

MECHANICAL NOTES

1. SCOPE OF WORK: WORK INCLUDES THE FOLLOWING: FURNISH AND INSTALL ALL EQUIPMENT AND CONTROLS SHOWN ON THE ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS AND DESCRIBED IN THESE NOTES, THE BOOK SPECIFICATIONS AND THE CONTRACT DOCUMENTS. WORK INCLUDES BUT IS NOT LIMITED TO: DEMOLITION OF TEN PACKAGE ROOFTOP HEAT PUMPS, DUCTING, CONDENSATE PIPING, AND CONTROLS. CONTRACTOR SHALL FURNISH AND INSTALL, MAKE OPERABLE, AND TEST ALL SYSTEMS AND MECHANICAL EQUIPMENT SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS AND CONTRACT DOCUMENTS. IN CONNECTION THEREWITH, CONTRACTOR SHALL ALSO FURNISH AND INSTALL ALL NECESSARY DEVICES, HARDWARE, AND SYSTEMS REQUIRED TO MAKE SAID EQUIPMENT PROPERLY AND SAFELY OPERABLE, INCLUDING BUT NOT LIMITED TO, INSULATION, FILTERS, DUCT SYSTEMS, CONTROL SYSTEMS, AND PATCHING.

2. INTERPRETATION OF DRAWINGS, SPECIFICATIONS OR CONTRACT DOCUMENTS. IF ANY BIDDER IS IN DOUBT AS TO THE TRUE MEANING OF ANY PART OF THE DRAWINGS, THE SPECIFICATIONS OR OTHER PORTIONS OF THE CONTRACT DOCUMENTS; FINDS DISCREPANCIES, ERRORS OR OMISSIONS THEREIN; OR FINDS VARIANCES IN ANY OF THE CONTRACT DOCUMENTS WITH APPLICABLE RULES, REGULATIONS, ORDINANCES AND/OR LAWS, A WRITTEN REQUEST FOR AN INTERPRETATION OR CORRECTION THEREOF MAY BE SUBMITTED TO THE ENGINEER. IT IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE BIDDER TO SUBMIT SUCH REQUEST IN SUFFICIENT TIME FOR THE PREPARATION OF A RESPONSE THERETO AND DELIVERY OF SUCH RESPONSE TO ALL BIDDERS PRIOR TO THE SCHEDULED CLOSING FOR RECEIPT OF BID PROPOSALS. ANY REQUEST OF ANY BIDDER, PURSUANT TO THE FOREGOING SENTENCE THAT IS MADE LESS THAN SEVEN DAYS PRIOR TO THE SCHEDULED CLOSING DATE FOR THE RECEIPT OF BID PROPOSALS SHALL BE DEEMED UNTIMELY. ANY INTERPRETATION OR CORRECTION OF THE CONTRACT DOCUMENTS WILL BE MADE ONLY BY WRITTEN ADDENDUM DULY ISSUED BY THE OWNER OR THE ENGINEER. A COPY OF ANY SUCH ADDENDUM WILL BE MAILED OR OTHERWISE DELIVERED TO EACH BIDDER RECEIVING A SET OF THE CONTRACT DOCUMENTS. NO PERSON IS AUTHORIZED TO RENDER AN ORAL INTERPRETATION OR CORRECTION OF ANY PORTION OF THE CONTRACT DOCUMENTS TO ANY BIDDER, AND NO BIDDER IS AUTHORIZED TO RELY ON ANY SUCH ORAL INTERPRETATION OR CORRECTION. FAILURE TO REQUEST INTERPRETATION OR CLARIFICATION OF THE DRAWINGS, THE SPECIFICATIONS OR OTHER PORTIONS OF THE CONTRACT DOCUMENTS PURSUANT TO THE FOREGOING SHALL BE DEEMED TO BE A WAIVER OF ANY DISCREPANCY, DEFECT, OR CONFLICT THEREIN.

3. DIMENSIONS. ALL DIMENSIONS SHALL HAVE PREFERENCE OVER SCALE. ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL AND ENGINEERING DRAWINGS BEFORE PROCEEDING WITH WORK. IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON WORKING DRAWINGS. ALL SIZES OF EQUIPMENT AND MATERIALS SHALL BE VERIFIED WITH EQUIPMENT MANUFACTURER.

4. CODES AND STANDARDS: ALL WORK SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), 2022 CALIFORNIA BUILDING CODE, THE 2022 CALIFORNIA MECHANICAL CODE, THE 2022 CALIFORNIA PLUMBING CODE, THE 2022 CALIFORNIA ELECTRIC CODE, THE STATE OF CALIFORNIA, EQUIPMENT MANUFACTURER'S RECOMMENDED PROCEDURES, AND STANDARD CONSTRUCTION PRACTICES. NOTE: WHERE TWO OR MORE CODES CONFLICT, THE MOST RESTRICTIVE SHALL APPLY. NOTHING IN THESE PLANS AND SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO APPLICABLE CODES.

5. SUBMITTALS REQUIRED: PRIOR TO ORDERING EQUIPMENT AND MATERIALS, CONTRACTOR SHALL FURNISH TO ENGINEER / OWNER SUBMITTALS AND SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIALS PROPOSED FOR USE IN THIS PROJECT. ORDERING OF EQUIPMENT AND MATERIALS SHALL ONLY PROCEED AFTER SATISFACTORY REVIEW OF ALL SUBMITTALS BY CONTRACTOR / ENGINEER / OWNER. COPIES OF ALL OWNER'S MANUALS, WARRANTIES AND OTHER WRITTEN INFORMATION REGARDING SYSTEMS SHALL BE PRESENTED TO OWNER PRIOR TO THE COMPLETION OF THE PROJECT.

6. CONSTRUCTION OBSERVATION: IN ADDITION TO THE REQUIREMENT FOR OBTAINING INSPECTIONS BY THE LOCAL JURISDICTION, CONTRACTOR SHALL NOTIFY ENGINEER AT APPROPRIATE TIMES DURING THE CONSTRUCTION PROCESS SO THAT ENGINEER CAN VISIT SITE TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF CONTRACTOR'S WORK AND TO DETERMINE IF THE WORK IS PROCEEDING IN GENERAL ACCORDANCE WITH THE CONTRACT DOCUMENTS.

7. UNIT LOCATIONS: EQUIPMENT AND SYSTEM LOCATIONS SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL STRUCTURAL MEMBERS AND EXISTING CONDITIONS IN THE FIELD, AND LOCATE UNITS AND DUCTWORK TO AVOID INTERFERENCE. ANY SIGNIFICANT DEVIATIONS FROM THE PLANS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER. ALLOW CLEARANCE FOR DUCTWORK AND PIPING. ALL CLEARANCES REQUIRED BY UNIT MANUFACTURER SHALL BE MAINTAINED. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH CODES AND THE RECOMMENDED INSTALLATION PROCEDURES PUBLISHED BY THE MANUFACTURER.

8. DUCTWORK & PIPING: CONTRACTOR SHALL INSTALL NEW DUCTWORK AND PIPING IN THE APPROXIMATE LOCATIONS SHOWN ON THE DRAWINGS. ALL DUCTWORK & PIPING SHALL BE SECURELY ANCHORED TO THE BUILDING IN AN APPROVED MANNER THAT WILL RENDER IT FREE FROM VIBRATION AND LATERAL MOVEMENT. CONTRACTOR SHALL PROVIDE WITHOUT COST TO THE OWNER ALL REQUIRED TRANSITIONS AND OFFSETS TO AVOID CONFLICTS WITH STRUCTURE AND OTHER TRADES.

9. MATERIALS - DUCTWORK: ALL NEW DUCTWORK FOR HVAC SYSTEMS SHALL BE GALVANIZED STEEL CONFORMING TO ASTM SPEC A525.

RECTANGULAR DUCTWORK SHALL BE MADE FROM GALVANIZED STEEL SHEETS. DUCT CONSTRUCTION, AND REINFORCING SHALL BE PER TABLES 6-1, 6-2, AND 6-3 OF THE CALIFORNIA MECHANICAL CODE. DUCTWORK SHALL BE OF THE FOLLOWING GAUGES: UP TO 12" - 26 GAUGE. 13"-30" - 24 GAUGE. CURVED ELBOWS SHALL HAVE CENTRALIZE RADIUS NOT LESS THAN THE WIDTH OF THE DUCT. WHERE ABRUPT TURNS AND ELBOWS ARE USED, TURNING VANES SHALL BE PROVIDED. TAKE-OFFS FROM MAIN DUCTS SHALL BE MADE WITH 45 DEGREE ANGLES WITH VOLUME DAMPERS WHERE SHOWN. ALL PANELS SHALL BE CROSS BROKEN TO ENSURE RIGIDITY.

10. BALANCING: FOLLOWING INSTALLATION, CONTRACTOR SHALL START UP AND BALANCE ALL HVAC SYSTEMS TO CONFORM TO AIR VOLUMES INDICATED ON PLANS. COPIES OF BALANCING RECORDS SHALL BE FURNISHED TO BUILDING OWNER AND PROJECT ARCHITECT. SEE BOOK SPECIFICATIONS FOR FURTHER REQTS.

11. CLEANUP: EVERY DAY, AND AFTER ALL WORK HAS BEEN COMPLETED, CONTRACTOR SHALL CLEAN ENTIRE JOB-SITE OF ALL DEBRIS ASSOCIATED WITH MECHANICAL SYSTEMS. EXPOSED PARTS WHICH ARE TO BE PAINTED SHALL BE THOROUGHLY CLEANED READY FOR PAINTING.

12. WIRING: ALL WIRING SHALL BE PERFORMED IN ACCORDANCE WITH NEC REQTS. ALL WIRING SHALL BE IN CONDUIT. ALL INTERIOR LOW VOLTAGE AND CONTROL WIRING SHALL BE IN WIREMOLD AND IN FAN ROOMS SHALL BE IN CONDUIT. EXPOSED CONDUIT SHALL BE INSTALLED IN A SQUARE, PLUMB, AND LEVEL MANNER WITH THOUGHT GIVEN TO THE FINAL APPEARANCES. PROVIDE TO ENGINEER SHOP DRAWING FOR CONTROL TRANSFORMER CONFIGURATIONS DETAILING CIRCUITS TO BE USED, LOAD CALCULATIONS, WIRE SIZES, AND LOCATIONS. WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT NATIONAL ELECTRICAL CODE AND ELECTRICAL SPECIFICATIONS. ALL TRANSFORMERS SHALL BE PROTECTED BY PROPERLY SIZED CIRCUIT BREAKER OR FUSE(S). ALL TRANSFORMERS SHALL HAVE RESETABLE BREAKER ON THE LOAD SIDE. ALL LOW VOLTAGE CONTROL & COMMUNICATIONS WIRING SHALL BE DONE ACCORDING TO MANUFACTURERS INSTALLATION MANUAL. PROVIDE SUBMITTALS ON WIRE AND ENCLOSURES.

16. COORDINATION DURING CONSTRUCTION: THE CONTRACTOR SHALL COORDINATE ANY NECESSARY CHANGES IN WORK SCHEDULING WITH THE COLLEGE TO MINIMIZE THE DISRUPTION. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY HIS WORK TO BUILDING(S) AND EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.

17. CORRECTION OF WORK: THE CONTRACTOR SHALL PROMPTLY CORRECT ALL WORK THE OWNER FINDS DEFECTIVE OR FAILING TO CONFORM TO THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BEAR ALL COSTS REQUIRED BY THE CONTRACT DOCUMENTS, IF ANY OF THE WORK IS FOUND TO BE DEFECTIVE OR NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL CORRECT IT PROMPTLY AFTER RECEIPT OF A WRITTEN NOTICE FROM THE OWNER TO DO SO.

18. AS-BUILT DRAWINGS SHALL BE GIVEN TO THE OWNER PRIOR TO ACCEPTANCE OF THE PROJECT. AS-BUILTS SHALL BE ON PRINTED SHEETS AND ON MAGNETIC MEDIA.

19. ALL DUCTING SHALL BE KEPT CLEAN DURING THE CONSTRUCTION PROCESS. DURING AIR BALANCE REVIEW THE DUCTING WILL BE INSPECTED FOR CLEANLINESS. SHOULD DEBRIS AND OR DUST BE FOUND IN THE DUCT SYSTEMS SHALL BE CLEANED PER NACDA STANDARDS.

22. CONDENSATE DRAINS SHALL TERMINATE AT DRYWELLS. DRAINS SHALL BE U.S. MANUFACTURED TYPE 'L' COPPER WITH WROT COPPER FITTINGS AND SOLDERED JOINTS. CONDENSATE DRAINS SHALL HAVE CLEAN-OUTS AT CHANGE OF DIRECTION AND SLOPE TO DRAIN. INSULATE INTERIOR CONDENSATE DRAINS WITH CLOSED CELL FOAM PIPE INSULATION.

GENERAL NOTES

1. CUTTING, BORING SAWCUTTING OR DRILLING THROUGH THE NEW OR EXISTING STRUCTURAL ELEMENTS TO BE DONE ONLY WHEN SO DETAILED ON THE DRAWINGS OR ACCEPTED BY THE MECHANICAL AND STRUCTURAL ENGINEER WITH THE APPROVAL OF DSA REPRESENTATIVE.

UV LIGHT NOTES

1. REMOVE (E) UV LIGHT SYSTEM AT EACH UNIT AND RE-INSTALL IN NEW UNIT DUCTING. PROVIDE ACCESS PANEL IN SHROUD FOR LIGHT CHANGING. CONNECT TO NEW UNIT POWER SUPPLY DOWNSTREAM OF DISCONNECT. REINSTALL VIEW PORT AND WARNING LABELS.

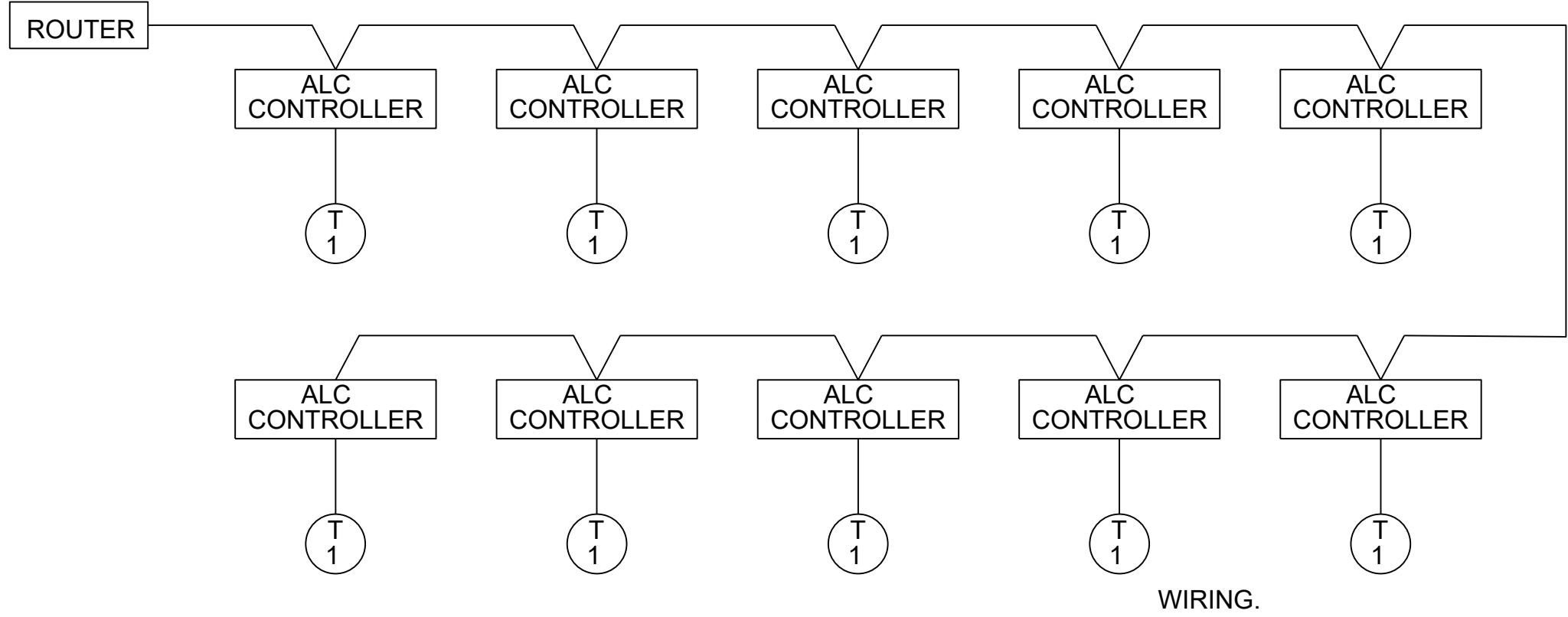
EXISTING UNITS SCHEDULE

TAG		TYPE	MAKE & MODEL	OPERATING WEIGHT (LBS)
AC 1		ROOFTOP UNIT	BARD PH11361-B	365
AC 2		ROOFTOP UNIT	BARD PH11481-B	450
AC 3		ROOFTOP UNIT	BARD PH11242	365

NEW UNITS SCHEDULE - HEAT PUMPS

TAG	TYPE	MAKE & MODEL	COOLING TOTAL CAPACITY (BTUH)	HEATING CAPACITY (BTUH)	NOMINAL TONS	EER2 SEER2	CFM	CFM OSA	OPERATING WEIGHT (LBS)	ELECTRICAL DATA			SUPPLEMENTAL HEAT KIT		ACCESSORIES
										POWER	MCA	MOCP	SUPPLEMENTAL HEAT KIT	SEPARATE POWER SUPPLY	
<div>AC 1</div> <div>A-G</div>	ROOFTOP HEAT PUMP	TRANE 5WCZ5036*3	35,000	33,000	3.0	11.5 15.2	1,100	160	373	208-3-60	20	30	208/1/60 3.7 KW	30 AMP FUSED DISCONNECT	R-454B REFRIGERANT, E-COAT CONDENSER COILS. FILTER RACK 2" MERV 13 FILTERS. <div></div>
<div>AC 2</div> <div>A-B</div>	ROOFTOP HEAT PUMP	TRANE 5WCZ5048*3	39,500	35,800	4.0	11.5 15.2	1400	200	353	208-3-60	23	30	208/1/60 3.7 KW	30 AMP FUSED DISCONNECT	
<div>AC 3</div> <div>A</div>	ROOFTOP HEAT PUMP	TRANE 5WCZ5024	23,400	22,200	2.0	11.5 15.2	800	120	375	208-1-60	18	25	208/1/60 3.7 KW	30 AMP FUSED DISCONNECT	
<div>T 1</div>	THERMOSTAT	EXISTING AUTOMATED LOGIC CONTROLS				REMOVE, REINSTALL & RECONNECT EXISTING CONTROLS WITH NEW DISCRETE OUTPUT FOR SUPPLEMENTAL ELECTRICAL HEAT CONTROL. MODIFY PROGRAMMING AND GRAPHICS REPLACE ONE NON-FUNCTIONAL AUTOMATED LOGIC Z551 CONTROLLER									

EXISTING CONTROL TOPOLOGY



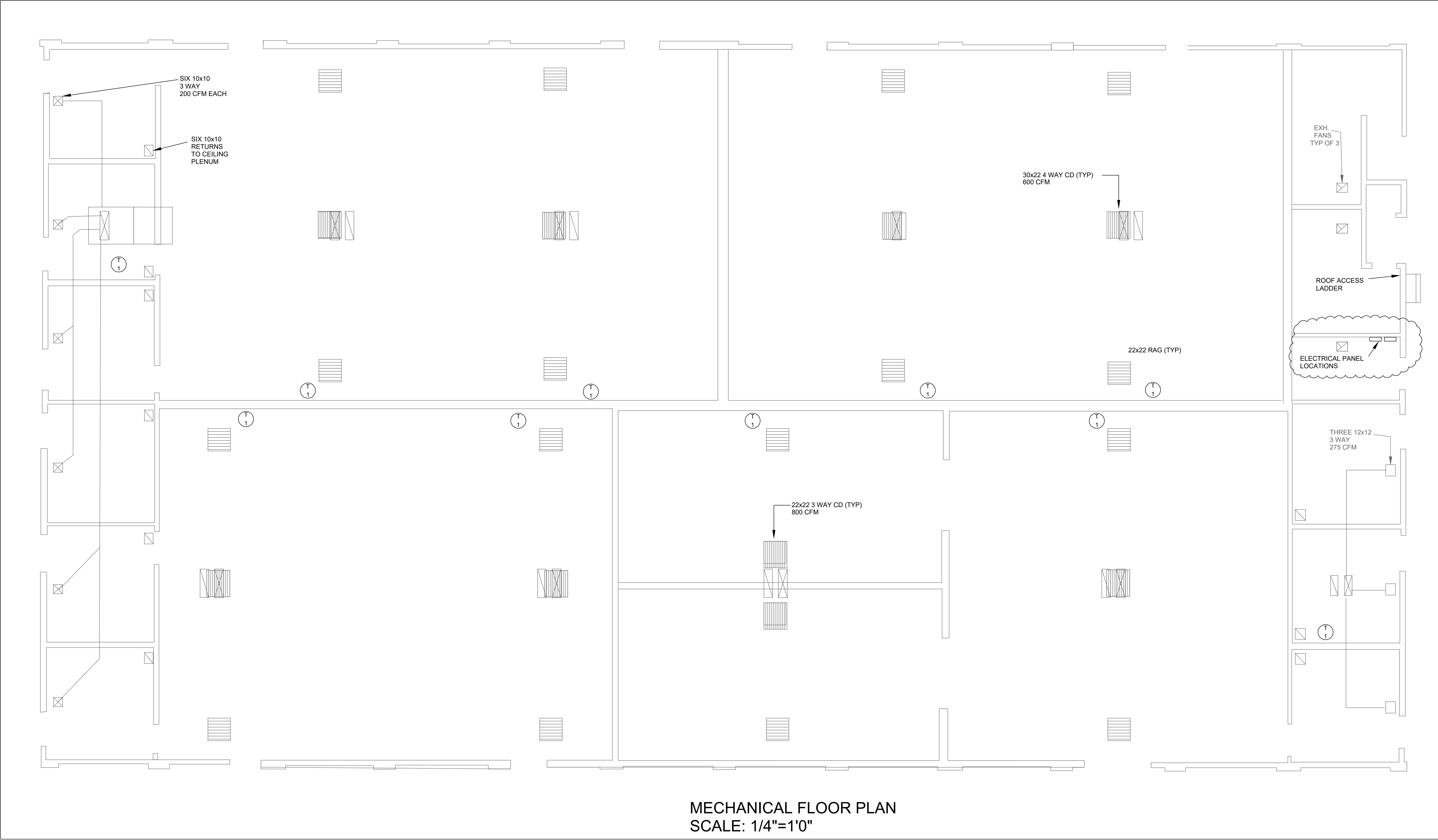
INPUTS OUTPUT


TSTAT
SUPPLY AIR TEMP
FAN ENABLE
HEATING STAGE ONE (HEAT PUMP)
HEATING STAGE TWO (ELECTRIC HEAT)

CONTROL NOTES

- ALL CONTROL WORK SHALL BE PERFORMED BY AN AUTOMATED LOGIC DEALER
- REMOVE (E) CONTROL PANEL AND ENCLOSURE FROM EACH UNIT AND STORE FOR RE-INSTALLATION. REINSTALL CONTROLLER AND PANEL ON NEW UNITS WITH NEW SHIELDED AND CONTROL WIRING AND CONDUIT AS NEEDED FOR COMPLETE INSTALLATION. INSTALL NEW SUPPLY AIR SENSOR AND WIRE AT EACH UNIT.
- ONE OF THE ALC CONTROLLERS IS FAULTY. REPLACE WITH NEW ALC Z551 CONTROLLER.
- FUNCTION TEST ALL MODES OF OPERATION AT NEW UNITS.





<div>REV.</div> <div>DATE</div> <div>ADDENDUM #1 6-24-25</div>	<div> AE Group Mechanical Engineers</div> <div>638 East Front Street Ventura, California 93001-2925 (805) 653-1722 hugh@ae-groupme.com</div>	<div>M O O R P A R K C O L L E G E</div> <div>7075 CAMPUS ROAD, MOORPARK, CALIFORNIA 93021</div> <div>V E N T U R A C O U N T Y C O M M U N I T Y C O L L E G E D I S T R I C T</div>	DEPARTMENT OF MAINTENANCE & OPERATIONS	SCALE: AS SHOWN	STUDENT SERVICE ANNEX HVAC REPLACEMENT PROJECT		<div>SHEET NO.</div> <div>M2</div> <div>3 OF 5</div>
			7075 CAMPUS RD. MOORPARK, CA. 93021 PHONE: (805) 378-1454 FAX: (805) 378-1593	DATE: 2-2-23	MECHANICAL FLOOR PLAN		
				BLDG. NO.			

HVAC PANEL

208 3Ø

OFFICES

WEST END

ROOM

107 A

107

ROOM

107 B

107

ROOM

111

A

ROOM

111

B

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

22

24

25

26

28

29

30

ROOM

108

ROOM

108

ROOM

108 & 110

ROOM

112

OFFICES

Rm 119

EAST END

tral

12

CON

DE

ROOM

108

ROOM

108 & 110

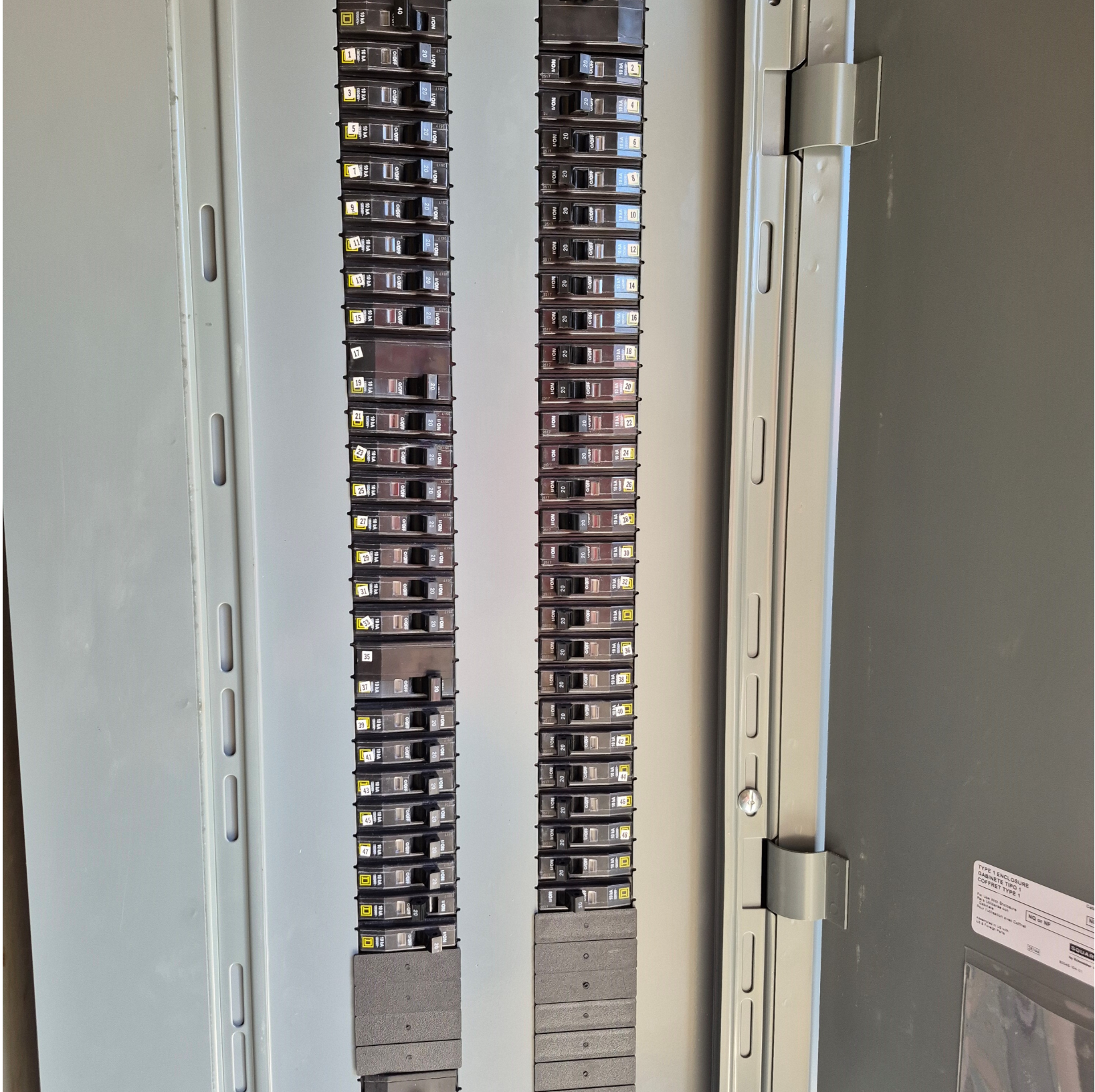
ROOM

112

OFFICES
Rm 119

EAST END





TYPE 1 ENCLOSURE
GABINETTE TPO 1
COFFRET TYPE 1

For use with Enclosure
Type 1, Series 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 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, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 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