SYMBOLS

COLUMN LINE

DOOR SYMBOLS
- DOOR MARK
- HARDWARE GROUP

WINDOW / LOUVER TYPE
SKIP LETTERS "I" AND "O"

EQUIPMENT TYPE
- TYPE OF EQUIPMENT
- X=X-RAY; F=FOOD SERVICE EQUIPMENT LIST

REVISIONS
- CLOUD AROUND REVISION OPTIONAL

MATCH LINE
- SHADED PORTION IS THE SIDE CONSIDERED

WORK POINT, CONTROL POINT OR DATUM POINT

BUILDING SECTION
- SECTION IDENTIFICATION DRAWING SHEET WHERE
- SECTION IS DRAWN

DETAIL
- DETAIL NUMBER
- DRAWING SHEET WHERE DETAIL IS DRAWN

INTERIOR ELEVATION
- ELEVATION IDENTIFICATION (ELEVATIONS UNFOLD CLOCKWISE NO ARROW INDICATES NO ELEVATION SHOWN.)
- DRAWING SHEET WHERE ELEVATION IS DRAWN

ROOM IDENTIFICATION
- ROOM NAME
- ROOM NUMBER
- ROOM MATERIAL CODES
  - 1ST NO. FLOOR/BASE
  - 2ND NO. WALLS WAINSCOT
  - 3RD NO. CEILING
- CEILING HEIGHT

40.8' NEW FINISH GRADE (DRAWN IN BOX)

34.6 EXISTING GRADE (SHOWN HORIZONTALLY)

NEW CONTOUR

EXISTING CONTOUR

CENTER LINE

PROPERTY LINE

SWALE

GENERAL DIRECTION SURFACE DRAINAGE

SS SANITARY SEWER

SD STORM DRAIN LINE

CHAIN LINK FENCE

W WATER LINE

GAS GAS

E ELECTRICAL CONDUIT UNDERGROUND

FIRE HYDRANT

POWER OR TELEPHONE POLE

DUPLEX OUTLET

FOURPLEX OUTLET

G.F.I. DUPLEX OUTLET GROUND FAULT INTERRUPTER

1/2 HOT DUPLEX OUTLET HALF HOT

220v DUPLEX OUTLET 220 VOLTS

T THERMOSTAT

J JUNCTION BOX

PH TELEPHONE

TV CABLE TV

DB DOOR BELL

SD SMOKE DETECTOR

CO CARBON MONOXIDE ALARM

$ ELECTRIC SWITCH

$3 ELECTRIC SWITCH THREE WAY

$4 ELECTRIC SWITCH FOUR WAY

LIGHT FIXTURE WALL MOUNTED

LIGHT FIXTURE RECESSED DOWN

EX. FAN & LIGHT COMBINATION

EX. FAN

LIGHT FIXTURE FLUORESCENT

LIGHT FIXTURE UNDER COUNTER

LIGHT FIXTURE TRACK

CLG. FAN

H.B. S.O.V. HOSE BIB W/ SHUT-OFF VALVE

H.B. HOSE BIB

F.G. FUEL GAS

C.W. COLD WATER

H.W. HOT WATER

KEY GAS VALVE KEY

ABBREVIATIONS

&	AND
∠	ANGLE
@	AT
Ø	DIAMETER OR ROUND
#	POUND OR NUMBER
(E)	EXISTING
(N)	NEW
A.B.	ANCHOR BOLT
A.C.	ASPHALTIC CONCRETE
ACOUS.	ACOUSTICAL
A.D.	AREA DRAIN
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISH FLOOR
AGGR.	AGGREGATE
AL.	ALUMINUM
ALT.	ALTERNATE
AP.	ACCESS PANEL
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
ASB.	ASBESTOS
ASPH.	ASPHALT
AUTO.	AUTOMATIC
BD.	BOARD
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
BOT.	BOTTOM
BTWN.	BETWEEN
CAB.	CABINET
C.B.	CATCH BASIN
C.B.C.	CALIFORNIA BUILDING CODE
CEM.	CEMENT
CER.	CERAMIC
CERT.	CERAMIC TILE
C.I.	CAST IRON
C.J.	CONSTRUCTION JOINT
CL.	CENTER LINE
CLG.	CEILING
CLKG.	CAULKING
CLO.	CLOSET
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
CO.	CLEANOUT
COL.	COLUMN
COMP.	COMPOSITION
CONC.	CONCRETE
COND.	CONDITION
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CORR.	CORRIDOR
CTSK.	COUNTER SUNK
CNTR.	COUNTER
CTR.	CENTER
C.W.	COLD WATER
d	PENNY (nail)
DBL.	DOUBLE
DEPT.	DEPARTMENT
D.F.	DRINKING FOUNTAIN
DET.	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
DN.	DOWN
D.O.	DOOR OPENING
DR.	DOOR
DW.	DISHWASHER
DWR.	DRAWER
DS.	DOWNSPOUT
D.S.P.	DRY STANDPIPE
DWG.	DRAWING
E.	EAST
EA.	EACH
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMER.	EMERGENCY
ENCL.	ENCLOSURE
E.P.	ELECTRICAL PANEL BOARD
EQ.	EQUAL
EQPT.	EQUIPMENT
E.W.C.	ELECTRIC WATER COOLER
EX.	EXHAUST
EXIST.	EXISTING
EXPO.	EXPOSED
EXP.	EXPANSION
EXT.	EXTERIOR
F.A.	FIRE ALARM
F.A.U.	FORCED AIR UNIT
F.B.	FLAT BAR
F.D.	FLOOR DRAIN
FND.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C	FIRE EXTINGUISHER CABINET
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
F.H.C.	FIRE HOSE CABINET
F.H.W.S.	FLATHEAD WOOD SCREW
FIN.	FINISH
FIXT.	FIXTURE
FL.	FLOOR
FLASH	FLASHING
FLUOR.	FLUORESCENT
F.O.C	FACE OF CONCRETE
F.O.F	FACE OF FINISH
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
FPRF.	FIREPROOF
F.R.P.	FIBERGLASS REINFORCED PANEL
FT.	FOOT OR FEET
FTG.	FOOTING
FURR.	FURRING
FUT.	FUTURE
FX.	FIXED
GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRAB BAR
G.F.I.	GROUND FAULT INTERRUPTER
G.I.	GALVANIZED IRON
GL.	GLASS
GLU. LAM.	GLUE LAMINATED BEAM
GND.	GROUND
GR.	GRADE
GYP.	GYPSUM
H.B.	HOSE BIB
H.C.	HOLLOW CORE
HDR.	HEADER
HDWD.	HARDWOOD
HDWE.	HARDWARE
HGT.	HEIGHT
HI.	HIGH
H.M.	HOLLOW METAL
HOR.	HORIZONTAL
HT.	HEIGHT
HR.	HOUR
HTR.	HEATER
HVAC	HEATING VENTILATING & AIR CONDITIONING
H.W.	HOT WATER
I.B.C.	INSTALLED BY CONTRACTOR
I.D.	INSIDE DIAMETER (DIM)
IN.	INCH
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
JAN.	JANITOR
J.H.	JOIST HANGER
JT.	JOINT
JST.	JOIST
KIT.	KITCHEN
LAB.	LABORATORY
LAM.	LAMINATE
LAV.	LAVATORY
LKR.	LOCKER
LT.	LIGHT
MAS.	MASONRY
MAT.	MATERIAL
MAX.	MAXIMUM
M.C.	MEDICINE CABINET
MECH.	MECHANICAL
MEMB.	MEMBRANE
MET.	METAL
MFR.	MANUFACTURER
MH.	MANHOLE
M.I.	MALLEABLE IRON
MIN.	MINIMUM
MIR.	MIRROR
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
M.T.	METAL THRESHOLD
MTD.	MOUNTED
MUL.	MULLION
N.	NORTH
N/A	NOT APPLICABLE
NAT.	NATURAL
N.I.C.	NOT IN CONTRACT
NO. OR #	NUMBER
N.T.S.	NOT TO SCALE
O/	OVER
OA.	OVERALL
OBS.	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER (DIM.)
OFF.	OFFICE
O.H.	OVERHANG
OPNG.	OPENING
OPP.	OPPOSITE
P.	POLE
P.A.F.	POWDER ACTUATED FASTENER
PERIM.	PERIMETER
PERP.	PERPENDICULAR
PH.	PHONE
PL.	PLATE
P. LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLUMB.	PLUMBING
PLYWD.	PLYWOOD
PR.	PAIR
PRCST.	PRECAST
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
P.T.D.	PAPER TOWEL DISPENSER
P.T.DR.	COMBINATION PAPER TOWEL DISPENSER & RECEPTACLE
P.T.H.	PAPER TOWEL HOLDER
PTN.	PARTITION
P.T.R.	PAPER TOWEL RECEPTACLE
Q.T.	QUARRY TILE
R.F.P.	REINFORCED FIBERGLASS PANEL
R.	RISER
R.A.	RETURN AIR
RAD.	RADIUS
R.D.	ROOF DRAIN
RECPT.	RECEPTACLE
REF.	REFRIGERATOR
REFR.	REFERENCE
REG.	REGISTER
REINF.	REINFORCED
REQ.	REQUIRED
RESIL.	RESILIENT
R.H.W.S.	ROUND HEAD WOOD SCREW
RM.	ROOM
R.O.	ROUGH OPENING
RW.	RIGHT OF WAY
RWD.	REDWOOD
R.W.L.	RAIN WATER LEADER
S	SOUTH
S.A.	SUPPLY AIR
S.B.	SOLID BLOCKING
S.C.	SOLID CORE
S.C.D.	SEAT COVER DISPENSER
SCHED.	SCHEDULE
S.D.	SOAP DISPENSER
SECT.	SECTION
SH.	SHELF
SHR.	SHOWER
SHT.	SHEET
SHTG.	SHEATHING
SIM.	SIMILAR
S.N.D.	SANITARY NAPKIN DISPENSER
S.N.R.	SANITARY NAPKIN RECEPTACLE
SPEC.	SPECIFICATION
SQ.	SQUARE
SST.	STAINLESS STEEL
S.SK.	SERVICE SINK
STA.	STATION
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
T.B.	TOWEL BAR
T.C.	TOP OF CURB
TEMP.	TEMPERED
T.E.N.	TYPICAL EDGE NAILING
TER.	TERRAZZO
T. & G.	TONGUE AND GROOVE
THK.	THICK
T.G.	TOP OF GRATE
T.M.	TOP OF MASONRY
T.P.	TOP OF PAVEMENT
T.P.D.	TOILET PAPER DISPENSER
T.O.P.	TOP OF PLATE
TRANS.	TRANSFORMER
TRD.	TREAD
T.V.	TELEVISION
T.W.	TOP OF WALL
TYP.	TYPICAL
U.L.	UNDERWRITERS LABORATORIES
UNF.	UNFINISHED
U.O.N.	UNLESS OTHERWISE NOTED
UR.	URINAL
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
VENT.	VENTILATION
VEST.	VESTIBULE
V.I.F.	VERIFY IN FIELD
V.T.R.	VENT THROUGH ROOF
W.	WEST
W/	WITH
W.C.	WATER CLOSET
WD.	WOOD
W.H.	WATER HEATER
W.M.	WATER METER
W/O	WITHOUT
WP.	WATERPROOF
WSCT.	WAINSCOT
WT.	WEIGHT
W.W.M.	WELDED WIRE MESH

MODERNIZATION FOR NEW HVAC CLASSROOM FOR:

GAVILAN COLLEGE

FILE #: 43-C4

5055 SANTA TERESA BLVD
GILROY, CALIFORNIA 95020

FILE #: 43-C4
DSA #: 01-117638

PROJECT DATA

1. PROJECT SCOPE WORK: MODERNIZE (E) SPACE FOR (N) HVAC CLASSROOM & INSTALL NEW EQUIPMENT FOR TEACHING USE.

2. LOCATION: 5055 SANTA TERESA BLVD., GILROY, CA 95020

3. BUILDING ANALYSIS: SEE SHT. A1.0

4. CODES:
   2016 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24 C.C.R.
   2016 CALIFORNIA BUILDING CODE, VOLUMES 1 & 2; PART 2, TITLE 24 C.C.R.
   2016 CALIFORNIA ELECTRICAL CODE; PART 3, TITLE 24 C.C.R.
   2016 CALIFORNIA MECHANICAL CODE; PART 4, TITLE 24 C.C.R.
   2016 CALIFORNIA PLUMBING CODE; PART 5, TITLE 24 C.C.R.
   2016 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 C.C.R.
   2016 CALIFORNIA ENERGY CODE, PART 6
   2016 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, C.C.R.
   TITLE 19, C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
   2016 NFPA 13 & NFPA 72 - NATIONAL FIRE ALARM CODE (CA. AMENDED)
   2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

   AMERICAN DISABILITIES ACT AND STANDARDS

   ALL SECTION NUMBERS BELOW REFER TO GROUP 1, CHAPTER 4, PART 1, TITLE 24, C.C.R.
   1. ADDENDA, "CONSTRUCTION CHANGE DOCUMENTS (CCD)" PER SECTION 4-338.
   2. INSPECTOR APPROVED BY DSA. INSPECTOR AND CONTINUOUS INSPECTION OF WORK PER SECTION 4-333(B) & 4-342.
   3. TESTS AND TESTING LABORATORY PER SECT. 4-335.
   4. SPECIAL INSPECTION PER SECT. 4-333(C).
   5. CONTRACTOR, INSPECTOR, ARCHITECT & ENGINEERS SHALL SUBMIT VERIFIED REPORTS PER SECT. 4-336 & 4-343(C).
   6. ADMINISTRATION OF CONSTRUCTION PER PART 1, TITLE 24, CCR - DUTIES OF ARCHITECT, STRUCTURAL ENGINEER OR PROFESSIONAL ENGINEER PER SECT. 4-333(A) & 4-341.
   7. GOVERNING CODES: TITLE 24
   8. A COPY OF PARTS 1 TO 5 OF TITLE 24 SHALL BE KEPT AVAILABLE IN THE FIELD DURING CONSTRUCTION.
   9. DSA SHALL BE NOTIFIED OF START OF CONSTRUCTION PER SECT. 4-331.
   10. SUPERVISION BY THE DIVISION OF THE STATE ARCHITECT PER SECT. 4-334.

5. THE INTENT OF THESE DRAWINGS & SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, C.C.R. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NONCOMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, C.C.R., A CONSTRUCTION CHANGE DIRECTIVE ORDER OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

6. PROJECT TO COMPLY WITH CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION AND CBC CHAPTER 33, SAFETY DURING CONSTRUCTION WILL BE ENFORCED.

7. PER TITLE 24, PART 1 CALIFORNIA ADMINISTRATIVE CODE. NO CHANGES OR REVISIONS SHALL BE MADE FOLLOWING WRITTEN APPROVAL WHICH EFFECTS ACCESS COMPLIANCE, FIRE & LIFE SAFETY AND STRUCTURAL ITEMS UNLESS SUCH CHANGES OR REVISIONS ARE SUBMITTED TO THE DSA FOR APPROVAL.

8. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE SUBMITTED AS A CONSTRUCTION CHANGE DOCUMENT OR ADDENDA, AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION.

9. CONSTRUCTION CHANGE ORDERS SHALL BE SIGNED BY THE FOLLOWING:
   - ARCHITECT OR ENGINEER OF RECORD
   - STRUCTURAL ENGINEER (WHEN APPLICABLE)
   - DELEGATED PROFESSIONAL ENGINEER
   - DSA

10. PER CBC 11B-104.1 ALL DIMENSIONS ARE SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES EXCEPT WHERE THE REQUIREMENT IS STATED AS A RANGE WITH SPECIFIC MINIMUM AND MAXIMUM END POINTS.
ORD

DSA NOTES PER PR15-01

1. DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT: THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

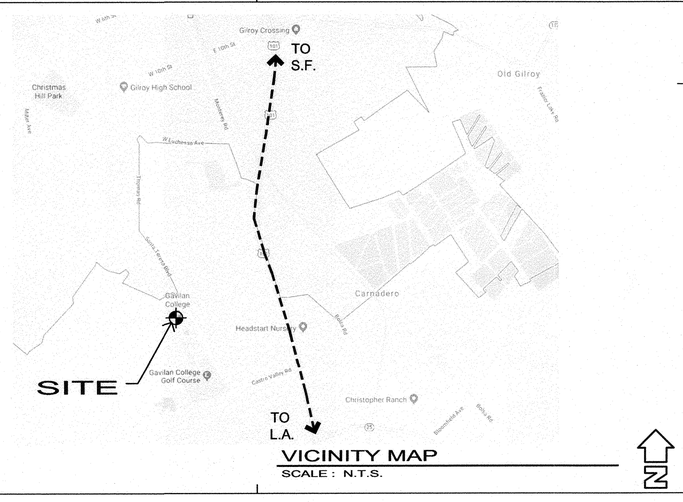
2. FIELD VERIFICATION: DSA MAY REVIEW THE CODE COMPLIANCE OF THE PATH OF TRAVEL
DURING THE COURSE OF A PROJECT.

2.1 PLAN REVIEW: DSA MAY VERIFY COMPLIANCE OF PATH OF TRAVEL ELEMENTS PRESENTED ON THE CONSTRUCTION DOCUMENTS AS PART OF THE PLAN REVIEW PROCESS. DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS WILL BE RESOLVED AS PART OF THE PLAN REVIEW AND BACK CHECK PROCESS.

2.2 DURING CONSTRUCTION: PATH OF TRAVEL ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT BUT FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THE PROJECT. A CONSTRUCTION CHANGE DOCUMENT TO CORRECT THE DISCREPANCY SHALL BE PREPARED BY THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.

2.3 AT COMPLETION: ANY REQUIRED PATH OF TRAVEL UPGRADES NOT COMPLETE AT THE END OF THE PROJECT WILL BE IDENTIFIED AS DEFICIENCY ITEMS AND INDICATED AS SUCH IN THE DSA CERTIFICATION BOX UNTIL CORRECTED.

SHEET INDEX



VICINITY MAP
SCALE : N.T.S.

ARCHITECT
ISA IN STUDIO ARCHITECTURE
ISA IN STUDIO ARCHITECTURE
250 MAIN ST.
SALINAS, CA 93901
831.320.2655

MECH./PLUMBING
AXIOM ENGINEERS
22 LOWER RAGSDALE DRIVE, SUITE A
MONTEREY, CA 93940
831.649.8000 EXT. 111

ELECTRICAL
AURUM CONSULTING ENGINEERS
60 GARDEN COURT #210
MONTEREY, CA 93940
831.646.3340

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
ACCESSIBILITY COMPLIANCE
INSPECTOR
DATE 09-06-2018

LICENSED ARCHITECT ALEX REYNOSO No. C 29184 Exp. 02/28/19 STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
TITLE SHEET

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	
CHECKED BY:	–
FILENAME:	–

A0.1

GENERAL NOTES

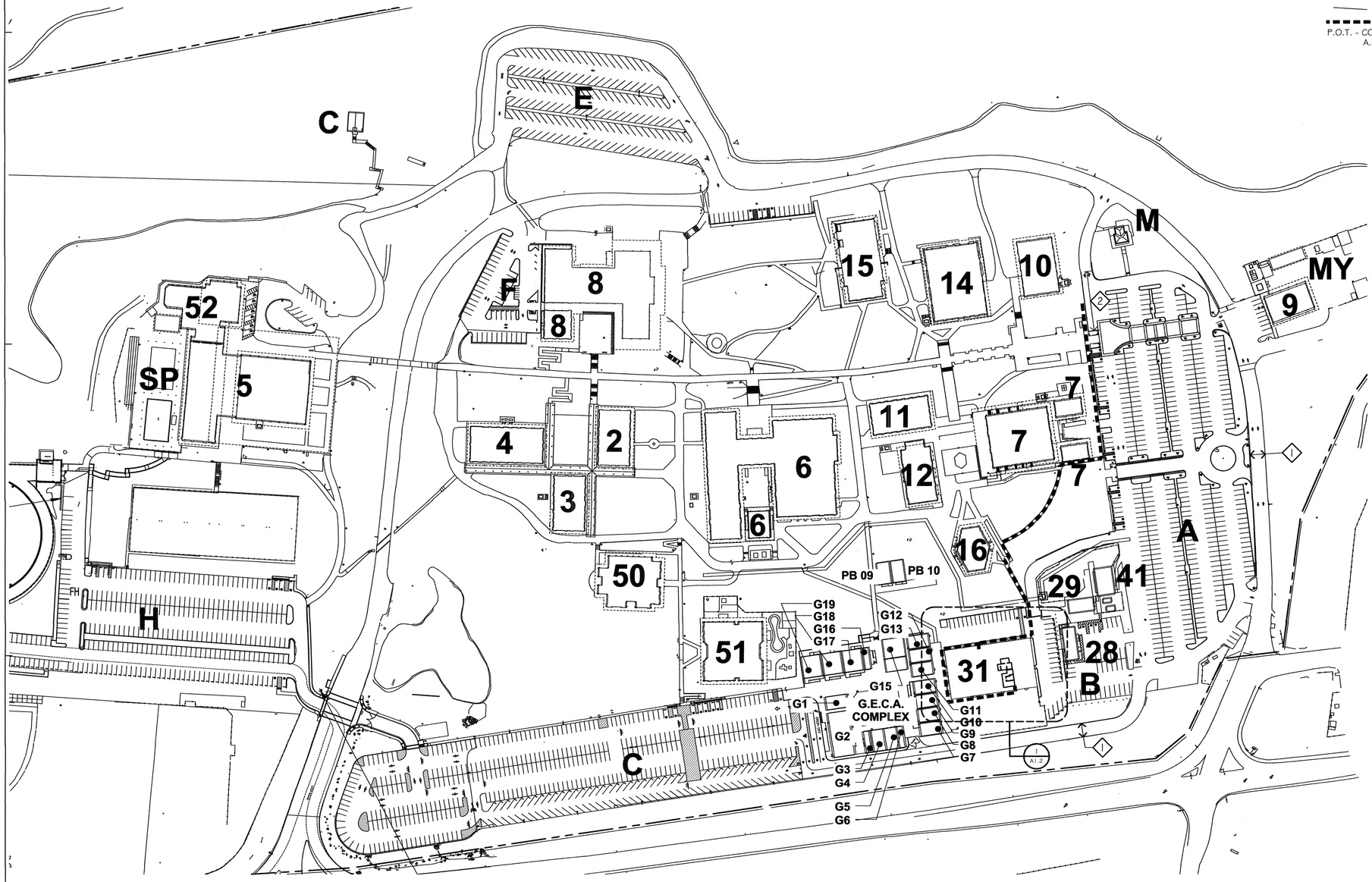
1. EVERYTHING IS EXISTING UNLESS OTHERWISE NOTED.
2. G.C. TO VERIFY ALL DIMENSIONS IN FIELD AND COORDINATE ALL WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
3. SEE MECH., PLUMB. & ELEC. DWG'S FOR ADDITIONAL DEMOLITION INFO
4. SEE A1.1 FOR FIRE ACCESS & FIRE NOTES

KEYED NOTES

1. CAMPUS ROAD
2. BUS ONLY DROP OFF

LEGEND

P.O.T. - CONC. OR A.C. PAVING — PATH OF TRAVEL (P.O.T.), AS INDICATED, IS A COMMON BARRIER FREE ACCESS ROUTE WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING ½" BEVELED AT 1:2 MAX. SLOPE, EXCEPT THAT LEVEL CHANGES DO NOT EXCEED ¼" VERTICAL AND IS AT LEAST 48" WIDE. THE PATH SURFACE IS SLIP RESISTANT, STABLE, FIRM AND SMOOTH. PASSING SPACES (11B-403.5.3) AT LEAST 60" X 60" ARE LOCATED NOT MORE THAN 200' APART. PARTS OF P.O.T. WITH CONTINUOUS GRADIENTS HAVE 60" LEVEL AREAS (11B-403.7) NOT MORE THAN 400' APART. THE CROSS-SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL AND IS LESS THAN 5% U.O.N. P.O.T. SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MIN. (11B-307) AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL & ABOVE 27" AND LESS THAN 80" (11B-307.4)



1 SITE PLAN
SCALE: 1" = 100'-0"
100 0 100 200 FEET

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC ___ FLS ___ SS ___
DATE 09-06-2018

LICENSED ARCHITECT
ALEX REYNOSO
No. C 29184
Exp. 02/28/19
STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
SITE PLAN

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	
CHECKED BY:	
FILENAME:	

A1.1

GENERAL NOTES

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3. SEE MECH., PLUMB. & ELEC. DWG'S FOR ADDITIONAL DEMOLITION INFO

KEYED NOTES

1. FIRE HYDRANT
2. (E) TOW AWAY SIGNAGE
3. ACCESSIBLE PARKING SEE
4. FIRE DEPARTMENT ACCESS, 20'-0" CLR.
5. ACCESSIBLE RESTROOMS / DRINKING FOUNTAIN
   A. RESTROOMS DSA# 01-108364
   B. DRINKING FOUNTAIN DSA# 01-108364

LEGEND

BUILDING SCOPE OF WORK

P.O.T. - CONC. OR A.C. PAVING

PATH OF TRAVEL (P.O.T.), AS INDICATED, IS A COMMON BARRIER FREE ACCESS ROUTE WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING ¼" BEVELED AT 1:2 MAX. SLOPE, EXCEPT THAT LEVEL CHANGES DO NOT EXCEED ½" VERTICAL AND IS AT LEAST 48" WIDE. THE PATH SURFACE IS SLIP RESISTANT, STABLE, FIRM AND SMOOTH. PASSING SPACES (11B-403.5.3) AT LEAST 60" X 60" ARE LOCATED NOT MORE THAN 200' APART. PARTS OF P.O.T. WITH CONTINUOUS GRADIENTS HAVE 60" LEVEL AREAS (11B-403.7) NOT MORE THAN 400' APART. THE CROSS-SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL AND IS LESS THAN 5% U.O.N. P.O.T. SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MIN. (11B-307) AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL & ABOVE 27" AND LESS THAN 80" (11B-307.4)

DSA 810

LOCAL FIRE AUTHORITY REVIEW

To facilitate the Division of the State Architect's (DSA) approval of the Fire/Life Safety portion of a project, DSA requires Local Fire Authority (LFA) review of certain elements as identified in this form. Use of this form is mandatory for projects that add square footage to a campus or if any item on this form is relevant to the project. For additional information, see DSA 810 Instructions and DSA Policy 09-01.

PROJECT INFORMATION

School District/Owner: GAVILAN COLLEGE
Project Name/School: RENOVATION OF HVAC CLASSROOM @ BUILDING 31
Project Address: 5055 SANTA TERESA BLDG., GILROY CA 95020

LOCAL FIRE AUTHORITY (LFA)

LFA Agency Name: SANTA CLARA COUNTY FIRE MARSHALL OFFICE
LFA Reviewer Name: BOB CAMPBELL — Title: SR. FIRE PROT. ENG.
Work Email: BOB.CAMPBELL@SCCFD.ORG — Work Telephone Number: 408-299-5761
I have reviewed and responded to the applicable items for this project as listed below.
Note: Only sign this form when it is intended as the complete. A loose form is not acceptable to DSA.
LFA Reviewer's Signature: [signature] Date: 6/25/18
Review Key: "Y" = Complies with LFA requirements "N" = Not approved (complete Section 8)
"NA" = Not applicable to the project "NR" = LFA elects not to review

	Description	Y	N	NA	NR
1	Where an elevator does not meet medical emergency service cab size, per the California Building Code (CBC), use of stairways for emergency rescue and patient transport is acceptable.			X	
2	Access roads, fire lane markings, pavers and gate entrances are in accordance with Title 19, California Code of Regulations and the California Fire Code, Chapter 5.			X	
3	Fire hydrant location and distribution complies with the California Fire Code (or see # 4).			X	
4	Fire hydrant location and distribution complies with NFPA 1142, "Alternate Means." If "NR" is checked, DSA can only approve on-site water storage as an alternate. The signature of the school district official is required to acknowledge the use of alternate means. Signature of School District Official: _____ Date: _____ Print the School District Official's Name: _____			X	
5	The location(s) of the proposed post indicator valve and fire department connection meet the requirements of this jurisdiction.			X	
6	The location(s) of the detector check valve assembly meet the requirements of this jurisdiction.			X	
7	Is the project located in a hazard severity zone area? (CBC, Chapter 7A, Section 701A.) ☐ Yes ☐ No. Check type if "Yes": ☐ Moderate ☒ High ☐ Very High ☐ WIFA (If one of these boxes is checked, the project design must meet the requirements of Chapter 7A.)				
8	COMMENTS (note deficiencies):				

DSA 810 (rev 01-24-18) DIVISION OF THE STATE ARCHITECT — DEPARTMENT OF GENERAL SERVICES — Page 1 of 1 STATE OF CALIFORNIA

1 SITE PLAN
SCALE: 1" = 100'-0"
100 0 100 200 FEET

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
ACC FLS SS
DATE 09-06-2018

LICENSED ARCHITECT ALEXANDER REYNOSO No. C 29184 Exp. 02/28/19 STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

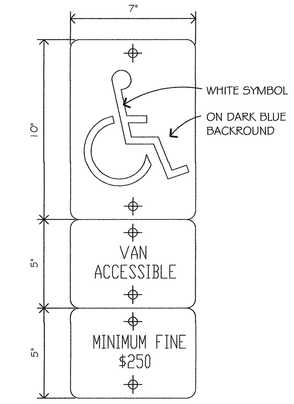
PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

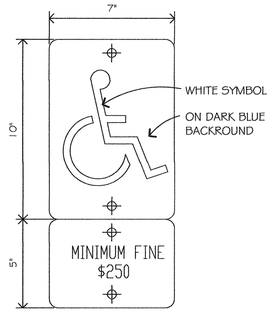
SHEET
SITE PLAN

PROJECT NUMBER: 1817
ISSUED: JUNE 28, 2018
DRAWN BY:
CHECKED BY:
FILENAME:

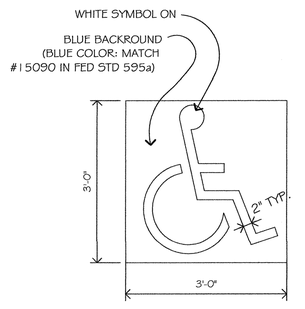
A1.1F



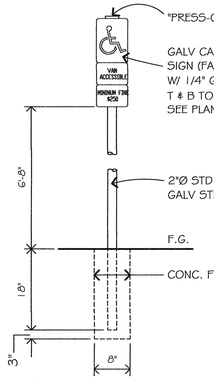
VAN ACC. SIGN .4
3" = 1'-0"



STD. ACC. SIGN .3
3" = 1'-0"

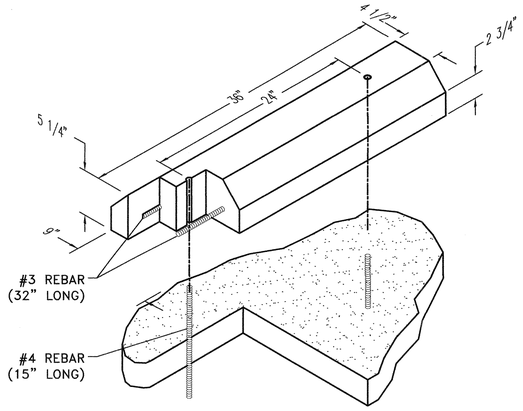


SIGN ON PAVING .2
3/4" = 1'-0"

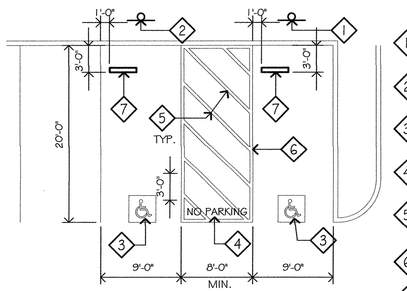


SIGN ON POST .1
N.T.S.

3 ACCESSIBLE PARKING SIGNAGE
SCALE: AS NOTED



4 WHEEL STOP
SCALE: N.T.S.

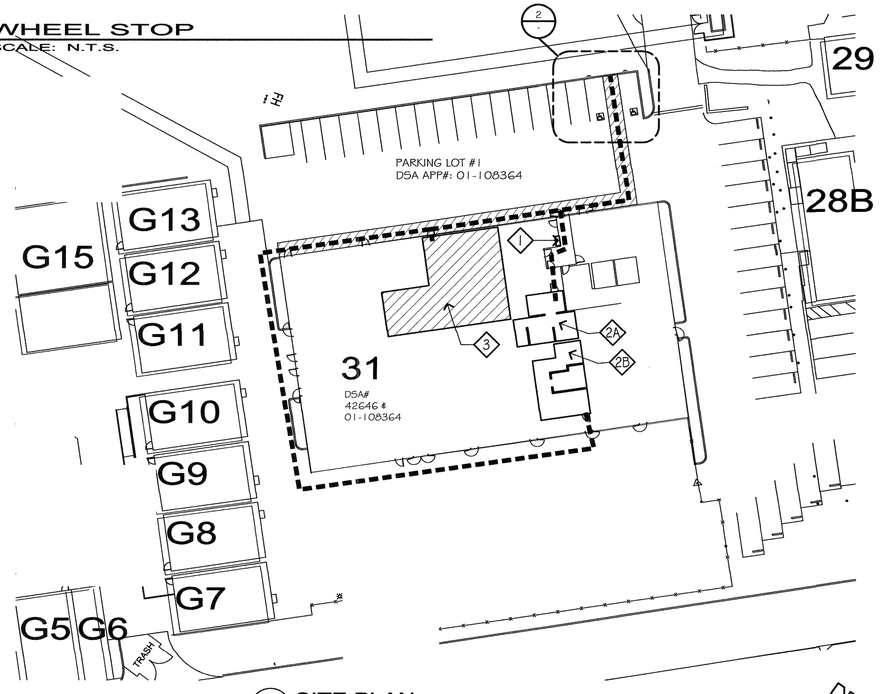


KEYED NOTES

1. (N) STD. ACC. SIGN TYPE SEE DTL. 3.3 & POST 3.1 THIS SHT.
2. (N) VAN ACC. SIGN TYPE (ON EXISTING POLE) SEE DTL. 3.4 THIS SHT.
3. RE-STRIPE ACC. SIGN ON PAVING, SEE DTL. 2.2 THIS SHT.
4. RE-STRIPE 12" HIGH PAINTED TEXT (WHITE)
5. RE-STRIPE 4" WIDE STRIPPING (WHITE)
6. RE-STIPE 4" WIDE STRIPED BORDER (BLUE)
7. (N) 3' CONC. WHEEL STOP SEE DTL. 4 THIS SHT.

2 (E) PARKING
SCALE: 1/8" = 1'-0"

8 0 8 16 FEET



1 SITE PLAN
SCALE: 1" = 30'-0"

30 0 30 60 FEET

GENERAL NOTES

1. EVERYTHING IS EXISTING UNLESS OTHERWISE NOTED.
2. G.C. TO VERIFY ALL DIMENSIONS IN FIELD AND COORDINATE ALL WORK, NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.
3. SEE MECH., PLUMB. & ELEC. DWG'S FOR ADDITIONAL DEMOLITION INFO

KEYED NOTES

1. D.F. DSA #01-108364
2. ACCESSIBLE RESTROOMS
   A. MEN DSA #01-108364
   B. WOMEN DSA #01-108364
3. AREA OF WORK, SEE 1/A2.2

LEGEND

BUILDING SCOPE OF WORK

P.O.T. - CONC. OR A.C. PAVING — PATH OF TRAVEL (P.O.T.), AS INDICATED, IS A COMMON BARRIER FREE ACCESS ROUTE WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING ½" BEVELED AT 1:2 MAX. SLOPE, EXCEPT THAT LEVEL CHANGES DO NOT EXCEED ¼" VERTICAL AND IS AT LEAST 48" WIDE. THE PATH SURFACE IS SLIP RESISTANT, STABLE, FIRM AND SMOOTH. PASSING SPACES (11B-403.5.3) AT LEAST 60" X 60" ARE LOCATED NOT MORE THAN 200' APART. PARTS OF P.O.T. WITH CONTINUOUS GRADIENTS HAVE 60" LEVEL AREAS (11B-403.7) NOT MORE THAN 400' APART. THE CROSS-SLOPE DOES NOT EXCEED 2% AND SLOPE IN THE DIRECTION OF TRAVEL AND IS LESS THAN 5% U.O.N. P.O.T. SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MIN. (11B-307) AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL & ABOVE 27" AND LESS THAN 80" (11B-307.4)

BUILDING ANALYSIS

BLDG.	DESCRIPTION	OCC.	CONST. TYPE	AREA	DSA APP#
31	(E) OCCUPATIONAL EDUCATION	B	V-N	15,998 sf.	42646
					01-108364

ALLOWABLE AREA INCREASE %	ALLOWABLE AREA INCREASE	ACTUAL AREAS / ALLOWABLE AREAS
60' YARD 3-SIDES =40x2.5 =100%	16,000S.F.	15,998 S.F. / 16,000 S.F. =0.99 < 1.0 (OK)

PARKING - #1

STANDARD	VAN ACS.	STD. ACS.	TOTALS
29	1	1	31

IN STUDIO ARCHITECTURE
250 MAIN STREET
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831.320.2655

DATES

IDENTIFICATION STAMP
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01-117638
APPLICATION NUMBER
AC FLS SS WEG
DATE 09-06-2018

LICENSED ARCHITECT ALEX REYNOSO No. C 29184 Exp. 02/28/19 STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

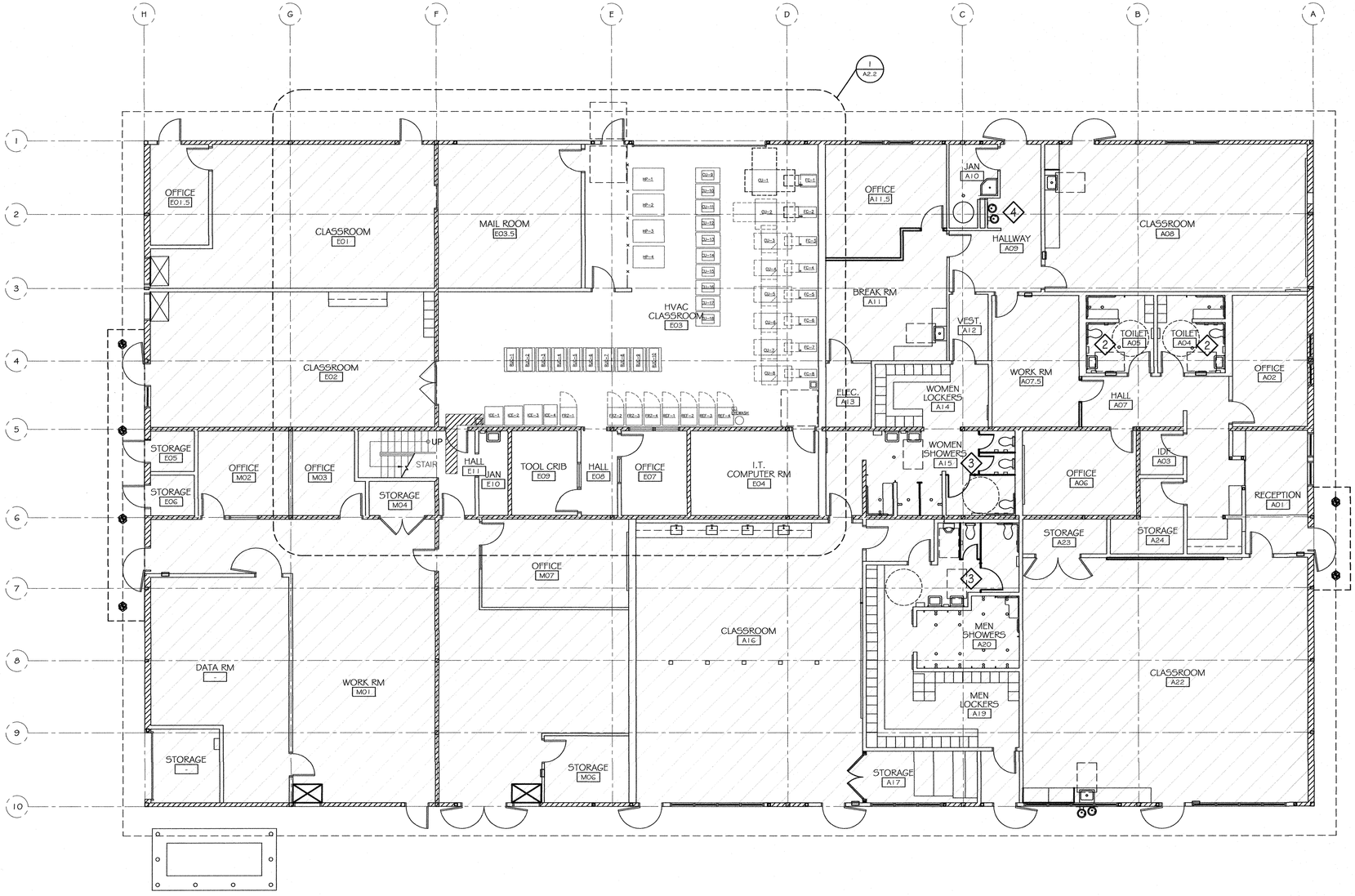
PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

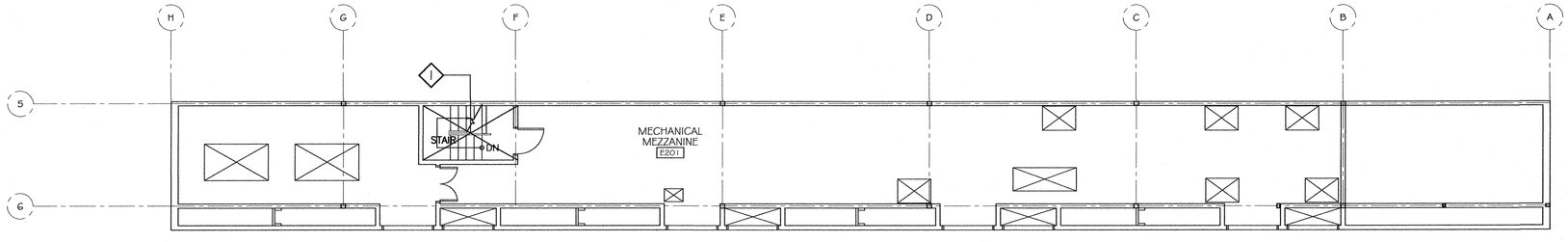
SHEET
PARTIAL SITE PLAN

PROJECT NUMBER: 1817
ISSUED: JUNE 28, 2018
DRAWN BY:
CHECKED BY:
FILENAME:

A1.2



2 FLOOR PLAN
SCALE : 1/8" = 1'-0"



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

8 0 8 16 FEET

GENERAL NOTES

1. EVERYTHING IS EXISTING UNLESS OTHERWISE NOTED.
2. G.C. TO VERIFY ALL DIMENSIONS IN FIELD AND COORDINATE ALL WORK, NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.

KEYED NOTES

1. (E) STAIR, OPEN TO BELOW
2. (E) TOILET PER DSA # 01-108364
3. (E) SHOWER/TOILET PER DSA# 01-108364
4. (E) D.F. PER DSA# 01-108364

LEGEND

- (E) NON - SHEAR WALL
- (E) SHEAR WALL
- (E) FACILITY - NO CHANGE

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC ___ FLS ___ SS ___

DATE 09-06-2018

LICENSED ARCHITECT
ALEX REYNOSO
No. C 29184
Exp. 02/28/19
STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

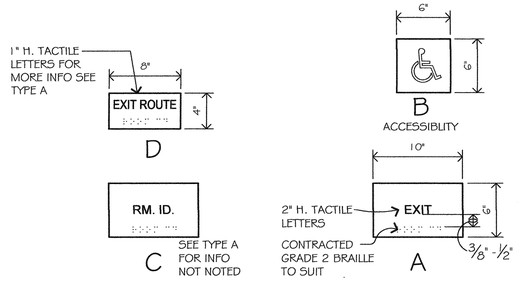
5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

FLOOR PLAN

PROJECT NUMBER: 1817
ISSUED: JUNE 28, 2018
DRAWN BY:
CHECKED BY:
FILENAME:

A2.1



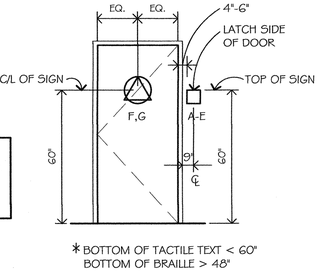
SIGNS .2

ROOM ID SIGN:

BACKGROUND: OPAQUE, COLORED
MATERIAL: 1/4" THK. ACRYLIC
- RAISED WHITE LETTERS
- CALIFORNIA GRADE 2 BRAILLE
SIZE: AS NOTED

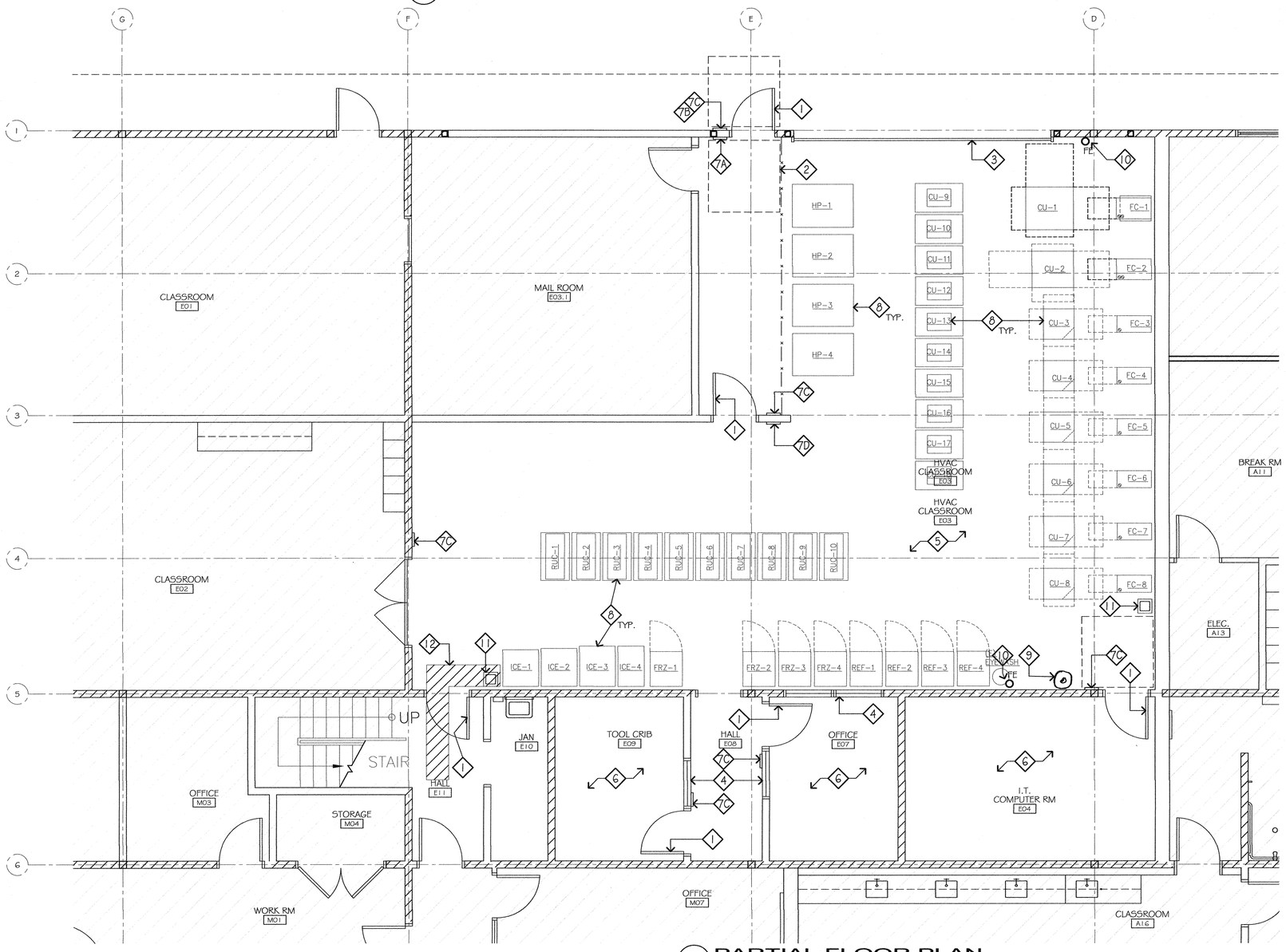
DOOR MOUNTED SIGN:

PER CBC 11B-703.7.2.6 A GEOMETRIC SYMBOL 1/4" THICK AND CONTRASTING THE DOOR COLOR SHALL BE MOUNTED ON TOILET ROOM DOORS BRAILLE IS PROHIBITED AND LETTERS & PICTOGRAMS ARE NOT REQUIRED



TYP. MOUNTING .1

2 TYP. SIGNAGE
SCALE: N.T.S.



1 PARTIAL FLOOR PLAN
SCALE : 1/4" = 1'-0"

4 0 4 8 FEET

GENERAL NOTES

1. EVERYTHING IS EXISTING UNLESS OTHERWISE NOTED.
2. G.C. TO VERIFY ALL DIMENSIONS IN FIELD AND COORDINATE ALL WORK, NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.

KEYED NOTES

1. (E) DOOR & FRAME W/ (N) LEVER HARDWARE, GROUP 'A'
2. (E) CHAINLINK FENCE
3. (E) ROLL-UP DOOR
4. (E) WINDOW
5. SEAL (E) CONC. FLOOR
6. (N) V.C.T. & RUBBER BASE
7. (N) SIGN, SEE 2/-
   A. TYPE A
   B. TYPE B
   C. TYPE C
   D. TYPE D
8. (N) EDUCATIONAL EQUIPMENT, SEE MECH.
9. RELOCATE (E) EMERGENCY SHOWER, SEE PLUMBING, SHOWER HANDLES 48" MAX A.F.F.
10. FIRE EXTINGUISHER, WALL MOUNTED NFPA-10, MNT AT 3'-5' A.F.F. W/ CURRENT CERTIFICATION TAG TYPE 'A' - 2A: 10BC; ONE PER 3000 S.F. OR FRACTION THEREOF; MAX. DISTANCE 75'
11. (N) FLOOR SINK, SAW CUT (E) CONC. SEE 1/AG.1 AND SEE PLUMBING
12. SAW CUT AND PATCH CONC. SLAB FOR PLUMBING SEE 1/AG.1

LEGEND

SEE A2.1

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

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01-117638
APPLICATION NUMBER
AC ____ FLS ____ SS NAS
DATE 09-06-2018

LICENSED ARCHITECT ALEX REYNOSO No. C 29184 Exp. 02/28/19 STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

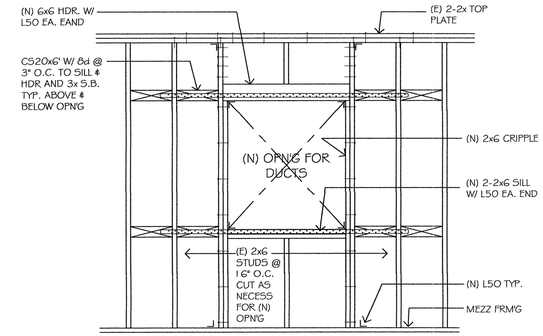
5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

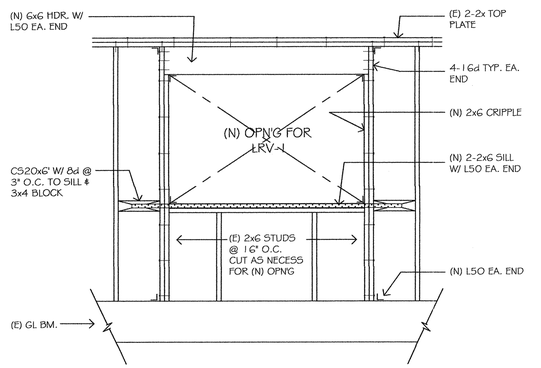
FLOOR PLAN

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	
CHECKED BY:	
FILENAME:	

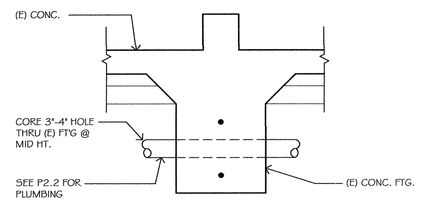
A2.2



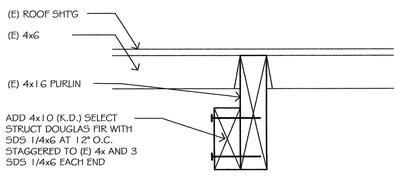
4 FRAMING @ DUCT PEN
SCALE: N.T.S.



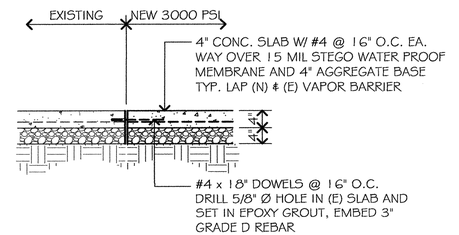
3 FRAMING @ LVR-1
SCALE: N.T.S.



2 PIPE PENETRATITION
SCALE: N.T.S.



5 BLOCK'G AT ROOF FRAMING
SCALE: 1"=1'-0"



1 CONC. SLAB PATCH
SCALE: 3/4" = 1'-0"

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

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DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC FLS SS TM&S

DATE 09-06-2018

LICENSED ARCHITECT ALEX REYNOSO No. C 29184 Exp. 02/28/19 STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

DETAILS

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	
CHECKED BY:	
FILENAME:	

A6.1

September 05, 2018 11:36:18 a.m.
Drawing: H:\PROJ2018\20180056\DRAWINGS\LNA-FILS\HVA-M01.DWG
Xrefs: MAS-BORD.DWG,

DSA GENERAL NOTES

1. THE INTENT OF THE CONTRACT DOCUMENTS IS TO MODERNIZE AN EXISTING BUILDING. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS, A CONSTRUCTION CHANGE DOCUMENT DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK.
2. THE SEISMIC SUPPORT AND ANCHORAGE OF THE EQUIPMENT DESCRIBED ON THESE DRAWINGS HAVE BEEN ENGINEERED BY THE ENGINEER OF RECORD FOR CONFORMANCE WITH APPROPRIATE BUILDING CODES. THE ENGINEER OF RECORD WAS NOT RESPONSIBLE FOR THE EQUIPMENT DESIGN.
3. ALL MECHANICAL AND PLUMBING EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION USING THE CRITERIA FROM CHAPTER 16A CALIFORNIA BUILDING CODE (CBC) 2016.
4. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT.

COMPONENT ANCHORAGE NOTES

ALL MECHANICAL AND PLUMBING COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7–10 CHAPTERS 13, 26, AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (EG HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICAL, GAS, OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORTS THE COMPONENT IS REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING MECHANICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

1. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4'–0" OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORTS THE EQUIPMENT.
2. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING AND DUCTWORK DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7–10 SECTION 13.3 AS DEFINED IN ASCE 7–10 SECTION 13.6.5.6., 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A1.24, 1616A.1.25, AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), AND PLUMBING PIPING (PP)

MP☐ MD☐ PP☐ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☐ MD☐ PP☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PREAPPROVAL (OPM:) #0043–13

MP☒ MD☒ PP☐ OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL A AND CONNECTION LEVEL 1 FOR THE PROJECT CONDITIONS.

GENERAL NOTES:

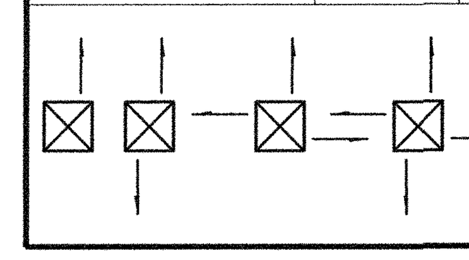
1. THIS PROJECT IS A REMODEL. THE PLANS AND SPECIFICATIONS INDICATE THE GENERAL EXTENT OF THE WORK BASED ON OWNER PROVIDED RECORD DRAWINGS AND LIMITED FIELD VERIFICATION. CONTRACTOR SHALL VISIT SITE, VERIFY EXISTING CONDITIONS, AND REPORT ANY DISCREPANCIES NOTED TO THE ARCHITECT PRIOR TO SUBMITTING A BID. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISCONNECTION AND RECONNECTION OF MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS NECESSARY TO ACCOMPLISH THE WORK WHETHER OR NOT SPECIFIED AND/OR INDICATED.
2. ASBESTOS ABATEMENT BY OTHERS ON THIS PROJECT. ANY REQUIRED ASBESTOS ABATEMENT WORK WILL BE PROVIDED BY OTHERS. AREAS SUSPECTED OF ASBESTOS CONTAMINATION WHICH INTERFERE WITH WORK UNDER THIS PROJECT SHALL BE IDENTIFIED DURING THE EARLY PHASES OF CONSTRUCTION IN ORDER TO PROVIDE FOR TIMELY DISPOSITION. NO DELAYS IN CONSTRUCTION SCHEDULE WILL BE ALLOWED DUE TO IMPROPER COORDINATION.
3. MECHANICAL CONTRACTOR SHALL NOTIFY GENERAL CONTRACTOR TO REPAIR WALL, FLOOR, AND CEILING SURFACES AS REQUIRED DUE TO DEMOLITION OR INSTALLATION WORK.
4. REMOVE ALL ABANDONED PIPING, DUCT WORK, WIRING, EQUIPMENT, AND FIXTURES INTERFERING WITH NEW WORK WHETHER NEW WORK IS ARCHITECTURAL, STRUCTURAL, MECHANICAL, OR ELECTRICAL.
5. ABANDON IN PLACE BEHIND NEW FINISHES ALL PIPING, WIRING, AND DUCT WORK NOT INTERFERING WITH NEW WORK UNLESS REQUIRED FOR CONTINUED SERVICE.
6. CUTTING OR CORING OF STRUCTURAL MEMBERS OR FOOTINGS IS PROHIBITED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ARCHITECT.
7. CONTRACTOR SHALL VERIFY THAT THE ELECTRICAL CONNECTIONS TO THE UNITS, INCLUDING CIRCUIT PROTECTION, CONFORM TO UNIT LABELS AND MANUFACTURER'S DIRECTIONS. WHERE WIRE SIZES SHOWN ON DRAWING EXCEED MANUFACTURER'S RECOMMENDATIONS, THE DRAWINGS SHALL GOVERN. ALL WIRING SHALL BE PER THE NATIONAL ELECTRICAL CODE. AS AMENDED AND ENFORCED BY JURISDICTIONAL AUTHORITY.
8. ALL CONTROL WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR. PROVIDE AND INSTALL RIGID CONDUIT IN AREAS EXPOSED TO THE ELEMENTS.
9. PROVIDE SHOP DRAWINGS OF ALL MECHANICAL LAYOUTS SHOWING EQUIPMENT, DUCTWORK, REGISTERS, PIPING, FILTER RACKS, CONTROL DAMPERS, LIGHTS, ACCESS PANELS AND ACCESS SPACES, ETC.. OBTAIN AND COORDINATE WITH APPROVED PLUMBING, ELECTRICAL, AND OTHER TRADES' SHOP DRAWINGS PRIOR TO MECHANICAL DRAWING SUBMITTAL.
10. COORDINATE EXACT GRILLE, DIFFUSER AND ACCESS DOOR LAYOUT WITH LIGHTS.
11. SUPPORT DUCTS TIGHT BELOW STRUCTURE WHEREVER POSSIBLE.
12. PROVIDE FLEXIBLE CONNECTION ON INLET AND OUTLET DUCT CONNECTIONS TO EQUIPMENT.
13. FLASHING AND WEATHERPROOFING AT EXTERIOR PENETRATIONS ARE SHOWN ON THE ARCHITECTURAL DRAWINGS.
14. COORDINATE WITH OWNER ON SPACE REQUIRED AND TIME SCHEDULE FOR DELIVERY OF ALL ITEMS WHICH ARE TO BE GIVEN TO THE OWNER FOR HIS DISPOSITION.
15. FOR ROOF PENETRATIONS WITHOUT CURBS, PROVIDE WEATHERPROOF FLASHING PER SMACNA ARCHITECTURAL SHEET METAL MANUAL AND DRAWING NOTES.
16. ALL TRANSITIONS IN DUCTWORK SHALL BE MADE AT 15 DEGREES MAXIMUM EACH FACE UNLESS OTHERWISE NOTED OR SPECIFICALLY APPROVED.
17. ALL DUCTWORK IS CONCEALED UNLESS OTHERWISE NOTED.
18. LABEL ALL PIECES OF EQUIPMENT WITH MARK MATCHING SCHEDULE OR EQUIPMENT LIST WITH ENGRAVED PLASTIC LABELS WITH MINIMUM 1/4" HIGH LETTERS. LABELS EXPOSED TO WEATHER SHALL BE ENGRAVED BRASS.
19. PRIME AND PAINT ALL EXPOSED DUCTWORK PER ARCHITECTURAL SPECIFICATIONS. PAINT SHALL NOT EXCEED THE FOLLOWING VOLATILE ORGANIC COMPOUND CONTENT LIMITS: FLATS < 50 GRAMS PER LITER, NON–FLATS < 100 GRAMS PER LITER.
20. ALL DUCTS, REGISTERS, EQUIPMENT, ETC. SHOWN IS NEW UNLESS OTHERWISE NOTED.
21. THE HEATING, VENTILATION AND AIR CONDITIONING SYSTEM(S) FOR THE BUILDING(S) WERE DESIGNED IN COMPLIANCE WITH THE LATEST EDITIONS OF THE CALIFORNIA CODES, STANDARDS AND REGULATIONS INCLUDING BUT NOT LIMITED TO CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA ENERGY CODE (CEC – TITLE 24, PART 6), AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE) AND SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA).

    THE INDOOR AND OUTDOOR DESIGN CONDITIONS ARE THOSE ESTABLISHED FOR BY THE CALIFORNIA ENERGY CODE AS FOLLOWS:
    1. OUTDOOR CONDITIONS
        SUMMER: 93°F DB/69°F WB
        WINTER: 23°F DB
    2. INDOOR CONDITIONS
        SUMMER: 74°F DB ±2°F
        WINTER: 70°F DB ±2°F

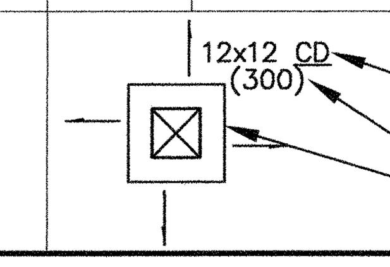
    IF THE OUTDOOR TEMPERATURES ARE HIGHER OR LOWER THAN DESIGN TEMPERATURES ESTABLISHED BY THE CALIFORNIA ENERGY CODE, THERE IS THE POTENTIAL THAT THE INSTALLED HVAC SYSTEM WILL NOT BE ABLE TO MAINTAIN THE DESIRED INDOOR TEMPERATURE. THE INCREASE OR DECREASE OF INDOOR TEMPERATURE COULD BE AS HIGH AS THE DIFFERENCE BETWEEN THE ACTUAL OUTDOOR TEMPERATURE AND THE DESIGN CONDITION.
22. ADHESIVES, SEALANTS AND CAULKS USED INDOORS SHALL NOT EXCEED THE FOLLOWING VOLATILE ORGANIC COMPOUND LIMITS PER TITLE 24, PART 11, SECTION 5.504.
    - METAL TO METAL < 30 GRAMS PER LITER
    - FIBERGLASS < 80 GRAMS PER LITER
    - CONTACT ADHESIVE < 80 GRAMS PER LITER
    - MASTICS < 100 GRAMS PER LITER
    - ZINC–RICH PRIMERS < 340 GRAMS PER LITER
    - FIRE RESISTANT COATINGS < 350 GRAMS PER LITER
23. HVAC EQUIPMENT SHALL NOT CONTAIN CFC'S OR HALONS PER TITLE 24, PART 11, SECTION 5.508.
24. AT THE TIME OF ROUGH INSTALLATION, OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING AND COOLING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENTS OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC OR SHEET METAL TO PROTECT THE AIR DISTRIBUTION SYSTEM FROM CONTAMINATION WITH DUST AND DEBRIS.

HVAC LEGEND

SYMBOL	ABBRV.	IDENTIFICATION	ABBRV.	IDENTIFICATION
———		AIR DUCT	HP	HORSEPOWER
——┼——	BD	BALANCING DAMPER	LBS	POUNDS
—→		AIR FROM DEVICE	MAX	MAXIMUM
√—→		AIR TO DEVICE	MBH	1000 BTU PER HOUR
⊠		SECTION THROUGH SUPPLY	MECH	MECHANICAL
◺		SECTION THROUGH RETURN	MFR	MANUFACTURER
⊠		SECTION THROUGH EXHAUST	MIN	MINIMUM
Ⓣ		THERMOSTAT 48" MAX TO TOP OF BOX	(N)	NEW
——Ⓜ	MOD	MOTOR OPERATED DAMPER	OA	OUTSIDE AIR
◪ BT		BYPASS TIMER	OBD	OPPOSED BLADE DAMPER
◕	P.O.C.	POINT OF CONNECTION	OC	ON CENTER
$	SW	SWITCH	OD	OUTSIDE DIAMETER
	°F	DEGREES FAHRENHEIT	OV	OUTLET VELOCITY
	AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	PC	PLUMBING CONTRACTOR
	ARCH	ARCHITECT/ARCHITECTURAL	PD	PRESSURE DROP
	BLDG	BUILDING	PH	PHASE
	BTUH	BRITISH THERMAL UNITS PER HOUR	RA	RETURN AIR
	CFM	CUBIC FEET PER MINUTE	RM	ROOM
	CLG	CEILING	RPM	REVOLUTIONS PER MINUTE
	CONN	CONNECTION	SA	SUPPLY AIR
	CONT	CONTINUED, CONTINUATION	SC	SENSIBLE COOLING
	COORD	COORDINATE	TV	TURNING VANES
	DN	DOWN	TYP	TYPICAL
	DWGS	DRAWINGS	V	VOLT
	(E)	EXISTING	W/	WITH
	EER	ENERGY EFFICIENCY RATIO	WT	WEIGHT
	ESP	EXTERNAL STATIC PRESSURE		



CEILING DIFFUSER – ONE, TWO, THREE AND FOUR WAY THROW



LIST OF GOVERNING CODES:

2016 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24, C.C.R.
2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, C.C.R.
2016 CALIFORNIA ELECTRICAL CODE, PART 3, TITLE 24, C.C.R.
2016 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24, C.C.R.
2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, C.C.R.
2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24, C.C.R.
2016 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, C.C.R.
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24, C.C.R.
2016 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, C.C.R.
TITLE 19, C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

ALL SECTION NUMBERS BELOW REFER TO GROUP 1, CHAPTER 4, PART 1, TITLE 24, C.C.R.
1. ADDENDA, CONSTRUCTION CHANGES PER SECTION 4–338.
2. INSPECTOR APPROVED BY DSA. INSPECTOR AND CONTINUOUS INSPECTION OF WORK PER SECTION 4–333(b) AND 4–342.
3. TESTS AND TESTING LABORATORY PER SECT. 4–335.
4. SPECIAL INSPECTION PER SECT. 4–333(c).
5. CONTRACTOR SHALL SUBMIT VERIFIED REPORTS PER SECT. 4–336 AND 4–343(c).
6. ADMINISTRATION OF CONSTRUCTION PER PART 1, TITLE 24, C.C.R. – DUTIES OF ARCHITECT, STRUCTURAL ENGINEER OR PROFESSIONAL ENGINEER PER SECT. 4–333(a) AND 4–341.
7. GOVERNING CODES: TITLE 24.
8. A COPY OF PARTS 1, 2, 3, 4, AND 5 OF TITLE 24 SHALL BE KEPT AVAILABLE IN THE FIELD DURING CONSTRUCTION.
9. DSA SHALL BE NOTIFIED OF START OF CONSTRUCTION PER SECT. 4–331.
10. SUPERVISION BY THE OFFICE OF REGULATION SERVICE PER SECT. 4–334.
11. SEE SHEET T1 FOR GOVERNING CODES NOT NOTED HERE.

REGISTERED PROFESSIONAL ENGINEER
No. M31059
EXP. JUNE 30, 2019
MECHANICAL
STATE OF CALIFORNIA
[illegible]

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LEE & ASSOCIATES
CONSULTING ENGINEERS

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22 Lower Ragsdale Dr., Suite A
Monterey, California 93940–5788

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC [illegible] FLS [illegible] SS [illegible]
DATE SEP - 6 [illegible]

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

**5055 SANTA TERESA BLVD
GILROY, CA**

SHEET

LEGEND AND NOTES - MECHANICAL

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M0.1

Drawing: H:\PROJ2018\2018056\DRAWING\ARCHITECTURAL\M0-2.DWG, June 22, 2018 11:11:48 AM, Plotted by: Mark Sellers
Xrefs: MAS-PGRD.DWG,

PACKAGE HEAT PUMPS

MARK	COOL MBH	HEAT MBH	CFM	V/PH	MCA	WT LBS	SEER HSPF	MAKE & MODEL	REMARKS
HP-1	23.1	21.9	800	208/1	17.4	380	14.0 8.0	COLEMAN PHE4A2421	(1) (2)
HP-2	23.1	21.9	800	208/1	17.4	380	14.0 8.0	COLEMAN PHE4A2421	(1) (2)
HP-3	23.1	21.9	800	208/1	17.4	380	14.0 8.0	COLEMAN PHE4A2421	(1) (2)
HP-4	23.1	21.9	800	208/1	17.4	380	14.0 8.0	COLEMAN PHE4A2421	(1) (2)

(1) CONTRACTOR TO PROVIDE AND INSTALL CASTERS ON UNIT BASE RAIL.

(2) OWNER FURNISHED, CONTRACTOR INSTALLED

ICE MAKERS

MARK	V/PH	MCA	MOCP	WT LBS	MAKE & MODEL: ICE MACHINE	MAKE & MODEL: STORAGE BIN	REMARKS
ICE-1	115/1	13.3	15	250	ICE-O-MATIC ICE250HA	ICE-O-MATIC B25-PP	(1) (2) (3)
ICE-2	115/1	8.4	15	280	HOSHIZAKI KML-325MAJ	HOSHIZAKI B-250PF	(1) (2) (3)
ICE-3	115/1	9.4	15	250	KOOLAIRE KYT-0300A	KOOLAIRE K400	(1) (2) (3)
ICE-4	115/1	12.7	15	280	SCOTSMAN C0322SA-1	SCOTSMAN B322S	(1) (2) (3)

(1) WEIGHT INCLUDES MACHINE AND BIN.

(2) WITH STANDING LEGS.

(3) OWNER FURNISHED, CONTRACTOR INSTALLED

FANS

MARK	CFM	ESP	SONES	MOTOR HP	MOTOR V/PH	FAN RPM	WT LBS	MAKE & MODEL	REMARKS
EF-1	1000	0.25"	5.1	1	115/1	921	80	GREENHECK SQ-130-VG	(1) (2)
TF-1	25	0.2"	1.0	38 WATTS	115/1	478	11	GREENHECK SP-B50	(1) (3) (4)
TF-2	25	0.2"	1.0	38 WATTS	115/1	478	11	GREENHECK SP-B50	(1) (3) (4)
TF-3	50	0.2"	0.7	12 WATTS	115/1	612	11	GREENHECK SP-B70	(1) (3) (4)

(1) WITH UL705 LISTING, UNIT MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, AND ISOLATION KIT.

(2) FOR MOUNTING, SEE 3/M6.1.

(3) FOR MOUNTING, SEE 1/M6.1.

(4) SWITCH WITH LIGHTS.

AIR DISTRIBUTION

MARK	TYPE	MAKE & MODEL	REMARKS
TG-1	TRANSFER GRILLE	TITUS 300 RL	(1) (2)
HSS-1	HIGH SIDEWALL SUPPLY	TITUS 300 RL	(1) (3)
HSR-1	HIGH SIDEWALL RETURN	TITUS 350 RL	(1) (2)
SG-1	SUPPLY GRILLE	TITUS 300 RL	(1) (4)
RG-1	RETURN GRILLE	TITUS 350 RL	(1) (4)

(1) BORDER TYPE 1 SURFACE MOUNT.

(2) FOR MOUNTING, SEE 9/M6.1.

(3) FOR MOUNTING, SEE 5/M6.1.

(4) WITH OPPOSED BLADE DAMPERS.

SEQUENCE OF OPERATION (F-1)

THE FURNACE'S INTEGRATED CONTROLS, WITH TEMPERATURE INPUT FROM THE THERMOSTAT, SHALL ENABLE THE HEATING STAGES AND CONTROL THE POSITION OF THE OUTSIDE DAMPER, AS DESCRIBED BELOW, TO MAINTAIN ROOM AIR TEMPERATURE AS SET AT THERMOSTAT

UNIT SHALL BE STARTED AND STOPPED AUTOMATICALLY BY THE TIME SCHEDULE OF THE THERMOSTAT. THIS TIME SCHEDULE SHALL BE DETERMINED BY THE OCCUPIED AND UNOCCUPIED CYCLES AND IT'S DURATION SHALL BE ADJUSTABLE.

DURING SCHEDULED OPERATING HOURS, AND AFTER-HOURS OPERATION WITH OVERRIDE TIMER, THE FURNACE IS ENABLED, THE FAN RUNS CONTINUOUSLY, OUTSIDE AIR DAMPER SHALL OPEN TO PROVIDE MINIMUM OUTSIDE AIR, AND UNIT MAINTAINS THE TEMPERATURE INSIDE THE SPACE WITHIN THE DEAD BAND. (INITIALLY 68°F FOR HEATING) (ADJUSTABLE).

AT THE END OF SCHEDULED TIME, GAS VALVE(S) CLOSES, BLOWER OPERATES AS REQUIRED TO ALLOW HEAT EXCHANGER TO COOL DOWN, FAN SHUTS DOWN, AND OUTSIDE AIR DAMPER CLOSES.

SEQUENCE OF OPERATION (SPLIT SYSTEM HEAT PUMPS)

UNITS SHALL BE CONTROLLED BY PROGRAMMABLE THERMOSTAT

UNITS SHALL OPERATE UNDER OWN CONTROLS TO MAINTAIN SPACE TEMPERATURE SETPOINT AT THERMOSTAT

SEQUENCE OF OPERATION (FANS)

EF-1 SHALL BE CONTROLLED BY WALL MOUNTED SWITCH.

TRANSFER FANS SHALL SWITCH WITH THE LIGHTS.

GAS FURNACE AND COOLING COILS

MARK	HEAT MBH	COOL MBH	CFM	FAN RPM	V/PH	MOCP	WT LBS	AFUE	LINE SIZE GAS	LINE SIZE LIQ	MAKE & MODEL: FURNACE	MAKE & MODEL: COIL	REMARKS
FC-1	70	36	1200	VARIABLE	115/1	15	250	98%	7/8"	3/8"	LENNOX SLP98DF070	LENNOX CR33-48B	(1) (2) (3) (5)
FC-2	70	24	1500	VARIABLE	115/1	15	200	95%	7/8"	3/8"	LENNOX EL195DF070	LENNOX CR33-30/36B	(1) (2) (3) (5)
FC-3	45	18	900	VARIABLE	115/1	15	150	80%	5/8"	3/8"	BRYANT 310JAV024045	BRYANT CNPVP1814ALA	(1) (4) (5)
FC-4	45	18	900	VARIABLE	115/1	15	150	80%	5/8"	3/8"	BRYANT 310JAV024045	BRYANT CNPVP1814ALA	(1) (4) (5)
FC-5	45	18	900	VARIABLE	115/1	15	150	80%	5/8"	3/8"	BRYANT 310JAV024045	BRYANT CNPVP1814ALA	(1) (4) (5)
FC-6	45	18	900	VARIABLE	115/1	15	150	80%	5/8"	3/8"	BRYANT 310JAV024045	BRYANT CNPVP1814ALA	(1) (4) (5)
FC-7	45	18	900	VARIABLE	115/1	15	150	80%	5/8"	3/8"	BRYANT 310JAV024045	BRYANT CNPVP1814ALA	(1) (4) (5)
FC-8	45	18	900	VARIABLE	115/1	15	150	80%	5/8"	3/8"	BRYANT 310JAV024045	BRYANT CNPVP1814ALA	(1) (4) (5)

(1) WEIGHT INCLUDES FURNACE AND COIL.

(2) CONTRACTOR TO PROVIDE WITH CONCENTRIC VENT KIT AND CONDENSATE NEUTRALIZER KIT.

(3) FOR MOUNTING, SEE 2/M6.2

(4) FOR MOUNTING, SEE 1/M6.3

(5) OWNER FURNISHED, CONTRACTOR INSTALLED

REFRIGERATORS AND FREEZERS

MARK	TYPE	DOORS	SHELVES	V/PH	AMPS	HP	WT LBS	MAKE & MODEL	REMARKS
REF-1	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23-HC	(1) (2)
REF-2	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23-HC	(1) (2)
REF-3	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23-HC	(1) (2)
REF-4	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23-HC	(1) (2)
FRZ-1	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23F-HC	(1) (2)
FRZ-2	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23F-HC	(1) (2)
FRZ-3	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23F-HC	(1) (2)
FRZ-4	REACH-IN SWING DOOR	1	3	115/1	2.2	1/4	285	TRUE FOOD SERVICE EQUIPMENT, INC. T-23F-HC	(1) (2)

(1) WITH FACTORY MOUNTED CASTERS.

(2) OWNER FURNISHED, CONTRACTOR INSTALLED

GAS FIRED EQUIPMENT

MARK	HEAT MBH IN	HEAT MBH OUT	CFM TOTAL	CFM ESP	CFM OA	FAN RPM	MOTOR HP	MOTOR V/PH	WT LBS	AFUE	MAKE & MODEL	REMARKS
F-1	78 120	76 117	1800	0.5"	800	VARIABLE	1	115/1	190	97%	CARRIER 59TN6A120V24	(1) (2)

(1) WITH CONCENTRIC VENT KIT, CONDENSATE NEUTRALIZER KIT, AND 7-DAY PROGRAMMABLE THERMOSTAT.

(2) FOR MOUNTING, SEE 1/M6.2

SPLIT SYSTEM HEAT PUMPS

MARK	COOL MBH	HEAT MBH	CFM	ESP	MOCP	V/PH	MCA	WT LBS	SEER HSPF	LINE SIZE GAS	LINE SIZE LIQ	MAKE & MODEL	REMARKS
SSI-1	9.0	10.9	400	–	(2)	(2)	(2)	25	–	3/8"	1/4"	MITSUBISHI MSZ-GL09NA-U1	(1) (3)
SSO-1			–	–	15	208/1	9	80	24.6 12.8	3/8"	1/4"	MITSUBISHI MUZ-GL09NA-U8	(4)
SSI-2	9.0	10.9	400	–	(2)	(2)	(2)	25	–	3/8"	1/4"	MITSUBISHI MSZ-GL09NA-U1	(1) (3)
SSO-2			–	–	15	208/1	9	80	24.6 12.8	3/8"	1/4"	MITSUBISHI MUZ-GL09NA-U8	(4)
SSI-3	18.0	21.6	650	–	(2)	(2)	(2)	30	–	3/8"	1/4"	MITSUBISHI MSZ-GL18NA-U1	(1) (3)
SSO-3			–	–	15	208/1	14	120	20.5 11.2	1/2"	1/4"	MITSUBISHI MUZ-GL18NA-U1	(4)

(1) WITH MITSUBISHI PAR-33MAA WIRED WALL MOUNTED CONTROLLER AND CONDENSATE PUMP.

(2) POWER FOR INDOOR UNIT PROVIDED BY OUTDOOR UNIT.

(3) FOR MOUNTING, SEE 6/M6.1.

(4) FOR MOUNTING, SEE 10/M6.1.

LOUVERS

MARK	SIZE	TYPE	MATERIAL	MAKE & MODEL	REMARKS
LVR-1	36" x 24"	STATIONARY	ALUMINUM	GREENHECK ESD-403	

CONDENSING UNITS

MARK	COOL MBH	V/PH	MCA	MOCP	FAN HP	WT LBS	SEER	LINE SIZE GAS	LINE SIZE LIQ	MAKE & MODEL	REMARKS
CU-1	36	208/1	20	30	1/3	200	23	3/8"	7/8"	LENNOX XC25-036	(1) (3)
CU-2	24	208/1	–	30	–	200	14	3/4"	3/8"	LENNOX XC14-024	(1) (3)
CU-3	18	208/1	12	20	1/12	150	14	3/4"	3/8"	BRYANT 105ANA018	(1) (3)
CU-4	18	208/1	12	20	1/12	150	14	3/4"	3/8"	BRYANT 105ANA018	(1) (3)
CU-5	18	208/1	12	20	1/12	150	14	3/4"	3/8"	BRYANT 105ANA018	(1) (3)
CU-6	18	208/1	12	20	1/12	150	14	3/4"	3/8"	BRYANT 105ANA018	(1) (3)
CU-7	18	208/1	12	20	1/12	150	14	3/4"	3/8"	BRYANT 105ANA018	(1) (3)
CU-8	18	208/1	12	20	1/12	150	14	3/4"	3/8"	BRYANT 105ANA018	(1) (3)
CU-9	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-10	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-11	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-12	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-13	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-14	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-15	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-16	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-17	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)
CU-18	7	115/1	15	25	1/2	55	14	3/8"	5/8"	TECUMSEH PRODUCTS 2G731-19	(2) (3)

(1) FOR MOUNTING, SEE 11/M6.1.

(2) UNIT PLACED ON UTILITY CART WITH WHEELS FOR STUDENT USE.

(3) OWNER FURNISHED, CONTRACTOR INSTALLED

REACH-IN UNIT COOLERS

MARK	COOL MBH	CFM	NO. OF FANS	V/PH	MOTOR FLA	LINE SIZE GAS	LINE SIZE LIQ	MAKE & MODEL	REMARKS
RUC-1	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-2	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-3	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-4	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-5	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-6	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-7	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-8	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-9	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)
RUC-10	6.5	520	2	115/1	2.0	1/2"	1/2"	LARKIN C43AG	(1) (2)

(1) UNIT PLACED ON UTILITY CART WITH WHEELS FOR STUDENT USE.

(2) OWNER FURNISHED, CONTRACTOR INSTALLED

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC. FLS SS
DATE SEP - 6 2018

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET

SCHEDULES AND NOTES - MECHANICAL

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M0.2

REGISTERED PROFESSIONAL ENGINEER
No. M31059
EXP. JUNE 30, 2019
MECHANICAL
STATE OF CALIFORNIA

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fc. (831) 649-8038
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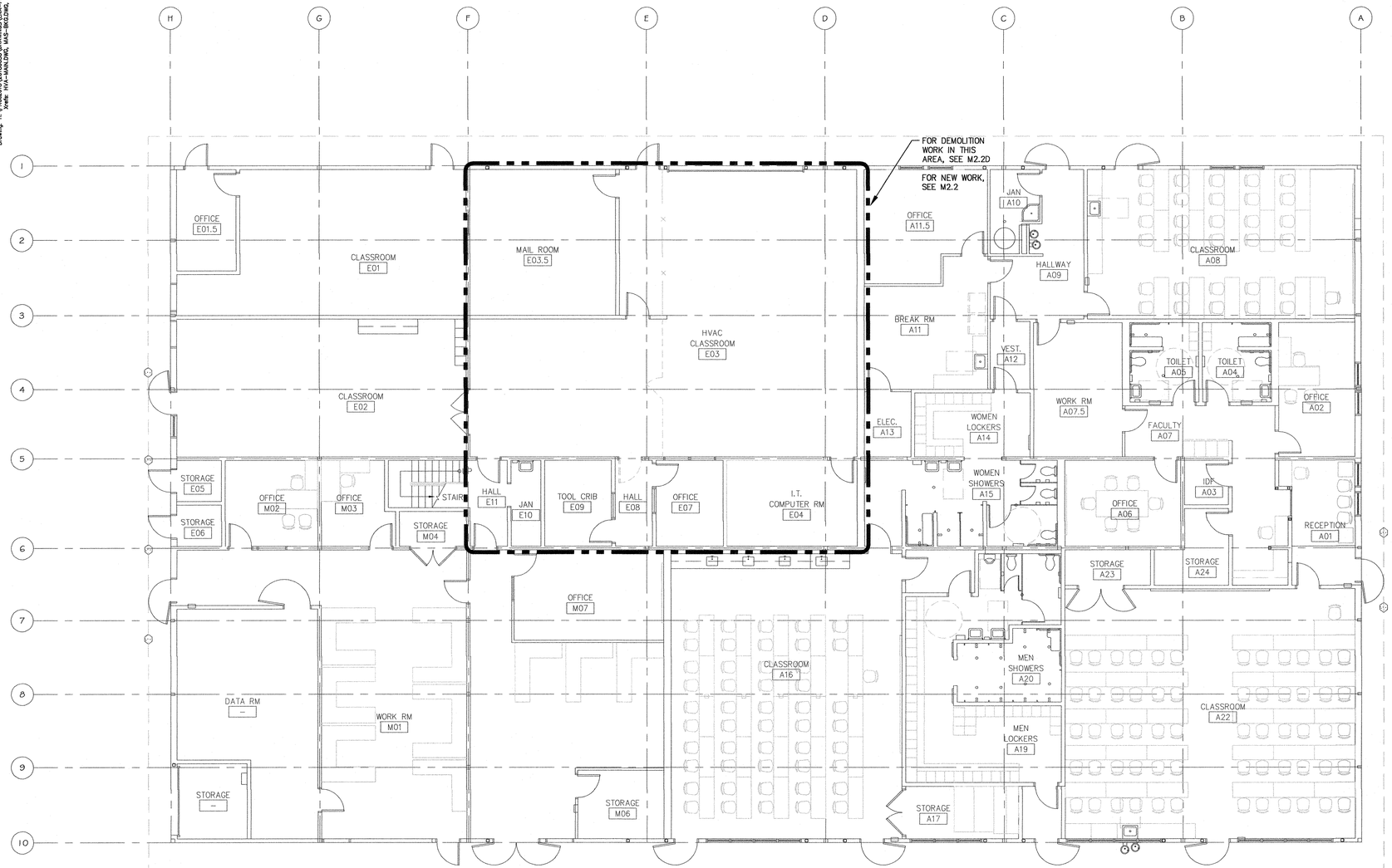
AXIOM ENGINEERS℠
LEE & ASSOCIATES
CONSULTING ENGINEERS

AE Project # : 20180056

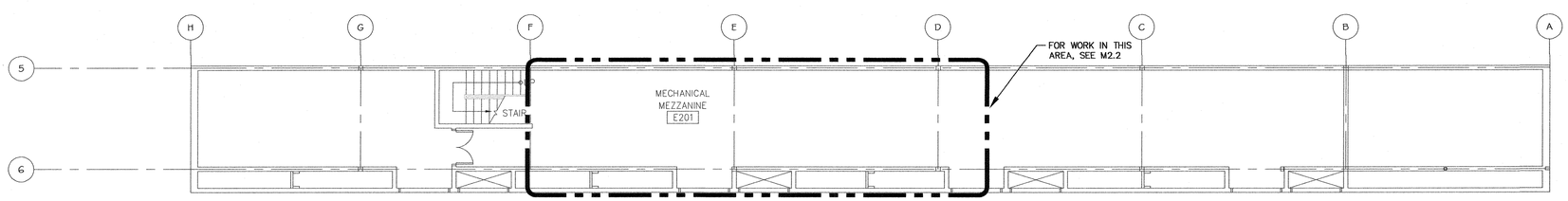
22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

June 19, 2018 4:08:13 p.m.
Drawing: H:\PROJ2018\20180056\DRAWING\ARCH\M2-1-MECH-FLOOR PLAN.dwg
Xrefs: HVA-MAIN.DWG, MAS-BKGD.DWG, MAS-BORD.DWG,



FLOOR PLAN - MECHANICAL

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



FLOOR PLAN MEZZANINE - MECHANICAL

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

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC PA ELEC SS/MES
DATE SEP 20 2018

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET

FLOOR PLANS - MECHANICAL

REGISTERED PROFESSIONAL ENGINEER
STEVEN MAAS
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LEE & ASSOCIATES
CONSULTING ENGINEERS

AE Project # : 20180056
22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M2.1

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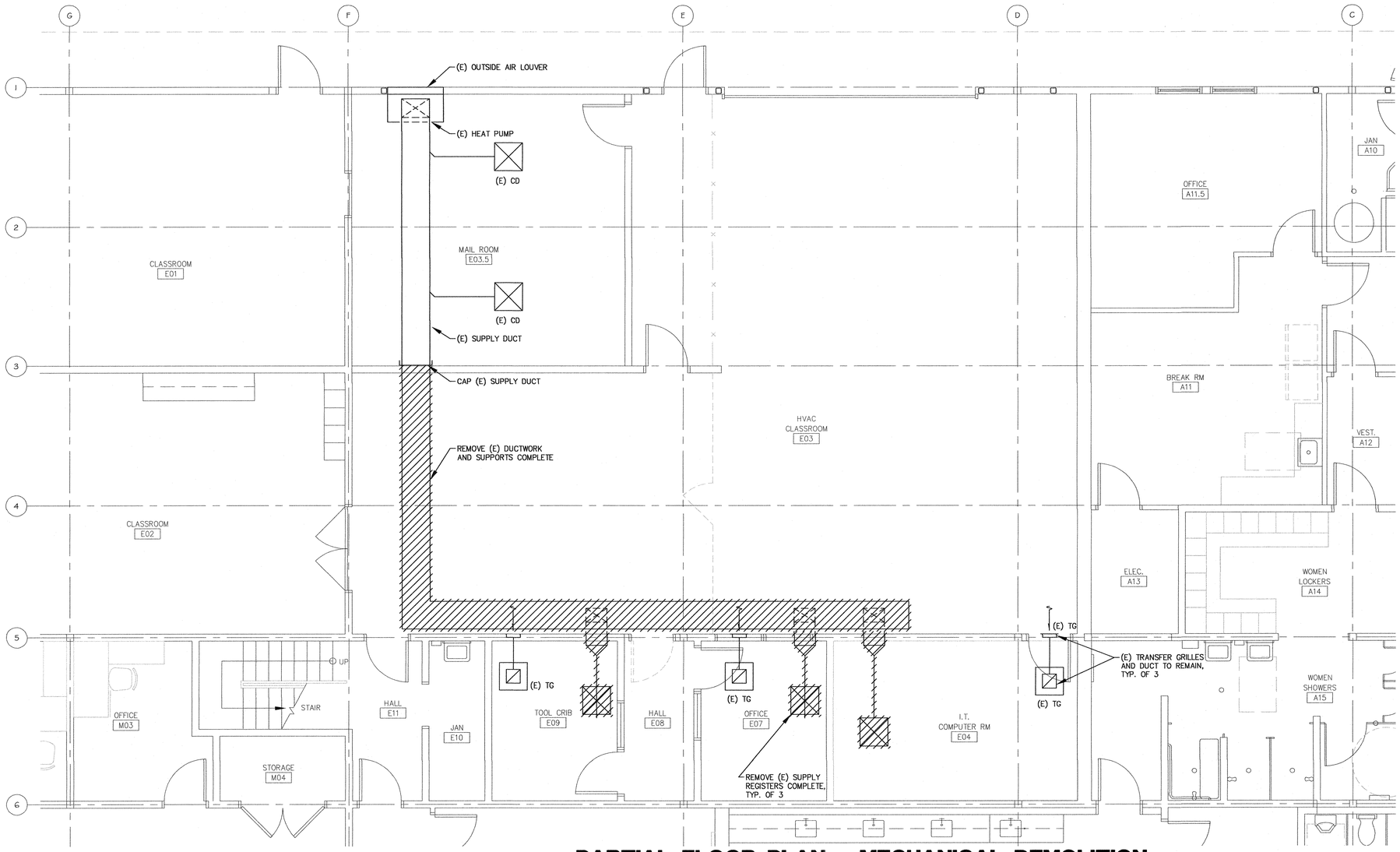
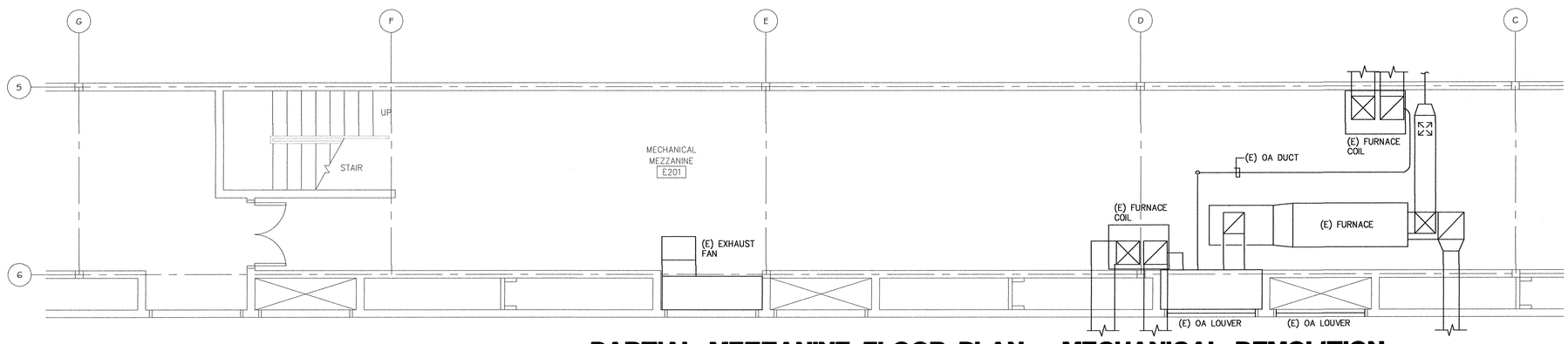


PARTIAL FLOOR PLAN - MECHANICAL DEMOLITION

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



PARTIAL MEZZANINE FLOOR PLAN - MECHANICAL DEMOLITION

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

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC. FLS. SS. NAGS

DATE SEP - 6 2018

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET

PARTIAL FLOOR PLANS - MECHANICAL DEMOLITION

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M2.2D

REGISTERED PROFESSIONAL ENGINEER
No. M31059
EXP. JUNE 30, 2019
MECHANICAL
STATE OF CALIFORNIA

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LEE & ASSOCIATES
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AE Project # : 20180056

22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

Jun 19, 2018 - 4:05:23 p.m.
Plotted by: Mark Stevens
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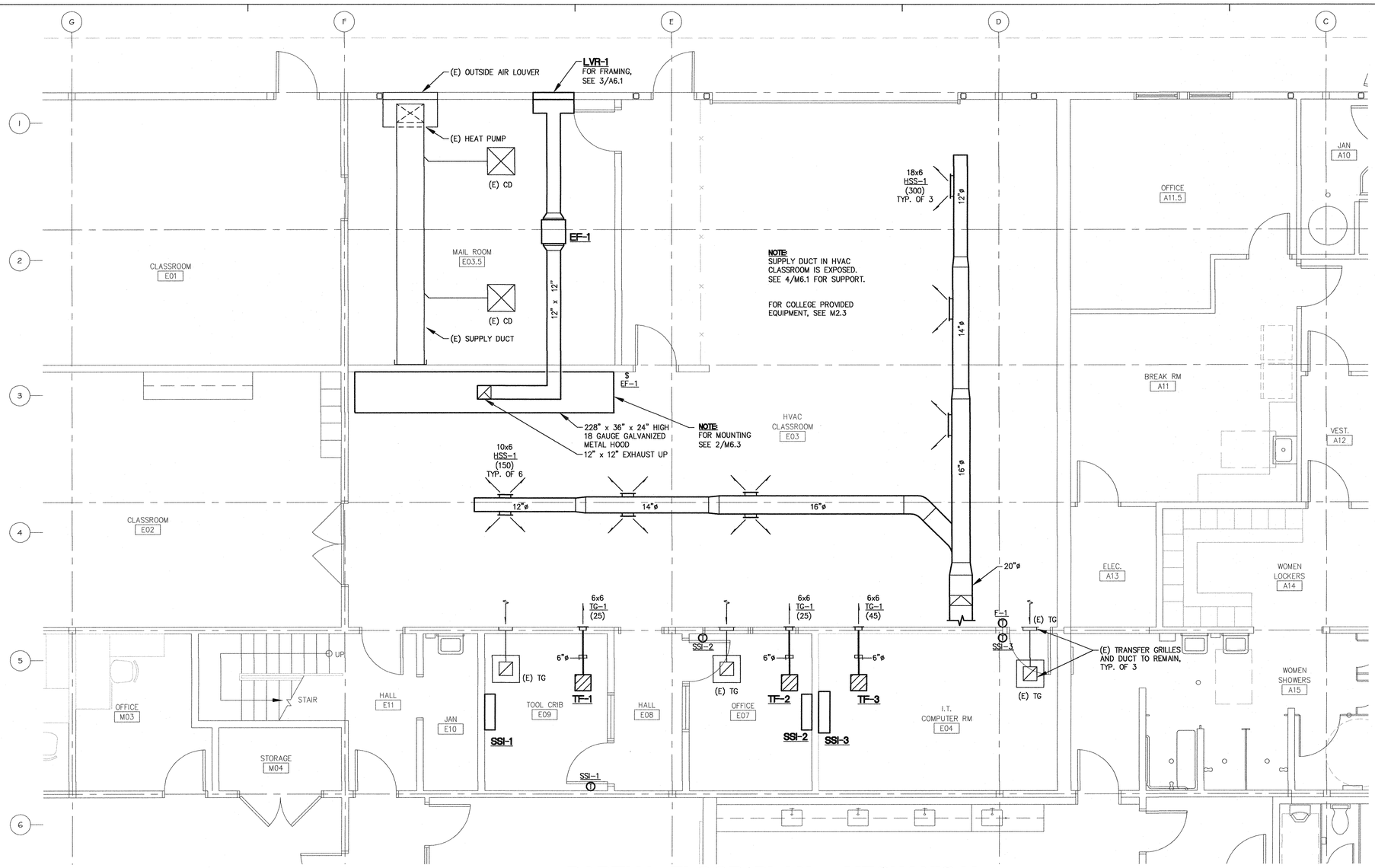
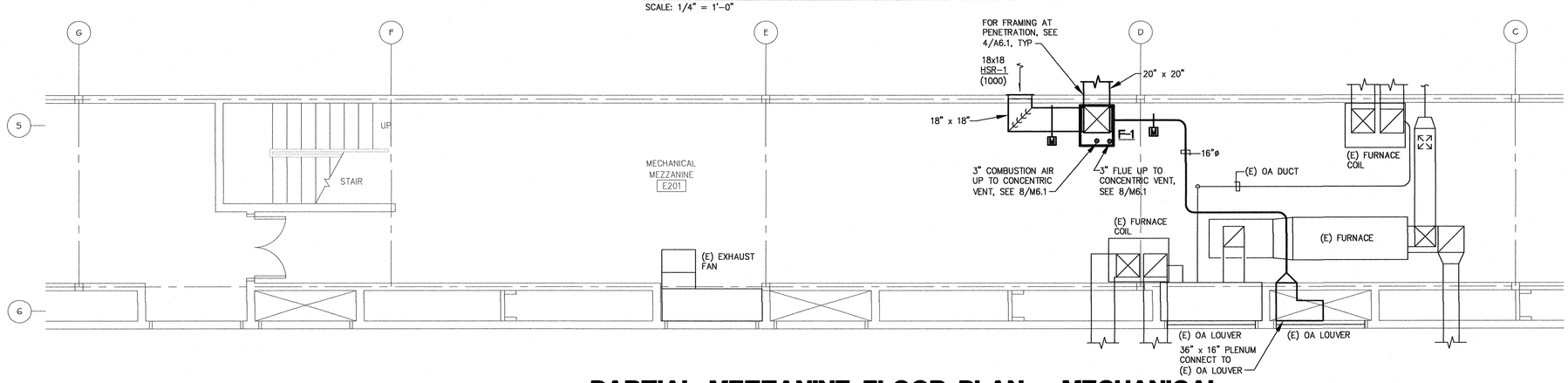
Xrefs: HVA-MAIN.DWG, MAS-BKDG.DWG, MAS-BKRD.DWG,



PARTIAL FLOOR PLAN - MECHANICAL

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



PARTIAL MEZZANINE FLOOR PLAN - MECHANICAL

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

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

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CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET

PARTIAL FLOOR PLANS - MECHANICAL

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DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M2.2

REGISTERED PROFESSIONAL ENGINEER
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LEE & ASSOCIATES
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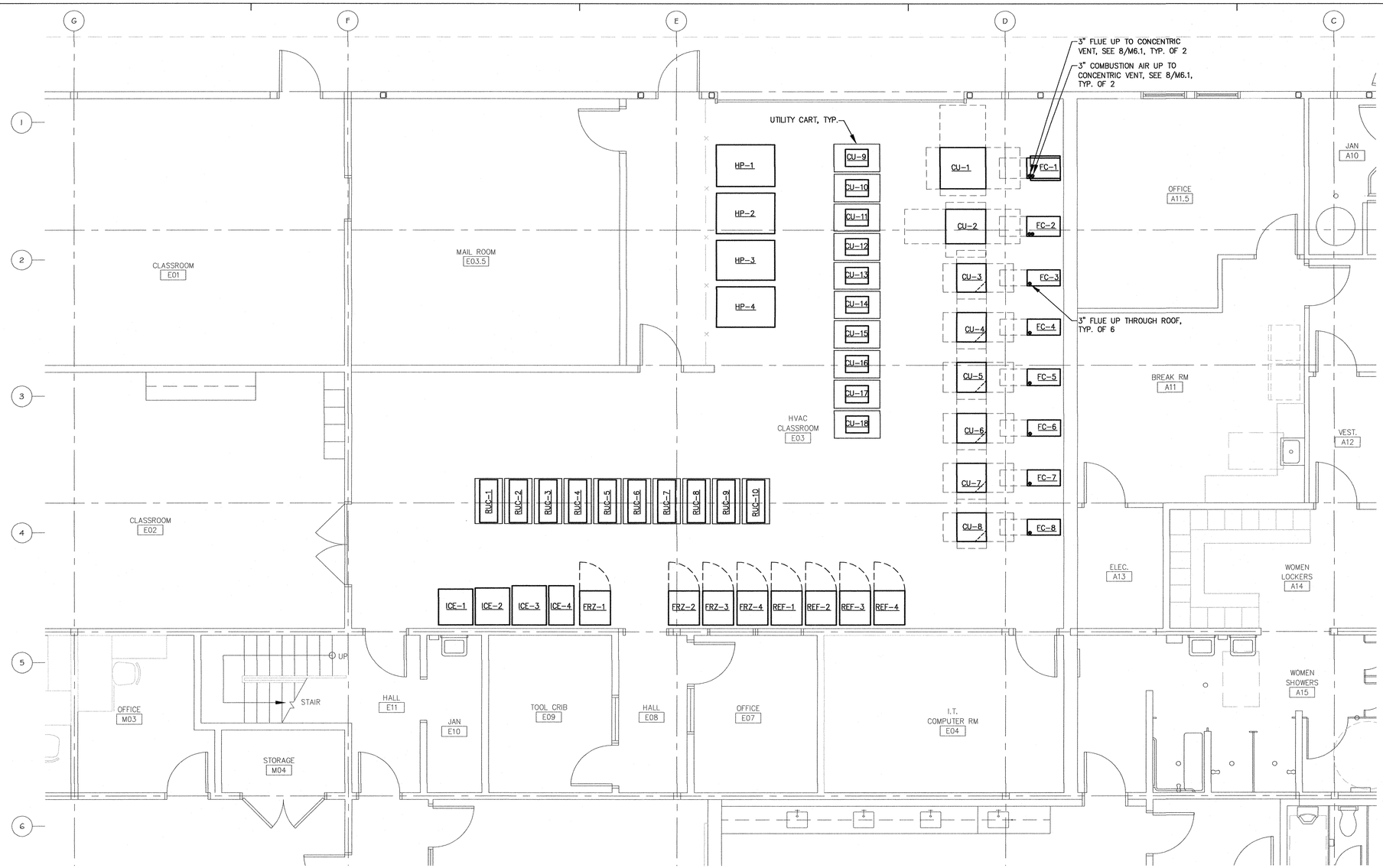
AE Project # : 20180056

22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788



PARTIAL FLOOR PLAN - MECHANICAL OWNER PROVIDED EQUIPMENT

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

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Drawing: H:\PROJECTS\2018\2018056\REVIT\M2.3-HVAC-MAIN.DWG, M2.3-HVAC-MAIN
Layout: HVAC-MAIN.DWG, M2.3-BIG.DWG

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC. FLS SS

DATE SEP - 6 2018

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

**5055 SANTA TERESA BLVD
GILROY, CA**

SHEET

PARTIAL FLOOR PLAN - MECHANICAL OWNER PROVIDED EQUIPMENT

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M2.3

REGISTERED PROFESSIONAL ENGINEER
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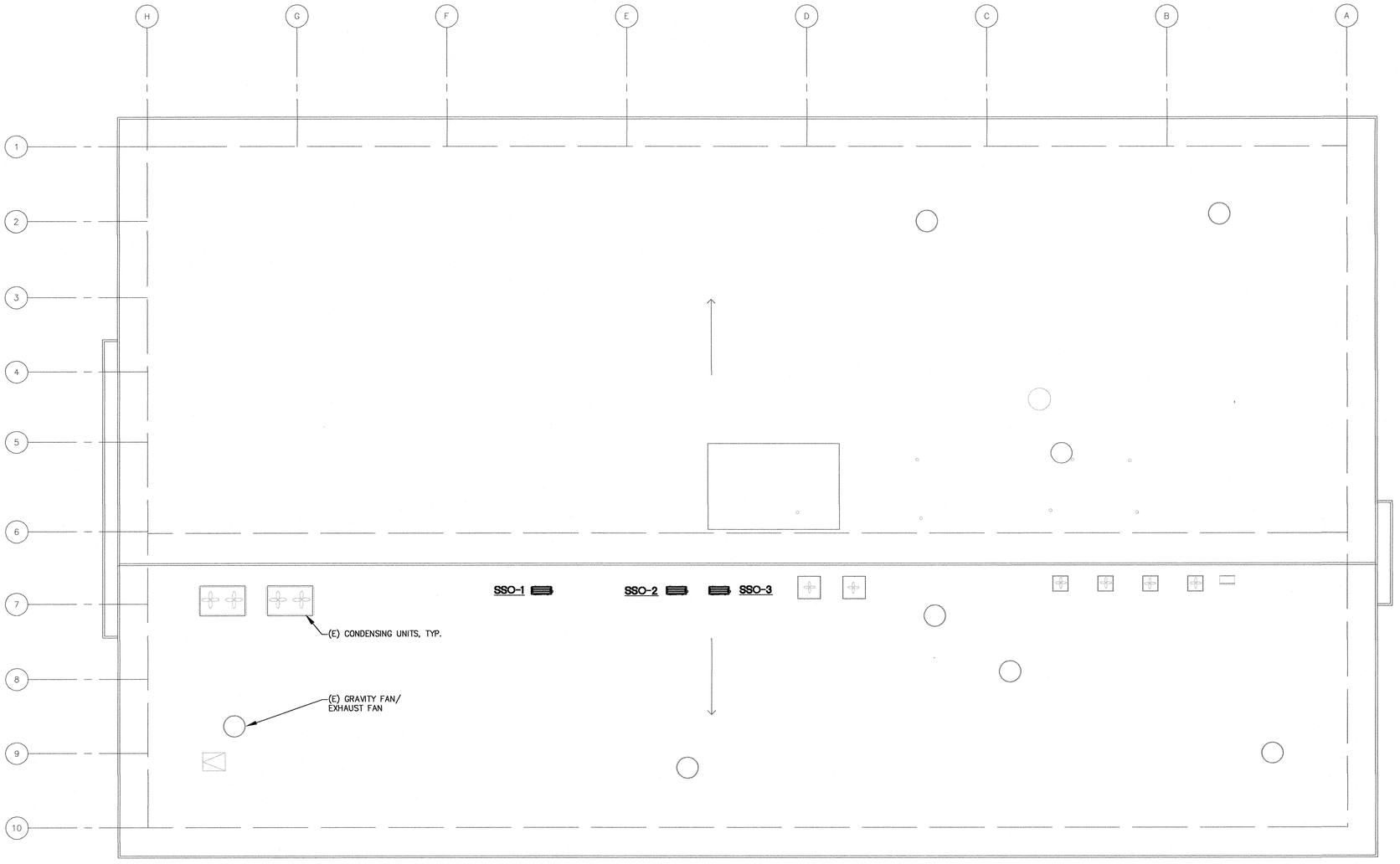
CONSULTING ENGINEERS

AE Project # : 20180056

22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

Drawing: H:\PROJ2018\20180056\GRAPHICS\HVAC-CLASSROOM-ROOF-PLAN-MECH.DWG, June 19, 2018 4:13:47 pm, Xref: HVAR-MAINLDWG, MASR-BKG.DWG, MAS-PGRD.DWG,



ROOF PLAN - MECHANICAL

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

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC ____, FLS ____, SS ____

DATE SEP - 6 2018

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET

ROOF PLAN - MECHANICAL

REGISTERED PROFESSIONAL ENGINEER
MICHAEL SEATTLEMAN
No. M31059
EXP. JUNE 30, 2019
MECHANICAL
STATE OF CALIFORNIA

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AXIOM ENGINEERS℠
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AE Project # : 20180056

22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

PROJECT NUMBER:	1817
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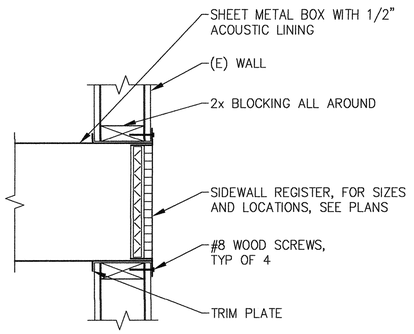
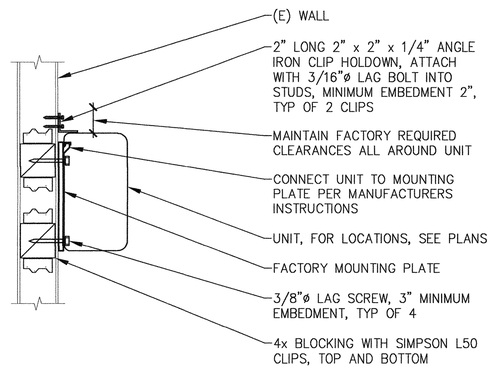
CHECKED BY:	MS
FILENAME:	

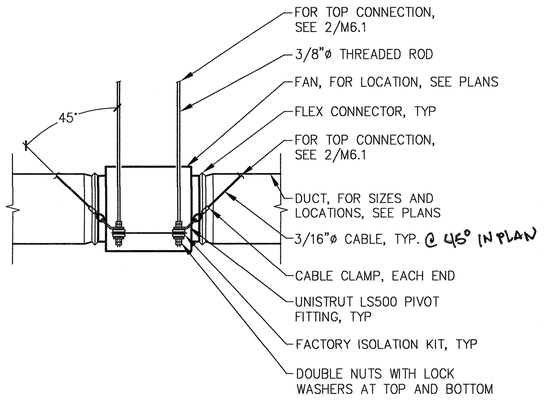
M3.1



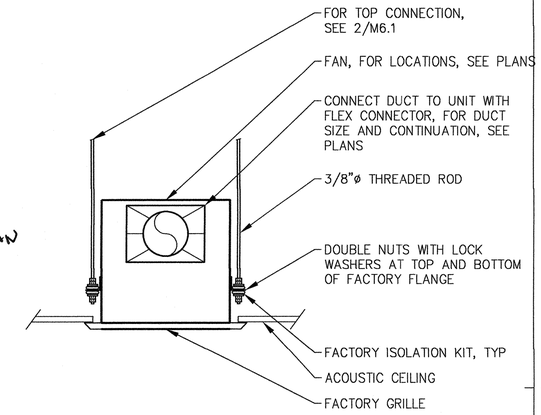
9 M6.1 SIDEWALL MOUNTING
NO SCALE



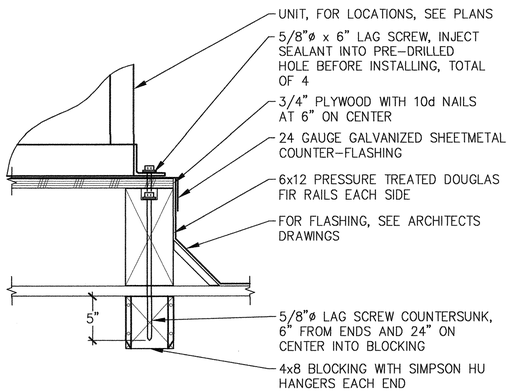
6 M6.1 SPLIT SYSTEM MOUNTING
NO SCALE



3 M6.1 INLINE FAN MOUNTING
NO SCALE



1 M6.1 CEILING MOUNTED FAN
NO SCALE



10 M6.1 SPLIT SYSTEM MOUNTING
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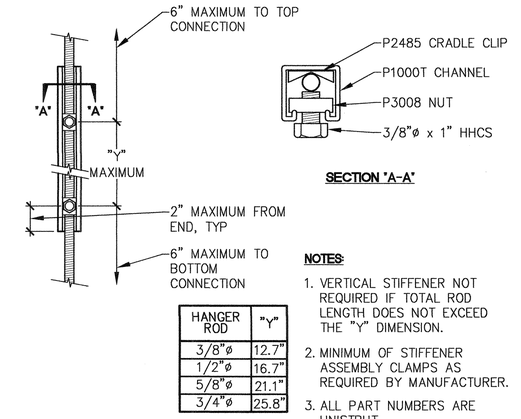
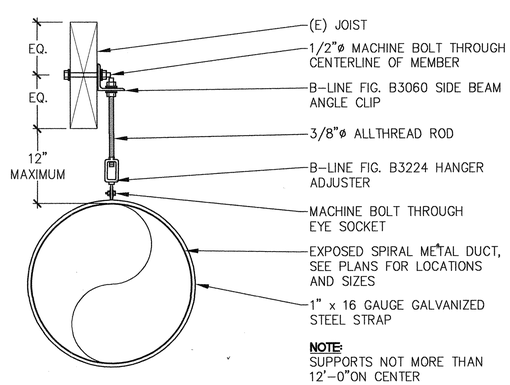


NOTES:

1. VERTICAL STIFFENER NOT REQUIRED IF TOTAL ROD LENGTH DOES NOT EXCEED THE "Y" DIMENSION.
2. MINIMUM OF STIFFENER ASSEMBLY CLAMPS AS REQUIRED BY MANUFACTURER.
3. ALL PART NUMBERS ARE UNISTRUT.

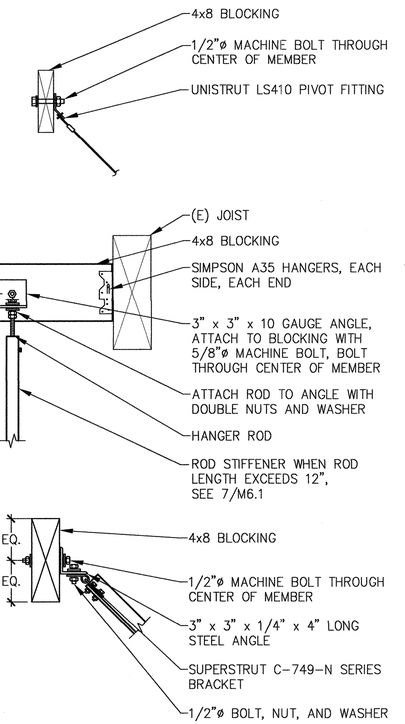
HANGER ROD	"Y"
3/8"ø	12.7"
1/2"ø	16.7"
5/8"ø	21.1"
3/4"ø	25.8"

7 M6.1 ROD STIFFENER
NO SCALE

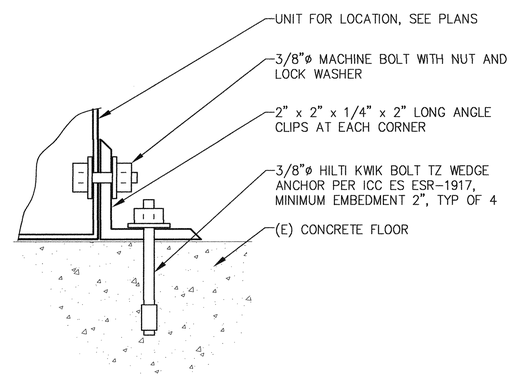


NOTE:
SUPPORTS NOT MORE THAN 12'-0"ON CENTER

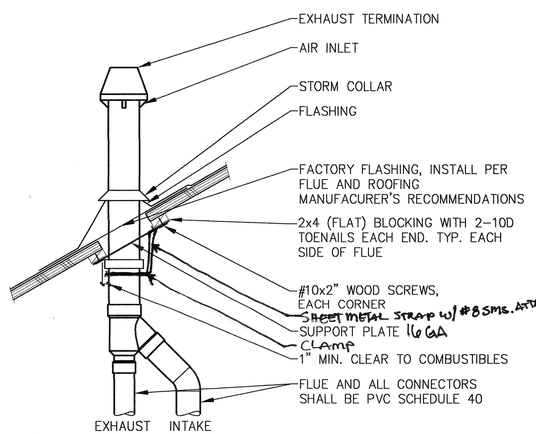
4 M6.1 EXPOSED DUCT SUPPORT
NO SCALE



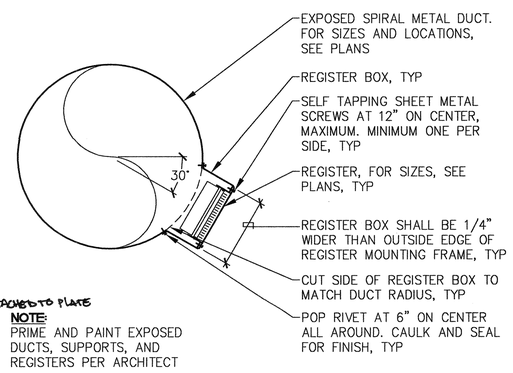
2 M6.1 TOP CONNECTIONS
NO SCALE



11 M6.1 CONDENSING UNIT MOUNTING
NO SCALE



8 M6.1 CONCENTRIC FLUE THRU ROOF
NO SCALE



NOTE:
PRIME AND PAINT EXPOSED DUCTS, SUPPORTS, AND REGISTERS PER ARCHITECT

5 M6.1 DUCT MOUNTED SUPPLY DUFFUSER
NO SCALE

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC JDL FLS MS SSN
DATE SEP - 6 2018

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD GILROY, CA

SHEET
DETAILS - MECHANICAL

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M6.1

REGISTERED PROFESSIONAL ENGINEER — MICHAEL SCOTT SCHMITT — No. M31059 — EXP. JUNE 30, 2019 — MECHANICAL — STATE OF CALIFORNIA

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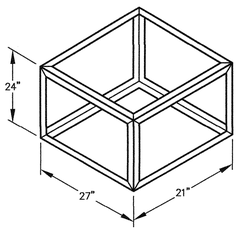
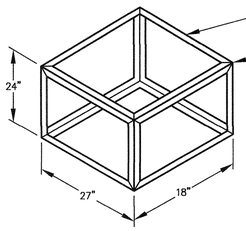
AXIOM ENGINEERS SM
LEE & ASSOCIATES
CONSULTING ENGINEERS

AE Project # : 20180056
22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788



FRAME AT PLENUM FOR FC-1



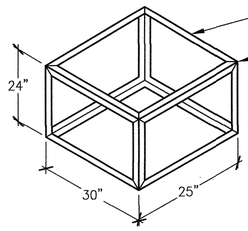
FRAME AT PLENUM FOR FC-2

2" x 2" x 1/4" ANGLE FRAME, ALL WELDED, MITERED CORNERS

3/16" TYP ALL JOINTS

NOTE:
FIELD VERIFY ALL DIMENSIONS.

USE ASTM 36 STEEL. WELDING ELECTRODES TO CONFORM TO AWS REQUIREMENTS. WELDING TO COMPLY WITH THE REQUIREMENTS OF AWS D1.1



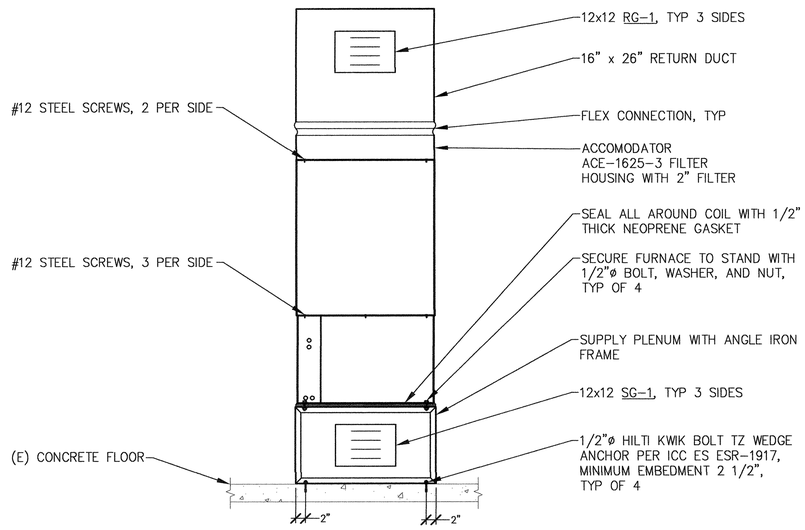
FRAME AT PLENUM

2" x 2" x 1/4" ANGLE FRAME, ALL WELDED, MITERED CORNERS

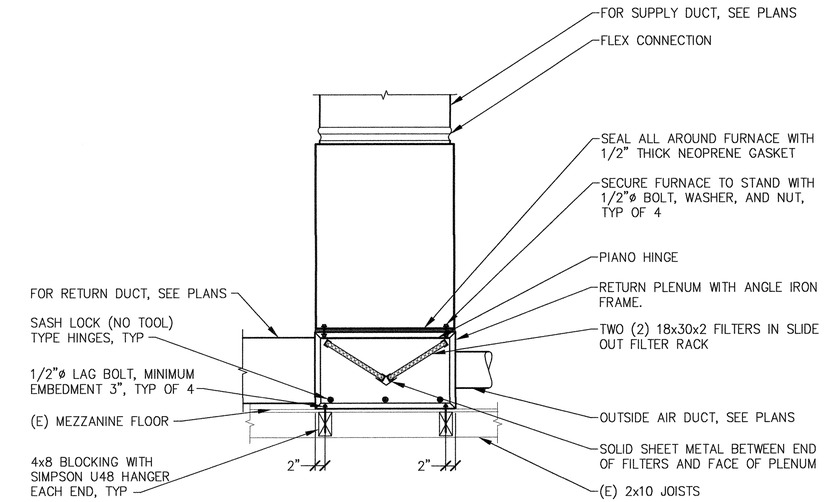
3/16" TYP ALL JOINTS

NOTE:
FIELD VERIFY ALL DIMENSIONS.

USE ASTM 36 STEEL. WELDING ELECTRODES TO CONFORM TO AWS REQUIREMENTS. WELDING TO COMPLY WITH THE REQUIREMENTS OF AWS D1.1



2 M6.2 **FURNACE AND COIL MOUNTING**
NO SCALE



1 M6.2 **FURNACE MOUNTING**
NO SCALE

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

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GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET
DETAILS - MECHANICAL

REGISTERED PROFESSIONAL ENGINEER
MICHAEL SEAN SMITH
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EXP. JUNE 30, 2019
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STATE OF CALIFORNIA

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AXIOM ENGINEERS SM
LEE & ASSOCIATES
CONSULTING ENGINEERS

AE Project # : 20180056

22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

PROJECT NUMBER:	1817
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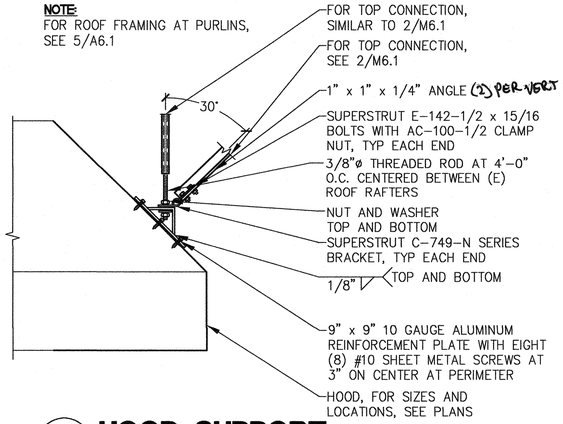
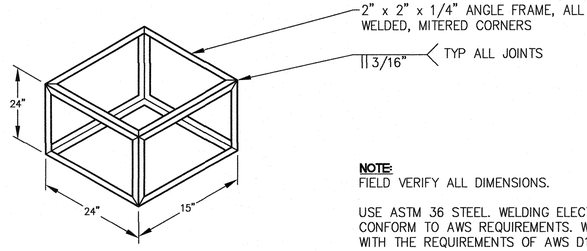
M6.2



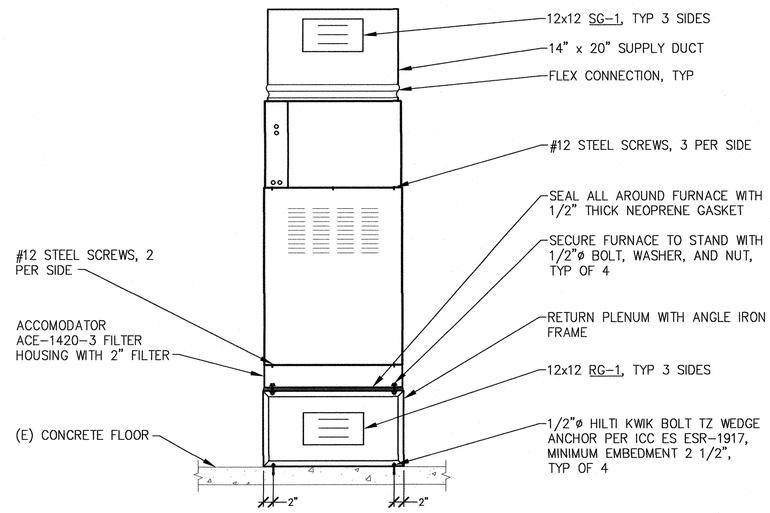
2 / M6.3 **HOOD SUPPORT**
NO SCALE



FRAME AT PLENUM

NOTE:
FIELD VERIFY ALL DIMENSIONS.

USE ASTM 36 STEEL. WELDING ELECTRODES TO CONFORM TO AWS REQUIREMENTS. WELDING TO COMPLY WITH THE REQUIREMENTS OF AWS D1.1



1 / M6.3 **FURNACE AND COIL MOUNTING**
NO SCALE

vc. (831) 649-8000
fx. (831) 649-8038
email: mail@axiomengineers.com

AXIOM ENGINEERS℠
LEE & ASSOCIATES
CONSULTING ENGINEERS

AE Project # : 20180056

22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC FLS SS,TWO
DATE SEP - 6 2018

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET
DETAILS - MECHANICAL

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

M6.3

Drawing: H:\PROJECTS\2018\20180056\DRAWINGS\Mechanical\M7.1 TITLE 24 DOCUMENTATION - MECHANICAL.DWG
Xrefs: M4S-BORD.DWG
June 15, 2018 4:11:07 p.m.

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	Page 3 of 3
Project Name: GAVILAN COLLEGE HVAC CLASSROOM	Date Prepared: 06/19/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Chahan Shah	Documentation Author Signature: Chahan Shah
Company: Axiom Engineers	Signature Date: 06/19/2018
Address: 22 Lower Ragsdale Dr. Suite A	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Monterey, CA 93940	Phone: 8316498000

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Metin Sertunc	Responsible Designer Signature:
Company: Axiom Engineers	Date Signed: 06/19/2018
Address: 22 Lower Ragsdale Dr. Suite A	License: M-31059
City/State/Zip: Monterey, CA 93940	Phone: 8316498000

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	Page 1 of 3
Project Name: GAVILAN COLLEGE HVAC CLASSROOM	Date Prepared: 06/19/2018

A. MECHANICAL COMPLIANCE DOCUMENTS & WORKSHEETS (check box if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.

YES	NO	Comp. Doc./Worksheet #	Title
◉	○	NRCC-MCH-01-E (Part 1 of 3)	Certificate of Compliance, Declaration. Required on plans for all submittals.
◉	○	NRCC-MCH-01-E (Part 2 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-02-A to 11-A). Required on plans for all submittals.
◉	○	NRCC-MCH-01-E (Part 3 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-12-A to 18-A). Required on plans where applicable.
○	◉	NRCC-MCH-02-E (Part 1 of 2)	Mechanical Dry Equipment Summary is required for all submittals with Central Air Systems. It is optional on plans.
○	◉	NRCC-MCH-02-E (Part 2 of 2)	Mechanical Wet Equipment Summary is required for all submittals with chilled water, hot water or condenser water systems. It is optional on plans.
○	◉	NRCC-MCH-03-E	Mechanical Ventilation and Reheat is required for all submittals with multiple zone heating and cooling systems. It is optional on plans.
○	◉	NRCC-MCH-07-E (Part 1 of 2)	Power Consumption of Fans. Required on plans where applicable
○	◉	NRCC-MCH-07-E (Part 2 of 2)	Power Consumption of Fans, Declaration. Required on plans where applicable

B. MECHANICAL HVAC ACCEPTANCE FORMS (check box for required compliance documents)

Test Performed By:

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.

Installing Contractor:
The contractor who installed the equipment is responsible to either conduct the acceptance test themselves or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible.

Enforcement Agency:
Plancheck - The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.
Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-02-A	MCH-03-A	MCH-04-A	MCH-05-A	MCH-06-A	MCH-07-A	MCH-08-A	MCH-09-A	MCH-10-A	MCH-11-A
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Controlled Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control
Gas-Fired Furnace	1	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐
Split Systems	3	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐

Add Row | Remove Last

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16)
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CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	Page 2 of 3
Project Name: GAVILAN COLLEGE HVAC CLASSROOM	Date Prepared: 06/19/2018

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Designer:
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Installing Contractor:
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Enforcement Agency:
Plancheck - The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.
Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-12-A	MCH-13-A	MCH-14-A	MCH-15-A	MCH-16-A	MCH-17-A	MCH-18-A
Equipment Requiring Testing or Verification	# of Units	Fault Detection & Diagnostics for DX Units	Automatic Fault Detection & Diagnostics for Air & Zone	Distributed Energy Storage DX AC Systems	Thermal Energy Storage (TES) Systems	Supply Air Temperature Reset Controls	Condenser Water Reset Controls	ECMS
Gas-Fired Furnace	1	☐	☐	☐	☐	☐	☐	☐
Split Systems	3	☑	☐	☐	☐	☐	☐	☐

Add Row | Remove Last

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TITLE 24 DOCUMENTATION - MECHANICAL

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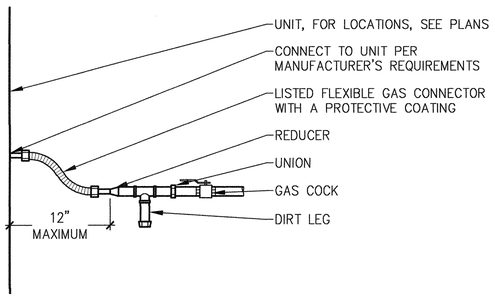
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

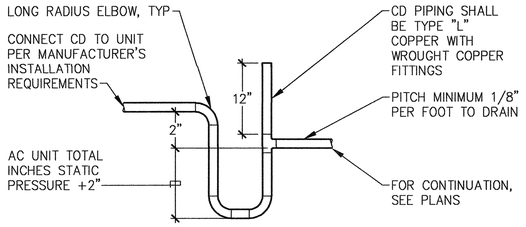
M7.1

Drawing: H:\PROJECTS\2018\20056\DRAWINGS\ARCHITECTURAL\20056-P0.DWG, Date: Aug 10, 2018 4:11:16 p.m., Xrefs: D72-P01.DWG, D71-P01.DWG, MAS-BORD.DWG,



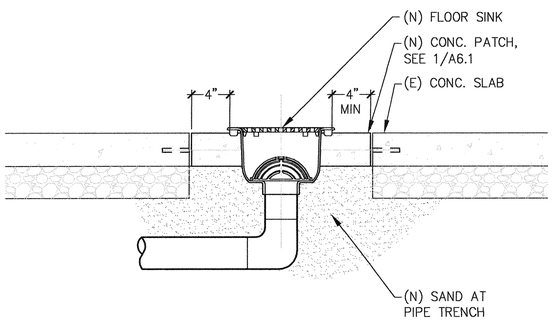
1 / P0.1 GAS CONNECTION AT UNIT

NO SCALE



2 / P0.1 COOLING COIL CONDENSATE TRAP

NO SCALE



3 / P0.1 FLOOR SINK

NO SCALE

PLUMBING CONNECTIONS/FIXTURE LIST

FIXT. NO.	FIXTURE	MAKE & MODEL	MIN BRANCH SIZE W	V	CW	HW	REMARKS
FS-1	FLOOR SINK	ZURN Z1900	2"	1 1/2"	–	–	(1)

(1) FOR MOUNTING, SEE 3/P0.1

GENERAL NOTES:

1. THIS PROJECT IS A REMODEL. THE PLANS AND SPECIFICATIONS INDICATE THE GENERAL EXTENT OF THE WORK BASED ON OWNER PROVIDED RECORD DRAWINGS AND LIMITED FIELD VERIFICATION. CONTRACTOR SHALL VISIT SITE, VERIFY EXISTING CONDITIONS, AND REPORT ANY DISCREPANCIES NOTED TO THE ARCHITECT PRIOR TO SUBMITTING A BID. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISCONNECTION AND RECONNECTION OF MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS NECESSARY TO ACCOMPLISH THE WORK WHETHER OR NOT SPECIFIED AND/OR INDICATED.
2. ASBESTOS ABATEMENT BY OTHERS ON THIS PROJECT. ANY REQUIRED ASBESTOS ABATEMENT WORK WILL BE PROVIDED BY OTHERS. AREAS SUSPECTED OF ASBESTOS CONTAMINATION WHICH INTERFERE WITH WORK UNDER THIS PROJECT SHALL BE IDENTIFIED DURING THE EARLY PHASES OF CONSTRUCTION IN ORDER TO PROVIDE FOR TIMELY DISPOSITION. NO DELAYS IN CONSTRUCTION SCHEDULE WILL BE ALLOWED DUE TO IMPROPER COORDINATION.
3. PLUMBING CONTRACTOR SHALL NOTIFY GENERAL CONTRACTOR TO REPAIR WALL, FLOOR, AND CEILING SURFACES AS REQUIRED DUE TO DEMOLITION OR INSTALLATION WORK.
4. REMOVE ALL ABANDONED PIPING, EQUIPMENT, AND FIXTURES INTERFERING WITH NEW WORK WHETHER NEW WORK IS ARCHITECTURAL, STRUCTURAL, MECHANICAL, OR ELECTRICAL.
5. ABANDON IN PLACE ALL PIPING NOT INTERFERING WITH NEW WORK UNLESS REQUIRED FOR CONTINUED SERVICE.
6. CONTRACTOR SHALL SAW-CUT SLAB AS REQUIRED FOR INSTALLATION OF WASTE AND VENT PIPING BELOW FLOOR.
7. CUTTING OR CORING OF STRUCTURAL MEMBERS OR FOOTINGS IS PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE ARCHITECT.
8. CONTRACTOR SHALL VERIFY THAT THE ELECTRICAL CONNECTIONS TO THE UNITS, INCLUDING CIRCUIT PROTECTION, CONFORM TO UNIT LABELS AND MANUFACTURER'S DIRECTIONS. WHERE WIRE SIZES SHOWN ON DRAWING EXCEED MANUFACTURER'S RECOMMENDATIONS, THE DRAWINGS SHALL GOVERN. ALL WIRING SHALL BE PER THE NATIONAL ELECTRICAL CODE.
9. ALL CONTROL WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE PROVIDED AND INSTALLED BY THE PLUMBING CONTRACTOR.
10. FLASHING AND WEATHERPROOFING AT EXTERIOR PENETRATIONS ARE SHOWN ON THE ARCHITECTURAL DRAWINGS.
11. COORDINATE WITH OWNER ON SPACE REQUIRED AND TIME SCHEDULE FOR DELIVERY OF ALL ITEMS WHICH ARE TO BE GIVEN TO THE OWNER FOR HIS DISPOSITION.
12. FOR ROOF PENETRATIONS WITHOUT CURBS, PROVIDE WEATHERPROOF FLASHING PER SMACNA ARCHITECTURAL SHEET METAL MANUAL AND DRAWING NOTES.
13. LABEL ALL PIECES OF EQUIPMENT WITH MARK MATCHING SCHEDULE OR EQUIPMENT LIST WITH ENGRAVED PLASTIC LABELS WITH MINIMUM 1/4" HIGH LETTERS. LABELS EXPOSED TO WEATHER SHALL BE ENGRAVED BRASS.
14. PRIME AND PAINT ALL EXPOSED PIPING PER ARCHITECTURAL SPECIFICATIONS. PAINT SHALL NOT EXCEED THE FOLLOWING VOLATILE ORGANIC COMPOUND CONTENT LIMITS: FLATS < 50 GRAMS PER LITER, NON-FLATS < 100 GRAMS PER LITER.
15. COORDINATE WITH ELECTRICAL ON REQUIRED POWER OUTLETS AND LIGHT SWITCHES NEAR PLUMBING EQUIPMENT.
16. BRACE ALL GAS PIPING THAT IS 1" NOMINAL OR LARGER. BRACE ALL PIPING IN MECHANICAL ROOMS THAT IS 1 1/4" NOMINAL OR LARGER. BRACE ALL PIPING 2 1/2" NOMINAL OR LARGER. PIPING SUSPENDED BY INDIVIDUAL HANGERS 12" OR LESS IN LENGTH, AS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE SUPPORT WHERE THE HANGER IS ATTACHED, NEED NOT BE BRACED.
17. ALL PIPING, VALVES, EQUIPMENT, ETC. SHOWN IS NEW UNLESS OTHERWISE NOTED.

PLUMBING GENERAL NOTES:

1. SEE ARCHITECTS PLANS AND DETAILS FOR ACCESSIBLE PLUMBING FIXTURE MOUNTING LOCATIONS, HEIGHTS, CLEARANCES, ETC.
2. ACCESSIBLE FIXTURES SHALL HAVE LEVER OR PUSH TYPE OPERATORS THAT REQUIRE LESS THAN FIVE (5) POUNDS FORCE TO ACTIVATE.
3. OPERATING CONTROLS FOR ACCESSIBLE FIXTURES TO BE OPERABLE WITH ONE HAND, NO TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
4. FAUCETS WITH SELF-CLOSING VALVES SHALL REMAIN OPEN FOR NO LESS THAN 10 SECONDS AND NO MORE THAN 15 SECONDS.
5. INSULATE ALL PIPING UNDER ACCESSIBLE FIXTURES AND COVER ANY SHARP OR ABRASIVE SURFACES WITH PROTECTIVE PIPE COVERS.
6. ALL PLUMBING VENTS THROUGH ROOF SHALL OFFSET ABOVE CEILING AND NOT PENETRATE WALL TOP PLATE.
7. MAXIMUM DEPTH OF ACCESSIBLE SINKS SHALL BE 6 1/2".

LIST OF GOVERNING CODES:

2016 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24, C.C.R.
2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, C.C.R.
2016 CALIFORNIA ELECTRICAL CODE, PART 3, TITLE 24, C.C.R.
2016 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24, C.C.R.
2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, C.C.R.
2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24, C.C.R.
2016 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, C.C.R.
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24, C.C.R.
2016 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, C.C.R. TITLE 19, C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

ALL SECTION NUMBERS BELOW REFER TO GROUP 1, CHAPTER 4, PART 1, TITLE 24, C.C.R.
1. ADDENDA, CONSTRUCTION CHANGES PER SECTION 4-338.
2. INSPECTOR APPROVED BY DSA. INSPECTOR AND CONTINUOUS INSPECTION OF WORK PER SECTION 4-333(b) AND 4-342.
3. TESTS AND TESTING LABORATORY PER SECT. 4-335.
4. SPECIAL INSPECTION PER SECT. 4-333(c).
5. CONTRACTOR SHALL SUBMIT VERIFIED REPORTS PER SECT. 4-336 AND 4-343(c).
6. ADMINISTRATION OF CONSTRUCTION PER PART 1, TITLE 24, C.C.R. – DUTIES OF ARCHITECT, STRUCTURAL ENGINEER OR PROFESSIONAL ENGINEER PER SECT. 4-333(a) AND 4-341.
7. GOVERNING CODES: TITLE 24.
8. A COPY OF PARTS 1, 2, 3, 4, AND 5 OF TITLE 24 SHALL BE KEPT AVAILABLE IN THE FIELD DURING CONSTRUCTION.
9. DSA SHALL BE NOTIFIED OF START OF CONSTRUCTION PER SECT. 4-331.
10. SUPERVISION BY THE OFFICE OF REGULATION SERVICE PER SECT. 4-334.
11. SEE SHEET T1 FOR GOVERNING CODES NOT NOTED HERE.

PLUMBING LEGEND

SYMBOL	ABBRV.	IDENTIFICATION	ABBRV.	IDENTIFICATION
—— — ——	CW	COLD WATER (DOMESTIC)	COORD	COORDINATE
—— — — ——	HW	HOT WATER	DN	DOWN
—— — — — ——	HWR	HOT WATER RETURN	DWGS	DRAWINGS
- - - - - - -	V	VENT	(E)	EXISTING
——G——	G	GAS (7"WC)	MIN	MINIMUM
——W——	S OR W	SOIL OR WASTE ABOVE GRADE	(N)	NEW
— —W— —	S OR W	SOIL OR WASTE BELOW GRADE	VTR	VENT THROUGH ROOF
—o——		RISE UP	W/	WITH
——	ELL	ELBOW DOWN		
——	TEE	TEE DOWN		
——		CAP		
——	CONT	CONTINUATION		
——◯——		BALL VALVE		
——		UNION		
——	WHA	WATER HAMMER ARRESTOR		
——⊖+	HB	HOSE BIBB		
——⊕——	GCO/FCO	GRADE CLEAN-OUT/FLOOR CLEAN-OUT		
——	WCO	WALL CLEAN-OUT		
		THERMOMETER		
	P.O.C.	POINT OF CONNECTION		

DSA GENERAL NOTES

1. THE INTENT OF THE CONTRACT DOCUMENTS IS TO MODERNIZE AN EXISTING BUILDING. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS, A CONSTRUCTION CHANGE DOCUMENT DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK.
2. THE SEISMIC SUPPORT AND ANCHORAGE OF THE EQUIPMENT DESCRIBED ON THESE DRAWINGS HAVE BEEN ENGINEERED BY THE ENGINEER OF RECORD FOR CONFORMANCE WITH APPROPRIATE BUILDING CODES. THE ENGINEER OF RECORD WAS NOT RESPONSIBLE FOR THE EQUIPMENT DESIGN.
3. ALL MECHANICAL AND PLUMBING EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION USING THE CRITERIA FROM CHAPTER 16A CALIFORNIA BUILDING CODE (CBC) 2016.
4. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT.

COMPONENT ANCHORAGE NOTES

ALL MECHANICAL AND PLUMBING COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTERS 13, 26, AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (EG HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICAL, GAS, OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORTS THE COMPONENT IS REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING MECHANICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

1. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4'-0" OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORTS THE EQUIPMENT.
2. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING AND DUCTWORK DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.5.6., 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A1.24, 1616A.1.25, AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), AND PLUMBING PIPING (PP)

MP☐ MD☐ PP☐ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☐ MD☐ PP☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PREAPPROVAL (OPM:) #0043-13

MP☐ MD☐ PP☒ OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL A AND CONNECTION LEVEL 1 FOR THE PROJECT CONDITIONS.

REGISTERED PROFESSIONAL ENGINEER — MICHAEL SCOTT GRATTAN — No. M31059 — EXP. JUNE 30, 2019 — MECHANICAL — STATE OF CALIFORNIA

vc. (831) 649-8000
fx. (831) 649-8038
email: mail@axiomengineers.com

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HVAC CLASSROOM

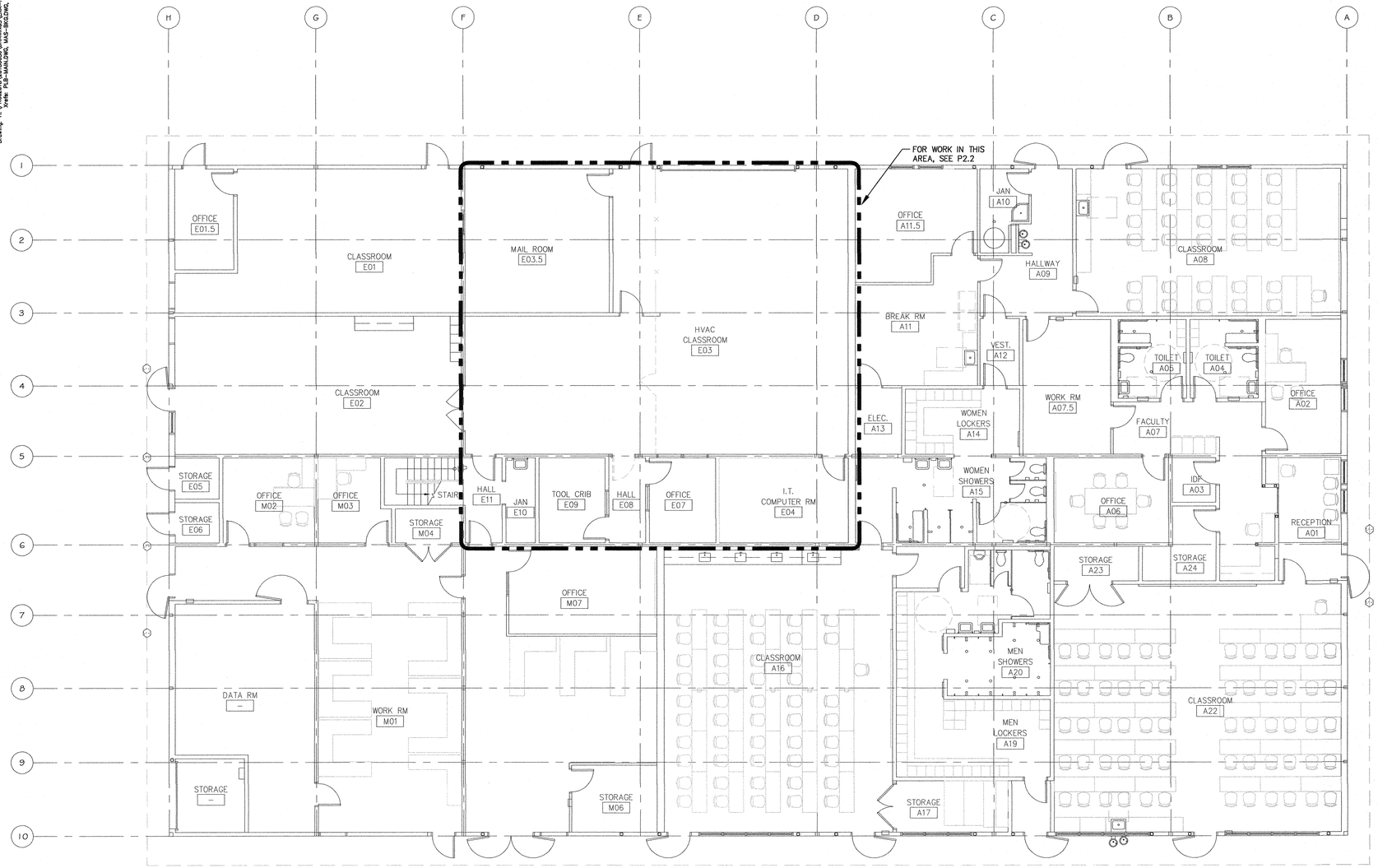
5055 SANTA TERESA BLVD
GILROY, CA

SHEET
LEGEND, SCHEDULES AND NOTES - PLUMBING

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
CHECKED BY:	MS
FILENAME:	

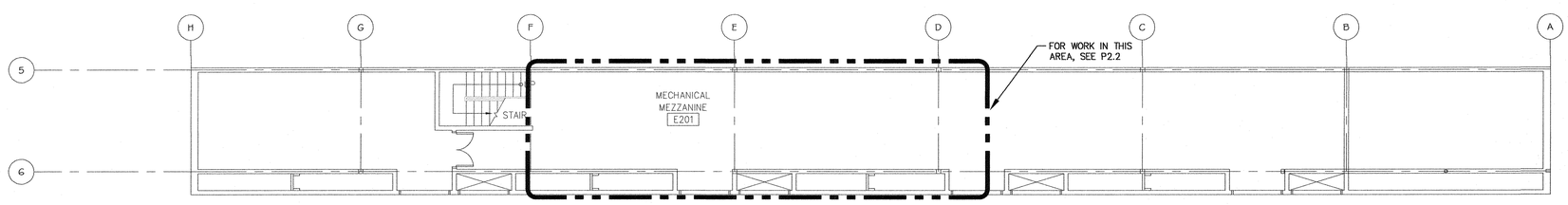
P0.1

Drawing: I:\PROJ2018\P_2018BOOM\DRAWING\ARCH\MAS-BRD.DWG, June 19, 2018 4:11:25 p.m. Xrefs: PLB-MAIN.DWG, MAS-BRD.DWG, MAS-BORD.DWG,



FLOOR PLAN - PLUMBING

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



FLOOR PLAN MEZZANINE - PLUMBING

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

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC FLS SS

DATE SEP - 6 2018

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET

FLOOR PLANS - PLUMBING

REGISTERED PROFESSIONAL ENGINEER
MICHAEL SEATTLEMAN
No. M31059
EXP. JUNE 30, 2019
MECHANICAL
STATE OF CALIFORNIA

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AXIOM ENGINEERS℠
LEE & ASSOCIATES
CONSULTING ENGINEERS

AE Project # : 20180056

22 Lower Ragsdale Dr., Suite A
Monterey, California 93940-5788

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
DRAWN BY:	CADD
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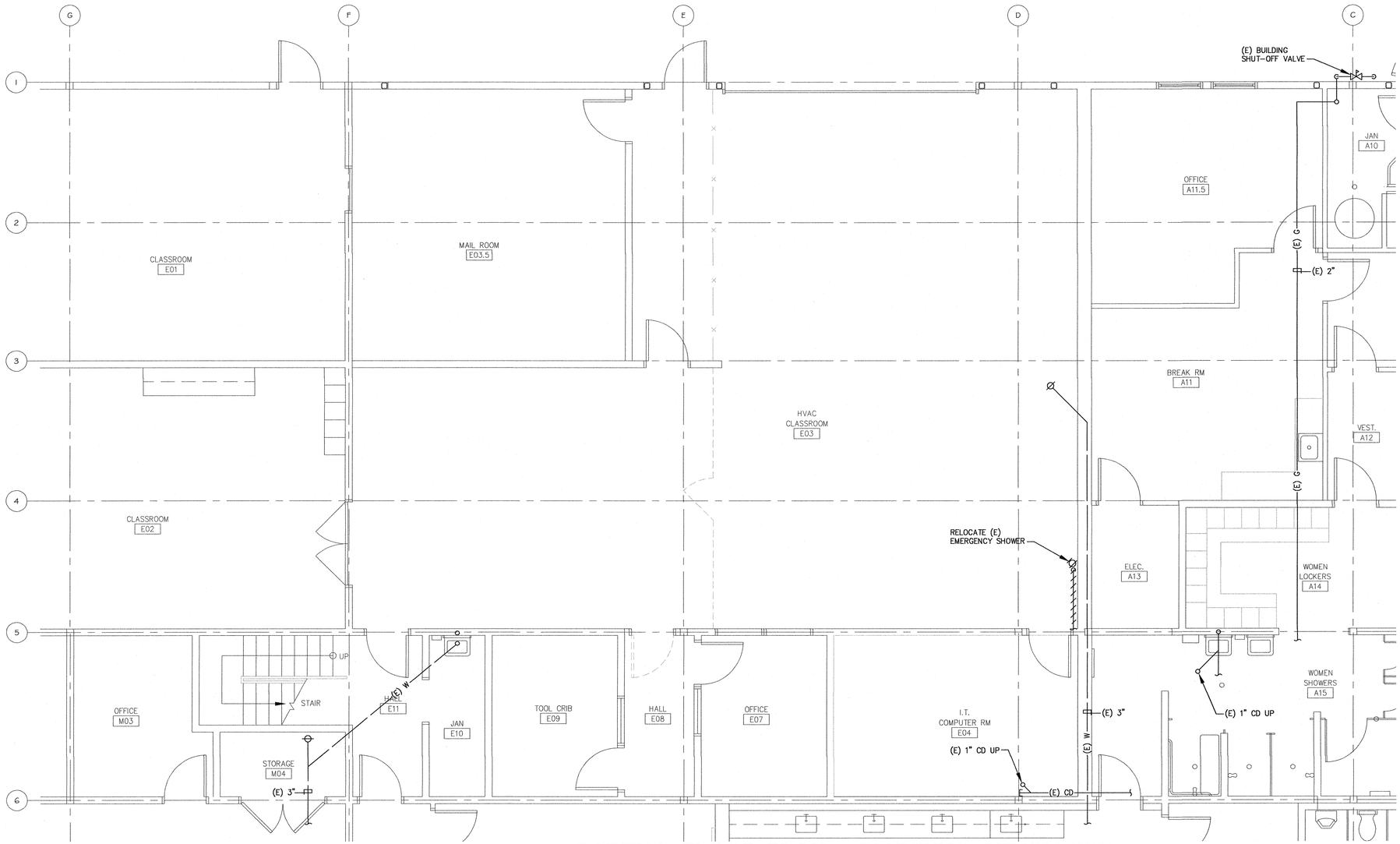
FILENAME:	

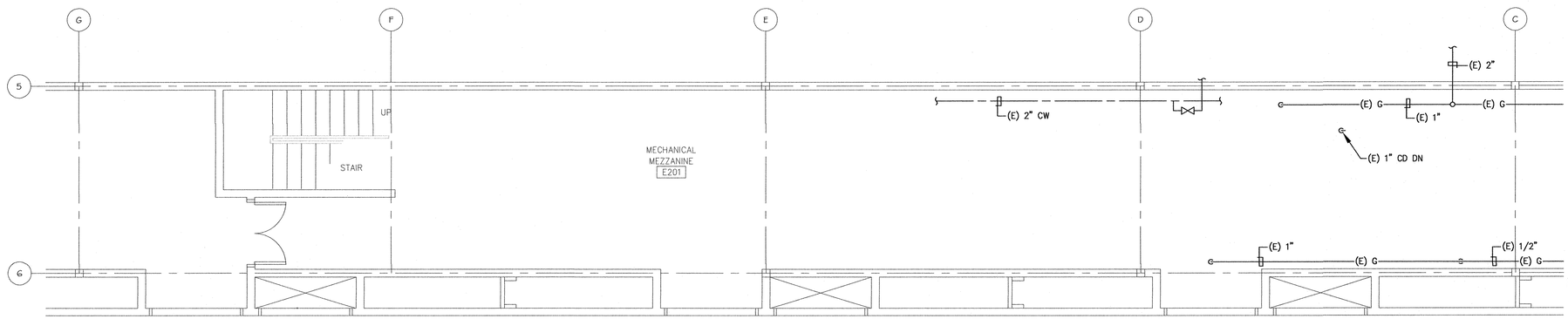
P2.1

Drawing: H:\PROJECTS\2018\20180056\DRAWINGS\ARCH\PLUMBING\A18-PLUMBING DEMO.DWG, Jul 27, 2018 13:11:50, dvh
Xrefs: PLB-HVAC.DWG, MAS-BLDG.DWG, MAS-BORD.DWG,



PARTIAL FLOOR PLAN - PLUMBING DEMOLITION

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



PARTIAL MEZZANINE FLOOR PLAN - PLUMBING DEMOLITION

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

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

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PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

SHEET

PARTIAL FLOOR PLANS - PLUMBING DEMOLITION

PROJECT NUMBER:	1817
ISSUED:	SEP 6, 2018
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P2.2D

REGISTERED PROFESSIONAL ENGINEER
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22 Lower Ragsdale Dr., Suite A
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June 19, 2018 4:11:34 p.m.
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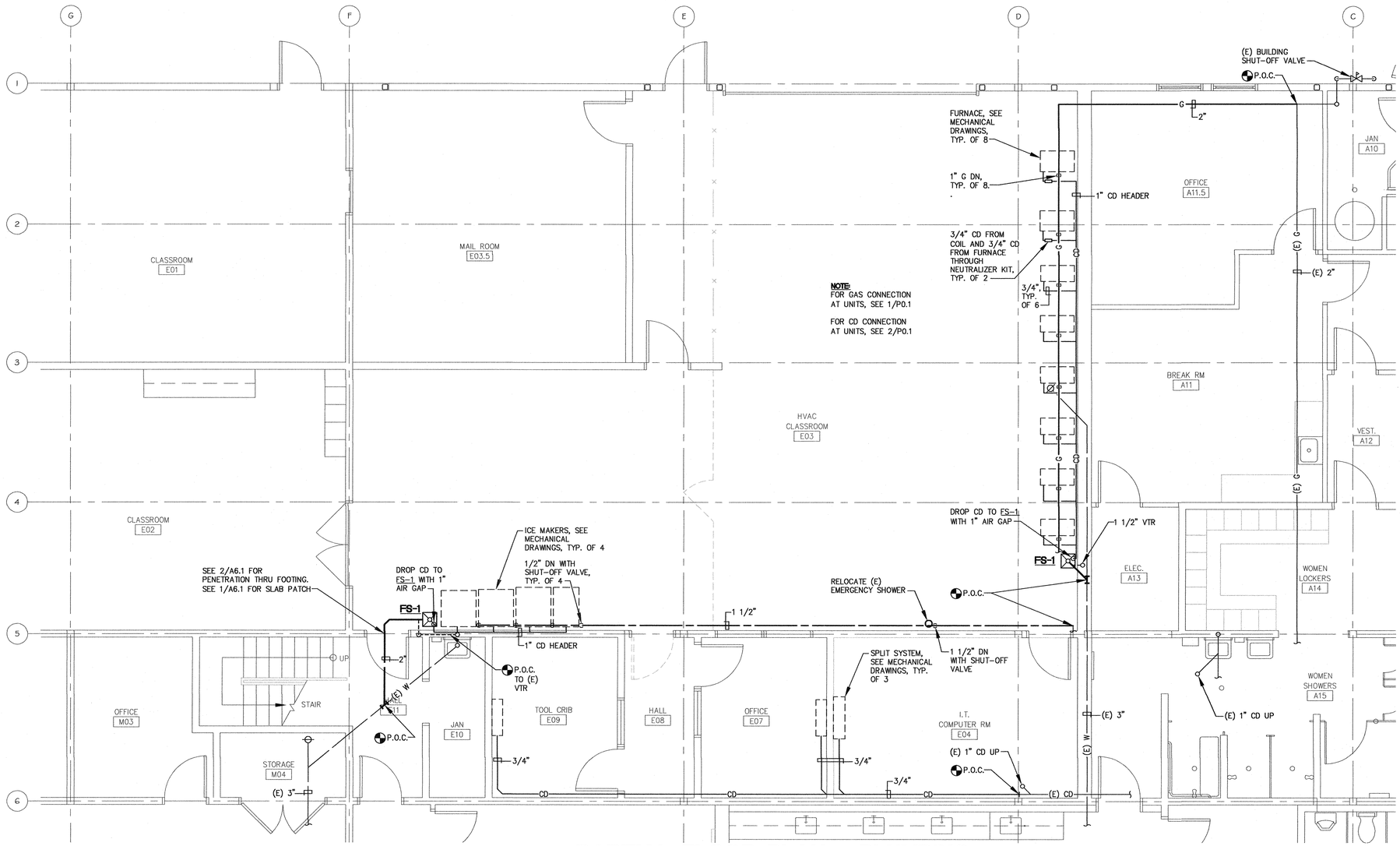
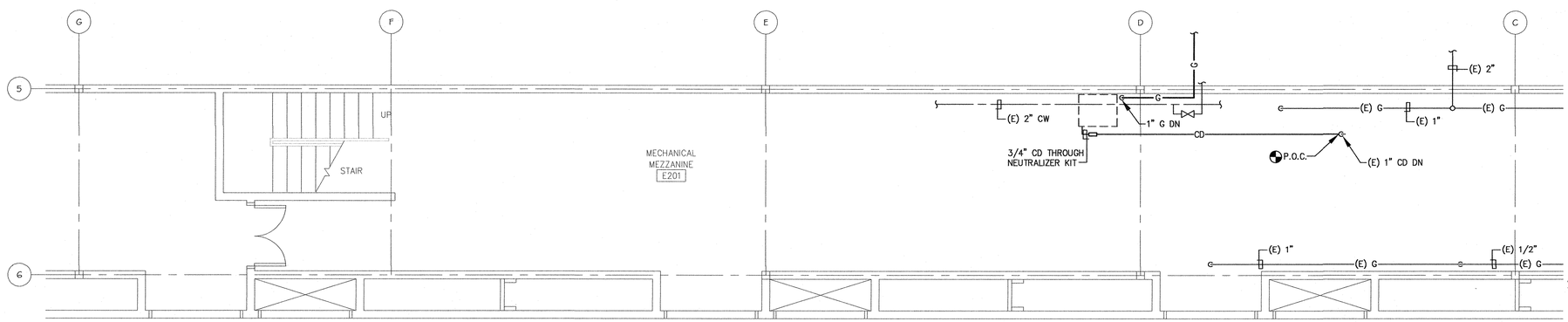
Xrefs: PLB-MAIN.DWG, MAS-BKGD.DWG, MAS-BGRD.DWG,



PARTIAL FLOOR PLAN - PLUMBING

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



PARTIAL MEZZANINE FLOOR PLAN - PLUMBING

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

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC FLS SS/WAC
DATE SEP 6 2018

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD
GILROY, CA

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PARTIAL FLOOR PLANS - PLUMBING

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P2.2

REGISTERED PROFESSIONAL ENGINEER
SEAL
No. M31059
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GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT SHALL BE U.L. LISTED AND LABELED FOR THE APPLICATION.
2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK.
3. CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING AND ALLOW FOR ALL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL CONTRACT DOCUMENTS. THE CONTRACTOR SHALL OBTAIN INFORMATION AND BE FAMILIAR WITH ALL OTHER TRADES WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES ON PROJECT.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY AND PERSONAL, PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
5. CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS TO ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL AT THE CONCLUSION OF THE PROJECT PROVIDE ACCURATE "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.
6. ALL MATERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
7. CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
8. CONTRACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.
10. ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN INTO BUILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ELECTRICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS.
11. ALL CONDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12s WITH ONE (1) #12 GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR ROUGH ESTIMATING ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE.
12. ALL BRANCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS. SHARED NEUTRALS ON MULTIWIRE CIRCUITS IS NOT ALLOWED.
13. ALL 120/277V LIGHT SWITCHES AND WALL OCCUPANT SENSORS SHALL HAVE A NEUTRAL INSTALLED TO THE DEVICE BOX EXCEPT WHERE A CONDUIT OR SURFACE RACEWAY SYSTEM IS INSTALLED.
14. COORDINATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CONFLICTS.
15. SEE ARCHITECTURAL DOCUMENTS FOR EXACT PLACEMENT OF LIGHTING FIXTURES AND DEVICES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CEILING TYPES FROM ARCHITECTURAL DOCUMENTS AND PROVIDE AND INSTALL ALL REQUIRED FIXTURE MOUNTING HARDWARE. PROVIDE AND INSTALL U.L. LISTED FIRE STOP ENCLOSURES FOR ALL RECESSED FIXTURES IN FIRE RATED CEILINGS.
16. FROM ALL NEW FLUSH MOUNT PANELS; THE CONTRACTOR SHALL STUB UP INTO ACCESSIBLE CEILING SPACE A MINIMUM OF FOUR (4) 3/4" CONDUITS FOR FUTURE USE.
17. CONTRACTOR SHALL, PRIOR TO BID, FIELD VERIFY ALL REQUIREMENTS FOR MODIFYING THE EXISTING CLOCK, DATA, AND INTERCOM SYSTEMS TO ACCOMMODATE ADDITIONS NOTED. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS NEEDED TO MAKE A FULLY OPERATIONAL SYSTEM AT THE CONCLUSION OF PROJECT WORK.
18. CONTRACTOR SHALL PROVIDE IN EVERY NEW EMPTY CONDUIT A DRAW STRING FOR USE IN FUTURE CONSTRUCTION.
19. ALL CONDUIT SHALL BE CONCEALED WHERE POSSIBLE. CUT AND PATCH EXISTING WALLS WHERE NECESSARY. WHERE IT IS NECESSARY TO CUT OR BORE EXISTING STRUCTURAL WALLS FOR NEW ELECTRICAL WORK OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO STARTING WORK. REUSE (E) CONDUIT WHERE POSSIBLE.
20. WHERE IT IS NOT POSSIBLE TO REUSE (E) CONDUIT OR RUN (N) CONCEALED CONDUIT USE NON-METALLIC SURFACE RACEWAY AND BOXES. ROUTING OF ALL NON-METALLIC RACEWAYS SHALL BE APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
21. EXTENSION RINGS OR RESET BOXES TO BE FLUSH WITH NEW WALL THICKNESS.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO (E) UNDERGROUND SYSTEMS (GAS, WATER, TELEPHONE, ELECTRICAL, SEWER, ETC.). THE CONTRACTOR SHALL REPAIR & PAY ALL EXPENSES FOR DAMAGE TO (E) UNDERGROUND SYSTEMS AS A RESULT OF (N) WORK. REPAIR TO DAMAGED UNDERGROUND SYSTEMS SHALL BE TO THE OWNERS SATISFACTION WITHOUT EXTRA EXPENSE TO THE OWNER.
23. EXISTING WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL CONDITIONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.
24. WHERE NON-METALLIC SHEATHED CONDUCTORS ARE FOUND, THE CONTRACTOR SHALL REMOVE TO FULLEST EXTENT PER THE GENERAL DEMOLITION NOTES AND REPLACE WITH CONDUIT. METAL CLAD CABLE WILL BE PERMITTED ON A CASE-BY-CASE BASIS ONLY BY WRITTEN APPROVAL FROM THE ARCHITECT.
25. ALL INSTALLATION OF EXPOSED SURFACE MOUNTED RACEWAY IN PUBLIC AREAS SHALL BE REVIEWED BY ELECTRICAL ENGINEER BEFORE ROUGH-IN. CONTRACTOR IS TO DETERMINE THE ACCESSIBILITY OF ATTIC, FURRED SPACE, HOLLOW MULLIONS, ETC. IN EACH AREA AND REVIEW WITH ENGINEER. IF SYSTEM CAN BE ROUTED CONCEALED EITHER BY FISHING OR ACCESSIBILITY, CONTRACTOR IS TO DO SO. IF INACCESSIBILITY IS DETERMINED, CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAY IN THE MOST AESTHETICALLY PLEASING MEANS AS DETERMINED BY THE THE ENGINEER. NO ALLOWANCE FOR ADDITIONAL COMPENSATION DUE TO ROUTING AS DIRECTED BY THE ENGINEER WILL BE MADE.

ELECTRICAL SYMBOLS & ABBREVIATIONS

SYMBOLS & ABBREVIATIONS SHOWN ARE FOR GENERAL USE. DISREGARD THOSE WHICH DO NOT APPEAR ON THE PLANS.

- FLUORESCENT OR LED LUMINAIRE - SEE SCHEDULE
- EMERGENCY OR NIGHT LIGHT
- STRIP FLUORESCENT OR LED LUMINAIRE - SEE SCHEDULE
- LUMINAIRE - RECESSED - SEE SCHEDULE
- RECESSED WALL WASHER
- LUMINAIRE - SURFACE MOUNTED - SEE SCHEDULE
- LUMINAIRE - POLE OR POST MOUNTED - SEE SCHEDULE
- LUMINAIRE - WALL MOUNTED SEE SCHEDULE
- BOLLARD OR PATH LIGHT - SEE SCHEDULE
- EXIT LIGHT - DIRECTIONAL ARROWS AS INDICATED - SEE SCHEDULE
- TRACK LIGHTING - SEE SCHEDULE
- EMERGENCY LIGHT
- DIGITAL DUAL TECHNOLOGY OCC. SENSOR
- LIGHTING CONTROL OCCUPANCY SENSOR CORNER MOUNTED
- DRC — DIMMER ROOM CONTROLLER
- PC — PLUG LOAD CONTROLLER
- RC — ROOM LIGHTING CONTROLLER
- LCP — LIGHTING CONTROL PANEL
- DL — DIGITAL DAYLIGHT SENSOR
- $ — SINGLE POLE SWITCH ★★
- $a — SINGLE POLE SWITCH, ★★ a = CIRCUIT CONTROLLED
- $3 — THREE WAY SWITCH★★
- $4 — FOUR WAY SWITCH★★
- $M — MANUAL MOTOR STARTER
- $K — KEY OPERATED SWITCH★★
- $ — LIGHTING DIMMER★★
- $ — DIGITAL ON/OFF SWITCH ★★
- $D — DIGITAL DIMMER SWITCH ★★
- $M# — DIGITAL MULTI SCENE LIGHTING SWITCH ★★
- $S — DIGITAL DUAL TECHNOLOGY WALL OCC. SENSOR ★★
- $ — WALL OCCUPANCY SENSOR ★★
- $2 — DOUBLE SWITCHED WALL OCCUPANCY SENSOR ★★
- $ — DIMMING DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR ★★
- $2 — 2-BUTTON DIMMING DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR ★★
- SECURITY DOOR CONTACTS
- MD — SECURITY MOTION DETECTOR
- SC — CCTV CAMERA
- KP — SECURITY SYSTEM KEYPAD
- DOOR BELL PUSHBUTTON
- CH — DOOR CHIME WITH LED
- RECEPTACLE - DUPLEX★
- DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT
- GFCI CONVENIENCE RECEPTACLE - DUPLEX★
- GFCI CONVENIENCE DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT
- RECEPTACLE DOUBLE DUPLEX★
- HALF SWITCHED DUPLEX RECEPTACLE ★
- SINGLE RECEPTACLE★
- DUPLEX RECEPTACLE - CEILING MOUNTED
- HC — LETTER INDICATES DUPLEX HALF CONTROLLED RECEPTACLE ★
- C — LETTER INDICATES DUPLEX FULLY CONTROLLED RECEPTACLE ★
- FLOOR MOUNTED DUPLEX RECEPTACLE
- FLOOR MOUNTED BOX
- POWER OUTLET - SEE PLANS FOR NEMA TYPE★
- POWER POLE
- WALL TELEPHONE OUTLET ★★
- [#] — VOICE/DATA WALL OUTLET★
- [#] — VOICE/DATA OUTLET MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT
- [#] — SURFACE MOUNTED VOICE/DATA WALL OUTLET ★
- [#] — SURFACE MOUNTED VOICE/DATA OUTLET MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT
- WIRELESS ACCESS POINT (WAP) - CEILING MOUNTED
- WIRELESS ACCESS POINT (WAP) - WALL MOUNTED - FIELD VERIFY HEIGHT
- [#] — VOICE/DATA OUTLET - FLOOR MOUNTED
- TV OUTLET ★
- [#] — VOICE/DATA OUTLET - CEILING MOUNTED
- S — INTERIOR SPEAKERS CEILING MOUNTED
- HS — INTERIOR SPEAKERS WALL MOUNTED
- HC — CLOCK +8'-0" AFF U.O.N. VERIFY BEFORE INSTALLATION
- PANELBOARD - FLUSH MOUNTED
- EQUIPMENT PANEL - FLUSH MOUNTED
- PANELBOARD - SURFACE MOUNTED
- EQUIPMENT PANEL - SURFACE MOUNTED
- M — METER W/ CURRENT TRANSFORMER
- J/HJ — JUNCTION BOX - CEILING OR WALL MOUNTED, SIZE PER CODE, TAPE AND TAG WIRES
- MOTOR CONNECTION
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH; FUSED WITH DUAL-ELEMENT FUSES SIZED PER EQUIPMENT MFGR'S NAMEPLATE DATA
- COMBINATION STARTER/FUSED DISCONNECT SWITCH; FUSED DISCONNECT SWITCH ELEMENT FUSES SIZED PER EQUIPMENT MFGRS NAMEPLATE DATA
- MAGNETIC STARTER - NEMA SIZE INDICATED NEMA 3R ENCLOSURE UNLESS OTHERWISE SPECIFIED
- CIRCUIT BREAKER
- GROUND ROD WITH GROUNDWELL BOX
- GROUND ELECTRODE
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- TRANSFORMER - SEE SINGLE LINE FOR SIZE
- PULLBOX
- FLEX CONDUIT WITH CONNECTION
- CONDUIT - UP
- CONDUIT - DOWN
- E — CONDUIT EMERGENCY SYSTEM
- LV — LOW VOLTAGE WIRING
- SURFACE METAL OR NON-METALLIC RACEWAY
- CONDUIT - CONCEALED IN WALLS OR CEILING
- CONDUIT - EXISTING
- CONDUIT - BELOW SLAB OR UNDERGROUND: 3/4"MIN.
- E — CAPPED OR STUB-OUT CONDUIT
- CONDUIT CONTINUATION
- #10 — CONDUIT - HOME RUN TO PANEL, TERMINAL CABINET, ETC. RUNS MARKED WITH CROSSHATCHES INDICATE NUMBER OF #12 AWG WIRES WHEN MORE THAN TWO. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE. CROSS HATCHES WITH NUMBER ADJACENT INDICATES WIRE SIZE OTHER THAN #12 AWG.
- 2 — SHEET NOTE REFERENCE SYMBOL; SEE ASSOCIATED NOTE ON SAME SHEET
- 3 — SCHEDULE SYMBOL; SEE ASSOCIATED NOTE ON SAME SHEET
- 2 — DETAIL NOTE REFERENCE SYMBOL SEE ASSOCIATED NOTE ON SAME DETAIL
- 1 / E3.0 — DETAIL NUMBER; DETAIL OR SECTION REFERENCE; SHEET NUMBER
- F301 — FEEDER DESIGNATION; SEE ASSOCIATED NOTE ON SAME DETAIL
- 1 / 2 — INDICATES QUANTITY OF TELEPHONE OUTLETS; INDICATES QUANTITY OF DATA OUTLETS

ABBREVIATIONS

A	AMPERE	GFCI	GROUND FAULT	NTS	NOT TO SCALE
AFF	ABOVE FINISHED FLOOR	GFI	INTERRUPTING	OAH	OVERALL HEIGHT
ALUM/AL	ALUMINUM	GND, G	GROUND	OC	ON CENTER
ARCH	ARCHITECT	GRS	GALVANIZED RIGID STEEL	OH	OVERHEAD
AWG	AMERICAN WIRE GAUGE	HT	HEIGHT	PA	PUBLIC ADDRESS
BKR	BREAKER	IC	INTERCOM	PB	PULL BOX
C	CONDUIT	IDF	INTERMEDIATE DISTRIBUTION FRAME	PF	POWER FACTOR
CATV	CABLE TV	INCAND	INCANDESCENT	PH	PHASE
CB	CIRCUIT BREAKER	JB	JUNCTION BOX	PIR	PASSIVE INFRARED
CCTV	CLOSED CIRCUIT TV	KV	KILOVOLT	PNL	PANEL
CKT	CIRCUIT	KVA	KILOVOLT AMPERES	PV	PHOTOVOLTAIC
CL	CENTER LINE	KW	KILOWATT	PVC	POLYVINYL CHLORIDE
CLG	CEILING	LCP	LIGHTING CONTROL PANEL	PWR	POWER
C.O.	CONDUIT ONLY	LTG	LIGHTING	(R)	EXISTING TO BE REMOVED
CTR	CENTER	LV	LOW VOLTAGE	(RP)	REMOVABLE POLE
D	DIMMER	KCM	THOUSAND CIRCULAR MILS	RECPT'S	RECEPTACLES
DIM	DIMENSION	M.B.	MAIN CIRCUIT BREAKER	REQD	REQUIRED
DIST	DISTRIBUTION	MCA	MINIMUM CIRCUIT AMPS	REQMT'S	REQUIREMENT(S)
(E)	EXISTING	MDF	MAIN DISTRIBUTION FRAME	SHT	SHEET
EC	ELECTRICAL CONTRACTOR	MECH	MECHANICAL	SLD	SINGLE LINE DIAGRAM
(EL)	EVENING LIGHT	MH	METAL HALIDE	STC	SYSTEMS TERMINATION CABINET
EM	EMERGENCY	MLO	MAIN LUGS ONLY	SW	SWITCH
EMT	ELECTRICAL METALLIC TUBING	MPOE	MAIN POINT OF ENTRANCE	SWBD	SWITCHBOARD
EQUIP	EQUIPMENT	MTD	MOUNTED	TTB	TELEPHONE TERMINAL BACKBOARD
EV	ELECTRICAL VEHICLE	MTG	MOUNTING	TYP	TYPICAL
FA	FIRE ALARM	MOCP	MAXIMUM OVER CURRENT PROTECTION	UON	UNLESS OTHERWISE NOTED
FACP	FIRE ALARM CONTROL PANEL	(N)	NEW	UG	UNDERGROUND
FC	FOOT CANDLE	NIC	NOT IN CONTRACT	V	VOLT
FIN	FINISH	NIEC	NOT IN ELECTRICAL CONTRACT	VD	VOLTAGE DROP
FL	FLOOR	(NL)	NIGHT LIGHT	W	WATT
FLA	FULL LOAD AMPS	NO.	NUMBER	W/	WITH
FLUOR	FLUORESCENT	NOM	NOMINAL	WP	WEATHERPROOF
(F)	FUTURE			XFMR	TRANSFORMER
GC	GENERAL CONTRACTOR				

FIRE ALARM

NOTE: SEE FIRE ALARM DRAWINGS FOR QUANTITIES AND MOUNTING HEIGHTS.

- P — MANUAL PULL STATION
- STROBE ONLY
- C — STROBE ONLY (CEILING MOUNTED)
- HORN ONLY
- M — MINI HORN
- HORN/STROBE
- CHIME/STROBE
- HEAT DETECTOR
- SMOKE DETECTOR
- DUCT SMOKE DETECTOR
- TAMPER SWITCH
- FLOW SWITCH
- POST INDICATING VALVE
- FIRE SMOKE DAMPER
- BELL (GONG)
- FCP — FIRE ALARM CONTROL PANEL
- APS — AUXILIARY POWER SUPPLY
- FSA — FIRE SYSTEM ANNUNCIATOR
- FTR — FIRE ALARM TRANSPONDER OR TRANSMITTER
- ESR — ELEVATOR STATUS/RECALL
- FAC — FIRE ALARM COMMUNICATOR
- ANN — REMOTE ANNUNCIATORS
- EOL — END OF LINE

★ +15" A.F.F. TO BOTTOM OF BOX, U.O.N.
★★ +48" A.F.F. TO TOP OF BOX, U.O.N.
[#] NUMBER IN BRACKETS DENOTES NUMBER OF CABLE DROPS WHEN MORE THAN (2).

EQUIPMENT ANCHORAGE

M/E/P COMPONENT ANCHORAGE NOTES:

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTION 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 15, 26 & 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED(e.g. HARD WIRE) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HRS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED IN THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.

A. COMPONENTS WEIGHTING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATIONS SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6 AND 2016 CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON PREAPPROVED INSTALLATION GUIDE (e.g. SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.
MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ☐ E ■ - OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ☐ E ☐ - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM#) #_____.

MP ☐ MD ☐ PP ☐ - OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING AND ADDENDA. FASTENERS AND OTHER ATTACHMENTS NO SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL_____ AND CONTRACTOR LEVEL_____ FOR THE PROJECT AND CONDITIONS.

APPLICABLE CODES & STANDARDS

CODES:

1. 2016 CALIFORNIA ADMINISTRATIVE CODE C.C.R., TITLE 24, PART 1.
2. 2016 CALIFORNIA BUILDING CODE (CBC) C.C.R., TITLE 24, VOL. 1 & 2 BASED ON THE 2015 INTERNATIONAL BUILDING CODE (IBC) WITH CALIFORNIA AMENDMENTS.
3. 2016 CALIFORNIA ELECTRICAL CODE (CEC) C.C.R., TITLE 24, PART 3 BASED ON THE 2014 NATIONAL ELECTRICAL CODE (NEC) WITH CALIFORNIA AMENDMENTS.
4. 2016 CALIFORNIA MECHANICAL CODE (CMC) C.C.R., TITLE 24, PART 4 BASED ON THE 2015 UNIFORM MECHANICAL CODE (UMC) WITH CALIFORNIA AMENDMENTS.
5. 2016 CALIFORNIA PLUMBING CODE (CPC) C.C.R., TITLE 24, PART 5 BASED ON THE 2015 UNIFORM PLUMBING CODE (UPC) WITH CALIFORNIA AMENDMENTS.
6. 2016 CALIFORNIA ENERGY CODE C.C.R., TITLE 24, PART 6.
7. 2016 CALIFORNIA FIRE CODE (CFC) C.C.R., TITLE 24, PART 9 BASED ON THE 2015 INTERNATIONAL FIRE CODE (IFC) WITH CALIFORNIA AMENDMENTS.
8. 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE C.C.R., TITLE 24, PART 11.
9. 2016 CALIFORNIA REFERENCED STANDARDS CODE C.C.R., TITLE 24, PART 12.
10. TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
11. NATIONAL FIRE ALARM CODE (NFPA 72) 2016.

STANDARDS:

1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
2. ELECTRONICS INDUSTRIES ASSOCIATION (EIA)
3. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
4. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
5. NATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)
6. UNDERWRITER LABORATORIES (UL)
7. CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS (CAL/OSHA)

SHEET INDEX

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.
Project No. 17558.00
60 Garden Court • Suite 210 • Monterey, CA 93940
T.831.646.3330 • F.831.646.3336 • www.acemb.com

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC GH FL FLS SS WHC
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER — MAJID ANWARI — No. E21043 — EXP. 3/31/19 — ELECTRICAL — STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

SYMBOLS, ABBREV., CODES, STANDARDS, NOTES & SHEET INDEX

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

E0.1

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 3/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path.	
Project Name: HVAC Classroom	Report Page: Page 1 of 6
Project Address: 5055 Santa Teresa Blvd., Gilroy CA 95020	Date Prepared: 5/31/2018

A. GENERAL INFORMATION

01	Project Location (city)	Gilroy	04	Total Conditioned Floor Area (ft²)	1,610
02	Climate Zone	4	05	Total Unconditioned Floor Area (ft²)	
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	

☐ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☑ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Other (write in):

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work		Conditioned Spaces		Unconditioned Spaces	
01		02	03	04	05
My Project Consists of (check all that apply):		Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☐ New Lighting System					
☑ Altered Lighting System	Entire Luminaire Alteration	Area Category	1,610		
Total Area of Work (ft²)		1,610			

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts)						Actual Lighting Power per §140.6(a) (Watts)						Compliance Results
	01	02	03	04	05		06	07	08	09			10
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Footnotes §140.6(c)2G (+)	Tailored §140.6(c)3 (+)	Total Allowed (Watts)		Total Designed (Watts)	Adjustments Portable Lighting §140.6(a) (-)	Adjustments PAF Control Credits §140.6(a)2 (-)	Total Actual (Watts) *Includes Adjustments			05 Must be ≥ 09 §140.6
	(See Table I)	(See Table I)	(See Table K)	(See Table L)			(See Table F)	(See Table J)	(See Table R)				
Conditioned:		1,932			1,932	≥	1,260			1,260	=		**COMPLIES**
Unconditioned:						=					=		
Controls Compliance (See Table H for Details)													**COMPLIES**
Rated Power Reduction Compliance (See Table S for Details)													**Not Applicable**

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 3/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: HVAC Classroom	Report Page: Page 2 of 6
Project Address: 5055 Santa Teresa Blvd., Gilroy CA 95020	Date Prepared: 5/31/2018

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03		04	05	06	07	08	09	
Name or Item Tag	Complete Luminaire Description	Specialized Luminaire Types		Watts per luminaire[1]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
		Track	Portable						Pass	Fail
A	**Suspended Strip LED Dimmable**	☐	☐	**87**	**Mfr. Spec[1]**	**14**	☐	1,218	☐	☐
B	Surface LED Dimmable	☐	☐	42	Mfr. Spec[1]	1	☐	42	☐	☐
						Total Designed Watts CONDITIONED SPACES:		**1,260**		

[1]*NOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. TRACK LIGHTING

This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

Table Instructions:
*Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls			
01	02	03	
Mandatory Demand Response §130.1(e)	Shut-off Controls §130.1(c)	Field Inspector Pass	Fail
Not Required ≤ 10,000 SF	See Area Level Controls	☐	☐
Area Level Controls			
Table Continued			

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 3/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: HVAC Classroom	Report Page: Page 3 of 6
Project Address: 5055 Santa Teresa Blvd., Gilroy CA 95020	Date Prepared: 5/31/2018

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector Pass	Fail
HVAC Classroom E03	Class, Lecture, Trg, Vocational	Manual ON/OFF	Dimmer	Occ Sensor	N/A	N/A	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved. 13
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2 Plan Sheet Showing Daylit Zones: N/A

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06		
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustments Footnotes	PAF	Portable Ltg
HVAC Classroom E03	Class, Lecture, Trg, Vocational	1.2	1,610	1,932	☐	☐	☐
			TOTAL:	**1,932**	See Tables J, K, R for detail		

J. POWER ADJUSTMENT: PORTABLE LIGHTING IN OFFICES

This Section Does Not Apply

K. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD FOOTNOTES

This Section Does Not Apply

L. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED SPECIAL FUNCTION AREAS

This Section Does Not Apply

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 3/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: HVAC Classroom	Report Page: Page 4 of 6
Project Address: 5055 Santa Teresa Blvd., Gilroy CA 95020	Date Prepared: 5/31/2018

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

P. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

Q. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

R. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (PAF)

This Section Does Not Apply

S. RATED POWER REDUCTION COMPLIANCE BY SPACE

This Section Does Not Apply

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 3/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: HVAC Classroom	Report Page: Page 5 of 6
Project Address: 5055 Santa Teresa Blvd., Gilroy CA 95020	Date Prepared: 5/31/2018

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at http://www.energy.ca.gov/2015publications/CEC-400-2015-033/appendices/forms/NRCI

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
◉	○	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/bttcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
○	◉	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 3/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTI-E
Project Name: HVAC Classroom	Report Page: Page 6 of 6
Project Address: 5055 Santa Teresa Blvd., Gilroy CA 95020	Date Prepared: 5/31/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name:	Najib Anwary	Documentation Author Signature:	Najib Anwary
Company:	Aurum Consulting Engineers	Signature Date:	5/31/2018
Address:	300 S. 1st Street Suite 342	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	San Jose, Ca 95113	Phone:	(408) 564-7925

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Najib Anwary	Responsible Designer Signature:	Najib Anwary
Company :	Aurum Consulting Engineers	Date Signed:	5/31/2018
Address:	300 S. 1st Street Suite 342	License:	E21043
City/State/Zip:	San Jose, Ca 95113	Phone:	(408) 564-7925

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.
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IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC FLS SS
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER NAJIB ANWARY No. E21043 Exp. 3/31/19 ELECTRICAL STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT
GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM
5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
CALIFORNIA ENERGY COMPLIANCE TITLE 24 - INDOOR

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

E0.2

PANELBOARD SCHEDULES

Voltage:	120/208V,3ø
Wire:	4W
Type:	NEMA 1
Mains:	M.L.O.

[1] [3] **PANEL LC3**

Bussing:	100A
Feed:	BOTTOM
Mounting:	SURFACE
A.I.C.	10,000

Load	A	B	C	Bkr	Ck	abc	Ck	Bkr	A	B	C	Load
RECEPTS-IT COMPUTER ROOM	720			20/1	1		2	20/1	100			CO2 DETECTOR [2]
RECEPTS-IT COMPUTER ROOM		720		20/1	3		4	20/1		114		TF-1-2-3
RECEPTS-IT COMPUTER ROOM			720	20/1	5		6	20/1			360	RECEPS-CORR.
RECEPTS-IT COMPUTER ROOM	540			20/1	7		8	20/1	360			RECEPS-CORR.
RECEPTS-OFFICE		720		20/1	9		10	20/1		360		RECEPS-CORR.
RECEPTS-TOOL CRIB			720	20/1	11		12	20/1				SPARE
RECEPS-HVAC CLASSROOM	1000			20/1	13		14	20/1				SPARE
RECEPS-HVAC CLASSROOM		1000		20/1	15		16	20/1				SPARE
RECEPS-HVAC CLASSROOM			1000	20/1	17		18	-				SPACE ONLY
SPACE ONLY				-	19		20	-				SPACE ONLY
SPACE ONLY				-	21		22	-				SPACE ONLY
SPACE ONLY				-	23		24	-				SPACE ONLY
SPACE ONLY				-	25		26	-				SPACE ONLY
SPACE ONLY				-	27		28	-				SPACE ONLY
SPACE ONLY				-	29		30	-				SPACE ONLY
	2260	2440	2440						460	474	360	

[1] SUBMITTAL SHALL MATCH EXACT BREAKER LOCATIONS SHOWN.
[2] PROVIDE & INSTALL LOCK-ON DEVICE.
[3] LABEL PANEL FOR SHORT CIRCUIT AMPS AVAILABLE PER CEC 110-24.

KVA Phase A	2.7
KVA Phase B	2.9
KVA Phase C	2.8

Total Connected Load KVA	8.4
Total Load Amperes	23

Voltage:	120/208V,3ø
Wire:	4W
Type:	NEMA 1
Mains:	M.L.O.

[1] [3] **PANEL LC1**

Bussing:	400A
Feed:	BOTTOM
Mounting:	SURFACE
A.I.C.	10,000

Load	A	B	C	Bkr	Ck	abc	Ck	Bkr	A	B	C	Load
CU-1	2080			30/2	1		2	15/1	1000			FC-1
CU-1		2080			3		4	15/1		1000		FC-2
CU-2			2080	30/2	5		6	15/1			1000	FC-3
CU-2	2080				7		8	15/1	1000			FC-4
CU-3		1248		20/2	9		10	15/1		1000		FC-5
CU-3			1248		11		12	15/1			1000	FC-6
CU-4	1248			20/2	13		14	15/1	1000			FC-7
CU-4		1248			15		16	15/1		1000		FC-8
CU-5			1248	20/2	17		18	25/1			1440	CU-9
CU-5	1248				19		20	25/1	1440			CU-10
CU-6		1248		20/2	21		22	25/1		1440		CU-11
CU-6			1248		23		24	25/1			1440	CU-12
CU-7	1248			20/2	25		26	25/1	1440			CU-13
CU-7		1248			27		28	25/1		1440		CU-14
CU-8			1248	20/2	29		30	25/1			1440	CU-15
CU-8	1248				31		32	25/1	1440			CU-16
SPACE ONLY				-	33		34	25/1		1440		CU-17
SPACE ONLY				-	35		36	25/1			1440	CU-18
PANEL "LC3"	1260			100/3	37		38		13159			PANEL "LC2"
PANEL "LC3"		1440			39		40	200/3		14719		PANEL "LC2"
PANEL "LC3"			1440		41		42				13410	PANEL "LC2"
	10412	8512	8512						20479	22039	21170	

[1] SUBMITTAL SHALL MATCH EXACT BREAKER LOCATIONS SHOWN.
[2] PROVIDE & INSTALL LOCK-ON DEVICE.
[3] LABEL PANEL FOR SHORT CIRCUIT AMPS AVAILABLE PER CEC 110-24.

KVA Phase A	30.9
KVA Phase B	30.6
KVA Phase C	29.7

Total Connected Load KVA	91.1
Total Load Amperes	253

Voltage:	120/208V,3ø
Wire:	4W
Type:	NEMA 1
Mains:	M.L.O.

[1] [3] **PANEL LC2**

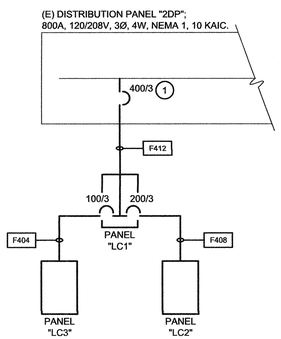
Bussing:	225A
Feed:	BOTTOM
Mounting:	SURFACE
A.I.C.	10,000

Load	A	B	C	Bkr	Ck	abc	Ck	Bkr	A	B	C	Load
SSO-1	936			15/2	1		2	20/1	360			RECEPTS-ROOF
SSO-1		936			3		4	30/1		1920		TF-1
SSO-2			936	15/2	5		6	30/1			1920	TF-1
SSO-2	936				7		8	20/1	1000			RECEPT-HVAC CLASSROOM
SSO-3		936		15/2	9		10	20/1		1000		RECEPT-HVAC CLASSROOM
SSO-3			936		11		12	20/1			1000	RECEPT-HVAC CLASSROOM
HP-1	1809			25/2	13		14	20/1	1000			RECEPT-HVAC CLASSROOM
HP-1		1809			15		16	20/1		1000		RECEPT-HVAC CLASSROOM
HP-2			1809	25/2	17		18	20/1			1000	RECEPT-HVAC CLASSROOM
HP-2	1809				19		20	20/1	1000			RECEPT-HVAC CLASSROOM
HP-3		1809		25/2	21		22	20/1		1000		RECEPT-HVAC CLASSROOM
HP-3			1809		23		24	20/1			1000	RECEPT-HVAC CLASSROOM
HP-4	1809			25/2	25		26	20/1	1000			RECEPT-HVAC CLASSROOM
HP-4		1809			27		28	20/1		1000		RECEPT-HVAC CLASSROOM
RECEPT CORD REEL-HVAC CLASSRM			500	20/1	29		30	20/1			1000	RECEPT-HVAC CLASSROOM
RECEPT CORD REEL-HVAC CLASSRM	500			20/1	31		32	20/1	500			RECEPT CORD REEL-HVAC CLASSRM
RECEPT CORD REEL-HVAC CLASSRM		500		20/1	33		34	20/1		500		RECEPT CORD REEL-HVAC CLASSRM
RECEPT CORD REEL-HVAC CLASSRM			500	20/1	35		36	20/1			500	RECEPT CORD REEL-HVAC CLASSRM
RECEPT CORD REEL-HVAC CLASSRM	500			20/1	37		38	-				SPACE ONLY
RECEPT CORD REEL-HVAC CLASSRM		500		20/1	39		40	-				SPACE ONLY
RECEPT CORD REEL-HVAC CLASSRM			500	20/1	41		42	-				SPACE ONLY
	8299	8299	6990						4860	6420	6420	

[1] SUBMITTAL SHALL MATCH EXACT BREAKER LOCATIONS SHOWN.
[2] PROVIDE & INSTALL LOCK-ON DEVICE.
[3] LABEL PANEL FOR SHORT CIRCUIT AMPS AVAILABLE PER CEC 110-24.

KVA Phase A	13.2
KVA Phase B	14.7
KVA Phase C	13.4

Total Connected Load KVA	41.3
Total Load Amperes	115



1 ELECTRICAL SINGLE LINE DIAGRAM
NO SCALE

DETAIL NOTES:

1. PROVIDE & INSTALL NEW BREAKER AND ASSOCIATED MOUNTING HARDWARE. NEW BREAKER SHALL MATCH EXISTING IN RATING & TYPE.

SINGLE LINE DIAGRAM LEGEND

- (DEMOLISH)
- (EXISTING)
- (NEW)
- (E) FLOOR/PAD MOUNTED EQUIPMENT
- (N) FLOOR/PAD MOUNTED EQUIPMENT

FEEDER SCHEDULE

DESIGNATION	AMPACITY	CONDUIT & CONDUCTORS SIZES
F404	100	1 1/2" C., 4 #2 & 1 #8 GND.
F408	200	2 1/2" C., 4 #3/0 & 1 #6 GND.
F412	400	4" C., 4 #500kcm & 1 #2 GND.

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.
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IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC FLS SS WB
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT
GAVILAN COLLEGE

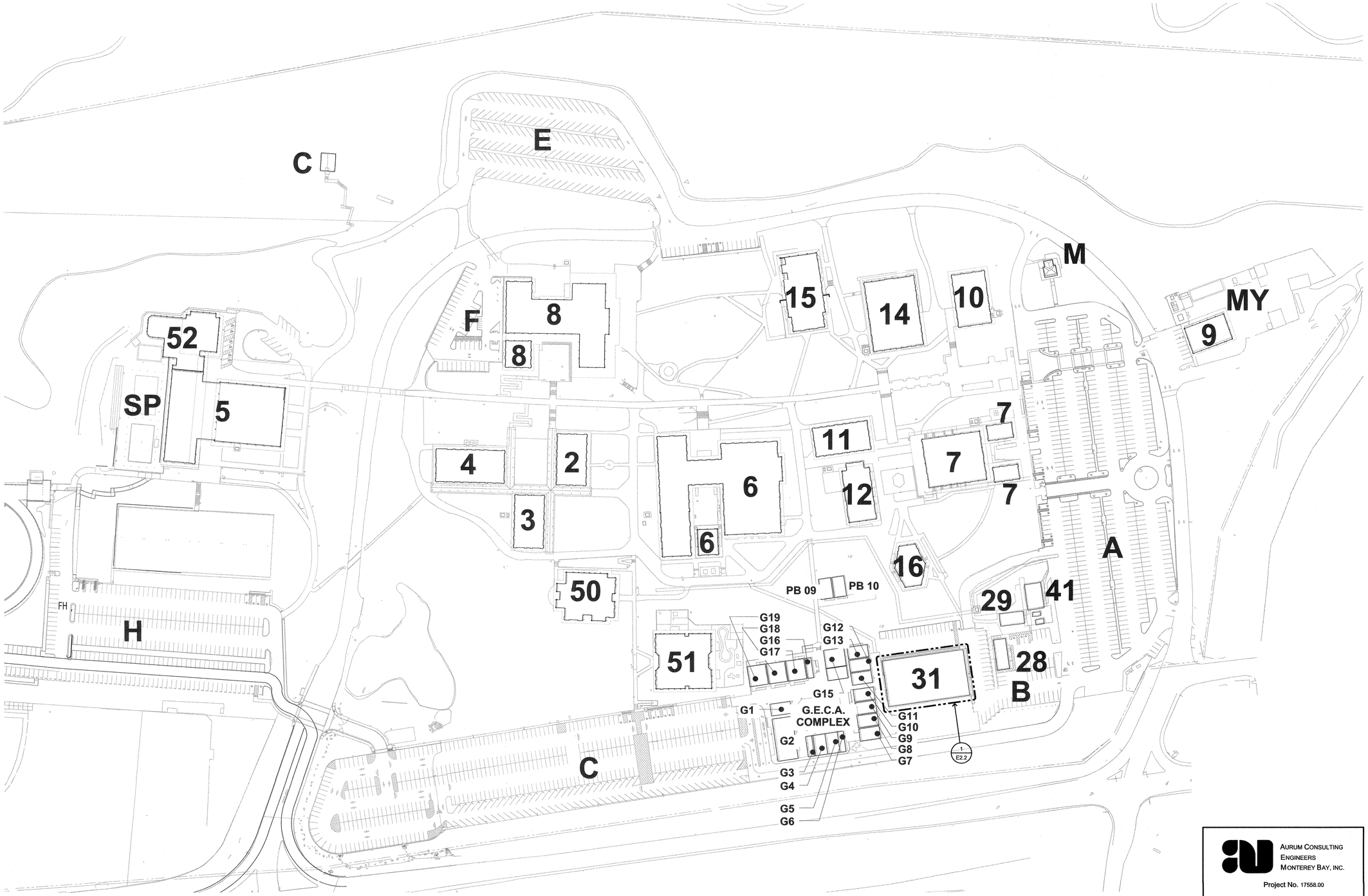
PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
ELECTRICAL SINGLE LINE DIAGRAM & PANELBOARD SCHEDULES

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

E1.1



1 OVERALL SITE PLAN

SCALE: 1"=80'-0"

80' 0' 40' 80'

NORTH

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

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NAJIB ANWARY
No. E21045
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GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

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PROJECT

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SHEET

OVERALL SITE PLAN

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.

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PROJECT NUMBER:	1817
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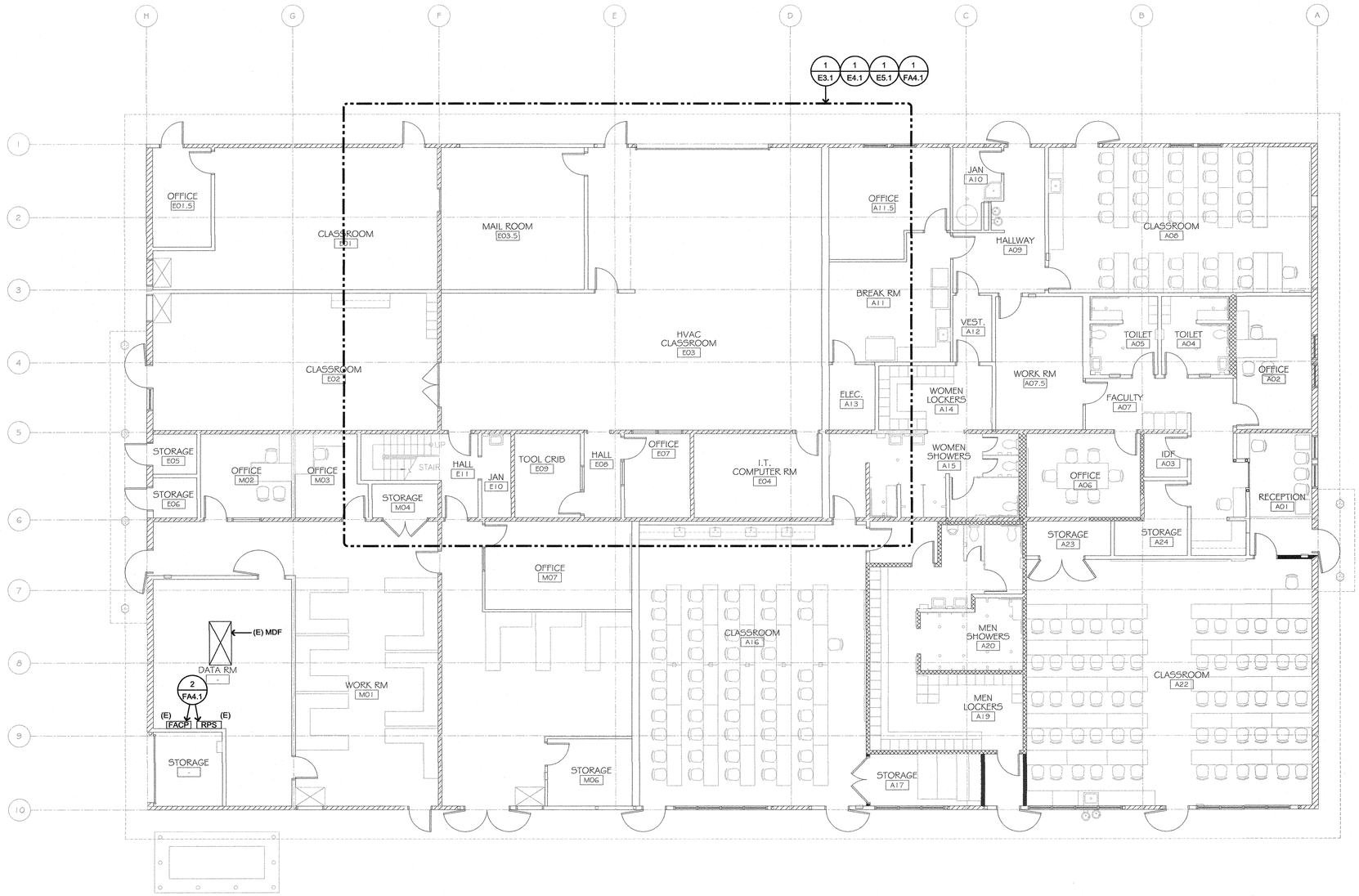

1 OVERALL FLOOR PLAN

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

8' 0' 2' 4' 6' 8'

NORTH

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC ___ FLS ___ SS. WAVE

DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

OVERALL FLOOR PLAN

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.

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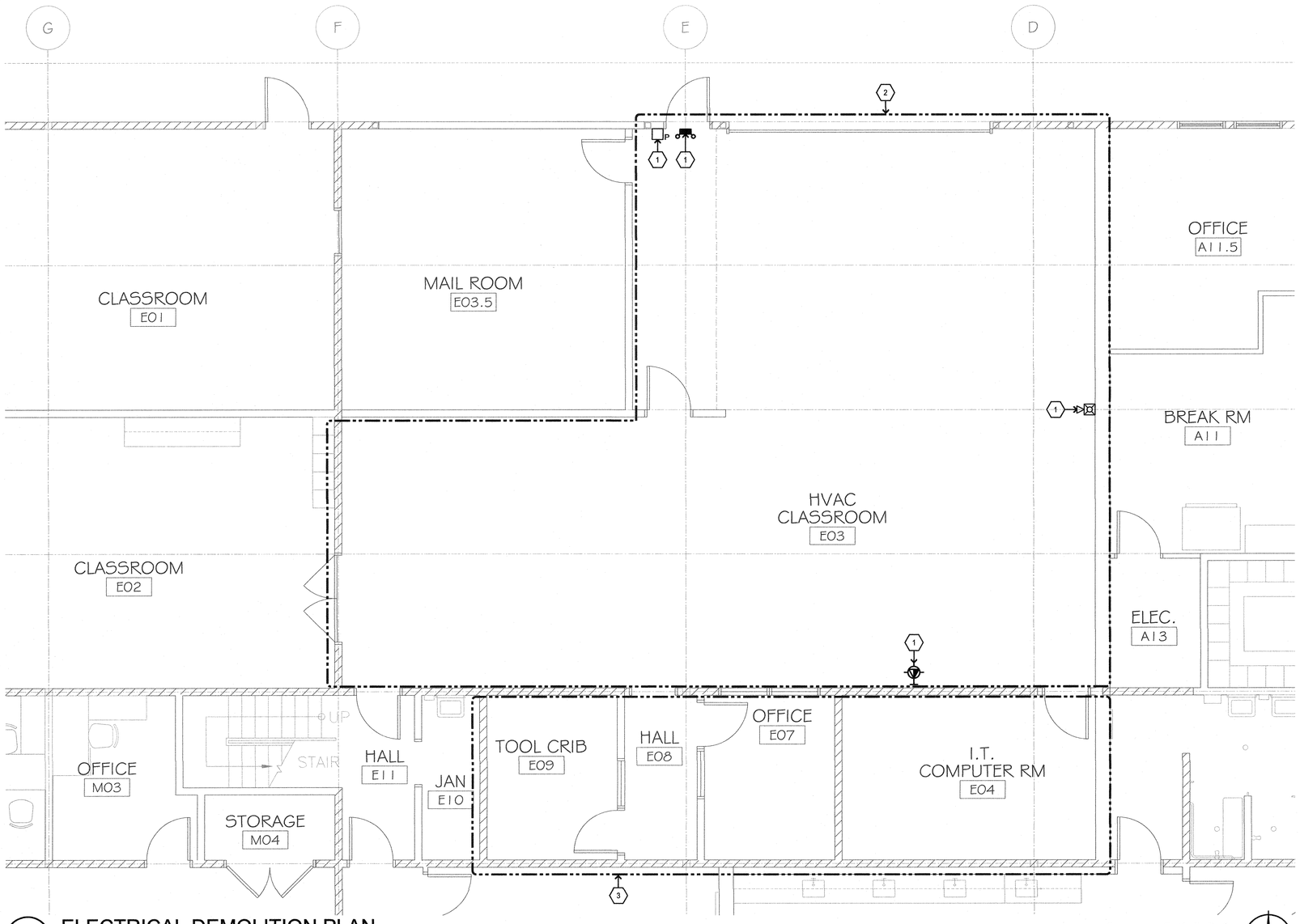
E2.2



1 ELECTRICAL DEMOLITION PLAN

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

SHEET NOTES

1. EXISTING TO REMAIN.
2. UNLESS OTHERWISE NOTED; PER GENERAL DEMOLITION NOTES, DEMOLISH ALL ELECTRICAL DEVICES, EQUIPMENT AND LIGHT FIXTURES.
3. ALL LIGHTING FIXTURES AND ASSOCIATED CONTROLS SHALL REMAIN IN THIS AREA. DEMOLISH ELECTRICAL DEVICES (POWER & DATA) AND ASSOCIATED CONNECTIONS ONLY PER GENERAL DEMOLITION NOTES.

GENERAL DEMOLITION NOTES

A. CONTRACTOR SHALL FIELD VERIFY EXTENT OF ELECTRICAL DEMOLITION AND QUANTITIES OF ELECTRICAL TO BE REMOVED AS DICTATED BY THE REQUIREMENTS OF THE PROJECT.

B. REMOVAL SHALL INCLUDE WIRING, RACEWAY, BOXES, SWITCHES, LIGHT FIXTURES, ETC. AS INDICATED ON THE PLANS AND AS REQUIRED BY THESE DEMOLITION NOTES.

C. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE CONCEALED IN EXISTING REMAINING WALLS MAY BE ABANDONED IN PLACE. REMOVE WIRING FROM CONDUIT.

D. RACEWAYS ASSOCIATED WITH ELECTRICAL BEING DEMOLISHED WHICH ARE EXPOSED SHALL BE REMOVED.

E. WHERE REMOVAL OF EQUIPMENT OR WIRING IS INDICATED, IT SHALL INCLUDE ALL ASSOCIATED WIRING BACK TO LAST ACTIVE REMAINING OUTLET, DEVICE, FIXTURE OR PANEL.

F. ELECTRICAL CONTRACTOR SHALL INSURE THAT ALL REMAINING ACTIVE CIRCUITS, DEVICES, OUTLETS, LIGHT FIXTURES, ETC. HAVE NOT BEEN DISCONNECTED OR MADE INOPERATIVE DURING DEMOLITION. ELECTRICAL CONTRACTOR SHALL RESTORE ALL INTERRUPTED OR DISCONNECTED CIRCUITS TO OPERATION.

G. ELECTRICAL CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL REMOVED ELECTRICAL EQUIPMENT AND MATERIAL.

H. NO REMOVED EQUIPMENT OR MATERIAL SHALL BE REUSED AS PART OF NEW WORK, U.O.N.

I. EXISTING REMAINING CONCEALED RACEWAYS MAY BE REUSED FOR NEW WORK PROVIDED THEY MEET ALL REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK.

J. EXISTING FLUSH OUTLETS MAY BE REUSED FOR NEW WORK PROVIDED THEY MEET ALL REQUIREMENTS OF THE SPECIFICATION FOR NEW WORK, MEET THE REQUIREMENTS OF THE CURRENT C.E.C. FOR VOLUME AND COINCIDE WITH LOCATION SHOWN FOR THE NEW WORK.

K. FLUSH OUTLET BOXES IN EXISTING WALLS TO REMAIN MAY BE ABANDONED IN PLACE. REMOVE DEVICES AND WIRING, PLUG OPENING AND PROVIDE AND INSTALL A BLANK DEVICE PLATE.

L. EXISTING WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL CONDITIONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.

M. WHERE TELEPHONE, COMPUTER DATA, FIBER OPTICS, FIRE ALARM OR OTHER COMMUNICATIONS OUTLETS OR WIRING IS TO BE DEMOLISHED IT SHALL BE REMOVED BACK TO THE NEXT TERMINAL POINT. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER OR HIS REPRESENTATIVE TO HAVE EQUIPMENT AND WIRING DESIGNATED FOR REMOVAL OR PRESERVATION PRIOR TO REMOVAL OF OUTLET BOXES, CONDUIT OR WIRING BY ELECTRICAL CONTRACTOR.

N. COORDINATE WITH OWNER PRIOR TO START OF DEMOLITION TO MINIMIZE POWER INTERRUPTIONS, WORK MAY HAVE TO OCCUR DURING NON-REGULAR BUSINESS HOURS. COORDINATE IN WRITING WITH OWNER ONE WEEK PRIOR TO PLANNED POWER INTERRUPTIONS.

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IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

ACC ____ FLS ____ SS W&S

DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

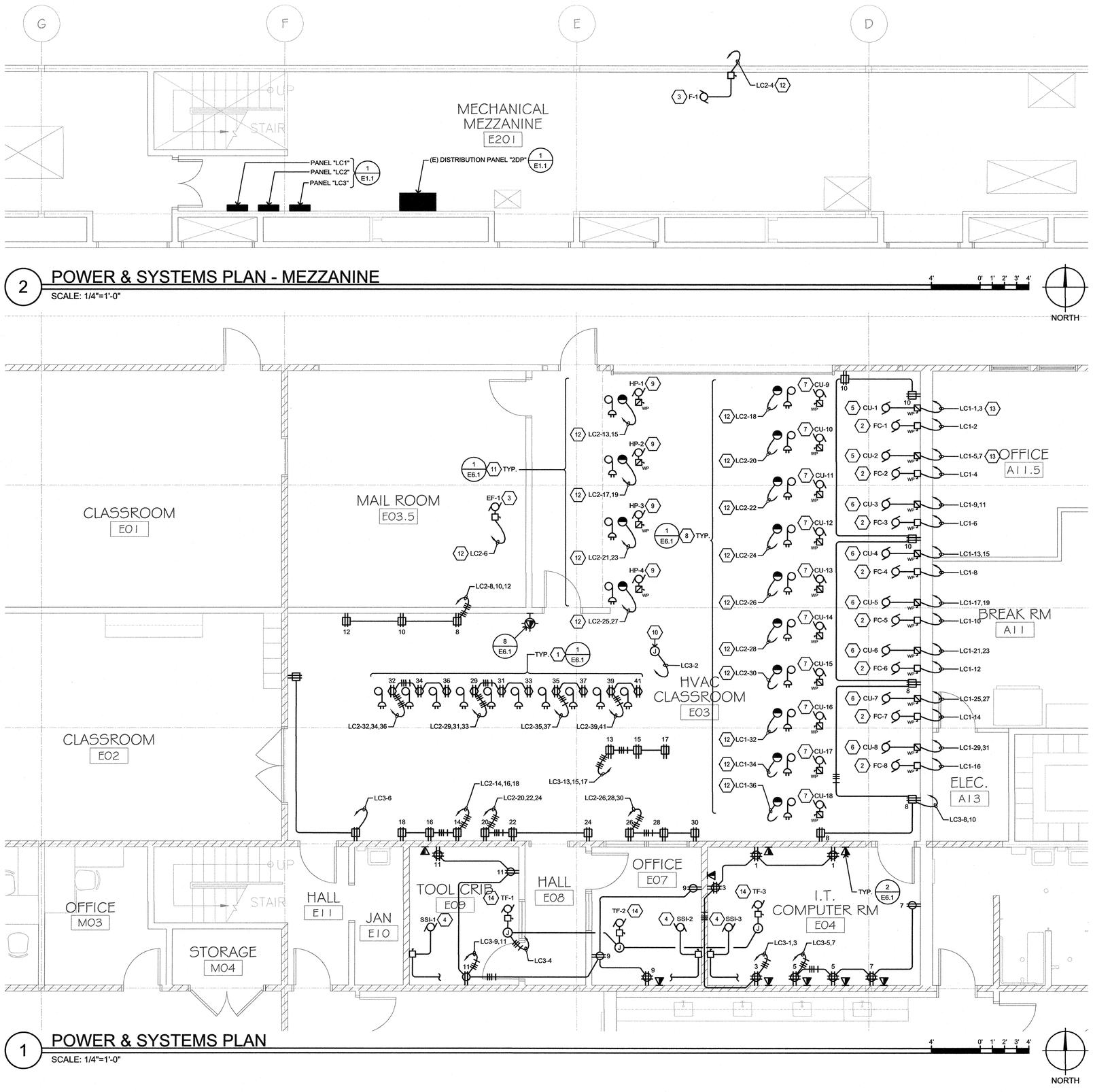
5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

ELECTRICAL DEMOLITION PLAN

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

E3.1



2 POWER & SYSTEMS PLAN - MEZZANINE

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

1 POWER & SYSTEMS PLAN

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

SHEET NOTES

1. PROVIDE & INSTALL CORD REEL WITH 20 AMP DUPLEX, 120V PLUG AT END CORD. CORD SHALL BE 30' LONG. INSTALL AT CEILING WITH CONNECTION 20 AMP, 120V. CEILING MOUNTED RECEPTACLE.
2. 1/3 HP, 120V.
3. 1 HP, 120V.
4. PROVIDE & INSTALL ¾"C. WITH CIRCUIT WIRES TO OUTDOOR UNIT FOR POWER. VERIFY EXACT REQUIREMENTS WITH MECHANICAL PLANS.
5. 20 MCA, 208V, 1Ø.
6. 12 MCA, 208V, 1Ø.
7. 15 MCA, 120V.
8. PROVIDE & INSTALL CORD REEL WITH 25 AMP NEMA PLUG, TO MATCH CONDENSING UNIT INPUT AT END CORD. VERIFY EXACT REQUIREMENTS WITH MECHANICAL AND MANUFACTURER INSTALLATION INSTRUCTIONS. CORD SHALL BE 30' LONG. INSTALL AT CEILING WITH CONNECTION 25 AMP, 120V. CEILING MOUNTED NEMA TYPE RECEPTACLE.
9. 17.4 MCA, 208V, 1Ø.
10. LOCATE AT CEILING FOR CARBON MONOXIDE DETECTOR, 120V.
11. PROVIDE & INSTALL CORD REEL WITH 25 AMP NEMA PLUG, TO MATCH CONDENSING UNIT INPUT AT END CORD. VERIFY EXACT REQUIREMENTS WITH MECHANICAL AND MANUFACTURER INSTALLATION INSTRUCTIONS. CORD SHALL BE 30' LONG. INSTALL AT CEILING WITH CONNECTION 25 AMP, 208V. CEILING MOUNTED NEMA TYPE RECEPTACLE.
12. ½"C., 2 #10 & 1 #10 GND.
13. ½"C., 2 #8 & 1 #10 GND.
14. 38 WATTS, 120V.

BRANCH CIRCUIT CONDUCTOR SIZING TABLE

CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	REQUIREMENT
20/120	56'-90'	½" C., 2 #10 & 1 #10 GND.
20/120	91'-140'	½" C., 2 #8 & 1 #10 GND.
20/277	131'-205'	½" C., 2 #10 & 1 #10 GND.
20/277	206'-330'	½" C., 2 #8 & 1 #10 GND.

NOTE:
CONTRACTOR SHALL SIZE BRANCH CIRCUIT CONDUCTORS PER THE TABLE ABOVE AS DETERMINED BY THE CIRCUIT CONDUCTOR LENGTH, U.O.N. CONTRACTOR SHALL SPLICE TO #12 AWG WITHIN TERMINATION BOX FOR DEVICE CONNECTION IF NECESSARY.

GENERAL NOTE:

A. UNLESS OTHERWISE NOTED, PROVIDE & INSTALL ALL CORD REELS WITH #10 AWG CONDUCTORS AS PART OF CORD REEL CABLES/WIRES.

B. UNLESS OTHERWISE NOTED, WHERE ARCHITECTURAL PLANS DO NOT SHOW WALLS TO BE FURRED OUT; CONTRACTOR SHALL PROVIDE & INSTALL SURFACE METAL (EMT) RACEWAYS & BOXES FOR DEVICES SHOWN.

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC FLS SS WG
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAVID ANWARY
No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
POWER & SYSTEMS PLAN

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.
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PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

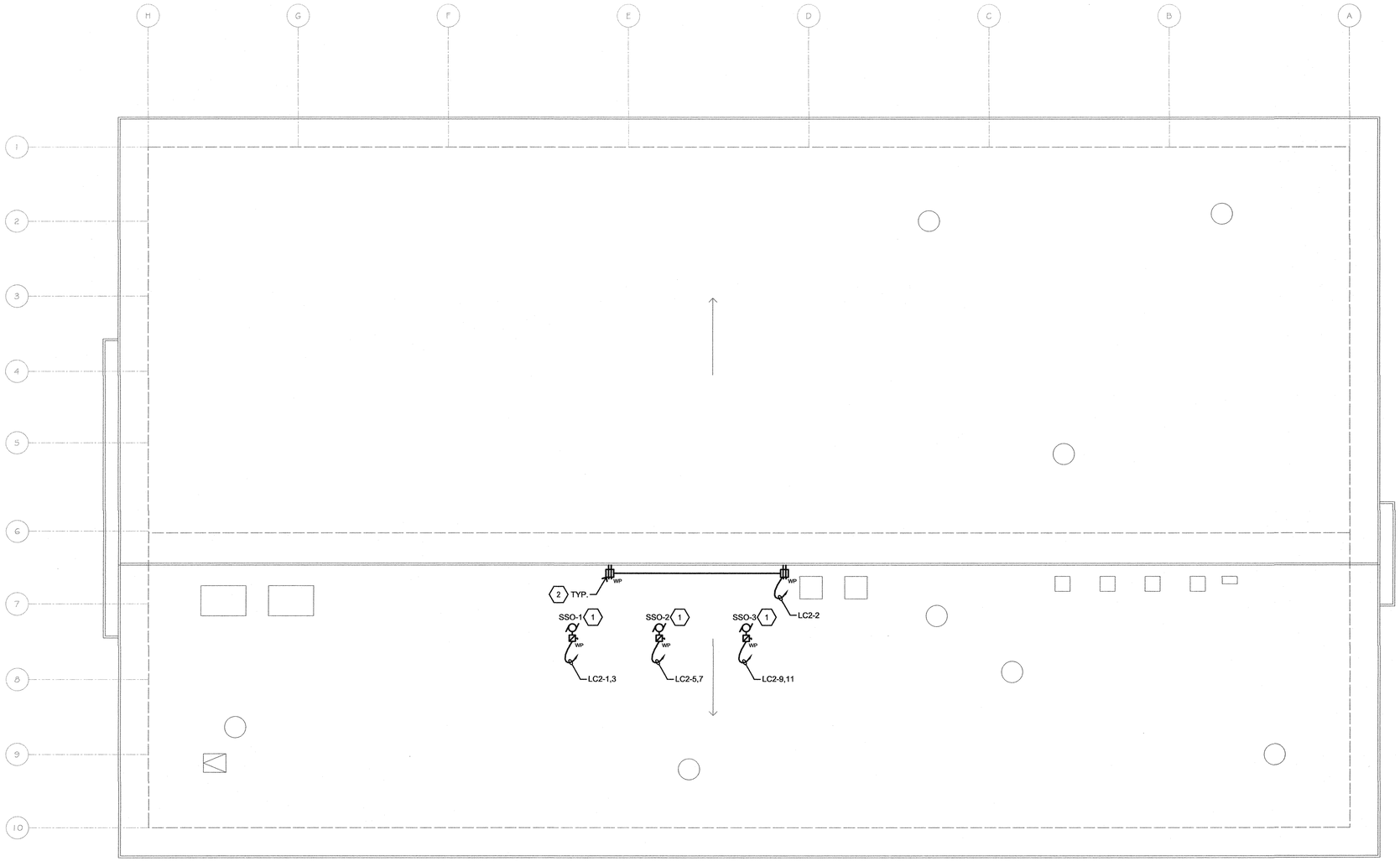
E4.1

SHEET NOTES

1. 9 MCA, 208V, 1Ø.
2. PROVIDE & INSTALL IN-USE WEATHERPROOF COVER, TAYMAC OR EQUAL.

BRANCH CIRCUIT CONDUCTOR SIZING TABLE		
CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	REQUIREMENT
20/120	56'-90'	½" C., 2 #10 & 1 #10 GND.
20/120	91'-140'	½" C., 2 #8 & 1 #10 GND.
20/277	131'-205'	½" C., 2 #10 & 1 #10 GND.
20/277	206'-330'	½" C., 2 #8 & 1 #10 GND.

NOTE:
CONTRACTOR SHALL SIZE BRANCH CIRCUIT CONDUCTORS PER THE TABLE ABOVE AS DETERMINED BY THE CIRCUIT CONDUCTOR LENGTH, U.O.N. CONTRACTOR SHALL SPLICE TO #12 AWG WITHIN TERMINATION BOX FOR DEVICE CONNECTION IF NECESSARY.



1 POWER PLAN - ROOF
SCALE: 1/8"=1'-0"

8' 0' 2' 4' 6' 8'

NORTH

IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC ___ FLS ___ SS/AS ___
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
POWER PLAN - ROOF

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.
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PROJECT NUMBER:	1817
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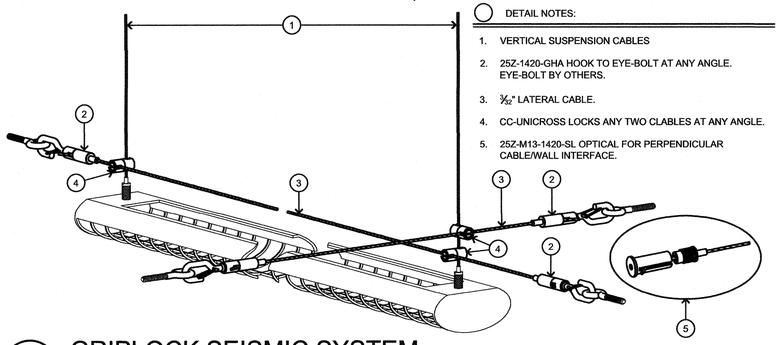
E4.2



DETAIL NOTES:

1. VERTICAL SUSPENSION CABLES
2. 25Z-1420-GHA HOOK TO EYE-BOLT AT ANY ANGLE. EYE-BOLT BY OTHERS.
3. 3/32" LATERAL CABLE.
4. CC-UNICROSS LOCKS ANY TWO CLABLES AT ANY ANGLE.
5. 25Z-M13-1420-SL OPTICAL FOR PERPENDICULAR CABLE/WALL INTERFACE.

2 GRIPLOCK SEISMIC SYSTEM

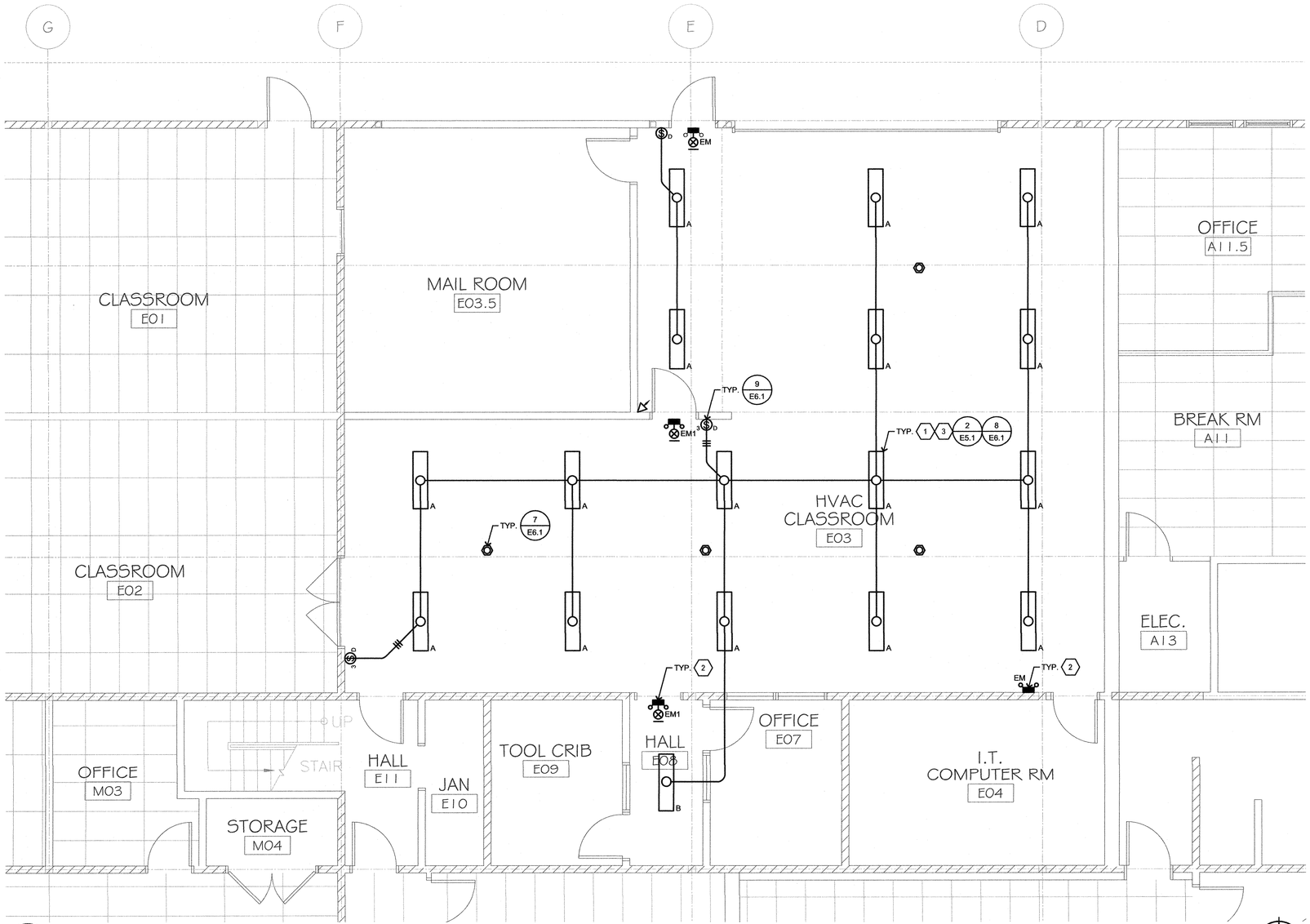
NO SCALE

INTERIOR LIGHTING CONTROLS SEQUENCE OF OPERATION

ROOM TYPE	FUNCTION: OCCUPANCY SENSOR - MANUAL ON	OCCUPANCY SENSOR - AUTO ON	OCCUPANCY SENSOR - PARTIAL ON	OCCUPANCY SENSOR - AUTO OFF	OCCUPANCY SENSOR - PARTIAL OFF	CONTINUOUS DIMMING	ON/OFF SWITCH	MULTI-ZONE DIMMING	AUTO TIME CLOCK OFF	AUTO TIME CLOCK ON	DAYLIGHT SENSOR - AUTO DIMMING (WHERE SHOWN ON PLANS)	OVERRIDE SWITCH CONTROL	SET LIGHT LEVEL TO 50% (PER T24 RECOMMENDATIONS)	SET LIGHT LEVEL TO 100% ON	ACCEPTANCE TESTING OF CONTROLS BY CCA'T	REMARKS
CLASSROOMS			•	•		•	•					•	•			

GENERAL NOTE:

DAYLIGHT SENSORS & DEMAND RESPONSE REQUIREMENTS ARE EXEMPT FROM THIS PROJECT PER CALIFORNIA TITLE 24 "TABLE 141.0-E CONTROL REQUIREMENTS FOR ENTIRE LUMINAIRE ALTERATIONS" LIGHTING POWER DENSITY IS < 85% OF ALLOWANCE .



1 LIGHTING PLAN

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

SHEET NOTES

1. MOUNT SUSPENDED 4 FEET FROM CEILING.
2. CONNECT VIA LIGHTING CIRCUIT UNSWITCHED HOT IN SAME SPACE.
3. CONTRACTOR SHALL PROVIDE SEISMIC BRACING ONLY WHERE ANY STRUCTURAL OR EQUIPMENT INSTALLED AS PART OF THIS PROJECT (i.e. CORD REELS, MECHANICAL SYSTEMS) WILL BE WITHIN 45° OF FIXTURE SWING.

LIGHT FIXTURE SCHEDULE

FIXTURE NOTES:

1. ALL FLUORESCENT/LED LIGHT FIXTURE BALLASTS/DRIVERS SHALL BE ELECTRONIC TYPE, 10% TOTAL HARMONIC DISTORTION MAXIMUM.
2. ALL LED LIGHT MODULES SHALL BE ENERGY SAVING 3500° K, 80 CRI MINIMUM, U.O.N. (SEE SPECIFICATIONS FOR MORE INFORMATION).
3. ALL LED DRIVERS (AND ASSOC. FIXTS.) SHALL HAVE MANUFACTURER'S CERTIFICATION OF COMPLIANCE WITH CALIFORNIA ENERGY COMMISSION STANDARDS AND REQUIREMENTS, WHERE SUCH ARE USED IN CONDITIONED SPACES.
4. EXIT SIGNS , EMERGENCY LIGHTS AND LIGHT FIXTURES WITH EMERGENCY BATTERY BACK-UP SHALL SUPPLY A MINIMUM DURATION OF 90 MINUTES OF POWER IN THE EVENT OF A POWER OUTAGE/FAILURE.

TYPE	DESCRIPTION	LAMPS	MANUFACTURER
A	SUSPENDED STRIP LED FIXTURE, 0-10V DIMMING DRIVER, 120/277V. FINISH PER ARCHITECT.	87W LED .	HE WILLIAMS 82 LED SERIES .
B	SURFACE LED FIXTURE, 0-10V DIMMING DRIVER, 120/277V. FINISH PER ARCHITECT.	42W LED .	HE WILLIAMS AVX LED SERIES .
EM	EXIT LIGHT FIXTURE, ALUMINUM WHITE THERMOPLASTIC HOUSING, EMERGENCY BATTERY BACK-UP AND BATTERY CHARGER WITH "SPECTRON" SELF TEST & EXERCISE FEATURE. GREEN LETTER. SEE PLANS FOR NUMBER OF FACES, ARROWS AND MOUNTING REQUIRED, CONNECT UNSWITCHED, 120V.	FURNACE WITH FIXTURE	DUAL LITE SE SERIES .
EM1	COMBO EXIT/EMERGENCY LIGHT FIXTURE, ALUMINUM WHITE THERMOPLASTIC HOUSING, EMERGENCY BATTERY BACK-UP AND BATTERY CHARGER WITH "SPECTRON" SELF TEST & EXERCISE FEATURE. GREEN LETTER. SEE PLANS FOR NUMBER OF FACES, ARROWS AND MOUNTING REQUIRED. CONNECT UNSWITCHED, 120V.	3W LED .	DUAL LITE LT LED SERIES .

BRANCH CIRCUIT CONDUCTOR SIZING TABLE

CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	REQUIREMENT
20/120	56'-90'	½" C., 2 #10 & 1 #10 GND.
20/120	91'-140'	½" C., 2 #8 & 1 #10 GND.
20/277	131'-205'	½" C., 2 #10 & 1 #10 GND.
20/277	206'-330'	½" C., 2 #8 & 1 #10 GND.

NOTE:
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No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

**5055 SANTA TERESA BLVD.
GILROY, CA 95020**

SHEET

LIGHTING PLAN, LIGHT FIXT. SCHEDULE & SEQUENCE OF OPERATIONS

PROJECT NUMBER:	1817
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DRAWN BY:	CADD
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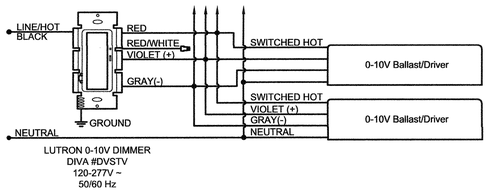
E5.1



9 0-10V DIMMING WIRING DIAGRAM

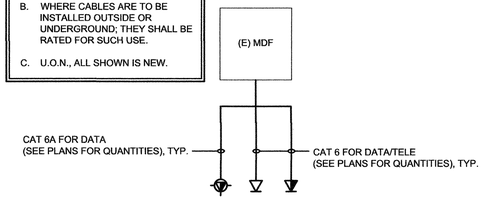
NO SCALE

GENERAL NOTES:

A. AT EACH LOCATION SHOWN ON POWER & SYSTEMS PLANS FOR TELEPHONE, PROVIDE PHONE COMPATIBLE WITH DISTRICT STANDARDS.

B. WHERE CABLES ARE TO BE INSTALLED OUTSIDE OR UNDERGROUND; THEY SHALL BE RATED FOR SUCH USE.

C. U.O.N., ALL SHOWN IS NEW.

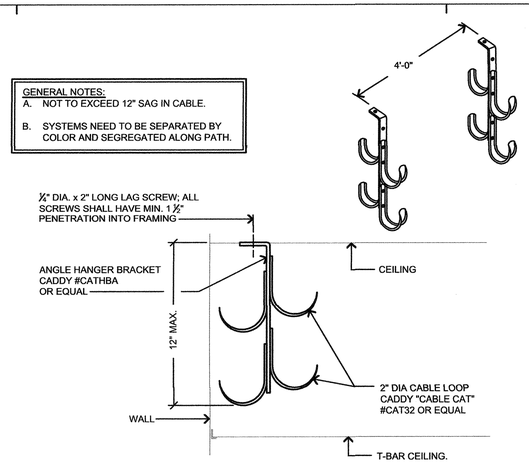


6 TELE/DATA RISER DIAGRAM

NO SCALE

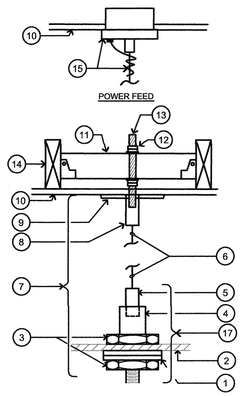
GENERAL NOTES:
A. NOT TO EXCEED 12" SAG IN CABLE.

B. SYSTEMS NEED TO BE SEPARATED BY COLOR AND SEGREGATED ALONG PATH.



3 LOW VOLTAGE CABLE SUPPORT

NO SCALE

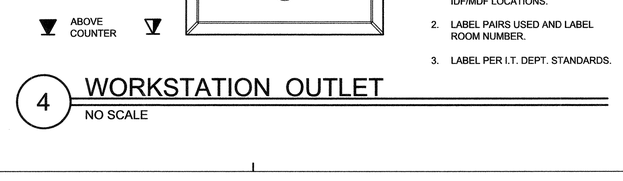


DETAIL NOTES

1. LOCK & CENTERING WASHERS
2. FIXTURE HOUSING
3. LOCK NUTS
4. END FITTING
5. STEEL CAPTIVE FULLY ADJUSTABLE LEVELING DEVICE .
6. 3/32" STAINLESS STEEL, FULLY ADJUSTABLE AIRCRAFT CABLE
7. UL LISTED CABLE ASSEMBLY (TO BE FURNISHED WITH FIXT.) LITE CONTROL ACC/V WITH ACC/F
8. THREADED SLEEVE
9. CANOPY ASSY.
10. CEILING
11. 4" x 4" BLOCKING WITH SIMPSON U44 JOIST HANGER EACH END
12. DOUBLE NUTS & FLATWASHER (BOTH SIDES OF BLOCKING)
13. ¼"-20 THREADED ROD
14. 2 x FRAMING
15. 5" DIA CANOPY POWER FEED WITH COILED CORD (18/3)
16. FIXTURE OUTLET BOX
17. FULLY ADJUSTABLE

8 CABLE SUSPENDED MOUNTING DETAIL

NO SCALE



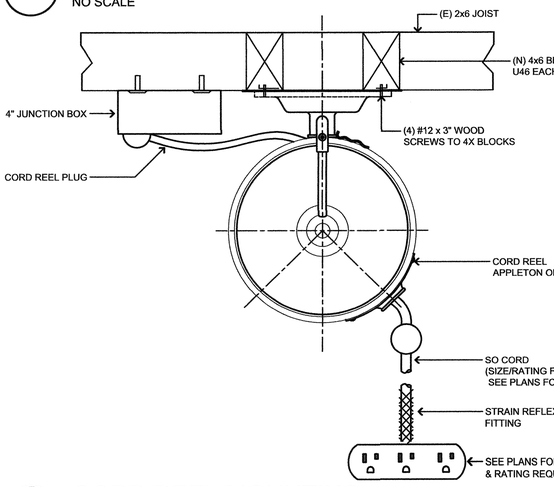
GENERAL NOTE:
CONTRACTOR SHALL COIL AN ADDITIONAL 20 FEET OF CABLE AT EACH ACCESS POINT.

DETAIL NOTES:

1. TO NEAREST MDF/IDF PATCH PANEL, SEE DRAWINGS FOR IDF/MDF LOCATIONS.
2. LABEL PAIRS USED AND LABEL ROOM NUMBER.
3. LABEL PER I.T. DEPT. STANDARDS.

5 WIRELESS OUTLET

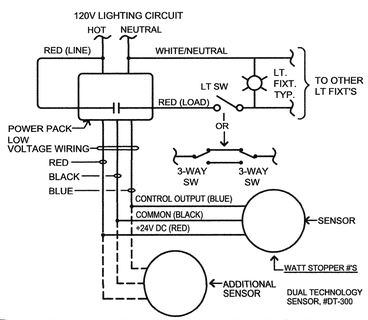
NO SCALE



2 TELE/DATA OUTLET

NO SCALE

FINAL DETERMINATION OF CIRCUITING, VOLTAGE AND QUANTITY OF POWER PACKS REQUIRED, AND SETTING OF SENSITIVITY/TIME ADJUSTMENTS ARE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. AND/OR COMMISSIONING AGENT, MANUFACTURER'S INSTALLATION INSTRUCTIONS SHOULD BE ADHERED TO.



GENERAL NOTES:

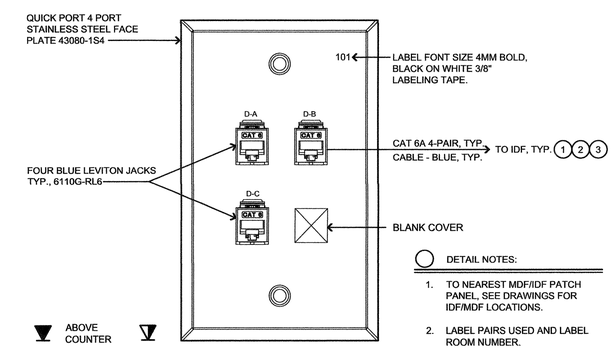
1. ALL SENSOR LOCATIONS ARE APPROXIMATE, REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
2. DUAL TECHNOLOGY CEILING MOUNT SENSORS REQUIRE THEY BE LOCATED NO CLOSER THAN 6' FROM AIR SUPPLY/RETURN REGISTERS.
3. CONTRACTOR IS RESPONSIBLE FOR: PROPER SENSITIVITY & TIME DELAY SETTINGS & MANUFACTURER'S RECOMMENDED PLACEMENT, FIELD VERIFICATION OF CIRCUITS WITH RESPECT TO POWER PACK PLACEMENT.
4. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF REQUIRED NUMBER OF POWER PACKS.

A. ONE POWER PACK IS REQUIRED FOR EACH CIRCUIT THAT IS TO BE CONTROLLED.

B. DEPENDING ON TYPE OF SENSOR UP TO 3 SENSORS CAN BE WIRED IN PARALLEL TO A SINGLE POWER PACK.

7 OCCUPANCY SENSOR WIRING DIAGRAM

NO SCALE



DETAIL NOTES:

1. TO NEAREST MDF/IDF PATCH PANEL, SEE DRAWINGS FOR IDF/MDF LOCATIONS.
2. LABEL PAIRS USED AND LABEL ROOM NUMBER.
3. LABEL PER I.T. DEPT. STANDARDS.

4 WORKSTATION OUTLET

NO SCALE

1 CORD REEL MOUNTING

NO SCALE

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.

Project No. 17558.00

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IN STUDIO ARCHITECTURE
250 MAIN STREET
SALINAS, CA 93901
831.320.2655

DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC ____ FLS ____ SS ____

DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
Exp. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

ELECTRICAL DETAILS

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

E6.1

SECTION 16000

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.01 Description of Work:
A. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.

1.02 Submittals:
A. As specified in Division 1. Submit to the Architect shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site.
B. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.
C. Substitutions shall be proven to the Architect or Engineer to be equal or superior to the specified product. Architect's decision is final. The Contractor shall pay all costs incurred by the Architect and Engineer in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.
D. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.
E. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which are a result of the substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.

1.03 Quality Assurance:
A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions of the following applicable codes:
1. California Electrical Code (CEC).
2. Occupational Safety and Health Act (OSHA) standards.
3. All applicable local codes, rules and regulations.
4. Electrical Contractor shall posses a C-10 license and all other licenses as may be required. Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.
B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.
C. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).
D. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.
E. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.
F. All work and materials covered by this specification shall be subject to inspection at any and all times by representatives of the owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.

1.04 Contract Documents:
A. Drawings: The Electrical Drawings shall govern the general layout of the completed construction.
1. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; verify locations with the Architect prior to installation.
2. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Architect.
3. All drawings and divisions of these specifications shall be considered as whole. The contractor shall report any apparent discrepancies to the Architect prior to submitting bids.
4. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.

1.05 Closeout Submittals:
A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 1.

1.06 Coordination:
A. Coordinate the electrical work with the other trades, code authorities, utilities and the Architect.
B. Provide and install all trenching, backfilling, conduit, pull boxes, splice boxes, etc. for all Utility Company services to the locations indicated on the Drawings. Prior to performing any work, the Electrical Contractor shall coordinate with the various Utility Companies to verify that all such work and materials shown on the Drawings are of sufficient sizes and correctly located to provide services on the site.
C. Utility Company charges shall be paid by the Owner.
D. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
E. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
F. When two trades join together in an area, make certain that no electrical work is omitted.

1.07 Job Conditions:
A. Operations: Perform all work in compliance with Division 1
1. Keep the number and duration of power shutdown periods to a minimum.
2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.
B. Construction Power: Unless otherwise noted in Division 1 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on site source. Energy costs shall be paid for by the Owner.

1.08 Safety and Indemnity:
A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.
B. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
C. If a work area is encountered that contains hazardous materials, the contractor is advised to coordinate with the owner and it's abatement consultant for abatement of hazardous material by the Owner's Representative. "Hazardous materials" means any toxic substance regulated or controlled by OSHA, EPA, State of California or local rules, regulations and laws. Nothing herein shall be construed to create a liability for Aurum Consulting Engineers regarding hazardous materials abatement measures, or discovery of hazardous materials.

1.09 Access Doors:
A. The contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".

1.10 Arc Flash:
A. The contractor shall install a clearly visible arc flash warning to the inside door of all panelboards and industrial control panels, as well as to the front of all switchboards and motor control centers that are a part of this project.
B. The warning shall have the following wording: line 1 "WARNING" (in large letters), line 2 "Potential Arc Flash Hazard" (in medium letters), line 3 & 4 "Appropriate Personal Protective Equipment and Tools required when working on this equipment".

1.11 All boxes and enclosures for emergency circuits shall be permanently marked with a readily visible red spray painted mark.

PART 2 - PRODUCTS

2.01 Nameplates:
A. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Where not otherwise specified, lettering shall be a minimum of 0.25 inch high normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.

2.02 Finish requirements:
A. Equipment: Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is otherwise unsatisfactory, to the satisfaction of the Architect.
B. Wiring System: In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

PART 3 - EXECUTION

3.01 Workmanship:
A. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the "NECA-1 Standard Practices For Good Workmanship in Electrical Contracting". Workmanship of the entire job shall be first class in every respect.

3.02 Equipment Installations:
A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
B. Do all the cutting and patching necessary for the proper installation work and repair any damage done.
C. Earthquake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per Title 24, part 2, table 16a-o, part 3.
D. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, pach-ometer, or prof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.

3.03 Field Test:
A. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service.
B. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.

3.04 Records:
A. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revising, deleting and adding to the Drawing Sheets as required. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.

3.05 Clean Up:
A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Architect.

3.06 Mechanical and Plumbing Electrical Work:
A. The requirements for electrical power and/or devices for all mechanical and plumbing equipment supplied and/or installed under this Contract shall be coordinated and verified with the following:
1. Mechanical and Plumbing Drawings.
2. Mechanical and Plumbing sections of these Specifications.
3. Manufacturers of the Mechanical and Plumbing equipment supplied.
B. The coordination and verification shall include the voltage, ampacity, phase, location and type of disconnect, control, and connection required. Any changes that are required as a result of this coordination and verification shall be a part of this Contract.
C. The Electrical Contractor shall furnish and install the following for all mechanical and plumbing equipment:
1. Line voltage conduit and wiring.
2. Disconnect switches.
3. Manual line motor starters.
D. Automatic line voltage controls and magnetic starters shall be furnished by the Mechanical and/or Plumbing Contractor and installed and connected by the Electrical Contractor. When subcontracted for by the Mechanical and/or Plumbing Contractor, all line voltage control wiring installed by the Electrical Contractor shall be done per directions from the Mechanical and/or Plumbing Contractor.
E. All low voltage control wiring for Mechanical and Plumbing equipment shall be installed in conduit. Furnishing, installation and connection of all low voltage conduit, boxes, wiring and controls shall be by the Mechanical and/or Plumbing Contractor.
F. Manual motor starters, where required, shall have toggle type operators with pilot light and melting alloy type overload relays, SQUARE D COMPANY, Class 2510, Type FG-1P (surface) or Type FS-1P (flush) or ITE, WESTINGHOUSE or GENERAL ELECTRIC equal.

SECTION 16060

GROUNDING

PART 1 - EXECUTION

1.1 Grounding and Bonding:
A. Grounding and bonding shall be as required by codes and local authorities.
B. All electrical equipment shall be grounded, including, but not limited to, panel boards, terminal cabinets and outlet boxes.
C. The ground pole of receptacles shall be connected to their outlet boxes by means of a copper ground wire connecting to a screw in the back of the box.
D. A green insulated copper ground wire, sized to comply with codes, shall be installed in all conduit runs.
E. All metal parts of pull boxes shall be grounded per code requirements.
F. All ground conductors shall be green insulated copper.

SECTION 16110

CONDUITS, RACEWAYS AND FITTINGS

PART 1 - EXECUTION

1.01 Conduit, Raceway and Fitting Installation:
A. For conduit runs exposed to weather provide rigid metal (GRS).
B. For conduit run underground, in concrete or masonry block wall and under concrete slabs, install minimum ¾" size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.
C. For conduit runs concealed in steel or wood framed walls or in ceiling spaces or exposed in interior spaces above six feet over the finished floor, install EMT.
D. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.
E. The minimum size raceway shall be 1/2-inch unless indicted otherwise on the Drawings.
F. Installation shall comply with the CEC.
G. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 360 degrees.
H. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.
1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete structure by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.
a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.
b. Group exposed conduits together. Arrange such conduits uniformly and neatly.
2. Support all conduits within three feet of any junction box, coupling, bend or fixture.
3. Support conduit risers in shafts with Unistrut Superstrut, or approved equal, channels and straps.
I. Moisture Seals: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).
J. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20 mil tape and extend minimum 12" above grade.
K. Provide a nylon pull cord in each empty raceway.
L. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.
M. Slope all underground raceways to provide drainage; for example, slope conduit from equipment located inside a building to the pull box or manhole located outside the building.
N. Conduits shall be blown out and swabbed prior to pulling wires.

SECTION 16120

LINE VOLTAGE WIRE AND CABLE

PART 1 - PRODUCTS

1.01 Conductors:
A. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 600 volt rated insulation.
B. Conductors shall be stranded copper.
C. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
D. All conductors used on this Project shall be of the same type and conductor material.

1.02 Terminations:
A. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.
B. Wire Terminations - Stranded conductors shall be terminated in clamping type terminations which serve to contain all the strands of the conductor. Curling of a stranded conductor around a screw type terminal is not allowed. For screw type terminations, use a fork type stake-on termination on the stranded conductor. Use only a stake-on tool approved for the fork terminals selected.
C. End Seals - Heat shrink plastic caps of proper size for the wire on which used.

1.03 Tape:
A. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

PART 2 - EXECUTION

2.01 Cable Installation:
A. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 16110 [26 05 42] - Conduits Raceway and Fittings.
B. All wiring including low voltage wiring shall be installed in conduit, U.O.N.
C. All feeder conductors shall be continuous from equipment to equipment. Splices in feeders are not permitted unless specifically noted or approved by the Electrical Engineer.
D. All branch circuit wiring shall be run concealed in ceiling spaces, walls, below floors or in crawl spaces unless noted otherwise.

2.02 Cable Terminations and Splices:
A. Splices - UL Listed wirenuts.
B. Terminations - Shall comply with the following:
1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.

2.03 Circuit and Conductor Identification:
A. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Conductor colors shall be as follows:

VOLTAGE	208/120V	480/277V
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Grey
Ground	Green	Green

B. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.
C. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source transformer of the circuit and the building number(s) serviced by the circuit.

2.04 Field Tests:
A. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.

SECTION 16130

OUTLET, JUNCTION AND PULL BOXES

PART 1 - PRODUCTS

1.01 Outlet boxes, Junction and Pull boxes
A. Standard Outlet Boxes: Galvanized, steel, knock-out type of size and configuration best suited to the application indicated on the Drawings. Minimum box size shall be 4 inches square (octagon for most light fixtures) by 1-1/2 inches deep with mud rings as required. Boxes used with conduit 1" or larger shall be minimum 2" deep.
B. Switch boxes: Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.
C. Conduit bodies: Cadmium plated, cast iron alloy. Conduit bodies with threaded conduit hubs and neoprene gasketed, cast iron covers. Bodies shall be used to facilitate pulling of conductors or to make changes in conduit direction only. Splices are not permitted in conduit bodies. Crouse-Hinds Form 8 Condulets, Appleton Form 35 Unilets or equal.
D. Sheet Metal Boxes: Use standard outlet or concrete ring boxes wherever possible; otherwise use a minimum 16 gauge galvanized sheet metal, NEMA I box sized to Code requirements with covers secured by cadmium plated machine screws located six inches on centers. Circle AW Products, Hoffman Engineering Company or equal.
E. Flush Mounted Pull boxes and Junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

PART 2 - EXECUTION

2.01 Outlet Boxes
A. General:
1. All outlet boxes shall finish flush with building walls, ceilings and floors except in mechanical and electrical rooms above accessible ceiling or where exposed work is called for on the Drawings.
2. Install raised device covers (plaster rings) on all switch and receptacle outlet boxes installed in masonry or stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
3. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
B. Box Layout:
1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
2. Locate switch outlet boxes on the latch side of doorways.
3. Outlet boxes shall not be installed back to back nor shall through-wall boxes be permitted. Outlet boxes on opposite sides of a common wall shall be separated horizontally by at least one stud or vertical structural member.
4. For outlets mounted above counters, benches or backsplashes, coordinate location and mounting heights with built-in units. Adjust mounting height to agree with required location for equipment served.
5. On fire rated walls, the total face area of the outlet boxes shall not exceed 100 square inches per 100 square feet of wall area.
C. Supports:
1. Outlet Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Fixture outlet boxes installed in suspended ceiling of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
3. Fixture outlet boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above where pendant mounted lighting fixture are to be installed on the box.
4. Fixture Boxes above tile ceilings having exposed suspension systems shall be supported directly from the structure above.
5. Outlet and / or junction boxes shall not be supported by grid or fixture hanger wires at any locations.

2.02 Junction And Pull Boxes
A. General:
1. Install junction or pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.
2. Locate pull boxes and junction boxes in concealed locations above accessible ceilings or exposed in electrical rooms, utility rooms or storage areas.
3. Install raised covers (plaster rings) on boxes in stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
4. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
5. Identify circuit numbers and panel on cover of junction box with black marker pen.
B. Box Layouts:
1. Boxes above hung ceilings having concealed suspension systems shall be located adjacent to openings for removable recessed lighting fixtures.
C. Supports:
1. Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Boxes installed in suspended ceilings of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
3. Boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above.
4. Boxes mounted above suspended acoustical tile ceilings having exposed suspension systems shall be supported directly from the structure above.

SECTION 16140

DEVICES WIRING

PART 1 - PRODUCTS

1.01 Receptacles:
A. General - Receptacles shall be heavy duty, high abuse, grounding type.
B. Duplex Receptacles:
1. Receptacles shall be specification grade, rated 20 ampere, two-pole, 3-wire, 120 volt, NEMA 5-20 configuration, self-grounding with screw terminals. Color shall be as selected by the Architect.
2. Devices shall have a nylon face, back and side wired.
3. Manufacturer: Hubbell #DR20 Series, Leviton #5825 Series.
C. GFCI Receptacles:
1. Device shall be rated 20 ampere, 2-pole, 3-wire, 120 volt, conforming to NEMA 5-20 configuration. Face shall be nylon composition. Unit shall have an LED type red indicator light, test and reset push buttons. Color shall be as selected by the Architect.
2. GFCI component shall meet UL 943 Class A standards with a tripping time of 1/40 second at 5 milliamperes current unbalance. Operating range shall extend from -31°F to 158°F. Unit shall have transient voltage protection and shall be ceramic encapsulated for protection against moisture.
3. Manufacturer: Hubbell #GF20_ _LA Series, Leviton #7899 Series.
D. Automatically Controlled Receptacles [Tamper Resistant]
1. Receptacles shall be specification grade, rated 20 amperes, two pole, 3-wire, 125V, NEMA 5-20 configuration, self-grounding with screw terminals. Color shall be selected by the Architect.
2. Devices shall have a nylon face, back and side wired. Marking permanently printed, molded, or stamped on the face of the receptacle and in compliance with controlled receptacle marking requirements stated in California Building Energy Efficiency Standards Section 130.5(d)(3).
E. Surge Suppression Receptacles:
1. Device shall be rated 20 ampere, 2-pole, 3-wire, 120 volt. Face shall be nylon composition. Unit shall have an LED type "Power-on" indication light and damage-alert audible alarm. Color shall be as selected by the Architect.
2. Surge suppression protection shall be listed to UL standard 1449 and shall instantly absorb a transient surge of 6,000 volts minimum. A minimum of four (4) Metal Oxide Varistors shall be utilized to absorb transients.
3. Manufacturer: Hubbell #HBL8362S Series, Leviton #8380 Series.

1.02 Switches:
A. Switches shall be rated 20 amperes to 120/277 volts ac. Units shall be flush mounted, self-grounding, quiet operating toggle devices. Handle color shall be as selected by the Architect.
1. Manufacturer: Hubbell #HBL1221 Series, Leviton #1221 Series
B. Timed switches: Shall be as designed by Paragon Electric Company # ET2000f or Watt Stopper TS-200 rated for the voltage specified on drawings. Time out shall be adjustable from 5 minutes up to 12 hours. Unit shall be provided with warning alarm.

1.03 Plates:
A. General - Plates shall be of the style and color to match the wiring devices, and of the required number of gangs. Plates shall conform with NEMA WD 1 , UL 514 and FS W-P-455A. Plates on finished walls shall be non-metallic or stainless steel. Plates on unfinished walls and on fittings shall be of zinc plated steel or case metal and shall have rounded corners and beveled edges.
B. Non-Metallic: Plates shall be plain with beveled edges and shall be nylon or reinforced fiberglass.
C. Stainless Steel: Plates shall be .040 inches thick with beveled edges and shall be manufactured from No. 430 alloy having a brushed or satin finish.
D. Cast Metal: Plates shall be cast or malleable iron covers with gaskets so as to be moisture resistant or weatherproof.
E. Blank Plates: Cover plates for future telephone outlets shall match adjacent device wall plates in appearance and construction.

PART 2 - EXECUTION

2.01 Installation of Wiring Devices:
A. Interior Locations: In finished walls, install each device in a flush mounted box with washers as required to bring the device mounting strap level with the surface of the finished wall. On unfinished walls, surface mount boxes level and plumb.
B. Mounting Heights: Adjust boxes so that the front edge of the box shall not be farther back from the finished wall plane than 1/4-inch. Adjust boxes so that they do not project beyond the finished wall. Height of device shall be as follows:
1. Receptacles 15 Inches from finished floor to bottom of box unless otherwise noted on the drawings
2. Toggle Switches 48 Inches from finished floor to top of box
C. Receptacles:
1. Ground each receptacle using a grounding conductor, not a yoke or screw contact.
2. Install receptacles with connections spliced to the branch circuit wiring in such a way that removal of the receptacle will not disrupt neutral continuity and branch circuit power will not be lost to other receptacles in the same circuit.

2.02 Installation of Wall Plates:
A. General - Plates shall match the style of the device and shall be plumb within 1/16-inch of the vertical or horizontal.
B. Interior Locations, Finished Walls: Install non-metallic plates so that all four edges are in continuous contact with the finished wall surfaces. Plaster filling will not be permitted. Do not use oversized plates or sectional plates.
C. Interior Locations, Unfinished Walls: Install stainless steel or cast metal cover plates.
D. Exterior Locations: Install cast metal plates with gaskets on wiring devices in such a manner as to provide a rain tight weatherproof installation. Cover type shall match box type. Cover shall be [Lockable] outdoor "in-use" type.
E. Future Locations: Install blank cover plates on all unused outlets.
F. Labeling: All switch and receptacle plates shall be labeled on the top portion of the plate with the panelboard and circuit number serving that device. Lettering shall be 1/16" minimum high, black color, on clear Mylar tape.

2.03 Tests:
A. Receptacles:
1. After installation of receptacles, energize circuits and test each receptacle to detect lack of ground continuity, reversed polarity, and open neutral condition.

SECTION 16210

METER CENTERS GANGABLE

PART 1 - PRODUCTS

1.01 Manufacturers
A. Meter Unit(s) shall be manufactured by Square D Company, Siemens or Eaton Cutler Hammer.

1.02 Enclosures
A. Enclosures shall be constructed of formed and welded code gauge galvannealed steel NEMA 3R or NEMA 1 as noted on drawings, with gray baked electrodeposited enamel finish, over cleaned galvannealed steel.
B. All compartments containing unmetered circuits shall be provided with a sealing means.

1.03 Meter Sockets
A. Meter sockets shall be test by-pass if so shown on drawings.
B. Sockets shall be rated as shown on the drawings.

1.04 Branch Molded Case Circuit Breakers
A. Circuit Breakers shall be Square D or same manufacturer of meter units type QO, Q2M, QE, or LA thermal magnetic trip, with an integral crossbar to provide simultaneous opening of all poles in multi-pole circuit breakers.

SECTION 16470

PANELBOARDS AND DISTRIBUTION PANELS

PART 1 - PRODUCTS

1.01 Panelboards:
A. General: Lighting and Receptacle Panelboards shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings or, if not shown, 42 circuits. All circuit breakers shall be quick-make, quick-break, thermal-magnetic, bolt-on type (unless otherwise noted on drawings), with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggy-back breakers shall not be used.
B. Nameplates:
1. Each panelboard shall have a field mounted identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings.
2. Each panelboard shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.
C. Construction:
1. Door and trim shall be finished to match finish type and color of surrounding wall. Box shall be hot-dip galvanized, field finished to match the front.
2. Panelboards and enclosures shall conform to requirements of all relevant codes. Panelboards shall be suitable for use as service equipment.
3. Panelboards shall be furnished with hinged trim fronts with key latch and a typed directory card and holder. Panelboard circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.
D. Busbars: Panelboard busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper.
E. Circuit Breakers: Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.
F. Manufacturer:
1. Panelboard manufacturer shall be be Square D, Siemens or I.E.M., No other panelboard manufacturers are acceptable. Panelboards shall be of the same manufacturer as the switchboard.

1.02 Distribution Panels:
A. General: Distribution panels shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings. All circuit breakers shall be quick-make, quick-break, thermal-magnetic bolt-on type, with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggy-back breakers shall not be used.
B. Nameplates:
1. Each distribution panel shall have a field mounted, identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings.
2. Each distribution panel shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.
C. Construction:
1. Door and trim shall be finished to match color of surrounding wall. Box shall be hot-dip galvanized, field finished to match the front.
2. Distribution panels and enclosures shall conform to requirements of all relevant codes. Distribution panels shall be suitable for use as service equipment.
3. Distribution panels shall have a front door with key latch and a typed directory card and permanently attached holder. Adhesive backed holders are not acceptable. Distribution panels circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.
D. Busbars: Distribution panels busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper, sized for a maximum current density of 1000A psi.
E. Circuit Breakers: Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.
F. Manufacturer:
1. Distribution panel manufacturer manufacturer shall be be Square D, Siemens, I.E.M. or Eaton Cutler Hammer; no other distribution panel manufacturers are acceptable. Distribution panels shall be of the same manufacturer as the switchboard.

PART 2 - EXECUTION

2.01 Mounting:
A. Panelboards and Distribution Panels shall be mounted with the top of the box 6'-6" above the floor. Panelboards and Distribution Panels shall be plumb within 1/8-inch. The highest breaker operating handle shall not be higher than 72 inches above the floor.

SECTION 16475 [26 28 16]

CIRCUIT BREAKERS

PART 1 - PRODUCTS

1.01 Circuit Breaker: Each circuit breaker shall consist of the following:
A. A molded case breaker with an over center toggle-type mechanism, providing quick-make, quick-break action. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. Multipole circuit breakers shall have variable magnetic trip elements which are set by a single adjustment to assure uniform tripping characteristics in each pole. Circuit breakers shall be of the bolt-on type unless otherwise noted.
B. Breaker shall be calibrated for operation in an ambient temperature of 40°C.
C. Each circuit breaker shall have trip indication by handle position and shall be trip-free.
D. Three pole breakers shall be common trip.
E. The circuit breakers shall be constructed to accommodate the supply connection at either end of the circuit breaker. Circuit breaker shall be suitable for mounting and operation in any position.
F. Breakers shall be rated as shown on Drawings.
G. Circuit breaker and/or Fuse/circuit breaker combinations for series connected interrupting ratings shall be listed by UL as recognized component combinations for use in the end use equipment in which it is installed. Any series rated combination used shall be marked on the end use equipment per CEC section 110-22.
H. Breakers shall be UL listed. Circuit breakers shall have removable lugs.
I. Lugs shall be UL listed for copper and aluminum conductors.
J. Breakers shall be UL listed for installation of mechanical screw type lugs.
K. Circuit breakers serving HACR rated loads shall be HACR type. Circuit breakers serving other motor loads shall be motor rated.
L. Breakers indicated as "current limiting " (CL), shall be of the non-fused type; Square D I-Limiter, Westinghouse Limit-R, or ITE Sentron only.

SECTION 16500

LIGHTING

PART 1 - PRODUCTS

1.01 Fixtures
A. Fixtures shall be of the types, wattage's and voltages shown on the Drawings and be UL classified and labeled for the intended use.
B. Substitutions will not be considered unless the photometric distribution curve indicates the proposed fixture is equal to or exceeds the specified luminaire.
C. Luminaire wire, and the current carrying capacity thereof shall be in accordance with the CEC.
D. Luminaires and lighting equipment shall be delivered to the project site complete, with suspension accessories, aircraft cable, stems, canopies, hickeys, castings, sockets, holders, ballasts, diffusers, frames, and related items, including support and braces.

1.02 Ballasts:
A. Ballasts shall be of the types shown on the drawings. Ballasts shall be CBM certified and bear the UL label. Magnetic ballasts shall be the high power factor type. Electronic ballasts shall be suitable for lamps specified by Advance, Magnetek/Universal, Motorola or approved equal. Electronic ballast shall be CBM certified and have a 10% maximum total harmonic distortion.
B. All ballasts for fixtures installed outdoors shall provide reliable starting of lamps at 0°F at 90% of the nominal line voltage.
C. Ballasts producing excessive noise (above 36 dB) or vibration will be rejected and shall be replaced at no expense to the Owner.

1.03 Lamps:
A. Lamps shall be new at the time of acceptance and shall be General Electric, Osram /Sylvania, Phillips, or approved equal.
B. Unless otherwise noted on the drawings, lamps shall be third generation T8, 3500°K, and 85 CRI minimum.
1. Third Generation: Also known as High-Performance, Higher Lumen, or Super, the third generation of 32 Watt T8 lamps offers 3,100 lumens and a long-life rating of 24,000 hours. Efficacy is high, with lumens per watt in the range of 94 to 100. CRI is 82 to 86.

PART 2 - EXECUTION

2.01 Installation:
A. General:
1. All fixtures and luminaires shall be clean and lamps shall be operable at the time of acceptance.
2. Install luminaires in accordance with manufacturer's instructions, complete with lamps, ready for operation as indicated.
3. Align, mount, and level the luminaires uniformly.
4. Avoid interference with and provide clearance for equipment. Where an indicated position conflicts with equipment locations, change the location of the luminaire by the minimum distance necessary.
B. Mounting and Supports:
1. Mounting heights shall be as shown on the Drawings. Unless otherwise shown, mounting height shall be measured to the centerline of the outlet box for wall mounted fixtures and to the bottom of the fixture for suspended fixtures and to the bottom of the fixture for all other types.
2. Luminaire supports shall be anchored to structural members.
3. Pendant stem mounted luminaires shall be provided with ball aligners to assure a plumb installation and shall have a minimum 45 degree clean swing from horizontal in all directions. Sway bracing shall be installed as required to limit the movement of the fixture. Fixtures shall be allowed to sway a maximum of 45° without striking any object.
4. Fixture supports shall be designed to resist earthquake forces based on the design earthquake acceleration parameter SDS = 1.028.

SECTION 16510

CONTROLS

PART 1 - PRODUCTS

1.01 Control Devices
A. See details on sheet E6.1.

PART 2 - EXECUTION

2.01 Support Services:
A. System Start Up and Commissioning
1. Manufacturer shall provide a factory authorized technician to confirm proper installation and operation of the lighting control sensors, controllers, switches, and occupancy sensors.
2. The technician shall provide training for the owner or their representative on the lighting control features of the system.

2.02 Optional Acceptance Testing Support Services:
A. A certified lighting controls acceptance test technician (CLCATT) must verify the installation of the lighting control system. Manufacturer should include an extra day of factory technician's time to assist the CLCATT review the functionality and settings of the lighting control hardware per the requirements in the California State forms. It will be the CLCATT's responsibility to create and complete any forms required for the commissioning process, although the manufacturer or contractor may offer spreadsheets and/or printouts to assist the CLCATT with this task.

2.03 Lighting Control Installation Certificate Requirements:
A. When certification is required by Title 24, Part 1, Section 10-103-A, the acceptance testing specified by Section 130.4 shall be performed by a Certified Lighting Controls Acceptance Test Technician (CLCATT) employed or hired by the electrical contractor. If the CLCATT is operating as an employee, the CLCATT shall be employed by a Certified Lighting Controls Acceptance Employer. The CLCATT shall disclose on the Certificate of Acceptance a valid CLCATT certification identification number issued by an approved Acceptance Test Technician Provider. The CLCATT shall complete all Certificate of Acceptance documentation in accordance with the applicable requirements in Section 10-103(a)4.
B. Lighting Control Installation Certificate Requirements. To be recognized for compliance with Part 6 an Installation Certificate shall be submitted in accordance with Section 10-103(a) for any lighting control system, Energy Management Control System, track lighting integral current limiter, track lighting supplementary overcurrent protection panel, interlocked lighting system, lighting Power Adjustment Factor, or additional wattage available for videoconference studio, in accordance with the following requirements, as applicable:
1. Certification that when a lighting control system is installed to comply with lighting control requirements in Part 6 it complies with the applicable requirements of Section 110.9; and complies with Reference Nonresidential Appendix NA7.7.1.
2. Certification that when an Energy Management Control System is installed to function as a lighting control required by Part 6 it functionally meets all applicable requirements for each application for which it is installed, in accordance with Sections 110.9, 130.0 through 130.5, 140.6 through 150.0, and 150.2; and complies with Reference Nonresidential Appendix NA7.7.2.
3. Certification that line-voltage track lighting current limiters comply with the applicable requirements of Section 110.9 and installed wattage has been determined in accordance with Section 130.0(c); and comply with Reference Nonresidential Appendix NA7.7.3.
4. Certification that line-voltage track lighting supplemental overcurrent protection panels comply with the applicable requirements of Section 110.9 and installed wattage has been determined in accordance with Section 130.(c); and comply with Reference Nonresidential Appendix NA7.7.4.
5. Certification that interlocked lighting systems used to serve an approved area comply with Section 140.6(a)1; and comply with Reference Nonresidential Appendix NA7.7.5.
6. Certification that lighting controls installed to earn a lighting Power Adjustment Factor (PAF) comply with Section 140.6(a)2; and comply with Reference Nonresidential Appendix NA7.7.6.
7. Certification that additional lighting wattage installed for a videoconference studio complies with Section 140.6(c)Gvii; and complies with Reference Nonresidential Appendix NA 7.7.7.

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.

Project No. 17558.00

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250 MAIN STREET
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DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC FLS SS
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21043
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

ELECTRICAL SPECIFICATIONS

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

E7.1

SECTION 27 10 00

STRUCTURED CABLING

PART 1 - GENERAL

1.01 Description of Work Included:

A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all voice and data backbone and horizontal cabling and routing installations that are shown on the Drawings and included in these specifications, or otherwise needed for a complete and fully operating facility. This project does not include specifications for PBX, handsets, desktop PCs, or servers used for the generation of communication signals on the installed wiring.

1. Installation of Outside Plant (OSP) single and multimode Fiber Optic Backbone cabling from the new Building IDF to the IDF located at existing classroom building noted on drawings.
2. Installation of Inside Plant Category 6 horizontal distribution cable from the Building's IDF to wall and ceiling mounted outlets.
3. Routing, suspension, and mounting of cabling.
4. Termination of all cables in Telecommunications Spaces and other specified locations.
5. Testing, labeling, and documentation of all cable and hardware installed under this contract.
6. Preparation and submission of testing reports, as-built drawings and cabling documentation.
7. Sealing of OSP entrance conduits and all penetrations after cabling is installed.

B. It is the intent of the Drawings and Specifications to provide a cabling system ready for use. Any item not specifically drawn or called for in the Specifications, but normally required for a complete system, is considered to be part of the Contract.

C. Contract Documents and Drawings depict equipment installation and wiring in a diagrammatic fashion and indicate the general arrangement of equipment and wiring. The most direct routing for conduits and telecommunications pathways is not assured. Exact requirements shall be governed by architectural, structural and mechanical condition/features of the job. Consult all other drawings and specifications.

D. When the work will be performed on an existing structure, the Contractor shall visit and examine the site of the proposed work to determine the existing conditions that may affect the work. The Contractor shall be held responsible for any assumptions in regard thereto.

E. The Contractor shall verify all dimensions and distances in the field and document the cable lengths and materials to be furnished and installed. The provision and installation of non-specified miscellaneous components and hardware (i.e. drag lines, nuts, bolts and tie wraps) shall also be the Contractor's responsibility.

F. Existing site conditions, Contract Documents and the overall construction schedule must be carefully reviewed to determine all required interfacing and timing of the work. All such documents shall be available through the General Contractor or Construction Management.

G. The system shall carry the manufacturer's performance warranty for each cable link as defined by TIA/EIA-568B for a period of 25 years from the date of registration by the manufacturer and extended directly to the owner.

H. The following industry standards are the basis for the structured cabling system described in this document.

1. TIA/EIA:
   a. TIA/EIA-568-B Commercial Building Telecommunications Cabling Standard
   b. TIA/EIA-568-B.1 General Requirements
   c. TIA/EIA-568-B.2 Balanced Twisted Pair Cabling Components Standard
   d. TIA/EIA-569-A Commercial Building Standard for Telecom Pathways And Spaces
   e. TIA/EIA-606-A Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
   f. TIA/ATIS JSTD-607A Commercial Building Grounding/Bonding Requirements for Telecommunications

2. NFPA:
   a. NFPA 70 National Electric Code (NEC)

3. BICSI-11th edition TDMM

I. If there is a conflict among the applicable documents, then the more stringent requirement shall apply. All documents listed are believed to be the most current releases of the documents. The Contractor has the responsibility to determine and adhere to the most recent release when developing the plan for installation.

J. This document does not replace any code, either partially or wholly. The contractor must be aware of and comply with local codes that may impact this project.

K. Contractor for this work shall have successfully completed at least three (3) similar size projects having category 6 wiring installations. Contractor shall provide written references demonstrating the installer has certified manufacturer's training for the products that are to be installed. Contractor shall provide at least 50% of their technicians, having been trained by the manufacturer, to perform all category 6 installation work, testing, and terminations. Contractor shall be able to extend the manufacturer's warranties for this project directly to the end-user.

1.02 Related Work:

A. See the following specification sections for work related to the work of this section:
   1. All other sections of Division 26 00 00.
   2. All other sections of Division 27 00 00.

1.03 Submittals:

A. As specified in Section 26 00 00 and Division 01.

B. Submit manufacturers published descriptive literature properly marked to identify the items to be supplied.

C. A single complete submittal is required for all products covered by this Section. The Contractor shall provide submittals within 30 working days of Notice to Proceed. The Contractor shall not deliver materials to the site until submittals are approved.

D. Product Data
   1. Provide manufacturer's catalog information showing dimensions, colors, and configurations.
   2. Submittals shall include all items called for in PART 2 - PRODUCTS of this document and the manufacturers cut sheets for the following:
      a. All single mode fiber optic cable
      b. All multimode fiber optic cable
      c. All balanced twisted pair cable
      d. All connectors and required tooling
      e. All termination system components
      f. All grounding and surge suppression system components
      g. All test equipment to be used
   3. Identify each submittal item by reference to Specification Section paragraph in which item is specified or Drawing and Detail number.
   4. Organize submittals in the same sequence as they appear in Specification Sections, articles, or paragraphs.

PART 2 - PRODUCTS

2.01 General:

A. The voice and data cabling system is defined as all required equipment and cabling, including hardware, termination blocks, cross-connects, patch panels, patch cords, copper and fiber cabling as specified and on drawings.

B. The Contractor shall supply the products as detailed in this specification. If not specified, the Contractor can select products of suitable quality and workmanship. For any products selected by the Contractor, the Contractor is required to submit product documentation including manufacturer's original literature, product specifications and testing reports as previously described.

C. Equal Product may be considered for substitution for those products specified, however, any equivalent product(s) must be approved by the District IT Representative and show demonstrated and documented equivalence to the product(s) specified.

D. All material furnished shall be new and unused. All materials used shall bear the Underwriter's Laboratory, Inc. label, provided a standard has been established for the material in question. All products and materials to be clean, free of defects, and free of damage and corrosion.

E. The Contractor must provide a 25 year Leviton / Superior Essex warranty upon completion of this project.

F. All articles or parts of articles of the General Conditions not so amended, modified or supplemented by this Telecommunications Cabling Specification shall remain in full force and effect. Should any discrepancy become apparent between the General Conditions and the Telecommunications Cable and Pathways Specification, the Contractor shall notify the Architect, in writing, and the Architect shall interpret and decide such matters in accordance with the provisions of the General Conditions.

2.02 Outside Plant Copper Backbone Cable:

A. All voice grade cable placed in the outside environment shall be solid, unshielded twisted pair, PE-89, 24 AWG Outside Plant Cable (OSP). Twenty five pair cable shall be Superior Essex 09-097-92 for speakers. Fifty pair cable shall be Superior Essex 09-100-92 for analog lines and cameras.

B. The copper twisted pair shall have a mutual capacitance at 1kHz of 83 nF/mile and meet ANSI/ICEA S-84-608 2007.

C. The cable shall be resistant to mechanical damage, lightning, or damage from wildlife. The cable shall have a dual shield design with fully flooded shield interfaces.

2.03 Building Entrance Protectors:

A. All OSP balanced twisted pair cable pairs shall be provided with protection at each building with an entrance cable protector panel. Circa Telecom 1880ECA1-50G.

B. The protector panel shall be equipped with a ground lug that will accept a #6 AWG copper bonding conductor and shall be grounded to the IDF/MDF main grounding bus with a #6 grounding conductor.

C. Each protector panel shall be fully loaded with 5-pin plug-in protector modules 4b1fs-240.

2.04 110-Type Wiring Block Kit:

A. The wiring block kit shall support Category 3 applications and facilitate cross connection and interconnection using cross connect wire. Leviton 41MB2-3FT. Each kit shall be provided with a vertical cord manager, Leviton 41880-300.

B. The wiring block shall be fire retardant, molded plastic consisting of horizontal index strips for terminating 25 pairs of conductors each. The index strips shall be marked with five colors on the high teeth, separating the tip and ring of each pair, to establish pair location. The wiring block shall accommodate 22 through 26-AWG conductors.

C. The wiring block kit shall include multiple 100 pair blocks, mounting frame, horizontal cord manager and label holder.

D. Provide C5 clips for ISP feeder terminations only. No station cabling is to be terminated directly onto 110 frames unless otherwise specified by District IT Representative.

2.05 Riser Rated Backbone Cable:

A. Copper riser rated cable shall be solid, twisted pair Category 3, CMR, 24 AWG. Superior Essex 18-499-36 (25pair) and 18-579-36 (50 pair).

B. The copper twisted pairs shall have a mutual capacitance at 1 kHz of 15.7 nF/1000 ft.

2.06 Fiber Optic Backbone Cable:

A. The fiber optic backbone cable shall be a 12 SM outside plant rated composite cable in a loose tube construction with inner and outer jackets and corrugated steel armor.

B. The Single mode fiber shall be ISO/IEC 11801 OS3, dispersion un-shifted fiber which meets the ITUT G.652d requirements.

C. The 62.5/125 micron multimode fiber shall have a maximum attenuation of 3.4 dB/km at 850 nm, and 1.0 dB/km at 1300 nm. This fiber shall be ISO/IEC 11801 OM1.

D. Provide Leviton 36" 12 strand break out kits 49887-12L.

2.07 Fiber Optic Panels and Modules:

A. Low Profile 2U combination panel shelves, Leviton OPT-X-5R2UH-S06 with 4 metal blank plates at each end Leviton 5F100-BLK. The panel shelf shall be available in a 2U height fully enclosed shelf, with integrated front cable management trough included. The shelf shall be equipped with hinged front doors for easy access, front cable management trough, top cover panel, standard water-tight cable entry conduit connectors for OSP cable, and blank labels for identifying fiber terminations.

B. Fiber modules shall be loaded with fiber optic adapter panels. Leviton 5F100-12P for multimode, and 5F100-12Z for Single mode. Modules must be from the same manufacturer as the fiber shelf.

C. LC Fiber Optic connectors shall utilize a pre-radiused zirconia ferrule and anaerobic adhesive for fiber alignment. Leviton 49990-MDL for multimode, and 49990-SDL for Single mode.

2.08 UTP Station Cable:

A. UTP Station cable shall consist of 4-pair Category 6, 23 AWG thermoplastic insulated conductors. All station cabling in plenum rated areas must have a minimum cable sheath rating of CMP. (All systems consist of CAT 6 cabling)
   1. This cable must meet parameters of the Cat 6 Cable TIA/EIA-568B and CAT 6 Permanent Link TIA/EIA-568B Commercial Building Telecommunications Wiring Standard.
      a. Input Impedance - 100 Ohms +/- 15% at 1-100 MHz
      b. ACR at 250 MHz shall be a minimum of 8.7 dB/100m.
      c. PS NEXT at 250 MHz shall be a minimum of 39.3 dB/100m.
      d. Insertion loss at 250 MHz shall be a maximum 32.6 dB/100m.
   2. Data station cable jacket shall be blue, Superior Essex 66-240-2B.
   3. Wireless cable jacket shall be green, Superior Essex 66-240-5B.

2.09 Copper Outlet Terminations:

A. T568B eight position, 8-conductor RJ45 jacks with 110 style rear termination. These terminations shall meet or exceed the requirements of the Cat 6 Cable TIA/EIA-568B and CAT 6 Permanent Link TIA/EIA-568B Commercial Building Telecommunications Wiring Standard.
   1. Four Pair data station cables in surface wall boxes shall be terminated on blue jacks, Leviton 61110-RL6.
   2. Four pair cables for wireless outlets in ceiling mounted boxes shall be terminated on green jacks, Leviton 61110-RV6.
   3. Four pair cables for camera outlets shall be terminated on yellow jacks, Leviton 61110-RY6. (refer to surveillance section)
   4. Four pair cables for intrusion panel IP connectivity shall be terminated on gray jacks, Leviton 61110-RG6. (refer to intrusion section)
   5. Four pair cables for speakers shall be terminated on purple jacks, Leviton 61110-RP6. (refer to paging section)

B. Universal faceplates that will accept the jack of the connectivity solutions shall be used throughout this project. Material shall be stainless steel; Leviton 43080-1S2 for 2 ports and 43080-1S4 for 4 ports.

C. Wall phone faceplates to be provided under this scope shall accept the jacks used on this project. Leviton 4108W-OSP.

D. Wireless faceplates shall be Leviton Quick Port, 2 port faceplate 41080-2IP.

2.10 Copper Patch panels:

A. High density unshielded twisted pair termination panels with space for 48 8P8C modules. Panels shall mount in a standard 19 inch equipment rack with universal hole spacing and allow for independent installation and removal of jack modules. Rear cable management bar shall be included with each patch panel. Cable termination modules shall be included as needed to complete the installation. All unused ports shall be covered with blank modules.
   1. Modular jack panels shall be 48 ports in a 2U space. Leviton 49255-H48 for CAT6 cabling.
   2. 48 port CAT6+ Patch Panel Leviton 69586-U48 for ISP tie to 110 frames.

2.11 Wire management:

A. Horizontal and Vertical cable managers shall be capable of managing cables on the front and rear of a standard 19 inch equipment rack. Horizontal managers shall have pass through holes that incorporate integral bend radius control and fingers with rounded edges. Hinged covers shall allow access to the cable pathway without having to remove the cover from the wire manager.
   1. Horizontal cable manager 2U high, Chatsworth 30530-719.
   2. Vertical cable managers shall be Chatsworth 30095-703.

2.12 Telecommunications Grounding and Bonding:

A. All grounding and bonding conductors shall be copper and may be insulated. When conductors are insulated, the sheath shall be green or marked with a distinctive green color, and shall be listed for the application. The minimum bonding conductor size shall be #6 AWG.

B. The Telecommunications Ground Busbar (TGB) shall be dedicated and pre-drilled copper busbar provided with holes for use with standard sized lugs. This busbar shall have minimum dimensions of .25 inch thick, 4 inches wide, and be variable in length.

C. Two-hole compression ground lugs shall be Chatsworth 40162-901, 40162-904, 40162-909, and 40162-911, or equal, based on the size of the copper conductor to be terminated.

D. All low voltage systems in this project shall be grounded and bonded.

2.13 Labels:

A. The contractor shall provide tags, straps, and adhesive labels. These tags, straps, and adhesive labels shall be of high quality that will endure heat, water, and time.

B. Shall meet the legibility, defacement, exposure, and adhesion requirements of UL 969.

C. Shall be pre-printed using a mechanical means of printing.

D. Where used for cable marking, provide vinyl substrate with a white printing area and a clear "tail" that self laminates the printed area when wrapped around the cable. The cable marking shall be immediately visible and within two inches from termination point.

E. Where insert type labels are used, provide clear plastic cover over label.

F. Copper patch panel labeling shall be completed with adhesive labeling kit specifically designed for the panel, Leviton 49257-QHD.

G. Labeling P-touch font size 4MM bold, black on White, 3/8" labeling tape on all work stations, panels and devices.

H. A round Avery label green in color Product Number: 5463 and a station label utilizing the same font size as on work station face plate must be installed on ceiling grid below each wireless cable location for identification. See type "D" Wireless Location Detail.

I. Labels shall be numbered consecutively and separate for each type of use. Refer to Work Station Details for additional information.

J. The contractor shall develop and submit for approval a labeling scheme for the cable installation. The Owner will negotiate an appropriate labeling scheme with the successful contractor. At a minimum, the labeling system shall clearly identify all components of the system: racks, cables, panels and outlets. The labeling system shall designate the cables origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the cable system infrastructure. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme. Labeling shall conform to the owner's Labeling Grammar and the TIA/EIA-606A standard.

PART 3 - EXECUTION

3.01 General:

A. Carefully check space requirements and the physical confines of the area of work to insure that all material can be installed in the spaces allotted thereto, including conduits and cable supports.

B. Transmit to other trades in a timely manner all information required for work to be provided under the respective Sections in ample time for installation.

C. Wherever work interconnects with or contacts the work of other trades, coordinate with other trades to insure that all trades have the information necessary so that they may properly install all the necessary connections and equipment.

D. Due to the type of installation, a fixed sequence of operation is required to properly install the complete systems. Coordinate project and schedule work with the General Contractor in accordance with the construction sequence. Provide status of the installation to the General Contractor to allow them to update their project schedules.

E. The Contractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper compliance with the design intent.

F. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 26 05 42- Conduits Raceway and Fittings.

G. Cable Pulling - Exercise care in pulling wires and cables into conduit or raceways so as to avoid kinking, putting undue stress on the cables or otherwise abrading them. No grease will be permitted in pulling cables. Only soapstone, talc, or UL listed pulling compound will be permitted. The raceway construction shall be complete and protected from the weather before cable is pulled into it. Swab conduits before installing cables and exercise care in pulling, to avoid damage to conductors.

H. Bending Radius - Cable bending radius shall be per TIA 568-B, applicable code and manufacturer recommendations. Install feeder cables in one continuous length.

I. All low voice and data system conduit stub out and nipples shall have end bushing installed prior to cable installation.

J. Examine areas and conditions under which LAN system is to be installed. Notify owner in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to install.

K. All backbone cable will be run through clean conduit with appropriately placed junction boxes or on J-hooks and/or cable tray in accessible ceiling areas.

L. All cable run outdoors or underground shall be U.L. listed type for such locations.

M. Manufacturer's recommended installation practices shall be followed.

N. Contractor shall schedule a low voltage pre-installation meeting prior to the start of any layout of the IDF. Participants to include general contractor, electrical and low voltage subcontractors, District IT representative and construction manager. The contractor shall provide 10 working days notice

3.02 Damages:

A. Protection: Contractor shall protect from damage during construction work all materials, including materials and work of other trades. Cables shall not be placed on floors in hallways or pathways. Care shall be taken to insure cables are not stepped on.

B. Contractor shall be liable for any and all damages to portions of the existing Campus caused by its employees or subcontractors, including, but not limited to:
   1. Damage to any portion of the Campus caused by the movement of tools, materials, or equipment.
   2. Damage to any component of the existing telecommunications spaces accessed by the Contractor.
   3. Damage to the existing electrical, telecommunications, mechanical and/or life safety or other systems caused by inappropriate operation or connections made by the Contractor or other actions of the Contractor.

3.03 Outside Plant and Cable Installation:

A. Use pulling compound when necessary. Pulling compounds must be water-base lubricant that will not deteriorate cable or conduit.

B. All cable/cabling shall be kept 30 inches away from any heat source; i.e. steam valves, etc.

C. Cables shall be pulled free of sharp bends, kinks, twists, or impact damage to the sheath. Cables shall not be pulled across sharp edges. All conduits and sleeve with rough edges will be provided with bushings on both ends. Cables shall not be forced or jammed between metal parts, assemblies, etc.

D. All outside plant cables will be terminated within 50 feet of the building entrance point. This is a maximum cable measurement and includes lengths for service loops, routing, backboard and patch panel mounting. If the cables cannot be terminated within the 50 foot length, the cables shall be extended in rigid conduit to within a 50 foot distance from the point of termination.

E. Cable mountings and service loops on backboards will be installed efficiently to minimize the backboard space consumed. All cables will be routed at right angles, in accordance with the bend radius specifications for the type of cable being routed. Copper cables will be tie wrapped every 4 feet. Fiber cables shall use Velcro wraps.

F. Polarization for entire system shall be maintained as described in ANSI/EIA/TIA-568-B section 12.7.1.

3.04 Copper Backbone terminations:

A. All copper shall be terminated on building entrance protector panels.

B. The building Entrance blocks shall be fully populated with protection fuses.

C. The OSP copper cable shall be exposed for no more than 50 feet from the point of entry in each building to where it is terminated on the protector panels as defined in Article 800-2 of the National Electrical Code.

D. The Building Entrance protection blocks shall be grounded with a 6 AWG copper bonding conductor between the protector ground lug and the grounding bus bar.

E. From the protector blocks, the Contractor shall provide ISP feeder to match OSP feeder count to new, wall mount 110 style blocks. All pairs shall be extended from the protector blocks to the 110 blocks.

3.05 Fiber Optic Backbone terminations:

A. Fiber will directly terminate on the rack mount fiber shelves without additional splicing. Sufficient cable slack to allow for movement and relocation will be required.

B. Field terminated LC connectors are required for all fiber strands in the telecommunications closets. All optical fiber strands shall be terminated. Connectors will be color-coded to distinguish core size.

C. The Contractor will provide four (4) multimode and four (4) single mode fiber patch cords for every telecommunications space. Fiber patch cords will be a minimum of 10 feet in length and will not introduce a loss greater than 1.0 dB, including connectors.

3.06 Horizontal Cable:

A. Place UTP cable so as to maintain the minimum cable bend radius limits specified by the manufacturer.

B. To avoid damaging horizontal cable conductors during installation, do not exceed a 25 pound force pulling tension.

C. Place copper cables transitioning between overhead pathways and cabinets in a neat and orderly manner.

D. Directly terminate twisted pair cable on patch panels and outlets in standard color code order.

E. Cable runs of low voltages cabling systems shall maintain a minimum of 4" clearance throughout entire length of runs. Bundling of different systems cables is not permitted.

3.07 Labeling:

A. Outside Plant

1. Contractor is required to provide labels for all cables at any vaults, pull box, or access panel crossing. The Contractor shall provide cable labels twelve inches from the end of the cable as it enters the building, on service loop mounts, and twelve inches from the end of the cable at the point of termination as follows:
   a. Fiber optic cable orange laminate tags (3.5" x 2") Hellermanntyton P.N. CT2003X2.
   b. Telephone cable yellow laminate tags (3.5" x 2") Hellermanntyton P.N. CT2012X2.
   c. Cable orange laminate write-on tags (4" x1.5") Hellermanntyton P.N. WC1503X2.
   The Contractor shall provide adhesive labels on all termination hardware such as fiber distribution shelf, protector, and 110 blocks.

2. All cables will be labeled according to the guidelines shown below as adapted from the EIA/TIA 606-A standard.

3. Fiber and copper backbone cable labeling shall follow the convention to include:
   a. Campus
   b. The origination point (Building Room ID)
   c. The destination point (Building Room ID)
   d. The type of cable
   e. The strand or pair count.

B. Horizontal Distribution

1. The Contractor is required to provide labels at all termination hardware such as patch panels and faceplate outlets and devices.

2. The Contractor shall provide 1/8 inch thick engraved plastic labels for new cabinets or racks installed. The engraving shall be white on black background.

3.08 Testing:

A. The Contractor's staff selected to provide the testing of this installation shall be certified by the manufacturer of the test equipment utilized, trained in all aspects of telecommunications acceptance testing procedures of the products described herein and shall have a minimum of five years experience in telecommunications acceptance testing.

B. Field test instruments shall have a current calibration certificate on hand during testing and the latest software and firmware installed.

C. All cables and termination hardware shall be 100% tested to verify cabling system performance under installed conditions. All pairs/strands of each installed cable shall be verified prior to system acceptance.

D. Balanced Twisted Pair Cable Testing

1. All pairs shall be tested with a copper test tool that conforms to the specifications of a certified Level II-E test set as described in TIA/EIA 568-B.2.

2. Copper backbone cabling shall be tested for conformance to the specifications of EIA/TIA Category 3 for multi-pair cable. Test shall include opens, shorts, polarity reversals, transposition, TDR for length, DC resistance, and tip/ring per pair.

E. Optical Fiber Cable Testing

1. The contractor shall conduct on reel test of all optical fiber cable prior to the installation.

2. Optical fiber testing shall be performed on all terminated fiber in the completed end-to-end system. Testing shall consist of an end-to-end OLTS and OTDR test performed per TIA/EIA-526-7. These tests also include continuity checking and optical length measurement of each fiber.

3. Paired duplex fibers in multi-fiber cables shall be tested to verify polarity in accordance with sub clause 10.3 of ANSI/TIA/EIA 568-B.1. The polarity of the paired duplex fibers shall be verified using an OLTS.

4. All single mode fiber optic cabling shall be tested at both 1310 and 1550 nm per TIA/EIA 526-7 Methods "A.1" (OLTS) and "B" (OTDR). All multimode fiber optic cabling shall be tested at 850 and 1300 nm.

5. Each fiber shall be tested in both directions.

6. Link test results from the OLTS and OTDR shall be recorded in the test instrument upon completion of each test for subsequent uploading to a PC in which the administrative documentation may be generated.

3.09 Test Records:

A. General

1. All cables will be tested and the results in electronic format on CD-ROM, with the resulting file capable of being formatted with one test result per 8.5 inch by 11 inch page. A hard copy of all tests is to be submitted in a 3 ring binder.

2. Test results saved within the field test instrument shall be transferred to a Windows based database utility that allows for the maintenance, inspection, and archiving of the test records. The test records shall be uploaded to the PC unaltered, i.e. "as saved in the field test instrument". The file format CSV does not provide adequate protection of these records and shall not be used.

3. The database for the complete project shall be stored and delivered on CD-ROM prior to the Punch walk and/or acceptance of the project. This CD-ROM shall include the software tools required to view, inspect, and print any selection of the test reports in the native format of the tester.

3.10 Quality Assurance:

A. Contractor is solely responsible for quality control of the Work. Comply with any Quality Control requirements specified in the General Conditions.

B. All materials furnished shall be new and unused. All materials shall meet all applicable codes provided a standard has been established for the material in question.

C. Contractor shall be in good standing with the selected manufacturer(s) of system components and be able to provide the Owner with the extended warranty for the installation offered by the manufacturer.

D. All work performed by the Contractor shall be available for observation and approval by the Manufacturer, the Owner, and the system Designer in order to verify the systems integrity and increase the performance of the system under the installation and performance guidelines described in the Contract Documents.

3.11 Certification & Warranty:

A. All work and all items of equipment and materials shall be warranted for a minimum period of one year from the date of acceptance of the work. Where a manufacturer's warranty is longer than one year, the Contractor shall offer the extended warranty. The Contractor shall, upon notification of any defective items, repair or replace such items within 24 hours without cost to Owner, all to the satisfaction of the Architect.

B. The installed passive components of the Work described in the Contract Documents shall be covered under a manufacturer supported Lifetime Warranty related to installed materials, supported applications and the installation workmanship. This guarantee and extended warranty shall be supported in writing by both the connectivity and cable manufacturer and shall address and cover the following:

C. Contractor shall respond to the Owners request and correct any problems, malfunctions, and warranty issues associated with the Work described in the Construction Documents without additional charge to the Owner within three (3) calendar days for the entire warranty period, as stated in the Warranty.

D. The Owner considers the Voice Data Communications System components a whole, complete system and requires an integrated component/cable warranty from both the cable manufacturer and the connectivity manufacturer for material and installation workmanship as described in the Construction Documents.

E. The warranty will not begin until after a thirty (30) day acceptance period (See below for Acceptance Period information) to judge the performance of the installed Voice Data Communication System. If during this thirty (30) day period the installed system does not perform adequately, the Trade Contractor must repair the installation within two (2) days to the satisfaction of the Designer and Owner and/or the Contract Documents and the thirty (30) days will restart from the date of the resolution.

3.12 Project Closeout:

A. The installed Voice Data Communications System will not be accepted until all work is complete and properly documented and all punch list items discovered are completed to the Designer and Owner's complete satisfaction.

B. The Trade Contractor's project manager must be available to answer questions about the installation and to attend site visits and meetings during the acceptance period.

3.13 Start Up: Assist:

A. Contractor shall assist District with system start up, for a complete and operational system. Provide sixteen (16) hours minimum system training. The Contractor shall provide (2) copies of manufacturer's literature.

3.14 As Built Documentation:

A. The Contractor will be provided drawings in electronic format (DWG, AutoCAD release 14 or later) on which as-built construction information can be added.

B. Upon completion of the project, the Contractor is to prepare as-built documentation showing actual site conditions and installation as constructed.

C. Contractor shall annotate the base drawings and return a hard copy and electronic form (AutoCAD release 14 or later).

D. The Contractor shall provide and install a C-size framed floor plan with outlet and device locations for all low voltage systems in new IDF location. Coordinate with other specification sections for similar requirements.

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MONTEREY BAY, INC.

Project No. 17558.00

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DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC ____ FLS ____ SS 1435
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
Exp. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

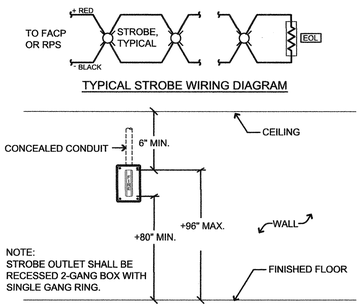
PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
ELECTRICAL SPECIFICATIONS

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

E7.2



1 STROBE INSTALLATION DETAIL

NO SCALE

FIRE ALARM EQUIPMENT LIST

SYMBOL	DESCRIPTION AND MODEL NUMBER	MFGR'S PART No.	CSFM LISTING
FACP	EXISTING FIRE ALARM CONTROL PANEL.	EST EST-3/3-CAB14B	7165-1657:0186
M	OUTPUT MODULE/PLUG IN UIO MOUNT.	EST SIGA-MCC10	7300-1657:0210
C	FIRE STROBE CEILING MOUNT - SYNCHRONIZE (15, 30, 75, 95 CANDELA)	EST GCF-VM	7125-1657:0219

FIRE ALARM GENERAL NOTES

1. WIRING MUST BE LISTED FOR USE AS REQUIRED BY TITLE 24/CEC, ARTICLE 760.
2. WIRE USED IN WET LOCATIONS SHALL BE OF AN APPROVED TYPE IN ACCORDANCE WITH 3-310-8, T24/CEC (I.E. THHW OR EQUAL).
3. UNDER GROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRES APPROVED FOR WET LOCATION.
4. ALL CONDUCTORS SHALL BE ROUTED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS. MINIMUM CONDUIT SIZE SHALL BE 3/4."
5. THE CONDUIT AND WIRE SHOWN ON THESE PLANS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD TO SUIT FIELD CONDITIONS. "AS-BUILT" PLANS SHALL BE MAINTAINED AND BE PROVIDED AS REQUIRED BY THE PROJECT INSPECTOR OF RECORD.
6. PENETRATIONS OF FIRE RATED WALLS SHALL BE PROTECTED IN ACCORDANCE WITH CALIFORNIA BUILDING CODE, CHAPTER 7, TITLE 24. PROVIDE DETAILS OF THROUGH PENETRATION FIRE-STOP SYSTEMS FOR ALL PIPE/CABLE/CONDUIT PASSING THROUGH FIRE RATED WALLS/FLOORS REQUIRING PROTECTED OPENINGS.
7. ALL DEVICES SHALL BE "CSFM" LISTED.
8. EXTERIOR DEVICES SHALL BE LISTED FOR EXTERIOR USE BY "CSFM."
9. AUDIBLE ALARM PRODUCED BY "FACP" SHALL SOUND THE CALIFORNIA UNIFORM SIGNAL IN TEMPORAL MODE.
10. AUDIBLE FIRE ALARM SOUND LEVEL SHALL BE AT LEAST 15DBA ABOVE THE AVERAGE SOUND LEVEL.
11. AUDIBLE SIGNALS INTENDED FOR OPERATION IN THE PUBLIC SHALL HAVE A SOUND LEVEL OF NOT LESS THAN 75DBA AT 10 FEET OR MORE THAN 110DBA AT THE MINIMUM HEARING DISTANCES FROM THE AUDIBLE APPLIANCE.
12. WHERE VISUAL DEVICES ARE REQUIRED, VISUAL DEVICE SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. NO PLACE IN ANY ROOM SHALL BE MORE THAN 50 FEET FROM A DEVICE.
13. APPROVED BY THE "DIVISION OF THE STATE ARCHITECT/OFFICE OF REGULATION SERVICES." CONTRACTOR SHALL PROVIDE COPIES OF APPROVED PLANS TO THE PROJECT INSPECTOR OF RECORD PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING TO ENGINEER PRIOR TO PURCHASE FOR REVIEW. THE FIRE PROTECTION SYSTEM SHALL NOT BE INSTALLED UNTIL SHOP DRAWINGS HAVE BEEN SUBMITTED TO AND RECEIVED BY THE ENGINEER OF RECORD.
14. FINAL ALARM TEST SHALL BE WITNESSED BY THE DSA INSPECTOR OF RECORD (IOR). BOTH THE DSA INSPECTOR OF RECORD (IOR) AND THE LOCAL FIRE AUTHORITY SHALL BE NOTIFIED OF DATE AND TIME OF FINAL FIRE ALARM TESTING BY THE FIRE ALARM CONTRACTOR. FIRE ALARM CONTRACTOR SHALL PROVIDE "RECORD OF COMPLETION" TO THE INSPECTOR OF RECORD (IOR)/DSA AFTER COMPLETION OF OPERATIONAL ACCEPTANCE TEST.
15. POWER SERVICE SHALL BE ON A DEDICATED, 120V BRANCH CIRCUIT, WITH A RED MARKING AND IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL."
16. AUTOMATIC FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AS AMENDED BY CFC CHAPTER 80. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUJS BY UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011.

SYMBOLS & ABBREVIATIONS

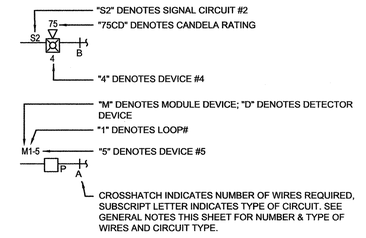
SYMBOLS

- ——— CONDUIT - CONCEALED IN WALLS OR CEILING.
- - - - - - - CONDUIT - IN OR BELOW FLOOR: 3/4"C MIN.
- ——— CONDUIT CONTINUATION.
- 201 ROOM NUMBER.
- 2 SHEET NOTE REFERENCE SYMBOL; SEE ASSOCIATED NOTE ON SAME SHEET.
- 2 / E1 DETAIL OR SECTION DESIGNATION.

ABBREVIATIONS

ARCH.	ARCHITECT	FSD	FIRE SMOKE DAMPER
AWG	AMERICAN WIRE GAUGE	IDC	INITIATING DEVICE CIRCUITS
BKR	BREAKER	(N)	NEW
C	CONDUIT	NAC	NOTIFICATION APPLIANCE CIRCUITS
CB	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CKT	CIRCUIT	NO	NUMBER
CLG	CEILING	SLC	SIGNALING LINE CIRCUITS
(E)	EXISTING	TYP	TYPICAL
EOL	END OF LINE	UON	UNLESS OTHERWISE NOTED
FA	FIRE ALARM	WP	WEATHERPROOF
FACP	FIRE ALARM CONTROL PANEL		
FBO	FURNISHED BY OTHERS		

TYPICAL ZONE NOMENCLATURE



FIRE ALARM SYSTEM OPERATIONAL MATRIX

CAUSE	ALARM: ALARM AT FACP	ALARM: ALARM AT ANNUNCIATOR	ALARM: ALARM AT OFF SITE REPORTING	ALARM: ACTIVATE F.F. PANEL ES	ALARM: ACTIVATE AUDIBLES	ALARM: ACTIVATE VISUALS	ALARM: ACTIVATE AUDIOVISUALS	TROUBLE: TROUBLE AT FACP	TROUBLE: TROUBLE AT ANNUNCIATOR	TROUBLE: TROUBLE AT OFF SITE REPORTING	SUPERVISORY: SUPERVISORY AT FACP	SUPERVISORY: SUPERVISORY AT ANNUNCIATOR	SUPERVISORY: SUPERVISORY AT OFF SITE REPORTING	MISC: FAN SHUT DOWN	MISC: DEACTIVATE AUDIBLES	MISC: DEACTIVATE VISUALS	MISC: DEACTIVATE AUDIOVISUALS	MISC: SYSTEM NORMAL	MISC: ELEVATOR RECALL	MISC: DOOR HOLDER RELEASE	MISC: SHUT FIRE SMOKE DAMPERS	MISC: LOCAL ALARM DETECTOR	REMARKS
SMOKE DETECTORS	•	•	•	•	•	•								•				•	•				
HEAT DETECTORS	•	•	•	•	•	•								•				•	•				
MANUAL PULL STATIONS	•	•	•	•	•	•								•				•	•				
SIGNAL SILENCE														•									
SYSTEM RESET														•	•	•	•						
AC POWER FAILURE								•	•	•													
TROUBLE (OPEN, SHORTS, GROUNDS) ON INITIATION OR SIGNAL CIRCUITS								•	•	•													

PROJECT DESCRIPTION

SCOPE OF WORK:
EXTENSION OF EXISTING ADDRESSABLE FIRE ALARM SYSTEM.

SYSTEM DESCRIPTION:
SLC = CLASS B
IDC = CLASS B
NAC = CLASS B

BY: NAJIB ANWARY, P.E.

AURUM CONSULTING ENGINEERS MONTEREY BAY, INC.

Project No. 17558.00

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GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

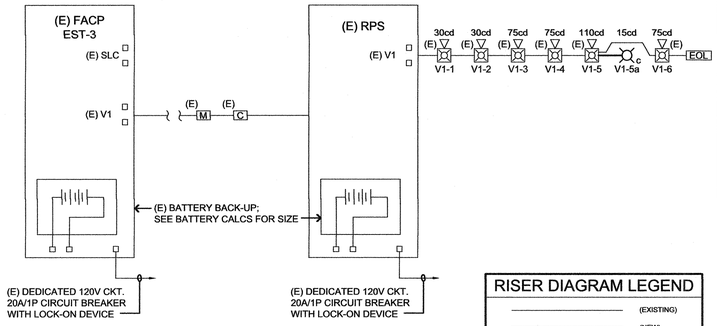
5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET

SYMBOLS, ABBREV., EQUIPMENT LIST, OPERATIONAL MATRIX, DETAILS & NOTES

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

FA0.1



RISER DIAGRAM LEGEND

(EXISTING)

(NEW)

2 FIRE ALARM RISER DIAGRAM

NO SCALE

BATTERY & VOLTAGE DROP CALCULATIONS

VOLTAGE DROP (VD) CALCULATION - (E) NOTIFICATION CIRCUIT No.S2

DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
GAUGE WIRE	12	12	12	12	12	12	12	12	12	12
DISTANCE (FT)	30	50	50	100	150	50	100			
AMPS OF DEVICE	0.167	0.167	0.281	0.281	0.337	0.063	0.281			
TOTAL AMPS@DEV.	1.577	1.41	1.243	0.962	0.681	0.344	0.281	0	0	0
VOLT. DROP @ DEV.	0.156	0.233	0.206	0.318	0.338	0.057	0.093	0	0	0
TOTAL CIRCUIT AMPS =	1.577			WIRE SIZE	RESIS. /M FT.	CIRC. MILS.		FORMULA		
TOTAL VOLT DROP =	1.401			10	1.29	10380		I * FEET * 21.6		
				12	2.01	6530		C.M.		
CKT VOLTAGE =	20.4			14	3.19	4110				
				16	5.08	2580				
% VOLTAGE DROP =	6.9%									

BATTERY CALCULATION "RPS"

QTY	MODEL No.	DEVICE DESCRIPTION	STANDBY EACH	STANDBY TOTAL	ALARM EACH	ALARM TOTAL
1	PS-8	WHEELOCK REMOTE POWER SUPPLY	0.1290	0.1290	0.1290	0.1290
1	V1	VISUAL CIRCUIT No.V1	0.0000	0.0000	1.5770	1.5770
		PANEL STANDBY CURRENT		0.1290		
		PANEL ALARM CURRENT				1.7060

TOTAL SYSTEM CURRENT

DESCRIPTION	STANDBY	ALARM
TOTAL STANDBY CURRENT (A)	0.1290	
X 24 HOUR STANDBY	3.0960	
TOTAL ALARM,CURRENT (B)		1.7060
15 MINUTES OF ALARM (X .25)		0.4265
TOTAL BATTERY REQUIREMENT (A+B)		3.5225
SAFETY MARGIN (20%)		4.2270
BATTERY SUPPLIED (2) 7AH		7AH

(E) FIRE ALARM CONTROL PANEL "FACP"

QTY	PRODUCT ID	DESCRIPTION	STANDBY EACH	STANDBY TOTAL	ALARM EACH	ALARM TOTAL
1	EST3	(E) FIRE ALARM CONTROL PANEL CONNECTIONS	0.5416	0.5416	0.9740	0.9740
		PANEL STANDBY CURRENT		0.5416		
		PANEL ALARM CURRENT				0.9740

FIELD DEVICES

QTY	PRODUCT ID	DESCRIPTION	STANDBY EACH	STANDBY TOTAL	ALARM EACH	ALARM TOTAL
		DESCRIPTION		STANDBY		ALARM
		CONTROL PANEL		0.5416		0.9740
		FIELD DEVICES		0.0000		0.0000
		TOTAL STANDBY CURRENT		0.5416		
		X 24 HOUR STANDBY		12.9984		
		TOTAL ALARM CURRENT				0.9740
		15 MINUTES OF ALARM (X .25)				0.2435
		TOTAL BATTERY REQUIREMENT				13.2418
		SAFETY MARGIN (20%)				15.8903
		BATTERY SUPPLIED				(2) 12V 17AH

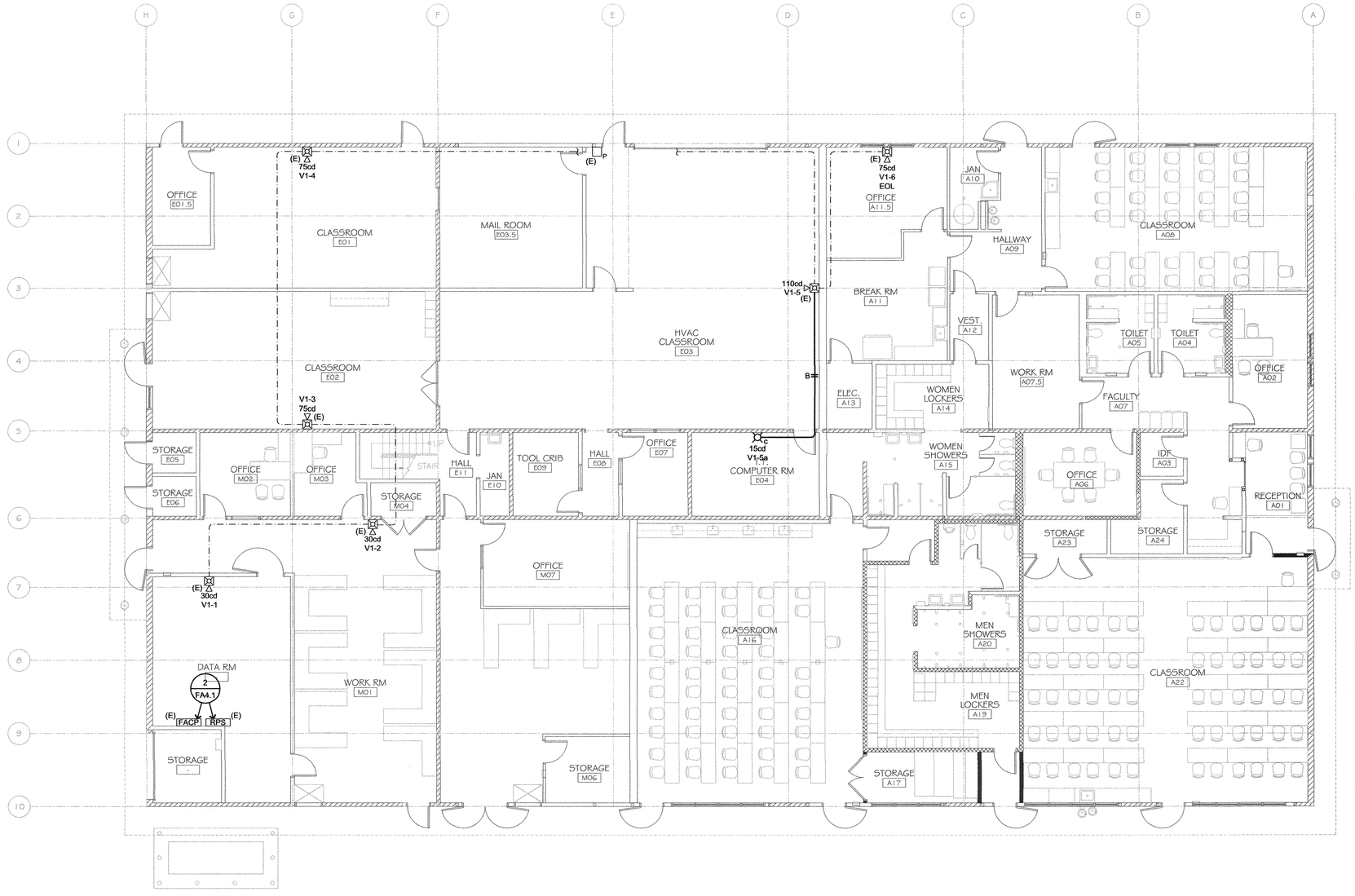
CABLE LEGEND

TYPE A = DENOTES INITIATING DETECTION CIRCUITS (SMOKE DETECTOR, HEAT DETECTOR ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) #14 SHIELDED PAIR. RUNS MARKED WITH CROSSHATCHES INDICATE THE NUMBER OF PAIRS WHEN MORE THAN ONE.

TYPE B = DENOTES NOTIFICATION APPLIANCE CIRCUITS (HORN, STROBES, BELL ETC.) UNLESS OTHERWISE NOTED, PROVIDE (1) PAIR OF #12 AWG. RUNS MARKED WITH CROSSHATCHES INDICATE THE NUMBER OF PAIRS WHEN MORE THAN ONE.

GENERAL NOTE:

FOR MOUNTING AND WIRING OF INITIATING DEVICES AND NOTIFICATION APPLIANCES SEE SHEET FA0.1.



1 FIRE ALARM PLAN

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

8' 0' 2' 4' 6' 8'

NORTH

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Project No. 17558.00

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DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT

01-117638
APPLICATION NUMBER

AC ____ FLS ____ SS LIVE

DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT

GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT

HVAC CLASSROOM

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SHEET

FIRE ALARM PLAN, RISER DIAGRAM , BATTERY & VOLTAGE DROP CALCULATIONS

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
DRAWN BY:	CADD
CHECKED BY:	N.A.
FILENAME:	

FA4.1

SECTION 16720 - FIRE ALARM SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:
- A. FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT INCLUDING ALL REQUIRED EQUIPMENT, PANELS, RACEWAYS, CONDUCTORS AND CONNECTIONS, AND PROVIDE ALL LABOR REQUIRED AND NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND/OR SPECIFIED IN ALL SECTIONS OF DIVISION 16 AND ALL OTHER WORK AND MISCELLANEOUS ITEMS, NOT SPECIFICALLY MENTIONED, BUT REASONABLY INFERRED FOR A COMPLETE EXTENSION OF THE EXISTING ADDRESSABLE FIRE ALARM, INCLUDING ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING THE SYSTEMS. IT IS IN THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS WILL BE COMPLETE, AND READY FOR OPERATION. NO EXTRA CHARGE WILL BE PAID FOR FURNISHING ITEMS REQUIRED BY REGULATIONS, BUT NOT SPECIFIED HEREIN, OR ON DRAWINGS.
- B. CONTRACTOR SHALL INCLUDE ALL COSTS TO DE-COMMISSION THE EXISTING SYSTEM BEFORE ANY NEW CONSTRUCTION CAN START. THE DISTRICT SHALL BE ADVISED IN WRITING THE DATE AS TO WHEN THE EXISTING SYSTEM WILL BE DE-COMMISSIONED. THE CONTRACTOR SCOPE OF WORK SHALL NOT DEGRADE ANY FUNCTION OR OPERATION OF THE REMAINING SITE FIRE ALARM SYSTEM.

1.02 RELATED WORK:
1. ALL OTHER SECTIONS OF DIVISION 16.

1.03 CODES AND STANDARDS:
- A. DEVICES AND EQUIPMENT FOR FIRE ALARM SYSTEMS SHALL BE U.L. LISTED.
- B. UL 864 CONTROL UNITS, FIRE PROTECTIVE SIGNALING SYSTEMS.
- C. DEVICES AND EQUIPMENT FOR FIRE ALARM SYSTEM SHALL BE LISTED BY THE CALIFORNIA STATE FIRE MARSHAL FOR THE SPECIFIC PURPOSE THE DEVICE OR EQUIPMENT IS USED.
- D. WORK AND MATERIAL SHALL BE IN COMPLIANCE WITH AND ACCORDING TO THE REQUIREMENTS OF THE LATEST VERSION OF THE BUILDING CODES AS NOTED ON DRAWINGS.

1.04 SUBMITTALS:
- A. IN ACCORDANCE WITH DIVISION 16.
- B. SUBMIT THE FOLLOWING ITEMS:
  1. MANUFACTURER'S CATALOG DATA: MANUFACTURER'S ORIGINAL CATALOG CUTS AND ORIGINAL DESCRIPTION OF DATA OF ALL MATERIAL AND EQUIPMENT WITH SUFFICIENT INFORMATION PROVIDED SO THAT THE EXACT FUNCTION OF EACH DEVICE IS KNOWN. EACH ITEM SUPPLIED SHALL BE CLEARLY IDENTIFIED INCLUDING BOTH U.L. NUMBER AND A COPY OF THE STATE FIRE MARSHAL'S LISTING.
- C. DESCRIPTION OF CONDUCTORS TO BE USED WITH A STATEMENT THAT ALL WIRE SHALL BE IN CONDUIT. WHERE ACCESSIBLE CEILING OCCURS, PLENUM RATED WIRE ON J-HOOKS IS ACCEPTABLE.

1.05 QUALITY ASSURANCE:
- A. INSTALLER: THE INSTALLATION FIRM SHALL BE AN ESTABLISHED COMMUNICATIONS AND ELECTRONICS CONTRACTOR WITH AT LEAST 5 YEARS SUCCESSFUL INSTALLATION EXPERIENCE OF PRODUCTS UTILIZING INTEGRATED COMMUNICATIONS SYSTEMS AND EQUIPMENT SPECIFIC TO THAT REQUIRED FOR THIS PROJECT. ONLY CALIFORNIA CERTIFIED FIRE ALARM TECHNICIANS OR CALIFORNIA CERTIFIED ELECTRICIAN SHALL BE USED TO INSTALL THE FIRE ALARM SYSTEM.
- B. ALL MATERIALS, UNLESS OTHERWISE SPECIFIED, SHALL BE NEW, AND FREE FROM ANY DEFECTS. ALL ITEMS OF EQUIPMENT INCLUDING WIRE AND CABLE SHALL BE DESIGNED BY THE MANUFACTURER UNLESS OTHERWISE SPECIFIED, SHALL FUNCTION AS A COMPLETE SYSTEM AND SHALL BE ACCOMPANIED BY THE MANUFACTURER'S COMPLETE SERVICE NOTES AND DRAWINGS DETAILING ALL INTERCONNECTIONS.
- C. THE CONTRACTOR SHALL SHOW SATISFACTORY EVIDENCE, UPON REQUEST, THAT HE MAINTAINS A FULLY EQUIPPED SERVICE ORGANIZATION CAPABLE OF FURNISHING ADEQUATE INSPECTION AND SERVICE TO THE SYSTEM. THE CONTRACTOR SHALL MAINTAIN AT HIS FACILITY THE NECESSARY SPARE PARTS IN THE PROPER PROPORTION AS RECOMMENDED BY THE MANUFACTURER TO MAINTAIN AND SERVICE THE EQUIPMENT BEING SUPPLIED.
- D. THE SYSTEM MANUFACTURER SHALL MAINTAIN ENGINEERING AND SERVICE DEPARTMENTS CAPABLE OF RENDERING ADVICE REGARDING INSTALLATION AND FINAL ADJUSTMENT OF THE SYSTEM.

1.06 WARRANTIES:
- A. THE CONTRACTOR SHALL WARRANT ALL EQUIPMENT AND WIRING FREE FROM INHERENT MECHANICAL AND ELECTRICAL DEFECT FOR ONE YEAR (365 DAYS) FROM THE DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL WITHOUT ADDITIONAL EXPENSE TO THE OWNER, REPLACE ANY DEFECTIVE MATERIALS OR EQUIPMENT PROVIDED BY HIM UNDER THIS CONTRACT WITHIN THE WARRANTY PERIOD.

PART 2 - PRODUCTS

2.01 FIRE ALARM CONTROL PANEL:
- A. SEE DRAWINGS FOR EXISTING SYSTEM PANELS.

2.02 BATTERY CHARGER:
- A. AS NOTED ON DRAWINGS.

2.03 ANALOG/ADDRESSABLE COMMUNICATIONS LOOPS:
- A. ALL INITIATING NEW DEVICES SHALL BE CONNECTED TO ADDRESSABLE LOOPS AS NOTED ON THE DRAWINGS.

2.04 ANALOG/ADDRESSABLE COMMUNICATIONS LOOPS:
- A. ALL INITIATING NEW DEVICES SHALL BE CONNECTED TO ADDRESSABLE LOOPS AS NOTED ON THE DRAWINGS.

2.05 DETECTION DEVICES:
- A. DETECTORS:
  1. EACH PHOTOELECTRIC SMOKE DETECTOR AND HEAT DETECTOR SHALL BE INTERCHANGEABLE VIA TWIST-LOCK MOUNTING BASE, TO ENSURE MATCHING THE PROPER SENSOR TO THE POTENTIAL HAZARDS OF THE AREAS BEING PROTECTED. THE SYSTEM SHALL RECOGNIZE WHEN AN IMPROPER SENSOR TYPE HAS BEEN INSTALLED IN A PREVIOUSLY PROGRAMMED SENSOR TYPE LOCATION.
- B. PHOTOELECTRIC SMOKE DETECTOR:
  1. PROVIDE WHITE FLAME RETARDANT PLASTIC, ADDRESSABLE, ANALOG, PHOTOELECTRIC TYPE, SMOKE DETECTORS. DETECTORS SHALL OPERATE USING AN OPTICAL SENSING CHAMBER PRINCIPAL WHICH COMPLIES WITH UL 268.
  2. EACH DETECTOR SHALL BE CAPABLE OF BEING SET AT TWO SENSITIVITY SETTINGS.
  3. EACH DETECTOR SHALL HAVE TWO LED VISUAL INDICATORS PROVIDING LOCAL 360 DEGREE VISIBILITY OF OPERATING STATUS AND ALARM INDICATION.
  4. EACH DETECTOR SHALL BE SUPPORTED INDEPENDENTLY OF WIRING CONNECTIONS, AND CONNECTED BY SEPARATE SCREW TERMINALS OF EACH CONDUCTOR.
  5. THE DETECTOR SCREEN AND COVER ASSEMBLY MUST BE EASILY REMOVABLE FOR FIELD CLEANING.
- C. COMBINATION FIXED TEMPERATURE, RATE OF RISE HEAT DETECTORS:
  1. PROVIDE OFF-WHITE FLAME RETARDANT PLASTIC, ADDRESSABLE, COMBINATION 140 DEGREE F FIXED TEMPERATURE, RATE OF RISE HEAT DUAL THERMISTOR DETECTORS. DETECTOR SHALL INITIATE AN ALARM WHEN TEMPERATURE RISES AT A RATE OF OVER 15 DEGREES F PER MINUTE OR ABOVE 140 DEGREES F.
  2. EACH DETECTOR SHALL HAVE TWO LED VISUAL INDICATORS PROVIDING LOCAL 360 DEGREE VISIBILITY OF OPERATING STATUS AND ALARM INDICATION.
  3. CONTACTS SHALL BE SELF-RESETTING AFTER RESPONSE TO RATE OR RISE PRINCIPAL. LOCATE DETECTORS IN ACCORDANCE WITH UL FPD OR FM P7825 LISTING AND THE REQUIREMENTS OF NFPA 72. TEMPERATURE RATING OF DETECTORS SHALL BE IN ACCORDANCE WITH NFPA 72.
- E. ADDRESSABLE MONITOR MODULE: PROVIDE ADDRESSABLE MONITOR MODULE WIRED AS STYLE B (CLASS "B") TO PROVIDE AN ADDRESS FOR NORMALLY OPEN CONTACT DEVICES.
  1. PROVIDE ADDRESSABLE MONITOR MODULE TO MONITOR STATUS OF ALL WATER FLOW SWITCHES, VALVE TAMPER SWITCHES AND POST INDICATOR VALVES.

2.06 ALARM NOTIFICATION DEVICES:
- A. COLOR OF NOTIFICATION APPLIANCES SHALL BE RED, UNLESS OTHERWISE NOTED BY DISTRICT.
- B. ALL ALARM NOTIFICATION DEVICES SHALL BE SYNCHRONIZED THROUGHOUT THE SCHOOL CAMPUS .
- C. STROBE LIGHTS: PROVIDE RECESSED MOUNTED STROBE LIGHT ASSEMBLY SUITABLE FOR USE IN ELECTRICALLY SUPERVISED CIRCUIT. LAMPS SHALL BE XENON FLASHTUBE TYPE, POWERED FROM THE FIRE ALARM CONTROL PANEL ALARM SIGNALING CIRCUIT. STROBES SHALL PROVIDE CANDELA RATINGS AS INDICATED ON THE DRAWINGS CANDELAS AND FLASH 60 TIMES PER MINUTE UNLESS OTHERWISE NOTED. STROBES IN TOILETS SHALL PROVIDE A MINIMUM OF 15 CANDELAS. LAMPS SHALL BE PROTECTED BE A CLEAR POLYCARBONATE LENS. HOUSING SHALL BE LABELED "FIRE" IN RED VERTICAL LETTERING.
- D. HORNS/STROBES: PROVIDE RECESSED MOUNTED, GRILLE FACE, VIBRATING DIAPHRAGM TYPE, AUDIO ALARM DEVICES CONSISTING OF AN ELECTRO-MECHANICAL HORN SUITABLE FOR USE IN AN ELECTRICALLY SUPERVISED CIRCUIT. HORNS/STROBES SHALL BE PROVIDED WITH A RED, TAMPER RESISTANT GRILL. HORN SHALL HAVE A MINIMUM SOUND RATING OF 90 DBA AT 10 FEET AND HAVE FIELD SELECTABLE SOUND LEVELS. HORNS SHALL BE CAPABLE OF PROVIDING A SYNCHRONIZED, FIELD SELECTABLE, TEMPORAL CODE 3 TONE. HORNS SHALL HAVE A SEPARATE MINIMUM CANDELA AS SHOWN ON THE DRAWINGS AND FLASH 60 TIMES PER MINUTE UNLESS OTHERWISE NOTED. LAMPS SHALL BE PROTECTED BY A CLEAR POLYCARBONATE LENS. HOUSING SHALL BE LABELED "FIRE" IN RED VERTICAL LETTERING.
- E. EXTERIOR HORNS: PROVIDE RECESSED MOUNTED, GRILLE FACE, VIBRATING DIAPHRAGM TYPE, AUDIO ALARM DEVICES CONSISTING OF AN ELECTRO-MECHANICAL HORN SUITABLE FOR USE IN AN ELECTRICALLY SUPERVISED CIRCUIT. HORNS SHALL BE PROVIDED WITH A RED, TAMPER RESISTANT GRILL, AND A WEATHERPROOF BACKBOX. HORN SHALL HAVE A MINIMUM SOUND RATING OF 90 DBA AT 10 FEET AND HAVE FIELD SELECTABLE SOUND LEVELS. HORNS SHALL BE CAPABLE OF PROVIDING A SYNCHRONIZED, FIELD SELECTABLE, TEMPORAL CODE 3 TONE. HORNS SHALL HAVE A SEPARATE SCREW TERMINAL FOR EACH CONDUCTOR CONNECTION. HORNS LOCATED IN AREAS SUBJECT TO MOISTURE OR EXTERIOR ATMOSPHERIC CONDITIONS, SHALL BE APPROVED FOR SUCH LOCATIONS.
- F. FIELD CHARGING POWER SUPPLY (FCPS):
  1. THE FCPS IS A DEVICE DESIGNED FOR USE AS EITHER A REMOTE 24 VOLT POWER SUPPLY OR USED TO POWER NOTIFICATION APPLIANCES.
  2. THE FCPS SHALL OFFER UP TO 6.0 AMPS (4.0 AMPS CONTINUOUS) OF REGULATED 24 VOLT POWER. IT SHALL INCLUDE AN INTEGRAL CHARGER DESIGNED TO CHARGE 7.0 AMP HOUR BATTERIES AND TO SUPPORT 60 HOUR STANDBY.
  3. THE FIELD CHARGING POWER SUPPLY SHALL HAVE TWO INPUT TRIGGERS. THE INPUT TRIGGER SHALL BE A NOTIFICATION APPLIANCE CIRCUIT (FROM THE FIRE ALARM CONTROL PANEL) OR A RELAY. FOUR OUTPUTS (TWO STYLE Y OR Z AND TWO STYLE Y) SHALL BE AVAILABLE FOR CONNECTION TO THE NOTIFICATION DEVICES.
  4. THE FIELD CHARGING POWER SUPPLY SHALL INCLUDE THE ABILITY TO DELAY THE AC FAIL DELAY PER NFPA REQUIREMENTS.
  5. THE FCPS INCLUDE POWER LIMITED CIRCUITRY, PER 1995 UL STANDARDS.

2.07 WIRING AND CONDUIT:
- A. PROVIDE WIRING IN ACCORDANCE WITH NFPA 72.
- B. CONDUCTORS SHALL BE SOLID COPPER. CONDUCTORS FOR 120 VOLT CIRCUITS SHALL BE NO. 12 AWG MINIMUM; CONDUCTORS FOR LOW-VOLTAGE DC CIRCUITS SHALL BE NO. 14 AWG MINIMUM FOR ANNUNCIATION CIRCUITS AND NO. 14 AWG MINIMUM FOR INITIATION CIRCUITS. ALL CABLES SHALL BE RATED AND CODE COMPLIANT FOR THEIR USE.
  1. ALL LOW VOLTAGE WIRING NOT INSTALLED IN CONDUITS SHALL BE PLENUM RATED.
  2. PROVIDE COLOR-CODED CONDUCTORS. IDENTIFY CONDUCTORS BY PLASTIC-COATED, SELF-STICKING, PRINTED MARKERS OR BY HEAT-SHRINK TYPE SLEEVES. EACH CONDUCTOR USED FOR THE SAME SPECIFIC FUNCTION SHALL BE DISTINCTLY COLOR CODED. USE DIFFERENT COLOR CODES FOR EACH INTERIOR CIRCUIT. EACH CIRCUIT COLOR CODE WIRE SHALL REMAIN UNIFORM THROUGHOUT THE CIRCUIT.
  3. PIGTAIL OR "T" TAP CONNECTIONS TO THE EVACUATION ALARM HORNS, HORN/STROBES AND STROBES ARE NOT ACCEPTABLE.
  4. UNDERGROUND CIRCUIT OR CIRCUITS IN WET AREAS SHALL BE GEL FILLED CABLES IN SCHEDULED 40 PVC CONDUIT. THERE SHALL BE NO SPLICING OF ANY UNDERGROUND CABLES.
- C. CONDUITS:
  1. IDENTIFICATION OF CONDUIT: NEW CONDUITS CONTAINING FIRE ALARM SYSTEM CONDUCTORS SHALL BE RED, ¾" MINIMUM. JUNCTION-BOXES, COVERS, GUTTERS, AND TERMINAL CABINETS, CONTAINING FIRE ALARM SYSTEM CONDUCTORS, SHALL BE PAINTED RED OR PROVIDED RED IN COLOR WITH ENGRAVED PLASTIC IDENTIFICATION SIGNS PERMANENTLY ATTACHED TO THE EQUIPMENT.
  2. DO NOT RUN FIRE ALARM CIRCUITS IN THE SAME CONDUIT WITH THE NON-FIRE ALARM CIRCUITS.
  3. DO NOT RUN AC CIRCUITS IN THE SAME CONDUIT WITH THE FIRE ALARM CIRCUITS.
  4. PROVIDE WIRING IN RIGID METAL CONDUIT FOR EXTERIOR INSTALLATIONS OR WHERE EXPOSED TO DAMAGE.
  5. CONCEAL CONDUIT IN FINISHED AREAS OF NEW CONSTRUCTION AND WHEREVER PRACTICAL IN EXISTING CONSTRUCTION. CONDUIT RUNS SHALL BE STRAIGHT, NEATLY ARRANGED PROPERLY SUPPORTED AND PARALLEL OR PERPENDICULAR TO WALLS AND PARTITIONS. IDENTIFY CONDUCTORS WITHIN EACH ENCLOSURE WHERE A TAP, SPLICE, OR TERMINATION IS MADE.

PART 3 - EXECUTION

3.01 INSTALLATION:
- A. EQUIPMENT, MATERIALS, INSTALLATION, WORKMANSHIP, INSPECTION, AND TESTING SHALL BE IN ACCORDANCE WITH THE NFPA PUBLICATIONS AND AS MODIFIED HEREIN.
- B. FOLLOW MANUFACTURER'S DIRECTIONS IN ALL CASES FOR INSTALLATION, TESTING AND ENERGIZING.
- C. ACCURATELY SET, LEVEL, SUPPORT, AND FASTEN ALL EQUIPMENT.
- D. SMOKE AND HEAT DETECTORS:
  1. NO DETECTOR SHALL BE LOCATED CLOSER THAN 12 INCHES TO ANY PART OF ANY LIGHTING FIXTURE. DETECTORS, LOCATED IN AREAS SUBJECT TO MOISTURE OR EXTERIOR ATMOSPHERIC CONDITIONS, OR HAZARDOUS LOCATIONS AS DEFINED BY NFPA 70, SHALL BE APPROVES FOR SUCH LOCATIONS.
  2. PROVIDE GUARDS FOR ALL DETECTORS MOUNTED IN ANY HIGH ATHLETIC ACTIVITY AREAS SUCH AS GYM'S, WRESTLING ROOMS, SHOWER ROOMS.
- E. CONDUIT WHERE EXPOSED SHALL BE INSTALLED PARALLEL WITH THE WALLS OR STRUCTURAL ELEMENTS; VERTICAL RUNS TO BE PLUMB; HORIZONTAL RUNS TO BE LEVEL OR PARALLEL WITH STRUCTURE; CONDUIT GROUPED NEATLY TOGETHER WITH STRAIGHT RUNS, ALL BENDS PARALLEL AND UNIFORMLY SPACED.
- F. EARTHQUAKE RESISTANT INSTALLATION/FASTENING OF ALL ELECTRICAL EQUIPMENT SHALL CONFORM TO THE GENERAL REQUIREMENTS OF SECTION 1614A OF THE CALIFORNIA BUILDING CODE.

3.02 PRELIMINARY TESTS:
- A. CONDUCT THE FOLLOWING TESTS DURING INSTALLATION OF WIRING AND SYSTEM COMPONENTS. CORRECT DEFICIENCY PERTAINING TO THESE REQUIREMENTS PRIOR TO FORMAL FUNCTIONAL AND OPERATIONAL TESTS OF THE SYSTEM, PRELIMINARY TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL FIRE AUTHORITY AND PROJECT INSPECTOR OF RECORD TO DETERMINE THE CONFORMANCE WITH THE SPECIFIED REQUIREMENTS.
- B. GROUND RESISTANCE: MEASURE THE RESISTANCE OF EACH CONNECTION TO GROUND. GROUND RESISTANCE SHALL NOT EXCEED 10 OHMS.
- C. DIELECTRIC STRENGTH INSULATION RESISTANCE: TEST THE DIELECTRIC STRENGTH AND THE INSULATING RESISTANCE OF THE SYSTEM INTERCONNECTING WIRING BY MEANS OF AN INSTRUMENT CAPABLE OF GENERATING 500 VOLTS OF DC AND EQUIPPED TO INDICATE LEAKAGE CURRENT 1000 MEGOHMS. FOR THE PURPOSE OF THIS TEST, CONNECT THE INSTRUMENT BETWEEN EACH CONDUCTOR ON THE LINE AND BETWEEN EACH CONDUCTOR AND GROUND AT THE CONTROL PANEL END OF THE LINE, WITH THE OTHER EXTREMITY OPEN CIRCUITED AND ALL SERIES-CONNECTED DEVICES IN PLACE. THE SYSTEM SHALL WITHSTAND THE TEST WITHOUT BREAKDOWN AND SHALL INDICATE A RESISTANCE OF NOT LESS THAN 1.0 MINUTE WITH A DC POTENTIAL OF NOT LESS THAN 100 VOLTS AND NOT MORE THAN 500 VOLTS.
- D. STANDBY BATTERY TEST: PRIOR TO FORMAL INSPECTION AND TESTS, PLACE THE FIRE ALARM SYSTEM ON STANDBY BATTERY POWER FOR 24 HOURS; IMMEDIATELY THEREAFTER, SOUND THE BUILDING EVACUATION ALARM SIGNALING DEVICES FOR 5 MINUTES. WHEN THE TEST IS COMPLETE, THE FIRE ALARM SYSTEM BATTERY CHARGER SHALL BE FULLY RECHARGED WITHIN 24 HOURS.
- A. FIELD INSPECTION AND TEST:
  1. BEFORE FINAL ACCEPTANCE OF THE WORK, PRE-TEST SYSTEM TO DEMONSTRATE COMPLIANCE WITH THE CONTRACT REQUIREMENTS. SYSTEM SHALL BE SUBJECTED TO COMPLETE FUNCTIONAL AND OPERATIONAL TESTS, INCLUDING TESTS IN PLACE OF EACH DETECTOR. WHEN TESTS HAVE BEEN COMPLETED AND CORRECTIONS MADE, SUBMIT A SIGNED AND DATED NFPA CERTIFICATE OF COMPLETION ALONG WITH A COMPLETED TESTING MATRIX WITH THE REQUEST FOR FORMAL INSPECTION AND TESTS.
  2. WHERE APPLICATION OF HEAT WOULD DESTROY A HEAT DETECTOR, IT MAY BE MANUALLY ACTIVATED.
  3. VERIFY THE PROPER RECEIPT OF THE ALARM SIGNALS AT THE CENTRAL STATION FOR THE UDACT PROVIDE PRINTOUT OF TEST REPORTS. IT SHALL BE THE SOLE OBLIGATION OF THE CONTRACTOR TO COORDINATE AND TO PROVIDE ALL TESTING DOCUMENTATION FROM THE CENTRAL STATION.
  4. THE COMMUNICATION LOOPS AND THE INDICATING APPLIANCE CIRCUITS SHALL BE OPENED IN AT LEAST TWO LOCATIONS PER ZONE TO CHECK FOR THE PRESENCE OF CORRECT SUPERVISORY CIRCUITRY.
  5. PERFORM THE FIELD INSPECTION AND TEST IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE, THE OWNER'S REPRESENTATIVE, LOCAL FIRE AUTHORITY AND PROJECT INSPECTOR OF RECORD (IOR).
  6. TEST EQUIPMENT: IT SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO FURNISH TOOLS, INSTRUMENTS, AND MATERIALS REQUIRED FOR A THOROUGH TEST OF THE SYSTEM. THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:
     - a. VOM METER
     - b. MANUFACTURER'S RECOMMENDED SMOKE DETECTOR TESTING DEVICE AND SENSITIVITY TEST EQUIPMENT.
     - c. HEAT SOURCE FOR TESTING HEAT DETECTORS.
     - d. KEYS TO ALL CONTROL PANELS.
     - e. LADDERS

3.03 PROJECT CLOSEOUT:
- A. AS BUILT DRAWINGS:
  1. PROVIDE A COMPLETE SET (FULL SIZE SCALABLE) OF REPRODUCIBLE "AS-BUILT" AND AUTOCAD FORMAT DRAWINGS SHOWING INSTALLED WIRING, COLOR CODING, AND WIRE TAG NOTATIONS FOR EXACT LOCATIONS OF ALL INSTALLED EQUIPMENT, SPECIFIC INTERCONNECTIONS BETWEEN ALL EQUIPMENT, AND INTERNAL WIRING OF THE EQUIPMENT UPON COMPLETION OF SYSTEM.
- B. OPERATING AND INSTRUCTION MANUALS:
  1. OPERATING AND INSTRUCTION MANUALS SHALL BE SUBMITTED PRIOR TO TESTING OF THE SYSTEM. FOUR COMPLETE SETS OF OPERATION AND INSTRUCTIONS MANUALS SHALL BE DELIVERED TO THE OWNER UPON REQUEST.
  2. COMPLETE, ACCURATE, STEP-BY-STEP TESTING INSTRUCTIONS GIVING RECOMMENDED AND REQUIRED TESTING FREQUENCY OF ALL EQUIPMENT, METHODS FOR TESTING EACH INDIVIDUAL PIECE OF EQUIPMENT, AND TROUBLESHOOTING MANUAL EXPLAINING HOW TO TEST THE PRELIMINARY INTERNAL PARTS OR EACH PIECE OF EQUIPMENT SHALL BE DELIVERED UPON COMPLETION OF THE SYSTEM.
- C. MAINTENANCE INSTRUCTIONS SHALL BE COMPLETE, EASY TO READ, UNDERSTANDABLE, AND SHALL PROVIDE THE FOLLOWING INFORMATION:
  1. INSTRUCTIONS ON REPLACING ANY COMPONENTS OF THE SYSTEM, INCLUDING INTERNAL PARTS.
  2. INSTRUCTIONS ON PERIODIC CLEANING AND ADJUSTMENT OF EQUIPMENT WITH A SCHEDULE OF THESE FUNCTIONS.
  3. A COMPLETE LIST OF ALL EQUIPMENT AND COMPONENTS WITH INFORMATION AS TO THE ADDRESS AND TELEPHONE NUMBER OF BOTH THE MANUFACTURER AND LOCAL SUPPLIER OF EACH ITEM.
  4. A USER OPERATING INSTRUCTIONS SHALL BE PROVIDED PROMINENTLY DISPLAYED ON A SEPARATE SHEET LOCATED NEXT TO THE CONTROL UNIT IN ACCORDANCE WITH U.L. STANDARD 864.

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MONTEREY BAY, INC.

Project No. 17558.00

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DATES

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-117638
APPLICATION NUMBER
AC FLS SS
DATE 09-06-2018

REGISTERED PROFESSIONAL ENGINEER
NAJIB ANWARY
No. E21045
EXP. 3/31/19
ELECTRICAL
STATE OF CALIFORNIA

CLIENT
GAVILAN JOINT COMMUNITY COLLEGE DISTRICT

GAVILAN COLLEGE

PROJECT
HVAC CLASSROOM

5055 SANTA TERESA BLVD.
GILROY, CA 95020

SHEET
FIRE ALARM SPECIFICATIONS

PROJECT NUMBER:	1817
ISSUED:	JUNE 28, 2018
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