MADERA UNIFIED SCHOOL DISTRICT

Bid No.030623 MHS
Kitchen HVAC Retrofit

MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA 93637

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO 2019 EDITION TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
2. CHANGE TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY DSA, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
3. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. PROJECT REQUIRES A CLASS 3 INSPECTOR.
4. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
5. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFING THE REQUIRED WORK SHALL SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, CCR)
6. LAYOUT OF MATERIALS, EQUIPMENT AND SYSTEMS IS GENERALLY DIAGRAMMATIC UNLESS SPECIFICALLY DIMENSIONED. SOME WORK MAY BE SHOWN OFFSET FOR CLARITY. THE ACTUAL LOCATIONS OF ALL MATERIALS, PIPING, DUCTWORK, FIXTURES, EQUIPMENT, SUPPORTS, ETC. SHALL BE CAREFULLY PLANNED, PRIOR TO INSTALLATION OF ANY WORK TO AVOID ALL INTERFERENCE WITH EACH OTHER, OR WITH STRUCTURAL, ELECTRICAL, ARCHITECTURAL, OR OTHER ELEMENTS. ALL DUCT AND PIPE OFFSET ELBOWS FOR COORDINATION BETWEEN TRADES ARE NOT SHOWN. CONTRACTOR SHALL INCLUDE SUFFICIENT FUNDS FOR THE COORDINATION OFFSETS IN THE BID. VERIFY THE PROPER VOLTAGE AND PHASE OF ALL EQUIPMENT WITH THE ELECTRICAL PLANS. ALL CONFLICTS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER PRIOR TO THE INSTALLATION OF ANY WORK OR THE ORDERING OF ANY EQUIPMENT.
7. ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE THERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.
   1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
   2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
   3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

   THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

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

   THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. 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 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.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., HCAI (OSHPD) OPM FOR 2013 CBC OR LATER), 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):

MP☒ MD☒ PP☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE HCAI (OSHPD) PRE-APPROVAL MASON WEST OPM #0043-13.

OWNER
MADERA UNIFIED SCHOOL DISTRICT

769 SOUTH PINE STREET
MADERA, CA 93637
(559) 675-4546

CONTACT: CURTIS MANGANAAN

MECHANICAL ENGINEER
LAWRENCE ENGINEERING GROUP

7084 NORTH MAPLE AVE. SUITE 101
FRESNO, CA 93720
(559) 431-0101

CONTACT: RYAN CARLSON

ELECTRICAL ENGINEER

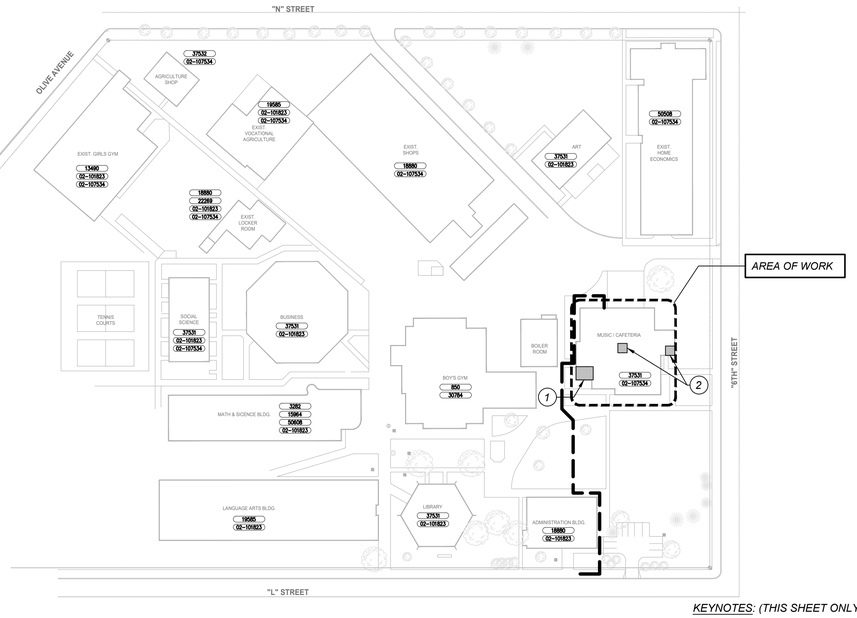
BORELLI & ASSOCIATES, INC.
2032 N. GATEWAY BLVD.
FRESNO, CA 93727
(559) 233-4438

CONTACT: JOHN BORELLI

STRUCTURAL ENGINEER

PARRISH HANSEN
418 CLOVIS AVE.
CLOVIS, CA 93612
(559) 323-1023

CONTACT: BOB PARRISH



VICINITY PLAN
SCALE: 1"=100'-0"

LEGEND:
--- DSA NUMBER (EXISTING BUILDING)
(E) ACCESSIBLE PATH OF TRAVEL

KEYNOTES: (THIS SHEET ONLY)
1. (E) STUDENT ACCESSIBLE RESTROOM.
2. (E) STAFF ACCESSIBLE RESTROOM.
3. THIS PROJECT IS EXEMPT FROM THE REQUIREMENTS IN 11B-202.4 DUE TO EXCEPTION #7.
4. THIS PROJECT HAS NO DEFERRED SUBMITTALS.

APPLICABLE CODES

- 2022 CALIFORNIA ADMINISTRATIVE CODE - CCR TITLE 24, PART 1
- 2019 CALIFORNIA BUILDING CODE - CCR TITLE 24, PART 2
- 2019 CALIFORNIA ELECTRICAL CODE - CCR TITLE 24, PART 3
- 2019 CALIFORNIA MECHANICAL CODE - CCR TITLE 24, PART 4
- 2019 CALIFORNIA PLUMBING CODE - CCR TITLE 24, PART 5
- 2019 CALIFORNIA ENERGY CODE - CCR TITLE 24, PART 6
- 2019 CALIFORNIA FIRE CODE - CCR TITLE 24, PART 9
- 2019 EXISTING BUILDING CODE - CCR TITLE 24, PART 10
- 2019 CALIFORNIA GREEN CODE - CCR TITLE 24 PART 11
- 2019 CALIFORNIA REFERENCE CODE - CCR TITLE 24 PART 12
- TITLE 19 CCR PUBLIC SAFTEY, STATE FIRE MARSHALL REGULATIONS
- 2016 NFPA 72 FOR FIRE ALARM SYSTEM. CFC CH 33 FIRE SAFTEY DURING CONSTRUCTION AND DEMOLITION

SHEET INDEX

CAFETERIA BUILDING ANALYSIS

OCCUPANCY A-2, E
EXISTING AREA 13,041 FT²
CONSTRUCTION TYPE TYPE IV - 1HR. PARTIALLY SPRINKLERED
FLOOD HAZARD ZONE X (UNSHADED):
AS DELINEATED ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP (MAP NUMBER 06039C1155E) FOR COMMUNITY NO. 060172, CITY OF MADERA, MADERA COUNTY, CALIFORNIA, EFFECTIVE JUNE 26, 2008, THE PROPERTY SHOWN ON THIS MAP LIES FULLY WITHIN FLOOD ZONE AREA DESIGNATED ZONE X (UNSHADED), WHICH ARE AREAS OUTSIDE OF 0.2% ANNUAL CHANCE FLOODING.

SCOPE OF WORK

THE SCOPE OF WORK IS AS INDICATED BY THE CONTRACT DRAWINGS AND SPECIFICATION AND IS SUMMARIZED AS FOLLOWS:

- REPLACE EXISTING KITCHEN MAKE-UP AIR UNIT WITH NEW MAKE-UP AIR UNIT.
- REPLACE 1 EXISTING KITCHEN HOOD WITH NEW, INCLUDING CLEAN AGENT FIRE SUPPRESSION SYSTEM.
- REPLACE 2 EXISTING HOOD EXHAUST FANS WITH NEW.

Statement of General Conformance

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

(Application No. 12-120316 File No. 20-H3)

The Architectural, Structural and Electrical Drawings Listed above have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. They have been examined by me for:

1) Design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
2) Coordination with my plans and specifications and is acceptable for incorporation into the construction of this project.

This Statement of General Conformance shall not be construed as relieving me of my rights, duties, and responsibilities under Section 17302 and 81138 of the Education Code and Sections 4-336, 4-341 and 4-344 of Title 24, Part 1. *(Title 24, Part 1, Section 4-317 (b))*

RYAN W. CARLSON
LICENSE NUMBER: M34846
EXPIRATION DATE: 6-30-24

APPROVALS:
APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER
RYAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 01/18/23

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

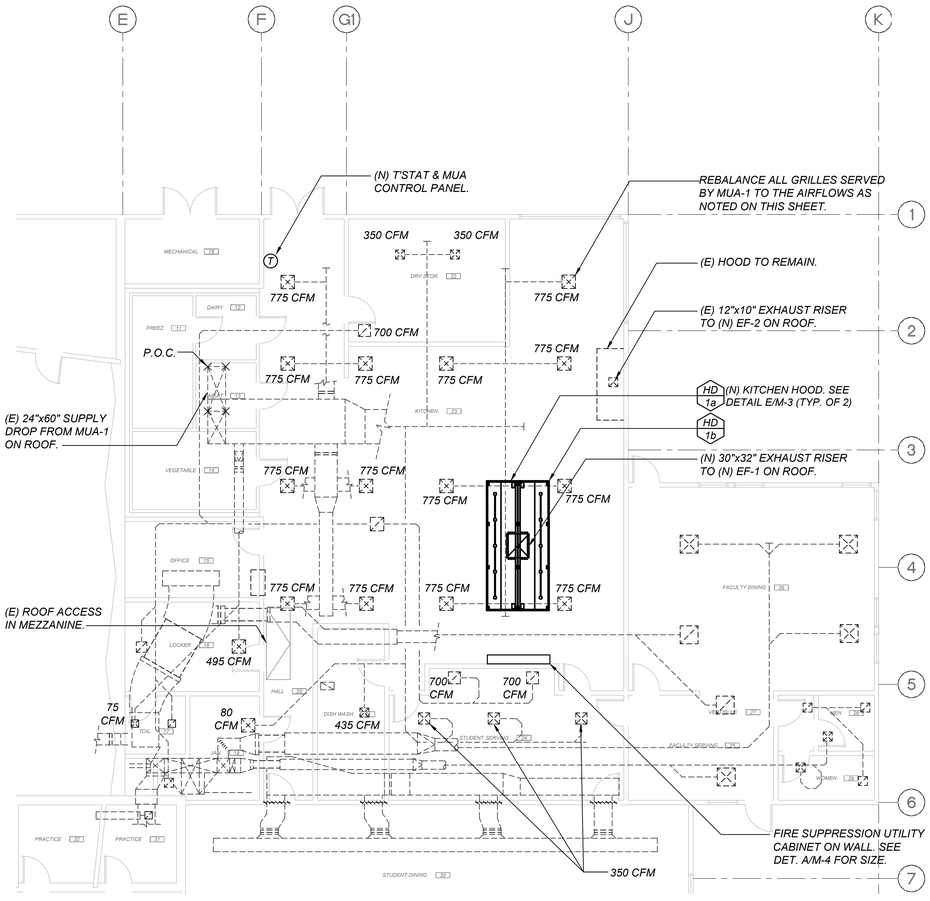
LAWRENCE ENGINEERING GROUP
4910 E. Clinton Way, Suite 101
Fresno, CA 93727
(559) 431-0101
FAX (559) 431-1582

TITLE:
COVER SHEET

SHEET:
G-1

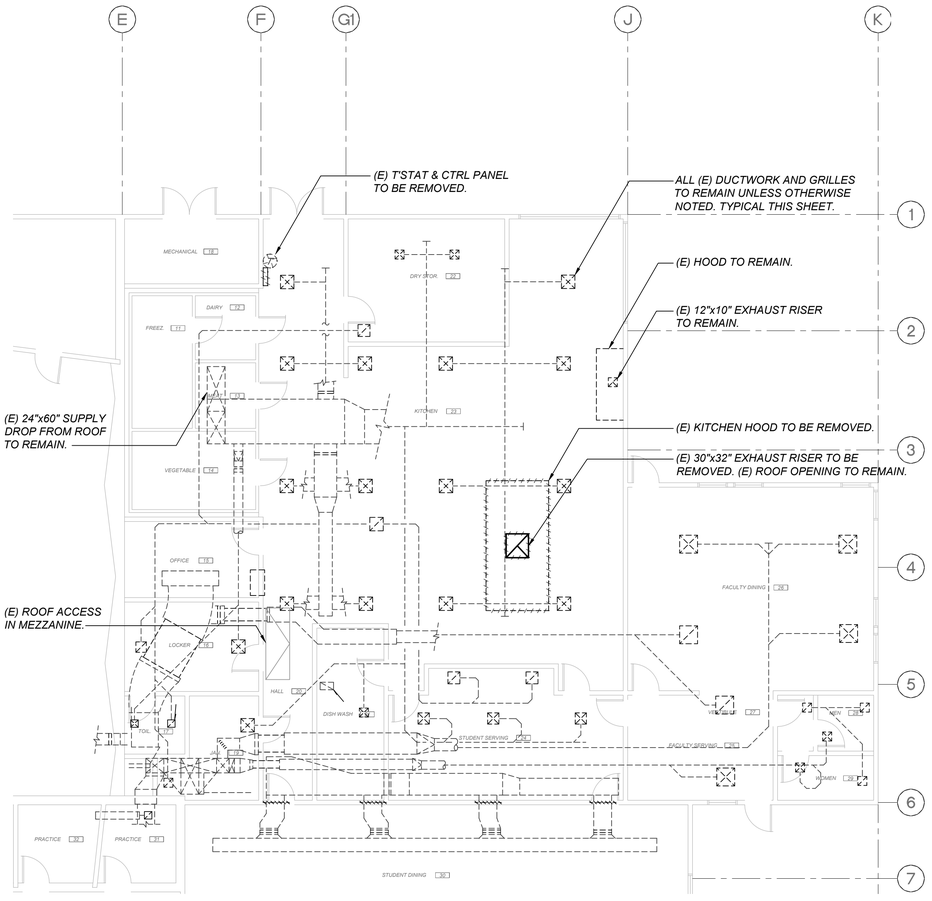
PROJECT 21135

11 February 2023 6:40 AM P:\2021\21135 Madera HS Kitchen HVAC Retrofit\4-Drawings\4 M\G-1 - COVER SHEET.dwg anthonyb



MECHANICAL FLOOR PLAN

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



MECHANICAL DEMOLITION FLOOR PLAN

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

AIR CONDITIONING LEGEND

SYMBOL	ITEM	ABBR
	ROUND DUCT	Ø
	SHEET METAL DUCT	—
	ACOUSTIC LINING FOR DUCT OR GRILLES	(L)
	DUCT W/EXT INSULATION & GALV. SM SUNSHIELD	—
	SUPPLY AIR DUCT DROP	—
	RETURN AIR DUCT DROP	—
	EXHAUST DUCT AIR DROP	—
	SUPPLY AIR DUCT RISE	—
	RETURN AIR DUCT RISE	—
	EXHAUST AIR DUCT RISE	—
	TURNING VANES	TV
	EXTRACTOR	—
	VOLUME CONTROL DAMPER W/LOCKING QUADRANT	VCD
	OPPOSED BLADE DAMPER	OBD
	BACKDRAFT DAMPER	BDD
	VOLUME CONTROL DAMPER W/ REMOTE REGULATOR	VCR
CFM	CUBIC FEET OF AIR PER MINUTE	CFM
M	EMS MOTORIZED DUCT DAMPER/ PIPE VALVE ACTUATOR	—
T	THERMOSTAT @ +4'-0" TOP OF BOX	T'STAT
C	CO_2 SENSOR @ +4'-0" TOP OF BOX	CO_2
T	EMS TEMPERATURE SENSOR @ +4'-0" TOP OF BOX	—
C	EMS CO_2 SENSOR @ +4'-0" TOP OF BOX	CO_2
SP	EMS STATIC PRESSURE SENSOR	SP
DP	EMS DIFFERENTIAL PRESSURE SENSOR	DP
CS	EMS CURRENT SENSOR	CS
	DIRECTION OF FLOW	—
	SUPPLY AIR	SA
	RETURN AIR	RA
	EXHAUST AIR	EA
	OUTSIDE AIR	OSA
	PIPE/DUCT TURN DOWN	—
	PIPE/DUCT TURN UP	—
	POINT OF CONNECTION	POC
	EXISTING (DESIGNATED)	(E)
	NEW (DESIGNATED)	(N)
SD	DUCT SMOKE DETECTOR	SD
A/V	AUDIBLE/VISUAL ALARM	A/VA
	BYPASS TIMER	BPT
G	LOW PRESSURE NATURAL GAS	G
C	CONDENSATE DRAIN	CD

NOTE:

WALLS AND CEILINGS ARE 1 HOUR RATED ENVELOPE FOR BUILDING PER ORIGINAL APPLICATION NO. 37531

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER
RYAN W. CARABAZ
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 01/18/23

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

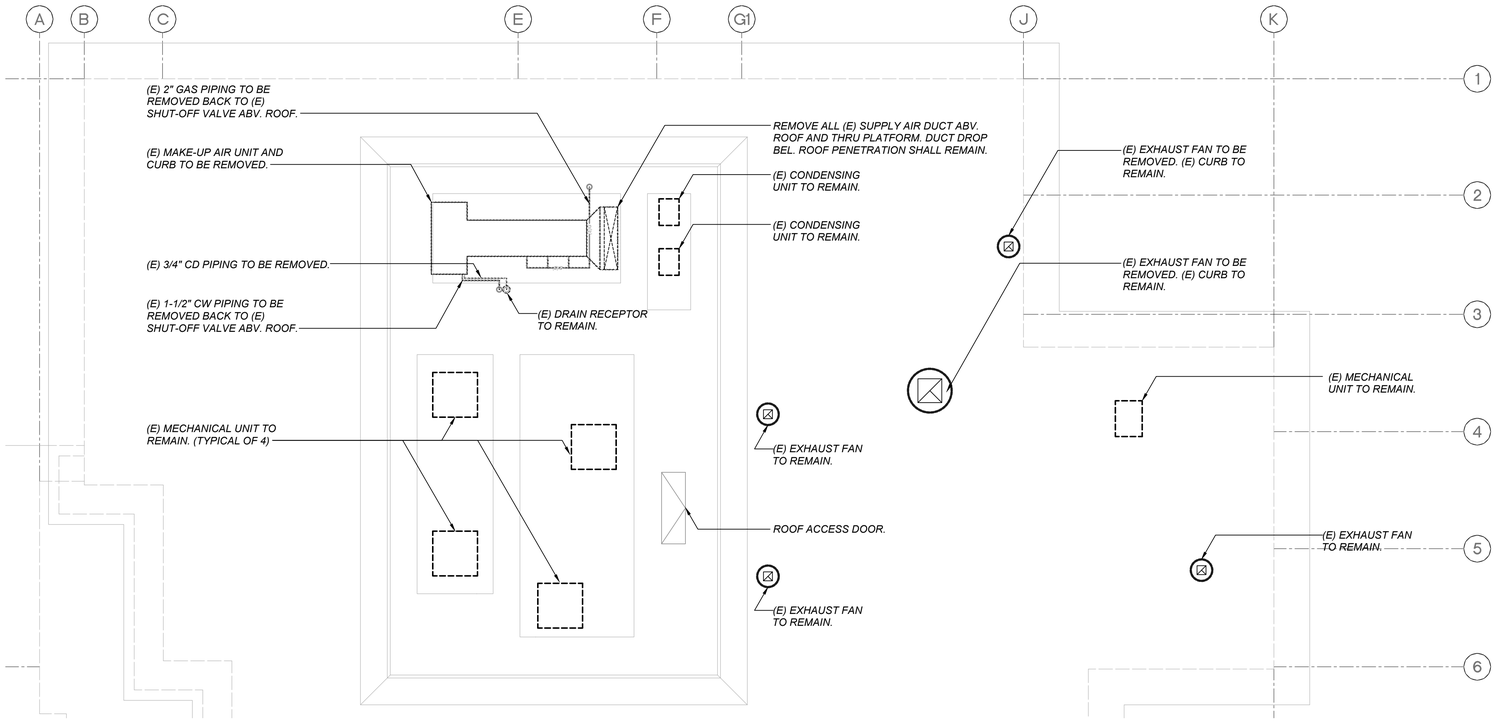
LAWRENCE ENGINEERING GROUP
4910 E. Clinton Way, Suite 101
Fresno, CA 93727
(559) 431-0101
FAX (559) 431-1302

TITLE:
MECHANICAL
FLOOR
PLANS

SHEET: M-1

PROJECT 21135

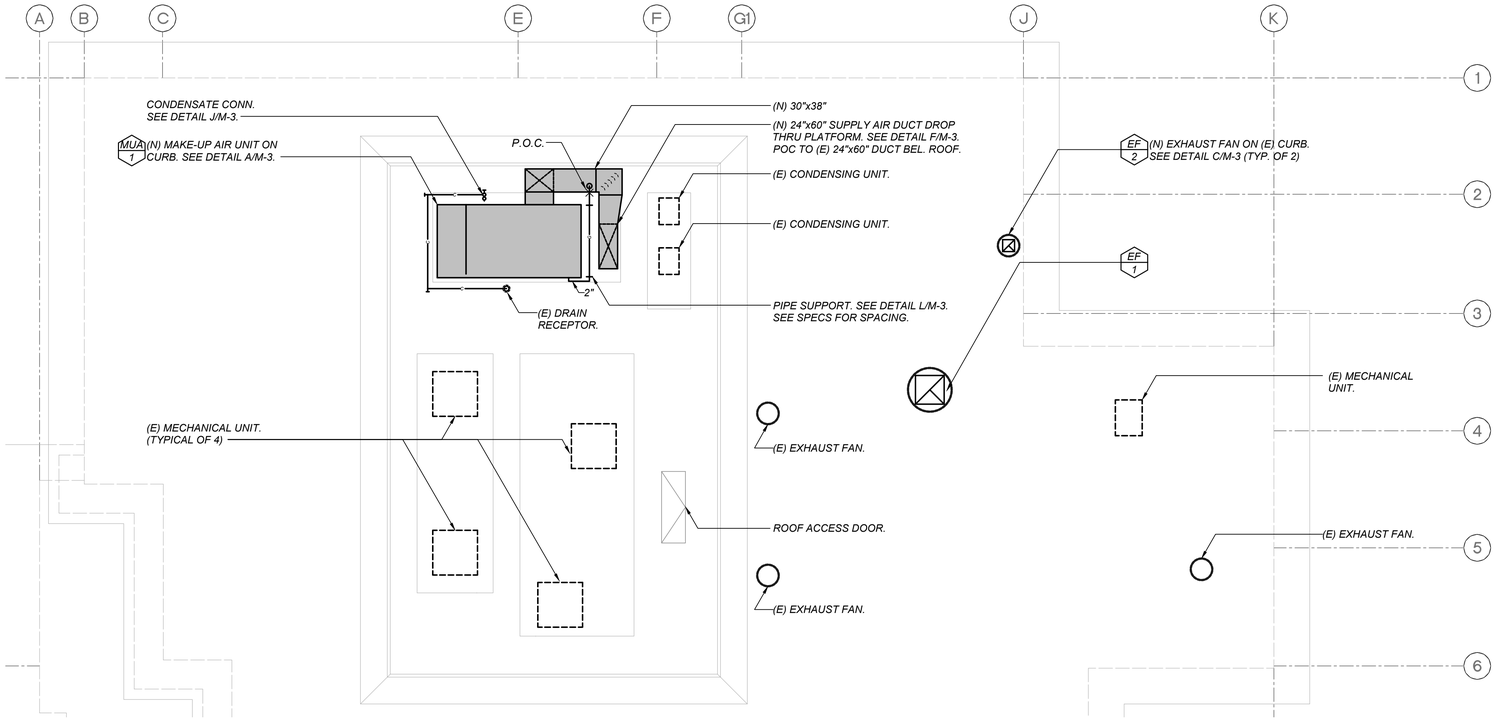
25 January 2023 11:40 AM P:\2021\21135 Madera HS Kitchen HVAC Retrofit\4-Drawings\4 MVM-1 — MECHANICAL FLOOR PLANS.dwg anthonyb



PARTIAL MECHANICAL DEMOLITION ROOF PLAN

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

NORTH



PARTIAL MECHANICAL ROOF PLAN

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

NORTH

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER
RYAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 01/18/23

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

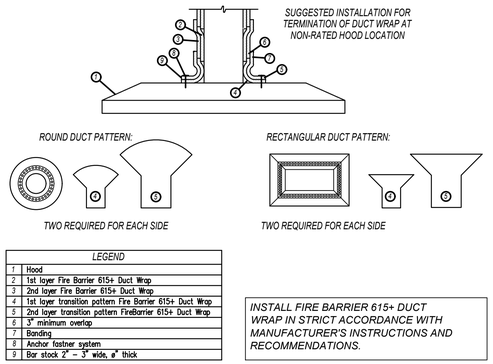
REVISIONS

LAWRENCE ENGINEERING GROUP
4710 E. Clinton Way, Suite 101
Fresno, CA 93727
(559) 431-9101
FAX (559) 431-1202

TITLE:
MECHANICAL
ROOF
PLANS

SHEET:
M-2

PROJECT 21135



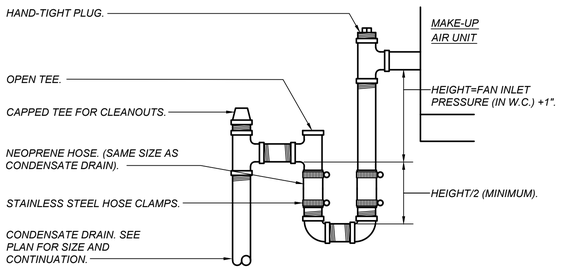
LEGEND	
1	Hood
2	1st layer Fire Barrier 615+ Duct Wrap
3	2nd layer Fire Barrier 615+ Duct Wrap
4	1st layer transition pattern Fire Barrier 615+ Duct Wrap
5	2nd layer transition pattern FireBarrier 615+ Duct Wrap
6	3" minimum overlap
7	Banding
8	Anchor fastner system
9	Bar stock 2" – 3" wide, ø" thick

INSTALL FIRE BARRIER 615+ DUCT WRAP IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

FIRE WRAP GREASE DUCT DETAIL

H M-3

SCALE: NONE

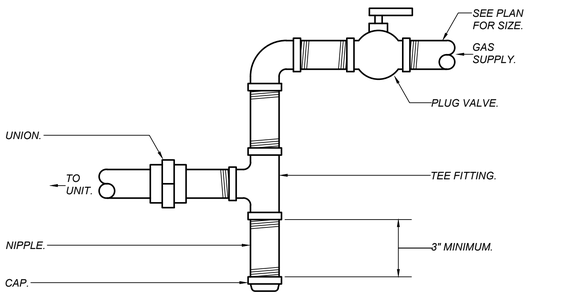


CONDENSATE DRAIN CONNECTION DETAIL

J M-3

SCALE: NONE

P020

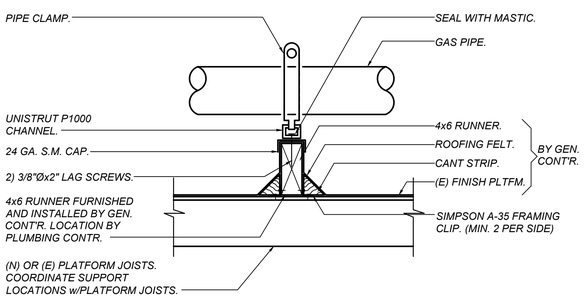


GAS PIPING DIRT LEG DETAIL

K M-3

SCALE: NONE

P128



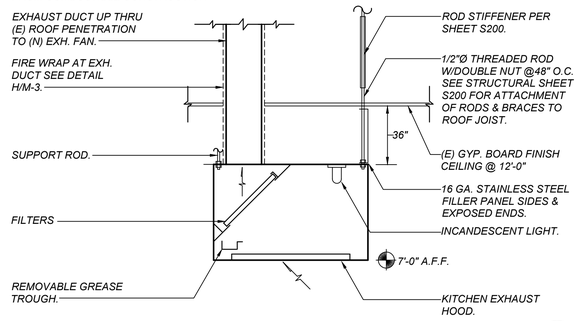
PIPE SUPPORT ON ROOF DETAIL

L M-3

SCALE: NONE

P001

NOTE:
KITCHEN HOOD MUST MAINTAIN 18" MINIMUM FROM COMBUSTIBLE CONSTRUCTION

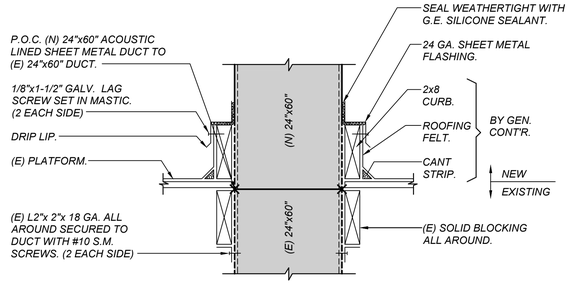


KITCHEN HOOD MOUNTING DETAIL

E M-3

SCALE: NONE

MM052

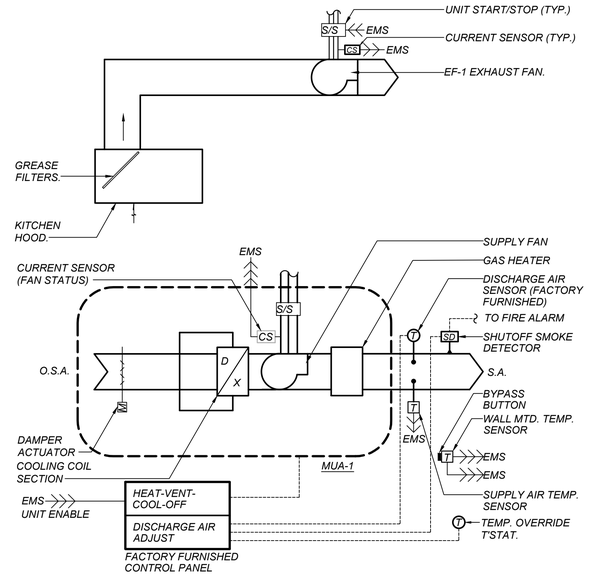


DUCT THRU ROOF DETAIL

F M-3

SCALE: NONE

MD039

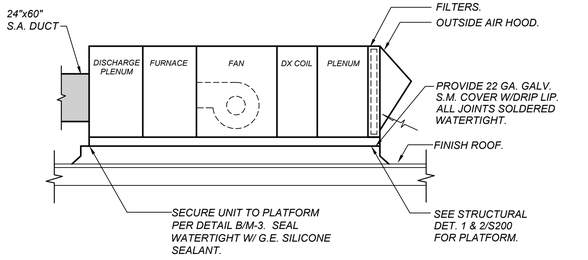


KITCHEN HVAC FLOW DIAGRAM

G M-3

SCALE: NONE

MC022

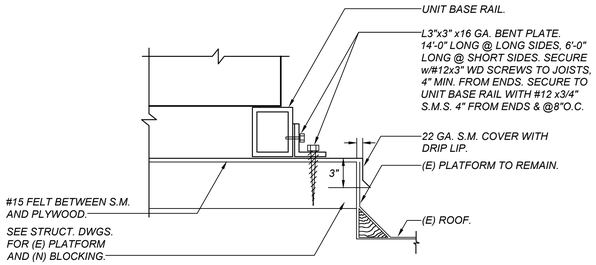


MAKE-UP AIR UNIT MOUNTING DETAIL

A M-3

SCALE: NONE

MM094

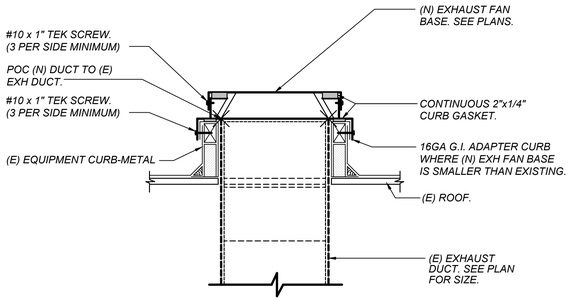


MAKE-UP AIR UNIT MOUNTING DETAIL

B M-3

SCALE: NONE

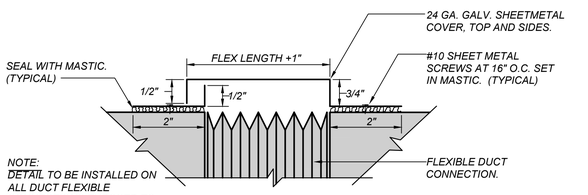
MM048



EXHAUST FAN MOUNTING DETAIL

C M-3

SCALE: NONE



SHEET METAL WEATHER COVER FOR FLEXIBLE DUCT CONNECTION DETAIL

D M-3

SCALE: NONE

MD048

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER
RYAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 01/18/23

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

LAWRENCE ENGINEERING GROUP
4910 E. Clinton Way, Suite 101
Fresno, CA 93727
(559) 431-0101
FAX (559) 431-1302

TITLE:
MECHANICAL
DETAILS

SHEET: M-3

PROJECT 21135

HOOD INFORMATION

HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.) LENGTH	WIDTH	HEIGHT	HOOD CONSTR.	COOKING LOAD / DUTY RATING	TOTAL CFM	EXHAUST COLLAR(S) WIDTH	LENGTH	DIA.	CFM	S.P.	SUPPLY MUA CFM	SUPPLY AC CFM	TOTAL WEIGHT LBS.	SECTION LOCATION
1	HOOD-1	GXEW-174-S	174	42	24	430 SS WHERE EXPOSED	HEAVY	4350	10	36		4350	0.843			410.163	SINGLE

HOOD INFORMATION

HOOD NO.	MARK	LIGHTING DETAILS FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	GREASE FILTRATION DETAILS TYPE / MODEL MATERIAL	QTY	SIZE (IN.) L	H	LOCATION	UTILITY CABINET(S) FIRE SYSTEM TYPE	SIZE	CONTROLS MODEL	INTERFACE
1	HOOD-1	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	8	53.42	X-TRACTOR STAINLESS STEEL	7	16	20	WALL				
						3	20						

HOOD OPTIONS

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #MH11726
BACK INTEGRAL AIR SPACE - 3 IN WIDE
36 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED
SHIPPED LOOSE EXHAUST COLLAR(S)
WALL UTILITY CABINET 27 IN HIGH 45 IN LONG 20 IN WIDE
HOOD ROW IS FRONT SIDE OF DOUBLE ISLAND CONFIGURATION
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

HOOD INFORMATION

HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.) LENGTH	WIDTH	HEIGHT	HOOD CONSTR.	COOKING LOAD / DUTY RATING	TOTAL CFM	EXHAUST COLLAR(S) WIDTH	LENGTH	DIA.	CFM	S.P.	SUPPLY MUA CFM	SUPPLY AC CFM	TOTAL WEIGHT LBS.	SECTION LOCATION
1	HOOD-2	GXEW-174-S	174	42	24	430 SS WHERE EXPOSED	HEAVY	4350	9	21		2175	0.809			410.163	SINGLE
									9	21		2175	0.809				

HOOD INFORMATION

HOOD NO.	MARK	LIGHTING DETAILS FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	GREASE FILTRATION DETAILS TYPE / MODEL MATERIAL	QTY	SIZE (IN.) L	H	LOCATION	UTILITY CABINET(S) FIRE SYSTEM TYPE	SIZE	CONTROLS MODEL	INTERFACE
1	HOOD-2	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	8	51.92	X-TRACTOR STAINLESS STEEL	7	16	20	WALL				
						3	20						

HOOD OPTIONS

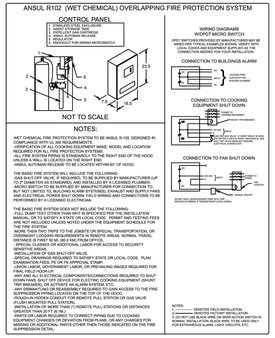
UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #MH11726
BACK INTEGRAL AIR SPACE - 3 IN WIDE
36 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED
FACTORY MOUNTED EXHAUST COLLAR(S)
WALL UTILITY CABINET 27 IN HIGH 84 IN LONG 20 IN WIDE
HOOD ROW IS BACK SIDE OF DOUBLE ISLAND CONFIGURATION
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH

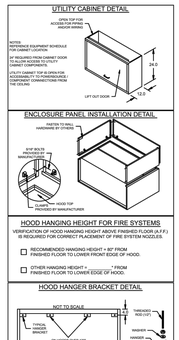
FIRE SYSTEM INFORMATION

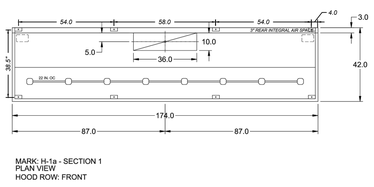
MARK	MODEL	LOCATION	FLOW POINTS HOODS	FLOW POINTS PCU	SUPPLY LINE	DETECTION	MARK(S) PROTECTED BY FIRE SYSTEM
FIRE SUPPRESSION	ANSUL R-102 OVERLAPPING WET CHEMICAL	REMOTE MOUNTED	38 UTILIZED 42 AVAILABLE		CONTINUOUS	FUSIBLE LINK	HOOD-1 SECTION 1 HOOD-2 SECTION 1

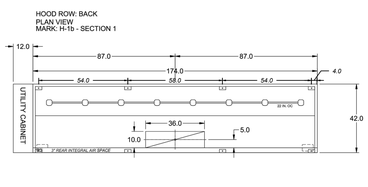
FIRE SYSTEM OPTIONS AND ACCESSORIES

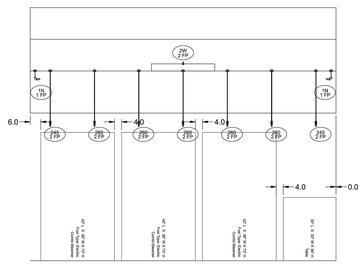
FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
OVERLAPPING PROTECTION TYPE - FULL HOOD
METAL BLOW-OFF CAPS - INCLUDED
GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 2", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE200
HOOD SUPPRESSION TANK - INCLUDED - 2 I GAL - ((7) 3.0 TANK(S))
REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS

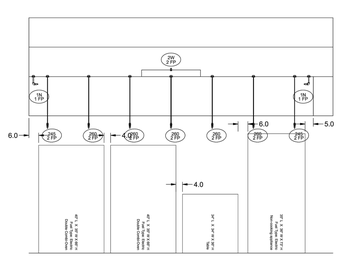


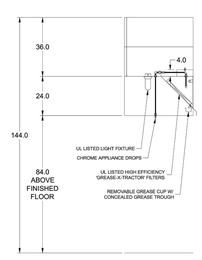












KITCHEN HOOD FIRE SUPPRESSION DETAIL

A / M-4

SCALE: NONE

KITCHEN HOOD SCHEDULE

DESIGNATION	HD 1A	HD 1B
SIZE (L X W) (IN.)	174 x 42	174 x 42
CLASS	I	I
NO. OF SIDES	4	4
CFM	4,350	4,350
DUCT COLLAR-SIZE (IN.)	36 X 10	36 X 10
DUCT COLLAR-VEL (FPM)	1,740	1,740
STATIC DROP (IN. WC)	0.75	0.75
MATERIAL	430 STAINLESS	430 STAINLESS
LIGHTING-TYPE/QTY.	CFL / 8	CFL / 8
FILTER-QTY/SIZE	0/0" X 0"	0/0" X 0"
FILTER-TYPE	1	1
MANUFACTURER	GREENHECK	GREENHECK
TYPE	ISLAND	ISLAND
MODEL NUMBER	GXEW-174.00-S	GXEW-174.00-S
CONTROL	2	2
LOCATION	KITCHEN	KITCHEN
OPER. WT. (LBS)	425	425
ACCESSORIES	1,3	1,3

1. STAINLESS STEEL BAFFLE GREASE FILTERS
2. REMOTE CONTROL PANEL. SEE KITCHEN HOOD CONTROL DIAGRAM.
3. WALL UTILITY CABINET, ANSUL R-102 WET CHEMICAL FIRE SUPPRESSION SYSTEM WITH REMOTE PULL STATION.

EXHAUST FAN SCHEDULE

DESIGNATION	EF 1	EF 2
CFM	8,700	1,600
ESP (IN WC)	0.50	0.25
HP/ WATTS	5 / 1.71	0.5 / 0.14
VOLTS/ PHASE	460 / 3	115 / 1
FLA (AMPS)	7.4	6.2
MCA / MOP (AMPS)	9 / 15	8 / 15
DRIVE	DIRECT	DIRECT
RPM	630	716
TIP SPEED/ SONES	5,030 / 16.2	3,115 / 7.7
MANUFACTURER	GREENHECK	GREENHECK
TYPE	UPBLAST	UPBLAST
MODEL NUMBER	CUE-300-VG	CUE-160-VG
CONTROL	2	2
SERVICE	HD-1a, 1b	HD-2
OPER. WT. (LBS)	400	90
ACCESSORIES	1	1

1. ALUMINUM HOUSING, HINGED BASE, JUNCTION BOX MOUNTED & WIRED, NEMA 3R SWITCH, UL 762 LISTED, HIGH TEMP CURB SEAL AT 1500°F GREASE TRAP, AND VARI-GREEN MOTOR w/DIAL AND 0-10VDC INPUT.
2. FAN WILL BE CONTROLLED BY THE HOOD CONTROLLER FOR HD-1, SEE DETAIL -/M-4.

MAKE-UP AIR UNIT SCHEDULE

	DESIGNATION	MUA 1
	VOLTS/PHASE	460 / 3
	F.L.A.	85.80
	MCA/MOCP (AMPS)	105 / 125
	DIMENSIONS (LxWxH) (IN.)	193 x 98 x 101
BLOWER	SUPPLY AIR (CFM)	13,000
BLOWER	EXT. SP (IN. WC)	1
BLOWER	MIN. O.S.A. (CFM)	13,000
BLOWER	NUMBER OF FANS	2
BLOWER	DRIVE	DIRECT
BLOWER	HP / BHP (PER FAN)	7.5 / 5.33
BLOWER	RPM (PER FAN)	1,770
COOLING	SENSIBLE (MBH)	560.1
COOLING	TOTAL (MBH)	571.8
COOLING	EADB/EAWB (°F)	105.0 / 73.7
COOLING	AMBIENT AIR (°F)	105.0
COOLING	LADB / LAWB (°F)	66.8 / 62.5
COOLING	REFRIGERANT	R-410A
HEATING	CAPACITY @ 47 DEG. (MBH)	960.0
HEATING	OUTPUT CAPACITY (MBH)	1,200.0
HEATING	FUEL	NAT. GAS
HEATING	AFUE (%)	80.0
HEATING	EAT / LAT (°F)	31.5 / 94.5
FILTERS	QUANTITY/SIZE	8 / 20"x20"x2"
FILTERS	QUANTITY/SIZE	4 / 16"x20"x2"
FILTERS	TYPE	MERV 13
FILTERS	P D (IN WC)	0.3
	MANUFACTURER	GREENHECK
	DISCHARGE	HORIZONTAL
	MODEL NUMBER	RV-75-40D-T
	LOCATION	ROOF
	OPER. WT (LBS)	6,204
	ACCESSORIES	1

1. DOUBLE WALL INSULATED CABINET, HINGED ACCESS PANELS, FACTORY DISCONNECT, 5:1 MODULATING FURNACE FURNACE, VFD, FILTER SENSOR, SUPPLY AIR SMOKE DETECTOR

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC: A
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER
RYAN W. CARTER
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 01/18/23

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

LAWRENCE ENGINEERING GROUP
Fresno, CA 93727
FAX (559) 431-1562
4910 E. Clinton Way, Suite 101
(559) 431-0101

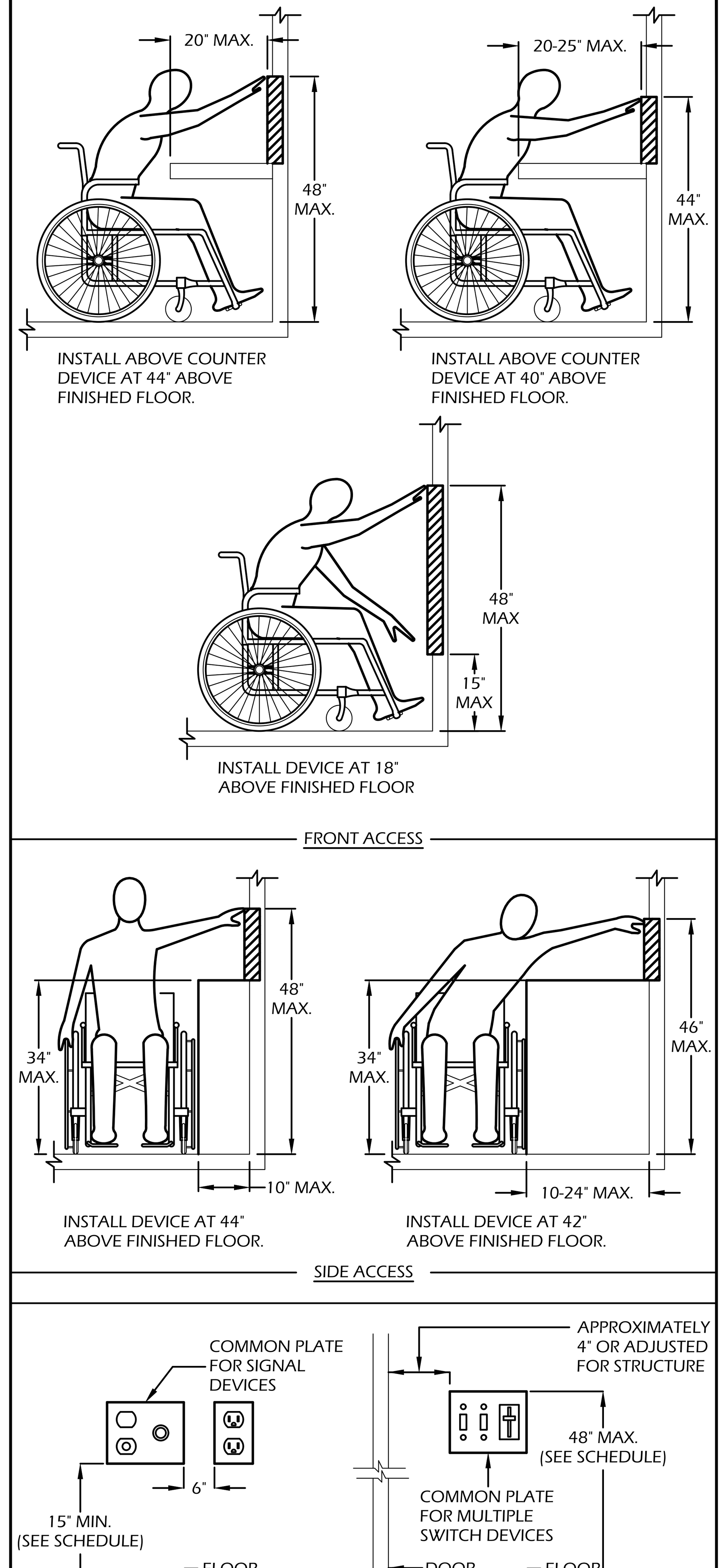
TITLE: MECHANICAL SCHEDULES

SHEET: M-4

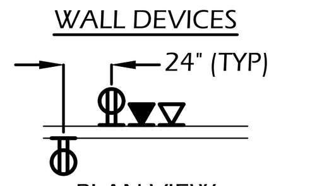
PROJECT 21135

TYPICAL WALL DEVICE MOUNTING HEIGHTS

ADA GUIDELINES

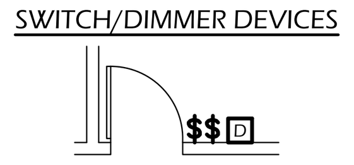


WALL DEVICES



PLAN VIEW

SWITCH/DIMMER DEVICES



PLAN VIEW

DEVICE TYPE	MOUNTING HEIGHT
SWITCHES	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
DIMMERS	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
RECEPTACLES	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
TEL. OUTLETS (OFFICE)	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
TEL. OUTLETS (CLASSROOMS)	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
DATA OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
INTERCOM OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
TELEVISION OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
MICROPHONE OUTLETS	NO LESS THAN 15" A.F.F. TO BOTTOM OF DEVICE
RECEPTACLES, OUTLETS, SWITCHES, ETC. MOUNTED ABOVE COUNTERS	WITHIN THE REACH RANGE SPECIFIED IN SECTION 11B-308 OF THE CALIFORNIA BUILDING CODE.
CLOCKS	AS SHOWN ON DRAWINGS
SPEAKERS	AS SHOWN ON DRAWINGS
HAND DRYERS	REFER TO ARCHITECTURAL PLANS
HAIR DRYERS	REFER TO ARCHITECTURAL PLANS
WALL SCONCES	ABOVE 80" FOR PROJECTIONS INTO CORRIDORS OF MORE THAN 4" OR AS SHOWN ON DRAWING
EXIT LIGHTS	SEE DETAILS
EXIT MARKERS	SEE DETAILS
EMERGENCY LIGHTING WALL PACK	AS SHOWN ON DRAWINGS
KEYPADS	NO MORE THAN 48" A.F.F. TO TOP OF DEVICE
WIREMOLD	MOUNTING HEIGHT SHALL BE SUCH THAT THE LOWEST DEVICE MOUNTED ON WIREMOLD IS AT 15" A.F.F. TO BOTTOM OF DEVICE, U.O.N.

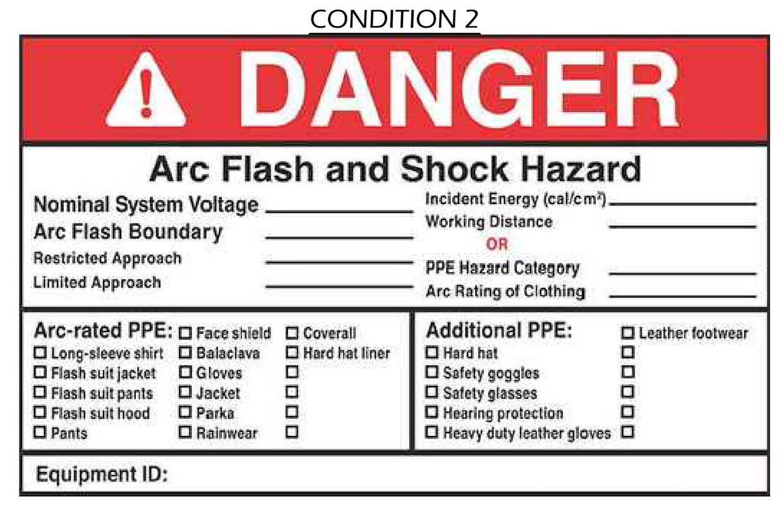
NOTES:
1. ALL VERTICAL MEASUREMENTS ARE 'ABOVE FINISHED FLOOR' - (A.F.F.).
2. SEE DRAWINGS FOR NON-TYPICAL MOUNTING HEIGHTS.
3. WHERE MOUNTING HEIGHTS ARE NOT SHOWN, REFER TO ARCHITECTURAL PLANS.
4. RECEPTACLES, LIGHT SWITCHES, TELEPHONE-DATA OUTLETS AND OTHER RECESSED ELECTRICAL DEVICES THAT ARE SHOWN BACK-TO-BACK ON WALLS SEPARATING CORRIDORS, ROOMS AND OPEN AREAS SHALL BE SEPARATED HORIZONTALLY BY AT LEAST 24 INCHES. THIS REQUIREMENT IS TO SATISFY BOTH THE CONDITIONS AT FIRE RATED CORRIDORS AND SOUND TRANSMISSION FACTOR BETWEEN ALL CORRIDORS, ROOMS AND OPEN AREAS INCLUDING EXTERIOR WALLS.

ARC FLASH WARNING LABEL REQUIREMENTS

CONDITION 1

ARC FLASH HAZARD HAZARD WARNING LABELS SHALL BE FIELD MARKED/PLACED ON ALL NEW AND EXISTING ELECTRICAL DISTRIBUTION BOARDS, MAIN SWITCHBOARDS, TRANSFORMERS, PANELS, PANELBOARDS, DISCONNECTS, MCC'S. PER CEC/NEC 110.16A THAT IS WITHIN THE SCOPE OF THIS PROJECT. LABELS SHALL BE APPLIED TO EXISTING EQUIPMENT WHERE NEW CONNECTIONS ARE MADE. THE LABELS SHALL MEET THE REQUIREMENTS OF 110.21(B) PER ANSI Z535.4-2011 GUIDELINES BY USING EFFECTIVE COLORS, SYMBOLS OR ANY COMBINATION THEREOF.

CONDITION 2



ARC FLASH HAZARD WARNING LABELS FOR AN ENTIRELY NEW ELECTRICAL SERVICE AND DISTRIBUTION SYSTEMS, THE EXCEPTION TO 110.16(B) SHALL BE UTILIZED AND ALL ELECTRICAL COMPONENTS OF THE DISTRIBUTION EQUIPMENT SHALL HAVE AN ARC FLASH WARNING LABEL WITH THE FOLLOWING INFORMATION:

a. NOMINAL SYSTEM VOLTAGE
b. ARC FLASH BOUNDARY
c. MINIMAL ARC RATING OF CLOTHING
d. AT LEAST ONE, BUT NOT BOTH OF THE FOLLOWING:
   - INCIDENT ENERGY & CORRESPONDING WORKING DISTANCE
   - THE ARC FLASH PPE CATEGORY

THE LABELS SHALL MEET THE REQUIREMENTS OF 110.21(B) PER ANSI Z535.4-2011 GUIDELINES BY USING EFFECTIVE COLORS, SYMBOLS OR ANY COMBINATION THEREOF. THE CONTRACTOR SHALL HAVE THE EQUIPMENT MANUFACTURER PROVIDE THE REQUIRED LABELING OR OBTAIN THE SERVICES OF A THIRD PARTY OR THE ELECTRICAL ENGINEER OF RECORD.

CONDITION 3

ARC FLASH HAZARD WARNING LABELS SHALL BE FIELD MARKED/PLACED ON ALL NEW SERVICE EQUIPMENT WITH THE FOLLOWING INFORMATION: NOMINAL SYSTEM VOLTAGE, AVAILABLE FAULT CURRENT AT THE SERVICE OVERCURRENT PROTECTIVE DEVICES, CLEARING TIME OF THE SERVICE OVERCURRENT PROTECTIVE DEVICES BASED ON THE AVAILABLE FAULT CURRENT AT THE SERVICE EQUIPMENT, THE DATE THE LABEL WAS APPLIED. THE LABELS SHALL MEET THE REQUIREMENTS OF 110.21(B) PER ANSI Z535.4-2011 GUIDELINES BY USING EFFECTIVE COLORS, SYMBOLS OR ANY COMBINATION THEREOF.

120V BRANCH CIRCUIT VOLT DROP CONDUCTOR LENGTH CHART

LOAD IN VOLT AMPERES	LENGTH OF CONDUCTOR — WIRE SIZE IN (GAUGE)				
	#12	#10	#8	#6	#4
1200VA	74	121	183	284	434
1560VA	57	93	141	218	334
1800VA	49	81	122	189	289
1920VA	46	76	115	178	271
2340VA	X	62	94	146	223
2880VA	X	51	76	118	181
3000VA	X	48	73	114	174
3900VA	X	X	56	87	134
4800VA	X	X	46	71	108

NOTES:
1. THIS CHART IS FOR COPPER CONDUCTORS ONLY.
2. THIS CHART ASSUME AN 80% POWER FACTOR AND STEEL RACEWAYS.
3. 2019 CALIFORNIA ENERGY CODE, 130.5(c) ALLOWS A MAXIMUM COMBINED VOLTAGE DROP OF 5%. THIS CHART ASSUMES A MAXIMUM LENGTH OF CONDUCTORS FOR LESS THAN 2% VOLTAGE DROP ON A BRANCH CIRCUIT AT GIVEN VA LOAD.
4. USE WIRE SIZE FROM THIS CHART UNLESS LARGER CONDUCTOR SIZES ARE NOTED ON THE DRAWINGS.
5. FOR VA VALUES NOT SHOWN USE NEXT HIGHEST VALUE FROM THE CHART.

STANDARD SYMBOL LEGEND

- FIXTURE DESIGNATOR - '#' INDICATES FIXTURE TYPE.
- LIGHT FIXTURE - APPROXIMATELY TO SCALE
- FIXTURE WITH 90 MINUTE EMERGENCY BATTERY BACK-UP UNIT - SEE TYPICAL WIRING DETAIL
- LIGHT FIXTURE - WALL OR CEILING MOUNTED. '3' INDICATES CIRCUIT, 'a' INDICATES SWITCH CONTROL.
- EXIT LIGHTS- CEILING OR WALL MOUNTED, ARROW(S) INDICATES DIRECTION.
- EXISTING POLE LIGHTING
- S1 WATTSTOPPER LMRC-101 ON/OFF, 1 SWITCH LEG LIGHTING CONTROLLER
- S2 WATTSTOPPER LMRC-102 ON/OFF, 2 SWITCH LEG LIGHTING CONTROLLER
- D1 WATTSTOPPER LMRC-211 DIMMING, 1 SWITCH LEG LIGHTING CONTROLLER
- D2 WATTSTOPPER LMRC-212 DIMMING, 2 SWITCH LEG LIGHTING CONTROLLER
- D3 WATTSTOPPER LMRC-213 DIMMING, 3 SWITCH LEG LIGHTING CONTROLLER
- WATTSTOPPER LMDC-100 DUAL TECHNOLOGY MOTION SENSOR
- WATTSTOPPER LMDX-100 DUAL TECHNOLOGY OCCUPANCY SENSOR
- LVa WATTSTOPPER LMSW-101 SWITCH, 'a' INDICATES SWITCH LEG CONTROL. 2 LETTERS NEXT TO EACHOTHER WITHOUT A COMMA INDICATES 1 SWITCH LEG
- Da WATTSTOPPER LMDM-101 DIMMER, 'a' INDICATES SWITCH LEG CONTROL. 2 LETTERS NEXT TO EACHOTHER WITHOUT A COMMA INDICATES 1 SWITCH LEG
- PS WATTSTOPPER LMLS-400 PHOTOSENSOR
- R2 WATTSTOPPER LMPL-201 RECEPTACLE CONTROLLER
- 'PNL'-#a / D#: PANEL IDENTIFICATION; CIRCUIT IDENTIFICATION; SWITCH-LEG IDENTIFICATION

LIGHTING AND RECEPTACLE ROOM CONTROLLERS SHALL BE LOCATED ABOVE THE T-BAR CEILING FOR THE ROOMS THEY ARE CONTROLLING. IF THE ROOM WITH THE CONTROLLED DEVICES HAS A HARD CEILING THEN LOCATE THE ROOM CONTROLLERS AT THE NEAREST ADJACENT ROOM WITH A T-BAR CEILING. IF NO T-BAR CEILINGS EXISTS LOCATE THE ROOM CONTROLLERS IN THE ELECTRICAL ROOM. LABEL ALL ROOM LIGHTING AND RECEPTACLE CONTROLLERS WITH THE ROOM NAME, ROOM NUMBER, AND CIRCUIT(S) THEY CONTROL.

- SKYLIT OR PRIMARY SIDE DAYLIT ZONE
- SECONDARY SIDE DAYLIT ZONE
- $a SPST TOGGLE WALL SWITCH - 20A, 120/277V, `a' INDICATES CONTROL
- $OC OCCUPANCY SENSOR COMBO WALL SWITCH - 20A, 120/277V RATED
- CEILING OR WALL MOUNTED JUNCTION BOX
- PULLBOX(S) - SIZE AND NUMBER AS INDICATED
- RECEPTACLE, DUPLEX - 20A, 120V & GROUND
- RECEPTACLE, DUPLEX CEILING MOUNTED
- RECEPTACLE, DUPLEX - WITH ONE-HALF SWITCHED/CONTROLLED
- RECEPTACLE, DUPLEX- WITH GFCI PROTECTION
- WP RECEPTACLE, DUPLEX - WITH GFCI PROTECTION IN WEATHERPROOF HOUSING
- 20A, 120V RECEPTACLE, DUPLEX- WITH TWO USB PORTS
- RECEPTACLE, DOUBLE DUPLEX - (2) 20A, 120V & GROUND
- RECEPTACLE, DOUBLE DUPLEX CEILING MOUNTED
- RECEPTACLE, DOUBLE DUPLEX WITH GFCI PROTECTION
- RECEPTACLE, DOUBLE DUPLEX - WITH ONE-HALF SWITCHED/CONTROLLED
- RECEPTACLE, DOUBLE DUPLEX - WITH ONE-HALF SWITCHED/CONTROLLED, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.
- RECEPTACLE, SPECIAL - REFER TO FLOOR PLAN FOR RECEPTACLE SIZE.
- TELEPHONE OUTLET: PROVIDE & INSTALL 2-GANG BOX WITH 1" CONDUIT. STUB-UP INTO T-BAR CEILING. FOR HARD CEILINGS, RUN THE CONDUIT TO THE CABLE TERMINATION LOCATION INDICATED PER THE RISER DIAGRAM.
- DATA OUTLET: PROVIDE & INSTALL 2-GANG BOX WITH 1" CONDUIT. STUB-UP INTO T-BAR CEILING. FOR HARD CEILINGS, RUN THE CONDUIT TO THE CABLE TERMINATION LOCATION INDICATED PER THE RISER DIAGRAM.
- RECEPTACLE, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.
- RECEPTACLE WITH ONE-HALF SWITCHED/CONTROLLED, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.
- TELEPHONE OUTLET, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.
- DATA OUTLET, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.
- INTERCOM OUTLET, FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED.
- FLUSH, FLOOR MOUNTED DUPLEX RECEPTACLE, DATA JACK, AND TELEPHONE JACK.
- DATA OUTLET, CEILING MOUNTED
- CEILING OR WALL MOUNTED WIRELESS ACCESS POINT PROVISIONS. PROVIDE AND INSTALL ONE DATA CABLE FROM EACH ACCESS POINT TO IDF. FOR HARD CEILINGS TERMINATE THE CABLES INTO A BOX WITH COVER PLATE. FOR T-BAR CEILINGS TERMINATE THE CABLES INTO A CUBE CAT-6 PORT AND CURL UP THE CABLE WITH 10-FEET OF SLACK. LEAVE ABOVE THE T-BAR CEILING. PROVIDE A LABEL BENEATH THE T-BAR CEILING TO INDICATE DATA PORTS ABOVE.
- 3/4" THICK x 96" TALL FIRE RETARDANT PLYWOOD BACKBOARD, PROVIDE QUANTITY OF PLYWOOD SHEETS TO ENCOMPASS ENTIRE LENGTH INDICATED ON PLANS.
- TERMINAL CABINET - SURFACE OR FLUSH MOUNTED WITH FLAME RETARDANT PLYWOOD BACKBOARD
- PANELBOARD - SURFACE OR FLUSH MOUNTED
- DISTRIBUTION OR SWITCHBOARD
- NEUTRAL LINK
- TRANSFORMER
- T TRANSFORMER
- #A/#B/#C FUSED DISCONNECT - MOTOR RATED. FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. DISCONNECTS TO BE FURNISHED WITH DUAL ELEMENT FUSES SIZED ACCORDING TO NAME PLATE DATA ON EQUIPMENT INSTALLED. SIZE AS : #A = AMPERE RATING OF DISCONNECT, #B = POLES, #C = FUSE SIZE REQUIRED. ALSO REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DISCONNECT REQUIREMENTS. IF NO AMPERE RATING IS INDICATED ON PLAN SIZE DISCONNECT PER NAMEPLATE RATING AND CEC.
- #A/#B UNFUSED DISCONNECT - MOTOR RATED, FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR: #1 = AMPERE RATING OF DISCONNECT, #2 = POLES REQUIRED. ALSO REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DISCONNECT REQUIREMENTS. IF NO AMPERE RATING IS INDICATED ON PLAN SIZE DISCONNECT PER NAMEPLATE RATING AND CEC.
- MAGNETIC MOTOR STARTER FURNISHED, INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
- M MOTOR - FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AND CONNECTED BY ELECTRICAL CONTRACTOR.
- M METER
- FIRE SPRINKLER HEAD. REFER TO OTHER DISCIPLINE PLANS.
- INTRUSION ALARM DOOR CONTACT PROVISION, SEE TYPICAL DETAILS.
- INTRUSION ALARM MOTION DETECTOR, AIM AS INDICATED ON PLANS.
- GROUND
- CIRCUIT BREAKER
- EXISTING ABOVE GROUND CONDUIT
- EXISTING UNDERGROUND CONDUIT
- WIREMOLD 5400 SERIES DUAL CHANNEL IVORY RACEWAY. PROVIDE ALL ACCESSORIES, FITTINGS, DIVIDERS, ETC FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.
- WIREMOLD RACEWAY VERTICAL RUNS. PROVIDE ALL ELBOWS, FITTINGS, AND CONNECTORS AS NECESSARY FOR A COMPLETE RACEWAY SYSTEM.
- NEW ELECTRICAL EQUIPMENT
- EXISTING ELECTRICAL EQUIPMENT TO REMAIN
- EXISTING ELECTRICAL EQUIPMENT TO BE DEMOLISHED
- GROUND WIRE WITH GREEN INSULATION SIZE PER N.E.C., U.O.N.
- CONDUIT CONCEALED IN WALL OR CEILINGS. PROVIDE NUMBER OF WIRES NECESSARY FOR BRANCH CIRCUIT, SWITCH LEGS, ETC. PROVIDE SEPARATE NEUTRALS FOR EACH PHASE WIRE. SIZE SHALL BE DETERMINED BY OCPD CONNECTED TO THE PHASE CONDUCTORS AND VOLTAGE DROP CONSIDERATIONS. ALL CONDUITS SHALL HAVE GROUND CONDUCTOR(S). SIZE CONDUIT PER NEC.
- CONDUIT CONCEALED UNDERGROUND OR BELOW FLOOR, MINIMUM SIZE IS 3/4". PROVIDE NUMBER OF WIRES NECESSARY FOR BRANCH CIRCUIT, SWITCH LEGS, ETC. PROVIDE SEPARATE NEUTRALS FOR EACH PHASE WIRE. SIZE SHALL BE DETERMINED BY OCPD CONNECTED TO THE PHASE CONDUCTORS AND VOLTAGE DROP CONSIDERATIONS. ALL CONDUITS SHALL HAVE GROUND CONDUCTOR(S). SIZE CONDUIT PER NEC.
- CONDUIT- UP
- CONDUIT-DOWN
- # SHEET NOTE NUMBER - #, SEE NOTE DESCRIPTION ON SAME SHEET.
- # GENERAL NOTE NUMBER - #, SEE NOTE DESCRIPTION ON SAME SHEET.
- #/# REFERENCE TO PLAN/DETAIL/DIAGRAM
- XX X DESIGNATES SIZE AND QUANTITY OF FEEDERS SEE FEEDER SCHEDULE
- TV PROVIDE AND INSTALL TWO MALE F-TYPE CONNECTORS AND TV FACEPLATE. PROVIDE AND INSTALL RG-6 COAXIAL CABLE FROM EACH CONNECTOR TO THE CABLE TV HEADEND & TERMINATE WITH A MALE F-TYPE CONNECTOR.
- TV TELEVISION OUTLET IN FLUSH FLOOR BOX - CARPET PLATE WHERE REQUIRED, SEE TELEVISION SYMBOL.
- (5)(4)(2) NUMBER IN PARENTHESIS INDICATES QUANTITY OF DEVICES. TYPICAL FOR ALL TYPES OF DEVICES.
- S SPEAKER - WALL OR CEILING MOUNTED, REFER TO RISER DIAGRAM AND/OR NOTES ON PLANS.
- C CLOCK, REFER TO RISER DIAGRAM AND/OR NOTES ON PLANS.
- CS COMBINATION CLOCK & SPEAKER, SEE CLOCK & SPEAKER SYMBOLS.

ELECTRICAL EQUIPMENT NOTES

1. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF ELECTRICAL EQUIPMENT, DEVICES AND WIRING. REFER TO THE TECHNICAL SPECIFICATIONS FOR FURTHER REQUIREMENTS.

ELECTRICAL SHEET LIST

E1.01	SYMBOLS LEGEND, ABBREVIATIONS, AND REQUIREMENTS
E1.02	ELECTRICAL NOTES
E1.03	SINGLE LINE DIAGRAM
E1.04	PANEL SCHEDULE & MECHANICAL SCHEDULE
E2.01	ELECTRICAL SITE PLAN
E3.01	PARTIAL POWER & SIGNAL FLOOR PLANS
E3.02	DEMOLITION POWER & SIGNAL ROOF PLAN
E3.03	POWER & SIGNAL ROOF PLAN
E4.01	FIRE ALARM SYMBOL LIST, NOTES AND RISER DIAGRAM
E4.02	PARTIAL FIRE ALARM FLOOR PLANS
E5.01	TYPICAL ELECTRICAL DETAILS

THESE PLANS ARE ACCOMPANIED WITH BOOK SPECIFICATIONS THAT FORM PART OF THE CONTRACT DOCUMENTS.

ABBREVIATIONS

A, AMP	AMPERES
A.C.	ABOVE COUNTER
A.F.F.	ABOVE FINISHED FLOOR
AL	ALUMINUM CONDUCTOR OR BUS
BD	BOARD
C	CONDUIT
CAB	CABINET
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CC	CENTER TO CENTER
CKT	CIRCUIT
CO	CONDUIT ONLY (EMPTY CONDUIT) WITH PULL WIRE
CPB	COMMUNICATIONS PULL BOX
CU	COPPER CONDUCTOR OR BUS
DB	DISTRIBUTION PANEL
(E)	EXISTING
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
E.O.L.	END-OF-LINE
EPO	EMERGENCY POWER-OFF
EWC	ELECTRIC WATER COOLER
F	FUSE
F.A./FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
F.B.O.	FURNISHED BY OTHER/FURNISHED BY OWNER
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METALLIC CONDUIT
FS	FLOW SWITCH
G	GREEN GROUND WIRE
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HC	HORIZONTAL CROSSCONNECT
HID	HIGH INTENSITY DISCHARGE
HPS	HIGH PRESSURE SODIUM
I.B.O.	INSTALLED BY OTHER
I.B.E.	INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR
IDF	INTERMEDIATE DISTRIBUTION FRAME (DATA)
IG	ISOLATED GROUND
INT	INTRUSION ALARM
J/JB	JUNCTION BOX
KV	KILOVOLTS
KVA	KILOVOLTS-AMPERES
KW	KILOWATT
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LCP	LIGHTING CONTROL PANEL
LTG	LIGHTING
LV	LOW VOLTAGE
MTD	MOUNTED
MTG	MOUNTING
MLO	MAIN LUG ONLY
N	NEUTRAL
(N)	NEW
NL	NIGHT LIGHT
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C./OC	ON CENTER
OFOI	OWNER FURNISHED OWNER INSTALLED
Ø	PHASE
P	POLE
P.A./PA	PUBLIC ADDRESS SYSTEM
PB	PULL BOX
PIV	POST INDICATOR VALVE
PNL	PANEL
PPB	POWER PULL BOX
REC/RECEPT.	RECEPTACLE
REF.	REFRIGERATOR
RELO	RELOCATABLE BUILDING/ PORTABLE BUILDING
RM	ROOM
RS	RAPID START
RU	RACK UNIT
SCE	SIGNAL CURRENT EXPANDER PANEL
S.L.	SECURITY LIGHT
SCTB	SIGNAL AND COMMUNICATION TERMINAL BACKBOARD
SPB	SIGNAL PULL BOX
SPD	SURGE SUPPRESSION DEVICE
STB	SIGNAL TERMINAL BOARD
STC	SIGNAL TERMINAL CABINET
SW	SWITCH
TPB	TELEPHONE PULL BOX
TS	TAMPER SWITCH
TEL	TELEPHONE
TERM	TERMINAL
TYP	TYPICAL
TTB	TELEPHONE TERMINAL BOARD
TTC	TELEPHONE TERMINAL CABINET
U.C.	UNDER COUNTER
UG	UNDERGROUND
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS/VOLTAGE
V.P.	VANDAL PROOF
W	WATTS
WP	WEATHERPROOF
WM	WIREMOLD

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER · JOHN BORRELLI · No. E16590 · EXP. 6/30/23 · ELECTRICAL · STATE OF CALIFORNIA

APPROVALS:
APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER · RYAN W. CARLSON · No. M34846 · Exp. 6-30-24 · MECHANICAL · STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-0101
FAX (559) 431-1362

TITLE:
SYMBOLS LEGEND, NOTES, ABBREVIATIONS, AND REQUIREMENTS

SHEET:
E1.01

PROJECT 21135

GENERAL NOTES

1. ALL WORK AND MATERIAL SHALL CONFORM TO LATEST CODES AND ORDINANCES. IT IS THE INTENTION OF THESE PLANS AND SPECIFICATIONS TO COVER ALL THINGS REQUIRED TO PROVIDE COMPLETE AND OPERATIVE SYSTEMS. THE CONTRACTOR SHALL FURNISH LABOR, MATERIAL, TRANSPORTATION, EQUIPMENT, MISCELLANEOUS SERVICES, ETC. REQUIRED TO ACCOMPLISH THIS RESULT. ANYTHING WHICH MAY BE REASONABLY CONSTRUED AS A NECESSARY PART OF THE INSTALLATION SHALL BE INCLUDED. NOTHING IN THESE PLANS OR SPECIFICATIONS MAY BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO ANY CONSTRUCTION CODES.

2. ALL EQUIPMENT SHALL HAVE TESTING LABORATORY LABEL ATTACHED (U.L. C.S.A. ETC.) AS PER N.E.C. 110. PROOF OF TESTING LABELS REQUIRED WITH ALL SUBMITTALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL THESE REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO PURCHASING, IF ANY OF THE SPECIFIED MATERIAL FAILED THESE REQUIREMENTS. WHERE A FIELD CERTIFIED PRODUCT MAY BE REQUIRED FOR FIELD ASSEMBLED COMPONENT, PROVIDE CERTIFIED REPORT BY AN APPROVED TESTING AGENCY ACCEPTABLE TO THE AUTHORITIES HAVING JURISDICTION. INCLUDE ALL TESTING FEES IN BID.

3. THE ENGINEERING SERVICE ARE LIMITED TO PREPARATION OF PLANS AND SPECIFICATIONS. THE PLANS AND SPECIFICATIONS ARE INTENDED TO BE USED AS CONSTRUCTION GUIDELINES ONLY AND NOT THE TOTAL INSTRUMENT OF CONTRACT DOCUMENTS. IT IS NOT THE INTENTION OF ANY CONSTRUCTION PLANS TO DIVIDE WORK AMONG DIFFERENT TRADES. VERIFY SCOPE OF WORK WITH GENERAL CONTRACTOR/OWNER SINCE THE ENGINEER IS NOT SUPERVISING THE JOB. THE ENGINEER WILL PROVIDE INTERPRETATION OF THE CONSTRUCTION DOCUMENTS, BUT SUPERVISION IS UNDER THE RESPONSIBILITY OF THE OWNER OR HIS APPOINTEE.

4. WORKING CLEARANCE SHALL BE MAINTAINED AS PER C.E.C/N.E.C. FOR ALL PANEL(S). SERVICE EQUIPMENT, DISCONNECT SWITCH, ETC. LOCAL UTILITY COMPANY WORKING CLEARANCE REQUIREMENT SHALL ALSO BE OBSERVED. POWER EQUIPMENT MANUFACTURER'S PRODUCT MAY VARY IN DIMENSION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WORKING CLEARANCE REQUIREMENT WHEN LAYING OUT THE ELECTRICAL EQUIPMENT.

5. AVAILABLE FAULT CURRENT SHALL BE INDICATED ON ALL NEWLY INSTALLED SERVICE EQUIPMENT. THE FIELD MARKING SHALL INCLUDE THE DATE OF THE FAULT CURRENT CALCULATION WAS PERFORMED.

6. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST SHOP DRAWINGS BEFORE STUBBING UP CONDUITS OR PENETRATING EXTERIOR WALL(S) OF BUILDING(S).

7. IN CASE OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING BEFORE PROCEEDING.

8. ALL OUTDOOR DEVICES SHALL BE WEATHERPROOF.

9. ONLY MAJOR PULL BOXES ARE SHOWN. CONTRACTOR SHALL PROVIDE ADDITIONAL PULL BOXES WHERE THEY ARE REQUIRED TO MAKE A WORKABLE INSTALLATION. ALL PULL BOXES ABOVE GROUND SHALL BE PAD LOCKABLE. ALL PULL BOXES UNDERGROUND SHALL HAVE HOLD DOWN BOLTS AND BE TRAFFIC RATED.

10. MARK ALL PANELS WITH LAMANOID TAGS. PROVIDE TYPE WRITTEN PANEL SCHEDULE AT ALL PANELS.

11. ALL FLOOR/GROUND MOUNTED EQUIPMENT SHALL SIT ON A CONCRETE PAD 3" HIGHER THAN SURROUNDING SURFACE FOR INTERIOR EQUIPMENT AND 6" FOR EXTERIOR EQUIPMENT.

12. CONTRACTOR SHALL FURNISH ALL MATERIALS, TOOLS, LABOR, EQUIPMENT AND SUPERVISION NECESSARY TO COMPLETE INSTALLATION, CHECKOUT AND INITIAL OPERATION.

13. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GENERAL ARRANGEMENT OF EQUIPMENT SHOWN AND SHALL SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT PRIOR TO PURCHASE.

14. CAUTION SHOULD BE USED WHEN EXCAVATING OR TRENCHING TO LOCATE EXISTING UNDERGROUND CONDUITS. COORDINATE WITH AGENCIES SUCH AS UNDERGROUND SERVICE ALERT PRIOR TO EXCAVATION.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING VISITED THE SITE AND SATISFIED HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL CHECK ALL OF THE CONDITIONS WHICH MAY AFFECT HIS WORK. THE SITE VISIT SHALL BE MADE PRIOR TO SUBMITTING THE BID. BIDDERS SHALL PREARRANGE A SITE VISIT WITH THE OWNER/ARCHITECT.

16. THE CONTRACTOR SHALL OBTAIN A FULL SET OF PLANS WHEN BIDDING THE JOB.

17. ALL PHASE CONDUCTORS SHALL HAVE THEIR OWN NEUTRALS. NO SHARING OF NEUTRALS ALLOWED.

18. A CERTIFIED ELECTRICAL SHALL BE PRESENT ON THE PROJECT WHENEVER ELECTRICAL WORK IS IN PROGRESS. AN ELECTRICAL CONTRACTOR IS NOT EXEMPT FROM THIS REQUIREMENT AND SHALL ALSO BE CERTIFIED IF HE IS WORKING AS THE RESPONSIBLE PROJECT ELECTRICIAN ; VIOLATION OF THIS REQUIREMENT BY EITHER ELECTRICIANS OR WORKING CONTRACTORS SHALL BE REPORTED TO THE STATE LICENSE CONTRACTOR BOARD AS REQUIRED UNDER THE EXISTING LABOR CODE SECTION 108.2. NO VOLUNTEERS ARE ALLOWED TO PERFORM WORK ON THIS PROJECT AND ALL CITY INSURANCE REQUIREMENTS MUST BE MET PRIOR TO PERFORMING ANY WORK.

19. ALL CONDUIT SHALL BE CONCEALED WITHIN ATTIC SPACE AND WALLS.

20. ALL EXTERIOR CONDUIT USED ON THIS PROJECT SHALL BE IMC OR RIGID.

21. ALL FASTENERS USED SHALL BE STAINLESS STEEL GRADE 316.

22. ALL EXTERIOR RECEPTACLES SHALL BE GFCI TYPE WITH A LOCKING, WEATHERPROOF IN-USE COVER.

23. ALL DISCONNECTS SHALL BE READILY ACCESSIBLE AND IN SIGHT OF THE EQUIPMENT, PER THE CALIFORNIA ELECTRICAL CODE. IF THE DISCONNECTING MEANS CANNOT BE LOCATED WITHIN SIGHT OF THE EQUIPMENT SERVED, IT SHALL HAVE THE CAPABILITY OF BEING LOCKED IN THE OPEN POSITION.

24. ALL CONDUCTORS IN STALLED IN UNDERGROUND OR WET LOCATIONS SHALL BE LISTED FOR WET LOCATIONS AND MARKED WITH "W" PER CEC.

25. SPLICES AND TERMINALS SHALL BE COMPRESSION TYPE OF SEAMLESS PURE COPPER, TIN PLATED, LONG BARREL (TERMINALS WITH TWO-HOLE PAD AND INSPECTION WINDOW WITH NEMA DRILLING), AS MANUFACTURED BY BURNDY TYPE YS, YAZ-2N OR EQUAL. CLEAN ALL SURFACES AND INSTALL WITH OXIDE INHIBITING COMPOUND, BURNDY PENETROX-E OR EQUAL. INSTALL COMPRESSION CONNECTORS WITH 360° CIRCUMFERENTIAL COMPRESSION DYE, BURNDY HYPRESS OR EQUAL. THE INDENTER OR OTHER TYPE TOOLS WILL NOT BE ACCEPTABLE.

26. INSTALL 'MECHANICALLY FASTENED PHENOLIC NAMEPLATE WITH WHITE LETTERING ON BLACK BACKGROUND ON ALL EQUIPMENT, INCLUDING PULL BOXES, WITH DESCRIPTION INDICATED ON DRAWINGS. NAMEPLATES SHALL READ EXACTLY AS DESCRIBED ON THE DRAWINGS. IN GENERAL NAMEPLATE LETTERING SIZE SHALL BE 3/16-INCH HIGH FOR ALL NAMEPLATES SERVING FEEDER AND BRANCH CIRCUIT BREAKERS, ON MAIN SERVICE PANELS AND ALL OTHER NAMEPLATES LETTERING SHALL BE 1/4-INCH HIGH.
    29.1 ALL SWITCHBOARDS, SWITCHGEAR, PANELBOARDS, VFD'S, MOTORS, JUNCTION BOXES, PULL BOXES, DISCONNECT SWITCHES, ETC., SHALL BE MARKED TO INDICATE EACH DEVICE OR EQUIPMENT WHERE THE POWER ORIGINATES PER CEC 408.4, FIELD IDENTIFICATION REQUIRED, (B) SOURCE OF SUPPLY.

27. COORDINATE EQUIPMENT LOCATIONS, CONTROL AND POWER WIRING REQUIREMENTS AND CONNECT POINTS WITH ALL APPLICABLE DISCIPLINES.

28. PROVIDE AND INSTALL FUSES PER UNIT NAMEPLATE DATA ON THE EQUIPMENT PROVIDED.

29. REINSTALL EXISTING ELECTRICAL INSTALLATIONS DISTURBED. CERTAIN EXISTING ELECTRICAL INSTALLATIONS MAY BE LOCATED IN WALL, CEILINGS OR FLOORS THAT ARE TO BE REMOVED AND ARE ESSENTIAL FOR THE OPERATION OF OTHER REMAINING INSTALLATIONS. WHERE THIS CONDITIONS OCCURS, PROVIDE A NEW EXTENSION OF ORIGINAL CIRCUITS, RACEWAYS, EQUIPMENT AND OUTLETS TO RETAIN SERVICE CONTINUITY. INSTALLATIONS SHALL BE CONCEALED IN FINISHED AREAS.

MEP ANCHORAGE BRACING NOTE

MEP COMPONENT ANCHORAGE NOTE:

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 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING 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 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.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE AABOVE 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 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTION13.6.5, 13.6.6, 13.6.7, 13.6.8 AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHAT BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOB SITE 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 SYSTEM (E):

MP [ ] MD [ ] PP [ ] E [ ] OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS

MP [ ] MD [ ] PP [ ] E [x] OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) # OPM-0052-13

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER — BORRELLI — No. E18390 — EXP. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER — RYAN W. CARLSON — No. M34846 — Exp. 6-30-24 — MECHANICAL — STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

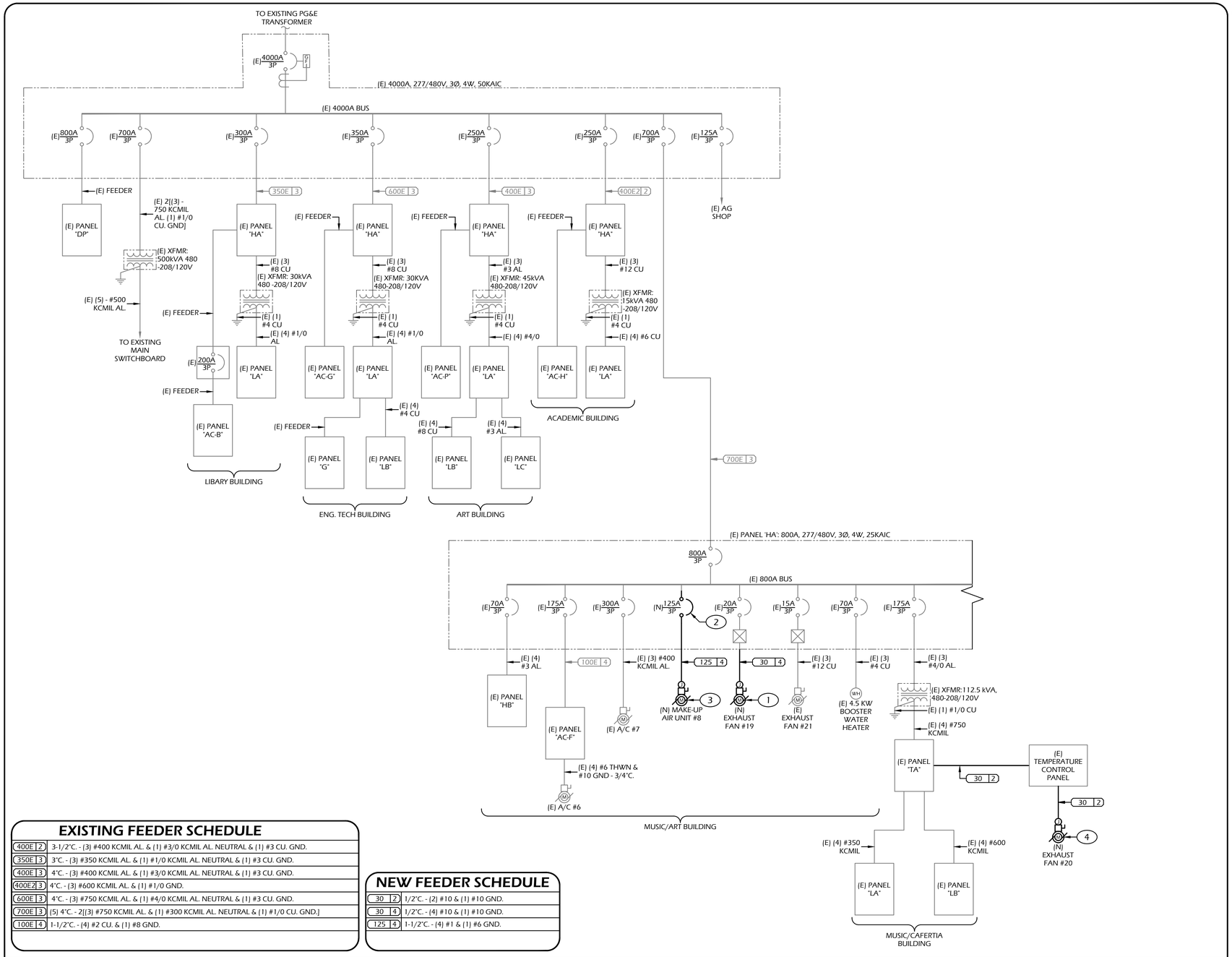
REVISIONS

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-1001
FAX (559) 431-1302

TITLE:
ELECTRICAL NOTES

SHEET:
E1.02

PROJECT 21135



EXISTING FEEDER SCHEDULE

400E 2	3-1/2"C. - (3) #400 KCMIL AL. & (1) #3/0 KCMIL AL. NEUTRAL & (1) #3 CU. GND.
350E 3	3"C. - (3) #350 KCMIL AL. & (1) #1/0 KCMIL AL. NEUTRAL & (1) #3 CU. GND.
400E 3	4"C. - (3) #400 KCMIL AL. & (1) #3/0 KCMIL AL. NEUTRAL & (1) #3 CU. GND.
400E2 3	4"C. - (3) #600 KCMIL AL. & (1) #1/0 GND.
600E 3	4"C. - (3) #750 KCMIL AL. & (1) #4/0 KCMIL AL. NEUTRAL & (1) #3 CU. GND.
700E 3	(5) 4"C. - 2[(3) #750 KCMIL AL. & (1) #300 KCMIL AL. NEUTRAL & (1) #1/0 CU. GND.]
100E 4	1-1/2"C. - (4) #2 CU. & (1) #8 GND.

NEW FEEDER SCHEDULE

30 2	1/2"C. - (2) #10 & (1) #10 GND.
30 4	1/2"C. - (4) #10 & (1) #10 GND.
125 4	1-1/2"C. - (4) #1 & (1) #6 GND.

1 / -

SINGLE LINE DIAGRAM

NOT TO SCALE

SHEET NOTES (#)

1. DISCONNECT AND REMOVE THE POWER TO THE EXISTING EXHAUST FAN #19. DISCONNECT AND REMOVE THE EXISTING SWITCH DISCONNECT. PULL THE EXISTING (3) AWG CU. CONDUCTORS BACK TO SOURCE. REMOVE THE EXISTING CONDUIT UP TO ACCESSIBLE POINT AND CAP OFF. PROVIDE AND INSTALL NEW FUSED SWITCH DISCONNECT FOR THE NEW HOOD EXHAUST FAN. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS AND MAKE ALL CONNECTIONS. REFER TO MECHANICAL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZE. REFER TO SHEET E3.02 AND E3.03 FOR LOCATION.
2. DISCONNECT AND REMOVE THE EXISTING 30A/3P CIRCUIT BREAKER AND PROVIDE AND INSTALL A NEW 125A/3P CIRCUIT BREAKER FOR THE NEW MAKE UP AIR UNIT.
3. DISCONNECT AND REMOVE THE POWER TO THE EXISTING MAKE UP AIR UNIT #8. DISCONNECT AND REMOVE THE EXISTING SWITCH DISCONNECT. EXISTING CONDUIT TO BE ABANDONED IN PLACE AND PULL THE EXISTING (3) #12 AWG CU. CONDUCTORS BACK TO SOURCE. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS AND MAKE ALL CONNECTIONS. REFER TO MECHANICAL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZE. REFER TO SHEET E3.02 AND E3.03 FOR LOCATION.
4. DISCONNECT AND REMOVE THE POWER TO THE EXISTING EXHAUST FAN #20. DISCONNECT AND REMOVE THE EXISTING SWITCH DISCONNECT. PULL THE EXISTING CONDUCTORS BACK TO SOURCE. REMOVE THE EXISTING CONDUIT UP TO ACCESSIBLE POINT AND CAP OFF. PROVIDE AND INSTALL NEW FUSED SWITCH DISCONNECT FOR THE HOOD EXHAUST FAN. PROVIDE AND INSTALL NEW CONDUIT, CONDUCTORS AND CIRCUIT BREAKER AT THE PANEL. MAKE ALL CONNECTIONS. REFER TO MECHANICAL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZE. REFER TO SHEET E3.02 AND E3.03 FOR LOCATION.

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER — JOHN BORRELLI — No. E14980 — EXP. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER — RYAN W. CARLSON — No. M34846 — Exp. 6-30-24 — MECHANICAL — STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

LAWRENCE ENGINEERING GROUP
7854 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-1010
FAX (559) 431-1032

TITLE: SINGLE LINE DIAGRAM

SHEET: E1.03

PROJECT 21135

VOLTAGE: 208/120V, 3Ø, 4W					(E) PANEL 'TA' NEW CONFIGURATION		BREAKER AIC: 35,000				
BUS: 600A							MOUNTING: SURFACE				
MAIN BREAKER: 600A/3P							ENCLOSURE: NEMA 3R				
CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1		905							480		2
3	30A/3P		905		(E) FRZR COMPRESSOR	(E) DAIRY COMPRESSOR		480		15A/3P	4
5				905			480				6
7		372						1920			8
9	15A/3P		372		(E) MEAT COMPRESSOR	(E) VEG. COMPRESSOR		1920		15A/3P	10
11				372			1920				12
13	15A/2P	860			(E) FREEZER EVAP.	(E) BOILER ROOM REC.			265	20A/1P	14
15			860			(E) HOT WATER CIRC.		330		↓	16
17	20A/1P			180	(E) FREEZER BOX	(E) BOILER	265			↓	18
19	↓	1368			(E) EXH. FAN #18	(E) EXH. FAN #16			1368	↓	20
21	↓		1368		(E) EXH. FAN #17	(E) WALK-IN LTS. & FANS		700		↓	22
23	↓			1368	(N) EXH. FAN #20	(E) WALK-IN LTS. & FANS	700			↓	24
25	↓	180			(E) TEMP. CTRL. PANEL	(E) FIRE ALARM BOOSTER			700	↓	26
27	↓		100		(E) EMS CTRL	(E) SPARE		100		↓	28
29				0	SPACE	SPACE	0				30
31	↓	0			↓				6300		32
33	↓		0		↓	(E) PANEL LB		6870		225A/3P	34
35	↓			0	↓		6015				36
37		37550				SPACE			0		38
39	350A/3P		29560		(E) PANEL LA	↓		0		↓	40
41				35415		↓	0			↓	42
TOTAL Ø LOADS (VA):					PHASE A = 54188	PHASE B = 45485	PHASE C = 49540				
TOTAL Ø LOADS (A):					PHASE A = 451	PHASE B = 379	PHASE C = 413				
TOTAL LOAD:					149213 VA	544 A					

VOLTAGE: 208/120V, 3Ø, 4W					(E) PANEL 'TA' EXISTING CONFIGURATION		BREAKER AIC: 35,000				
BUS: 600A							MOUNTING: SURFACE				
MAIN BREAKER: 600A/3P							ENCLOSURE: NEMA 3R				
CIR #	BKR	LOAD (VA) PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA) PHASE C	PHASE B	PHASE A	BKR	CIR #
1		905							480		2
3	30A/3P		905		(E) FRZR COMPRESSOR	(E) DAIRY COMPRESSOR		480		15A/3P	4
5				905			480				6
7		372						1920			8
9	15A/3P		372		(E) MEAT COMPRESSOR	(E) VEG. COMPRESSOR		1920		15A/3P	10
11				372			1920				12
13	15A/2P	860			(E) FREEZER EVAP.	(E) BOILER ROOM REC.			265	20A/1P	14
15			860			(E) HOT WATER CIRC.		330		↓	16
17	20A/1P			180	(E) FREEZER BOX	(E) BOILER	265			↓	18
19	↓	1368			(E) EXH. FAN #18	(E) EXH. FAN #16			1368	↓	20
21	↓		1368		(E) EXH. FAN #17	(E) WALK-IN LTS. & FANS		700		↓	22
23	↓			1368	(E) EXH. FAN #20	(E) WALK-IN LTS. & FANS	700			↓	24
25	↓	180			(E) TEMP. CTRL. PANEL	(E) FIRE ALARM BOOSTER			700	↓	26
27	↓		100		(E) EMS CTRL	(E) SPARE		100		↓	28
29				0	SPACE	SPACE	0				30
31	↓	0			↓				6300		32
33	↓		0		↓	(E) PANEL LB		6870		225A/3P	34
35	↓			0	↓		6015				36
37		37550			SPACE				0		38
39	350A/3P		29560		↓	(E) PANEL LA		0		↓	40
41				35415	↓		0			↓	42
TOTAL Ø LOADS (VA):					PHASE A = 54188	PHASE B = 45485	PHASE C = 49540				
TOTAL Ø LOADS (A):					PHASE A = 451	PHASE B = 379	PHASE C = 413				
TOTAL LOAD:					149213 VA	544 A					

MECHANICAL EQUIPMENT SCHEDULE

DESIG. (#/#)	DESCRIPTION	MCA/HP/W/ RLA/FLA	STARTER/ FUSES	VOLT (V)	PHASE	MAX. OCPD SIZE	CON-DUIT SIZE	CONDUCTOR #	CONDUCTOR SIZE	GND.
AC-8	MAKE-UP AIR UNIT	105 MCA	FUSE/DISC.	480	3	NOTE 3	NOTE 5	3	NOTE 5	NOTE 4
EF-19	EXHAUST FAN		STARTER/DISC.	↓	↓	↓	↓	↓	↓	↓
EF-20	↓	↓	↓	120	1	↓	↓	2	↓	↓

NOTES:
1. PROVIDE FUSED DISCONNECT PER NAME PLATE RATING OF MECHANICAL UNITS, SIZED PER NEC/CEC.
2. REFER TO MECHANICAL PLANS FOR LOCATIONS OF MECHANICAL EQUIPMENT.
3. REFER TO THE PANEL SCHEDULE/SINGLE LINE DIAGRAM FOR THE CIRCUIT BREAKER SIZES.
4. GROUNDING CONDUCTOR SIZE TO MATCH CIRCUIT CONDUCTOR SIZE.
5. REFER TO SINGLE LINE DIAGRAM FOR CONDUCTOR AND CONDUIT SIZE.

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER — JOHN BORRELLI — No. E18390 — Exp. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER — RYAN W. CARLSON — No. M34846 — Exp. 6-30-24 — MECHANICAL — STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-5101
FAX (559) 431-1362

TITLE:
PANEL SCHEDULE &
MECHANICAL SCHEDULE

SHEET: E1.04

PROJECT 21135

1 - **ELECTRICAL SITE PLAN**
SCALE: 1"=40'-0"

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER — JOHN BORRELLI — No. E18390 — EXP. 4/30/23 — ELECTRICAL — STATE OF CALIFORNIA

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER — BRYAN W. CARLSON — No. M34846 — Exp. 6-30-24 — MECHANICAL — STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-0101
FAX (559) 431-1562

TITLE: ELECTRICAL SITE PLAN

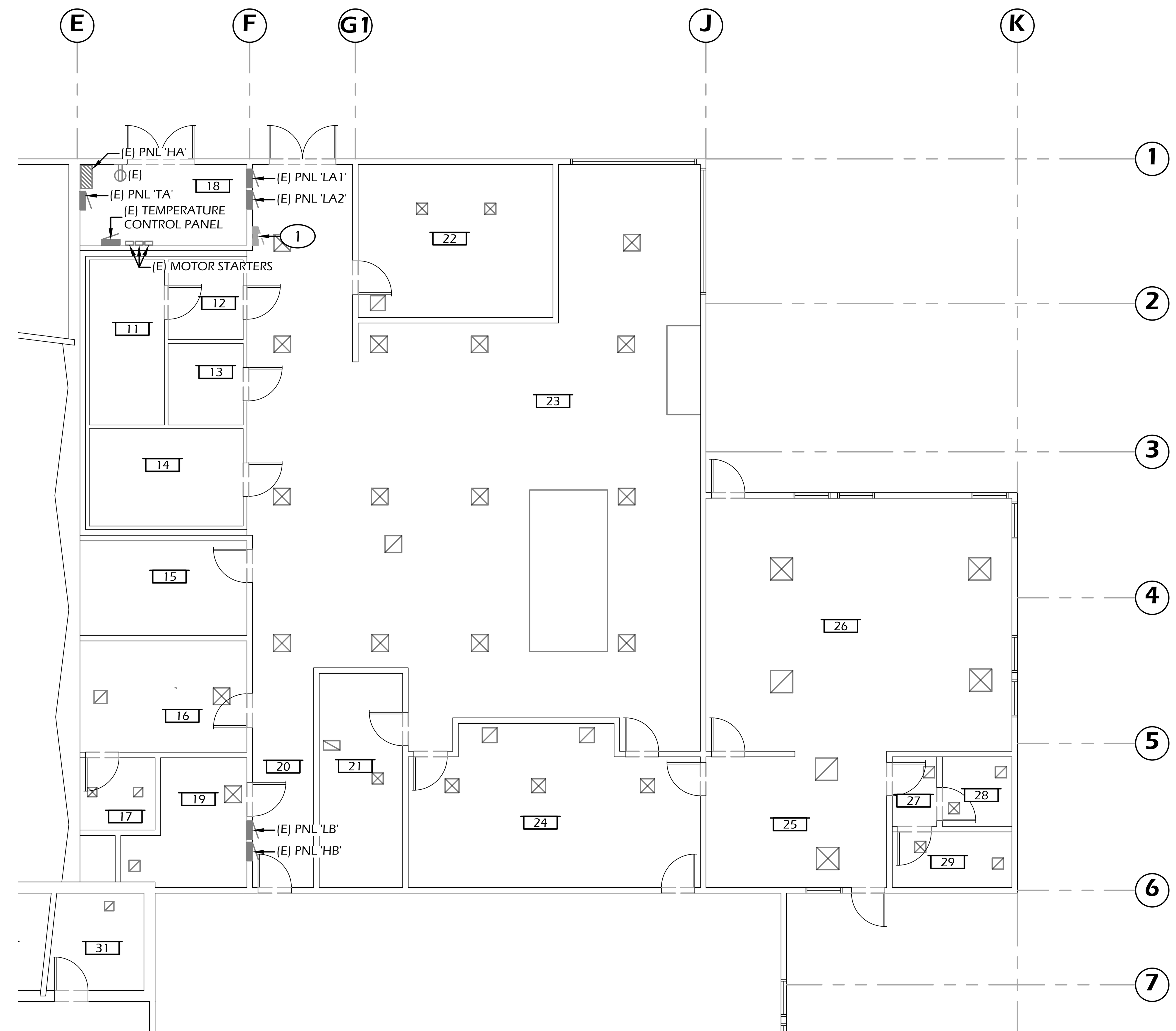
SHEET: E2.01

PROJECT 21135

APPROVALS:
APPLICATION #
02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

2 / -
PARTIAL POWER & SIGNAL FLOOR PLAN
SCALE: 1/8"=1'-0"



1 / -
PARTIAL DEMOLITION POWER & SIGNAL FLOOR PLAN
SCALE: 1/8"=1'-0"

ROOM SCHEDULE

###	ROOM NAME	###	ROOM NAME
1	LOBBY	20	HALL
2	OFFICE	21	DISH WASH
3	LIBRARY	22	DRY STROAGE
4	OFFICE	23	KITCHEN
5	UNIFORM STORAGE	24	STUDENT SERVING
6	PRACTICE	25	FACULTY SERVING
7	PRACTICE	26	FACULTY DINING
8	PRACTICE	27	VESTIBULE
9	INSTRUMENT STORAGE	28	MEN'S RESTROOM
10	BAND ROOM	29	WOMEN'S RESTROOM
11	FREEZER	30	STUDENT DINING
12	DAIRY	31	PRACTICE
13	MEAT	32	PRACTICE
14	VEGETABLE	33	PRACTICE
15	OFFICE	34	RECORD
16	LOCKER	35	CHORAL ROOM
17	TOILET	36	CLOSET
18	CUSTODIAN	37	MEN'S RESTROOM
19	JANITOR	38	WOMEN'S RESTROOM

SHEET NOTES

1. EXISTING CONTROL PANEL TO BE REMOVED.

REGISTERED PROFESSIONAL ENGINEER
RYAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

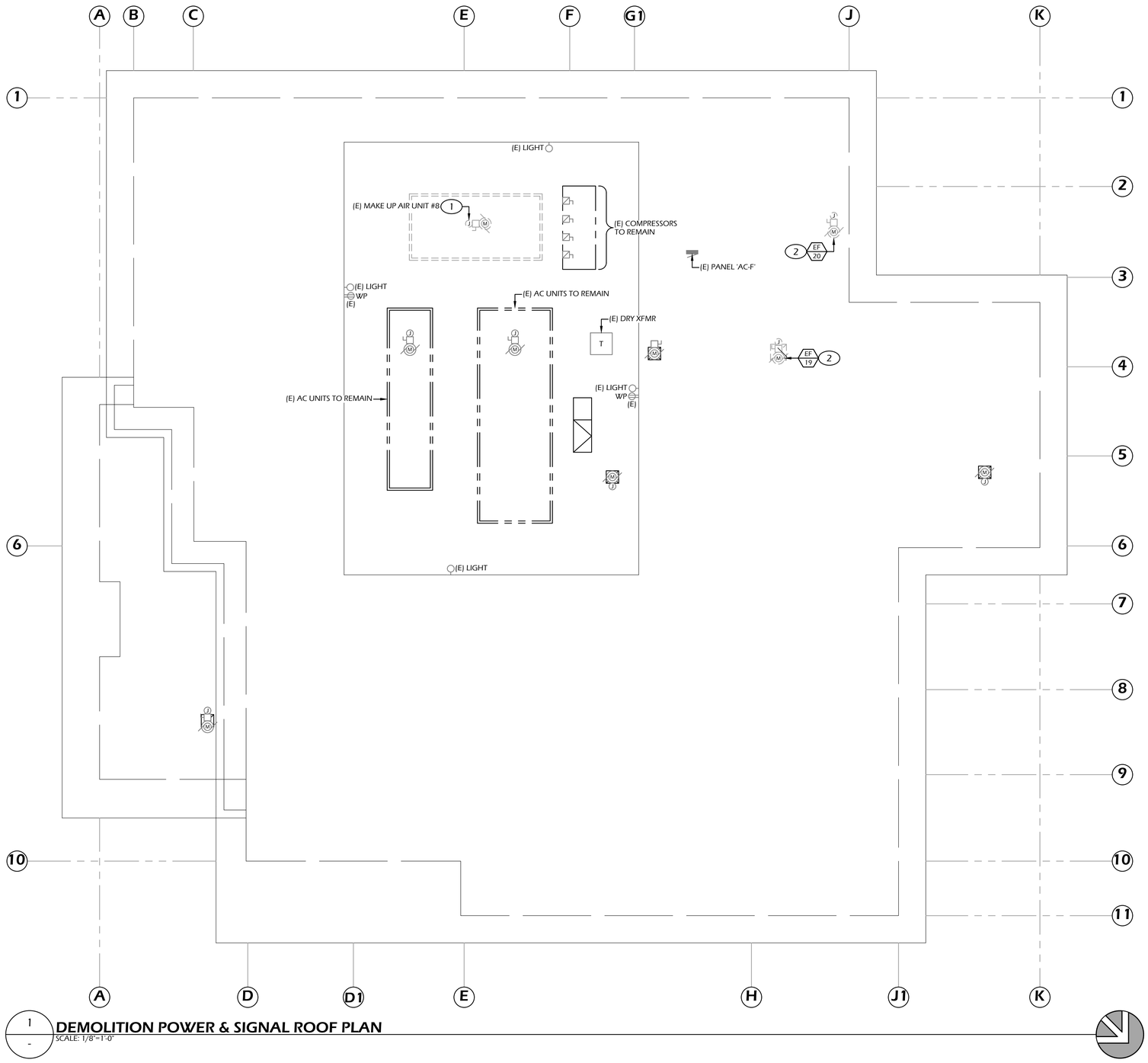
LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
(559) 431-0101
Fresno, CA 93720
FAX (559) 431-1342

TITLE:
PARTIAL POWER & SIGNAL
FLOOR PLANS

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL
STATE OF CALIFORNIA

SHEET:
E3.01
PROJECT 21135



1 / - **DEMOLITION POWER & SIGNAL ROOF PLAN**

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

SHEET NOTES (#)

1. DISCONNECT AND REMOVE THE POWER TO THE EXISTING MAKE UP AIR UNIT. DISCONNECT AND REMOVE THE EXISTING SWITCH DISCONNECT. REMOVE EXISTING CONDUIT UP TO ACCESSIBLE PLACE AND CAP OFF. PULL ALL CONDUCTORS BACK TO SOURCE.
2. DISCONNECT AND REMOVE THE POWER TO THE EXISTING EXHAUST FAN. DISCONNECT AND REMOVE THE EXISTING SWITCH DISCONNECT. REMOVE THE EXISTING CONDUIT UP ACCESSIBLE POINT AND CAP OFF. PULL ALL CONDUCTORS BACK TO SOURCE.

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER — JOHN BORRELLI — No. E18390 — Exp. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER — BRYAN W. CARABA — No. M34846 — Exp. 6-30-24 — MECHANICAL — STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

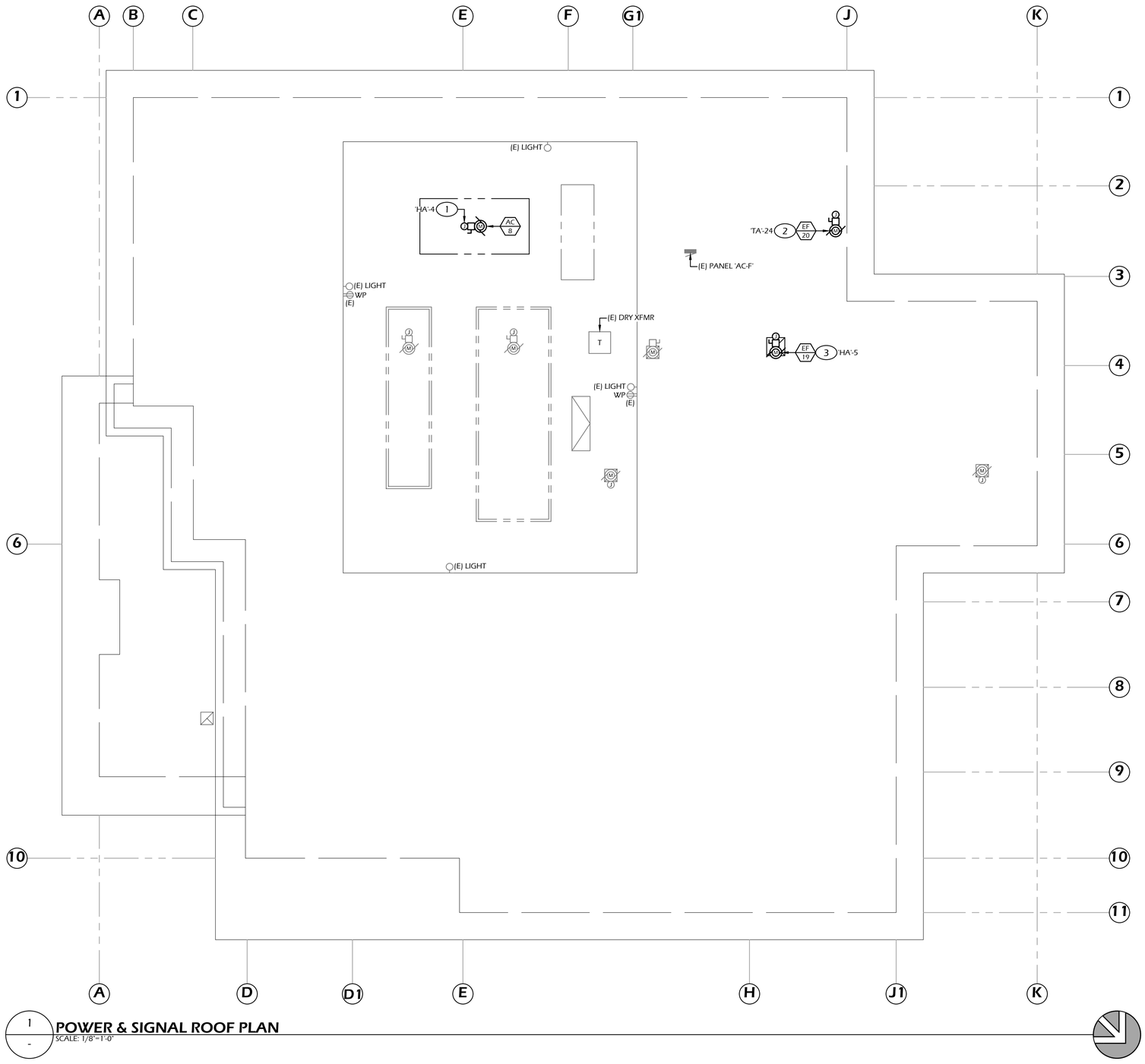
REVISIONS

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-9101
FAX (559) 431-1262

TITLE:
DEMOLITION POWER &
SIGNAL ROOF PLAN

SHEET:
E3.02

PROJECT 21135



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

SHEET NOTES (#)

1. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS FOR THE NEW MAKE-UP AIR UNIT AC-8 AND MAKE ALL CONNECTIONS. REFER TO MECHANICAL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZES. PROVIDE AND INSTALL NEW FUSED SWITCH DISCONNECT AND NEW CIRCUIT BREAKER AT PANEL 'HA' AND MAKE ALL CONNECTIONS.
2. PROVIDE AND INSTALL NEW FUSED SWITCH DISCONNECT FOR THE NEW HOOD EXHAUST FAN. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS AND MAKE ALL CONNECTIONS. REFER TO MECHANICAL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZES.
3. PROVIDE AND INSTALL NEW FUSED SWITCH DISCONNECT FOR THE NEW HOOD EXHAUST FAN. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTORS. PROVIDE AND INSTALL NEW CIRCUIT BREAKER AT PANEL 'TA' FOR THE EXHAUST FAN, PROVIDE ALL MOUNTING HARDWARE AND MAKE ALL CONNECTIONS. REFER TO MECHANICAL SCHEDULE FOR CONDUIT AND CONDUCTOR SIZES.

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER — JOHN BORRELLI — No. E18390 — EXP. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA

APPROVALS:
APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER — RYAN W. CARLSON — No. M34846 — Exp. 6-30-24 — MECHANICAL — STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

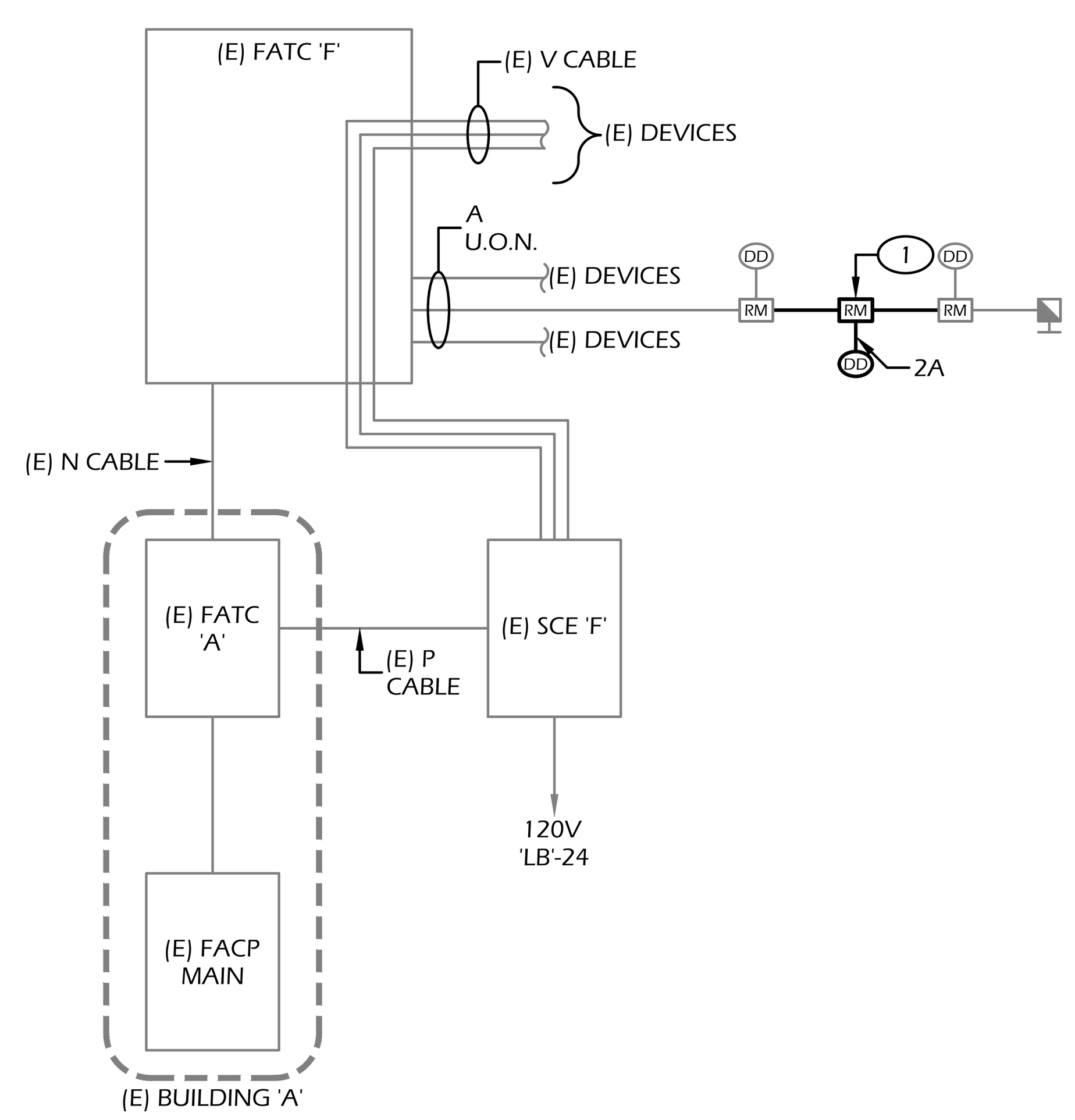
LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-9101
FAX (559) 431-1302

TITLE:
POWER & SIGNAL ROOF PLAN

SHEET:
E3.03

PROJECT 21135

APPROVALS:
APPLICATION #
02-120316



1

PARTIAL FIRE ALARM RISER DIAGRAM

NOT TO SCALE

FIRE ALARM RECORD DOCUMENTS CABINET

1. THE FIRE ALARM SYSTEM WORK SHALL INCLUDE A DOCUMENTATION CABINET, INSTALLED AT THE SYSTEM CONTROL PANEL OR OTHER APPROVED LOCATION PER NFPA 72, 7.7.2.
2. THE DOCUMENTATION CABINET SHALL BE RED WITH A HINGED, LOCKING DOOR AND SHALL BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS".
3. ALL RECORD AND TESTING DOCUMENTATION SHALL BE STORED INSIDE THE CABINET.
4. CONTENTS SHALL BE ACCESSIBLE BY AUTHORIZED PERSONNEL ONLY.
5. WHERE CABINET IS INSTALLED IN A LOCATION OTHER THAN THE SYSTEM CONTROL UNIT, ITS LOCATION SHALL BE IDENTIFIED AT THE SYSTEM CONTROL UNIT.
6. PROVIDE SYSTEM DOCUMENTS AS APPLICABLE:
   a. RECORD DRAWINGS/ AS-BUILTS
   b. EQUIPMENT CUT SHEETS AND CA SFM LISTINGS
   c. ALTERNATIVE MEANS AND METHODS
   d. PERFORMANCE BASED DESIGN DOCUMENTATION (NFPA 72. 7.3.7)
   e. SYSTEM RECORD OF COMPLETION AND ANY SUPPLEMENTAL INSPECTION AND TESTING DOCUMENTATION (NFPA 72, 7.8.2)
   f. EMERGENCY RESPONSE PLAN (NFPA 72, 7.3.8)
   g. EVALUATION DOCUMENTATION (NFPA 72, 7.3.9)
   h. RISK ANALYSIS DOCUMENTATION (NFPA 72, 7.3.6)
   i. SOFTWARE AND FIRMWARE CONTROL DOCUMENTATION (NFPA 72, 23.2.2)

FIRE ALARM OPERATION MATRIX

INPUT	OUTPUT			
	SHUTDOWN HVAC	ANNUNCIATE TROUBLE AT FACP	ANNUNCIATE SUPERVISORY AT FACP	TRANSMIT SIGNAL TO CENTRAL STATION
POWER FAILURE		●	●	●
DUCT SMOKE DETECTORS	●	●	●	●

FIRE ALARM SYSTEM NOTES

1. APPLICABLE STANDARD NFPA 72, AS ADOPTED AND AMENDED IN CBC CHAPTER 35.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST REGULATIONS OF THE STATE FIRE MARSHAL, CALIFORNIA CODE OF REGULATIONS, SERVING UTILITY COMPANIES, AND OTHER APPLICABLE STATE ORDINANCES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THESE CODES. WHERE WORK OF A HIGHER DEGREE IS INDICATED IN THE PLANS OR SPECIFICATIONS THIS REQUIREMENT SHALL GOVERN.
3. THE FIRE ALARM SYSTEM DESIGN IS A "COMPLETE PLAN SUBMITTAL". THE CONTRACTOR SHALL INSTALL THE SYSTEM AS SHOWN AND AS HEREIN SPECIFIED.
4. ALARM INDICATING DEVICES OF A FIRE ALARM SYSTEM INTENDED TO ALERT ALL OCCUPANTS SHALL BE SO LOCATED AND UNOBSTRUCTED AS TO CAUSE A LEVEL OF AUDIBILITY OF NOT LESS THAN 15 DB ABOVE AMBIENT NOISE LEVELS MEASURED FOUR FEET ABOVE THE FLOOR INSIDE BUILDING. AMBIENT NOISE LEVELS SHALL BE CONSTRUED TO MEAN THAT WHICH CAN NORMALLY BE EXPECTED TO EXIST WHEN THE FACILITY, BUILDING, ROOM OR AREA IS FUNCTIONING UNDER NORMAL OPERATIVE OR WORKING CONDITIONS.
5. UPON COMPLETION OF THE INSTALLATION OF THE FIRE PROTECTIVE SIGNALING EQUIPMENT, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE ENFORCING FIRE AGENCY PER CHAPTER 14, NFPA 72, AND A CERTIFICATE OF COMPLETION SHALL BE PROVIDED TO THE OWNER PER CHAPTER 7, NFPA 72 AND THE CALIFORNIA FIRE CODE, SECTION 907.7.
6. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, HAS BEEN APPROVED BY DSA.
7. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN EXCEPT WHERE INDICATED ELSEWHERE.
8. ALARM SIGNALS DO TO CARBON MONOXIDE(CO) DETECTORS SHALL BE DISTINCT AND "DESCRIPTIVELY ANNUNCIATED" FROM FIRE ALARM, CO SUPERVISORY, AND CO TROUBLE SIGNALS. FURTHERMORE, THE CO ALARM SIGNAL SHOULD TAKE PRECEDENCE OVER SUPERVISORY OR TROUBLE SIGNALS. CO DETECTOR TROUBLE SIGNALS MUST BE INDICATED VISUALLY AND AUDIBLY AT THE CONTROL PANEL AND SUPERVISING STATION. AUDIBLE DO TO A CO ALARM NOTIFICATION SHALL BE PROVIDED AS A TEMPORAL 4 OR VIA A CODED VOICE MESSAGE OVER THE VOICE EVACUATION SYSTEM.
9. WALL MOUNTED VISIBLE NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.
10. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" FROM FINISHED FLOOR AND NO CLOSER THE 6" TO A HORIZONTAL STRUCTURE.
11. ALL FIRE PROTECTION SIGNALING COMPONENTS SHALL BE ONLY THOSE APPROVED AND LISTED IN THE STATE FIRE MARSHAL'S LISTING SERVICE. AN ITEMIZED MATERIALS LIST SHOWING MAKE, MODEL NUMBER AND ITS CORRESPONDING STATE FIRE MARSHAL'S LISTING NUMBER SHALL BE FURNISHED TO THE PROJECT INSPECTOR. UPON COMPLETION OF THE INSTALLATION OF THE FIRE PROTECTIVE SIGNALING EQUIPMENT, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE LOCAL FIRE AUTHORITY WITH I.O.R. INSTALLATION REQUIREMENTS SHALL BE PER NFPA 72, CALIFORNIA BUILDING CODE, AND CALIFORNIA FIRE CODE.
12. THE FIRE ALARM SYSTEM SHALL TRANSMIT THE ALARM, SUPERVISORY, AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX (CENTRAL STATION) OR UUJS (REMOTE AND PROPRIETARY) BY UNDERWRITERS LABORATORY (UL) OR SHALL COMPLY WITH THE REQUIREMENTS OF STANDARD FM 3011.
13. ALL PENETRATIONS THROUGH RATED ASSEMBLIES REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA. APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
14. POWER SUPPLIES WITHIN THE FACP AND SCE ARE TO ACCOMMODATE THE CONNECTED FIRE ALARM LOADS.
15. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
16. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
17. AFTER SUCCESSFUL TESTING OF THE FIRE ALARM SYSTEM, COMPLETE THE NFPA 72 RECORD OF COMPLETION AND PROVIDE COPIES TO THE ARCHITECT, OWNER, LOCAL FIRE AUTHORITY, AND DSA (VIA THE PROJECT INSPECTOR).
18. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
19. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
20. DIVISION 26/28 SHALL PROVIDE FIRE ALARM WIRING AND CONTROL WITH A FIRE ALARM RELAY MODULE AT EACH HVAC UNIT. DIVISION 23 HVAC/CONTROL CONTRACTOR SHALL PROVIDE CONTROL WIRING FROM THE FIRE ALARM RELAY MODULE TO THE HVAC UNIT SHUTOFF RELAY. MAKE ALL CONNECTIONS.
21. PROVIDE ALL REQUIRED FIRE ALARM PANEL SYSTEM CARDS, HARDWARE, ETC. FOR A FULLY FUNCTIONAL SYSTEM. PROVIDE ALL FIRE ALARM ZONE INDICATORS AND SCHEDULES AT THE THE FIRE ALARM CONTROL PANEL AND REMOTE ANNUNCIATORS (WHEN REMOTE ANNUNCIATORS ARE USED).
22. AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (DBA) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR FIVE DBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIABLE SPACE WITHIN THE BUILDING.
23. VISIBLE DEVICES SHOULD NOT EXCEED TWO FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISIBLE DEVICES WITHIN SAME ROOM SHALL BE SYNCHRONIZED.
24. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATER TIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
25. ALL FIRE ALARM WIRING SHALL BE FPLOR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE TYPE THHN OR THWN.
26. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. ALL BOXES TO BE SIZED PER CEC.
27. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1′ FROM FIRE SPRINKLERS OR 3′ FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM, DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
28. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
29. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
30. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL." CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.
31. THE INSTALLING CONTRACTOR SHALL PROVIDE A COMPLETED "SYSTEM RECORD OF COMPLETION" PER NFPA 72, FIGURE 17.8.2.
32. FIRE ALARM CONTROL PANELS AND REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" ABOVE THE FINISHED FLOOR.
33. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-308.
34. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
35. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
36. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

FIRE ALARM SYMBOL LIST

SYMBOL	DEVICE TYPE	MANUFACTURER AND MODEL NUMBER	CSFM LISTING NUMBER
MAIN	(E) FIRE ALARM CONTROL PANEL (FACP)	GAMEWELL #E3BB-RD/INCC	7165-1703:0176
	(E) FIRE ALARM TERMINAL CABINET (FATC)	GAMEWELL #FIREFORCE 8	N/A
	(E) SIGNAL CIRCUIT EXTENDER PANEL (SCE)	GAMEWELL #HPFF8 GAMEWELL #SCE-95	N/A
DD	DUCT DETECTOR DUCT DETECTOR HOUSING	GAMEWELL #ASD-PL2FR GAMEWELL #DNRW	7272-1703:0121
RM	CONTROL RELAY MODULE	SYSTEM SENSOR #AOM-2RF	7300-1703:0102
CABLE LEGEND			
A	INITIATION CABLE ABOVE GROUND	WEST-PENN #D990	7161-0859:101
	INITIATION CABLE UNDERGROUND	WEST-PENN #AQ225	7161-0859:101
V	VISUAL CABLE ABOVE GROUND	WEST-PENN #227	7161-0859:101
P	POWER CABLE ABOVE GROUND	WEST-PENN #998	7161-0859:101
	POWER CABLE UNDERGROUND	WEST-PENN #AQ227	7161-0859:101
N	NETWORK CABLE	WEST-PENN #AQ225	7161-0859:101

NOTES:
1. PROVIDE ALL ACCESSORIES FOR FULLY FUNCTIONAL SYSTEM.

CALIFORNIA CODE OF REGULATIONS

PARTIAL LIST OF APPLICABLE CODES AS OF JANUARY 1, 2020*

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR*
2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR (2018 INTERNATIONAL BUILDING CODE, VOL. 1 & 2, AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR (2017 NATIONAL ELECTRICAL CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR (2018 IAPMO UNIFORM MECHANICAL CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR(2018 IAPMO UNIFORM PLUMBING CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR(2018 INTERNATIONAL FIRE CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR (2018 INTERNATIONAL EXISTING BUILDING CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2019 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
2016 ASME A17.1/CSA B44-13 SAFETY CODE FOR ELEVATORS AND ESCALATORS (PER 2019 CBC PART 2 CH 35)NOTE: CAL/OSHA ELEVATOR UNIT ENFORCES CCR TITLE 8 AND USES THE 2004 ASME A17.1 BY ADOPTION.

*ALL PARTS OF THE 2019 CALIFORNIA BUILDING CODE BECOME EFFECTIVE JANUARY 1, 2020 EXCEPT THE EFFECTIVE DATE FOR THE USE OF THE 2019 BUILDING ENERGY EFFICIENCY STANDARDS (TITLE 24, PART 1, CHAPTER 10) IS JANUARY 8, 2019 AND THE EFFECTIVE DATE FOR THE USE OF THE CALIFORNIA ADMINISTRATIVE CODE (TITLE 24, PART 1, CHAPTER 4) IS JANUARY 8, 2019.

PARTIAL LIST OF APPLICABLE STANDARDS

NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS (CA AMENDED) - 2016 EDITION
NFPA 14 - STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS (CA AMENDED) - 2016 EDITION
NFPA 17 - STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS - 2017 EDITION
NFPA 17A - STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS - 2017 EDITION
NFPA 20 - STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION - 2016 EDITION
NFPA 22 - STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION - 2013 EDITION
NFPA 24 - STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES (CA AMENDED) - 2016 EDITION
NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED) - 2016 EDITION
NFPA 80 - STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES - 2016 EDITION
NFPA 2001 - STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS (CA AMENDED) - 2015 EDITION
UL 300 - STANDARD FOR FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMMERCIAL COOKING EQUIPMENT - 2005 (R2010)
UL 464 - AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES - 2003 EDITION
UL 521 - STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS - 1999 EDITION
UL 1971 - STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED - 2002 (R2010)
ICC 300 - STANDARD FOR BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS - 2017 EDITION

FOR A COMPLETE LIST OF APPLICABLE NFPA STANDARDS REFER TO 2019 CBC (SFM) CHAPTER 35 AND CALIFORNIA FIRE CODE CHAPTER 80.

SEE CALIFORNIA BUILDING CODE CHAPTER 35 FOR STATE OF CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS.

SYSTEM DESCRIPTION

1. THE SYSTEM SHOWN IS AN EXISTING MANUAL AND ADDRESSABLE SYSTEM.
2. CLASS A WIRING METHOD IS UTILIZED FOR ALL SIGNALING CIRCUITS.

SCOPE OF FIRE ALARM WORK

THE FIRE ALARM SYSTEM CONSISTS OF ADDING NEW FIRE ALARM DUCT DETECTORS FOR THE NEW AIR HANDLERS ON THE ROOF.

SHEET NOTES

1. CAREFULLY DISCONNECT WIRING FROM THE EXISTING RELAY CONTROL MODULE AND DUCT DETECTOR AND DISCARD DEVICES. PULL WIRING BACK TO PREVIOUS DEVICE AND NEXT DEVICE AND CONNECT NEW RELAY MODULE AND DUCT DETECTOR AS SHOWN ON THE RISER DIAGRAM AFTER INSTALLATION OF NEW MAKE-UP AIR UNIT. MAKE ALL CONNECTIONS FOR A FULLY FUNCTIONING SYSTEM.

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER JOHN BORRELLI No. E16390 EXP. 6/30/23 ELECTRICAL STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER RYAN W. CARLSON No. M34846 Exp. 6-30-24 MECHANICAL STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
(559) 431-0101
Fresno, CA 93720
FAX (559) 431-1362

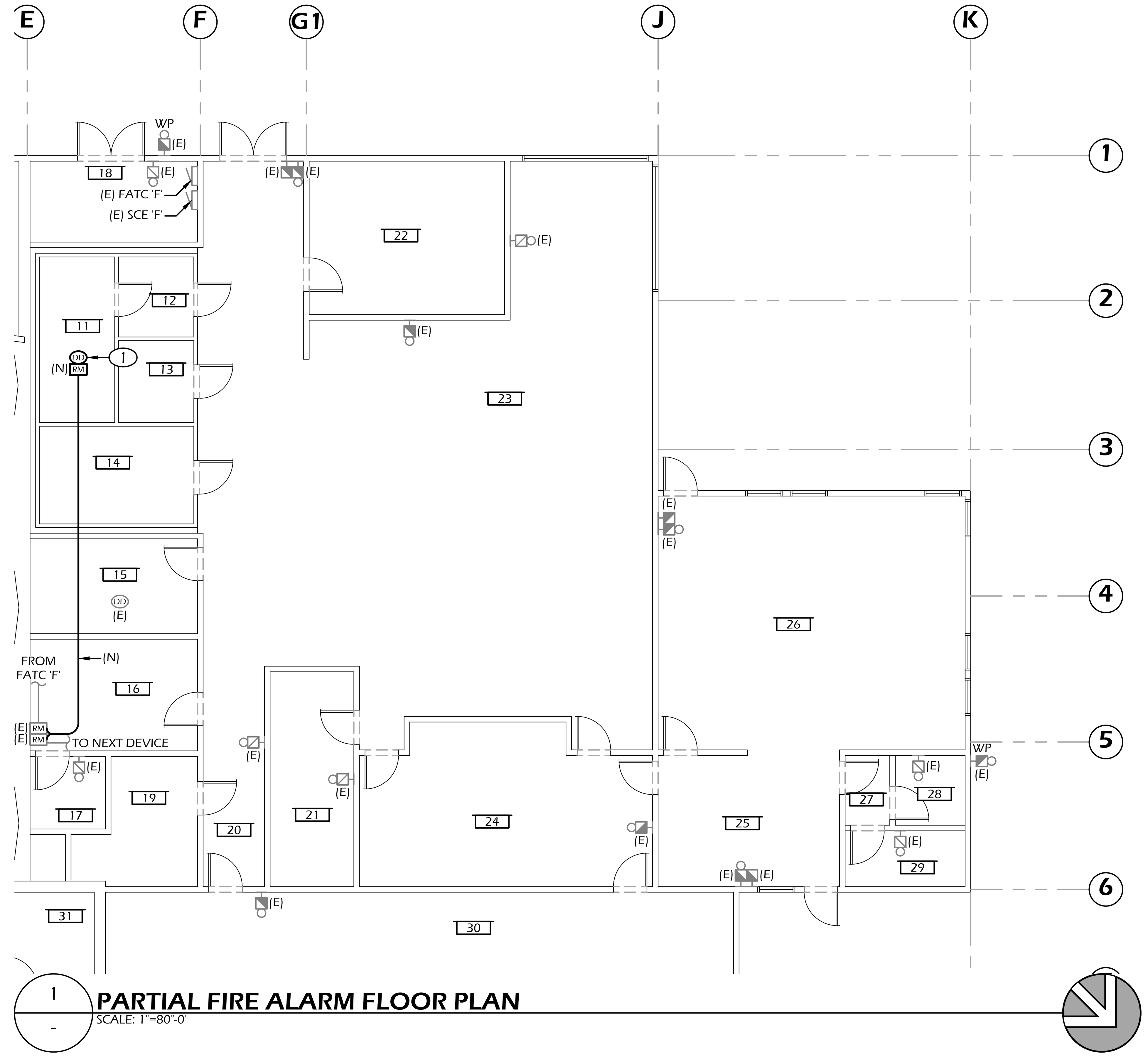
TITLE:
FIRE ALARM SYMBOL LIST,
NOTES AND RISER DIAGRAM

SHEET:
E4.01
PROJECT 21135

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023



PARTIAL FIRE ALARM FLOOR PLAN

SCALE: 1"=80'-0"

ROOM SCHEDULE

###	ROOM NAME	###	ROOM NAME
1	LOBBY	20	HALL
2	OFFICE	21	DISH WASH
3	LIBRARY	22	DRY STROAGE
4	OFFICE	23	KITCHEN
5	UNIFORM STORAGE	24	STUDENT SERVING
6	PRACTICE	25	FACULTY SERVING
7	PRACTICE	26	FACULTY DINING
8	PRACTICE	27	VESTIBULE
9	INSTRUMENT STORAGE	28	MEN'S RESTROOM
10	BAND ROOM	29	WOMEN'S RESTROOM
11	FREEZER	30	STUDENT DINING
12	DAIRY	31	PRACTICE
13	MEAT	32	PRACTICE
14	VEGETABLE	33	PRACTICE
15	OFFICE	34	RECORD
16	LOCKER	35	CHORAL ROOM
17	TOILET	36	CLOSET
18	CUSTODIAN	37	MEN'S RESTROOM
19	JANITOR	38	WOMEN'S RESTROOM

SHEET NOTES (#)

1. CAREFULLY DISCONNECT WIRING FROM THE EXISTING RELAY CONTROL MODULE AND DUCT DETECTOR AND DISCARD DEVICES. PULL WIRING BACK TO PREVIOUS DEVICE AND NEXT DEVICE AND CONNECT NEW RELAY MODULE AND DUCT DETECTOR AS SHOWN ON THE RISER DIAGRAM AFTER INSTALLATION OF NEW MAKE-UP AIR UNIT. MAKE ALL CONNECTIONS FOR A FULLY FUNCTIONING SYSTEM.

GENERAL NOTES

1. FIRE ALARM SYSTEM SHALL BE TESTED AND INSPECTED IN ACCORDANCE WITH NFPA 72, CHAPTER 14.

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

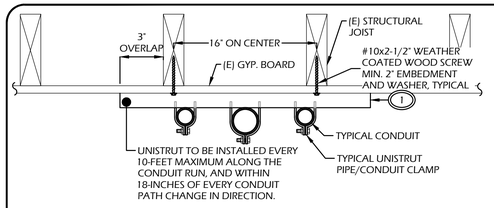
REVISIONS

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
(559) 431-0101
Fresno, CA 93720
FAX (559) 431-1362

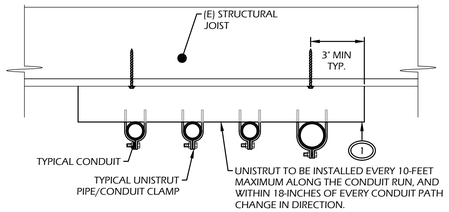
TITLE:
PARTIAL FIRE ALARM
FLOOR PLANS

SHEET:
E4.02

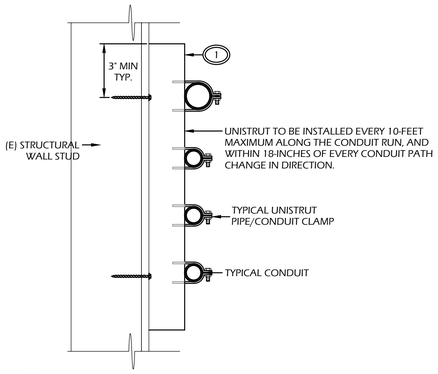
PROJECT 21135



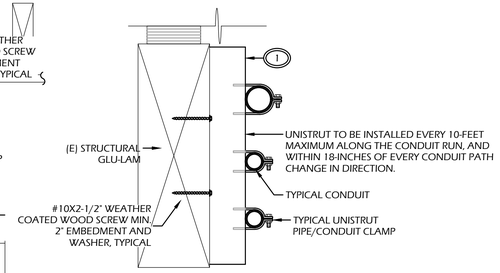
A CONDITION 1 - CEILING MOUNTED
CEILING JOIST PARALLEL TO CONDUIT RUN



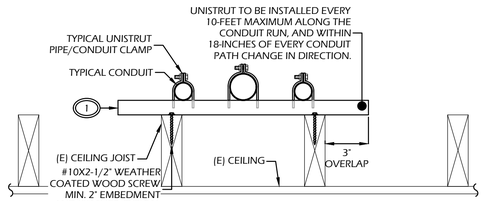
B CONDITION 2 - CEILING MOUNTED
CEILING JOIST PERPENDICULAR TO CONDUIT RUN



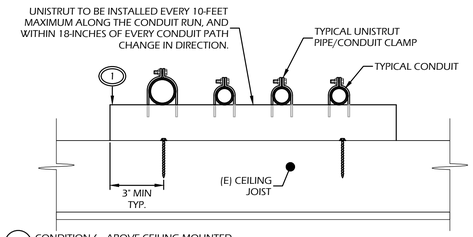
C CONDITION 3 - WALL MOUNTED



D CONDITION 4 - CONDUIT MOUNTING ON GLU-LAM



E CONDITION 5 - ABOVE CEILING MOUNTED
CEILING JOIST PARALLEL TO CONDUIT RUN



F CONDITION 6 - ABOVE CEILING MOUNTED
CEILING JOIST PERPENDICULAR TO CONDUIT RUN

DETAIL NOTES (#)

1. PROVIDE AND INSTALL UNISTRUT CONDUIT CLAMPS. COORDINATE UNISTRUT MEMBER SIZE. REFER TO SCHEDULE BELOW FOR CLAMP MODEL NUMBER AND MAXIMUM CONDUIT SIZE PER CLAMP.

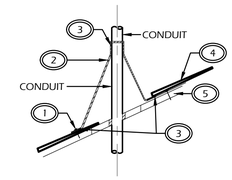
PART NO.	CONDUIT SIZE IN (mm)	THICKNESS GAUGE (mm)	WT/100 PCS LBS (kg)	DESIGN LOAD LBS (kN)
P1211	1/2 12.7	16 1.5	10 4.5	400 1.78
P1212	3/4 19.1	16 1.5	11 5.0	400 1.78
P1213	1 25.4	16 1.5	12 5.4	400 1.78
P1214	1-1/4 31.8	14 1.9	18 8.2	600 2.67
P1215	1-1/2 38.1	14 1.9	20 9.1	600 2.67
P1217	2 50.8	14 1.9	22 10.0	600 2.67
P1218	2-1/2 63.5	12 2.7	40 18.1	800 3.56
P1219	3 76.2	12 2.7	47 21.3	800 3.56
P1220	3-1/2 88.9	11 3.0	62 28.1	1000 4.45
P1221	4 101.6	11 3.0	67 30.4	1000 4.45

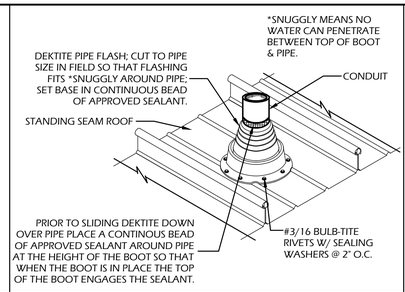
GENERAL NOTES

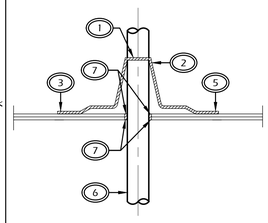
1. QUANTITY OF CONDUIT ON UNISTRUT MOUNTED MAY VARY. REFER TO CONDUIT ROUTING FLOOR PLAN FOR QUANTITY OF CONDUIT.
2. FOR CONDUITS ROUTING PARALLEL TO THE ROOF JOISTS WITH A WEIGHT GREATER THAN 15LBS./FT., THE SUPPORTS SHALL BE WITHIN 2 FEET OF AN EXISTING STRUCTURAL BEAM, ONE SUPPORT ON EACH SIDE OF THE BEAM.
3. CONDUITS ROUTING PERPENDICULAR TO THE ROOF JOISTS WITH A WEIGHT GREATER THAN 25LBS./FT. SHALL BE WITHIN 2 FEET OF AN EXISTING STRUCTURAL GLU-LAM.
4. UNISTRUT CHANNEL SHALL BE P1000-HS, UON. COORDINATE UNISTRUT MEMBER SIZE.

2 - **TYPICAL CONDUIT SUPPORT DETAIL**

NOT TO SCALE







SHINGLE ROOF

DETAIL NOTES: (#)
1. TYPICAL OF (4). TYPICAL WASHERED ROOFING NAIL, SIMPSON TYPE 304 8-PENNY x2" 10Ga. AT ALL FOUR CORNERS OF THE ROOF JACK. SEAL EACH NAIL WITH RUBBERIZED MASTIC.
2. METAL ROOF FLASHING/JACK.
3. SEAL WITH RUBBERIZED MASTIC.
4. EXISTING ROOF SHINGLE, SLIP ROOF JACK BENEATH SHINGLE.
5. NAIL ROOF JACK AT UPPER SIDE OF ROOF BENEATH UPPER SHINGLE. SEAL WITH MASTIC.

STANDING SEAM ROOF

NOTES:
1. THE DEKTITE CONDUIT FLASHING MUST BE FASTENED TO THE PANEL ONLY AND NOT INTO THE ROOF SUBSTRATE TO ALLOW THE PANEL TO MOVE THERMALLY.
2. ADEQUATE CLEARANCE MUST BE LEFT BETWEEN THE CONDUIT AND THE PANEL TO ALLOW FOR THERMAL MOVEMENT WITHOUT INTERFERENCE.
3. THE CONDUIT MUST BE CENTERED IN THE PANEL TO ALLOW ADEQUATE CLEARANCE FOR INSTALLATION OF THE DEKTITE WITHOUT INTERFERENCE WITH THE PANEL RIBS.
4. FOR REGIONS WITH SNOW & ICE, A ROW OF SNOW GUARDS MUST BE INSTALLED NO GREATER THAN 3' IN FRONT OF THE CONDUIT PENETRATION FOR PROTECTION.
5. CONDUITS LARGER THAN 6" IN DIAMETER MAY REQUIRE A CURB DEPENDING ON PANEL WIDTH & CONDUIT LOCATION. THIS IS TO BE VERIFIED IN FIELD.

ROLL ON ROOF

DETAIL NOTES: (#)
1. SEAL MASTIC.
2. ROOF JACK.
3. REMOVE CAP SHEET, SET ROOF JACK IN HOT ASPHALT OR RUBBERIZED ROOF MASTIC.
4. NOT USED.
5. APPLY 6" FIBER TAPE CENTERED ON PERIMETER OF ROOF JACK BASE IN HOT ASPHALT.
6. CONDUIT.
7. CAULK FORCED INTO SPACE TO MAXIMUM EXTENT POSSIBLE. CAULK SHALL BE INSTALLED FLUSH WITH ROOF MEMBRANE AND CEILING.

1 - **TYPICAL CONDUIT ROOF PENETRATIONS**

NOT TO SCALE

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI# 22126

REGISTERED PROFESSIONAL ENGINEER BORRELLI No. E19390 EXP. 6/30/23 ELECTRICAL STATE OF CALIFORNIA

APPROVALS:
APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER RYAN W. CARLSON No. M34846 Exp. 6-30-24 MECHANICAL STATE OF CALIFORNIA

DATE: 08-11-2022

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS

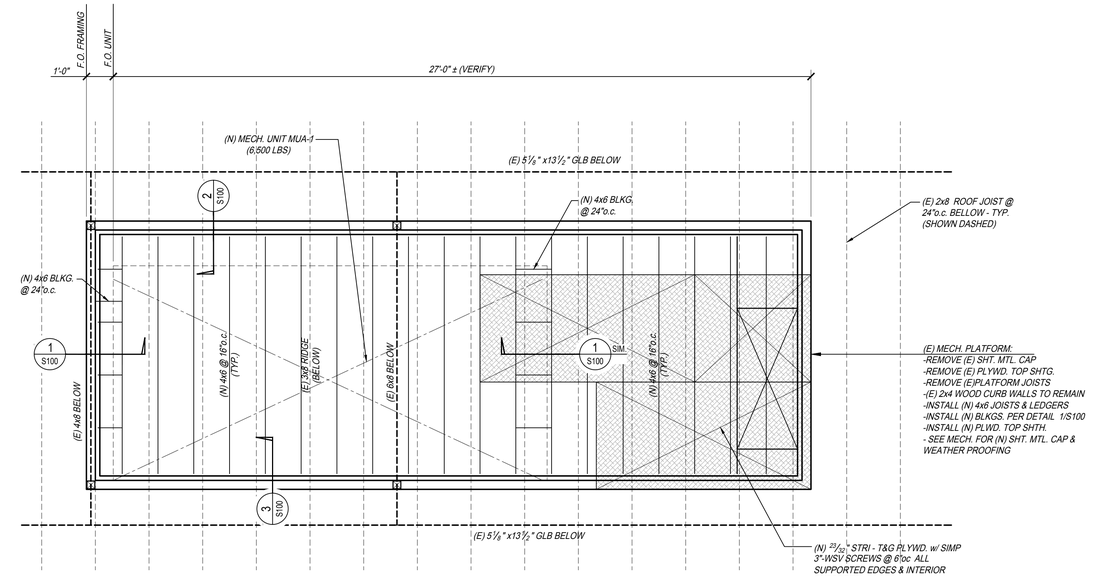
LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
Fresno, CA 93720
(559) 431-1001
FAX (559) 431-1362

TITLE:
TYPICAL ELECTRICAL DETAILS

SHEET: E5.01

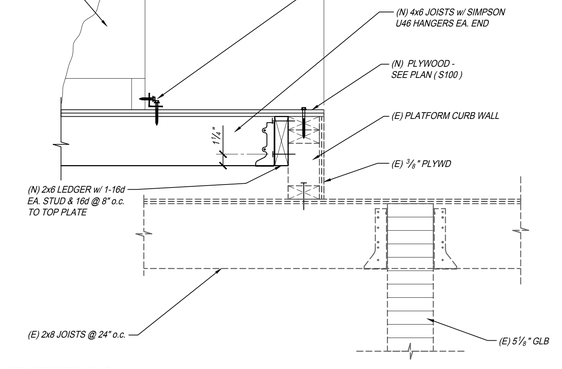
PROJECT 21135

G:\Educational\MaderaUSD\MaderaHighSchool\KitchenRetrofit-2022\22126E5-1.dwg, 1/27/2023 2:40:50 PM, JV2032, AutoCAD PDF (High Quality Print).pc3, ARCH full bleed D (36.00 x 24.00 Inches)



PARTIAL PLAN - ROOF MECHANICAL PLATFORM

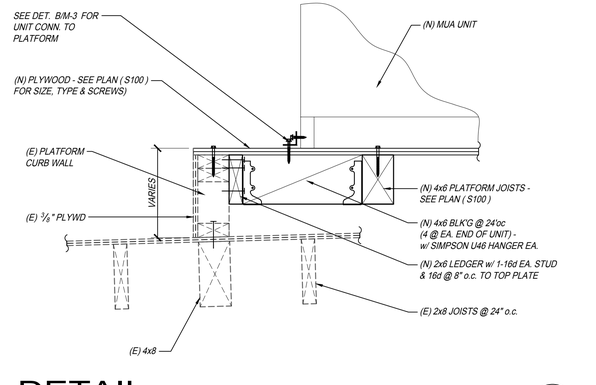
SCALE: 3/8" = 1'-0"



DETAIL 2

SCALE: 1 1/2" = 1'-0"

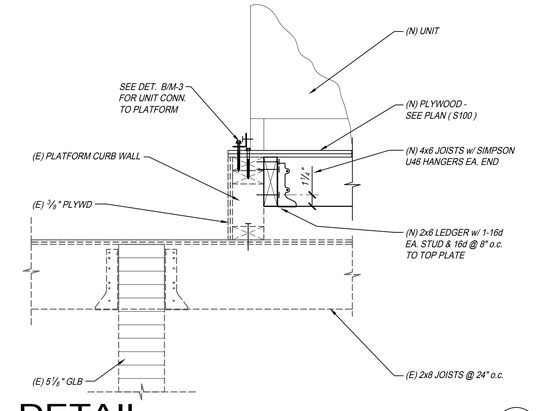
DET02 S100



DETAIL 1

SCALE: 1 1/2" = 1'-0"

DET01 S100



DETAIL 3

SCALE: 1 1/2" = 1'-0"

DET03 S100

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS IT BEARS THE STAMPS AND SIGNATURES OF THE ARCHITECT AND ENGINEER AND THE 'APPROVAL' STAMP OF THE JURISDICTIONAL BUILDING DEPARTMENT

2. STRUCTURAL WOOD

A. MATERIALS: (UNLESS OTHERWISE NOTED ON DRAWINGS)
1. FOUNDATIONS SILLS, NAILERS AND LEDGERS IN DIRECT CONTACT WITH CONCRETE: PRESERVATIVE TREATED DOUG-FIR #2
2. ALL 4X POSTS AND BEAMS DOUG FIR-#2
3. ALL 6X FRAMING MEMBERS: DOUG-FIR #1
4. ALL OTHER 2X AND 4X FRAMING MEMBERS: DOUG-FIR #2 OR BETTER.
5. 2X BEARING WALL STUDS: DOUG-FIR #2 OR BETTER.
6. WOOD STRUCTURAL PANELS (PLYWOOD OR ORIENTED STRAND BOARD - OSB):EACH PANEL SHALL BE IDENTIFIED WITH THE GRADE TRADEMARK OF THE APA. INSTALL ROOF PLYWOOD W/ FACE-GRAIN PERPENDICULAR TO SUPPORT FRAMING. SEE ROOF PLYWOOD SCHEDULE AND PLYWOOD SHEARWALL SCHEDULE FOR OTHER INFORMATION.

B. MACHINE BOLTS & LAG SCREWS:
1. BOLTS AND NUTS: ASTM A307
2. WASHERS: STANDARD CUT WASHERS SHALL BE FURNISHED AT EACH BOLT HEAD AND NUT PLACED NEXT TO WOOD.
3. BOLT HOLES: MINIMUM 1/32" TO MAXIMUM 1/16" LARGER THAN BOLTS, ACCURATELY LOCATED. OVERSIZE OR SLOTTED HOLES NOT PERMITTED UNLESS SPECIFICALLY DETAILED ON DRAWINGS.
4. LAG SCREWS: LEAD HOLE FOR THREADED PORTION SHALL BE 70% OF SHANK DIAMETER WITH A DEPTH EQUAL TO THE LENGTH OF SCREW AND CLEARANCE HOLE FOR UNTHREADED PORTION SHALL EQUAL THE DIAMETER AND LENGTH OF THE SCREW SHANK.

C. WOOD SCREWS: ANSI/ASME STANDARD B18.6.1
1. CONNECTION WOOD TO WOOD: WOOD SCREWS MAY BE PRE-DRILLED. THE LEAD HOLE RECEIVING THE SHANK SHALL BE NO MORE THAN $^{7}/_{8}$ OF THE SHANK DIAMETER. THE LEAD HOLE RECEIVING THE THREADED PORTION SHALL BE NO MORE THAN $^{1}/_{4}$ DIAMETER OF THE SHANK AT THE THREADED PORTION.
2. WOOD SCREWS SHALL NOT HAVE UPSET THREADS. DECKING SCREWS ARE NOT ALLOWED. SOAP OR OTHER LUBRICANT SHALL BE USED ON WOOD SCREWS TO FACILITATE INSERTION.
3. CONNECTING PLYWOOD TO LIGHT GAUGE STEEL: USE SELF-DRILLING, FLAT PHILLIPS HEAD, ZINC-PLATED STEEL SCREWS.
4. CONNECTING PLYWOOD TO STEEL SHAPES: USE THREAD CUTTING, FLAT PHILLIPS HEAD, ZINC-PLATED STEEL SCREWS.

D. FASTENERS , INCLUDING ANCHOR BOLTS, IN CONTACT WITH PRESSURE TREATED MATERIAL: FASTENERS SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL (ASTM A 153). FASTENERS OTHER THAN NAILS, WOOD SCREWS AND LAG SCREWS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC COATED STEEL (ASTM B 695, CLASS 55 MIN.)

E. NAILED JOINTS: USE ONLY COMMON WIRE NAILS OR SPIKES. FOR MINIMUM REQUIREMENTS, REFER TO THE TYPICAL FASTENING SCHEDULE. (SINKERS AND BOX NAILS ARE NOT ALLOWED). PRE-DRILL HOLES WHERE WOOD TENDS TO SPLIT.

F. PLYWOOD NAILING: WHETHER HAND-NAILED OR MACHINE-NAILED, NAILS SHALL BE "COMMON WIRE" ONLY AND NAIL HEADS SHALL BE FLUSH WITH THE SURFACE OF THE SHEATHING. NAIL HEADS SHALL NOT PENETRATE THE SURFACE PLY. NAIL HEAD PENETRATION OF SURFACE PLY INTO 2nd PLY WILL CAUSE FOR RE-NAILING OR REJECTION OF THE PLYWOOD SHEET PENDING ENGINEER'S INSPECTION.

G. MISC. METAL CONNECTORS: ALL SHEET METAL CONNECTORS USED FOR CONNECTING STRUCTURAL WOOD MEMBERS SHALL HAVE C.B.C. APPROVAL AND CONNECTORS SHALL BE GALVANIZED.

H. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR MISC. BLOCKING, FURRING, SHIMS, ETC. FOR ATTACHMENT OF FINISHES AND ORNAMENTAL ITEMS.

I. ALL SOLID SAWN LUMBER SHALL BE SEASONED LUMBER WITH A 19% MAX. MOISTURE CONTENT AT TIME OF INSTALLATION. WOOD PIECES EXCESSIVELY SPLIT, BENT OR DISTORTED SHALL BE REJECTED.

1. GENERAL NOTES

A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE CALIFORNIA BUILDING CODE (CBC), 2019 EDITION, AND ALL OTHER PUBLICATIONS AND STANDARDS LISTED HEREIN.

B. ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS.

C. DETAILS SHOWN ON STRUCTURAL DRAWINGS ARE TYPICAL. SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS. CONDITIONS NOT COMPATIBLE TO THE DETAILS PROVIDED SHALL BE REPORTED TO THE ARCHITECT.

D. DIMENSIONS SHOWN SHALL TAKE PRECEDENCE OVER SCALE ON PLANS, SECTIONS AND DETAILS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

E. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

F. FRAMING AND DETAIL CONDITIONS SPECIFIED BY THESE DRAWINGS SHALL NOT BE MODIFIED WITHOUT APPROVED WRITTEN DOCUMENTATION FROM THE ENGINEER AND ARCHITECT. CONTRACTOR SHALL NOT PROCEED WITH CONSTRUCTION OF CONDITIONS NOT APPROVED.

G. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FLOOR OR ROOF FRAMING MEMBERS. LOAD SHALL NOT EXCEED DESIGN LIVE LOAD.

H. DESIGN LOADING: PER CBC, 2019 EDITION.

I. CONSTRUCTION DOCUMENTS SHALL CONSIST OF THE "APPROVED" DRAWINGS, SPECIFICATIONS AND ADDENDUM BEARING THE STAMP AND SIGNATURE OF THE ARCHITECT AND THE APPROVAL STAMP OF THE JURISDICTIONAL BUILDING DEPARTMENT. STRUCTURAL CALCULATIONS ARE NOT PART OF THE CONSTRUCTION DOCUMENTS AND SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.

J. ALL WORK SHALL BE PERFORMED FROM THE "APPROVED" DOCUMENTS ONLY. A FULL SET OF APPROVED DOCUMENTS SHALL BE KEPT ON SITE DURING ALL CONSTRUCTION PHASES.

K. DESIGN DATA CONDITIONS AS LISTED BELOW.

LOADING DATA	
ROOF DEAD LOAD	14 psf
ROOF LIVE LOAD	20 psf

WIND DESIGN DATA	
ULTIMATE WIND SPEED (3 SECOND GUST)	100mph
WIND EXPOSURE CATEGORY	C
RISK CATEGORY	III
INTERNAL PRESSURE COEFFICIENT	±0.18
WIND PRESSURE FOR COMPONENTS & CLADDING	ASCE 7-16 13.3.1
ANALYSIS PROCEDURE	ASCE7-16 CHAPTER 29.4

SEISMIC DESIGN DATA	
SITE COORDINATES	36.956° N -120.066° W
SEISMIC IMPORTANCE FACTOR (I)	I = 1.25 Ip = 1.0
RISK CATEGORY	III
MAPPED SPECTRAL RESPONSE	S_s = 0.599 S_1 = 0.235
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENTS	S_{DS} = 0.528
SEISMIC DESIGN CATEGORY	D
SEISMIC-RESISTING FORCE SYSTEM(S)	NON-STUCTURAL COMPNENT
DESIGN SIESMIC FORCE Fp	ASCE 7-16 (13.3-1)
ANALYSIS PROCEDURE USED	ASCE 7-16 CHAPTER 13.3

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER
BRYAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 08/11/22

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS
1 01-15-23 DSA BACK CHECK

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
(559) 431-0101
Fresno, CA 93720
FAX (559) 431-1382

TITLE:

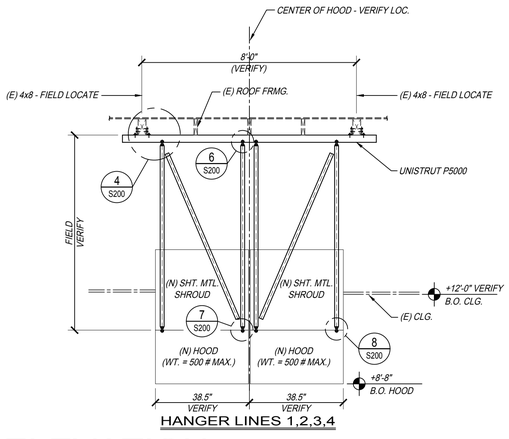
PLANS & ELEVATIONS

SHEET: S100

PROJECT 21135

REGISTERED PROFESSIONAL ENGINEER
ROBERT S. PARRISH
No. S23331
Exp. 3/23
02/10/2023
STRUCTURAL
STATE OF CALIFORNIA

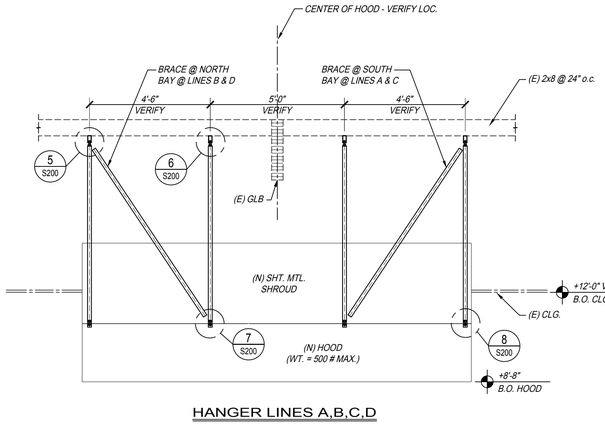
PROVOST& PRITCHARD
PARRISH HANSEN
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/



HANGER LINES 1,2,3,4

ELEVATION

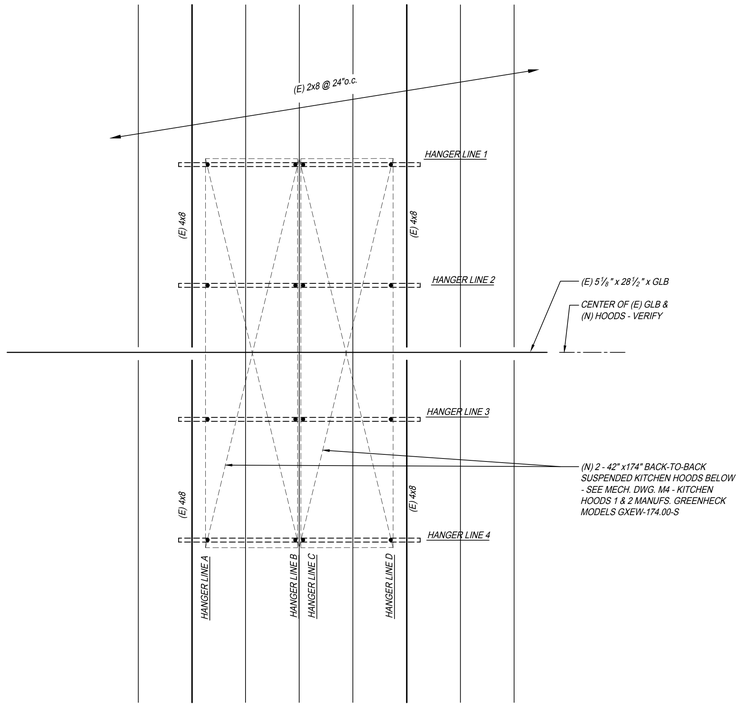
SCALE: 3/8" = 1'-0"



HANGER LINES A,B,C,D

ELEVATION

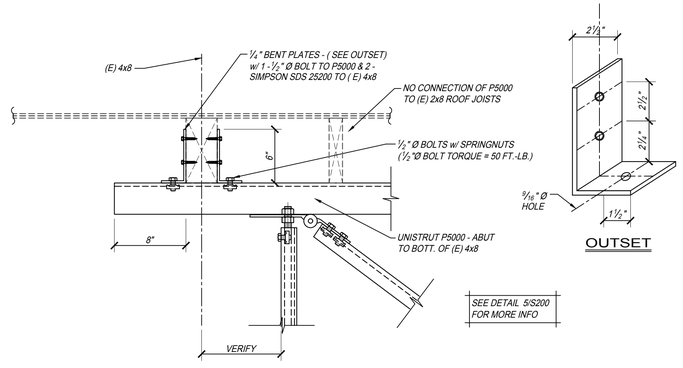
SCALE: 3/8" = 1'-0"



● - INDICATES ROD HANGERS (16 TOTAL)
= = = - INDICATES UNISTRUT SUPPORT BEAM (4 TOTAL)

PARTIAL PLAN - KITCHEN HOODS

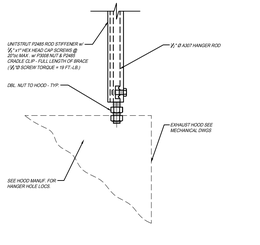
SCALE: 3/8" = 1'-0"



DETAIL

SCALE: 1 1/2" = 1'-0"

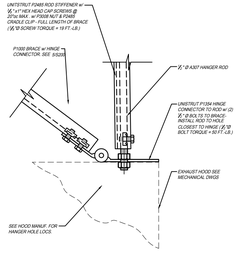
DET04 — 4 S200



DETAIL

SCALE: 1 1/2" = 1'-0"

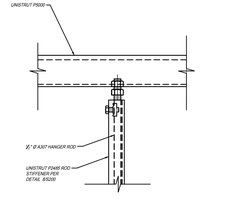
DET10 — 8 S200



DETAIL

SCALE: 1 1/2" = 1'-0"

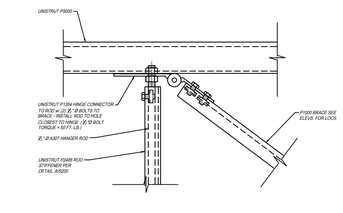
DET09 — 7 S200



DETAIL

SCALE: 1 1/2" = 1'-0"

DET08 — 6 S200



DETAIL

SCALE: 1 1/2" = 1'-0"

DET07 — 5 S200

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS IT BEARS THE STAMPS AND SIGNATURES OF THE ARCHITECT AND ENGINEER AND THE 'APPROVAL' STAMP OF THE JURISDICTIONAL BUILDING DEPARTMENT

APPROVALS:

APPLICATION # 02-120316

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-120316 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 02/13/2023

REGISTERED PROFESSIONAL ENGINEER
BRYAN W. CARLSON
No. M34846
Exp. 6-30-24
MECHANICAL
STATE OF CALIFORNIA

DATE: 08/11/22

MADERA UNIFIED SCHOOL DISTRICT
MADERA HIGH SCHOOL
KITCHEN HVAC RETROFIT
200 SOUTH L STREET
MADERA, CA. 93637

REVISIONS
1 01-15-23 DSA BACK CHECK

LAWRENCE ENGINEERING GROUP
7084 N. Maple Ave., Suite 101
(559) 431-0101
Fresno, CA 93720
FAX (559) 431-1382

TITLE: DETAILS

SHEET: S200

PROJECT 21135

REGISTERED PROFESSIONAL ENGINEER
ROBERT S. PARRISH
No. S2331
Exp. 3/23
02/10/2023
STRUCTURAL
STATE OF CALIFORNIA

PROVOST& PRITCHARD
PARRISH HANSEN
A PROVOST& PRITCHARD DIVISION
455 W FIR AVENUE
CLOVIS, CALIFORNIA 93611
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/