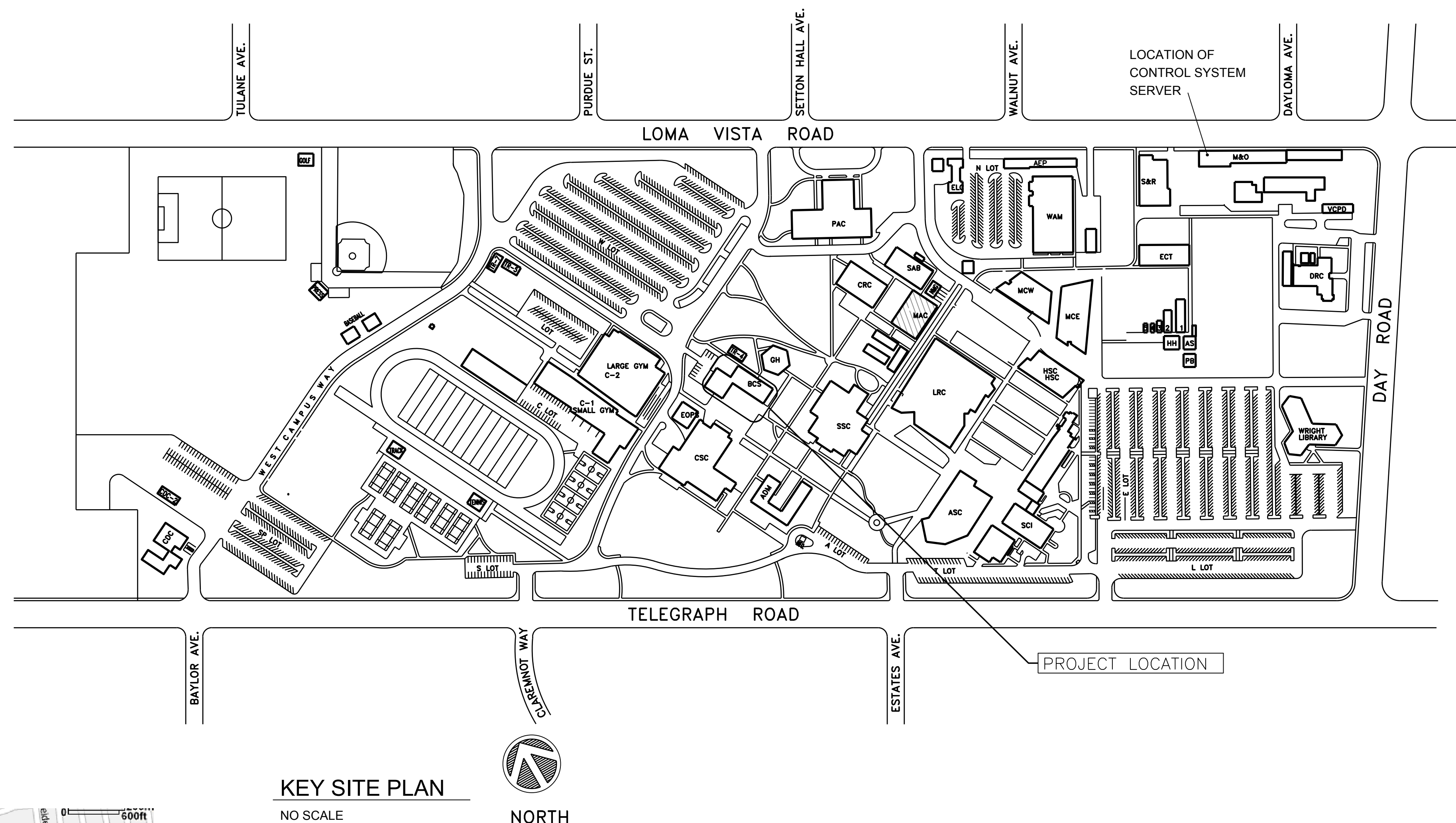
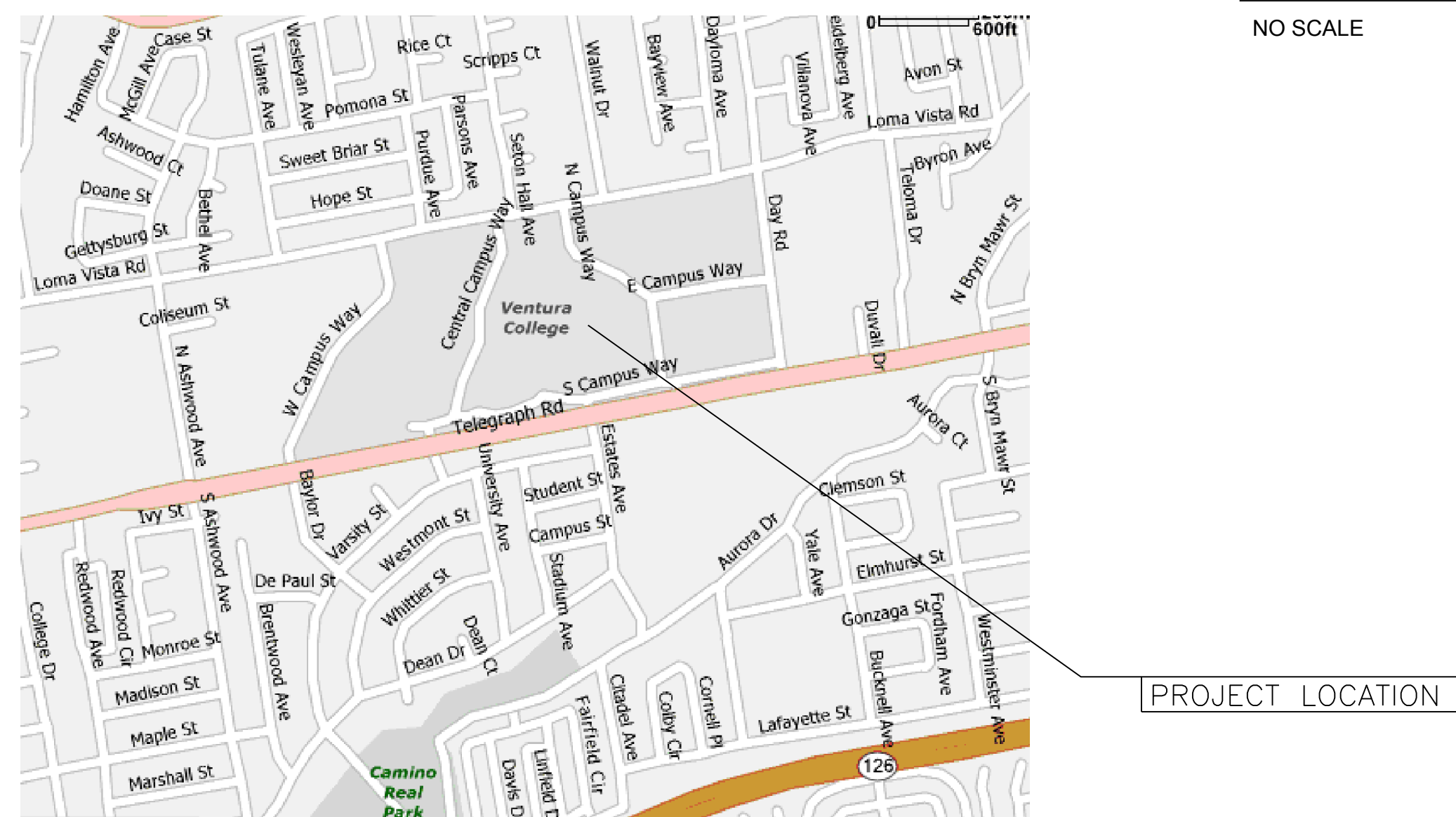


VENTURA COUNTY COMMUNITY COLLEGE DISTRICT VENTURA COLLEGE HVAC REPLACEMENT PROJECT BUILDING E



KEY SITE PLAN
NO SCALE



VICINITY MAP
NO SCALE

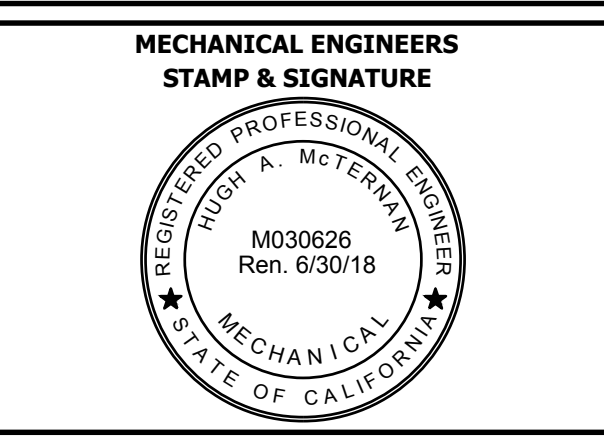
SCOPE OF WORK
DEMO EXISTING FURNACES, COILS AND CONDENSING UNITS. INSTALL NEW PACKAGED AC UNITS WITH NEW DUCTING AT MECHANICAL RM. INSTALL NEW THERMOSTATS AND CONTROLS. EXTEND (E) GAS PIPING TO NEW PACKAGED UNITS.

INDEX TO DRAWINGS	
SHEET T1	TITLE SHEET
SHEET M1	MECHANICAL NOTES & SCHEDULES
SHEET M2	MECHANICAL DEMOLITION PLANS
SHEET M3	MECHANICAL PLAN
SHEET M4	MECHANICAL ENLARGED PLANS
SHEET M5	MECHANICAL DETAILS
SHEET EN1	ENERGY NOTES

OWNER CONTACT
DIRECTOR OF FACILITIES, MAINTENANCE, AND OPERATIONS
JAY MOORE
4667 TELEGRAPH RD, VENTURA, CA 93003
(805) 289-6340, jmoore1@vccd.edu

CONSULTANTS
MECHANICAL ENGINEER AND ENGINEER OF RECORD
HUGH MCTERNAN
838 E. FRONT ST. VENTURA CA. 93001
805 653-1722 hugh@aegroupme.com
ELECTRICAL ENGINEER
KEN LUCCI - LUCCI & ASSOCIATES
3251 Corte Malpaso #511 Camarillo, Ca 93012
805 389-6520 ken@luccland.com

AE Group
Mechanical Engineers, Inc.
838 East Front Street
Ventura, California 93001
(805) 653-1722 FAX: (805) 653-7260
email: cad@aegroupme.com



CONSULTANT INFORMATION

CONSULTANT STAMP & SIGNATURE

**VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
VENTURA COLLEGE
HVAC REPLACEMENT PROJECT
BUILDING E
4667 TELEGRAPH ROAD - VENTURA, CALIFORNIA**

NO	DATE	BY	DESCRIPTION	REVISIONS

DRAWN: HM/JS CHECKED: HM
DATE: 6-8-18 SCALE: AS NOTED
PROJECT NUMBER: AE201824

TITLE SHEET

DRAWING NUMBER : **T1**

MECHANICAL NOTES

1. SCOPE OF WORK: WORK INCLUDES THE FOLLOWING: FURNISH AND INSTALL ALL EQUIPMENT AND CONTROLS SHOWN ON THE MECHANICAL DRAWINGS AND DESCRIBED IN THESE NOTES...

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...

3. DIMENSIONS. ALL DIMENSIONS SHALL HAVE PREFERENCE OVER SCALE. ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES...

4. CODES AND STANDARDS: ALL WORK SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), 2016 CALIFORNIA BUILDING CODE...

5. SUBMITTALS REQUIRED: PRIOR TO ORDERING EQUIPMENT AND MATERIALS, CONTRACTOR SHALL FURNISH TO ENGINEER / OWNER SUBMITTALS AND SHOP DRAWINGS OF ALL EQUIPMENT...

6. CONSTRUCTION OBSERVATION: IN ADDITION TO THE REQUIREMENT FOR OBTAINING INSPECTIONS BY THE LOCAL JURISDICTION, CONTRACTOR SHALL NOTIFY ENGINEER AT APPROPRIATE TIMES...

7. UNIT LOCATIONS: EQUIPMENT AND SYSTEM LOCATIONS SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL STRUCTURAL MEMBERS AND EXISTING CONDITIONS...

8. DUCTWORK: CONTRACTOR SHALL INSTALL NEW DUCTWORK IN THE APPROXIMATE LOCATIONS SHOWN ON THE DRAWINGS. ALL DUCTWORK SHALL BE SECURELY ANCHORED TO THE BUILDING...

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

ALL CONCEALED ROUND DUCTWORK SHALL BE GALVANIZED CONSTRUCTION WITH GAUGES AND CONNECTIONS AS FOLLOWS: UP TO 12" DIAMETER (INCLUDING FITTINGS) - 26 GAUGE WITH 2" CRIMP JOINT...

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 UNIFORM MECHANICAL CODE...

10. DUCT INSULATION: NEW SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED WITH 2" THICK, THREE QUARTER POUND PER CUBIC FOOT FOIL SCRIMP VAPOR BARRIER FACED FIBERGLASS FLEXIBLE DUCT INSULATION...

EXISTING DUCTING SHALL HAVE NEW 1-1/2" FOIL FACE FIBERGLASS INSULATION INSTALLED OVER EXISTING INSULATION TO THE GREATEST EXTENT POSSIBLE.

11. 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...

12. VIBRATION ISOLATION: INSTALL FLEXIBLE CONNECTIONS BETWEEN MECHANICAL EQUIPMENT AND DUCTWORK. ISOLATE PIPING & DUCTWORK FROM STRUCTURE TO PREVENT EXCESSIVE VIBRATION.

13. DUCT SUPPORTS AND HANGERS: DUCT SUPPORTS SHALL BE PER TABLE 6-5 (PARTS I & II) OF THE 2016 CALIFORNIA MECHANICAL CODE. RECTANGULAR DUCTS WITH A MAXIMUM SIZE NOT EXCEEDING 30" AND ALL ROUND DUCTS SHALL BE SUPPORTED WITH ONE INCH WIDE 18 GAUGE HANGER STRAPS...

14. VOLUME DAMPERS: LOCKING SHEET METAL VOLUME DAMPERS SHALL BE INSTALLED AT THE POINT OF TAKE-OFF FROM MAIN DUCTING AT ALL LOCATIONS SHOWN ON PLANS AND ELSEWHERE AS NECESSARY FOR PROPER BALANCING OF THE SYSTEM...

15. EXHAUST FAN AND FLUE DISCHARGE: ALL EXHAUST FAN DUCTWORK AND FLUES SHALL BE RUN TO A POINT AT LEAST 10 FEET FROM AIR INTAKES OR OTHER OPENINGS TO THE BUILDING.

16. COORDINATION: MECHANICAL CONTRACTOR SHALL COORDINATE WORK WITH THE COLLEGE DISTRICT'S PROJECT MANAGER AND ALL RELATED TRADES.

17. 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.

18. 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...

19. COORDINATION DURING CONSTRUCTION: THE CONTRACTOR SHALL COORDINATE ANY NECESSARY CHANGES IN WORK SCHEDULING WITH THE COLLEGE DISTRICT TO MINIMIZE THE DISRUPTION. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES...

20. CORRECTION OF WORK: THE CONTRACTOR SHALL PROMPTLY CORRECT ALL WORK THE COLLEGE DISTRICT FINDS DEFECTIVE OR FAILING TO CONFORM TO THE CONTRACT DOCUMENTS...

21. AS-BUILT DRAWINGS SHALL BE GIVEN TO THE COLLEGE DISTRICT PRIOR TO ACCEPTANCE OF THE PROJECT. INCLUDED IN THE AS-BUILTS SHALL BE ON PRINTED SHEETS AND ON MAGNETIC MEDIA.

22. VENTURA COLLEGE OPERATES AN AUTOMATED LOGIC ENERGY MANAGEMENT CONTROL SYSTEM. NO SUBSTITUTIONS ALLOWED. NEW MECHANICAL EQUIPMENT SHALL BE CONTROLLED BY ALC DEVICES.

23. CONCRETE: ALL CONCRETE SHALL BE HARDROCK CONFORMING TO ASTM C-94. ALL REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A-615, GRADE 40.

24. NATURAL GAS PIPING: ALL ABOVE GROUND NATURAL GAS PIPING SHALL BE U.S. MANUFACTURED BLACK (INTERIOR) OR SCH. 40 GALVANIZED (EXTERIOR) STEEL PIPE WITH 150 POUND BLACK OR GALVANIZED THREADED FITTINGS...

25. CONDENSATE PIPE SHALL BE COPPER TYPE "L" U.S. MANUFACTURED WITH SOLDERED WROT COPPER FITTINGS. SLOPE MIN 1/8"/FT TO DRYWELL. PROVIDE TEE W/ BRASS PLUG AT CHANGES OF DIRECTION.

26. INSTALL CHAINLINK ENCLOSURE WITH G-90 FENCING AND SCHEDULE 40 GALVANIZED STEEL POSTS AND RAILS. INSTALL WITH COMMERCIAL GRADE HOT DIPPED GALVANIZED HARDWARE. PROVIDE GATES FOR SERVICE ACCESS AS SHOWN ON PLANS...

27. CONCRETE SIDEWALK - CONCRETE SIDE WALK SHALL BE A MINIMUM 4" THICK 2500 PSI CONCRETE ASTM C 150 TYPE V GRAY. INSTALLATION SHALL COMPLY WITH ACI 117 AND 301. NATIVE SOIL SHALL BE CONSISTENTLY COMPACTED TO 95%...

THE CONCRETE SHALL BE PLACED ON A MOIST FOUNDATION TO THE REQUIRED DEPTH AND CONSOLIDATED AND SPADED SUFFICIENTLY TO BRING THE MORTAR TO THE SURFACE AFTER WHICH IT SHALL BE STRUCK OFF AND FLOATED WITH A WOOD FLOAT...

SIDEWALK SHALL BE DIVIDED IN REGULAR INTERVALS WITH A CONTRACTION JOINT 1" DEEP AND 1/4" IN WIDTH. ONE HALF INCH WIDE TRANSVERSE EXPANSION JOINTS SHALL BE A PLACED AT APPROXIMATELY 45 FOOT INTERVALS AND FILLED WITH CONCRETE EXPANSION JOINT FILLER...

PROTECT CONCRETE FROM PRE-MATURE DRYING. CONCRETE SHALL CURED PER ACI 308.1 WITH EITHER THE WET BURLAP OR MOISTURE RETAINING COVER FOR SEVEN DAYS.

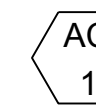
TRANSITIONS FROM EXISTING SHALL MATCH TRANSVERSE SLOPE AND SLOPES SHALL BE SMOOTH AND CONTINUOUS. ADJACENT SOIL SHALL HAVE A MAXIMUM SLOPE OF TWO UNITS HORIZONTAL TO ONE UNIT VERTICAL.

CONTRACTOR SHALL MOVE ANY EXCESS SOIL TO A LOCATION DESIGNATED BY COLLEGE'S PROJECT MANAGER.

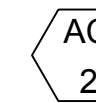
28. INSTALL PROTECTIVE FENCING OUTSIDE THE PERIMETER OF WORK AREA. REVIEW EXTENT OF FENCING WITH ENGINEER AND COLLEGE'S PROJECT MANAGER PRIOR TO INSTALLATION.

29. REMOVE TREE STUMPS FROM AREAS UNDER NEW CONCRETE.

MECHANICAL SCHEDULE



PACKAGED UNIT. CARRIER MODEL 48LCD012A2D5-1A0A0. 10 TON. 4835 CFM @ 0.6"WC. HORIZONTAL FLOW. NATURAL GAS - TWO STAGE- INPUT 180,000/144,000, OUTPUT 118,000/146,000 BTUH...



PACKAGED UNIT. CARRIER MODEL 48LCD014A6D5-1A0A0. 12.5 TON. 6250 CFM @ 0.6"WC. HORIZONTAL FLOW. NATURAL GAS - TWO STAGE- INPUT 176,000/141,000, OUTPUT 143,000/114,000 BTUH...

ABBREVIATIONS

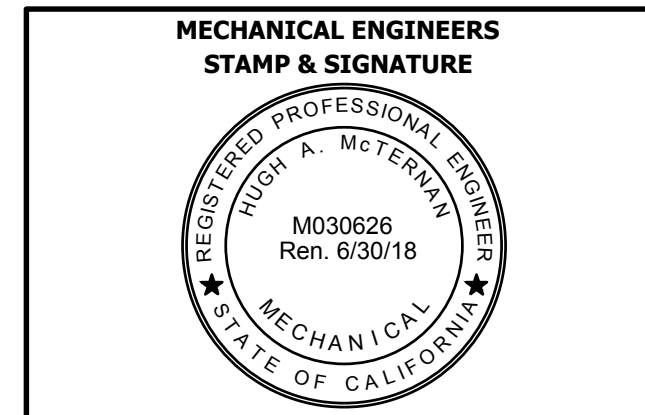
ABBVY ABBREVIATIONS
ABV ABOVE
AFF ABOVE FINISHED FLOOR
AHU AIR HANDLING UNIT
APPROX APPROXIMATELY
BLOG BUILDING
BLW BELOW
BOT BOTTOM
CD CEILING DIFFUSER
CFM CUBIC FEET PER MINUTE
CL CENTERLINE
CLG CEILING
COND CONDENSATE
CONT CONTINUED
DIA DIAMETER
DN DOWN
DWG DRAWING
(E) EXISTING
EA EACH
EL ELEVATION
ELEC ELECTRIC
ELEV ELEVATION
EQ EQUIPMENT
EQUIP EQUIPMENT
EXH EXHAUST
FIN FINISHED
FRM FROM
FLR FLOOR
G GAS
GPM GALLONS PER MINUTE
MAX MAXIMUM
MIN MINIMUM
(N) NEW
OC ON CENTER
POC POINT OF CONNECTION
PSI POUNDS PER SQUARE INCH
RAG RETURN AIR GRILLE
RAR RETURN AIR REGISTER
SD SMOKE DETECTOR
SHT SHEET
SOV SHUT-OFF VALVE
SPEC SPECIFICATIONS
SR SIDEWALL REGISTER
(TYP) TYPICAL
UGND UNDERGROUND
VTR VENT TO ROOF
WCO WALL CLEAN-OUT

SYMBOL LEGEND

SEE MECH. SCHEDULE FOR DESCRIPTIONS

Table with 2 columns: Symbol and Description. Symbols include square with X, square with X and circle, square with B, square with vertical line, circle with clock, square with plenum, square with plenum and line, square with circle and X, square with 1/MXX, square with X, square with plus.

AE Group Mechanical Engineers, Inc.
838 East Front Street
Ventura, California 93001
(805) 653-1722 FAX: (805) 653-7260
email: cad@aeengrps.com



CONSULTANT INFORMATION

CONSULTANT STAMP & SIGNATURE

VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
VENTURA COLLEGE
HVAC REPLACEMENT PROJECT
BUILDING E
4667 TELEGRAPH ROAD - VENTURA, CALIFORNIA

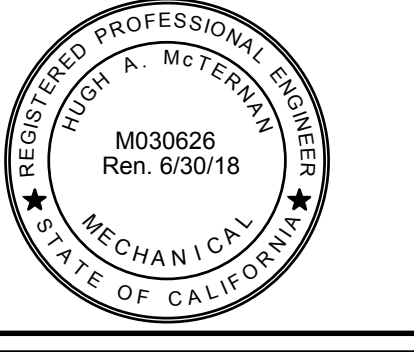
Table with columns: NO, DATE, BY, DESCRIPTION, REVISIONS. Contains revision record information.

Table with 2 columns: DRAWN/DATE and CHECKED/SCALE. Includes project number AE201824.

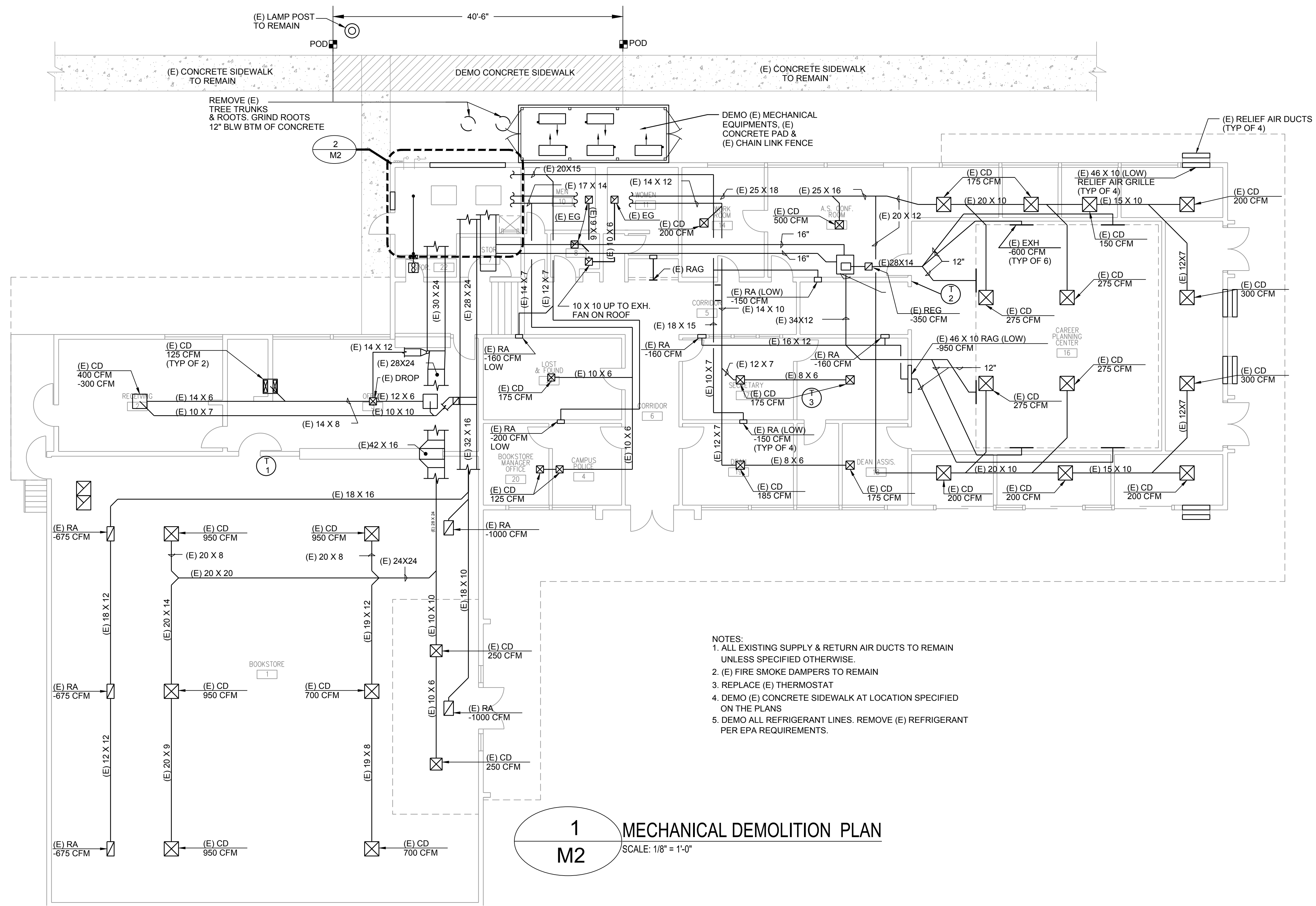
MECHANICAL NOTES & SCHEDULES

DRAWING NUMBER : M1

SEISMIC RESTRAINT
PROVIDE COMPLETE SEISMIC ANCHORAGE AND BRACING DETAILS FOR LATERAL AND VERTICAL SUPPORT OF DUCTING/PIPING AND MECHANICAL EQUIPMENT, ETC. IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE, SECTION 1632A TABLE 16A-O.
THE SEISMIC BRACING AND ANCHORAGE OF PIPING AND DUCTS NOT DETAILED ON THESE DRAWINGS SHALL BE SUPPORTED AND BRACED PER THE SMACNA 1998 SEISMIC RESTRAINTS RESTRAINT SYSTEM.
ALL BRACING OF DUCTS AND PIPINGS SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA 1998 GUIDELINES AS APPROVED BY DSA/ORS.

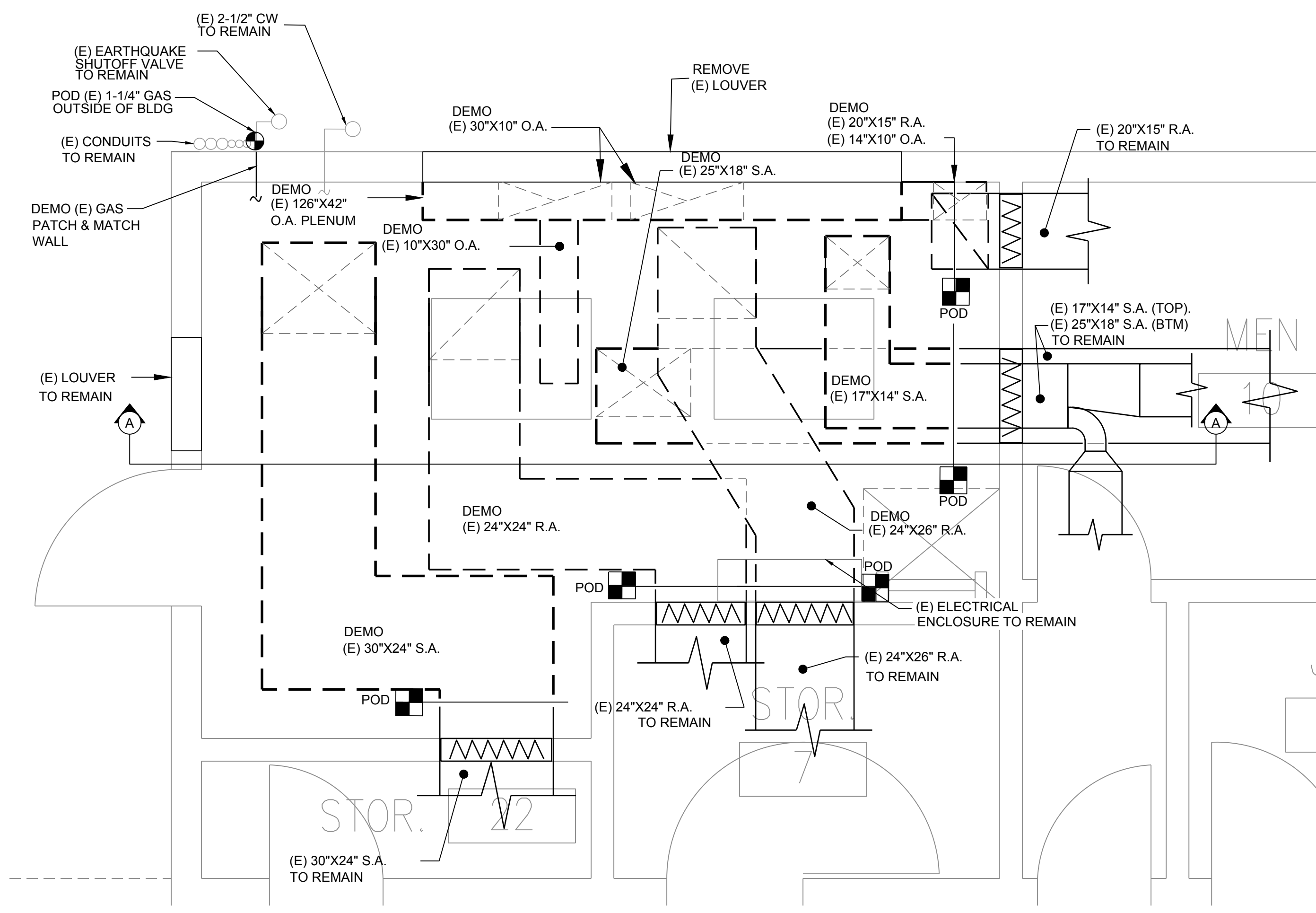


VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
VENTURA COLLEGE
 HVAC REPLACEMENT PROJECT
BUILDING E
 4667 TELEGRAPH ROAD - VENTURA, CALIFORNIA

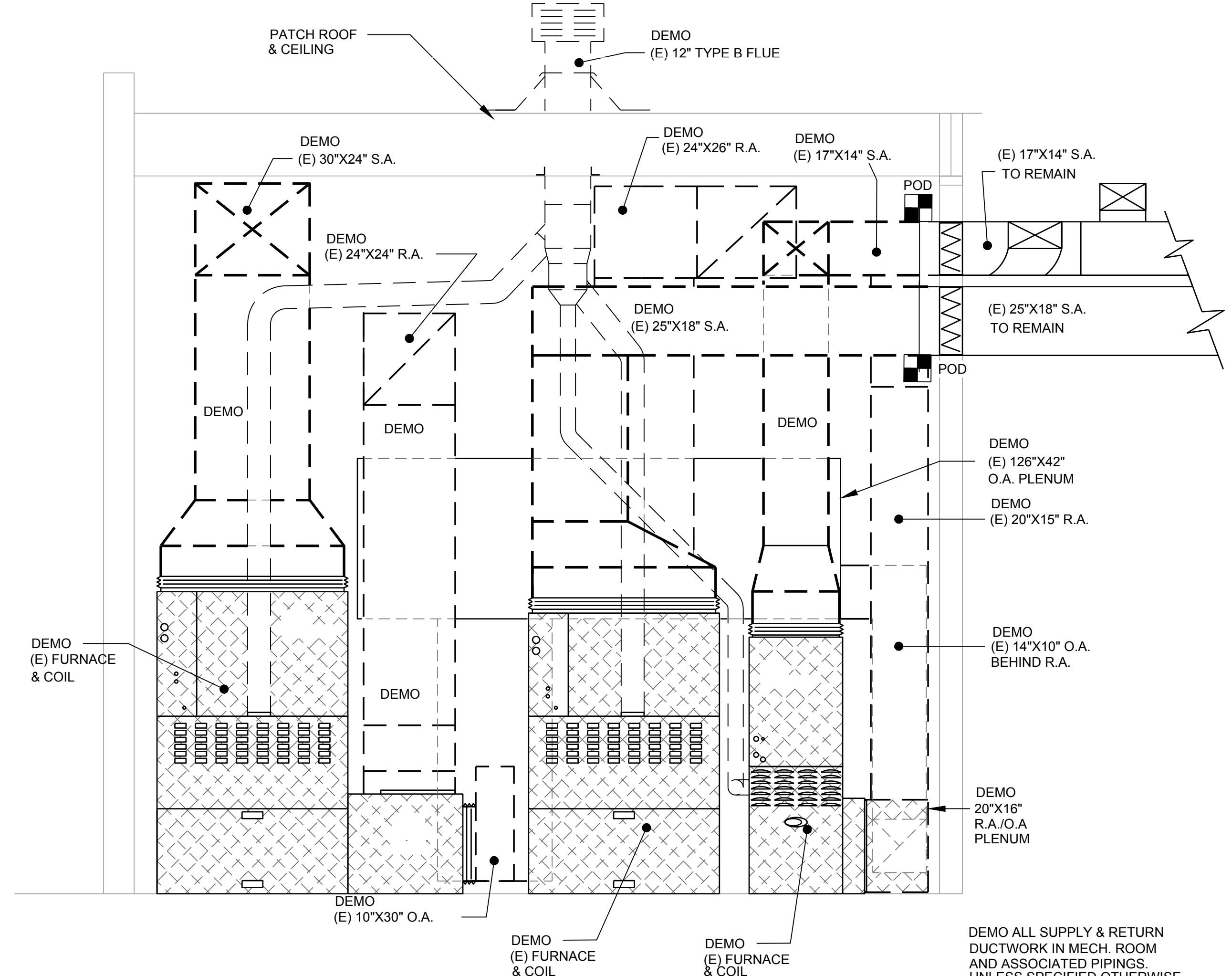


- NOTES:
1. ALL EXISTING SUPPLY & RETURN AIR DUCTS TO REMAIN UNLESS SPECIFIED OTHERWISE.
 2. (E) FIRE SMOKE DAMPERS TO REMAIN
 3. REPLACE (E) THERMOSTAT
 4. DEMO (E) CONCRETE SIDEWALK AT LOCATION SPECIFIED ON THE PLANS
 5. DEMO ALL REFRIGERANT LINES. REMOVE (E) REFRIGERANT PER EPA REQUIREMENTS.

1
 M2
 MECHANICAL DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"



2
 M2
 ENLARGED MECHANICAL DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"



3
 M2
 ELEVATION A-A MECHANICAL DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"

LEGEND

	DEMO SUPPLY
	DEMO RETURN
	SUPPLY TO REMAIN
	RETURN TO REMAIN
	(N) SUPPLY
	(N) RETURN
	POINT OF DISCONNECTION
	POINT OF CONNECTION

NO	DATE	BY	DESCRIPTION	REVISIONS

DRAWN: HM/JS CHECKED: HM
 DATE: 6-8-18 SCALE: AS NOTED
 PROJECT NUMBER: AE201824

MECHANICAL DEMOLITION PLANS

DRAWING NUMBER : M2

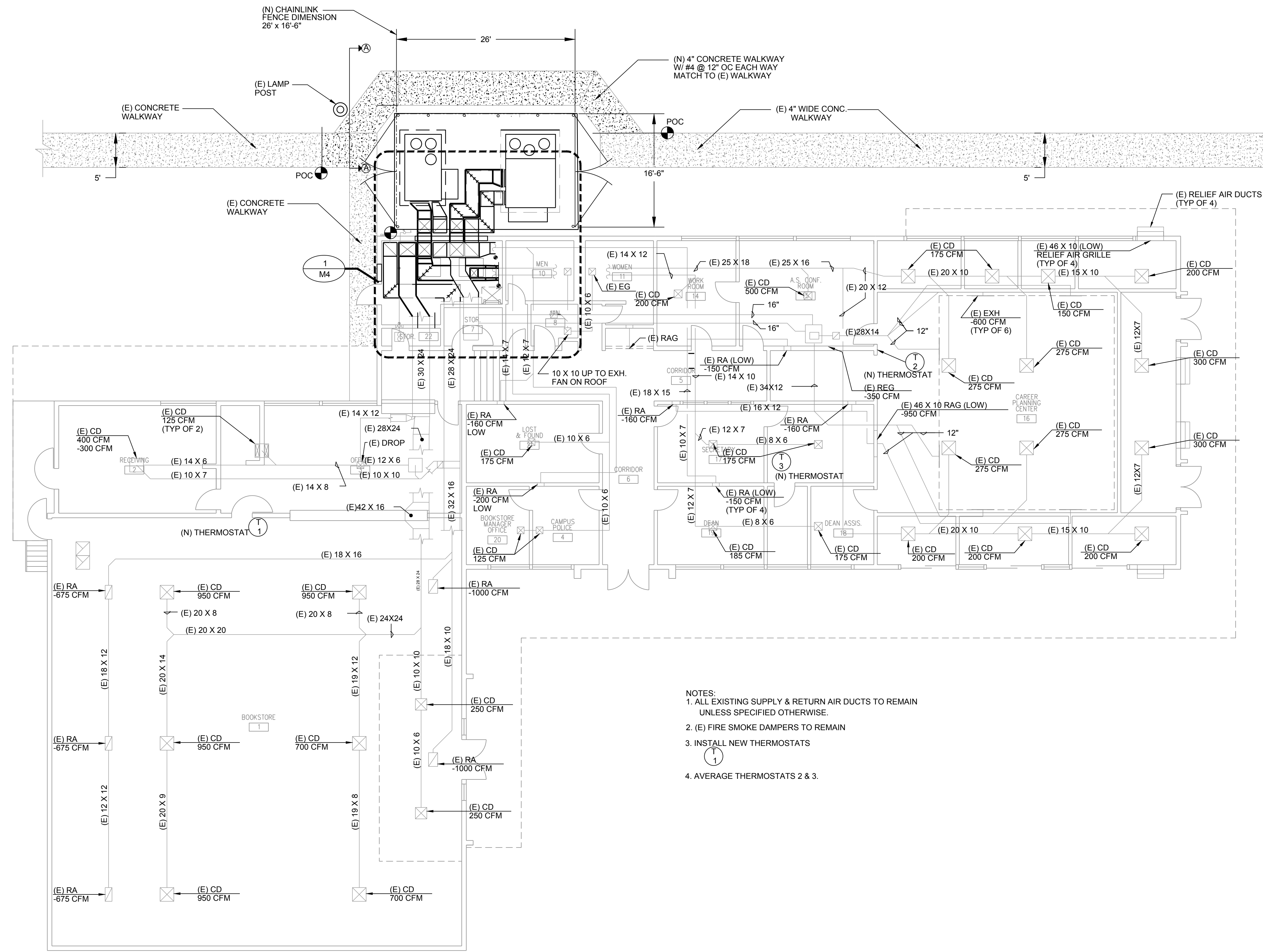
MECHANICAL ENGINEERS
 STAMP & SIGNATURE



CONSULTANT INFORMATION

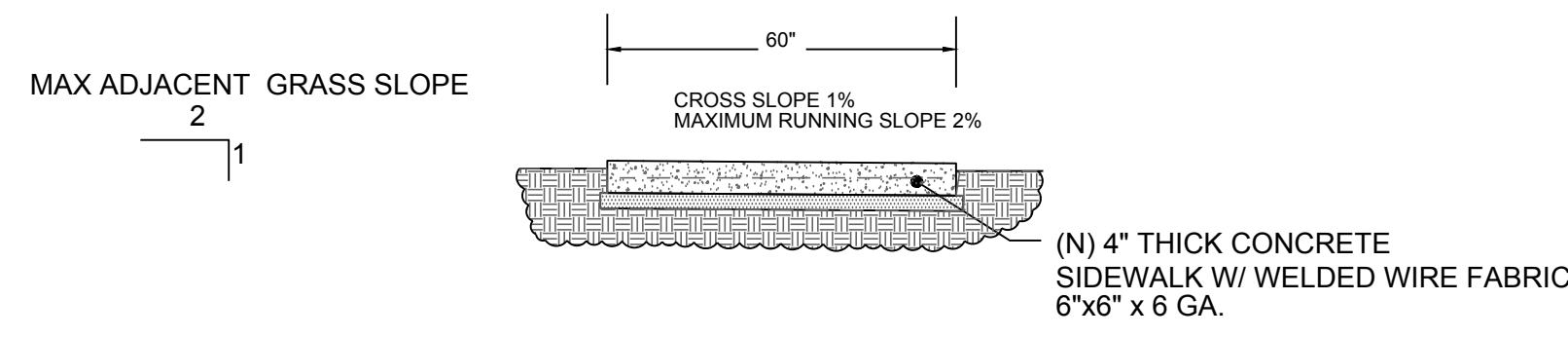
CONSULTANT
 STAMP & SIGNATURE

VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
VENTURA COLLEGE
 HVAC REPLACEMENT PROJECT
BUILDING E
 4667 TELEGRAPH ROAD - VENTURA, CALIFORNIA



- NOTES:
 1. ALL EXISTING SUPPLY & RETURN AIR DUCTS TO REMAIN UNLESS SPECIFIED OTHERWISE.
 2. (E) FIRE SMOKE DAMPERS TO REMAIN
 3. INSTALL NEW THERMOSTATS
 4. AVERAGE THERMOSTATS 2 & 3.

1
M3 MECHANICAL PLAN
 SCALE: 1/8" = 1'-0"



- NOTES:
 1) CONCRETE SHALL BE 2500 PSI AND PLACED ON 2" PEA GRAVEL. COMPACT NATIVE SOIL BELOW TO 95%.
 2) PROVIDE WELDED WIRE FABRIC AT CONCRETE MID-POINT
 3) MATCH NEW CONCRETE TO EXISTING
 4) INSTALL CONTROL JOINTS EQUAL TO THE WIDTH OF THE WALKWAY
 5) RESEED GRASS AREA DISTURB BY CONSTRUCTION.
 6) INSTALL EXPANSION JOINT AT CONNECTION TO (E) WALKWAY. INSTALL TWO #4 BAR 18" LONG EQUALLY SPACED EMBEDDED INTO CONCRETE 4"

(N) WALKWAY ELEVATION
2
M3 ELEVATION A-A
 SCALE: 3/8" = 1'-0"

LEGEND

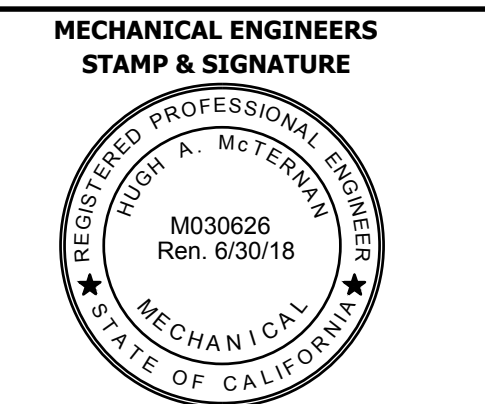
---	DEMO SUPPLY
---	DEMO RETURN
---	SUPPLY TO REMAIN
---	RETURN TO REMAIN
---	(N) SUPPLY
---	(N) RETURN
■	POINT OF DISCONNECTION
●	POINT OF CONNECTION

NO	DATE	BY	DESCRIPTION

DRAWN: HM/JS CHECKED: HM
 DATE: 6-8-18 SCALE: AS NOTED
 PROJECT NUMBER: AE201824

MECHANICAL PLAN

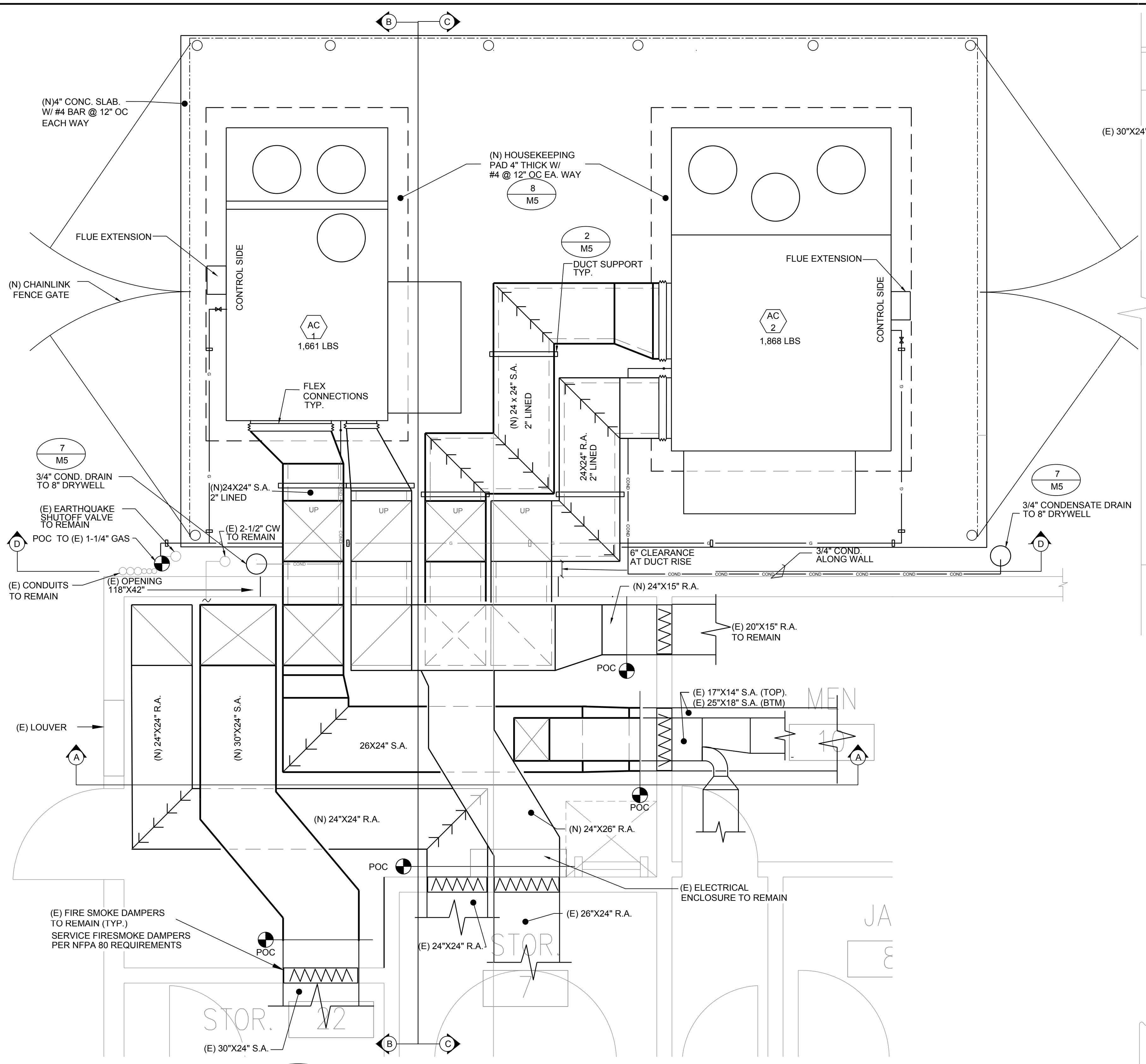
DRAWING NUMBER : **M3**



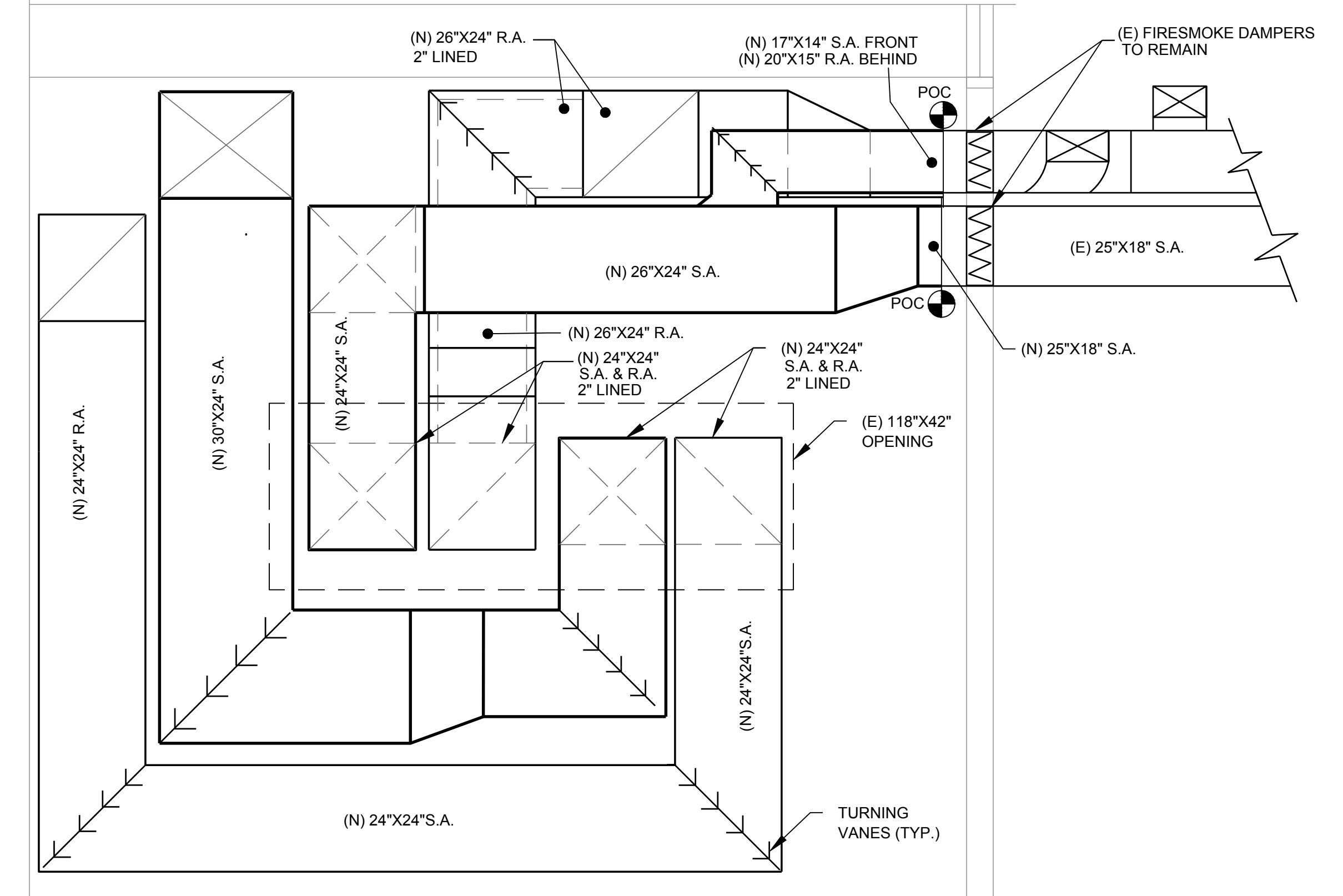
CONSULTANT INFORMATION

CONSULTANT STAMP & SIGNATURE

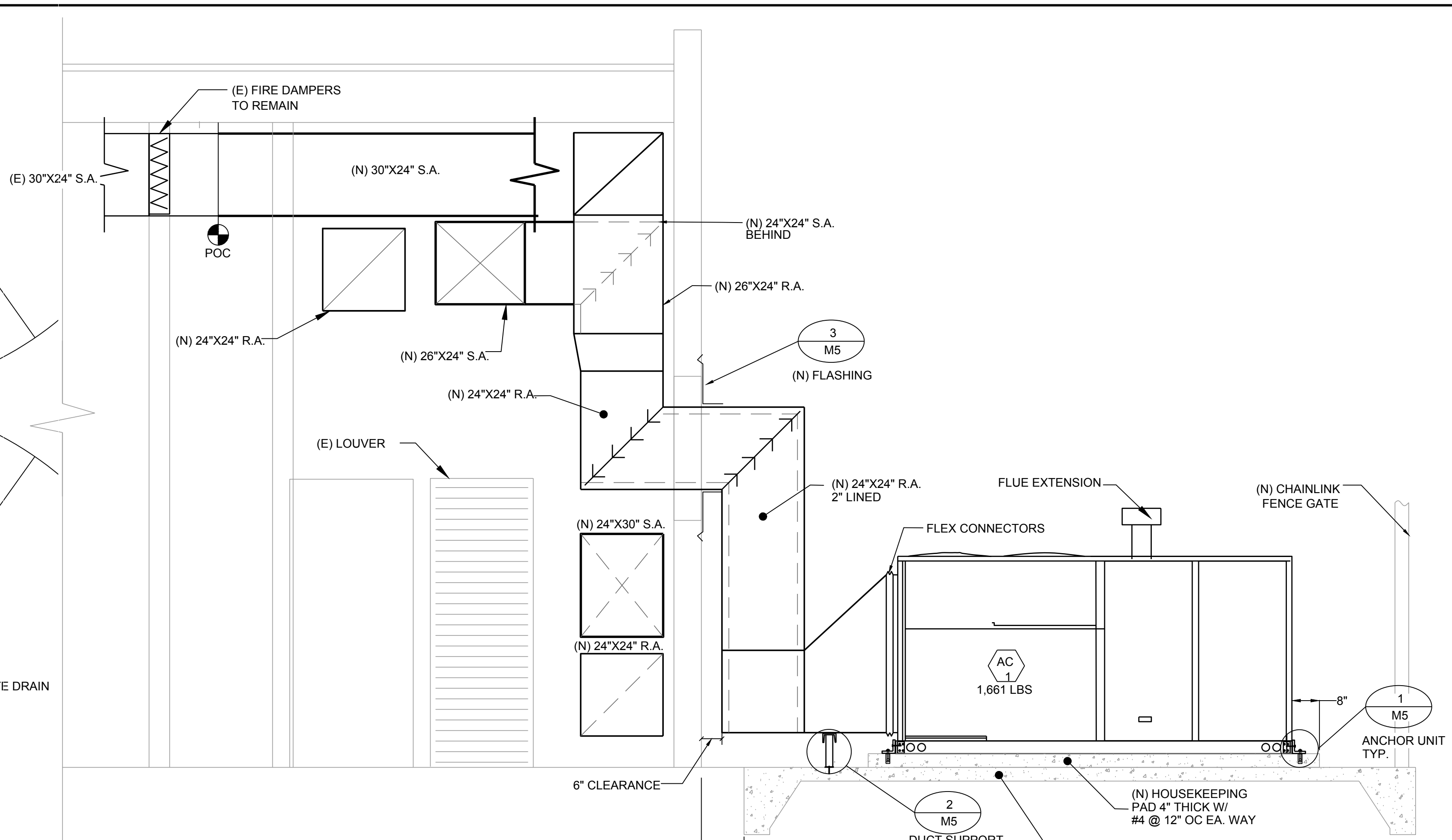
VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
VENTURA COLLEGE
 HVAC REPLACEMENT PROJECT
BUILDING E
 4667 TELEGRAPH ROAD - VENTURA, CALIFORNIA



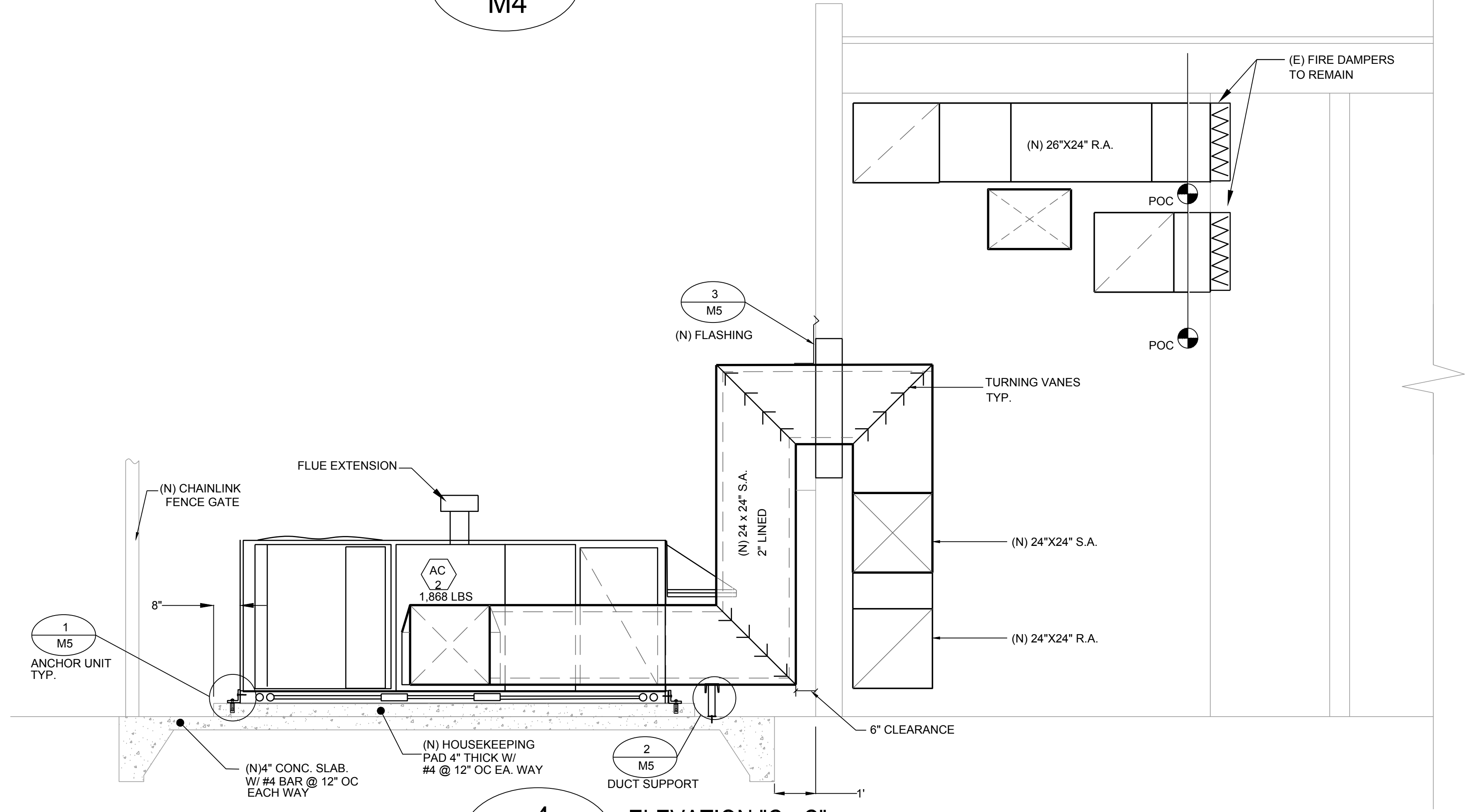
1
M4
ENLARGED MECHANICAL EQUIPMENT ROOM PLAN
SCALE: 1/2" = 1'-0"



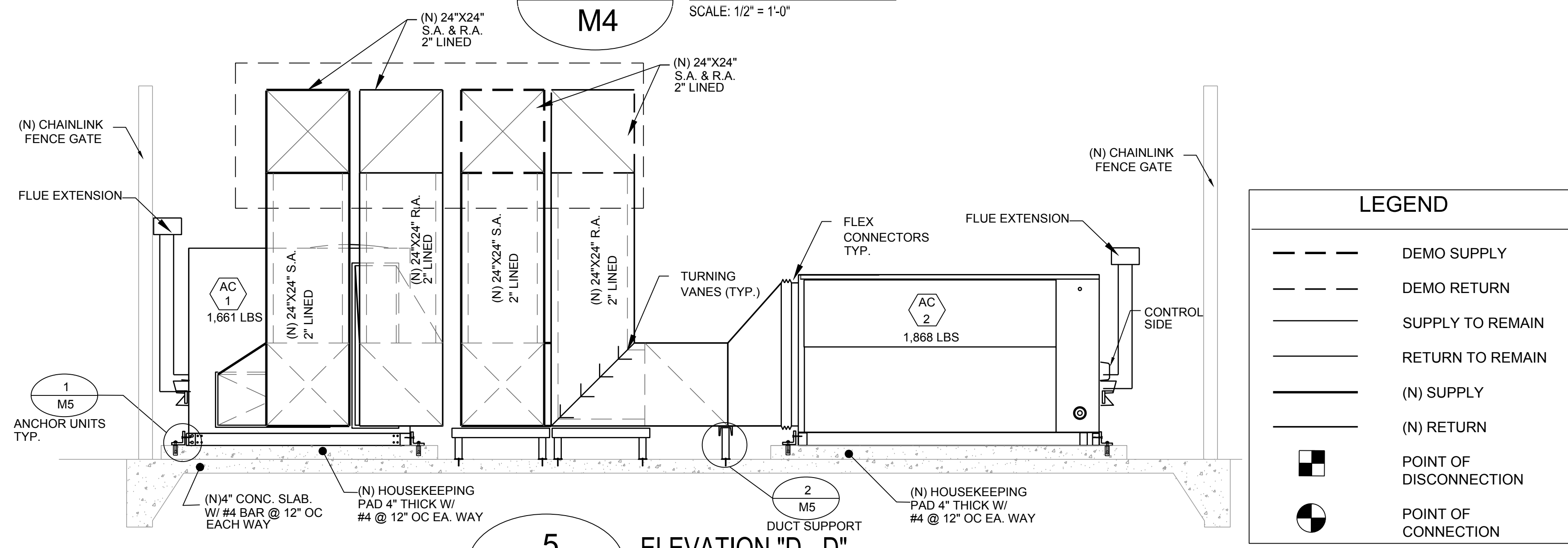
2
M4
ELEVATION "A - A"
SCALE: 1/2" = 1'-0"



3
M4
ELEVATION "B - B"
SCALE: 1/2" = 1'-0"



4
M4
ELEVATION "C - C"
SCALE: 1/2" = 1'-0"



5
M4
ELEVATION "D - D"
SCALE: 1/2" = 1'-0"

LEGEND

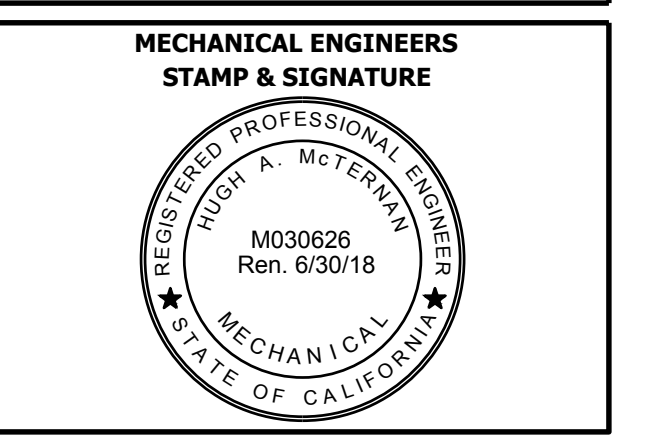
	DEMO SUPPLY
	DEMO RETURN
	SUPPLY TO REMAIN
	RETURN TO REMAIN
	(N) SUPPLY
	(N) RETURN
	POINT OF DISCONNECTION
	POINT OF CONNECTION

NO	DATE	BY	DESCRIPTION	REVISIONS

DRAWN: HM/JS CHECKED: HM
 DATE: 6-8-18 SCALE: AS NOTED
 PROJECT NUMBER: AE201824

ENLARGED MECHANICAL PLAN AND SECTIONS

DRAWING NUMBER : M4



CONSULTANT INFORMATION

CONSULTANT
 STAMP & SIGNATURE

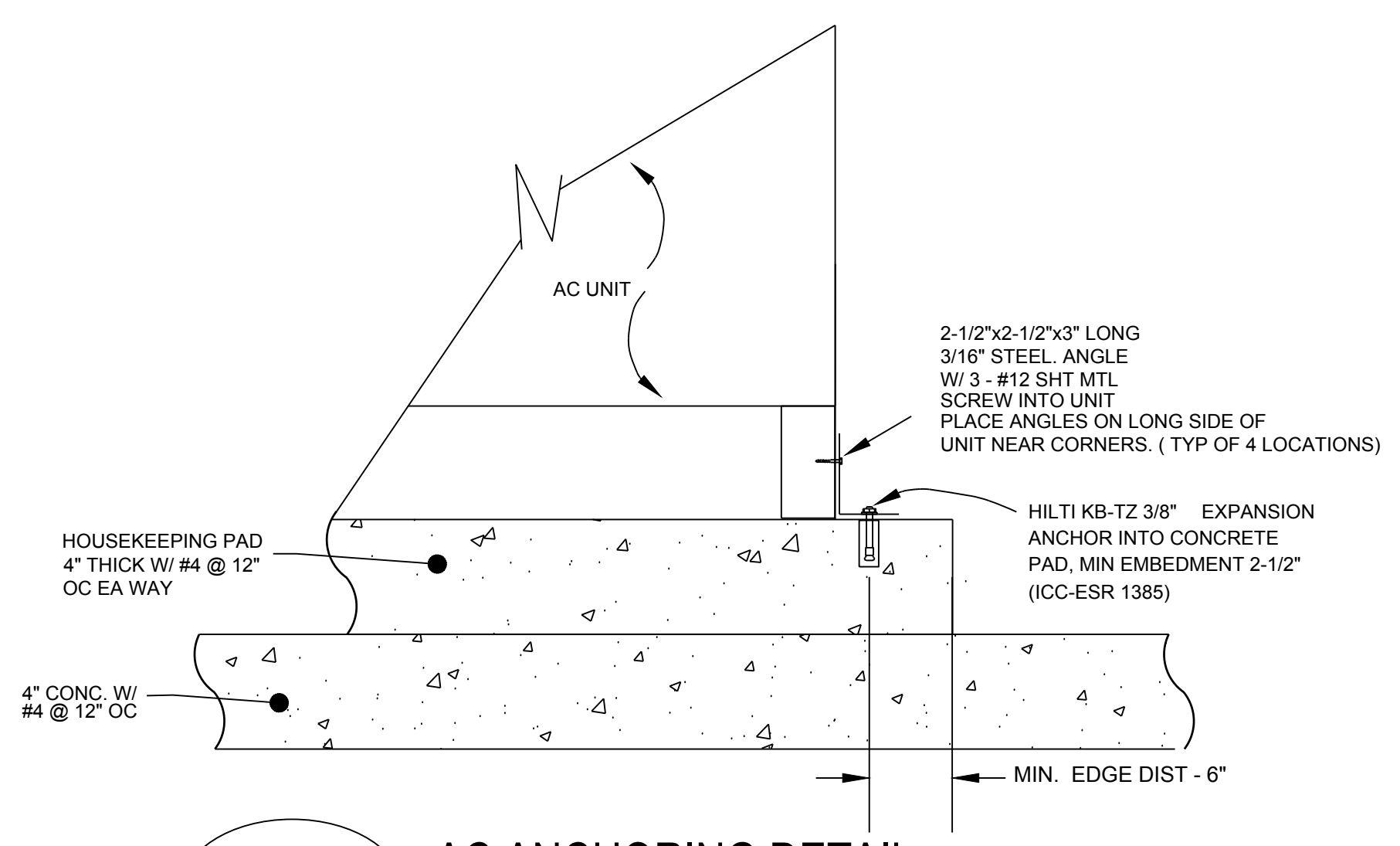
VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
VENTURA COLLEGE
 HVAC REPLACEMENT PROJECT
BUILDING E
 4667 TELEGRAPH ROAD - VENTURA, CALIFORNIA

NO	DATE	BY	DESCRIPTION	REVISIONS

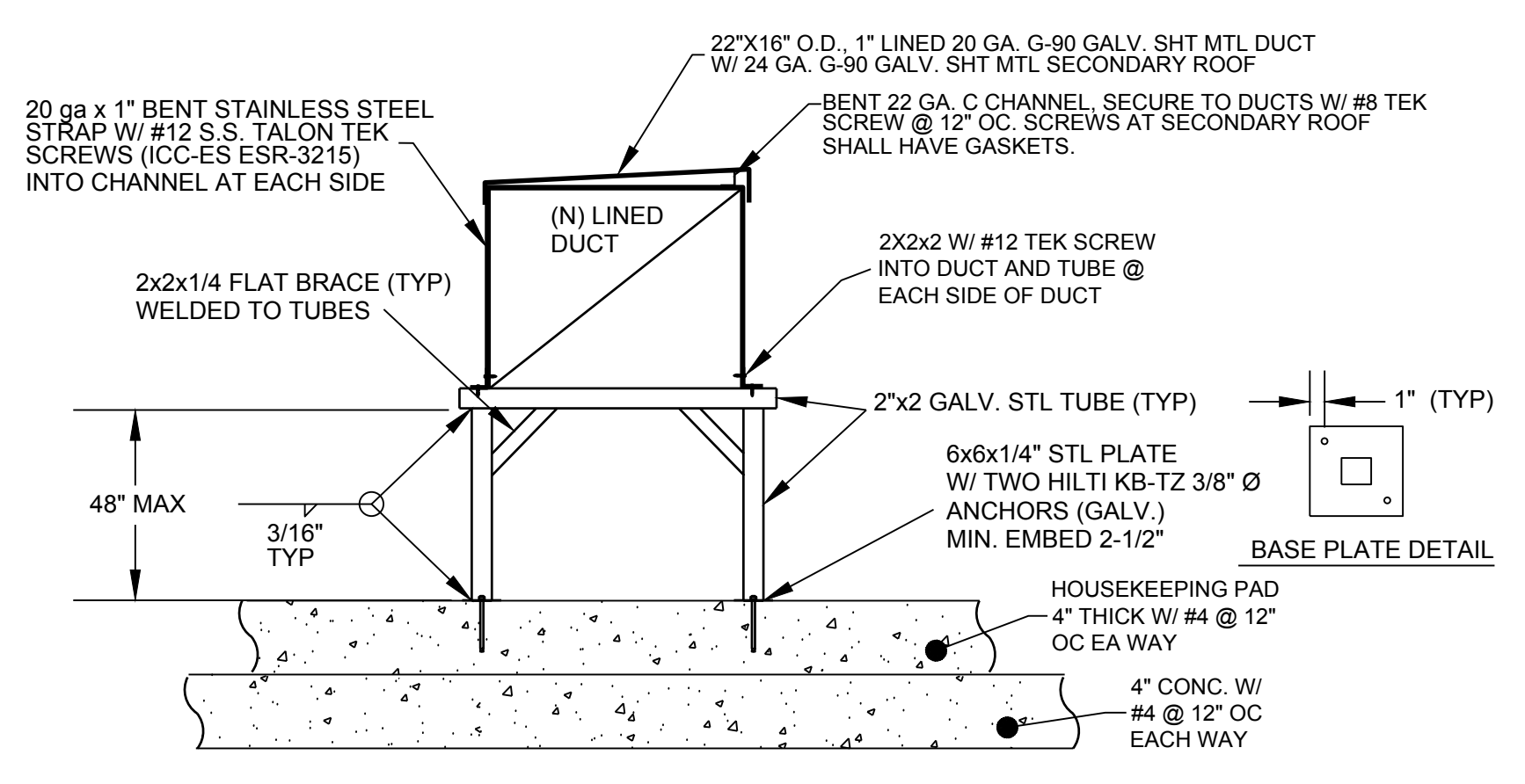
DRAWN: HM/JS CHECKED: HM
 DATE: 6-8-18 SCALE: AS NOTED
 PROJECT NUMBER: AE201824

MECHANICAL
 DETAILS

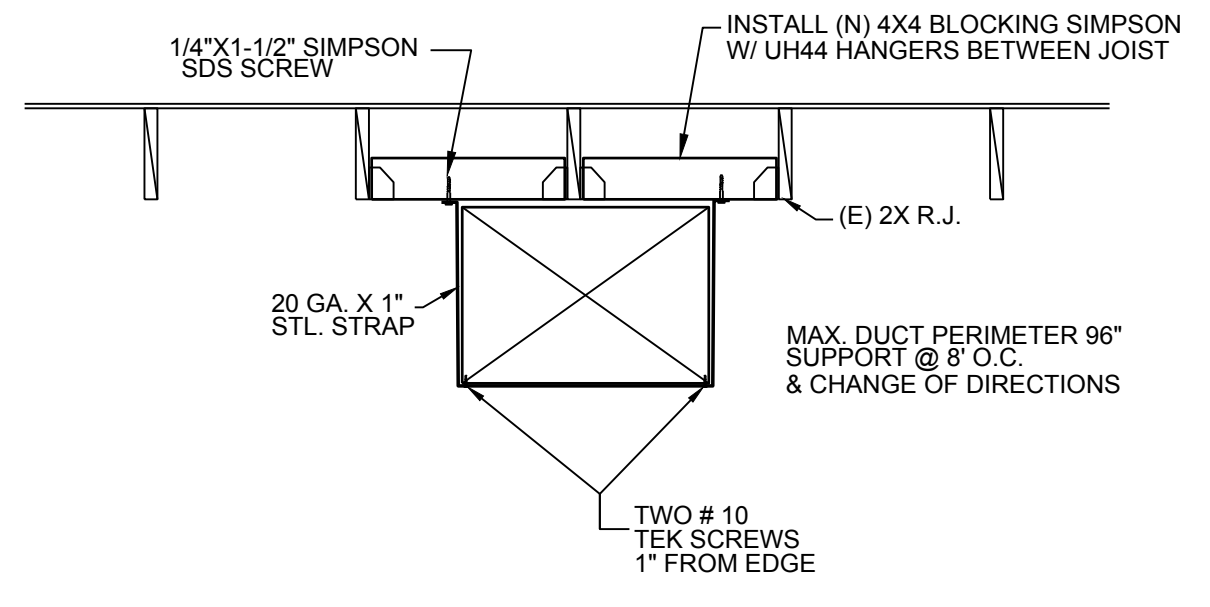
DRAWING
 NUMBER : M5



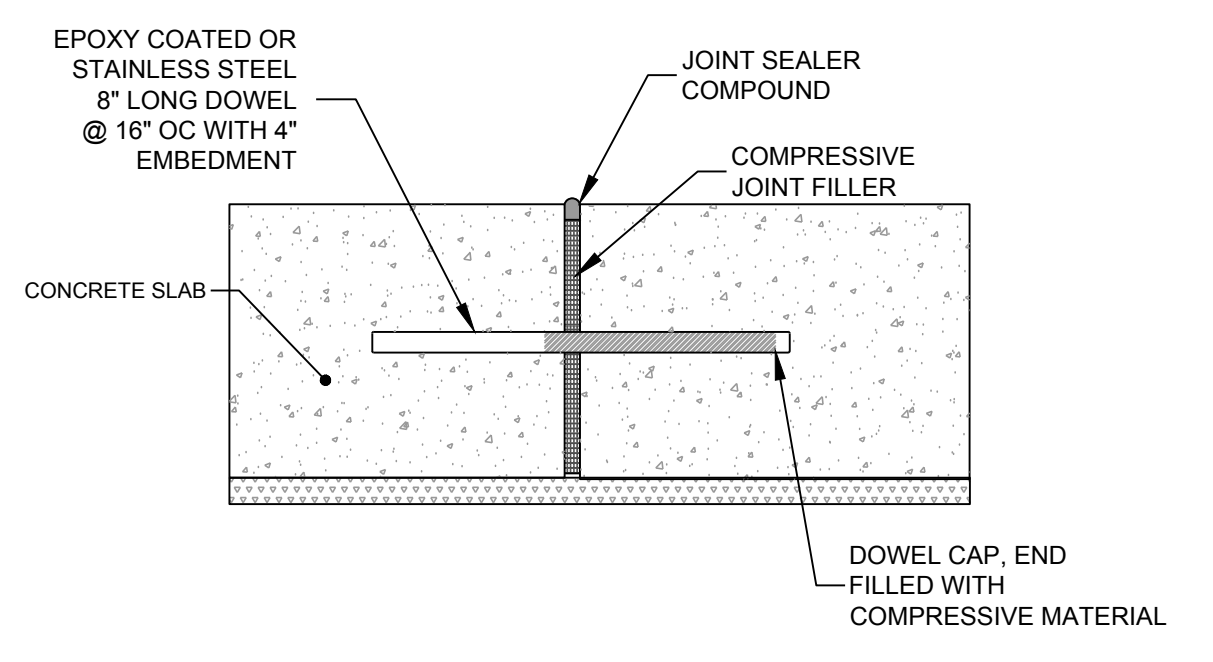
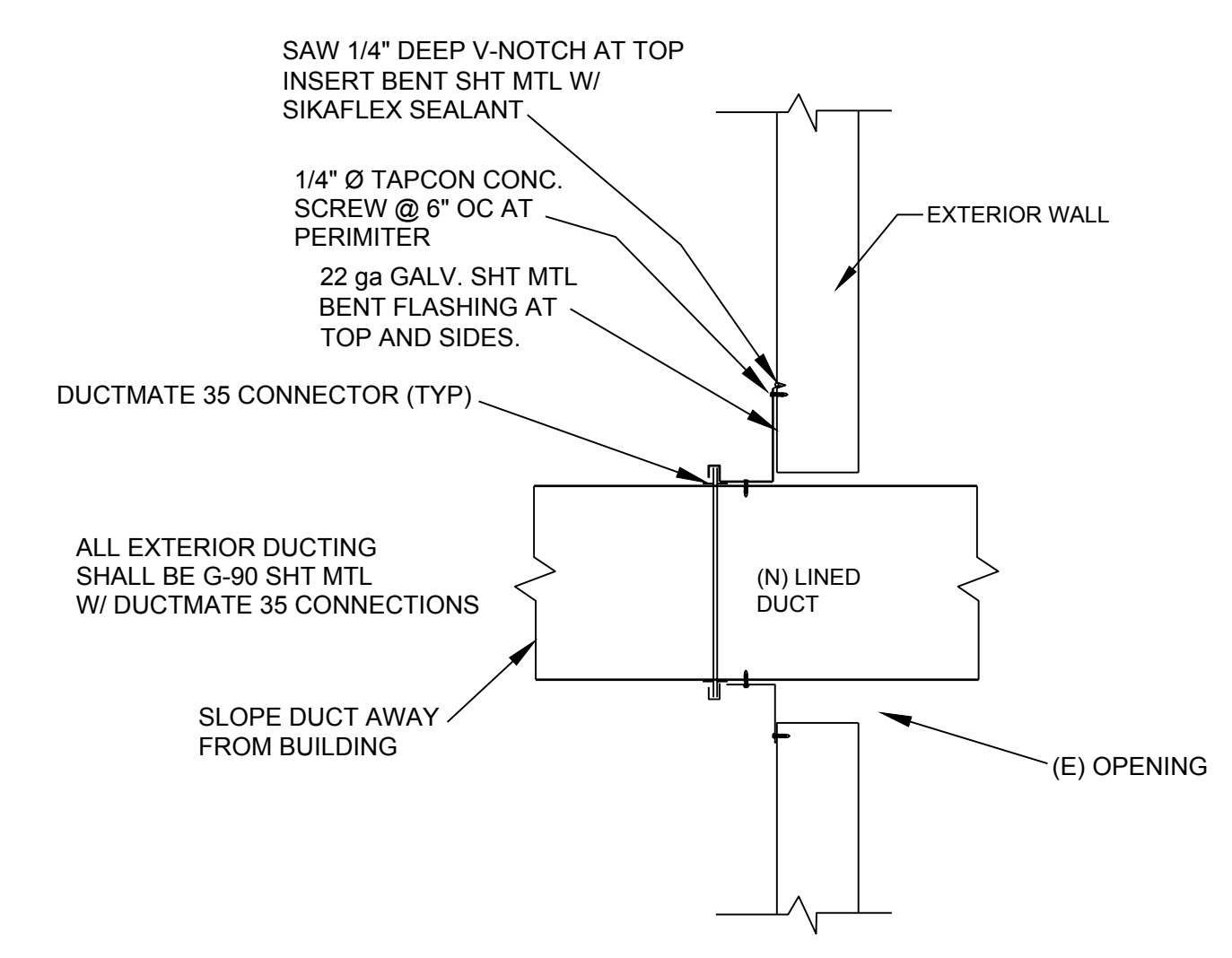
1
M5
AC ANCHORING DETAIL
 NO SCALE



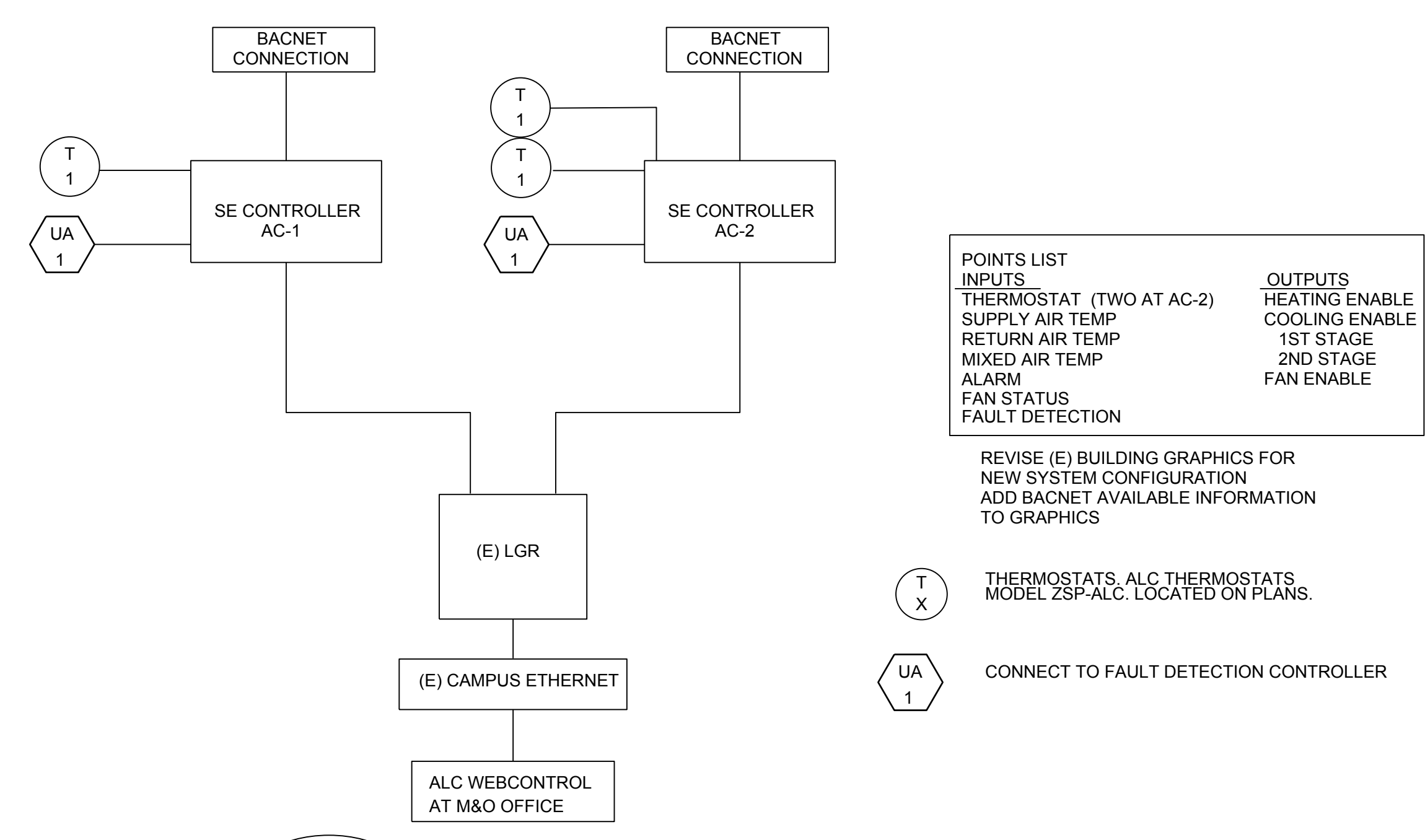
2
M5
DUCT SUPPORT DETAIL
 NO SCALE



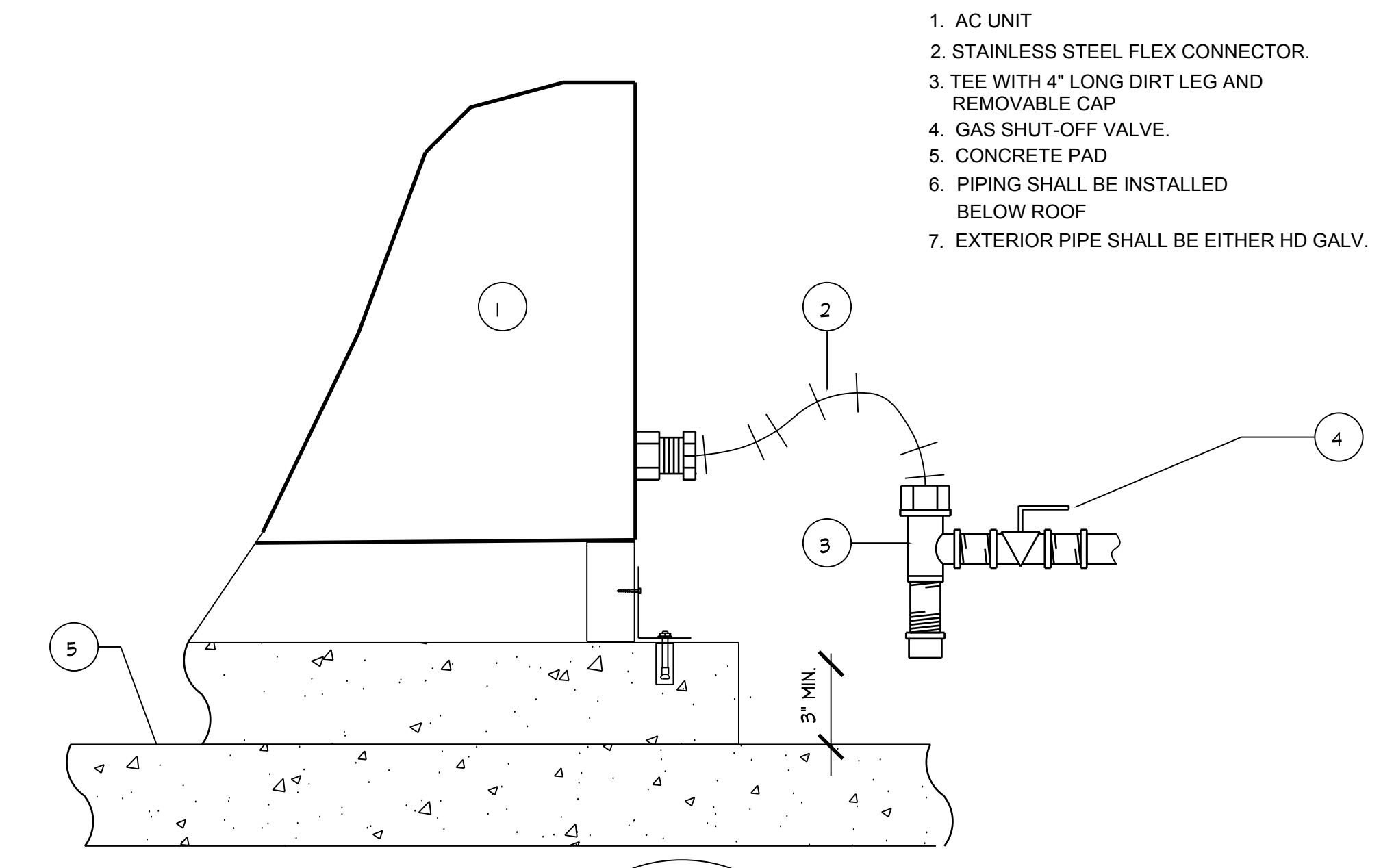
3
M5
DUCT FLASHING DETAIL
 NO SCALE



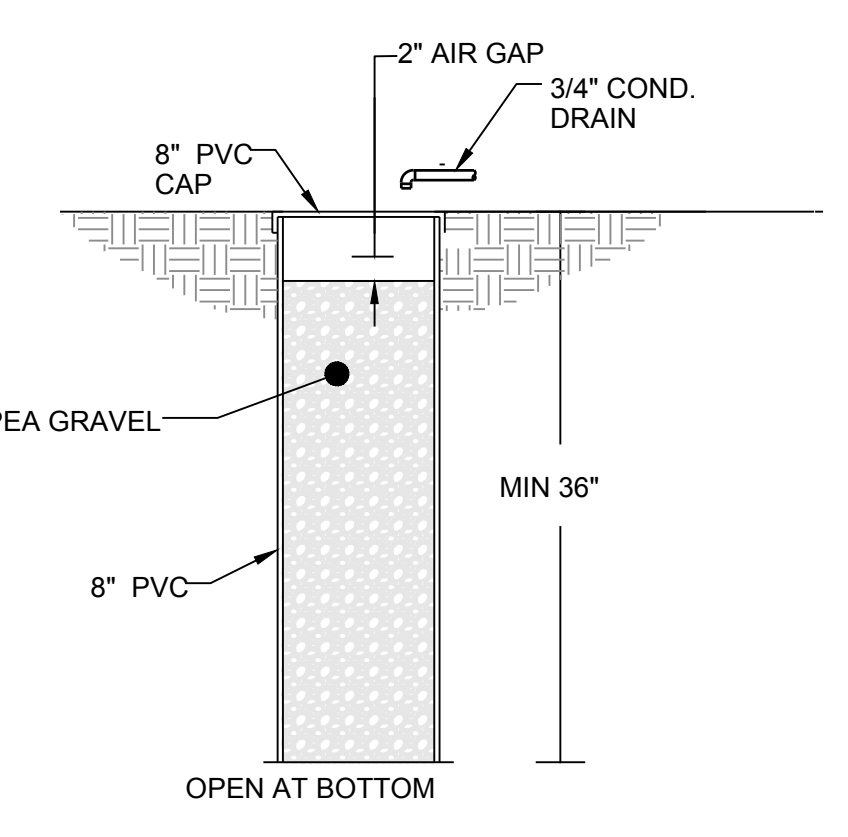
4
M5
TYPICAL HORIZ. DOWEL DETAIL
 NO SCALE



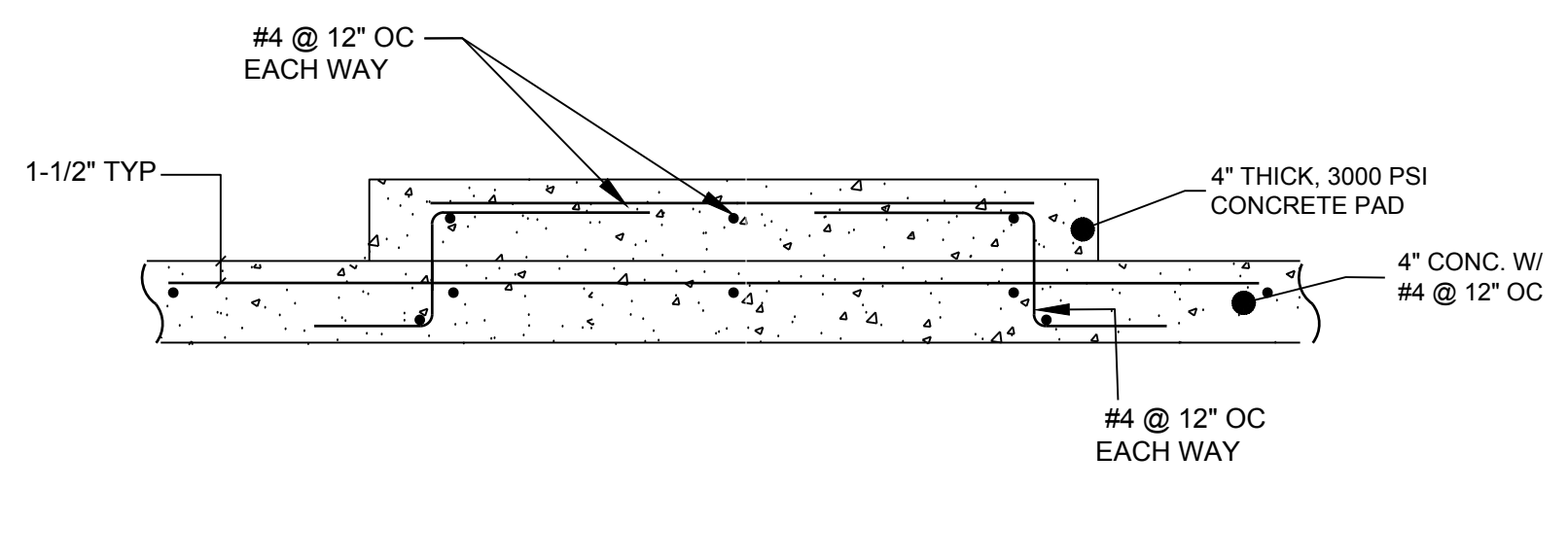
5
M5
CONTROL DETAIL
 NO SCALE



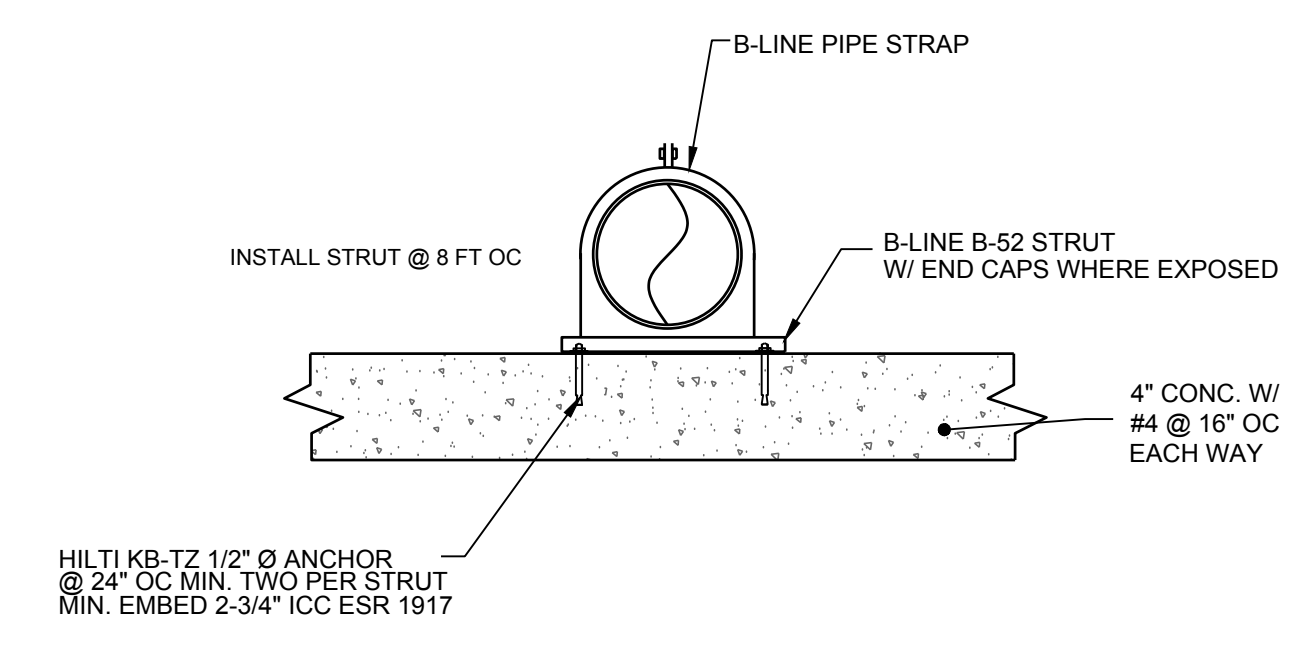
6
M5
GAS CONNECTION DETAIL
 NO SCALE



7
M5
DRYWELL DETAIL
 NO SCALE



8
M5
TYPICAL MECHANICAL PAD DETAIL
 NO SCALE



9
M5
GAS PIPE SUPPORT DETAIL
 NO SCALE

