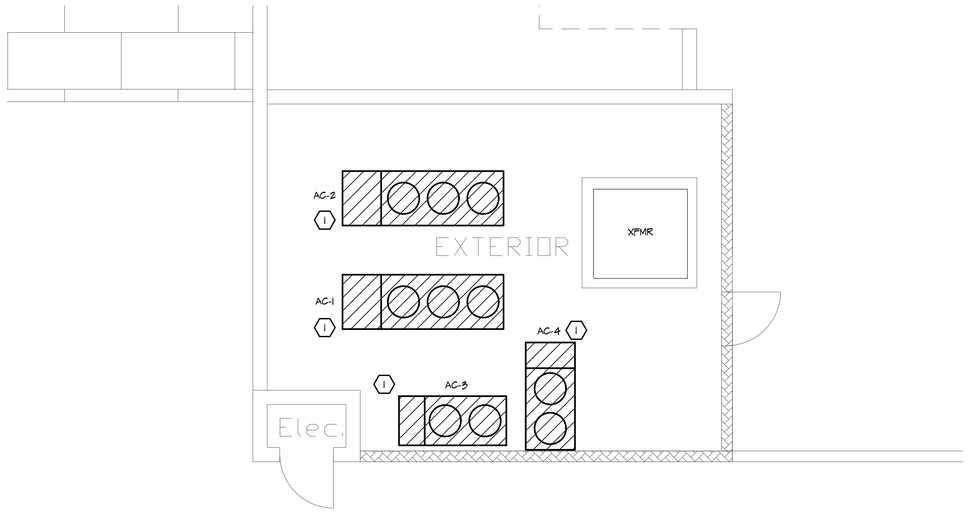
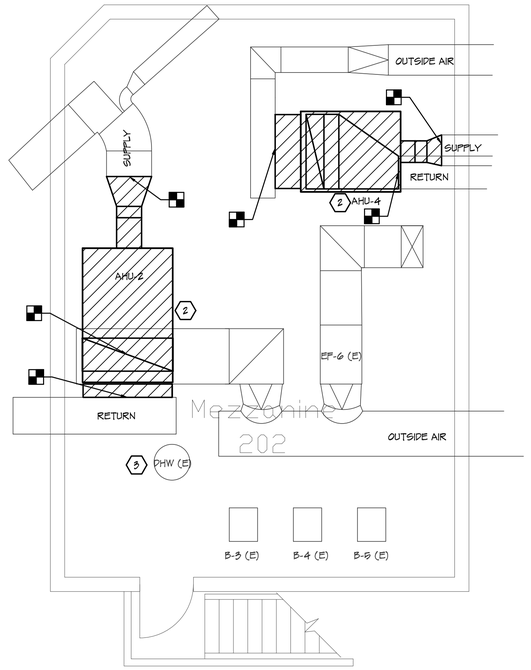
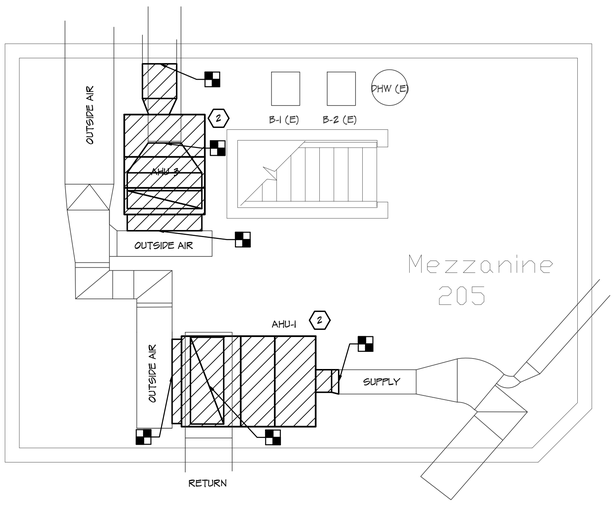


1 / M-1 MECHANICAL FIRST FLOOR EXTERIOR DEMOLITION WORK PLAN
SCALE: 1/4" = 1'-0"



2 / M-1 MECHANICAL SECOND FLOOR DEMOLITION WORK PARTIAL PLAN - MEZZANINE A
SCALE: 1/4" = 1'-0"



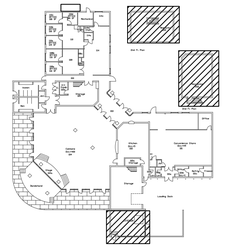
3 / M-1 MECHANICAL SECOND FLOOR DEMOLITION WORK PARTIAL PLAN - MEZZININE B
SCALE: 1/4" = 1'-0"

DEMOLITION WORK NOTES

1. DISCONNECT ALL SERVICES & REMOVE EXISTING CONDENSING UNITS IN THEIR ENTIRETY. EXISTING UNDER-GROUND REFRIGERANT PIPING TO BE ABANDONED. RECYCLE/RECLAIM REFRIGERANT IN ACCORDANCE WITH US EPA REGULATIONS. DELIVER TO STOCKTON UNIVERSITY ANY AND ALL RECLAIMED REFRIGERANT. (TYPICAL FOR 4).

2. DISCONNECT & PULLBACK EXISTING SERVICES (DUCTING, HOT WATER, ELECTRIC, CONTROLS, FIRE ALARM, ETC) TO AHU TO ALLOW REMOVAL OF EXISTING UNIT AND INSTALLATION OF NEW UNIT. EXISTING SERVICES ARE TO REMAIN FOR RE-CONNECTION TO NEW UNIT. REMOVE ALL ABOVE-GROUND REFRIGERANT PIPING IN ITS ENTIRETY. EXISTING HOT WATER STRAINER, CONTROL VALVE, ISOLATION VALVES AND DRAIN VALVES TO REMAIN AND BE REUSED. (TYPICAL FOR 4).

3. DISCONNECT & PULLBACK EXISTING SERVICES (FLUE, HOT WATER, GAS PIPING, ELECTRIC, CONTROLS ETC) FOR DOMESTIC HOT WATER HEATER TO ALLOW REMOVAL OF EXISTING AHU-2 AND AHU-4 AND INSTALLATION OF NEW UNITS. EXISTING SERVICES ARE TO REMAIN FOR RE-CONNECTION. TEMPORARILY STORE AND PROTECT DOMESTIC HOT WATER HEATER FROM DAMAGE, SO THAT IT CAN BE REINSTALLED AT THE COMPLETION OF THE AIR HANDLER REPLACEMENT WORK.



KEY PLAN

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Project
HVAC UPGRADES FOR
STOCKTON UNIVERSITY LAKESIDE LODGE
101 VERA KING FERRIS DRIVE, GALLOWAY, NJ 08205

Project Bid Date

Revisions	By	Date

Sheet Title
MECHANICAL
DEMOLITION WORK PLAN

Drawn By		
MW/GB	2	
Chk'd By	OF	
MW/GB		11

Sheet No.
M-1

Project No.
HRG-XXXXX

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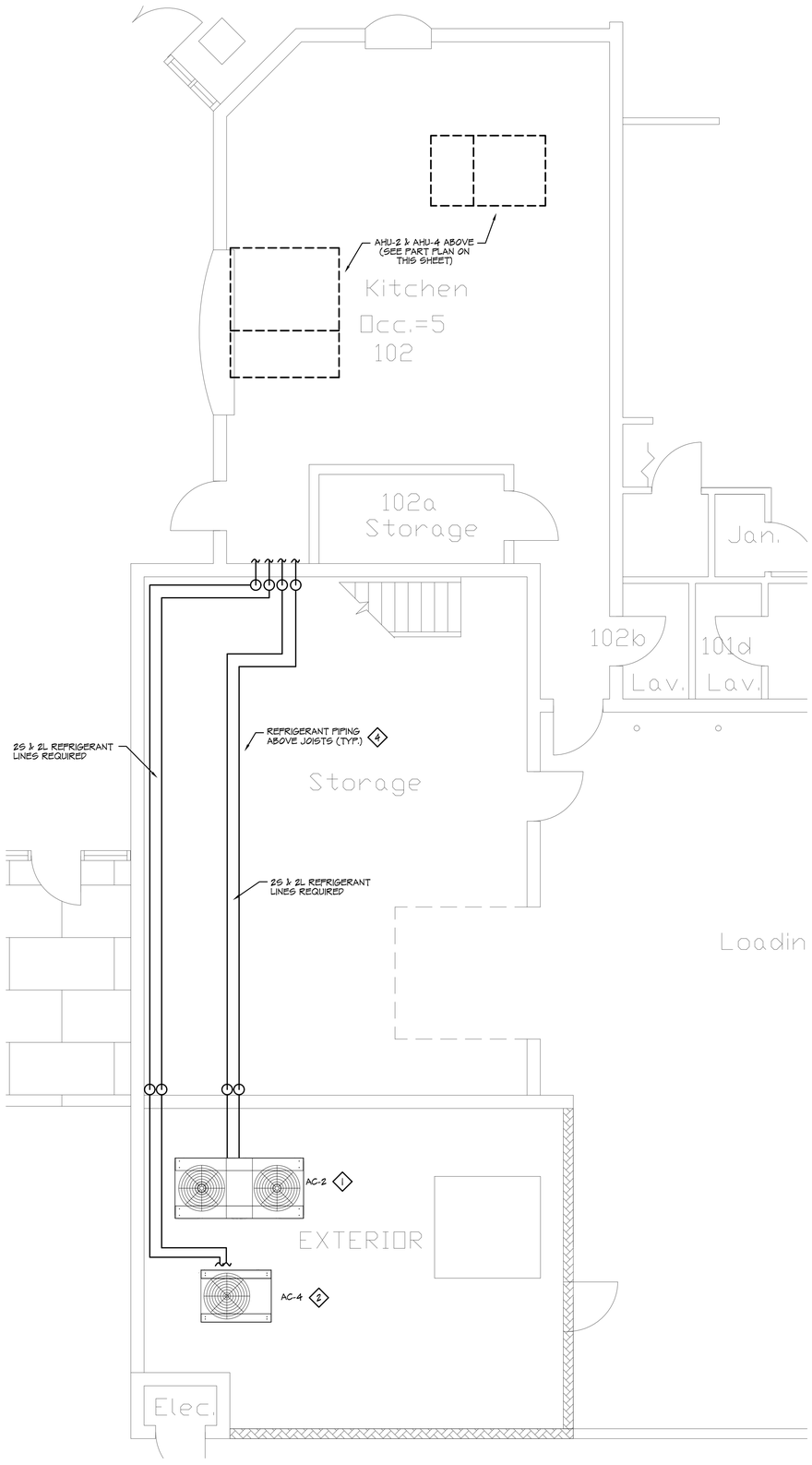
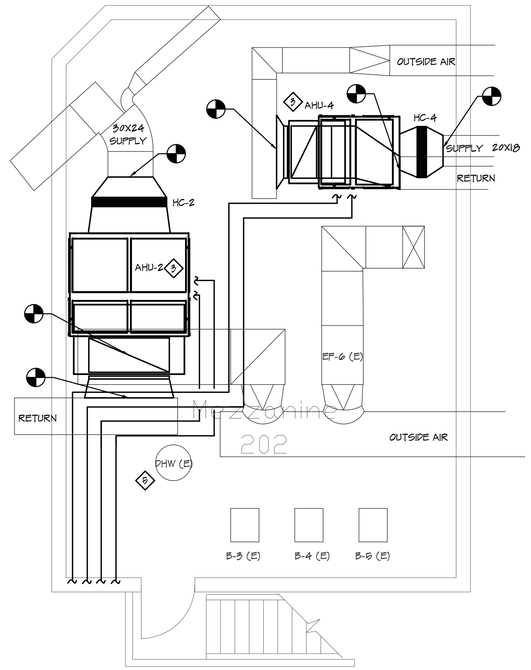


1 M-1 MECHANICAL FIRST FLOOR PROPOSED WORK PLAN
SCALE: 1/4" = 1'-0"



2 M-1 MECHANICAL SECOND FLOOR PROPOSED WORK PARTIAL PLAN - MEZZANINE A
SCALE: 1/4" = 1'-0"

NEW WORK NOTES

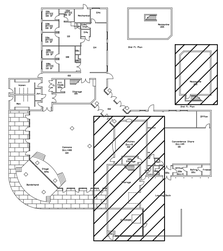
1. INSTALL NEW CONDENSING UNIT (AC-2) ON EXISTING CONCRETE PAD. PROVIDE NEW REFRIGERANT LINE SET PAIRS TO ASSOCIATED AHU UNIT (AHU-2) IN MEZZANINE. ROUTE REFRIGERANT LINES AT CEILING LEVEL ABOVE STORAGE ROOM AS SHOWN. SUCTION AND LIQUID LINES TO BE INSULATED WITH 3/4" THICK ARMAFLEX AP ARMACELL PIPE INSULATION. EXTERIOR PORTIONS OF INSULATED LINESET TO RECEIVE EMBOSSED ALUMINUM WEATHERPROOF JACKET.

2. INSTALL NEW CONDENSING UNIT (AC-4) ON EXISTING CONCRETE PAD. PROVIDE NEW REFRIGERANT LINE SET PAIRS TO ASSOCIATED AHU UNIT (AHU-4) IN MEZZANINE. ROUTE REFRIGERANT LINES AT CEILING LEVEL ABOVE STORAGE ROOM AS SHOWN. SUCTION AND LIQUID LINES TO BE INSULATED WITH 3/4" THICK ARMAFLEX AP ARMACELL PIPE INSULATION. EXTERIOR PORTIONS OF INSULATED LINESET TO RECEIVE EMBOSSED ALUMINUM WEATHERPROOF JACKET.

3. PROVIDE AND INSTALL NEW AHUS (AHU-2 & AHU-4) AND DUCT-MOUNTED HOT WATER COILS. RECONNECT EXISTING SERVICES (DUCTING, HOT WATER, ELECTRIC, CONTROLS, FIRE ALARM, ETC). EXTEND AND CONNECT EXISTING HOT WATER SUPPLY AND RETURN PIPING AND 3-WAY CONTROL VALVE TO HOT WATER COIL. ROUTE NEW CONDENSATE DRAIN TO EXISTING DRAIN. REPAIR OR REPLACE ANY EXISTING INSULATION, DUCTWORK OR PIPING DAMAGED DURING CONSTRUCTION.

4. NOTE THAT THE NEW CONDENSING UNIT (AND AIR HANDLING UNIT COIL) IS DUAL CIRCUIT. SO TWO (2) SUCTION LINES AND TWO (2) LIQUID LINES ARE REQUIRED FOR EACH AC/AHU PAIR. COORDINATE THE ACTUAL REFRIGERANT LINESET SIZES WITH THE MANUFACTURER'S RECOMMENDATIONS. FOR BIDDING PURPOSES, ASSUME TWO (2) 7/8" SUCTION LINES AND (2) 1/2 LIQUID LINES FOR EACH 7.5-TON AC/AHU PAIR AND TWO (2) 1-1/8" SUCTION LINES AND TWO (2) 5/8" LIQUID LINES FOR EACH 15-TON AC/AHU PAIR.

5. RE-INSTALL EXISTING TO REMAIN DOMESTIC HOT WATER HEATER BACK TO PREVIOUS INSTALLATION LOCATION. COORDINATE WITH STOCKTON PERSONNEL TO REROUTE EXISTING GAS PIPING TO DOMESTIC WATER HEATER AWAY FROM WALKING PATH.



KEY PLAN

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CERTIFICATE OF AUTHORIZATION: #24GA28138200
MATTHEW DAVID WELLS, N.J.P.E.
PROFESSIONAL ENGINEER, LIC. NO. 24GE04594000
SIGNATURE NOT VALID WITHOUT RAISED SEAL
DATE

Project
HVAC UPGRADES FOR
STOCKTON UNIVERSITY LAKESIDE LODGE
101 VERA KING FERRIS DRIVE, GALLOWAY, NJ 08205

Project Bid Date

Revisions	By	Date

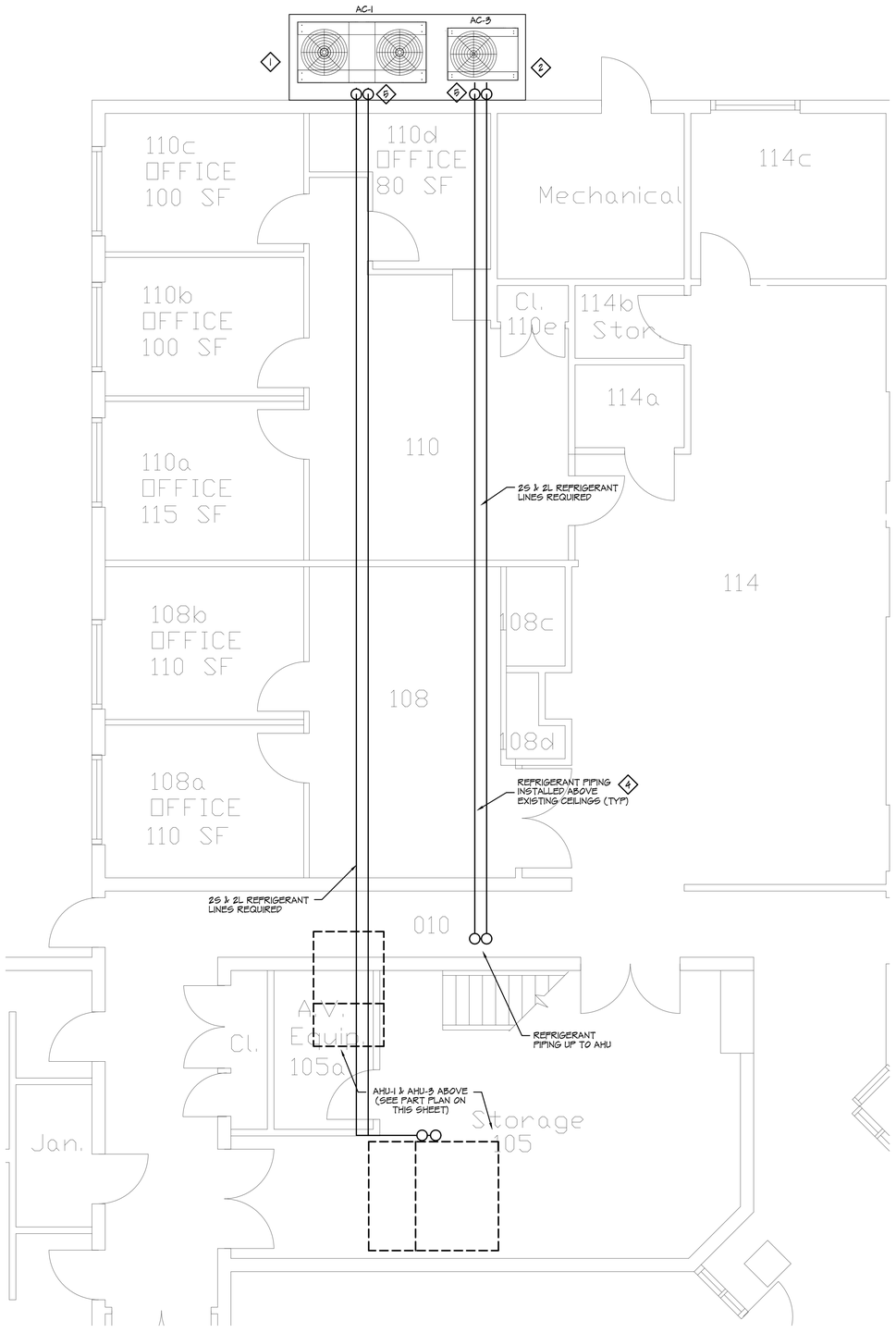
Sheet Title
MECHANICAL
PROPOSED WORK PLAN

Drawn By MW/GB
Chk'd By MW/GB
3 OF 11

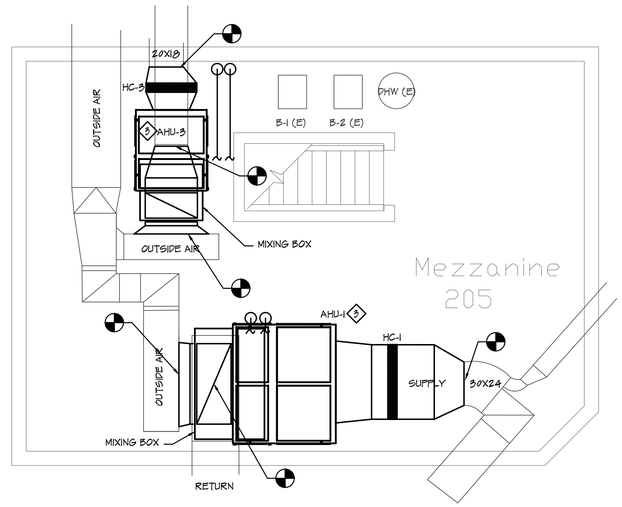
Sheet No.
M-2

Project No.
HRG-XXXXX

Do Not Scale Drawings – Field check all dimensions prior to start of construction.



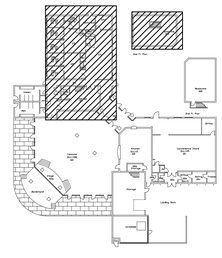
1 / M-1 MECHANICAL FIRST FLOOR PROPOSED WORK PLAN
SCALE: 1/4" = 1'-0"



2 / M-1 MECHANICAL SECOND FLOOR PROPOSED WORK PARTIAL PLAN - MEZZANINE B
SCALE: 1/4" = 1'-0"

NEW WORK NOTES

1. INSTALL NEW CONDENSING UNIT (AC-1) ON NEW CONCRETE PAD. PROVIDE NEW REFRIGERANT LINE SET PAIRS TO ASSOCIATED AHU UNIT (AHU-1) IN MEZZANINE. ROUTE REFRIGERANT LINES ABOVE EXISTING SUSPENDED CEILINGS AS SHOWN. SUCTION AND LIQUID LINES TO BE INSULATED WITH 3/4" THICK ARMAFLEX AP ARMACELL PIPE INSULATION. EXTERIOR PORTIONS OF INSULATED LINESET TO RECEIVE EMBOSSED ALUMINUM WEATHERPROOF JACKET.
2. INSTALL NEW CONDENSING UNIT (AC-3) ON NEW CONCRETE PAD. PROVIDE NEW REFRIGERANT LINE SET PAIRS TO ASSOCIATED AHU UNIT (AHU-3) IN MEZZANINE. ROUTE REFRIGERANT LINES ABOVE EXISTING SUSPENDED CEILINGS AS SHOWN. SUCTION AND LIQUID LINES TO BE INSULATED WITH 3/4" THICK ARMAFLEX AP ARMACELL PIPE INSULATION. EXTERIOR PORTIONS OF INSULATED LINESET TO RECEIVE EMBOSSED ALUMINUM WEATHERPROOF JACKET.
3. PROVIDE AND INSTALL NEW AHUS (AHU-1 & AHU-3) AND DUCT-MOUNTED HOT WATER COILS. RECONNECT EXISTING SERVICES (DUCTING, HOT WATER, ELECTRIC, CONTROLS, FIRE ALARM, ETC). EXTEND AND CONNECT EXISTING HOT WATER SUPPLY AND RETURN PIPING AND 3-WAY CONTROL VALVE TO HOT WATER COIL. ROUTE NEW CONDENSATE DRAIN TO EXISTING DRAIN. REPAIR OR REPLACE ANY EXISTING INSULATION, DUCTWORK OR PIPING DAMAGED DURING CONSTRUCTION.
4. NOTE THAT THE NEW CONDENSING UNIT (AND AIR HANDLING UNIT COIL) IS DUAL CIRCUIT. SO TWO (2) SUCTION LINES AND TWO (2) LIQUID LINES ARE REQUIRED FOR EACH AC/AHU PAIR. COORDINATE THE ACTUAL REFRIGERANT LINESET SIZES WITH THE MANUFACTURER'S RECOMMENDATIONS. FOR BIDDING PURPOSES, ASSUME TWO (2) 7/8" SUCTION LINES AND (2) 1/2 LIQUID LINES FOR EACH 7.5-TON AC/AHU PAIR AND TWO (2) 1-1/8" SUCTION LINES AND TWO (2) 5/8" LIQUID LINES FOR EACH 15-TON AC/AHU PAIR.
5. CONCEAL REFRIGERANT PIPING AND CONTROL WIRING UP THE OUTSIDE OF THE BUILDING IN RECTORSEAL SLIMDUCT LINESET COVERS (OR EQUIVALENT).



KEY PLAN

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Drawn By: MW/GB
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4 OF 11

Sheet No.
M-3

Project No.
HRG-XXXXX

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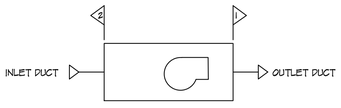
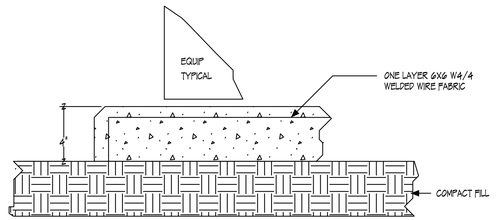


1 SMACNA PRESSURE DETAIL
NO SCALE



NOTE: EXTEND PAD HEIGHT AS REQUIRED FOR DRAIN TRAP.

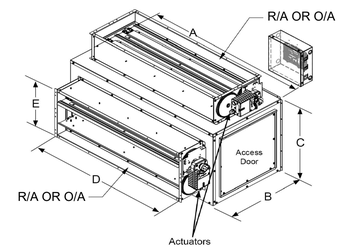
2 HOUSEKEEPING PAD DETAIL
NO SCALE

TYPICAL RECTANGULAR DUCT JOINTS AND REINFORCING

JOINT DETAIL	MAX. DUCT DIMENSION	MAX. DISTANCE BETWEEN JOINTS	REINFORCING AT JOINTS
	12"	8'	NONE
	18"	8'	NONE
H	H = 1" 19" TO 42"	4'	NONE
	H = 1 1/2" 43" TO 60"	3'	NONE
	61" TO 84"	2'	1 1/2" x 1 1/2" x 1/8"
	85" TO 96"	2'	1 1/2" x 1 1/2" x 3/16"
	OVER 96"	2'	2 x 2 x 1/4"
	85" TO 96"	8'	1 1/2" x 1 1/2" x 3/16"
	OVER 96"	8'	2 x 2 x 1/4"
	LONGITUDINAL JOINTS AT CORNERS		
	LONGITUDINAL JOINTS ON FLAT SIDES		

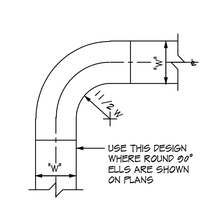
WHEN USING ANGLE COMPANION JOINTS, PROVIDE ANGLE REINFORCING ON 2FT. CENTER BETWEEN JOINTS OF THE SAME SIZE ANGLE AS USED FOR JOINT

3 LOW PRESSURE SHEETMETAL DUCTWORK
NO SCALE

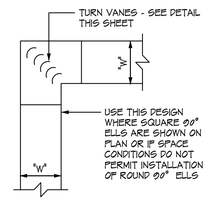


4 MIXING BOX DETAIL
NO SCALE

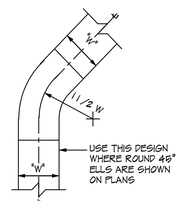
UNIT	A (IN)	B (IN)	C (IN)	D (IN)	E (IN)
AHU-1,3	74.25	25.50	25.50	48.00	18.00
AHU-2,4	42.00	20.00	20.00	36.00	12.00



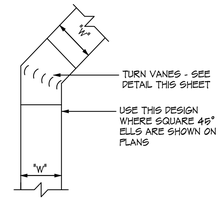
ROUND 90° ELBOW



SQUARE 90° ELBOW



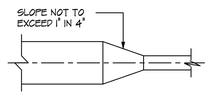
ROUND 45° ELBOW



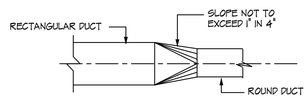
SQUARE 45° ELBOW

CONSTRUCTION OF 90° ELBOWS

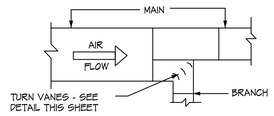
CONSTRUCTION OF 45° ELBOWS



TYPICAL RECTANGULAR TRANSITION



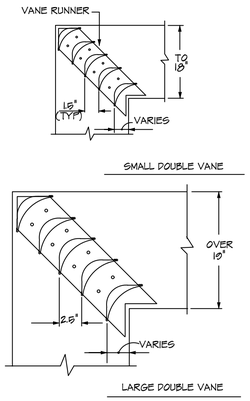
TYPICAL RECTANGULAR TO ROUND TRANSITION

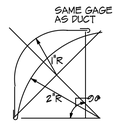


SQUARE BRANCH TAKEOFF

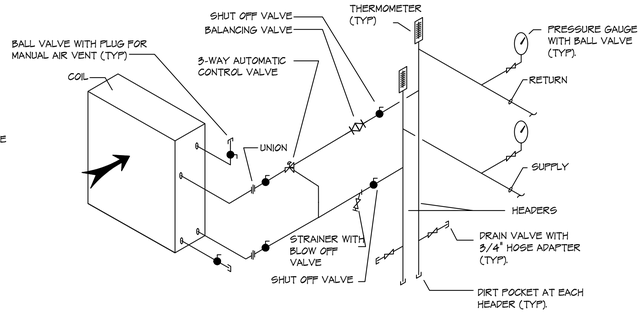
CONSTRUCTION OF BRANCH TAKEOFFS FROM MAIN

5 LOW VELOCITY DUCTWORK DETAILS
NO SCALE





6 DUCTWORK TURNING VANE DETAIL
NO SCALE



7 HW COIL DETAIL
NO SCALE

AIR HANDLING UNIT SCHEDULE

Tag	Manufacturer	Model	Installed Configuration	DX Coil (Cooling) Data					DX Coil (Heating) Data at 0° F			Supply Fan Data						Electrical				
				EAT (db/wb)	LAT (db/wb)	Rows	FPF	Sensible Capacity (MBH)	Total Capacity (MBH)	EAT (db)	LAT (db)	Total Capacity (MBH)	Total Airflow (cfm)	Outside Airflow (cfm)	ESP (in. w.c.)	Speed (rpm)	BHP	Motor HP	(V/Ph/Hz)	MCA	MOPD	Unit Weight (lbs.)	Applicable Notes
AHU-1	Trane	TWE180K4BA	Horizontal	80/67	57.83/56.81	4	168	154.16	194.13	60.0	76.8	107.7	6,000	1950	1.5	1111	4.45	5	460/3/60	9.5	15	742	1,2,3,4,5,6,7,8
AHU-2	Trane	TWE180K4BA	Horizontal	80/67	57.83/56.81	4	168	154.16	194.13	60.0	76.8	107.7	6,000	1950	1.5	1111	4.45	5	460/3/60	9.5	15	742	1,2,3,4,5,6,7,8
AHU-3	Trane	TWE090K4BA	Horizontal	80/67	57.03/56.20	4	168	75.87	101.09	60.0	77.0	54.4	3,000	975	1.5	1162	2.54	3	460/3/60	6.0	15	373	1,2,3,4,5,6,7,8
AHU-4	Trane	TWE090K3BA	Horizontal	80/67	57.03/56.20	4	168	75.87	101.09	60.0	77.0	54.4	3,000	975	1.5	1162	2.54	3	208/3/60	14.0	20	373	1,2,3,4,5,6,7,8

Notes: 1. Provide standard 1" throwaway filters in angled filter box. **2.** Capacities listed are at 95 degree outdoor air temperature, with entering air conditions listed and scheduled condensing units. **3.** Provide return air, mixed air, and supply air temperature sensors. **4.** Unit control is 2-stage airflow, single zone VAV. **5.** Condensate overflow switch required. **6.** Provide Trane Symbio S500 unit controller. **7.** Provide secondary drip pan under unit with wet switch. Wire wet switch to shut down unit when activated. **8.** Provide MicroMetl MB-TW2CA-D2EH mixing boxes for 7.5 ton units and MicroMetl MB-TW4CA-D2EH mixing boxes for 15 ton units.

AIR-COOLED CONDENSING UNIT (HEAT PUMP) SCHEDULE

Tag	Manufacturer	Model	Refrigerant	Total Capacity (MBH)	No. of Refrig. Ckts.	No. of Fans	IEER	EER	COP	Elec. Char. (V/Ph/Hz)	MCA	MOPD	Dimensions (WxDxH)	Unit Weight (lbs.)	Applicable Notes
AC-1	Trane	TWA180K3DA	R-454B	194.13	2	2	13.5	10.8	3.3	208/3/60	74.0	100	93-5/16" x 45-1/8" x 46"	782.2	1,2,3
AC-2	Trane	TWA180K4DA	R-454B	194.13	2	2	13.5	10.8	3.3	460/3/60	34.2	45	93-5/16" x 45-1/8" x 46"	782.2	1,2,3
AC-3	Trane	TWA090K3DA	R-454B	65.6	2	1	14.1	11.2	3.4	208/3/60	35.0	45	50-15/16" x 37-11/16 x 39-1/8"	445	1,2,3
AC-4	Trane	TWA090K4DA	R-454B	65.6	2	1	14.1	11.2	3.4	460/3/60	15.9	20	50-15/16" x 37-11/16 x 39-1/8"	445	1,2,3

Notes: 1. Hermetic scroll compressors. **2.** Listed total capacity is at 95°F ambient, with scheduled air handlers and evaporator coils. **3.** Advanced Controller - BACnet BAS. **4**. Provide hail guards, phase monitor, service valve accessory kit, low ambient controls and rubber-in-shear isolators.

DUCT MOUNTED HOT WATER COIL

TAG	SUPPLY AIRFLOW CFM	ROWS	NOMINAL COIL HEIGHT	NOMINAL COIL LENGTH	MAX AIR PD (IN H2O)	APPROX. WEIGHT (LB)	HOT WATER COIL TOTAL MBH	EAT DB	LAT DB	EWT	LWT	FLOW GPM	MAX WPD (FT)	FLUID TYPE	BASIS OF DESIGN	NOTES
HC-1	6000	2	24	50	0.43	98	260.0	55.0	95.0	180	138.7	12.7	3.0	100% WATER	COONEY HWSCFB13B02-24.00x50.00R	1,2
HC-2	6000	2	24	50	0.43	98	260.0	55.0	95.0	180	138.7	12.7	3.0	100% WATER	COONEY HWSCFB13B02-24.00x50.00R	1,2
HC-3	3000	2	18	34	0.45	58	130.0	55.0	95.0	180	147.2	8.0	1.2	100% WATER	COONEY HWSCFB14B02-18.00x34.00R	1,2
HC-4	3000	2	18	34	0.45	58	130.0	55.0	95.0	180	147.2	8.0	1.2	100% WATER	COONEY HWSCFB14B02-18.00x34.00R	1,2

NOTES: 1. PROVIDE UNIT COIL DRAIN PAN AND COONEY FREEZE BLOCK.
2. INTERLOCK CONTROLS WITH ASSOCIATED UNIT CONTROL SYSTEM. COORDINATE WITH THE HVAC CONTROL SYSTEM CONTRACTOR.
3. PROVIDE COILS WITH 5/8" COPPER TUBES, WITH 0.020" THICKNESS.
4. PROVIDE GLYCOL SYSTEM IN LIEU OF FREEZEBLOCK.

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DETAILS AND SCHEDULES

Drawn By MW/GB
Chk'd By MW/GB
5 OF 11

Sheet No.
M-4

Project No.
HRG-XXXXX

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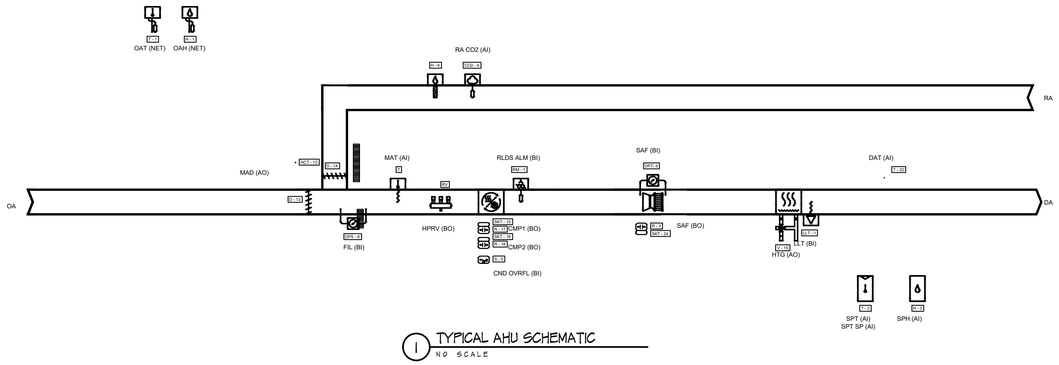
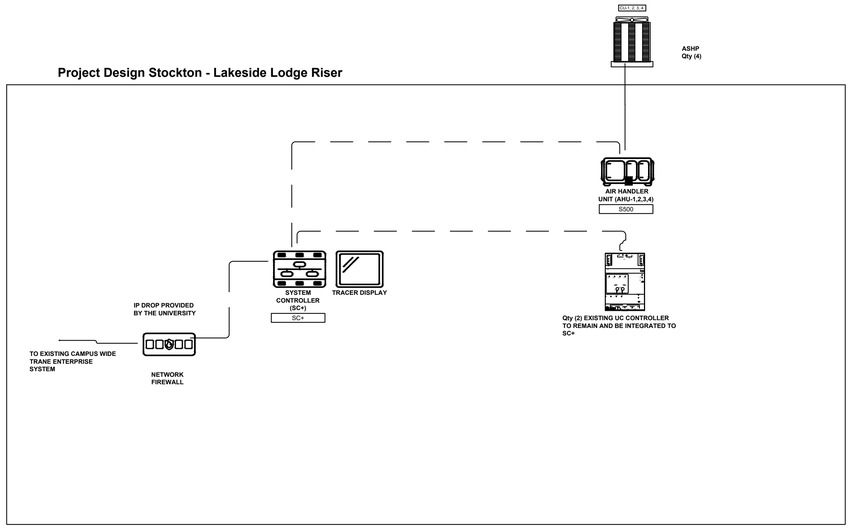


1 TYPICAL AHU SCHEMATIC
NO SCALE

Project Design Stockton - Lakeside Lodge Riser



2 BMS RISER DIAGRAM
NO SCALE

GENERAL BMS UPGRADE NOTES

1. INSTALL ONE NEW TRANE SYSTEM CONTROLLER (SC+) AND INTEGRATE PER THE BMS RISER DIAGRAM.
2. INSTALL ONE NEW TRANE S500 CONTROLLER FOR EACH AHU (TOTAL OF 4) AND FIELD-WIRE TO THE END DEVICES SHOWN IN THE POINTS LIST (INCLUDING EXTERIOR HEAT PUMPS).
3. INSTALL ONE NEW TEMPERATURE SENSOR AND ONE NEW HUMIDITY SENSOR IN THE SPACES SERVED BY EACH AHU AND WIRE TO THE ASSOCIATED S500 CONTROLLER.
4. CONTROL SEQUENCES REQUIRED INCLUDES SINGLE ZONE-VAV HEATING/COOLING, DEMAND CONTROL VENTILATION (BASED ON RETURN DUCT CARBON DIOXIDE LEVELS), SWITCH-OVER FROM HEAT PUMP HEATING TO HOT WATER HEATING AT 40°F OAT (ADJUSTABLE) AND HOT WATER REHEAT DEHUMIDIFICATION.
5. MAINTAIN EXISTING TRANE UC600 CONTROLLERS (WITH XM30 EXPANSION MODULES) FOR OTHER EQUIPMENT/CONTROL POINTS NOT SHOWN IN THE POINTS LIST ABOVE, AND INTEGRATE WITH THE NEW SC+ SYSTEM CONTROLLER.

Points List: AIR HANDLER UNIT (AHU-1,2,3,4) [QTY: 4]

Point Name	POINTS									ALARMS				
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SFT)	HARDWARE INTERLOCK (HDW)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
COIL LEAVING AIR LOW TEMP CUTOUT ALARM LLT			X										X		
COMPRESSOR 1 COMMAND CMP1	X				X										
COMPRESSOR 2 COMMAND CMP2	X				X										
CONDENSATE OVERFLOW DETECTION LOCAL CND OVRFL	X		X									X	X		
DISCHARGE AIR TEMPERATURE DAT	X	X								X	X			X	
FILTER STATUS FIL	X		X									X			
HEATING OUTPUT COMMAND HTG	X			X											
HEAT PUMP REVERSING VALVE HPRV	X				X										
MIXED AIR DAMPER COMMAND MAD	X			X											
MIXED AIR TEMP MAT	X	X													
OUTDOOR AIR RELATIVE HUMIDITY (COMMUNICATED) OAH	X								X						
OUTDOOR AIR TEMPERATURE (COMMUNICATED) OAT	X								X						
REFRIGERANT LEAK DETECTION SYSTEM INPUT RLDS ALM			X									X			
REHEAT OUTPUT COMMAND RH	X			X											
RETURN AIR CO2 LOCAL RA CO2	X	X								X					
SPACE HUMIDITY LOCAL SPH	X	X								X					
SPACE TEMPERATURE LOCAL SPT	X	X								X	X			X	
SPACE TEMPERATURE SETPOINT LOCAL SPT SP	X	X													
SUPPLY FAN START STOP COMMAND SAF	X				X										
SUPPLY FAN STATUS SAF	X		X												
BAS COMMUNICATION STATE BAS COM						X									X
MAINTENANCE REQUIRED MNT REQ						X						X			
OCCUPIED COOLING SETPOINT OCC CLG STPT	X					X									
OCCUPIED HEATING SETPOINT OCC HTG STPT	X					X									
SUPPLY FAN FAILURE SF FAIL	X					X						X			
UNOCCUPIED COOLING SETPOINT UNOCC CLG STPT	X					X									
UNOCCUPIED HEATING SETPOINT UNOCC HTG STPT	X					X									

3 POINTS LIST
NO SCALE

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DATE

HVAC UPGRADES FOR
STOCKTON UNIVERSITY LAKESIDE LODGE
101 VERA KING FERRIS DRIVE, GALLOWAY, NJ 08205

Project

Project Bid Date

Revisions By Date

Sheet Title
MECHANICAL CONTROLS AND BMS RISER DIAGRAM

Drawn By MW/GB
Chk'd By MW/GB
6 OF 11

Sheet No.
M-5

Project No.
HRG-XXXXX

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ELECTRICAL GENERAL NOTES & SPECIFICATIONS

1. UNLESS ITEMS OF MATERIAL, EQUIPMENT OR WORK ARE SPECIFICALLY NOTED TO BE PROVIDED OR FURNISHED BY OTHERS, THEY SHALL BE PROVIDED BY THIS CONTRACTOR TO PERFORM THE WORK AS SHOWN AND DESCRIBED ON THE DRAWINGS. ITEMS NOTED AS "FURNISHED BY OWNER" SHALL BE INSTALLED BY THIS CONTRACTOR.

2. WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITION (2020) OF THE NATIONAL ELECTRICAL CODE (NFPA 70), UNIFORM CONSTRUCTION CODE, INTERNATIONAL BUILDING CODE AND ALL APPLICABLE STATE AND LOCAL CODES.

3. WORK SHALL BE INSTALLED AND PERFORMED IN A WORKMAN LIKE MANNER CONSISTENT WITH APPLICABLE INDUSTRY STANDARDS.

4. EQUIPMENT INSTALLATIONS SHALL CONFORM TO THE EQUIPMENT MANUFACTURER'S WRITTEN INSTRUCTIONS AND ALL APPLICABLE INDUSTRY STANDARDS. INSTALL EQUIPMENT IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5. BY SUBMITTING THEIR BID, THIS CONTRACTOR WARRANTS THAT HE HAS VISITED THE PROJECT SITE, VIEWED CONDITIONS, MATERIALS AND EQUIPMENT THAT EXIST AND WARRANTS THAT HE IS THOROUGHLY FAMILIAR WITH THE SCOPE OF WORK REQUIRED TO PROVIDE A COMPLETE, FULLY FUNCTIONAL, CODE ACCEPTABLE SYSTEM.

6. COORDINATE INSTALLATION OF WORK WITH EXISTING CONDITIONS AND ALL OTHER SYSTEMS BEING INSTALLED PRIOR TO START OF WORK. ALL SYSTEMS REQUIRED TO BE REMOVED AND REINSTALLED DUE TO THE LACK OF COORDINATION BY THIS CONTRACTOR SHALL BE DONE AT THIS CONTRACTOR'S EXPENSE. WHERE SYSTEMS OR ITEMS ARE INDICATED ON THE DRAWINGS, OR DURING THE COURSE OF CONSTRUCTION ARE FOUND NECESSARY TO BE RELOCATED, REROUTED OR REMOVED AND REINSTALLED, CONTRACTOR SHALL PROVIDE NEW MATERIALS TO MATCH EXISTING MATERIALS, EQUIPMENT, ETC. AS REQUIRED TO PERFORM TASKS INDICATED.

7. WORK REQUIRING THE SHUTDOWN OF ANY EXISTING SYSTEMS SHALL BE COORDINATED SO LENGTH OF DOWN TIME IS MINIMIZED. ALL SYSTEM SHUTDOWNS SHALL BE COORDINATED WITH OWNER PRIOR TO START OF CONSTRUCTION.

8. SYSTEMS SHALL BE LEFT IN PROPER WORKING ORDER. WORK, MATERIALS OR EQUIPMENT FURNISHED AND INSTALLED BY THIS CONTRACTOR UNDER THIS CONTRACT THAT DEVELOPS DEFECTS WITHIN TWO (2) YEARS FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER, OTHER THAN NORMAL WEAR AND TEAR, SHALL BE REPLACED WITHOUT ADDITIONAL CHARGE.

9. IN FINISHED AREAS, CONCEAL RACEWAYS AND WIRING IN WALLS, PIPE CHASES, ABOVE CEILINGS OR UTILITY SPACES, UNLESS INSTALLATION OF SURFACE MOUNTED RACEWAYS HAS THE PRIOR APPROVAL OF THE OWNER.

10. INSTALL RACEWAYS TIGHT TO SLABS, BEAMS, JOISTS, COLUMNS, WALLS, AND OTHER PERMANENT ELEMENTS OF THE BUILDING. ALLOW SUFFICIENT SPACE ABOVE REMOVABLE CEILING PANELS TO ALLOW FOR PANEL REMOVAL.

11. PROVIDE GROUNDING FOR ALL ELECTRICAL ENCLOSURES AND EQUIPMENT AND FOR ALL METAL PIPING IN THE BUILDING (ELECTRICAL CONDUIT, WATER PIPING, SPRINKLER PIPING, ETC.) IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70). CONNECT THE GROUNDING FOR THIS EQUIPMENT TO THE BUILDING'S EXISTING GROUND SYSTEM.

12. PROVIDE LATERAL SEISMIC RESTRAINTS AS REQUIRED IN ACCORDANCE WITH THE LATEST EDITION OF APPLICABLE BUILDING CODE FOR ALL EQUIPMENT AND RACEWAYS AS DESCRIBED WITHIN THE CODE.

13. PROVIDE ALL MISCELLANEOUS STEEL SHAPES, HANGERS, RODS, STRAPS, ETC. REQUIRED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT.

14. PROVIDE APPLICABLE PLUGS OR COVERS FOR ALL OPENINGS IN CONDUIT FITTINGS, J-BOXES, ETC.

15. PROVIDE TEMPORARY LIGHTING AND POWER, AS REQUIRED, DURING CONSTRUCTION. REMOVE WIRING AND DEVICES AT END OF CONSTRUCTION.

16. PROVIDE FIRE RATED SLEEVES AT ALL FIREWALL PENETRATIONS AND SEAL AROUND SLEEVES AND PIPES WITH FIRE STOP SEALANT. THIS CONTRACTOR SHALL HIRE INDIVIDUALS SKILLED IN SUCH WORK TO DO THE SEALING AND FIREPROOFING. THESE INDIVIDUALS HIRED SHALL NORMALLY AND ROUTINELY BE EMPLOYED IN THE SEALING AND FIREPROOFING OCCUPATION.

17. UNLESS DIRECTED OTHERWISE, ALL CUTTING AND PATCHING OF NEW AND EXISTING WALLS, CEILINGS OR FLOORS FOR REMOVALS OR INSTALLATION OF EQUIPMENT, IS THE RESPONSIBILITY OF THE CONTRACTOR WHOSE WORK PENETRATES THE OPENING. THE CONTRACTOR RESPONSIBLE SHALL HIRE INDIVIDUALS SKILLED IN SUCH WORK TO DO THE PATCHING AND PAINTING. THESE INDIVIDUALS HIRED SHALL NORMALLY AND ROUTINELY BE EMPLOYED IN THE PATCHING AND PAINTING OCCUPATION. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING, WITHOUT ADDITIONAL CHARGE, ANY EXISTING WORK DAMAGED BY HIM DURING THE COURSE OF THIS CONSTRUCTION.

18. VERIFY AFTER ALL WORK IS COMPLETED THAT ALL OPENINGS IN WALLS AND CEILINGS ARE PATCHED AND PAINTED TO MATCH EXISTING SURFACES.

19. APPLY FOR AND PROCURE ALL REQUIRED PERMITS, CERTIFICATES, AND AGENCY APPROVALS REQUIRED FOR THE LAWFUL PROSECUTION OF THE WORK UNLESS OTHERWISE DIRECTED. PROVIDE THE OWNER WITH COPIES OF ALL REQUIRED CERTIFICATIONS AND APPROVALS.

20. PROVIDE THE OWNER WITH COMPLETE AND ACCURATE "AS INSTALLED DOCUMENTATION" AT THE COMPLETION OF THE PROJECT.

21. PROVIDE TESTS AS REQUIRED BY THE OWNER OR ANY INSPECTION DEPARTMENT. TESTS SHALL VERIFY WHETHER THE EQUIPMENT AND SYSTEMS INSTALLED COMPLY WITH THE SPECIFICATIONS AND ARE IN PROPER WORKING ORDER. PROVIDE TEST RESULTS TO THE OWNER.

22. EQUIPMENT LISTED IN THESE DOCUMENTS BY MANUFACTURE AND MODEL NUMBER ESTABLISHES A STANDARD OF QUALITY FOR THE EQUIPMENT. EQUAL SUBSTITUTES MAY BE ACCEPTABLE. WRITTEN APPROVAL OF THE PROPOSED SUBSTITUTION IS REQUIRED PRIOR TO PURCHASE OR INSTALLATION.

23. SUBMIT SHOP DRAWINGS FOR ALL MAJOR MANUFACTURED ITEMS REQUIRED ON THIS PROJECT. A MINIMUM OF 4 COPIES SHALL BE SUBMITTED. EQUIPMENT OR SYSTEM COMPONENTS SHALL NOT BE PURCHASED OR INSTALLED PRIOR TO CONTRACTORS RECEIPT OF THE REVIEWED SHOP DRAWINGS. REVIEW OF SHOP OR INSTALLATION DRAWINGS SHALL ONLY BE CONSTRUED TO AFFLY TO GENERAL LAYOUT AND CONFORMANCE OF THE EQUIPMENT TO THE DESIGN CONCEPT OF THE PROJECT AND FOR CONFORMANCE WITH THE GENERAL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE RESPONSIBILITY FOR DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE THE CONTRACTOR'S UNLESS THE CONTRACTOR HAS, IN WRITING, SPECIFICALLY CALLED ATTENTION TO SUCH DEVIATIONS AT THE TIME OF SUBMISSION AND HAS RECEIVED WRITTEN APPROVAL OF SUCH DEVIATIONS FROM THE OWNER.

24. PROVIDE PRODUCT DATA INCLUDING INSTALLATION AND STARTUP INSTRUCTIONS FOR ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT PRIOR TO PURCHASE. SUBMITTALS SHALL INCLUDE PERFORMANCE DATA, WIRING DIAGRAMS, AND MAINTENANCE INSTRUCTIONS.

25. ALL WIRING SHALL BE COPPER TYPE THHN (INTERIOR) AND THWN (EXTERIOR).

26. ALL LIGHTING CIRCUIT HOMERUNS SHALL BE MINIMUM #10 AWG.

27. WIRING AND ASSOCIATED RACEWAYS NOT SHOWN ON THE DRAWINGS SHALL BE SIZED PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) UNLESS NOTED OTHERWISE.

28. RACEWAYS:

- EXPOSED INDOOR: ELECTRICAL METALLIC TUBING (EMT) OR AS INDICATED
- CONCEALED INDOOR: EMT, FLEXIBLE METAL CONDUIT OR AS INDICATED
- IN CONCRETE SLAB: GALVANIZED RIGID STEEL, PVC, OR AS INDICATED
- FINAL CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION, MOVEMENT, OR ADJUSTMENT: 3'-0" MINIMUM LENGTH OF LIQUID TIGHT FLEXIBLE METAL CONDUIT.
- CONNECTION TO LIGHT FIXTURES: 6'-0" MAXIMUM LENGTH OF FLEXIBLE ARMOR CLAD CABLE, TYPE AC OR MC.
- MINIMUM RACEWAY SIZE IS: 3/4" FOR POWER WIRING.
  1/2" FOR SIGNAL & CONTROL CABLING

29. ALL SIZING OF EQUIPMENT FOR CONNECTION TO MECHANICAL EQUIPMENT IS BASED ON MECHANICAL EQUIPMENT THAT IS SPECIFIED. THIS CONTRACTOR SHALL VERIFY ALL POWER REQUIREMENTS FOR ACTUAL EQUIPMENT INSTALLED. COORDINATE ANY MODIFICATIONS WITH THE ENGINEER PRIOR TO INSTALLATION.

30. ALL CUTTING AND PATCHING OF ROOF SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS DIRECTED OTHERWISE. RESPONSIBLE CONTRACTOR SHALL SECURE THE SERVICES OF THE INSTALLED ROOFING MANUFACTURER'S CERTIFIED ROOFING TECHNICIAN PRIOR TO ANY PENETRATIONS OF EXISTING ROOFING ARE MADE TO MAINTAIN ANY WARRANTIES OF NEW OR EXISTING ROOF SYSTEM. ALL PENETRATIONS SHALL BE SEALED WATER-TIGHT

31. ALL ELECTRICAL PANELS WITHIN CONTRACT AREA SHALL BE PROVIDED WITH UP-TO-DATE, TYPED INDEX CARDS MOUNTED IN PLASTIC HOLDERS ON THE INSIDE OF EACH ENCLOSURE DOOR.

32. THE FACILITY OPERATIONS SHALL REMAIN FUNCTIONAL DURING CONSTRUCTION. THIS CONTRACTOR SHALL PROVIDE FULL DUST BARRIER ENCLOSURES AROUND ALL CONSTRUCTION AND KEEP ALL AREAS CLEAR OF ALL DIRT AND DEBRIS. THIS CONTRACTOR SHALL THOROUGHLY COORDINATE, AND SCHEDULE CONSTRUCTION WITH GENERAL CONTRACTOR AND THE OWNER PRIOR TO COMMENCING CONSTRUCTION.

33. PROVIDE NAMEPLATES CONSTRUCTED OF 1/16" INCH THICK LAMINATED MATERIAL. ENGRAVE THROUGH COLORED SURFACE MATERIAL TO CONTRASTING COLORED SUB-LAYER. USE RECEPTACLE LABELS BY ELECTRONIC LABELER BROTHER P-TOUCH, MODEL PT-20/28, DYMO TAPE OR APPROVED EQUAL. ALSO, UTILIZE BLCK NON-ERASE MARKER TO PRINT INFO ON INSIDE OF RESPECTIVE FACEPLATES.

- ELECTRICAL FACEPLATE PROVIDE PANEL & CIRCUIT NUMBER
- IT OUTLET PROVIDE DROP IDENTIFICATION. COORDINATE ID WITH STOCKTON IT PERSONNEL

ELECTRICAL SYMBOLS LEGEND

- XX-X — CONDUIT AND/OR WIRING HOMERUN TO PANELBOARD. TEXT INDICATES PANEL DESIGNATION AND CIRCUIT NUMBER.
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- CONDUIT WITH CAP UNLESS OTHERWISE NOTED)
- DEMOLITION OR NEW WORK
- EXISTING TO REMAIN
- UNFUSED DISCONNECT SWITCH
- FLUSH WALL MOUNTED JUNCTION BOX OR JUNCTION BOX ABOVE CEILING
- WALL OUTLET BOX FOR TELEPHONE W/ 1"C (W/ PULL CORD) TO ABOVE ACCESSIBLE FINISHED CEILING MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED
- WALL OUTLET BOX FOR DATA W/ 1"C (W/ PULL CORD) TO ABOVE ACCESSIBLE FINISHED CEILING MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED
- (S)A — ADDRESSABLE DUAL TECHNOLOGY FIRE ALARM SYSTEM SMOKE DETECTOR WITH AUDIBLE BASE
- (H)A — ADDRESSABLE FIRE ALARM SYSTEM RATE-OF RISE/FIXED TEMP HEAT DETECTOR WITH AUDIBLE BASE
- (D) — ADDRESSABLE FIRE ALARM SYSTEM DUCT DETECTOR WITH REMOTE TEST SWITCH
- F — FIRE ALARM SYSTEM ADDRESSABLE MANUAL PULL STATION - SIMPLEX MODEL #4099-0001
- H #a — FIRE ALARM SYSTEM AUDIO/VISUAL UNIT - SIMPLEX MODEL 4903-9426 ("a" INDICATES CANDELLA LEVEL)
- #a — FIRE ALARM SYSTEM VISUAL UNIT - SIMPLEX MODEL #4904-9169 ("a" INDICATES CANDELLA LEVEL)
- 208/120V BRANCH CIRCUIT PANELBOARD - FLUSH MOUNTED
- WALL OUTLET BOX AND 120V, 20 AMP DUPLEX CONVENIENCE RECEPTACLE MOUNTED 18" ABOVE FINISHED UNLESS OTHERWISE NOTED. (+ INDICATES MOUNTED AT COUNTERTOP HEIGHT) COORDINATE LOCATION WITH ARCHITECTURAL PLANS
- WALL OUTLET BOX AND 120V, 20 AMP GFI RECEPTACLE ("CT" INDICATES MOUNTED AT COUNTERTOP HEIGHT. COORDINATE LOCATION WITH ARCHITECTURAL PLANS
- WALL OUTLET BOX AND 120V, 20 AMP QUADRAPLEX RECEPTACLE MOUNTED 18" AFF UNLESS OTHERWISE NOTED. (+ INDICATES MOUNTED AT COUNTERTOP HEIGHT. COORDINATE LOCATION WITH ARCHITECTURAL PLANS
- 2X2 FLUORESCENT LIGHTING FIXTURE
- EM — 2X2 FLUORESCENT LIGHTING FIXTURE ON UNSWITCHED CIRCUIT FOR NIGHT LIGHTING - EM INDICATES FIXTURE PROVIDED W/ INTERNAL BATTERY BACK-UP
- IX4 FLUORESCENT LIGHTING FIXTURE - LETTER "A" INDICATES TYPE
- RECESSED LED DOWNLIGHT LIGHT
- CEILING OUTLET BOX AND ILLUMINATED EXIT SIGN (SHADED QUADRANT INDICATES FACE). DIRECTIONAL ARROWS AS INDICATED ON PLANS. LETTER "A" INDICATES TYPE
- RECESSED LED STRIP LIGHT
- RIBBON LIGHT
- S_a — WALL OUTLET BOX AND SINGLE POLE TOGGLE-TYPE SWITCH - 20 AMP, MOUNTED 54" AFF UNLESS OTHERWISE NOTED. (LOWER CASE LETTER INDICATES LIGHTS TO BE CONTROLLED. IF NO LETTER IS INDICATED, ALL LIGHTS IN ROOM SHALL BE CONTROLLED)
- S^3_b — WALL OUTLET BOX AND THREE-WAY TOGGLE TYPE SWITCH - 20 AMP, MOUNTED 54" AFF UNLESS OTHERWISE NOTED. (LOWER CASE LETTER INDICATES LIGHTS TO BE CONTROLLED. IF NO LETTER IS INDICATED, ALL LIGHTS IN ROOM SHALL BE CONTROLLED)
- S^3_v — WALL OUTLET BOX WITH VOLUME CONTROL SWITCH FOR LOCAL PAGING SPEAKER(S)
- OS — 4"SQ. OUTLET BOX AND OCCUPANCY SENSOR (DUAL TECHNOLOGY TYPE) MOUNTED ON CEILING UNLESS OTHERWISE NOTED.
- OS R — 4"SQ. OUTLET BOX AND RAB OCCUPANCY SENSOR MOUNTED ON CEILING UNLESS OTHERWISE NOTED
- MD — SECURITY SYSTEM MOTION SENSOR
- DC — SECURITY SYSTEM DOOR CONTACTOR
- SP WP — SECURITY SYSTEM EXTERIOR (WP - WEATHERPROOF SPEAKER)
- SP V — INDOOR PAGING SYSTEM SPEAKER (V INDICATES VOLUME CONTROL INTEGRAL W/ SPEAKER
- EMERGENCY BATTERY PACK
- EMERGENCY LIGHTING REMOTE HEAD
- GRADE MOUNTED OUTLET BOX AND 120V, 20 AMP G.F.I. DUPLEX RECEPTACLE WITH WEATHER PROOF, LOCKING COVER. COORDINATE LOCATION WITH ARCHITECTURAL PLANS.
- AP z — CEILING MOUNTED WIRELESS ACCESS POINT (NUMBER INDICATES QUANTITY OF CAT6A CABLES)

ABBREVIATIONS LEGEND

ABBREVIATION	DESCRIPTION
A	AMPERES
AC	AIR CONDITIONING
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
AHU	AIR HANDLING UNIT
AFF	ABOVE FINISHED FLOOR
ARCH	ARCHITECT
AWG	AMERICAN WIRE GAUGE
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT - RACEWAY
CB	CIRCUIT BREAKER
CD	CONTRACT DOCUMENTS
CKT	CIRCUIT
CLG	CEILING
CM	CONSTRUCTION MANAGER
CT	COUNTER TOP
CU	COPPER
DWG	DRAWING
EM	EMERGENCY
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EOL	END OF LINE
EWH	ELECTRIC WATER HEATER
EWC	ELECTRIC WATER COOLER
E/R	EXISTING TO REMAIN
F	FAHRENHEIT
FIXT	FIXTURE
FLA	FULL LOAD AMPS
G	GROUND OR GROUNDING
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPT
HZ	HERTZ
HP	HORSE POWER
ISCA	SHORT CIRCUIT CURRENT RATING
KVA	KILOVOLT AMPERES
KW	KILOWATTS
KWH	KILOWATT HOUR
LSG	LONG TIME, SHORT TIME, GROUND FAULT
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MOUNTING HEIGHT
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NL	NIGHT LIGHT
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PNL	PANEL OR PANELBOARD
Ø, PH	PHASE
RTU	ROOF TOP UNIT
SP	SPARE
TBD	TO BE DECIDED
TEL	TELEPHONE
TW/SH	TWISTED/SHIELDED
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLT
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
WH	WATER HEATER
XFMR	TRANSFORMER

ELECTRICAL DRAWING LIST:

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COVERSHEET

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7 OF 11

Sheet No.
E-0

Project No.
HRG-XXXXX

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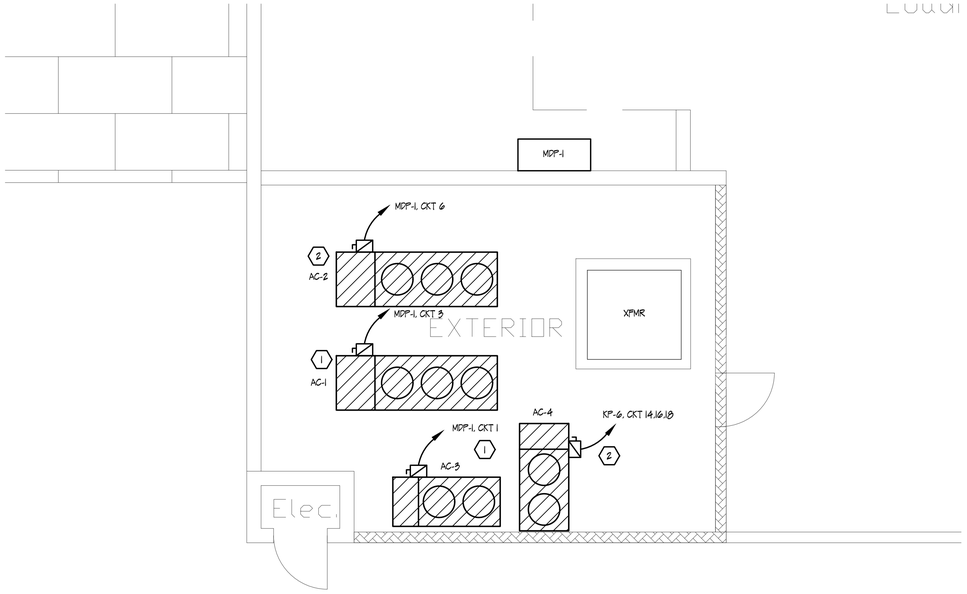
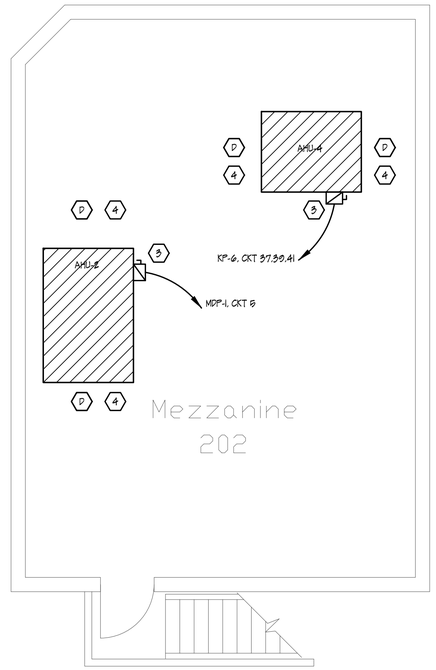
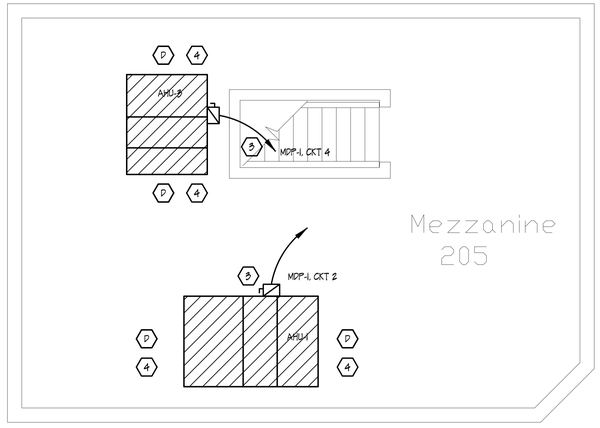


1 / E-1 ELECTRICAL FIRST FLOOR EXTERIOR DEMOLITION WORK PLAN
SCALE: 1/4" = 1'-0"



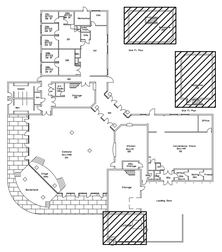
2 / E-1 ELECTRICAL SECOND FLOOR DEMOLITION WORK PARTIAL PLAN - MEZZANINE A
SCALE: 1/4" = 1'-0"



3 / E-1 ELECTRICAL SECOND FLOOR DEMOLITION WORK PARTIAL PLAN - MEZZINE B
SCALE: 1/4" = 1'-0"

DEMOLITION WORK NOTES

1. SAFE OFF EXISTING CIRCUIT FOR CONDENSING UNIT (AC-1 & AC-3). DISCONNECT AND REMOVE EXISTING CIRCUIT INCLUDING DISCONNECT SWITCH, CONDUCTORS AND 3-POLE BREAKER IN ASSOCIATED DISTRIBUTION PANEL (MDP-1 LOCATED IN STORAGE ROOM). EXISTING UNDERGROUND CONDUIT SHALL BE ABANDONED. SWITCH "OFF" BREAKER AND LABEL ASSOCIATED CIRCUIT BREAKERS AS "SPARE".
2. SAFE OFF EXISTING CIRCUIT FOR CONDENSING UNIT (AC-2 & AC-4). DISCONNECT AND REMOVE EXISTING CIRCUIT INCLUDING DISCONNECT SWITCH, CONDUCTORS AND 3-POLE BREAKER IN ASSOCIATED DISTRIBUTION PANEL (MDP-1 LOCATED IN STORAGE ROOM & PANEL KP-6 IN KITCHEN CLOSET). EXISTING UNDERGROUND CONDUIT SHALL BE ABANDONED.
3. SAFE OFF EXISTING CIRCUIT FOR AHU. DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH AND 3-POLE BREAKER IN ASSOCIATED DISTRIBUTION PANEL. EXISTING ELECTRICAL CIRCUIT CONDUIT AND CONDUCTORS TO REMAIN AND BE REUSED. (MDP-1 LOCATED IN STORAGE ROOM & PANEL KP-6 IN KITCHEN CLOSET).
4. REMOVE EXISTING DUCT SMOKE DETECTORS LOCATED IN THE SUPPLY DUCT AND RETURN DUCT FOR EACH EXISTING AHU (TOTAL OF 8 DUCT DETECTORS). NOTE THAT THE NEW DUCT DETECTORS WILL BE MOUNTED IN THE RETURN DUCT ONLY IN THE NEW AHUS.



KEY PLAN

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Sheet Title
ELECTRICAL
DEMOLITION WORK PLANS

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8 OF 11

Sheet No.
E-1

Project No.
HRG-XXXXX

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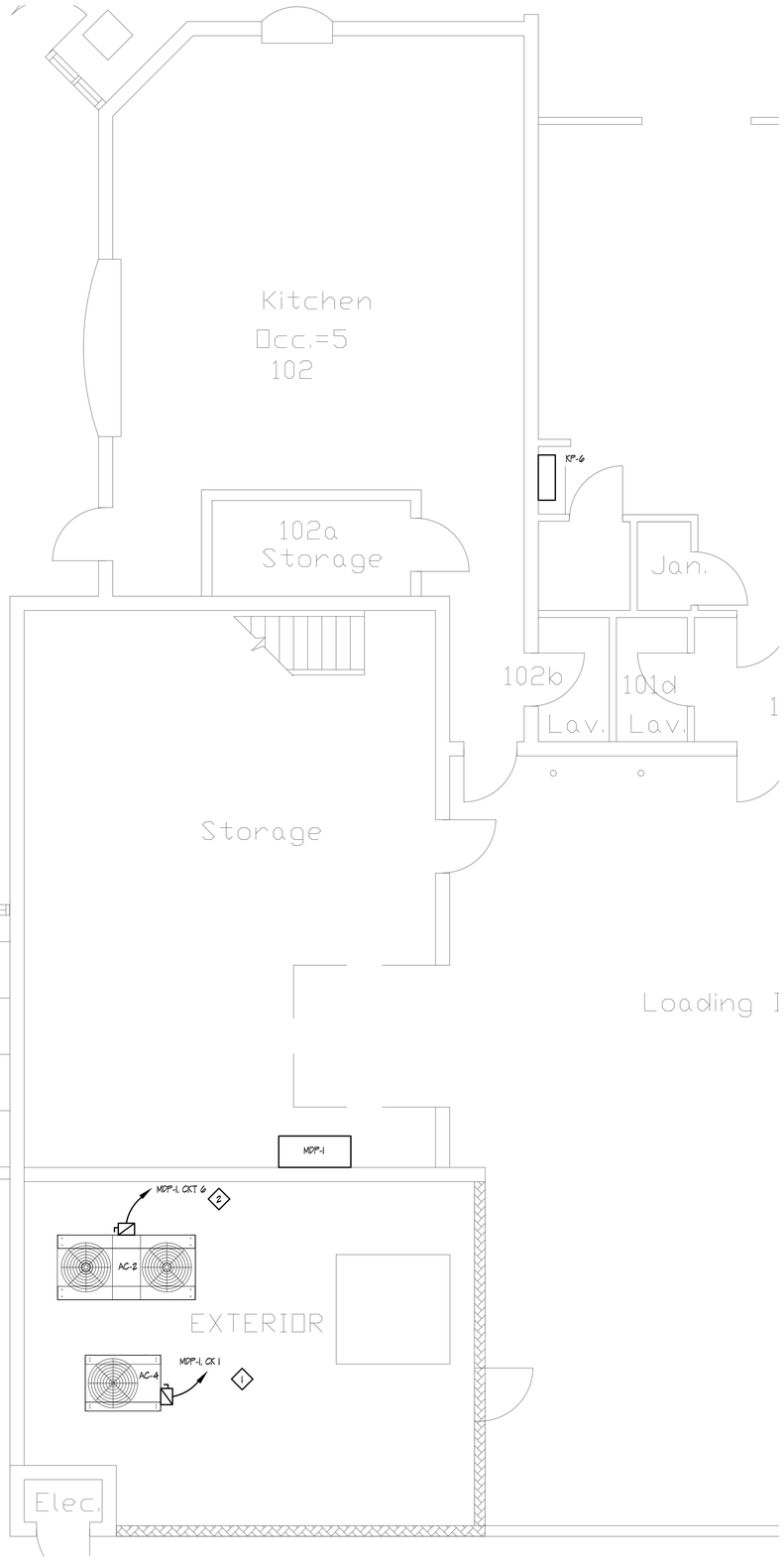
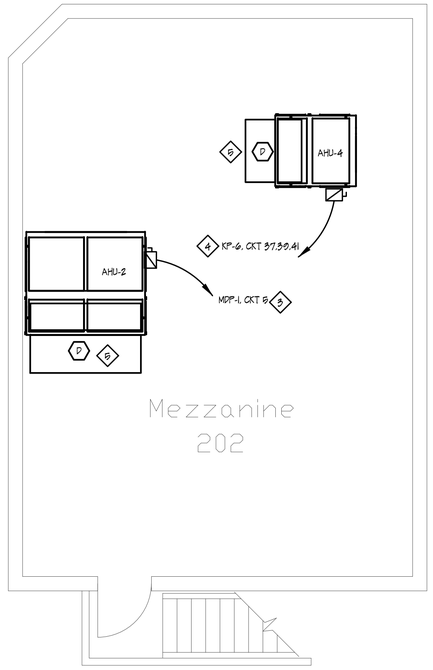


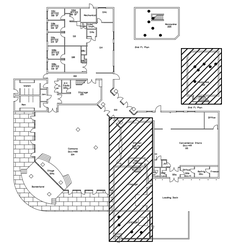
1 E-2 ELECTRICAL FIRST FLOOR PROPOSED WORK PLAN
SCALE: 1/4" = 1'-0"



2 E-2 ELECTRICAL SECOND FLOOR PROPOSED WORK PARTIAL PLAN - MEZZANINE A
SCALE: 1/4" = 1'-0"

NEW WORK NOTES

1. PROVIDE NEW 3-POLE NEMA 3R 30-AMP FUSED DISCONNECT SWITCH (20 AMP FUSES). PROVIDE NEW 20 AMP, 3-POLE CIRCUIT BREAKER IN PANEL MDP-1. PROVIDE NEW POWER CIRCUIT, (3) #12 & (1) #12G IN 3/4" C.
2. PROVIDE NEW 3-POLE, NEMA 3R, 60-AMP FUSED DISCONNECT SWITCH (45A FUSES). PROVIDE NEW 45-AMP, 3-POLE CIRCUIT BREAKER IN PANEL MDP-1. PROVIDE NEW POWER CIRCUIT, (3) #8 & (1) #10G IN 3/4" C.
3. PROVIDE NEW 3-POLE, NEMA 1, 30-AMP COMBINATION FUSED DISCONNECT SWITCH/MOTOR STARTER (15 AMP FUSES). PROVIDE NEW 15-AMP, 3-POLE CIRCUIT BREAKER IN PANEL MDP-1. NEW MOTOR STARTER TO INCLUDE 24-VOLT HOLDING COIL AND THERMAL OVERLOAD RELAY. RECONNECT TO EXISTING CONDUIT AND CONDUCTORS.
4. PROVIDE NEW 3-POLE, NEMA 1, 30-AMP COMBINATION FUSED DISCONNECT SWITCH/MOTOR STARTER (20 AMP FUSES). PROVIDE NEW 20-AMP, 3-POLE CIRCUIT BREAKER IN PANEL KF-6. NEW MOTOR STARTER TO INCLUDE 24-VOLT HOLDING COIL AND THERMAL OVERLOAD RELAY. RECONNECT TO EXISTING CONDUIT AND CONDUCTORS.
5. PROVIDE AND INSTALL NEW DUCT-MOUNTED SMOKE DETECTOR AND FIRE ALARM RELAY MODULE AND INTEGRATE INTO EXISTING FIRE ALARM SYSTEM. DUCT-DETECTOR TO SHUT DOWN AHU FAN UPON INITIATION. NOTE THAT THE DUCT DETECTOR IS TO BE LOCATED IN THE RETURN AIR DUCT OF EACH AHU.



KEY PLAN

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CERTIFICATE OF AUTHORIZATION: #24GA28138200

MATTHEW DAVID WELLS, N.J.P.E.
PROFESSIONAL ENGINEER, LIC. NO. 24GE04594000

SIGNATURE NOT VALID WITHOUT RAISED SEAL
DATE

Project
HVAC UPGRADES FOR
STOCKTON UNIVERSITY LAKESIDE LODGE
101 VERA KING FERRIS DRIVE, GALLOWAY, NJ 08205

Project Bid Date

Revisions	By	Date

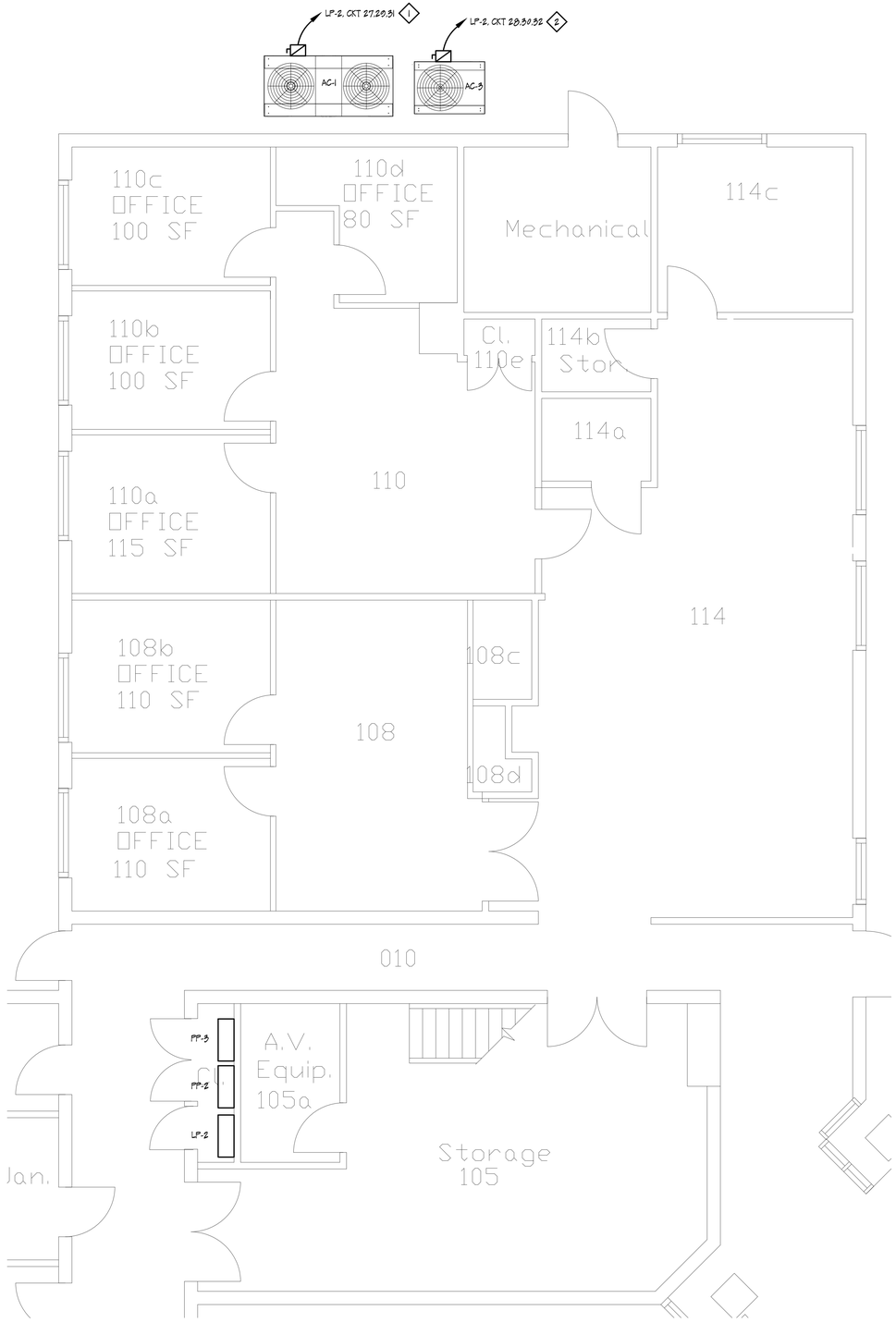
Sheet Title
ELECTRICAL
PROPOSED WORK PLAN

Drawn By	Sheet No.	
MW/GB	9	OF 11
Chk'd By		
MW/GB		

Sheet No.
E-2

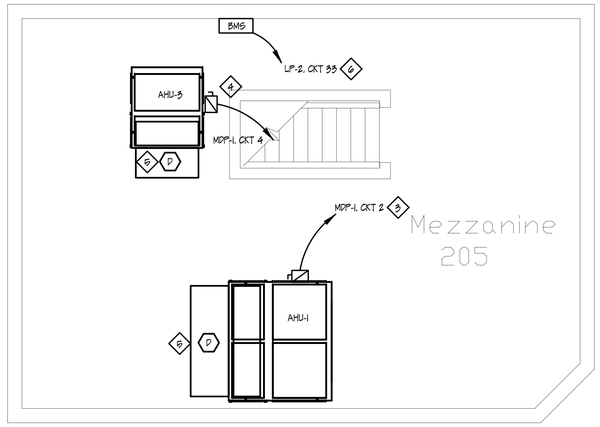
Project No.
HRG-XXXXX

Do Not Scale Drawings — Field check all dimensions prior to start of construction.



1 E-3 ELECTRICAL FIRST FLOOR PROPOSED WORK PLAN

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

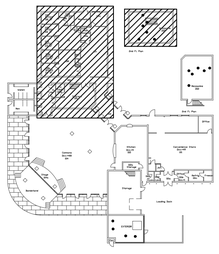


2 E-3 ELECTRICAL SECOND FLOOR PROPOSED WORK PARTIAL PLAN - MEZZANINE B

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

NEW WORK NOTES

1. PROVIDE NEW 3-POLE NEMA 3R 100-AMP FUSED DISCONNECT SWITCH (100 AMP FUSES). PROVIDE NEW 100 AMP, 3-POLE CIRCUIT BREAKER IN PANEL LP-2. PROVIDE NEW POWER CIRCUIT, (3) #2 & (1) #8G IN 1" C.
2. PROVIDE NEW 3-POLE, NEMA 3R, 60-AMP FUSED DISCONNECT SWITCH (45A FUSES). PROVIDE NEW 45-AMP, 3-POLE CIRCUIT BREAKER IN PANEL LP-2. PROVIDE NEW POWER CIRCUIT, (3) #8 & (1) #10G IN 3/4" C.
3. PROVIDE NEW 3-POLE, NEMA 1, 30-AMP COMBINATION FUSED DISCONNECT SWITCH/MOTOR STARTER (18 AMP FUSES). PROVIDE NEW 18-AMP, 3-POLE CIRCUIT BREAKER IN PANEL MDP-1. NEW MOTOR STARTER TO INCLUDE 24-VOLT HOLDING COIL AND THERMAL OVERLOAD RELAY. RECONNECT TO EXISTING CONDUIT AND CONDUCTORS.
4. PROVIDE NEW 3-POLE, NEMA 1, 30-AMP COMBINATION FUSED DISCONNECT SWITCH/MOTOR STARTER (18 AMP FUSES). PROVIDE NEW 18-AMP, 3-POLE CIRCUIT BREAKER IN PANEL MDP-1. NEW MOTOR STARTER TO INCLUDE 24-VOLT HOLDING COIL AND THERMAL OVERLOAD RELAY. RECONNECT TO EXISTING CONDUIT AND CONDUCTORS.
5. PROVIDE AND INSTALL NEW DUCT-MOUNTED SMOKE DETECTOR AND FIRE ALARM RELAY MODULE AND INTEGRATE INTO EXISTING FIRE ALARM SYSTEM. DUCT-DETECTOR TO SHUT DOWN AHU FAN UPON INITIATION. NOTE THAT THE DUCT DETECTOR IS TO BE LOCATED IN THE RETURN AIR DUCT OF EACH AHU.
6. PROVIDE NEW SINGLE-PHASE 120V, 20AMP CIRCUIT FOR NEW SC+ BMS CONTROLLER. CIRCUIT TO BE (2) #12 & (1) #12G IN 3/4" C. PROVIDE NEW 20-AMP, SINGLE POLE CIRCUIT BREAKER IN PANEL LP-2.



KEY PLAN

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Revisions By Date

Sheet Title
ELECTRICAL
PROPOSED WORK PLAN

Drawn By MW/GB
Chk'd By MW/GB
10 OF 11

Sheet No.
E-3

Project No.
HRG-XXXXX

Do Not Scale Drawings - Field check all dimensions prior to start of construction.

EXISTING PANEL SCHEDULE					
Panel: MDP-1			Fed By:		
Location: Storage Room			480/277V - 3PH - 4 Wire		
CKT	AMPS	Load Description	CKT	AMPS	Load Description
1	**30**	**AC-3**	**2**	**30**	**AHU-1**
3	**50**	**AC-1**	**4**	**50**	**AHU-3**
5	**30**	**AHU-2**	**6**	**30**	**AC-2**
7	100	Closet Panel 2	8	100	Closet Panel 1
9	100	Pizza Kitchen Panel 5	10	100	Closet Panel 3
11	100	Pizza Kitchen Panel 4		20	Pole Lights - DAM
				20	Pole Lights - DAM
				15	Pole Light Control
12	400	Event Transformer		20	Rear Bubble Lights
					Blank
					Blank
	20	Lower Lane Poles			Blank
	20	Lower Lane Poles			Blank

MODIFIED PANEL SCHEDULE					
Panel: MDP-1			Fed By:		
Location: Storage Room			480/277V - 3PH - 4 Wire		
CKT	AMPS	Load Description	CKT	AMPS	Load Description
1	**20**	**AC-4**	**2**	**15**	**AHU-1**
3		**SPARE**	**4**	**15**	**AHU-3**
5	**15**	**AHU-2**	**6**	**45**	**AC-2**
7	100	Closet Panel 2	8	100	Closet Panel 1
9	100	Pizza Kitchen Panel 5	10	100	Closet Panel 3
11	100	Pizza Kitchen Panel 4		20	Pole Lights - DAM
				20	Pole Lights - DAM
				15	Pole Light Control
12	400	Event Transformer		20	Rear Bubble Lights
					Blank
					Blank
	20	Lower Lane Poles			Blank
	20	Lower Lane Poles			Blank

EXISTING PANEL SCHEDULE					
Panel: KP-6			Fed By:		
Location: Kitchen Closet			208/120V - 3PH - 4 Wire		
CKT	AMPS	Load Description	CKT	AMPS	Load Description
1	20		2	20	
3	20		4	20	
5	20		6	20	
7	20		8	20	
9	20		10	20	
11	20		12	20	
13	20		**14**		
15	20		**16**	**50**	**AC-4**
17	20		**18**		
19	20		20	30	Split AC
21	20		22		
23	20		24	30	Split AC
25	20		26		
27	20		28	20	
29	20		30	20	
31	20		32	20	
33	20		34	20	
35	20		36		
37			38	30	
39	**30**	**AHU-4**	40		
41			42	20	

MODIFIED PANEL SCHEDULE					
Panel: KP-6			Fed By:		
Location: Kitchen Closet			208/120V - 3PH - 4 Wire		
CKT	AMPS	Load Description	CKT	AMPS	Load Description
1	20		2	20	
3	20		4	20	
5	20		6	20	
7	20		8	20	
9	20		10	20	
11	20		12	20	
13	20		**14**		
15	20		**16**		**SPARE**
17	20		**18**		
19	20		20	30	Split AC
21	20		22		
23	20		24	30	Split AC
25	20		26		
27	20		28	20	
29	20		30	20	
31	20		32	20	
33	20		34	20	
35	20		36		
37			38	30	
39	**20**	**AHU-4**	40		
41			42	20	

1 E-4 ELECTRICAL PANEL SCHEDULES

SCALE: N/A

GENERAL NOTES

1. NO MODIFIED PANEL SCHEDULE IS PROVIDED FOR EXISTING PANEL LP-2. NEW CIRCUIT BREAKERS/LOADS TO BE ADDED TO PANEL LP-2 INCLUDE:
   - 3-POLE, 100-AMP FOR AC-1
   - 3-POLE, 45-AMP FOR AC-3
   - 1-POLE, 20-AMP FOR BMS CONTROLLER

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Revisions	By	Date

Sheet Title
ELECTRICAL PANEL SCHEDULES

Drawn By: MW/GB
Chk'd By: MW/GB

Sheet No.
E-4

Project No.
HRG-XXXXX

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