DAVIDSON MIDDLE SCHOOL
HVAC UPGRADES

280 WOODLAND AVE, SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA FILE NO: 21-39 **DSA APPLICATION NO:** 01-119448 **PTN:** 65458-57

PROJECT TEAM

OWNER

San Rafael City Schools
310 Nova Albion Way
San Rafael, CA 94903
Phone: 415-492-3285

ARCHITECT

Quattrocchi Kwok Architects
636 Fifth Street
Santa Rosa, CA 95404
Phone: 707-576-0829
Fax: 707-576-0295
Email: lyannes@qka.com

STRUCTURAL ENGINEER

ZFA Structural Engineers
1212 Fourth Street, Suite Z
Santa Rosa, CA 95404
Phone: 707-526-0992
Fax: 707-526-0217
Email: chrisw@zfa.com

MECHANICAL ENGINEER

Costa Engineers
3274 Villa Lane
Napa, CA 94558
Phone: 707-252-9177
Fax: 707-252-6473
Email: cdelcore@costaengineers.com

ELECTRICAL ENGINEER

O'Mahony & Myer
4340 Redwood Highway, Suite 245
San Rafael, CA 94903
Phone: 415-492-0420
Fax: 415-479-6962
Email: pcolenbrander@ommconsulting.com

QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE C20161
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

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HVAC UPGRADES

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SAN RAFAEL, CA 94901

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DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	N.T.S.
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

COVER SHEET

SHEET NUMBER

G-0.1

ABBREVIATIONS

&	AND	GA	GAUGE	S	SOUTH
L	ANGLE	GALV	GALVANIZED	S.A.D.	SEE ARCHITECTURAL DRAWINGS
@	AT	GB	GRAB BAR	S.AV.D.	SEE AUDIOVIDEO DRAWINGS
℄	CENTERLINE	GC	GENERAL CONTRACTOR	SC	SOLID CORE
'	FEET	GI	GALVANIZED IRON	S.C.D.	SEE CIVIL DRAWINGS
"	INCHES	GL	GLASS/ GLAZING	SCHED	SCHEDULE
d	PENNY	GLB	GLUE LAMINATED BEAM	SD	STORM DRAIN
#	POUND/ NUMBER	GND	GROUND	SECT	SECTION
		GR	GRADE	S.E.D.	SEE ELECTRICAL DRAWINGS
AB	ANCHOR BOLT	GYP BD	GYPSUM BOARD	SEP	SEPARATION
ABBREV	ABBREVIATION			S.F.PD.	SEE FIRE PROTECTION DRAWINGS
AC	ASPHALT CONCRETE	HB	HOSE BIBB	SHTG	SHEATHING
A/C	AIR CONDITIONING	HC	HOLLOW CORE	SIM	SIMILAR
ACC	ACCESSIBLE	HDR	HEADER	SL	SLIDING
ACOUS	ACOUSTICAL	HDWD	HARDWOOD	S.L.D.	SEE LANDSCAPE DRAWINGS
AC T	ACOUSTICAL TILE	HDWR	HARDWARE	SM	SHEET METAL
AD	AREA DRAIN	HM	HOLLOW METAL	S.M.D.	SEE MECHANICAL DRAWING
ADJ	ADJUSTABLE	HOR	HORIZONTAL	SOV	SHUT OFF VALVE
A.F.F.	ABOVE FINISH FLOOR	HP	HIGH POINT	S.P.D.	SEE PLUMBING DRAWINGS
A.F.G.	ABOVE FINISH GRADE	HR	HOUR	SPEC	SPECIFICATION
AGG	AGGREGATE	HSS	HOLLOW STEEL SECTION	SPKR	SPEAKER
ALUM	ALUMINUM	HT	HEIGHT	SQ	SQUARE
ANOD	ANODIZED	HTG	HEATING	SS	STAINLESS STEEL
APPROX	APPROXIMATE	HVAC	HEATING, VENTILATING,	S.S.D.	SEE STRUCTURAL DRAWINGS
ARCH	ARCHITECTURAL		AIR-CONDITIONING	S.TH.D.	SEE THEATER DRAWINGS
ASPH	ASPHALT			STA	STATION
		ID	INSIDE DIAMETER	STD	STANDARD
BD	BOARD	INSUL	INSULATION	STL	STEEL
BITUM	BITUMINOUS	INT	INTERIOR	STOR	STORAGE
BLDG	BUILDING	INTEG	INTEGRAL	STRUCT	STRUCTURAL
BLK	BLOCK	INTERMED	INTERMEDIATE	SUSP	SUSPENDED
BLKG	BLOCKING	INV	INVERT	SYM	SYMMETRICAL
BM	BEAM				
BOT	BOTTOM	JH	JOIST HANGER	T	TREAD
BO	BY OWNER	JST	JOIST	T&B	TOP & BOTTOM
BRK	BREAK	JT	JOINT	TC	TOP OF CURB
BRG	BEARING			TEL	TELEPHONE
BTWN	BETWEEN	KIT	KITCHEN	TER	TERRAZZO
BU	BUILT-UP	KP	KICK PLATE	T&G	TONGUE & GROOVE
BUR	BUILT-UP ROOFING			TH	THICK
		LAB	LABORATORY	THRU	THROUGH
CAB	CABINET	LAM	LAMINATE	TJ	TOOL JOINT
CB	CATCH BASIN	LAV	LAVATORY	TN	TOE NAIL
CBC	CALIFORNIA BUILDING CODE	LL	LIVE LOAD	T.O.D.	TOP OF DECK
CEM	CEMENT	LP	LOW POINT	T.O.P.	TOP OF PLATE
CER	CERAMIC	LT	LIGHT	T.O.R.	TOP OF ROOF
CI	CAST IRON			T.O.W.	TOP OF WALL
CIR	CIRCLE	MAT	MATERIAL	T.P.	TOP OF PAVEMENT
CJ	CONTROL JOINT	MAX	MAXIMUM	TRN	TRANSOM
CORR	CORRIDOR	MB	MACHINE BOLT	TRANS	TRANSPARENT
CL	CLOSET/ CENTER LINE	MC	MEDICINE CABINET	TS	TUBE STEEL
CLG	CEILING	MECH	MECHANICAL	TUB	TUBULAR
CLR	CLEAR	MED	MEDIUM	TV	TELEVISION
CLS	CLOSURE	MEMB	MEMBRANE	TW	TACKWALL
CMU	CONCRETE MASONRY UNIT	MFR	MANUFACTURER	TYP	TYPICAL
CO	CLEANOUT	MH	MANHOLE		
COL	COLUMN	MIN	MINIMUM	UNF	UNFINISHED
COMB	COMBINATION	MIR	MIRROR	U.O.N.	UNLESS OTHERWISE NOTED
COMP	COMPOSITION	MISC	MISCELLANEOUS	UR	URINAL
CONC	CONCRETE	MO	MASONRY OPENING	UTIL	UTILITY
CONN	CONNECTION	MOD	MODULAR		
CONST	CONSTRUCTION	MR	MOISTURE RESISTANT	VB	VAPOR BARRIER
CONT	CONTINUOUS	MTD	MOUNTED	VCT	VINYL COMPOSITION TILE
CONTR	CONTRACTOR	MTL	METAL	VERT	VERTICAL
CT	CERAMIC TILE	MUL	MULLION	VEST	VESTIBULE
CTR	CENTER			V.I.F.	VERIFY IN FIELD
CTSK	COUNTERSINK	N	NORTH	VTR	VENT THROUGH ROOF
CUST	CUSTODIAN	(N)	NEW	VWC	VINYL WALL COVERING
CW	COLD WATER	NAT	NATURAL		
		N.I.C.	NOT IN CONTRACT	W	WEST
DBL	DOUBLE	NO	NUMBER	W/	WITH
DEPT	DEPARTMENT	NOM	NOMINAL	WC	WATER CLOSET
DET	DETAIL	N.T.S.	NOT TO SCALE	WD	WOOD
DF	DRINKING FOUNTAIN			WDW	WINDOW
DG	DECOMPOSED GRANITE	O/	OVER	WH	WATER HEATER
		OA	OVERALL	W/O	WITHOUT
DI	DRAIN INLET	OBS	OBSCURE	WP	WATER PROOF
DIA	DIAMETER	OC	ON CENTER	W.P.	WORK POINT
DIAG	DIAGONAL	OD	OUTSIDE DIAMETER	WR	WATER RESISTANT
DIM	DIMENSION	OF	OVERFLOW	WSCT	WAINSCOT
DISP	DISPOSAL	OFCI	OWNER FURNISHED/ CONTRACTOR INSTALLED	WT	WEIGHT
DIV	DIVISION	O.L.F.	OCCUPANT LOAD FACTOR	YD	YARD
DN	DOWN	OFF	OFFICE		
DO	DOOR OPENING	OPNG	OPENING		
DIR	DIRECTLY	OPP	OPPOSITE		
DR	DOOR	OVHD	OVERHEAD		
DSA	DIVISION OF STATE ARCHITECT				
DS	DOWN SPOUT	PC	PORTLAND CEMENT		
DSP	DRY STAND PIPE	P.C.F.	POUNDS PER CUBIC FOOT		
DT	DRAIN TILE	PDA	POWER DRIVEN ANCHOR		
DW	DISHWASHER	PERF	PERFORATED		
DWG	DRAWING	PH	PLATE HEIGHT		
DWR	DRAWER	PL	PLATE		
		P/L	PROPERTY LINE		
E	EAST	PLAM	PLASTIC LAMINATE		
(E)	EXISTING	PLAS	PLASTER/ PLASTIC		
EA	EACH	PLF	POUNDS PER LINEAL FOOT		
EB	EXPANSION BOLT	PLYWD	PLYWOOD		
EE	EACH END	P.O.C.	POINT OF CONTACT		
EF	EXHAUST FAN	PR	PAIR		
EJ	EXPANSION JOINT	PROP	PROPERTY		
EL	ELEVATION GRADE	PSF	POUNDS PER SQUARE FOOT		
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH		
ELEV	ELEVATION	PT	POINT		
EMER	EMERGENCY	PTDF	PRESSURE TREATED DOUGLAS FIR		
EMT	ELECTRIC METALLIC TUBING				
ENCL	ENCLOSURE	PTN	PARTITION		
EP	ELECTRIC PANEL	PTR	PAPER TOWEL RECEPTACLE		
EQ	EQUAL	PVC	POLYVINYL CHLORIDE		
EQUIP	EQUIPMENT	PVMT	PAVEMENT		
EQUIV	EQUIVALENT				
ES	EACH SIDE	R	RISER		
EW	EACH WAY	R / RAD	RADIUS		
EXH	EXHAUST	RD	ROOF DRAIN		
EXIST	EXISTING	REF	REFERENCE		
EXP	EXPANSION	REFR	REFRIGERATOR		
EXT	EXTERIOR	REG	REGULAR		
		REQD	REQUIRED		
F	FACE	REINF	REINFORCED		
FA	FIRE ALARM	RH	ROOF HATCH		
FCO	FLOOR CLEAN OUT	RHMS	ROUND HEAD MACHINE SCREW		
FD	FLOOR DRAIN	RHWS	ROUND HEAD WOOD SCREW		
FDN	FOUNDATION	RM	ROOM		
FE	FIRE EXTINGUISHER	RO	ROUGH OPENING		
FEC	FIRE EXTINGUISHER CABINET	RWL	RAIN WATER LEADER		
FF	FINISH FLOOR	RWD	REDWOOD		
FG	FINISH GRADE				
FGL	FIBERGLAS				
FH	FIRE HYDRANT				
FHMS	FLAT HEAD MACHINE SCREW				
FHS	FIRE HOSE STATION				
FHWS	FLAT HEAD WOOD SCREW				
FIN	FINISH				
FIXT	FIXTURE				
FL	FLOOR LINE				
FLASH	FLASHING				
FLUOR	FLUORESCENT				
FLR	FLOOR				
FM / FOM	FACE OF MASONRY				
FN	FACE NAIL				
FOC	FACE OF CONCRETE				
FOF	FACE OF FINISH				
FOS	FACE OF STUD				
FRMG	FRAMING				
FR	FIRE-RESISTANT				
FRP	FIBERGLASS REINFORCED PANEL				
FT	FEET				
FTG	FOOTING				
FURR	FURRING				

LEGEND

ALL NOTES AND SYMBOLS ARE INTENDED TO APPLY AT ALL OTHER LOCATIONS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY. NO LIMITATION OF APPLICATION IS INTENDED EXCEPT AS SPECIFICALLY NOTED.

AA / A1 — COLUMN GRIDS A AND 1 IN BUILDING A

6'-0" — DIMENSION TO FACE OF STUD OR MASONRY

6'-0" — DIMENSION TO FACE OF FINISH

6'-0" — DIMENSION TO CENTER LINE OR COLUMN LINE

12'-0" — RELATIVE ELEVATION DIMENSION

M101 — MECHANICAL CLOSET DOOR IN ROOM NUMBER 101

SEE -

W03 — WINDOW NUMBER 03

11 / A-9.12 — DETAIL NUMBER 11 ON SHEET NUMBER A-9.12

3 / A-B6.2 — SECTION NUMBER 3 ON SHEET NUMBER A-B6.2

2 / A-B5.3 — ELEVATION NUMBER 2 ON SHEET NUMBER A-B5.3

FLOOR PLAN — CLASSROOM A204 — ROOM NAME / ROOM NUMBER 204 IN 20s WING

L01 — ARCHITECTURAL LOUVER TYPE L01, SEE ELEVATIONS AND LOUVER SCHEDULE. DOOR LOUVERS ARE NOT TAGGED, SEE DOOR SCHEDULE.

W.P. — RELATIVE ORIGIN OR WORK POINT

Statement of General Conformance

BY ARCHITECT UTILIZING PLANS (INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS) PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

DSA Application No **01-119448** File No **21-39**

These drawings and/or specifications and/or calculations for the items listed (marked Structural, Mechanical, and Electrical), have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. It has 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.

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

Signature — 3/15/2021 Date

Architect or Engineer designated to be in general responsible charge

Steven Kwok	C20161	April 30, 2021
Print Name	License Number	Expiration Date

GENERAL NOTES

1. ALL WORK IS SHOWN, DESCRIBED OR SPECIFIED IN THE DRAWINGS INDEXED ON THIS PAGE OR IN THE SPECIFICATIONS.

   ALL WORK NOT INDICATED AS EXISTING (E) IS NEW.

2. ALL FRAMING DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
   - DO NOT SCALE DRAWINGS.
   - VERIFY ALL DIMENSIONS WHERE WORK INVOLVES FRAMING FOR WINDOWS, DOORS, OR CABINETS.

3 ONLY WORK SO NOTED IS NOT IN CONTRACT (N.I.C.) ALL N.I.C. ITEMS ARE NOT PART OF DSA APPROVAL

4. GOVERNING CODES: A COPY OF TITLE 24 PARTS 1-5 SHALL BE KEPT ON THE JOB AT ALL TIMES.
   CALIFORNIA CODE OF REGULATIONS TITLE 24 BUILDING STANDARDS CODE:
   - PART 1 2019 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
   - PART 2 2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR (2018 INTERNATIONAL BUILDING CODE, VOL. 1 & 2, AND 2016 CALIFORNIA AMENDMENTS)
   - PART 3 2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR (2017 NATIONAL ELECTRICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
   - PART 4 2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR (2018 IAPMO UNIFORM MECHANICAL CODE AND 2016 CALIFORNIA AMENDMENTS)
   - PART 5 2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR (2018 IAPMO UNIFORM PLUMBING CODE AND 2016 CALIFORNIA AMENDMENTS)
   - PART 6 2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR
   - PART 9 2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR (2018 INTERNATIONAL FIRE CODE AND 2016 CALIFORNIA AMENDMENTS)
   - PART 10 2019 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR (2018 INTERNATIONAL EXISTING BUILDING CODE AND 2016 CALIFORNIA AMENDMENTS)
   - PART 11 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL-GREEN), PART 11, TITLE 24 CCR
   - PART 12 2019 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR

   TITLE 19 CCR, PUBLIC SAFETY CODE, STATE FIRE MARSHAL REGULATIONS
   2010 ADA STANDARDS FOR ACCESSIBILITY DESIGN
   ASME A17.1-16/CSA B44-16 SAFETY CODE FOR ELEVATORS AND ESCALATORS

5. STANDARD AND GUIDES:

NFPA 13	INSTALLATION OF FIRE SPRINKLER SYSTEMS (CA AMENDED)	2016 EDITION
NFPA 14	INSTALLATION OF STANDPIPE AND HOSE SYSTEMS	2016 EDITION
NFPA 17	DRY CHEMICAL EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 17A	WET CHEMICAL FIRE EXTINGUISHING SYSTEMS	2017 EDITION
NFPA 20	INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION	2016 EDITION
NFPA 24	STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES	2016 EDITION
NFPA 25	CALIFORNIA EDITION - TESTING, MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS	2013 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 110	EMERGENCY AND STANDBY POWER SYSTEMS	2016 EDITION
NFPA 170	STANDARD FOR FIRE SAFETY AND EMERGENCY SYMBOLS	2018 EDITION
NFPA 2001	STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS	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 EDITION
UL 2034	STANDARD FOR SINGLE AND MULTIPLE CARBON MONOXIDE ALARMS	2017 EDITION
ICC 300	STANDARD FOR BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS	2017 EDITION

6. IN ACCORDANCE WITH TITLE 24 PART 1 CHAPTER 4: THE ADMINISTRATIVE REGULATIONS FOR THE DIVISION OF THE STATE ARCHITECT STRUCTURAL SAFETY (DSA/SS)
   - 4-331 DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION.
   - 4-332 WHEN CONSTRUCTION IS SUSPENDED FOR MORE THAN ONE MONTH, THE PROJECT INSPECTOR SHALL INFORM DSA.
   - 4-333(a) OBSERVATION OF THE WORK SHALL BE BY ARCHITECT OR REGISTERED ENGINEER.
   - 4-333(b) THE DISTRICT MUST PROVIDE AND PAY FOR PROJECT INSPECTOR.
   - 4-334 SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH THIS SECTION.
   - 4-335 STRUCTURAL TESTS AND INSPECTION ARE REQUIRED IN ACCORDANCE WITH THIS SECTION. TESTS OF MATERIALS AND TESTING LAB SHALL BE IN ACCORDANCE WITH SECTION 4-335 AND THE DISTRICT SHALL EMPLOY AND PAY THE LAB. COSTS OF RE-TEST MAY BE BACKCHARGED TO THE CONTRACTOR. ALL TESTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 4-335 AND APPROVED BY A I SHEET (DSA-103)
   - 4-336 VERIFIED REPORTS SHALL BE SUBMITTED BY CONTRACTORS (DSA 006-C), INSPECTORS (DSA 006-PI), ARCHITECTS AND ENGINEERS (DSA 006-AE) IN ACCORDANCE WITH SECTIONS 4-336 AND 4-343.
   - 4-337 SEMI-MONTHLY REPORTS SHALL BE SUBMITTED BY INSPECTORS (DSA - 155), IN ACCORDANCE WITH SECTIONS 4-337.
   - 4-338 WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE APPROVED PLANS, ADDENDA AND CONSTRUCTION DOCUMENTS. CHANGES IN THE APPROVED PLANS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENTS STAMPED AND SIGNED BY THE ARCHITECT OR REGISTERED ENGINEER IN CHARGE. ADDENDA AND CHANGE DOCUMENTS SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF WORK.
   - 4-341(a) THE ARCHITECT AND THE REGISTERED ENGINEER SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SECTIONS 4-333(a) AND 4-341.
   - 4-341(d) INSPECTOR SHALL BE APPROVED BY DSA.
   - 4-342 INSPECTION SHALL BE IN ACCORDANCE WITH SECTION 4-333 THE DUTY OF THE INSPECTOR SHALL BE IN ACCORDANCE WITH THIS SECTION.
   - 4-343 THE CONTRACTOR SHALL PERFORM HIS DUTIES IN ACCORDANCE WITH THIS SECTION.

7. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, C.C.R. SHOULD ANY EXISTING CONDITIONS BE DISCOVERED WHICH ARE NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH SAID TITLE 24 C.C.R. A CONSTRUCTION CHANGE DOCUMENT DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK. (TITLE 24 PART 1, SECTION 4-338(c))

8. COMPLIANCE WITH CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION AND CBC CHAPTER 33, SAFETY DURING CONSTRUCTION SHALL BE ENFORCED.

9. EMERGENCY VEHICLE ACCESS ROADS AND ON-SITE FIRE HYDRANTS SHALL BE IN SERVICE AND OPERABLE PRIOR TO LOADING THE SITE WITH COMBUSTIBLE MATERIALS.

10. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS, AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH APPLICABLE LOCAL ORDINANCES.

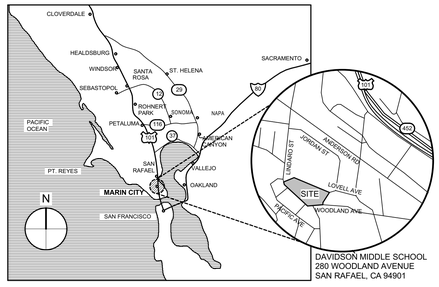
PROJECT DESCRIPTON

UPGRADE TO MECHANICAL SYSTEMS, AND ELECTRICAL SERVICE IMPROVEMENTS IN SUPPORT OF MECHANICAL WORK; INCLUDES REPLACEMENT OF EXISTING MECHANICAL UNITS AT BUILDING WINGS 10 THROUGH 50, INSTALLATION OF GROUND MOUNTED UNITS OUTSIDE THE PATH OF TRAVEL, AND SECURITY ENCLOSURES TO PROTECT UPGRADED EXTERIOR MECHANICAL UNITS.
PER IR 11B-6, THIS IS A MECHANICAL ONLY PROJECT AND DOES NOT REQUIRE ACCESS REVIEW.

DEFERRED APPROVALS

- NONE

VICINITY MAP



SHEET INDEX

TOTAL SHEET COUNT: 56

QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT — STEVEN KWOK — LICENSE # C-20161 — EXP APRIL 30, 2021 — STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

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DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

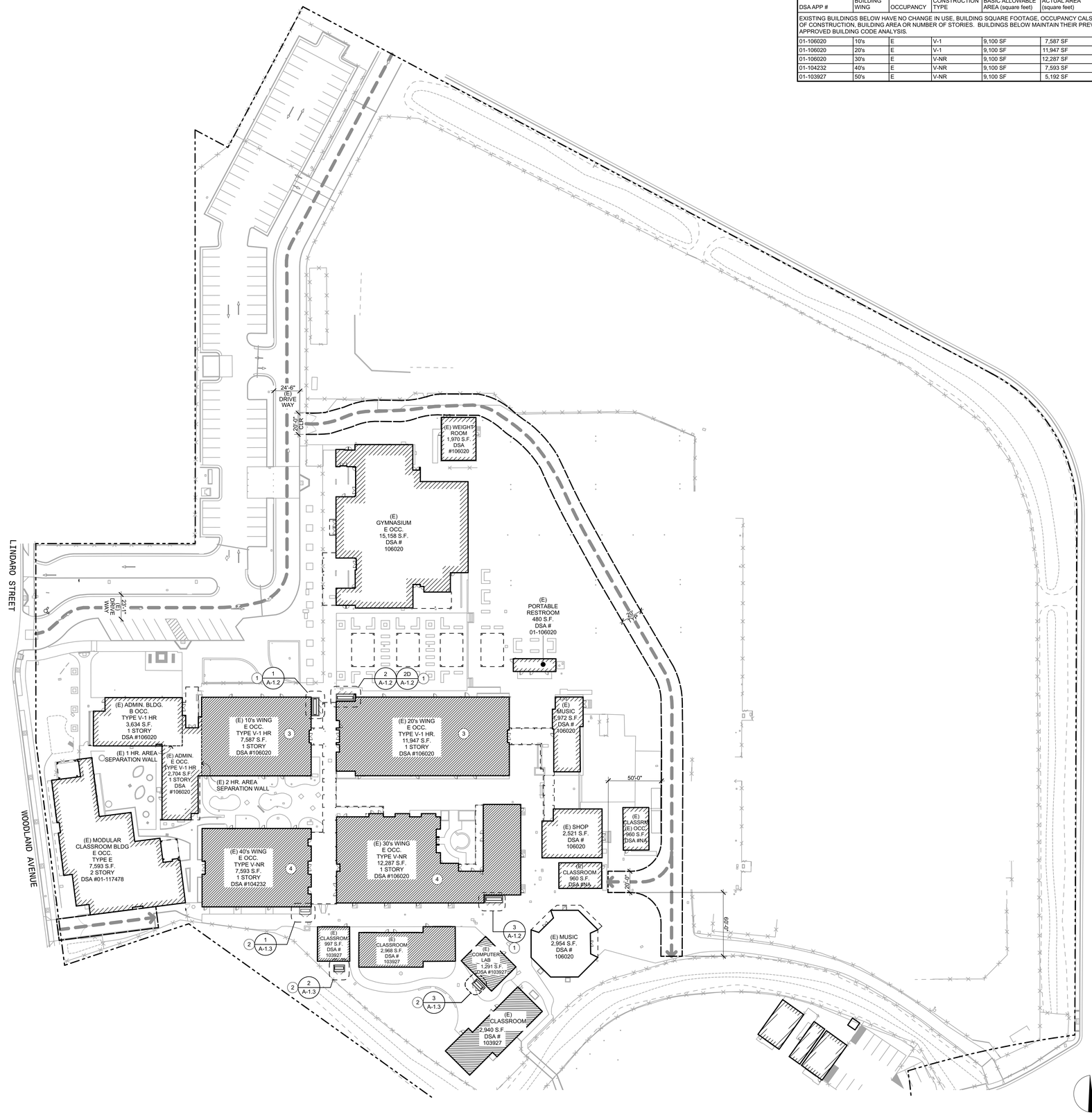
ABBREVIATIONS AND NOTES

SHEET NUMBER

G-0.2

BUILDING CODE ANALYSIS

DSA APP #	BUILDING WING	OCCUPANCY	CONSTRUCTION TYPE	BASIC ALLOWABLE AREA (square feet)	ACTUAL AREA (square feet)	MAX STORIES	ACTUAL STORIES
EXISTING BUILDINGS BELOW HAVE NO CHANGE IN USE, BUILDING SQUARE FOOTAGE, OCCUPANCY CALSSIFICATION, TYPE OF CONSTRUCTION, BUILDING AREA OR NUMBER OF STORIES. BUILDINGS BELOW MAINTAIN THEIR PREVIOUSLY APPROVED BUILDING CODE ANALYSIS.							
01-106020	10's	E	V-1	9,100 SF	7,587 SF	ONE	ONE
01-106020	20's	E	V-1	9,100 SF	11,947 SF	ONE	ONE
01-106020	30's	E	V-NR	9,100 SF	12,287 SF	ONE	ONE
01-104232	40's	E	V-NR	9,100 SF	7,593 SF	ONE	ONE
01-103927	50's	E	V-NR	9,100 SF	5,192 SF	ONE	ONE



PROJECT SITE PLAN 1

1" = 40'

SITE PLAN KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

1. TYPE 1 MECHANICAL ENCLOSURE ON HOUSEKEEPING PAD, S.M.D. FOR MECHANICAL WORK
2. TYPE 2 MECHANICAL ENCLOSURE ON HOUSEKEEPING PAD, S.M.D. FOR MECHANICAL WORK
3. REPLACEMENT MECH LOUVER VENT AT (E) CLERESTORY OPENINGS, S.M.D. FOR LOCATIONS AND (23 / A-1.5)
4. MECH CLOSET DOOR REPLACEMENT, SEE FLOOR PLANS

SITE PLAN GENERAL NOTES

1. PER IR 11B-6, MECHANICAL PROJECTS DO NOT REQUIRE ACCESS REVIEW.
2. SITE IS NOT WITHIN A WILDLAND URBAN INTERFACE.
3. SITE IS LOCATED IN A FLOOD HAZARD AREA. HOWEVER, THE VALUE OF THIS PROJECT DOES NOT EXCEED 50 PERCENT OF THE MARKET VALUE OF THE STRUCTURE PRIOR TO THE IMPROVEMENTS BEING MADE. THEREFORE COMPLIANCE WITH FLOOD HAZARD AREA DOCUMENTATION IS NOT REQUIRED.
4. REFER TO MECHANICAL & ELECTRICAL ENGINEERING DWGS FOR MECHANICAL AND ELECTRICAL WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY CONFIRM EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
6. THE CONTRACTOR SHALL VERIFY AND LOCATE ALL EXISTING ABOVE AND UNDERGROUND UTILITIES AND SERVICES. PROTECT ALL EXISTING UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED ON THE PLANS. WHERE DEMOLISHED, CAP AS REQUIRED AND IDENTIFY FOR OWNER. EXISTING MAINS AND SERVICE LINES SHOWN HAVE NOT BEEN VERIFIED IN THE FIELD.
7. IF UTILITIES TO REMAIN IN PLACE ARE DAMAGED, CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY AND MAKE REPAIRS TO SAID LINES AS QUICKLY AS POSSIBLE, AT NO EXPENSE TO THE OWNER.
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10. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS.
11. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.

SITE PLAN LEGEND

- (E) BUILDING AT AREA OF WORK
- (E) BUILDING
- (E) PROPERTY LINE
- (E) FIRE ACCESS

QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE #C-28461
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1" = 40'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

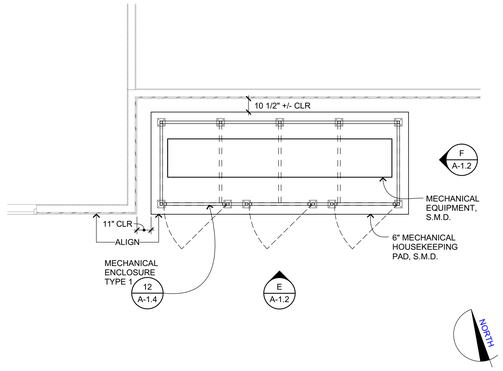
MARCH 15, 2021

SHEET TITLE

CAMPUS SITE PLAN

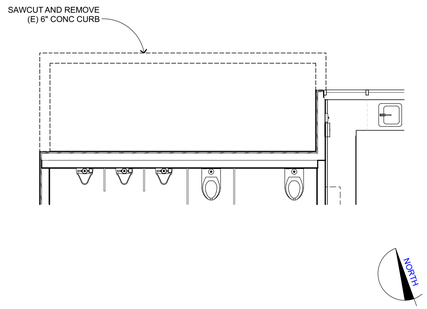
SHEET NUMBER

A-1.1



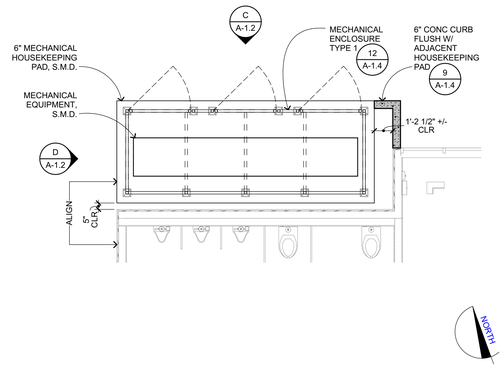
PARTIAL ENLARGED PLAN @ 30's WING 3

1/4" = 1'-0"



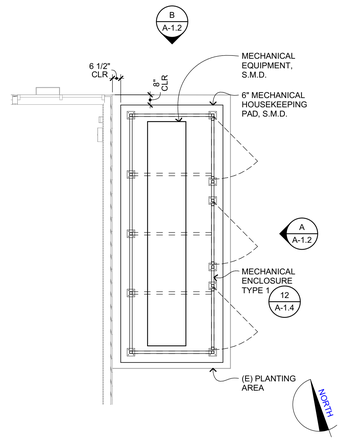
PARTIAL ENLARGED DEMOLITION PLAN @ 20's WING 2D

1/4" = 1'-0"



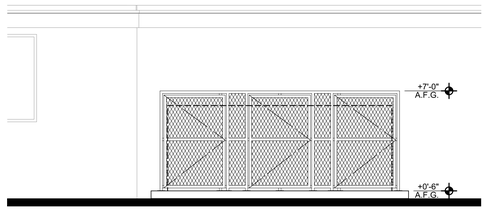
PARTIAL ENLARGED PLAN @ 20's WING 2

1/4" = 1'-0"



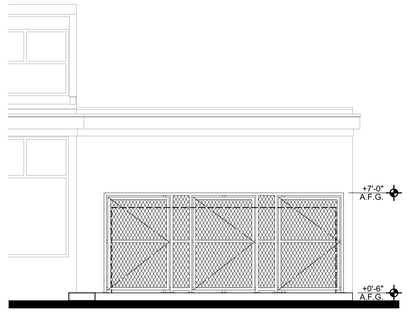
PARTIAL ENLARGED PLAN @ 10's WING 1

1/4" = 1'-0"



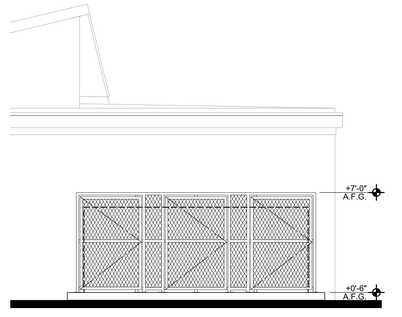
SOUTH ELEVATION E

1/4" = 1'-0"



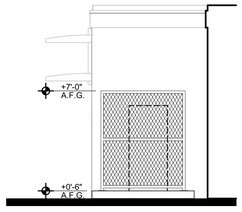
NORTH ELEVATION C

1/4" = 1'-0"



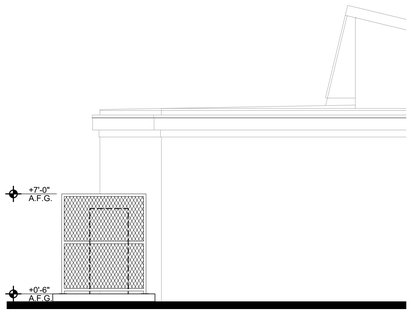
EAST ELEVATION A

1/4" = 1'-0"



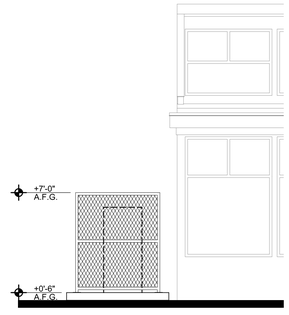
EAST ELEVATION F

1/4" = 1'-0"



WEST ELEVATION D

1/4" = 1'-0"



NORTH ELEVATION B

1/4" = 1'-0"

ENLARGED SITE PLAN GENERAL NOTES

1. REFER TO MECHANICAL ENGINEERING DWGS FOR MECHANICAL UNIT INSTALLATIONS NOT OTHERWISE INDICATED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY CONFIRM EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
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8. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.

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Main:
636 Fifth Street, Santa Rosa, CA 95404
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55 Harrison Street, Suite 525,
Oakland, CA 94607
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LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C20161
EXP APRIL 30, 2021
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SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/4" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

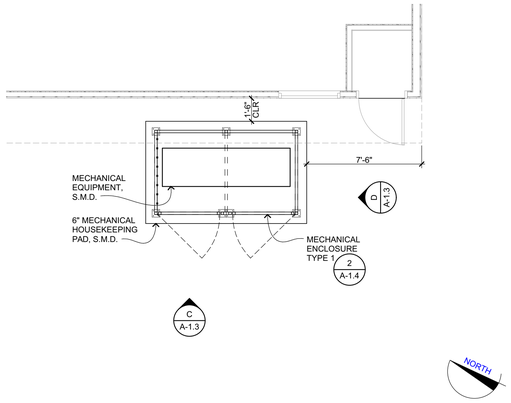
MARCH 15, 2021

SHEET TITLE

PARTIAL ENLARGED SITE PLANS & ELEVATIONS

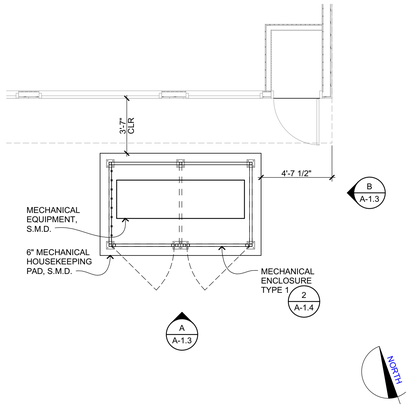
SHEET NUMBER

A-1.2



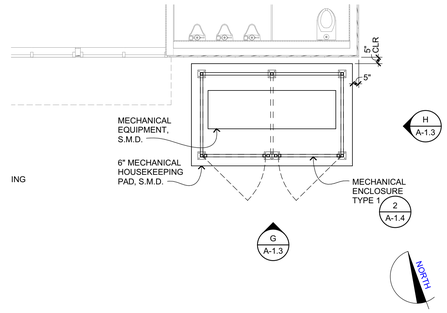
PARTIAL ENLARGED PLAN @ 50's WING 3

1/4" = 1'-0"



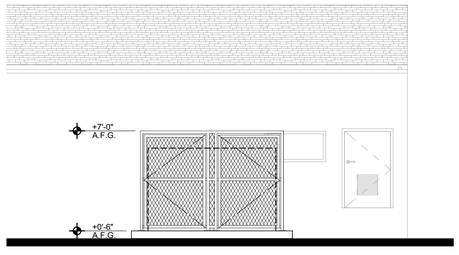
PARTIAL ENLARGED PLAN @ 50's WING 2

1/4" = 1'-0"



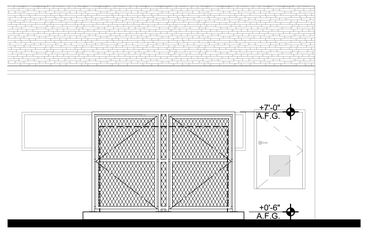
PARTIAL ENLARGED PLAN @ 40's WING 1

1/4" = 1'-0"



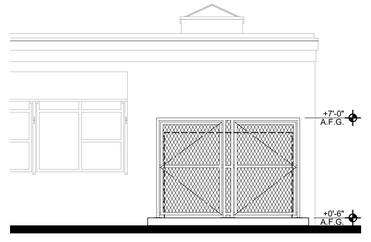
SOUTH WEST ELEVATION C

1/4" = 1'-0"



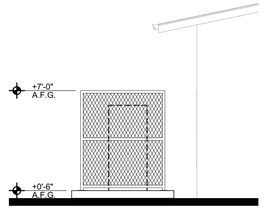
SOUTH ELEVATION A

1/4" = 1'-0"



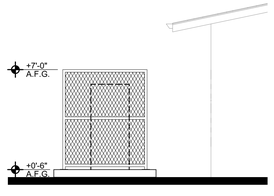
SOUTH ELEVATION G

1/4" = 1'-0"



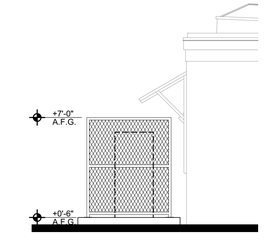
SOUTH EAST ELEVATION D

1/4" = 1'-0"



EAST ELEVATION B

1/4" = 1'-0"



WEST ELEVATION H

1/4" = 1'-0"

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QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C20116
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/4" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

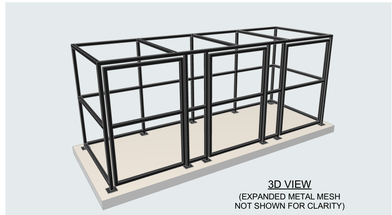
MARCH 15, 2021

SHEET TITLE

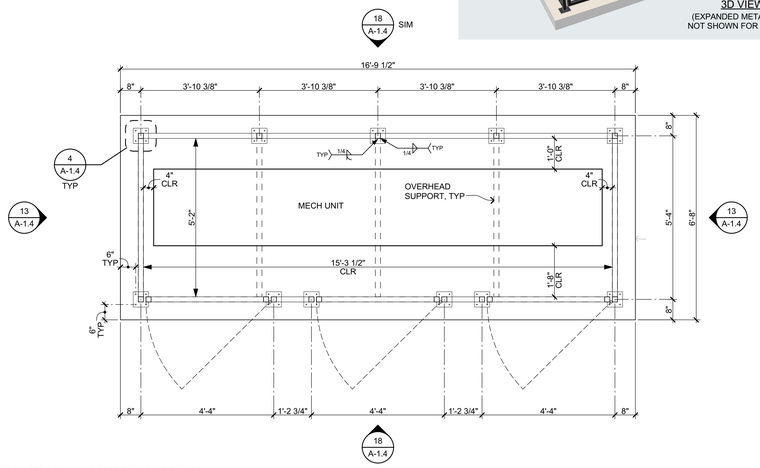
PARTIAL ENLARGED SITE PLANS & ELEVATIONS

SHEET NUMBER

A-1.3



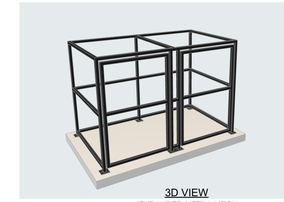
3D VIEW
(EXPANDED METAL MESH
NOT SHOWN FOR CLARITY)



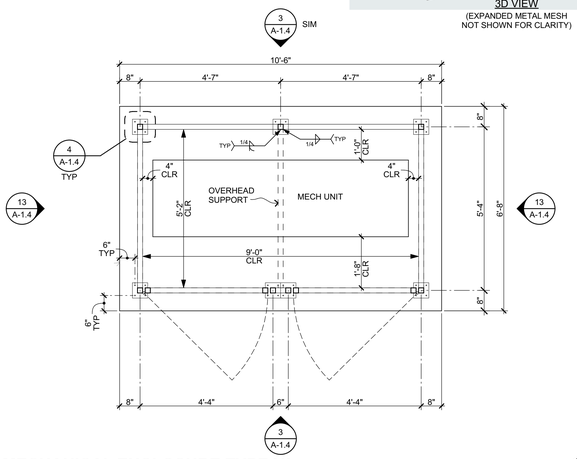
MECHANICAL ENCLOSURE TYPE '2'

1/2" = 1'-0"

12



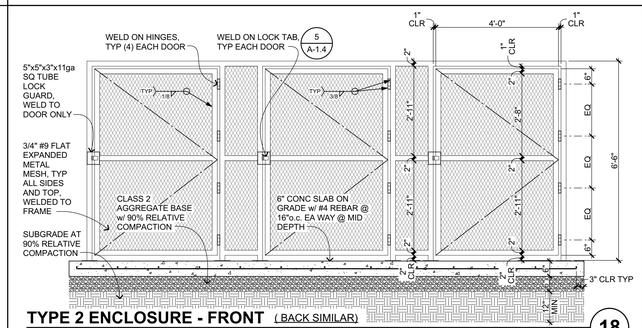
3D VIEW
(EXPANDED METAL MESH
NOT SHOWN FOR CLARITY)



MECHANICAL ENCLOSURE TYPE '1'

1/2" = 1'-0"

2

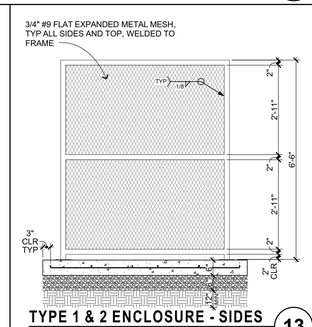


TYPE 2 ENCLOSURE - FRONT (BACK SIMILAR)

1/2" = 1'-0"

1900.00-02

18

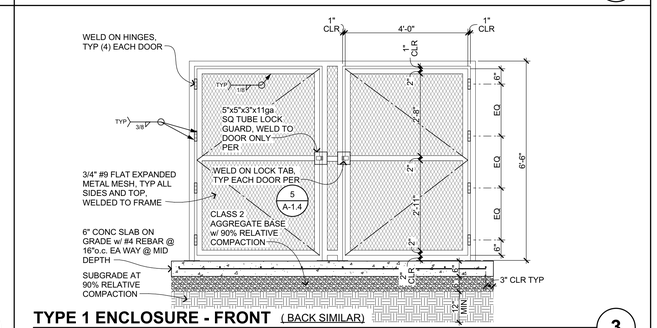


TYPE 1 & 2 ENCLOSURE - SIDES

1/2" = 1'-0"

1900.00-04

13

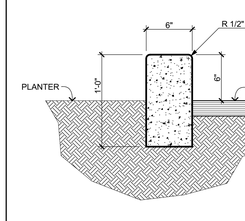


TYPE 1 ENCLOSURE - FRONT (BACK SIMILAR)

1/2" = 1'-0"

1900.00-05

3

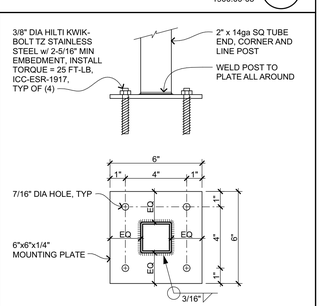


CURB @ PLANTER

1 1/2"= 1'-0"

1900.00-06

9

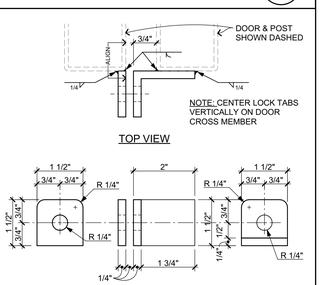


POST BASE

3" = 1'-0"

1900.00-01

4



LOCK TABS

6" = 1'-0"

1900.00-03

5

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Main:
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SIGNED: MARCH 15, 2021

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HVAC UPGRADES

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SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	AS NOTED
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

ARCHITECTURAL DETAILS

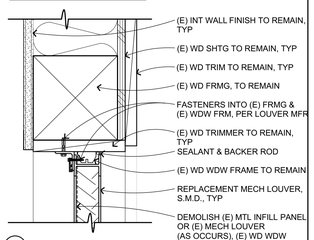
SHEET NUMBER

A-1.4

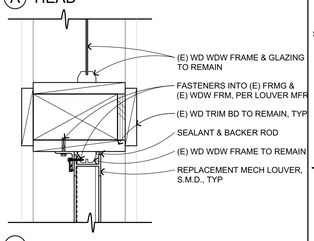
PRESERVE & PROTECT (E) WD WDW FRAMES/MULLIONS AT LOCATIONS OF (E) MTL INFILL PANEL & (E) MECH LOUVER DEMOLITION, TYP

TYP FASTENER NOTE: #12 S.S. FHWS, 1-1/2" MIN PENETRATION AT 16" O.C., MIN 2 FASTENERS PER PIECE, MAX 3" FROM ENDS.

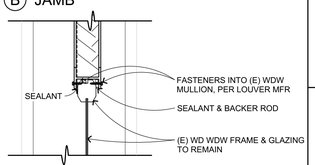
COORDINATE W/ MECHANICAL DRAWINGS FOR LOCATIONS OF WORK



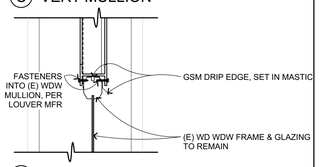
A HEAD



B JAMB



C VERT MULLION

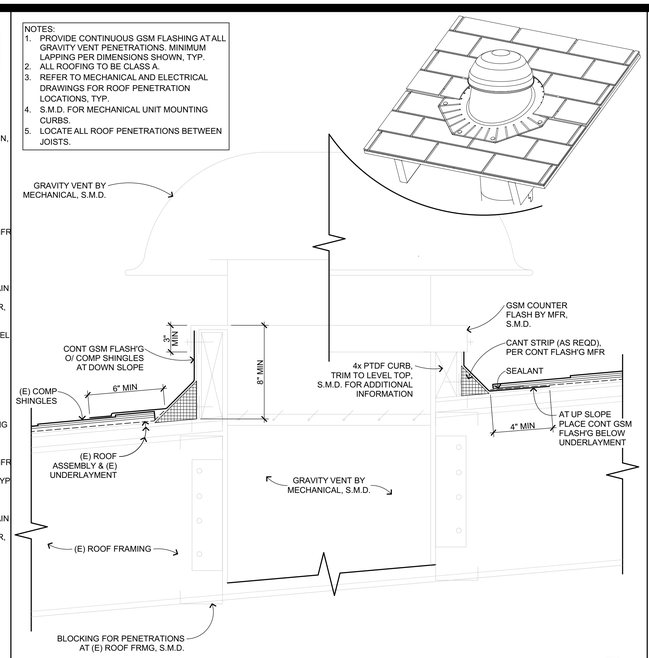


D HORIZ MULLION

LOUVER AT (E) CLERESTORY WDWS 23

3" = 1'-0" B204101A-1781-1900.00

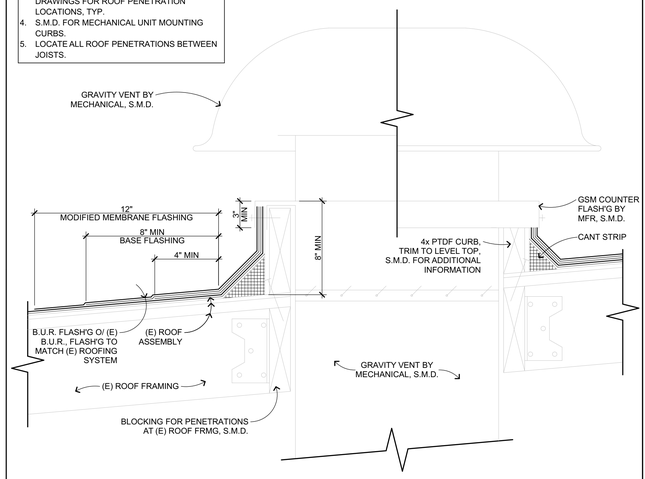
NOTES:
1. PROVIDE CONTINUOUS GSM FLASHING AT ALL GRAVITY VENT PENETRATIONS. MINIMUM LAPPING PER DIMENSIONS SHOWN, TYP.
2. ALL ROOFING TO BE CLASS A.
3. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ROOF PENETRATION LOCATIONS, TYP.
4. S.M.D. FOR MECHANICAL UNIT MOUNTING CURBS.
5. LOCATE ALL ROOF PENETRATIONS BETWEEN JOISTS.



ROOF FLASHING AT 50s WING GRAVITY VENT PENETRATIONS

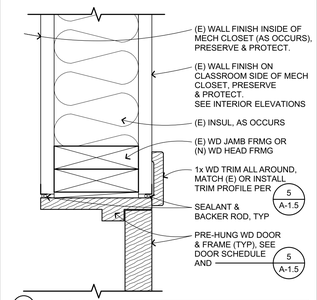
3" = 1'-0" B301313 **12**

NOTES:
1. PROVIDE B.U.R. FLASHING LAPS ALL AROUND GRAVITY VENT PENETRATIONS. LAPPING PER DIMENSIONS SHOWN, TYP.
2. ALL ROOFING TO BE CLASS A.
3. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ROOF PENETRATION LOCATIONS, TYP.
4. S.M.D. FOR MECHANICAL UNIT MOUNTING CURBS.
5. LOCATE ALL ROOF PENETRATIONS BETWEEN JOISTS.



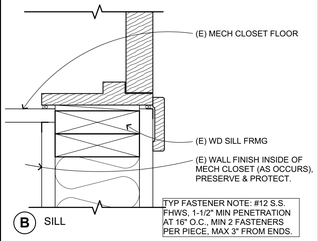
ROOF FLASHING AT 30s & 40s WING GRAVITY VENT PENETRATIONS

3" = 1'-0" B301214-1900.00 **2**



A HEAD/JAMB

NOTE:
1. PATCH/REPAIR OF (E) WALL FINISHES SHALL BE PAINTED/FINISHED TO MATCH ADJACENT (E) FINISHES.
2. DOOR, FRAME, AND TRIM TO BE PAINTED TO MATCH (E) COLORS/FINISHES.



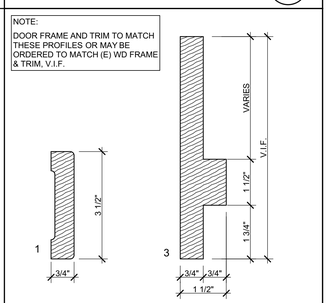
B SILL

TYP FASTENER NOTE: #12 S.S. FHWS, 1-1/2" MIN PENETRATION AT 16" O.C., MIN 2 FASTENERS PER PIECE, MAX 3" FROM ENDS.

MECH CLOSET DOORS

3" = 1'-0" 1480.00-1900.00A **4**

NOTE:
DOOR FRAME AND TRIM TO MATCH THESE PROFILES OR MAY BE ORDERED TO MATCH (E) WD FRAME & TRIM, V.I.F.



MECH CLOSET DOOR TRIM

6" = 1'-0" 1480.00-1900.00B **5**

QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C20161
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448
ARCH PROJECT NO: 1900.00
DRAWN BY: TF, BSC
DRAWING SCALE: AS NOTED
PTN: 65458-57 FILE NO: 21-39

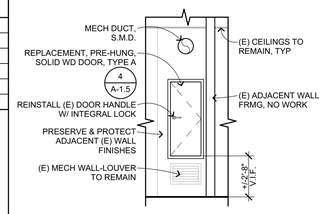
DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE
ARCHITECTURAL DETAILS

SHEET NUMBER
A-1.5

DOOR SCHEDULE

ID	TYPE	DOOR			FRAME			LOUVER SIZE	LABEL	HDWR	P. H.	REMARKS
		SIZE	MAT	FIN	TYPE	MAT	FIN					
M30	A	2'-0" x 4'-10"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M31	A	2'-0" x 4'-10"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M32	A	2'-0" x 4'-10"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M33	A	2'-0" x 4'-10"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M34	A	2'-0" x 4'-10"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M36	A	2'-0" x 4'-10"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)

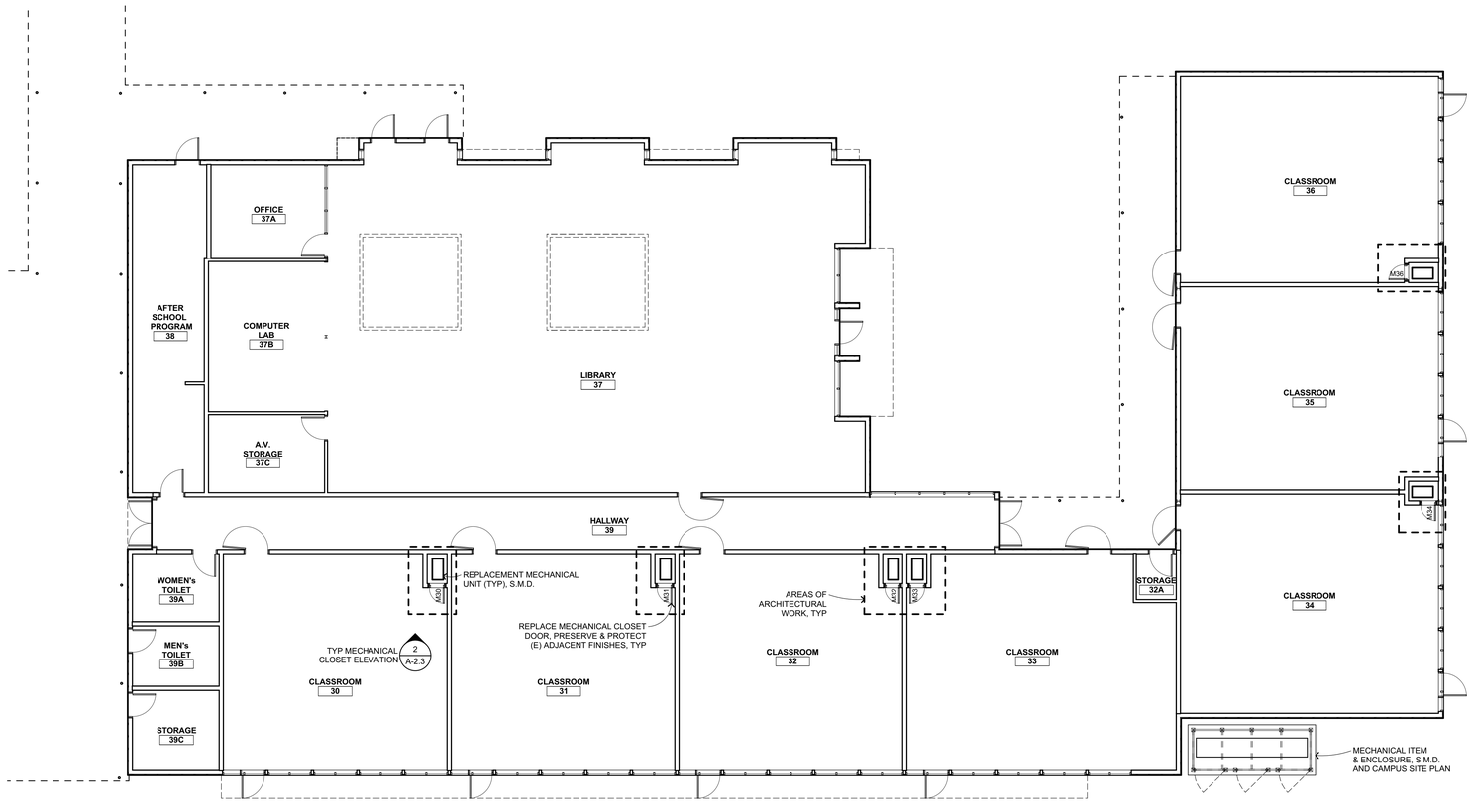


TYP MECH CLOSET ELEVATION 2

1/4" = 1'-0"

FLOOR PLAN GENERAL NOTES

1. COORDINATE ALL WORK WITH THAT SHOWN IN MECHANICAL AND ELECTRICAL DRAWINGS.
2. INTERIOR ARCHITECTURAL WORK IS LIMITED TO MECHANICAL CLOSET DOOR & FRAME REPLACEMENT & PAINTING, INCLUDING RELATED WOOD TRIM, AND INCIDENTAL PATCH/REPAIR & PAINTING RELATED TO DOOR REPLACEMENT.
3. PRESERVE & PROTECT (E) DOOR HANDLES W/ INTEGRAL LOCKS AT TIME OF MECHANICAL CLOSET DOOR DEMOLITION. REMOVE HANDLES W/ LOCKS AND STORE SAFELY FOR REINSTALLATION INTO REPLACEMENT DOOR ASSEMBLY.
4. DEMOLITION SHALL BE SUFFICIENT TO COMPLETE THE (N) WORK SHOWN IN THE DRAWINGS. NEATLY CUT AND REMOVE FINISHES AS REQUIRED TO A NATURAL POINT OF DIVISION TO ENABLE INSTALLATION OF BLOCKING, BACKING, FRAMING, SHEATHING, UTILITIES OR OTHER CONCEALED WORK, WHETHER SPECIFICALLY SHOWN OR INFERRED FOR (N) WORK. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR CONCEALED WORK.
5. REPAIR AND REPLACE ALL EXISTING SURFACES AND FINISHES TO EXISTING UNDISTURBED WORK.
6. INSPECT EXPOSED STRUCTURE FOR DAMAGE AND ADVISE ARCHITECT.
7. SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.
8. FOR ROOF FLASHING WORK AT ROOF PENETRATIONS, SEE 5 A-1.5 AND S.M.D. FOR LOCATIONS.
9. REFER TO MECHANICAL & ELECTRICAL DWGS FOR MECHANICAL UNIT INSTALLATIONS NOT OTHERWISE INDICATED.
10. REFER TO REFLECTED CEILING PLAN FOR CLERESTORY WINDOWS.



30s WING FLOOR PLAN 1

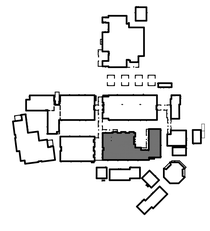
1/8" = 1'-0"

NORTH

FLOOR PLAN LEGEND

LIMITED AREA OF WORK

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE: A-C30189
EXP APRIL 30, 2021
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SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE

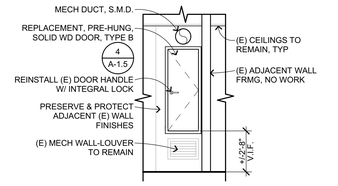
30s WING FLOOR PLAN

SHEET NUMBER

A-2.3

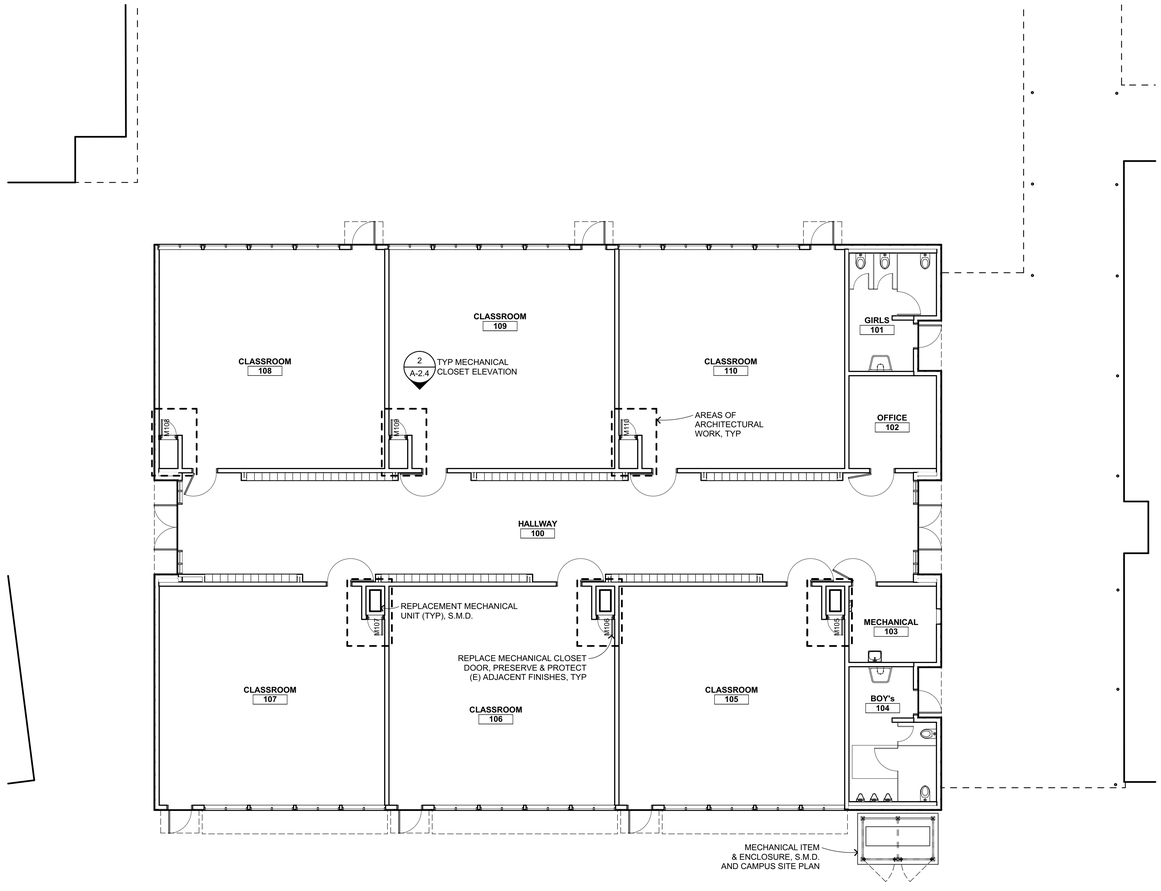
DOOR SCHEDULE

ID	TYPE	DOOR			FRAME			LOUVER SIZE	LABEL	HDWR	P. H.	REMARKS
		SIZE	MAT	FIN	TYPE	MAT	FIN					
M105	B	2'-0" x 5'-4"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M106	B	2'-0" x 5'-4"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M107	B	2'-0" x 5'-4"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M108	B	2'-0" x 5'-4"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M109	B	2'-0" x 5'-4"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)
M110	B	2'-0" x 5'-4"	WOOD	PAINT	1	WOOD	PAINT	N/A	N/A	(E)	N/A	V.I.F. & S.M.D. TO CONFIRM DOOR SIZE, PAINT DOOR & FRAME TO MATCH (E)



TYP MECH CLOSET ELEVATION 2

1/4" = 1'-0"



40s WING FLOOR PLAN 1

1/8" = 1'-0"

NORTH

FLOOR PLAN GENERAL NOTES

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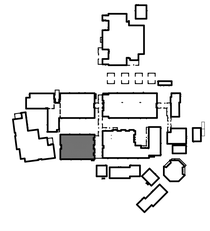
9. REFER TO MECHANICAL & ELECTRICAL DWGS FOR MECHANICAL UNIT INSTALLATIONS NOT OTHERWISE INDICATED.
10. REFER TO REFLECTED CEILING PLAN FOR CLERESTORY WINDOWS.

FLOOR PLAN LEGEND

- - - - - - LIMITED AREA OF WORK

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE C20161
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

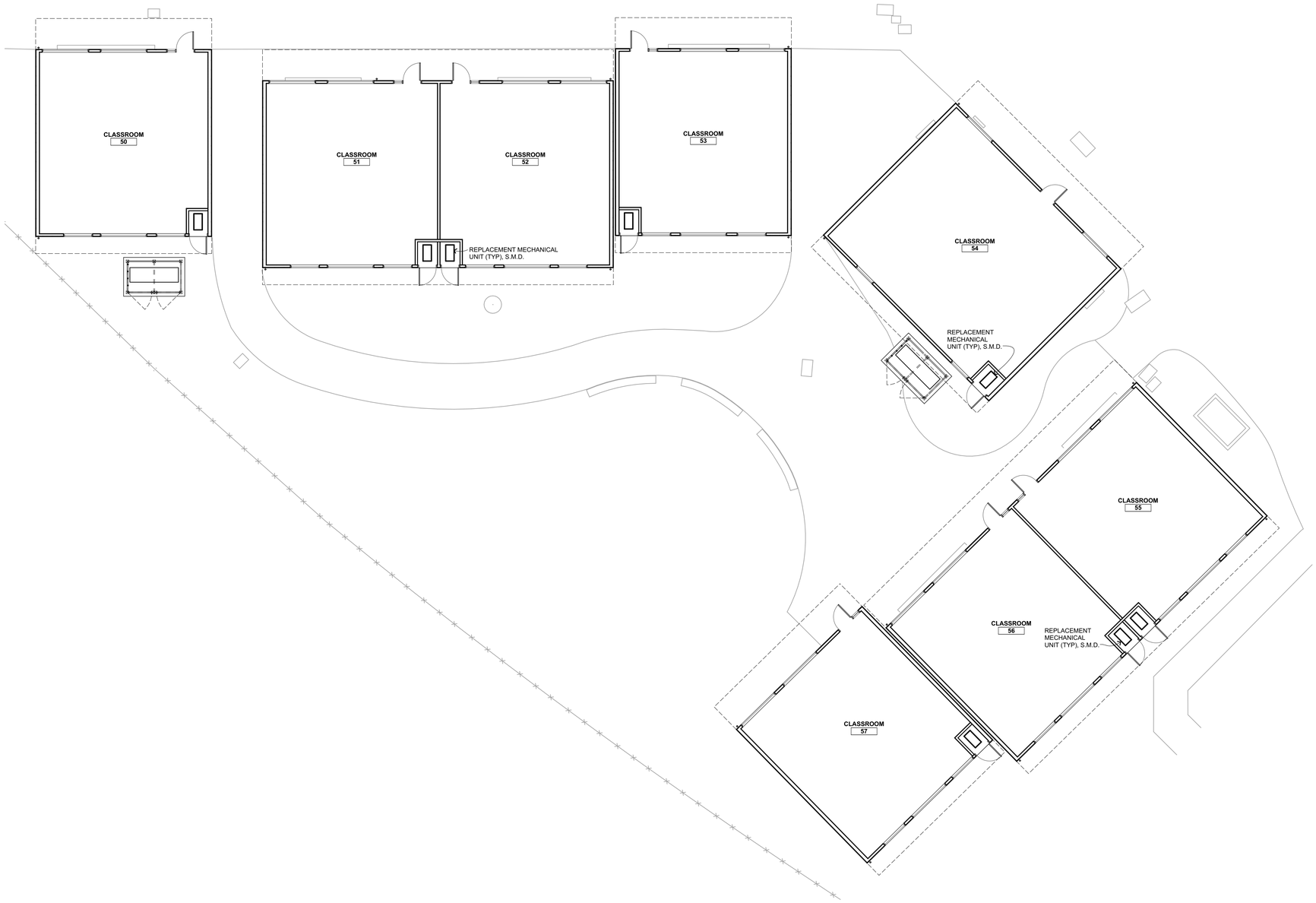
MARCH 15, 2021

SHEET TITLE

40s WING FLOOR PLAN

SHEET NUMBER

A-2.4



50's WING FLOOR PLAN 1

1/8" = 1'-0"

FLOOR PLAN GENERAL NOTES

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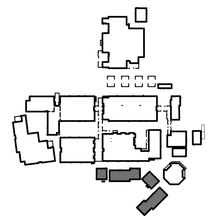
10. REFER TO REFLECTED CEILING PLAN FOR CLERESTORY WINDOWS.

FLOOR PLAN LEGEND

- - - - - - LIMITED AREA OF WORK

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C20192
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

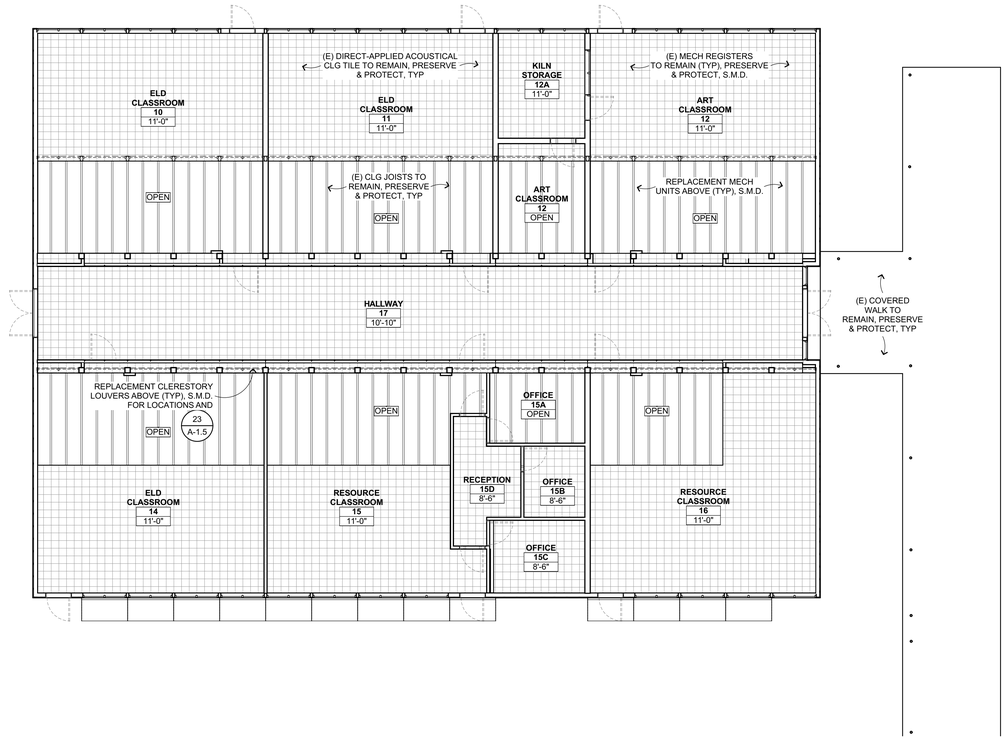
MARCH 15, 2021

SHEET TITLE

50s WING FLOOR PLAN

SHEET NUMBER

A-2.5



10's WING RCP 1 — 1/8" = 1'-0"

NORTH

RCP GENERAL NOTES

1. NOTES & SYMBOLS ARE TO APPLY TO ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDACY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
2. LIGHT FIXTURES TO REMAIN, PRESERVE & PROTECT, TYP
3. S.E.D. FOR HORNS, SPEAKERS, PULL STATIONS, AND OTHER FEATURES NOT OTHERWISE SHOWN.
4. S.M.D. FOR PIPING, REGISTERS & VENTS NOT OTHERWISE SHOWN. MECHANICAL DUCT LOCATION DIMENSIONS ARE NOMINAL. VERIFY IN FIELD TO MAINTAIN CLEARANCES TO FIXED ELEMENTS.

REFLECTED CEILING PLAN LEGEND

CLASSROOM 11 X'-X" — CLASSROOM NUMBER 11. X'-X" REFERS TO FINISHED CEILING HEIGHT A.F.F. WHERE CEILING HEIGHT IS INDICATED AS "OPEN" OR " - ", ROOM IS OPEN TO STRUCTURE ABOVE.

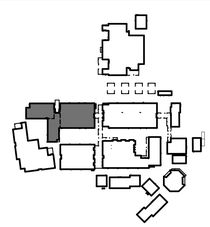
(E) GYPSUM BOARD TO REMAIN, PRESERVE & PROTECT

(E) 2'x4 SUSPENDED CEILING SYSTEM W/ ACOUSTIC TILE TO REMAIN, PRESERVE & PROTECT

(E) 1'x1' ADHESIVE-APPLIED ACOUSTIC TILE CEILING SYSTEM TO REMAIN, PRESERVE & PROTECT

DOORS SHOWN DASHED INDICATE DOOR BELOW. FOR REPLACEMENT MECH CLOSET DOOR/FRAME INFORMATION SEE FLOOR PLANS & DOOR SCHEDULE

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
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55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE C-20161
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

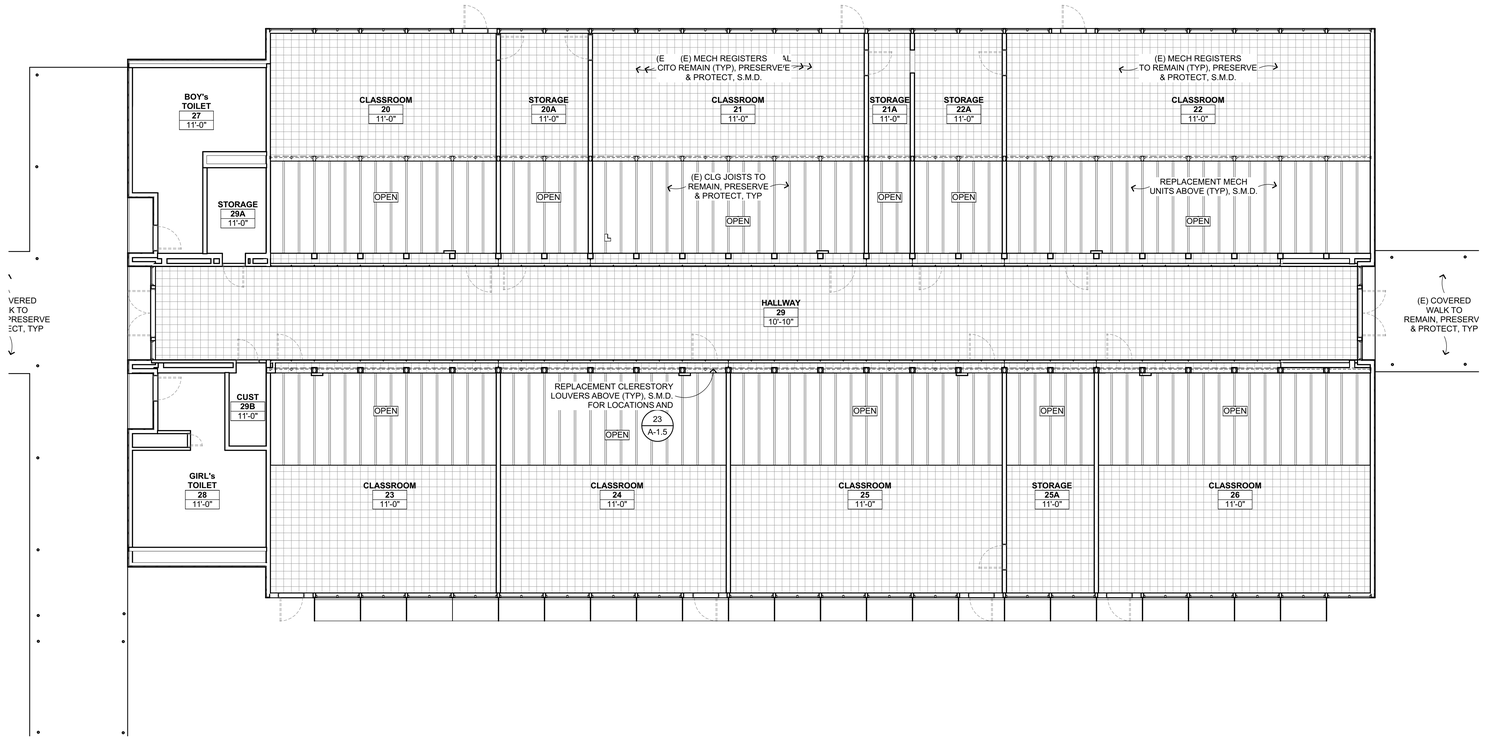
DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE
10s WING RCP

SHEET NUMBER
A-3.1



20's WING RCP 1

1/8" = 1'-0"

NORTH

RCP GENERAL NOTES

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3. S.E.D. FOR HORNS, SPEAKERS, PULL STATIONS, AND OTHER FEATURES NOT OTHERWISE SHOWN.
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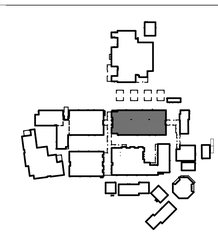
DOORS SHOWN DASHED INDICATE DOOR BELOW. FOR REPLACEMENT MECH CLOSET DOOR/FRAME INFORMATION SEE FLOOR PLANS & DOOR SCHEDULE

KEYPLAN



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280 WOODLAND AVE
SAN RAFAEL, CA 94901

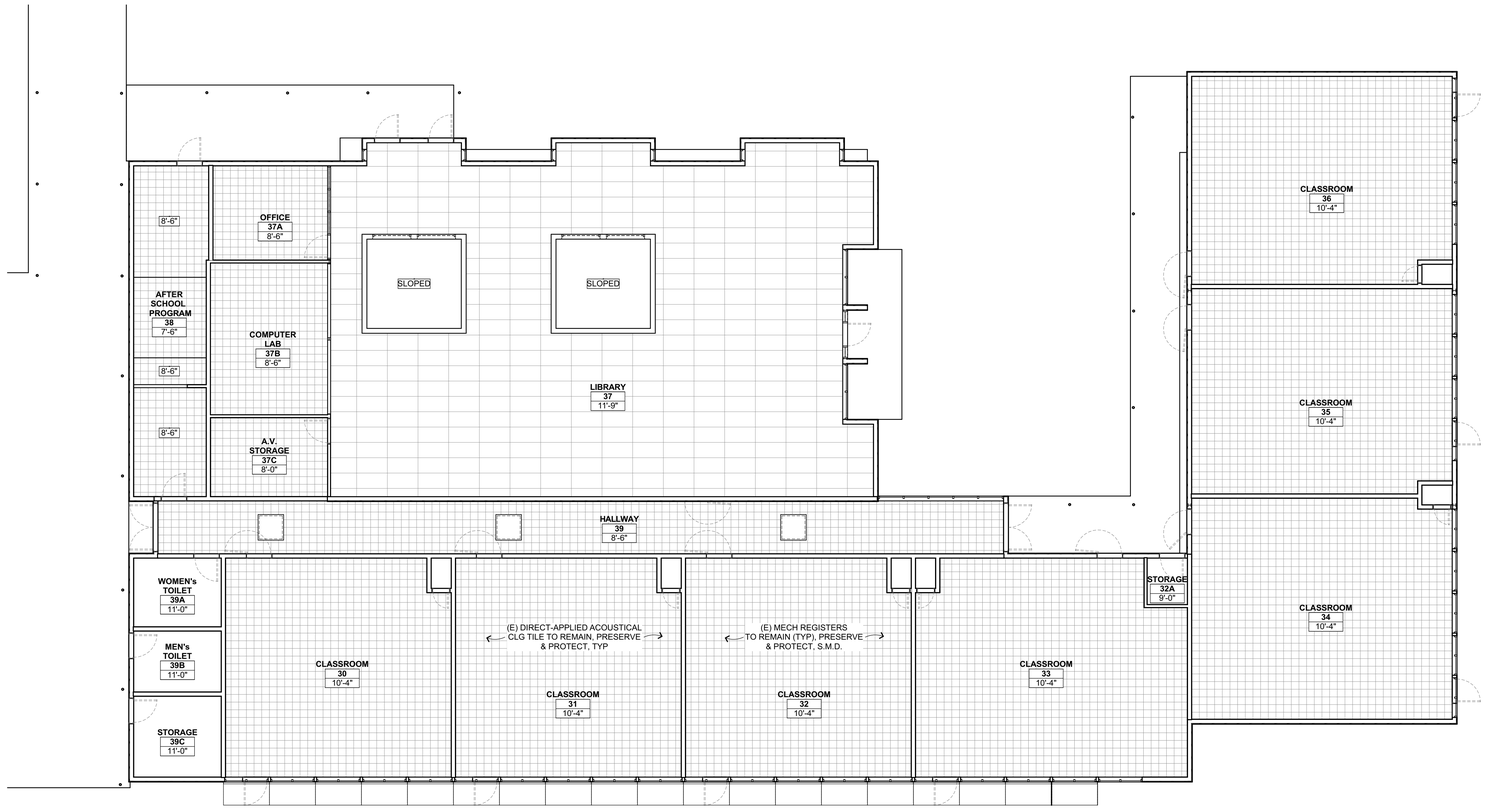
SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448
ARCH PROJECT NO: 1900.00
DRAWN BY: TF, BSC
DRAWING SCALE: 1/8" = 1'-0"
PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE
20s WING RCP

SHEET NUMBER
A-3.2



30's WING RCP 1

1/8" = 1'-0"

NORTH

RCP GENERAL NOTES

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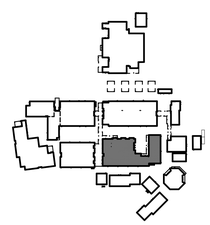
4. S.M.D. FOR PIPING, REGISTERS & VENTS NOT OTHERWISE SHOWN. MECHANICAL DUCT LOCATION DIMENSIONS ARE NOMINAL. VERIFY IN FIELD TO MAINTAIN CLEARANCES TO FIXED ELEMENTS.

REFLECTED CEILING PLAN LEGEND

CLASSROOM 11 X'-X"	CLASSROOM NUMBER 11 X'-X" REFERS TO FINISHED CEILING HEIGHT A.F.F. WHERE CEILING HEIGHT IS INDICATED AS "OPEN" OR " - ", ROOM IS OPEN TO STRUCTURE ABOVE.
	(E) GYPSUM BOARD TO REMAIN, PRESERVE & PROTECT
	(E) 2'x4 SUSPENDED CEILING SYSTEM W/ ACOUSTIC TILE TO REMAIN, PRESERVE & PROTECT
	(E) 1'x1' ADHESIVE-APPLIED ACOUSTIC TILE CEILING SYSTEM TO REMAIN, PRESERVE & PROTECT
	DOORS SHOWN DASHED INDICATE DOOR BELOW. FOR REPLACEMENT MECH CLOSET DOOR/FRAME INFORMATION SEE FLOOR PLANS & DOOR SCHEDULE

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE #C20101
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

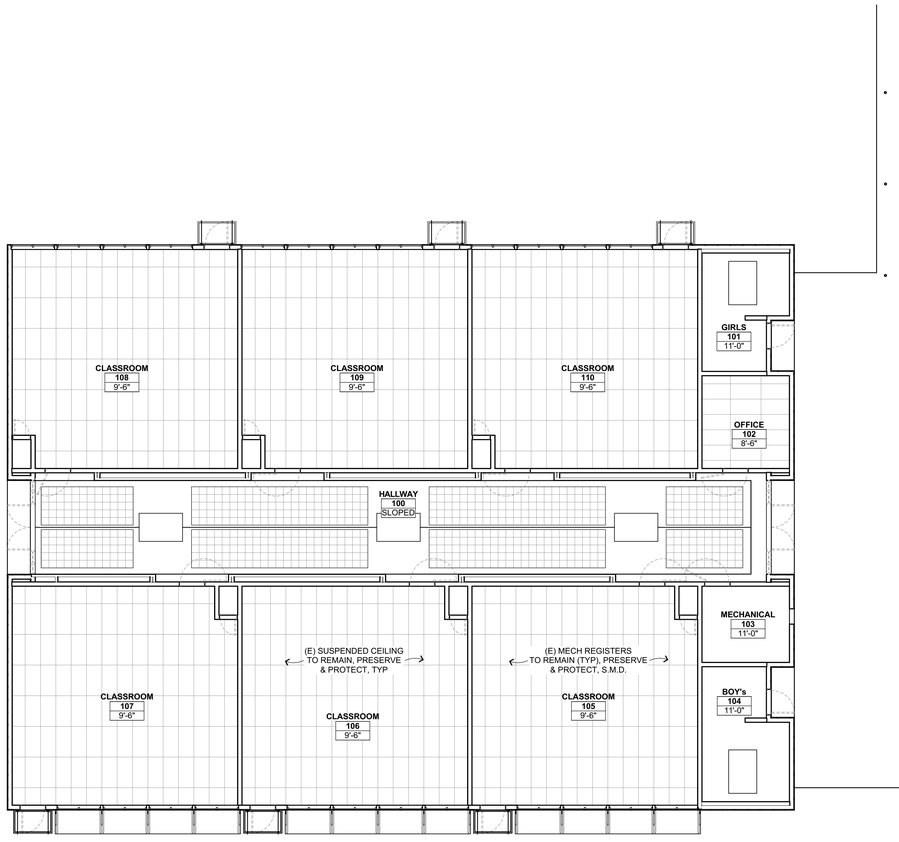
DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE

30s WING RCP

SHEET NUMBER

A-3.3



40's WING RCP 1

1/8" = 1'-0"

NORTH

RCP GENERAL NOTES

1. NOTES & SYMBOLS ARE TO APPLY TO ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDACY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
2. LIGHT FIXTURES TO REMAIN, PRESERVE & PROTECT, TYP
3. S.E.D. FOR HORNS, SPEAKERS, PULL STATIONS, AND OTHER FEATURES NOT OTHERWISE SHOWN.
4. S.M.D. FOR PIPING, REGISTERS & VENTS NOT OTHERWISE SHOWN. MECHANICAL DUCT LOCATION DIMENSIONS ARE NOMINAL. VERIFY IN FIELD TO MAINTAIN CLEARANCES TO FIXED ELEMENTS.

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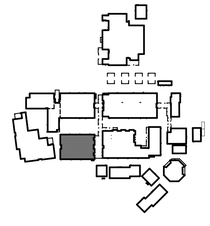
DOORS SHOWN DASHED INDICATE DOOR BELOW. FOR REPLACEMENT MECH CLOSET DOOR/FRAME INFORMATION SEE FLOOR PLANS & DOOR SCHEDULE

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C30184
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

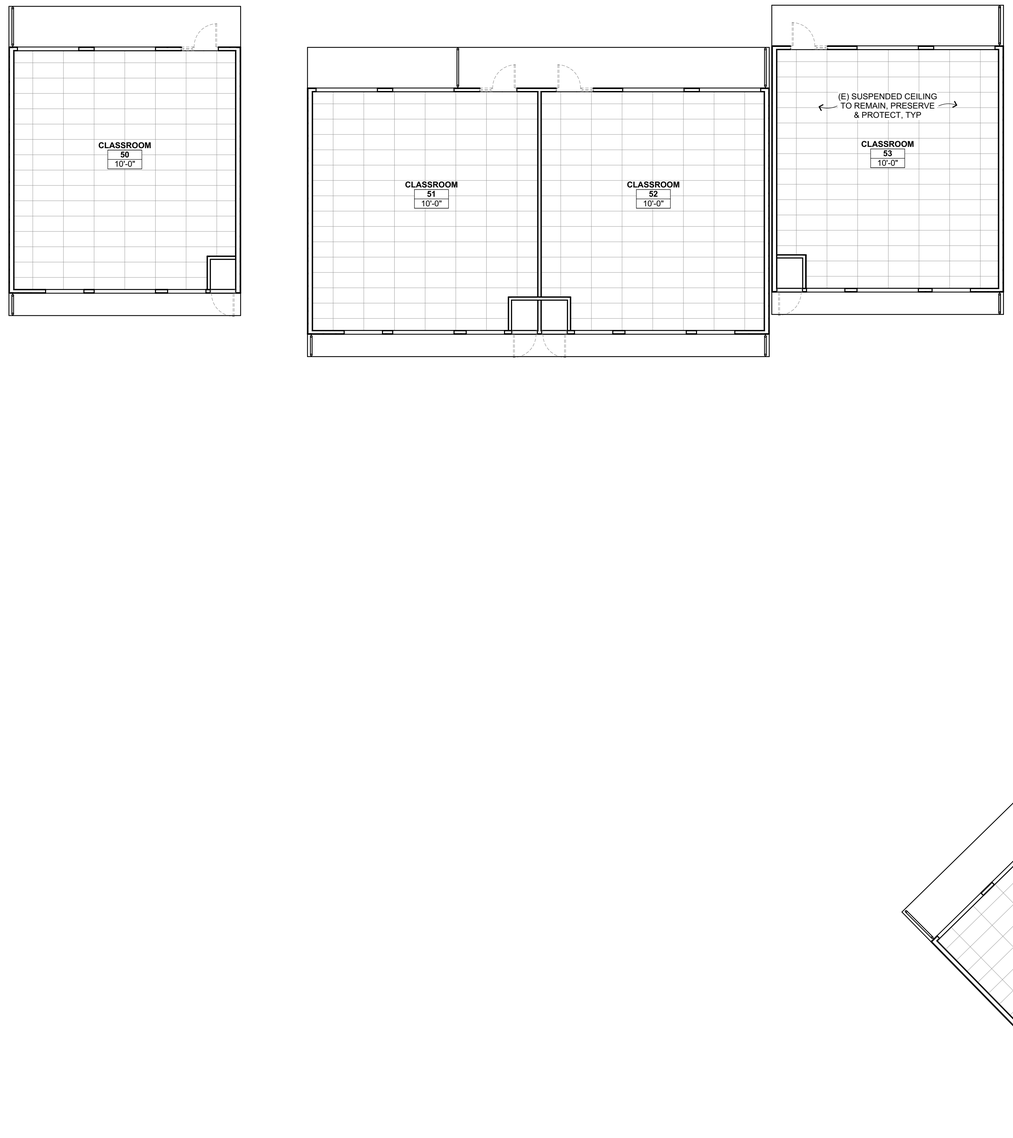
DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE

40s WING RCP

SHEET NUMBER

A-3.4



50's WING RCP (1)

1/8" = 1'-0"

NORTH

RCP GENERAL NOTES

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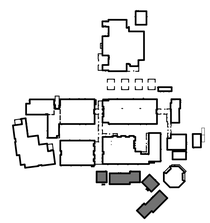
DOORS SHOWN DASHED INDICATE DOOR BELOW. FOR REPLACEMENT MECH CLOSET DOOR/FRAME INFORMATION SEE FLOOR PLANS & DOOR SCHEDULE

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C22016
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

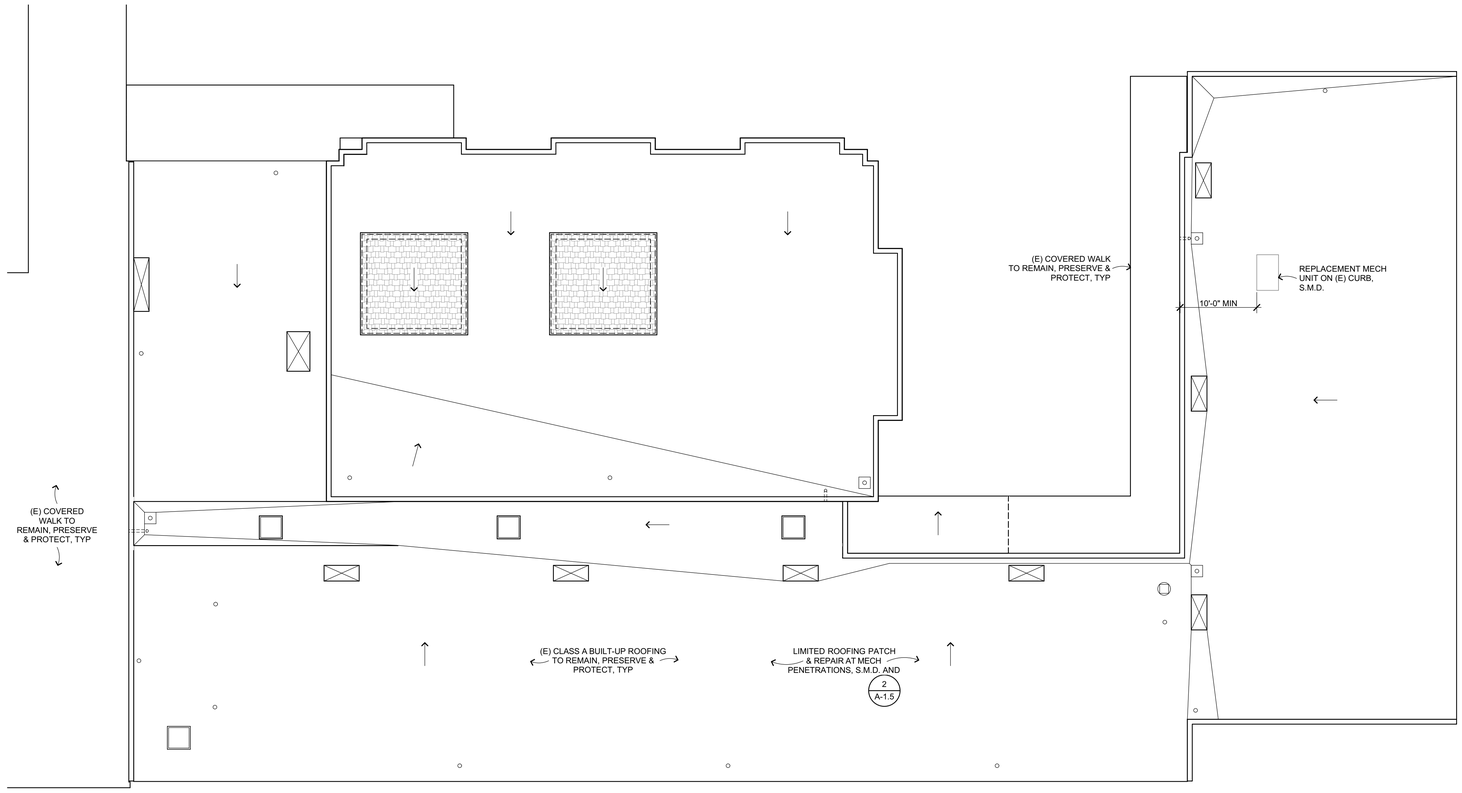
MARCH 15, 2021

SHEET TITLE

50s WING RCP

SHEET NUMBER

A-3.5



30's WING ROOF PLAN 1

1/8" = 1'-0"

ROOF PLAN GENERAL NOTES

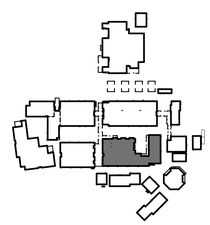
1. LOCATE ALL ROOF PENETRATIONS BETWEEN (E) JOISTS.
2. MAINTAIN MIN 1/4":12" SLOPE TO DRAIN AT BUR.
3. ALL ROOFING TO BE CLASS A.
4. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ROOF PENETRATION LOCATIONS NOT OTHERWISE INDICATED, TYPICAL.
5. PRESERVE, PROTECT, AND REUSE MECHANICAL UNIT MOUNTING CURBS (AS OCCURS), S.M.D.
6. MECHANICAL VENT FLASHING, PER PLAN NOTATIONS.

ROOF PLAN LEGEND

(E) MODIFIED BITUMEN ROOFING, PRESERVE & PROTECT

(E) COMPOSITION SHINGLE ROOFING, PRESERVE & PROTECT

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C20163
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

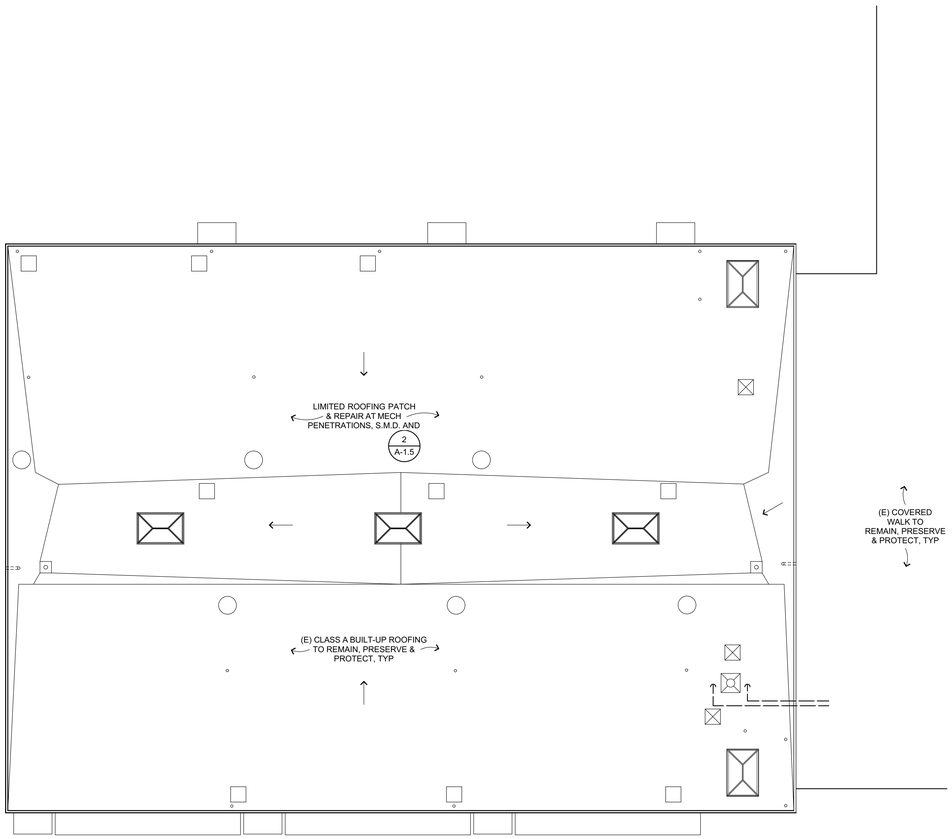
MARCH 15, 2021

SHEET TITLE

30s WING ROOF PLAN

SHEET NUMBER

A-4.3



40's WING ROOF PLAN 1

1/8" = 1'-0"

NORTH

ROOF PLAN GENERAL NOTES

1. LOCATE ALL ROOF PENETRATIONS BETWEEN (E) JOISTS.
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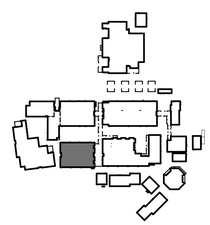
6. MECHANICAL VENT FLASHING, PER PLAN NOTATIONS.

ROOF PLAN LEGEND

(E) MODIFIED BITUMEN ROOFING, PRESERVE & PROTECT

(E) COMPOSITION SHINGLE ROOFING, PRESERVE & PROTECT

KEYPLAN



QUATTROCCHI KWOK
ARCHITECTS

Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C-20161
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

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ARCH PROJECT NO:	1900.00
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PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

40s WING ROOF PLAN

SHEET NUMBER

A-4.4

50's WING ROOF PLAN (1)

1/8" = 1'-0"

NORTH

ROOF PLAN GENERAL NOTES

1. LOCATE ALL ROOF PENETRATIONS BETWEEN (E) JOISTS.
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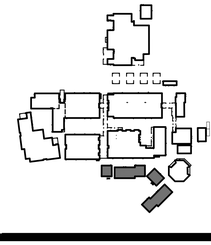
ROOF PLAN LEGEND

(E) MODIFIED BITUMEN ROOFING, PRESERVE & PROTECT

(E) COMPOSITION SHINGLE ROOFING, PRESERVE & PROTECT

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main:
636 Fifth Street, Santa Rosa, CA 95404
East Bay:
55 Harrison Street, Suite 525,
Oakland, CA 94607
(707) 576-0829

LICENSED ARCHITECT
STEVEN KWOK
LICENSE # C20161
EXP APRIL 30, 2021
STATE OF CALIFORNIA

SIGNED: MARCH 15, 2021

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	TF, BSC
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

50s WING ROOF PLAN

SHEET NUMBER

A-4.5

C:\Users\mquevedo\Documents\21010 Davidson MS HVAC Modernization RVT20_mquevedo@costaengineers.com.rvt 3/15/2021 9:43:54 AM

VENTILATION RATING PROCEDURE

ROOM #	ROOM NAME	Area	SF	ASHRAE 62.1 OCCUPANCY	OSA MIN-MIN	OSA MIN-MAX	DESIGN OSA
10	ELD CLASSROOM	842	842	62-Educational Facilities - Classrooms Age 9 Plus	127	320	325
11	ELD CLASSROOM	840	840	62-Educational Facilities - Classrooms Age 9 Plus	126	320	325
12	ART CLASSROOM	845	845	62-Educational Facilities - Art Classroom	0	127	150
12A	KILN STORAGE	154	154	62-Office Buildings - Occupiable Storage	0	24	25
14	ELD CLASSROOM	862	862	62-Educational Facilities - Classrooms Age 9 Plus	130	328	350
15	RESOURCE CLASSROOM	754	754	62-Educational Facilities - Classrooms Age 9 Plus	114	287	300
15A	OFFICE	109	109	62-Office Buildings - Office Space	0	17	25
15B	OFFICE	74	74	62-Office Buildings - Office Space	0	12	25
15C	OFFICE	113	113	62-Office Buildings - Office Space	0	17	25
15D	RECEPTION	118	118	62-Office Buildings - Reception Areas	0	18	25
16	RESOURCE CLASSROOM	845	845	62-Educational Facilities - Classrooms Age 9 Plus	127	322	325
17	HALLWAY	1217	1217	62-General - Corridor	0	183	200
20	CLASSROOM	846	846	62-Educational Facilities - Classrooms Age 9 Plus	127	322	325
21	CLASSROOM	1018	1018	62-Educational Facilities - Classrooms Age 9 Plus	153	387	400
22	CLASSROOM	1364	1364	62-Educational Facilities - Classrooms Age 9 Plus	205	519	525
23	CLASSROOM	846	846	62-Educational Facilities - Classrooms Age 9 Plus	127	322	325
24	CLASSROOM	854	854	62-Educational Facilities - Classrooms Age 9 Plus	129	325	325
25	CLASSROOM	1065	1065	62-Educational Facilities - Classrooms Age 9 Plus	160	405	425
26	CLASSROOM	1017	1017	62-Educational Facilities - Classrooms Age 9 Plus	153	387	400
29	HALLWAY	1911	1911	62-General - Corridor	0	287	300
30	CLASSROOM	829	829	62-Educational Facilities - Classrooms Age 9 Plus	125	316	325
31	CLASSROOM	831	831	62-Educational Facilities - Classrooms Age 9 Plus	125	316	325
32	CLASSROOM	829	829	62-Educational Facilities - Classrooms Age 9 Plus	125	316	325
33	CLASSROOM	964	964	62-Educational Facilities - Classrooms Age 9 Plus	145	367	375
34	CLASSROOM	975	975	62-Educational Facilities - Classrooms Age 9 Plus	147	371	375
35	CLASSROOM	904	904	62-Educational Facilities - Classrooms Age 9 Plus	136	344	350
36	CLASSROOM	923	923	62-Educational Facilities - Classrooms Age 9 Plus	139	351	375
37	LIBRARY	3076	3076	62-Educational Facilities - Libraries	0	462	475
37A	OFFICE	184	184	62-Office Buildings - Office Space	0	28	50
37B	COMPUTER LAB	310	310	62-Educational Facilities - Computer Lab	0	47	50
38	AFTER SCHOOL PROGRAM	410	410	62-Educational Facilities - Classrooms Age 9 Plus	62	156	175
39	HALLWAY	773	773	62-General - Corridor	0	116	125
50	CLASSROOM	903	903	62-Educational Facilities - Classrooms Age 9 Plus	136	344	350
51	CLASSROOM	916	916	62-Educational Facilities - Classrooms Age 9 Plus	138	349	350
52	CLASSROOM	910	910	62-Educational Facilities - Classrooms Age 9 Plus	137	346	350
53	CLASSROOM	901	901	62-Educational Facilities - Classrooms Age 9 Plus	136	343	350
54	CLASSROOM	1220	1220	62-Educational Facilities - Classrooms Age 9 Plus	183	464	475
55	CLASSROOM	920	920	62-Educational Facilities - Classrooms Age 9 Plus	138	350	350
56	CLASSROOM	907	907	62-Educational Facilities - Classrooms Age 9 Plus	137	345	350
57	CLASSROOM	905	905	62-Educational Facilities - Classrooms Age 9 Plus	136	344	350
100	HALLWAY	1367	1367	62-General - Corridor	0	206	225
102	OFFICE	138	138	62-Office Buildings - Office Space	0	21	25
105	CLASSROOM	837	837	62-Educational Facilities - Classrooms Age 9 Plus	126	319	325
106	CLASSROOM	836	836	62-Educational Facilities - Classrooms Age 9 Plus	126	318	325
107	CLASSROOM	837	837	62-Educational Facilities - Classrooms Age 9 Plus	126	319	325
108	CLASSROOM	837	837	62-Educational Facilities - Classrooms Age 9 Plus	126	319	325
109	CLASSROOM	844	844	62-Educational Facilities - Classrooms Age 9 Plus	127	321	325
110	CLASSROOM	844	844	62-Educational Facilities - Classrooms Age 9 Plus	127	321	325

APPLICABLE GOVERNING CODES:

2019 CALIFORNIA BUILDING CODE
2019 CALIFORNIA ELECTRICAL CODE
2019 CALIFORNIA MECHANICAL CODE
2019 CALIFORNIA PLUMBING CODE
2019 CALIFORNIA ENERGY CODE
2019 CALIFORNIA FIRE CODE
2019 CALIFORNIA GREEN BUILDING STANDARDS

MECHANICAL SHEET LIST

Applicable Code: 2019 CBC 02/05/2020 Revised: 02/14/2020

MEP Componet Anchorage Note

All mechanical, plumbing, and electrical components shall be anchored and installed per the details on the DSA-approved construction documents. 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 which is heavier 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 trasverse and longitudinal directions:

A. Components weighing less than 400 pounds and having 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 of 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 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 Sections 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., 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 haging and bracing of the distribution systems. The Structural Engineer of Record shall verify the adequacy of the structure to support the hanger and brace loads.

Mechanical Piping (MP), Mechanical Ducts (MD), Plumbing Piping (PP), Electrical Distribution Systems (E):

MP ☐ MD ☐ PP ☐ E ☐ Option 1: Detailed on the approved drawings with project specific notes and details

MP ☒ MD ☒ PP ☐ E ☐ Option 2: Shall comply with the applicable OSHPD Pre-Approval (OPM #) #OPM-0043-13

MECHANICAL LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
X / X		EQUIPMENT TYPE / EQUIPMENT NUMBER
X / X-X		DETAIL / DRAWING NUMBER / SHEET NUMBER
	SA OR OA	SECTION THRU SUPPLY AIR OR OUTSIDE AIR DUCT
	RA	SECTION THRU RETURN AIR
	EXH	SECTION THRU EXHAUST AIR
		ROUND DUCT DOWN
DN / DN	DN OR UP	SLOPE DUCT DOWN OR UP IN DIRECTION OF FLOW
	AL	ACOUSTICAL LINING
	FC	FLEXIBLE DUCT CONNECTION
	VD	VOLUME DAMPER
	FD	FIRE DAMPER
	TV	TURNING VANES
		FLEXIBLE DUCT
		45° ROUND DUCT TAKE-OFF
		45° RECTANGULAR DUCT TAKE-OFF
		90° TURN - ROUND DUCT
		90° RADIUS TURN - ROUND OR RECTANGULAR DUCT
		SQUARE TO ROUND DUCT TRANSITION
		DUCT TRANSITION
		RECTANGULAR DUCT 90° SPLIT
T		THERMOSTAT @ 48" AFF MAX TO TOP
CO2		CO2 SENSOR
PS		PRESSURE SENSOR
	AP	ACCESS PANEL
	POC	POINT OF CONNECTION
	POD	POINT OF DEMOLITION
	BHP	BRAKE HORSEPOWER
	HP	HORSEPOWER
	SAD	SEE ARCHITECTURAL DRAWINGS
	SSD	SEE STRUCTURAL DRAWINGS
	SCD	SEE CIVIL DRAWINGS
	AFC	ABOVE FINISH CEILING
	CR	CLASSROOM
	BDD	BACKDRAFT DAMPER
	RAD	RETURN AIR DAMPER

VRV SYSTEM INDOOR UNIT

MARK	MFR	MODEL	AIRFLOW	OSA	TOTAL COOLING	SENS COOLING	HEATING OUTPUT	ELECTRICAL DATA V-Ø-HZ	MCA	MOCP	FILTER	WEIGHT	SERVICE	REMARKS
FC 10-1	DAIKIN	FXMQ54PBVJU	1620 CFM	325 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 10	1-6
FC 10-2	DAIKIN	FXMQ54PBVJU	1620 CFM	325 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 11	1-6
FC 10-3	DAIKIN	FXMQ54PBVJU	1620 CFM	150 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 12	1-6
FC 10-4	DAIKIN	FXMQ54PBVJU	1620 CFM	350 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 14	1-6
FC 10-5	DAIKIN	FXMQ54PBVJU	1620 CFM	300 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 15	1-6
FC 10-6	DAIKIN	FXTQ36TAVJUA	1050 CFM	100 CFM	36000 Btu/h	24400 Btu/h	40000 Btu/h	208/230-1-60	4.9	15	MERV 13	140 lb	OFFICE 15	1-6
FC 10-7	DAIKIN	FXMQ54PBVJU	1620 CFM	325 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 16	1-6
FC 20-1	DAIKIN	FXMQ54PBVJU	1620 CFM	325 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 20	1-6
FC 20-2	DAIKIN	FXMQ54PBVJU	1620 CFM	400 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 21	1-6
FC 20-3	DAIKIN	FXMQ54PBVJU	1620 CFM	260 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 22	1-6
FC 20-4	DAIKIN	FXMQ54PBVJU	1620 CFM	260 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 22	1-6
FC 20-5	DAIKIN	FXMQ54PBVJU	1620 CFM	325 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 23	1-6
FC 20-6	DAIKIN	FXMQ54PBVJU	1620 CFM	325 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 24	1-6
FC 20-7	DAIKIN	FXMQ54PBVJU	1620 CFM	400 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 25	1-6
FC 20-8	DAIKIN	FXMQ54PBVJU	1620 CFM	425 CFM	54000 Btu/h	40300 Btu/h	60000 Btu/h	208/230-1-60	3.4	15	MERV 13	104 lb	CR 26	1-6
FC 30-1	DAIKIN	FXTQ60TAVJUA	1800 CFM	325 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 30	1,3,4,6,7
FC 30-2	DAIKIN	FXTQ60TAVJUA	1800 CFM	325 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 31	1,3,4,6,7
FC 30-3	DAIKIN	FXTQ60TAVJUA	1800 CFM	325 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 32	1,3,4,6,7
FC 30-4	DAIKIN	FXTQ60TAVJUA	1800 CFM	375 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 33	1,3,4,6,7
FC 30-5	DAIKIN	FXTQ60TAVJUA	1800 CFM	375 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 34	1,3,4,6,7
FC 30-6	DAIKIN	FXTQ60TAVJUA	1800 CFM	375 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 36	1,3,4,6,7
FC 40-1	DAIKIN	FXTQ48TAVJUA	1520 CFM	325 CFM	48000 Btu/h	32700 Btu/h	54000 Btu/h	208/230-1-60	6.5	15	MERV 13	150 lb	CR 108	1,3,4,6,7
FC 40-2	DAIKIN	FXTQ48TAVJUA	1520 CFM	325 CFM	48000 Btu/h	32700 Btu/h	54000 Btu/h	208/230-1-60	6.5	15	MERV 13	150 lb	CR 109	1,3,4,6,7
FC 40-3	DAIKIN	FXTQ48TAVJUA	1520 CFM	325 CFM	48000 Btu/h	32700 Btu/h	54000 Btu/h	208/230-1-60	6.5	15	MERV 13	150 lb	CR 110	1,3,4,6,7
FC 40-4	DAIKIN	FXTQ48TAVJUA	1520 CFM	325 CFM	48000 Btu/h	32700 Btu/h	54000 Btu/h	208/230-1-60	6.5	15	MERV 13	150 lb	CR 107	1,3,4,6,7
FC 40-5	DAIKIN	FXTQ48TAVJUA	1520 CFM	325 CFM	48000 Btu/h	32700 Btu/h	54000 Btu/h	208/230-1-60	6.5	15	MERV 13	150 lb	CR 106	1,3,4,6,7
FC 40-6	DAIKIN	FXTQ48TAVJUA	1520 CFM	325 CFM	48000 Btu/h	32700 Btu/h	54000 Btu/h	208/230-1-60	6.5	15	MERV 13	150 lb	CR 105	1,3,4,6,7
FC 50-1	DAIKIN	FXTQ60TAVJUA	1800 CFM	350 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 50	1,4,6,8
FC 50-2	DAIKIN	FXTQ60TAVJUA	1800 CFM	350 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 51	1,4,6,8
FC 50-3	DAIKIN	FXTQ60TAVJUA	1800 CFM	350 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 52	1,4,6,8
FC 50-4	DAIKIN	FXTQ60TAVJUA	1800 CFM	475 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 53	1,4,6,8
FC 50-5	DAIKIN	FXTQ60TAVJUA	1800 CFM	350 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 54	1,4,6,8
FC 50-6	DAIKIN	FXTQ60TAVJUA	1800 CFM	350 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 55	1,4,6,8
FC 50-7	DAIKIN	FXTQ60TAVJUA	1800 CFM	350 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 56	1,4,6,8
FC 50-8	DAIKIN	FXTQ60TAVJUA	1800 CFM	350 CFM	60000 Btu/h	41300 Btu/h	66000 Btu/h	208/230-1-60	8.6	15	MERV 13	167 lb	CR 57	1,4,6,8

NOTES:

1. PROVIDE WITH TEMPERATURE SENSOR BY DAIKIN, UNIT CONTROLLER TO COMMUNICATE WITH EXISTING ALERTON BACNET EMS, CO2 SENSOR AND ECONOMIZER CONTROLLER PER CONTROL DIAGRAM. THERMOSTAT AND CO2 SENSOR SHALL BE MOUNTED MAX 48" AFF.
2. MOUNT PER DETAIL H/M-4.1
3. PROVIDE WITH CONDENSATE PUMP TYP
4. PROVIDE WITH EXTERNAL 2" FILTER RACK OR FILTER BOX ACCESSORY.
5. PROVIDE WITH FILTER BOX ACCESSORY.
6. FURNISH & INSTALL GLOBAL PLASMA SOLUTIONS NEEDLEPOINT BI-POLAR IONIZATION SYSTEM MODEL FC24 IN EACH INDOOR UNIT. SEE SPECIFICATIONS.
7. MOUNT PER DETAIL B/M-4.1
8. MOUNT PER DETAIL A/M-4.1

AIR TERMINAL SCHEDULE

MANUFACTURER:TITUS (EXCEPT AS NOTED)

WR		WALL RETURN GRILLE	355R - LOUVERS ON 1/2" CENTERS, STEEL CONSTRUCTION, LOUVERS PARALLEL WITH LONG DIMENSION
CR		CEILING RETURN	50F5 - 1/2" x 1/2" x 1/2" EGGCRATE, ALUMINUM GRID
EG		EXHAUST GRILLE	50F5 - 1/2" x 1/2" x 1/2" EGGCRATE, ALUMINUM GRID

NOTES:
1. ADAPTER NEEDED FOR TRANSITION FROM SQUARE NECK TO ROUND DUCT.
2. SIZE (NECK/FACE) TYPE / CFM (NO. OF THROW) FACE SIZE FOR T-BAR CEILING ONLY

BRANCH CONTROLLER SCHEDULE

MARK	MFR	MODEL NUMBER	ELECTRICAL DATA V-Ø-HZ	MCA	MOCP	WEIGHT
BS 10-1	DAIKIN	BSF6Q54TVJ	208/230-1-60	0.6	15	73.00 lb
BS 10-2	DAIKIN	BSF6Q54TVJ	208/230-1-60	0.6	15	73.00 lb
BS 20-1	DAIKIN	BSF6Q54TVJ	208/230-1-60	0.6	15	73.00 lb
BS 20-2	DAIKIN	BSF6Q54TVJ	208/230-1-60	0.6	15	73.00 lb
BS 30-1	DAIKIN	BSF8Q54TVJ	208/230-1-60	0.8	15	81.00 lb
BS 30-2	DAIKIN	BSF4Q54TVJ	208/230-1-60	0.4	15	49.00 lb
BS 40-1	DAIKIN	BSF4Q54TVJ	208/230-1-60	0.4	15	49.00 lb
BS 40-2	DAIKIN	BSF4Q54TVJ	208/230-1-60	0.4	15	49.00 lb
BS 50-1	DAIKIN	BSF8Q54TVJ	208/230-1-60	0.8	15	81.00 lb
BS 50-2	DAIKIN	BSF8Q54TVJ	208/230-1-60	0.8	15	81.00 lb

VRV SYSTEM OUTDOOR UNIT

MARK	MFR.	MODEL NO.	SIZE TONS	Rated Cooling Capacity (Btu/hr)	Nominal cooling Capacity (Btu/hr)	Rated Heating Capacity (Btu/hr)	Nominal Heating Capacity	EER	ELECTRICAL DATA V-Ø-HZ	MCA	MOP	WEIGHT	SERVICE	REMARKS
VRV 10	DAIKIN	REYQ384XAYDA	32	304670	294000	367226	432000	9.70/9.90	460-3-60	21.1+31.1+27.9	25+25+40	724+724+793	10 WING	1,2
VRV 20	DAIKIN	REYQ456XAYDA	38	380508	396000	433665	51300	9.30/9.50	460-3-60	27.9+27.9+31.1	40+40+40	793+793+793	20 WING	1,2
VRV 30	DAIKIN	REYQ384XAYDA	32	304670	294000	367226	432000	9.70/9.90	460-3-60	21.1+31.1+27.9	25+25+40	724+724+793	30 WING	1,2
VRV 40	DAIKIN	REYQ312XAYDA	26	247540	234000	296858	351000	10.10/9.90	460-3-60	27.9+31.1	40+40	793+793	40 WING	1,2
VRV 50-1	DAIKIN	REYQ240XAYDA	20	190420	196000	224868	270000	11.60/11.70	460-3-60	21.1+21.1	25+25	727+727	50 WING	1,2
VRV 50-2	DAIKIN	REYQ240XAYDA	20	190420	196000	224868	270000	11.60/11.70	460-3-60	21.1+21.1	25+25	727+727	50 WING	1,2

NOTES:

1. MOUNT PER DETAIL E/M-4.1
2. FACTORY CHARGED WITH R410 REFRIGERANT

HP SCHEDULE

MARK	MODEL NO	UNIT SIZE	ESP	SUPPLY FAN RPM	AIRFLOW	TOTAL COOLING (MBH)	SENSIBLE COOLING (MBH)	TOTAL HEATING CAPACITY	INTEGRATED HEATING CAPACITY	SEER	ELECTRICAL DATA V-Ø-Hz	MCA	MOCP	WEIGHT	SERVICE	REMARKS
HP 30-1	50FCQA06A3A5	5	1.00 in-wg	1920	1800 CFM	61.9	49.0	56.8	56.8	14.30	208-3-60	45.0	50	655 lb	CR 35	1-6

NOTES:

1. PROVIDE 5 kW STRIP HEATER
2. PROVIDE ECONOMIZER WITH DRY-BULB TEMPERATURE CONTROL.
3. PROVIDE 2" MERV13 FILTER
4. PROVIDE SINGLE POINT ELECTRICAL CONNECTION KIT
5. FURNISH & INSTALL GLOBAL PLASMA SOLUTIONS NEEDLEPOINT BI-POLAR IONIZATION SYSTEM MODEL FC24 IN EACH INDOOR UNIT. SEE SPECIFICATIONS.
6. INSTALL PER DETAIL D/M-4.1

GRAVITY RELIEF SCHEDULE

MARK	MFR	MODEL NO	AIRFLOW	SP	WEIGHT	REMARKS
GR 1	GREENHECK	GRSR 20	1500 CFM	0.06 in-wg	24 lb	
GR 2	GREENHECK	GRSR 20	1800 CFM	0.08 in-wg	24 lb	

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
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Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

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SAN RAFAEL, CA
94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO: 1900.00
DRAWN BY: MQ/SC
DRAWING SCALE:
PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE

MECHANICAL SCHEDULES & LEGENDS

SHEET NUMBER

M-1.1

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

D ALL EQUIPMENT, MECHANICAL EQUIPMENT, PIPING, VALVING, CONTROLS, ETC. RENDERED USELESS BY THIS WORK SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

E LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

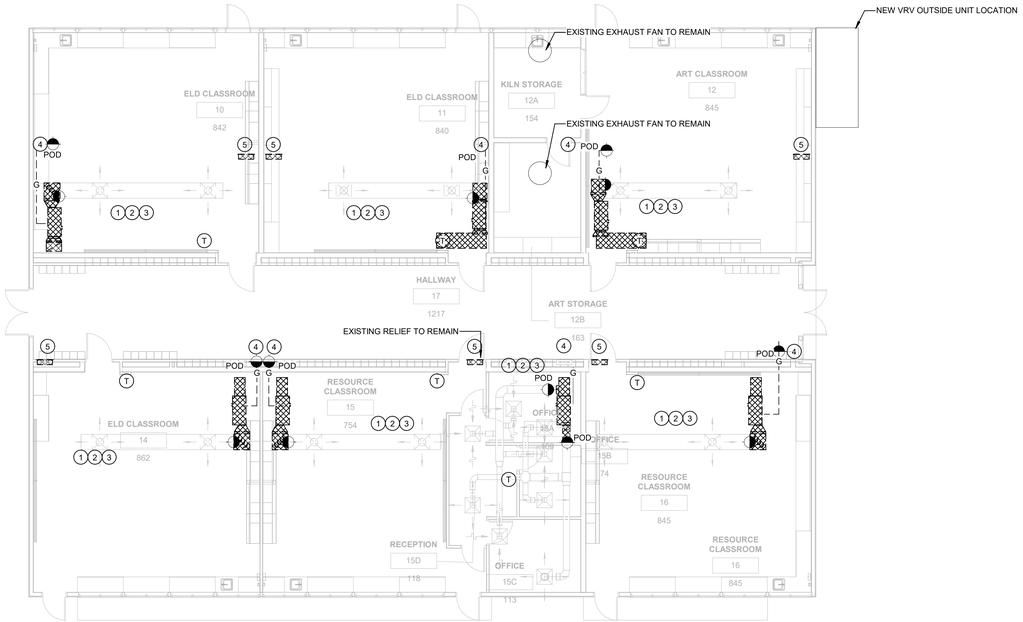
K DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

L SUPPORT AND BRACING OF ALL PIPING AND DUCTWORK SHALL BE IN ACCORDANCE WITH THE OPM-0043-13

M WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWING OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER OR FIELD INSPECTOR OF THE GOVERNING AUTHORITY.

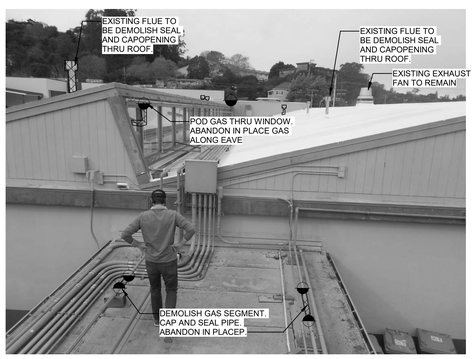
DEMOLITION SHEET NOTES

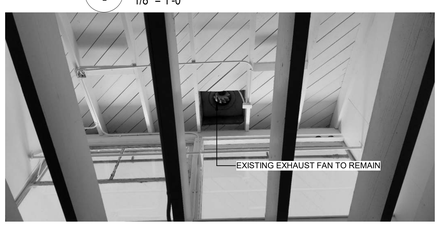
1. DEMOLISH THERMOSTAT. SEE PLANS FOR NEW THERMOSTATS.
2. DEMOLISH (E) FURNACE & (E) FLUE. CAP & SEAL (E) FLUE @ 1 FOOT BELOW ROOF.
3. DEMOLISH GAS PIPING IN CLASSROOM. CAP EXISTING GAS PIPE OUTSIDE.
4. DEMOLISH METAL PANEL. SEE PLANS FOR NEW WORK AT THIS LOCATION.
5. DEMOLISH (E) RELIEF LOUVER

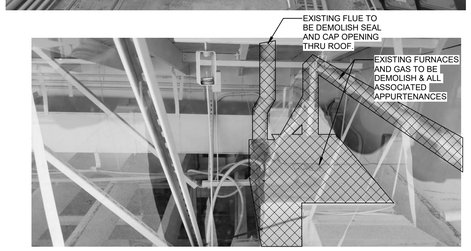


1 MECHANICAL DEMOLITION FLOOR PLAN - 10'S WING

1/8" = 1'-0"



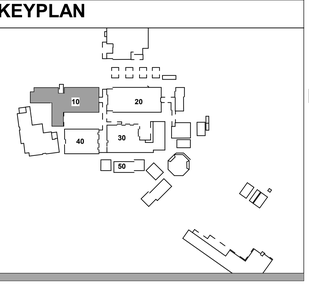




2 EXISTING BLDG 10

1" = 400'-0"

KEYPLAN



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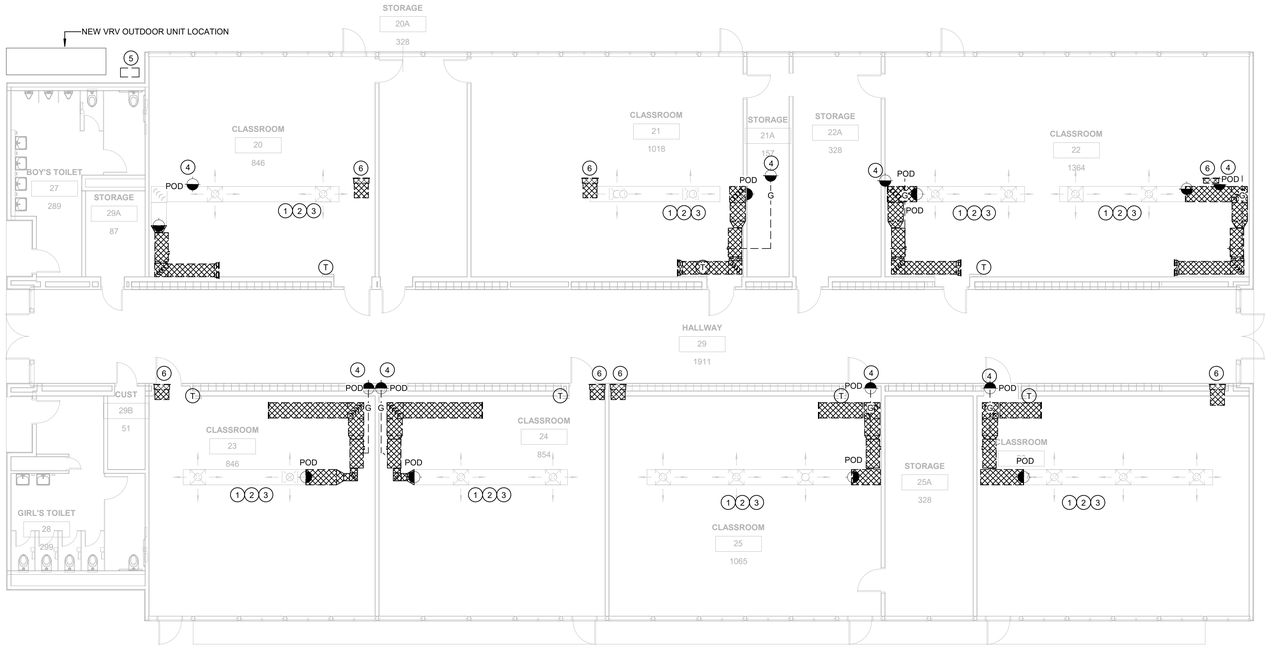
MARCH 15, 2021

SHEET TITLE

MECHANICAL 10'S WING DEMOLITION PLAN

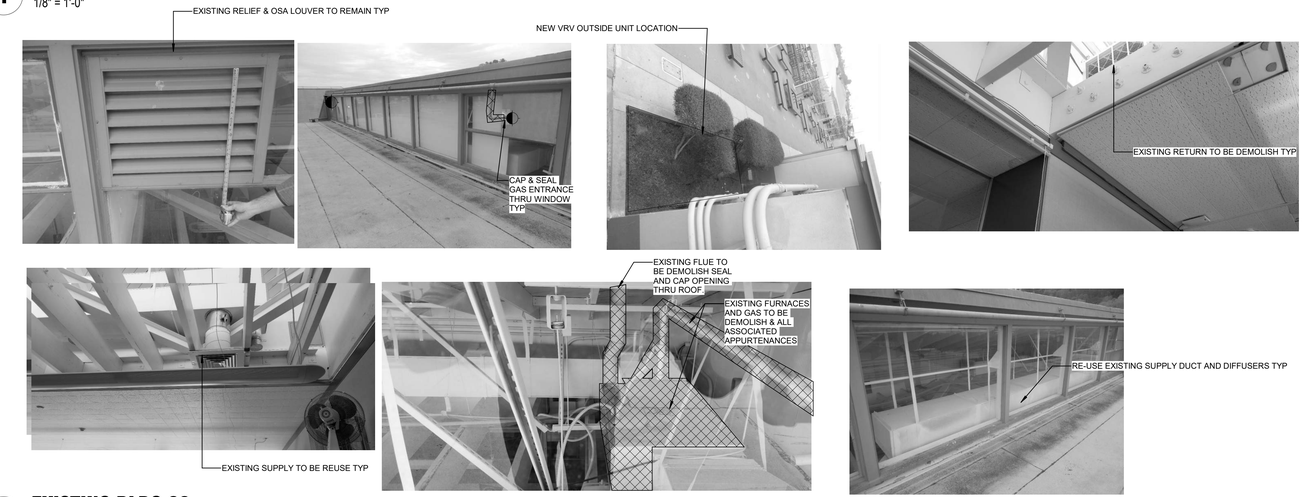
SHEET NUMBER

MD-2.1



1 MECHANICAL DEMOLITION FLOOR PLAN - 20'S WING

1/8" = 1'-0"



2 EXISTING BLDG 20

1" = 400'-0"

GENERAL NOTES

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F. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

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DEMOLITION SHEET NOTES

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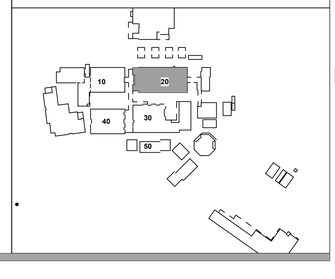
2. DEMOLISH (E) FURNACE & (E) FLUE. CAP & SEAL (E) FLUE @ 1 FOOT BELOW ROOF.
3. DEMOLISH GAS PIPING IN CLASSROOM & CAP EXISTING GAS PIPE OUTSIDE.
4. DEMOLISH METAL PANEL. SEE PLANS FOR NEW WORK AT THIS LOCATION.
5. RELOCATE BFP TO COORDINATE WITH VRV PAD. SEE M-2.2 FOR NEW WORK.
6. DEMOLISH EF. DEMOLISH LOUVER

KEYPLAN



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Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	As indicated
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

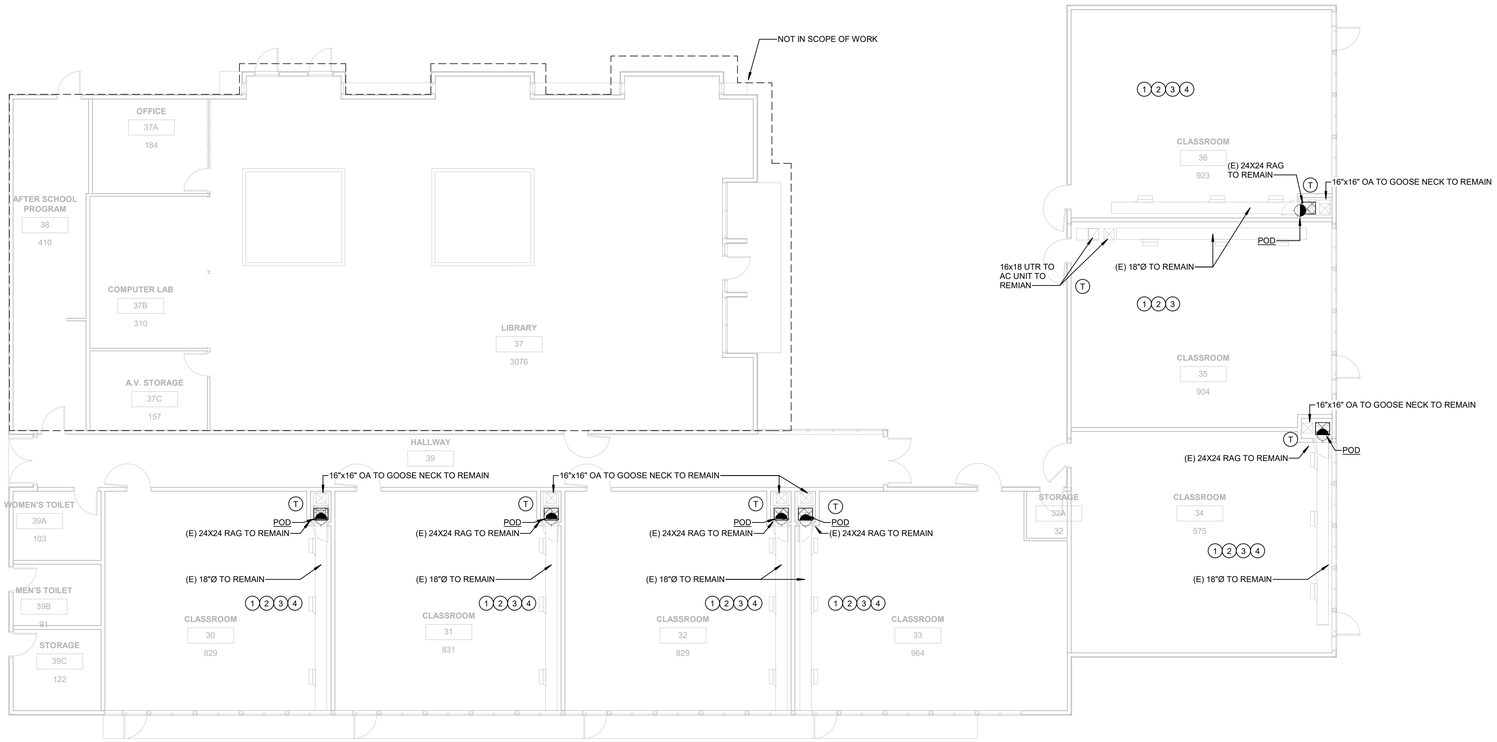
MARCH 15, 2021

SHEET TITLE

MECHANICAL 20'S WING DEMOLITION PLAN

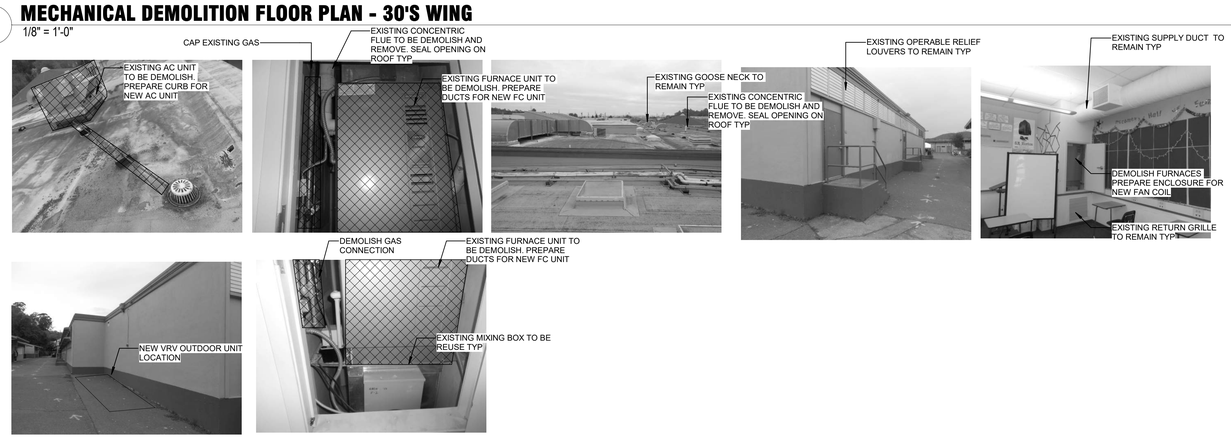
SHEET NUMBER

MD-2.2



1 MECHANICAL DEMOLITION FLOOR PLAN - 30'S WING

1/8" = 1'-0"



2 EXISTING BLDG 30

1" = 400'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C. THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

D. ALL EQUIPMENT, MECHANICAL EQUIPMENT, PIPING, VALVING, CONTROLS, ETC. RENDERED USELESS BY THIS WORK SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

E. LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G. ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H. TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J. DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

K. DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

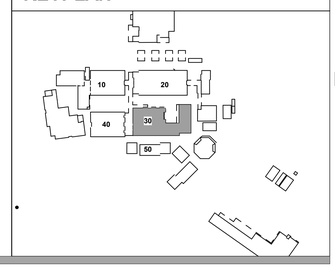
L. SUPPORT AND BRACING OF ALL PIPING AND DUCTWORK SHALL BE IN ACCORDANCE WITH THE OPM-0043-13

M. WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWING OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER OR FIELD INSPECTOR OF THE GOVERNING AUTHORITY.

DEMOLITION SHEET NOTES

1. DEMOLISH THERMOSTAT. SEE PLANS FOR NEW THERMOSTATS.
2. DEMOLISH (E) FURNACE & (E) FLUES. CAP & SEAL (E) FLUE @ 1 FOOT BELOW ROOF.
3. CAP EXISTING GAS PIPE.
4. DEMOLISH CONDENSATE PUMP. PUMPED CONDENSATE LINE TO REMAIN.

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main Office:
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DSA SUBMITTAL

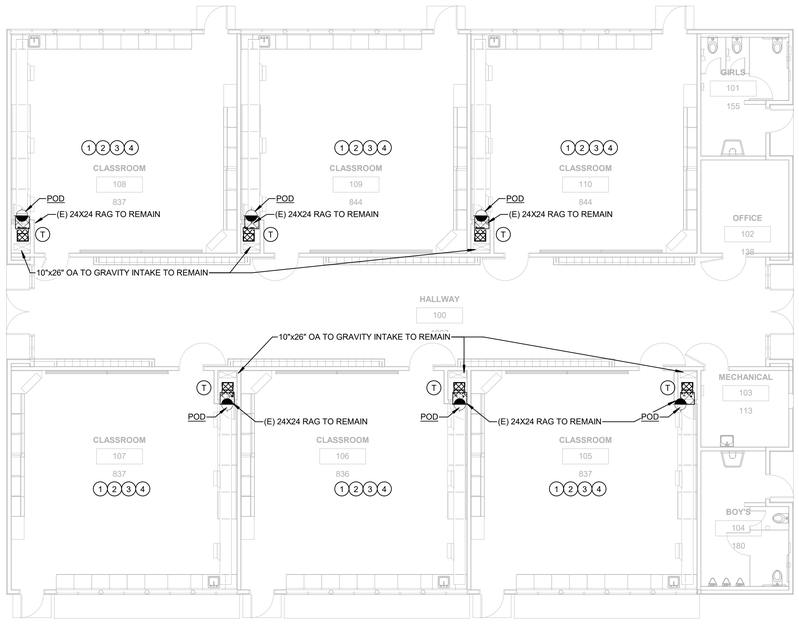
MARCH 15, 2021

SHEET TITLE

MECHANICAL 30'S WING DEMOLITION PLAN

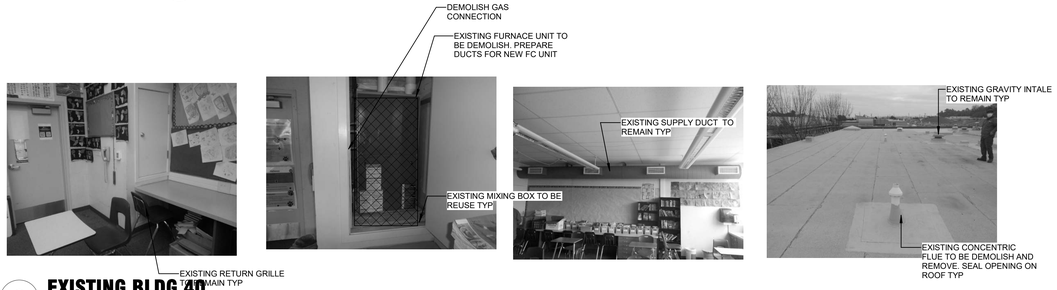
SHEET NUMBER

MD-2.3



1 MECHANICAL DEMOLITION FLOOR PLAN - 40'S WING

1/8" = 1'-0"



2 EXISTING BLDG 40

1" = 400'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C. THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

D. ALL EQUIPMENT, MECHANICAL EQUIPMENT, PIPING, VALVING, CONTROLS, ETC. RENDERED USELESS BY THIS WORK SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

E. LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G. ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H. TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J. DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

K. DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

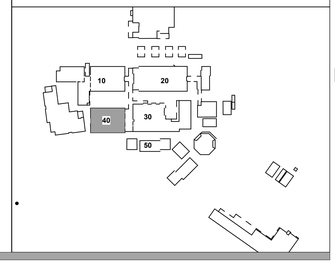
L. SUPPORT AND BRACING OF ALL PIPING AND DUCTWORK SHALL BE IN ACCORDANCE WITH THE OPM-0043-13

M. WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWING OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER OR FIELD INSPECTOR OF THE GOVERNING AUTHORITY.

DEMOLITION SHEET NOTES

1. DEMOLISH THERMOSTAT. SEE PLANS FOR NEW THERMOSTATS.
2. DEMOLISH (E) FURNACE & (E) FLUES. CAP & SEAL (E) FLUE @ 1 FOOT BELOW ROOF.
3. CAP EXISTING GAS PIPE.
4. DEMOLISH CONDENSATE PUMP. PUMPED CONDENSATE LINE TO REMAIN.

KEYPLAN



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DSA SUBMITTAL

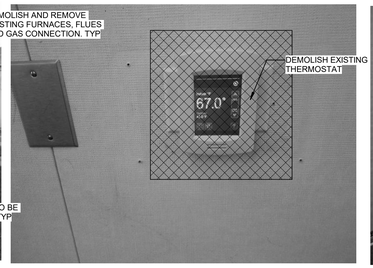
MARCH 15, 2021

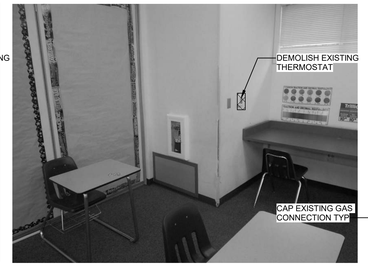
SHEET TITLE

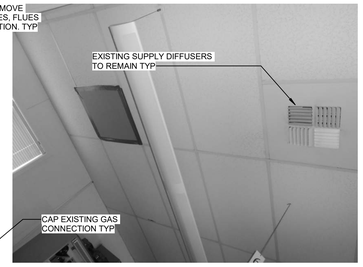
MECHANICAL 40'S WING DEMOLITION PLAN

SHEET NUMBER

MD-2.4

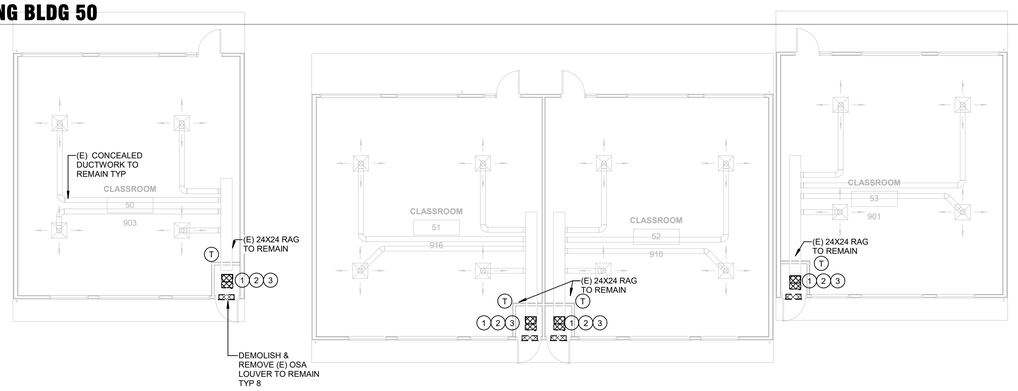


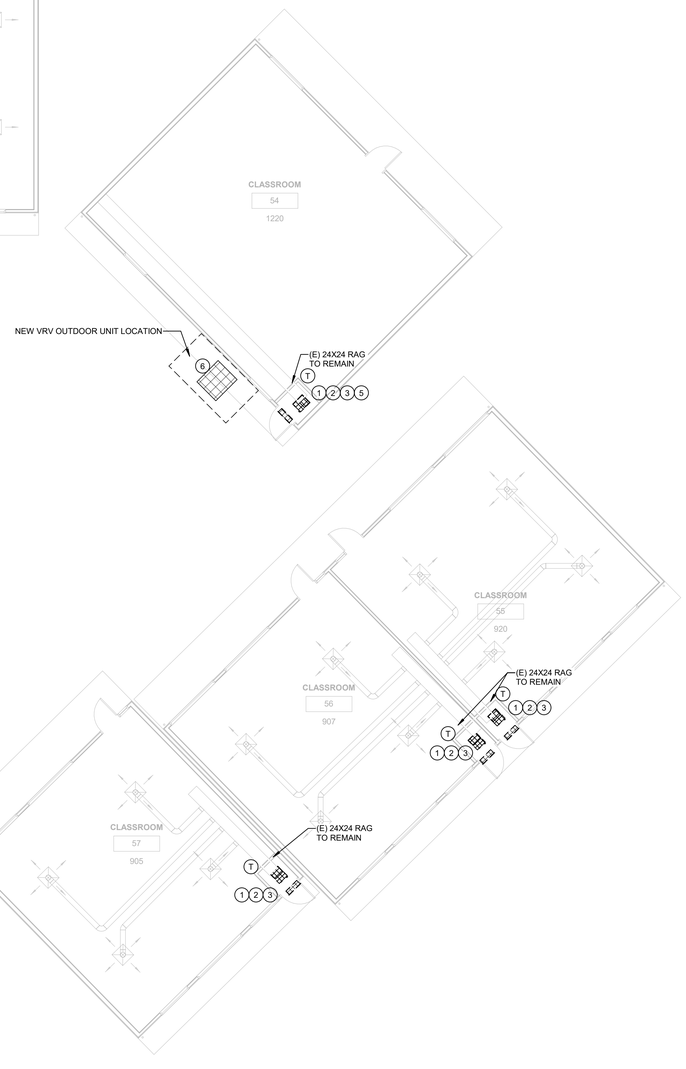




2 EXISTING BLDG 50

1" = 400'-0"





1 MECHANICAL DEMOLITION FLOOR PLAN - 50'S WING

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

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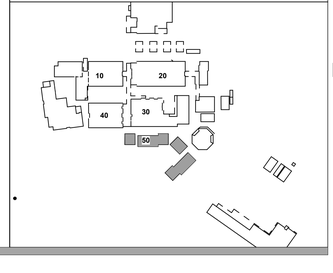
DEMOLITION SHEET NOTES

1. DEMOLISH THERMOSTAT. SEE PLANS FOR NEW THERMOSTATS.
2. DEMOLISH (E) FURNACE & (E) FLUES. CAP & SEAL (E) FLUE @ 1 FOOT BELOW ROOF.
3. CAP EXISTING GAS PIPE AT CLOSET ENTRY.
4. EMOLISH OA DAMPER. SEE PLANS FOR NEW OA DAMPER. SAD FOR EXACT LOCATION.
5. CD PIPING TO REMAIN. SEE PLANS FOR NEW WORK.
6. DEMOLISH CU REFRIGERANT LINES & COOLING COIL. CONDENSATE PIPING TO REMAIN FOR FUTURE CONNECTION. SEE PLANS FOR NEW WORK.

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
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COSTA ENGINEERS INC.

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER J. DE COSTA — NO. 21500 — Exp. 12-31-22 — MECHANICAL — STATE OF CALIFORNIA

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SAN RAFAEL CITY SCHOOLS

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DSA SUBMITTAL

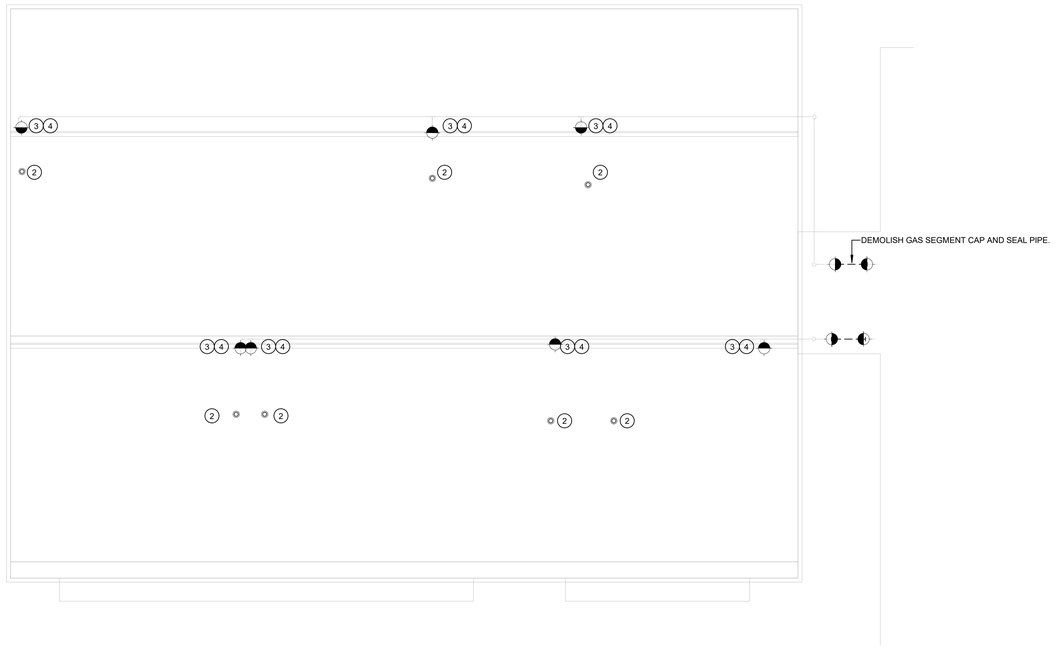
MARCH 15, 2021

SHEET TITLE

MECHANICAL 50'S WING DEMOLITION PLAN

SHEET NUMBER

MD-2.5



1 MECHANICAL DEMOLITION ROOF PLAN - 10'S WING

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C. THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

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F. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

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H. TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J. DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

K. DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

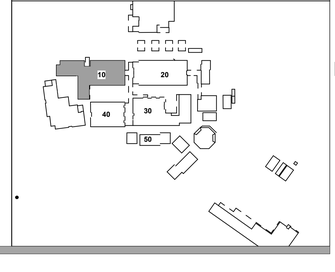
L. SUPPORT AND BRACING OF ALL PIPING AND DUCTWORK SHALL BE IN ACCORDANCE WITH THE OPM-0043-13

M. WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWING OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER OR FIELD INSPECTOR OF THE GOVERNING AUTHORITY.

DEMOLITION SHEET NOTES

1. SAD FOR ROOFING WORK IN THIS AREA. SMD FOR NEW WORK.
2. (E) FLUE AT ROOF TO REMAIN. CAP & SEALED BELOW ROOF LEVEL.
3. DEMOLISH GAS PIPING BRANCHES THRU CLERESTORY WINDOW TO POD OUTSIDE THE BUILDING. CAP PIPE. GAS PIPING ALONG TOP OF CLERESTORY TO REMAIN.
4. DEMOLISH METAL PANELS IN WINDOW PANES IN PREPARATION FOR NEW WORK. SAD 28/A-1.4.

KEYPLAN



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DSA APP NO. 01-119448

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DRAWN BY:	MQ/SC
DRAWING SCALE:	1/8" = 1'-0"
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DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

MECHANICAL 10'S WING DEMOLITION ROOF PLAN

SHEET NUMBER

MD-3.1

1 MECHANICAL DEMOLITION ROOF PLAN - 20'S WING

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C. THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

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H. TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

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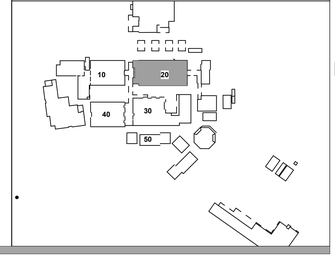
DEMOLITION SHEET NOTES

1. SAD FOR ROOFING WORK IN THIS AREA. SMD FOR NEW WORK.
2. (E) FLUE AT ROOF TO REMAIN. CAP & SEALED BELOW ROOF LEVEL.
3. DEMOLISH GAS PIPING BRANCHES THRU CLERESTORY WINDOW TO POD OUTSIDE THE BUILDING. CAP PIPE. GAS PIPING ALONG TOP OF CLERESTORY TO REMAIN.
4. DEMOLISH METAL PANELS IN WINDOW PANES IN PREPARATION FOR NEW WORK. SAD 28/A-1.4.

KEYPLAN



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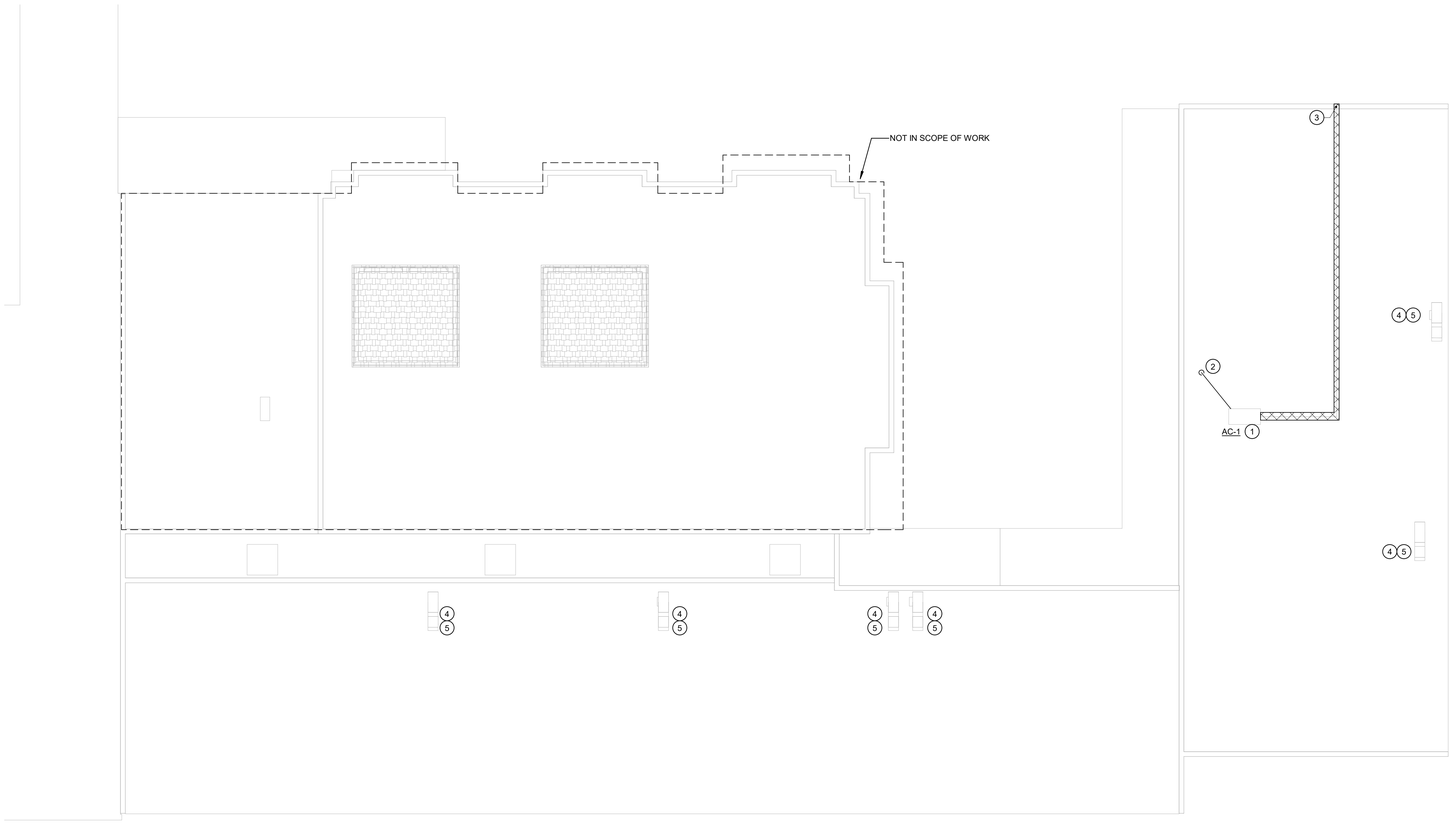
SHEET TITLE

MECHANICAL 20'S WING DEMOLITION ROOF PLAN

SHEET NUMBER

MD-3.2



1 MECHANICAL DEMOLITION ROOF PLAN - 30'S WING

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

D ALL EQUIPMENT, MECHANICAL EQUIPMENT, PIPING, VALVING, CONTROLS, ETC. RENDERED USELESS BY THIS WORK SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

E LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

K DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

L SUPPORT AND BRACING OF ALL PIPING AND DUCTWORK SHALL BE IN ACCORDANCE WITH THE OPM-0043-13

M WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWING OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER OR FIELD INSPECTOR OF THE GOVERNING AUTHORITY.

DEMOLITION SHEET NOTES

(1) DEMOLISH AC UNIT. CURB TO REMAIN. SEE PLANS FOR NEW UNIT.

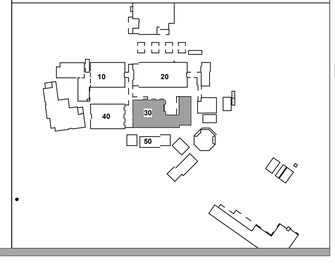
(2) CD PIPING TO REMAIN. SET ASIDE AND CONNECT TO NEW HEAT PUMP.

(3) DEMOLISH AND CAP GAS PIPE MAX 6" ABOVE GRADE. SAD FOR ROOF PATCHING WORK.

(4) 16"x16" OA TO GOOSE NECK TO REMAIN

(5) (E) COMBINATION VENT AT ROOF TO REMAIN. CAP & SEALED BELOW ROOF LEVEL.

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

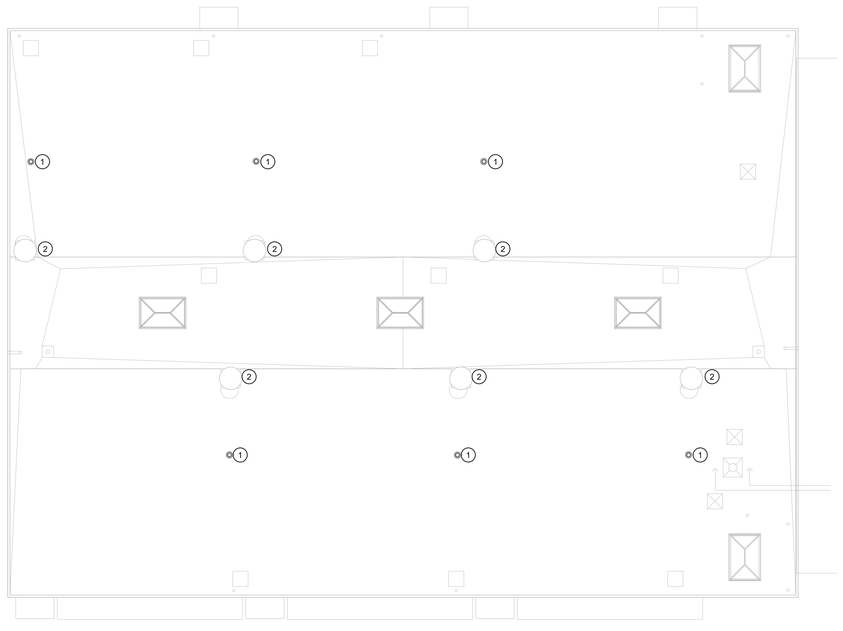
MARCH 15, 2021

SHEET TITLE

MECHANICAL 30'S WING DEMOLITION ROOF PLAN

SHEET NUMBER

MD-3.3



1 MECHANICAL DEMOLITION ROOF PLAN - 40'S WING

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

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E. LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G. ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H. TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

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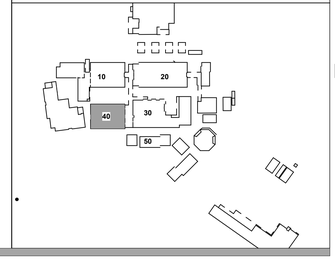
DEMOLITION SHEET NOTES

(1) (E) COMBINATION VENT AT ROOF TO REMAIN. CAP & SEALED BELOW ROOF LEVEL.

(2) COOK GRAVITY VENT TO REMAIN.

KEYPLAN



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600 Main Street, Suite E,
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(707) 576-0829

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DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
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REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
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PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

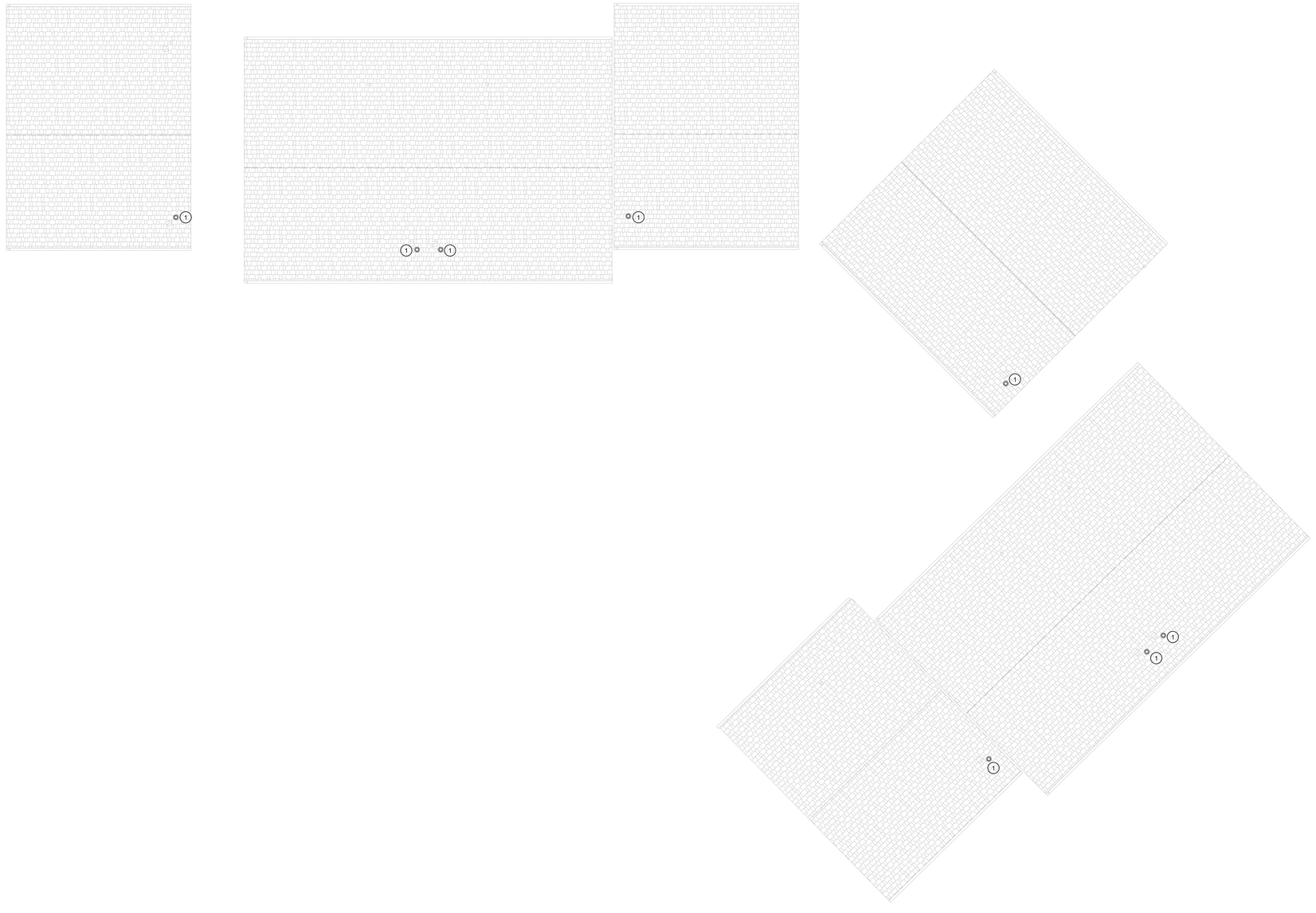
MARCH 15, 2021

SHEET TITLE

MECHANICAL 40'S WING DEMOLITION ROOF PLAN

SHEET NUMBER

MD-3.4



1 MECHANICAL DEMOLITION ROOF PLAN - 50'S WING

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C. THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

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F. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G. ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H. TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

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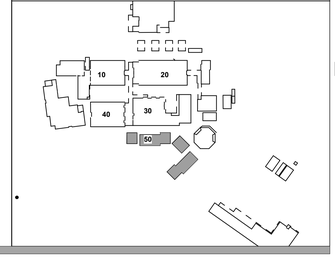
DEMOLITION SHEET NOTES

1 (E) COMBINATION VENT AT ROOF TO REMAIN. CAP & SEALED BELOW ROOF LEVEL.

KEYPLAN



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Main Office:
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SAN RAFAEL, CA
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DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

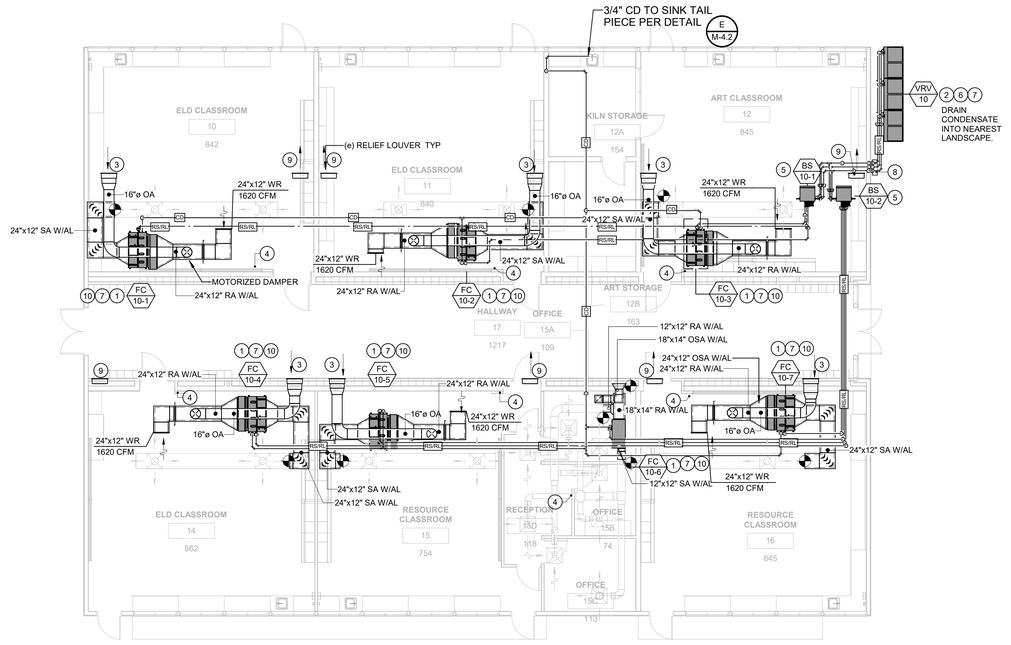
MARCH 15, 2021

SHEET TITLE

MECHANICAL 50'S WING DEMOLITION ROOF PLAN

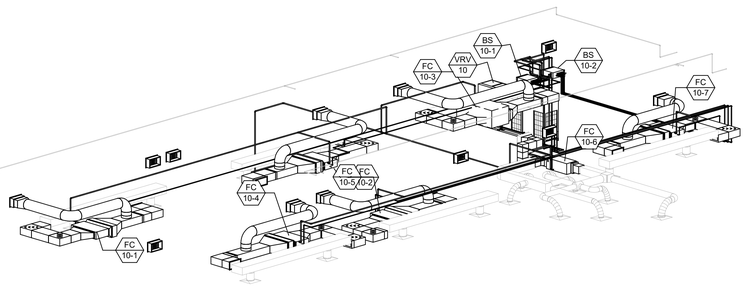
SHEET NUMBER

MD-3.5



1 MECHANICAL PLAN - 10'S WING

1/8" = 1'-0"



2 WING 10 ISOMETRIC

FOR REFRIGERATION PIPE SIZES & WIRING DIAGRAM SEE SHEET M-6.1

GENERAL NOTES

A FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

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SHEET NOTES

1 INSTALL NEW FAN COIL WITH MERV13 2" FILTER
PER DETAIL H M-4.1
ROUTE AND CONNECT NEW REFRIGERANT LINES. DRAIN CONDENSATE INTO DRAIN PAN & ROUTE CONDENSATE DRAIN PAN INTO NEAREST SINK TAIL PIECE.

2 VRV UNIT INISDE ENCLOUSURE SAD A-1.2. MOUNT NEW REFRIGERANT LINES, POWER & CONTROL WIRING ON (E) STRUT PIECE ON FASCIA BOARD ABOVE ENCLOSURE WITH NEW CLEVIS CLAMPS.

3 OSA LOUVER HIGH ON CLEARSTORY WITH BACK DRAFT DAMPER AND BIRD SCREEN. 28" x 24" RUSKIN ELF211D INSTALL PER DETAIL 28/A-1.4
OSA AIR TO BE 10'-0" AWAY FROM ANY EXHAUST & PLUMBING VENT TYP

4 THERMOSTAT (TEMPERATURE SENSOR), CO2 SENSOR SHALL BE MOUNTED 48"ABOVE FINISHED FLOOR. PROVIDE WITH LOCKABLE COVERS.

5 VRV BRANCH SELECTOR ABOVE CEILING,. REFRIGERANT LINE ROUTING SHALL BE AS SHOWN IN VRV SYSTEM DIAGRAM. MOUNTED PER DETAIL. H M-4.1 NOT DRAIN PAN REQUIRED

6 OUTDOOR VRV UNIT MOUNTED PER DETAIL E M-4.1

7 INSTALL CONDENSATE CONNECTION TO UNIT PER DETAIL C M-4.1

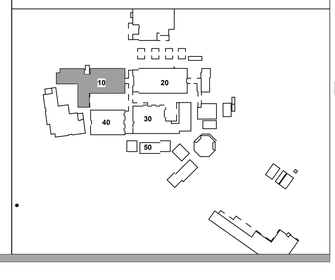
8 REFRIGERATION PIPING FROM VRV OUTDOOR UNIT TO INSIDE OF BLDG PER DETAIL A M-4.2

9 RELIEF LOUVER HIGH ON CLEARSTORY WITH INTEGRAL BACK DRAFT DAMPER AND BIRD SCREEN. 28" x 24" RUSKIN ELBD375BD INSTALL PER DETAIL 28/A-1.4

10 PROVIDE WITH MOTORIZED DAMPER FOR RETURN AND OSA INTAKE. SEE CONTROL DIAGRAMS.

11 CONDENSATE PUMP AT UNIT AND PUMPED CONDENSATE DRAINAGE TO DISCHARGE AT KILN SINK TAILPIECE

KEYPLAN



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Main Office:
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94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	MQ/SC
DRAWING SCALE:	1/8" = 1'-0"

PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

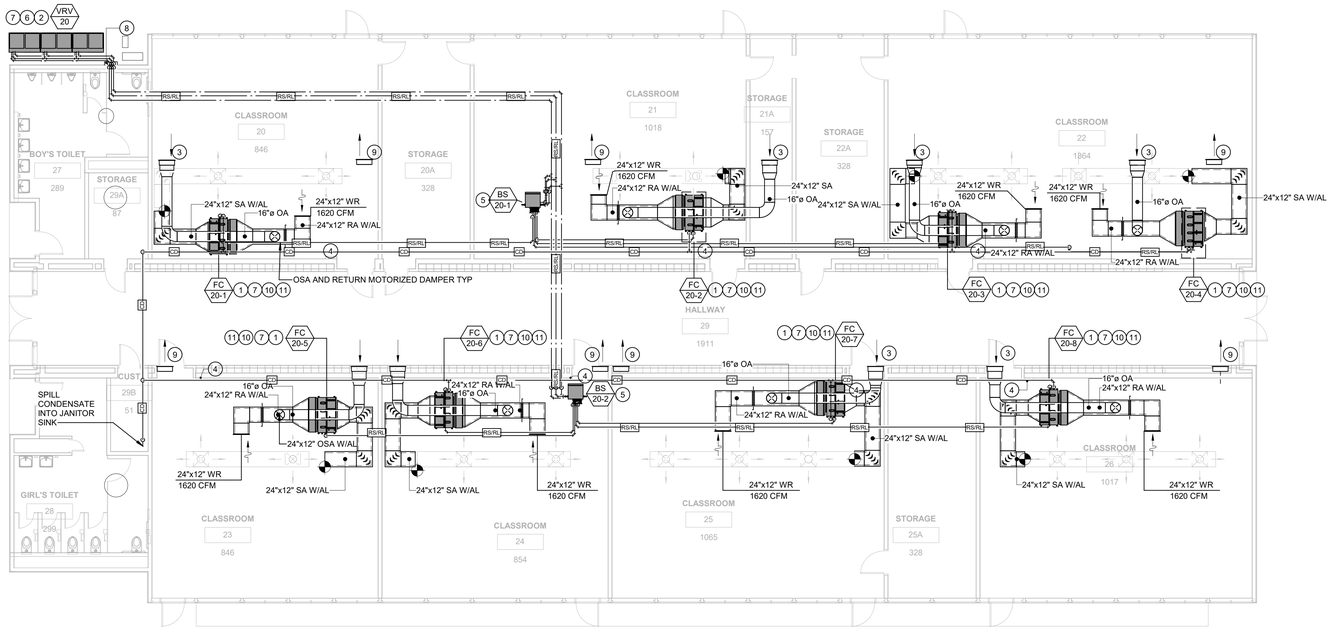
SHEET TITLE

MECHANICAL 10'S WING FLOOR PLAN

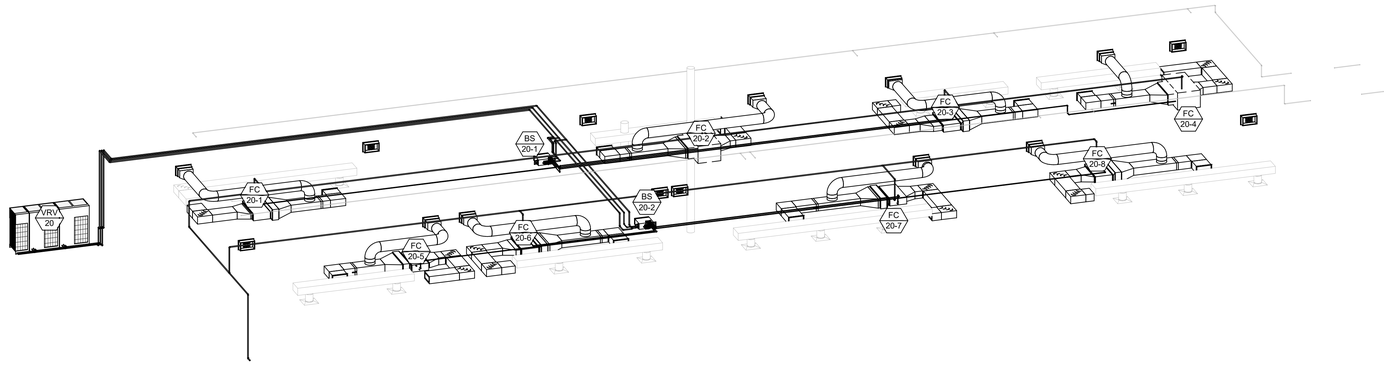
SHEET NUMBER

M-2.1

FOR REFRIGERATION PIPE SIZES & WIRING DIAGRAM SEE SHEET M-6.2



1 MECHANICAL PLAN -20'S WING
1/8" = 1'-0"



2 WING 20 ISOMETRIC

GENERAL NOTES

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SHEET NOTES

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PER DETAIL H/M-4.1
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2 VRV UNIT INISDE ENCLOUSURE SAD A-1.2. MOUNT NEW REFRIGERANT LINES, POWER & CONTROL WIRING ON (E) STRUT PIECE ON FASCIA BOARD ABOVE ENCLOSURE WITH NEW CLEVIS CLAMPS.

3 OSA LOUVER HIGH ON CLEARSTORY WITH BACK DRAFT DAMPER AND BIRD SCREEN. 28" x 24" RUSKIN ELF211D INSTALL PER DETAIL 28/A-1.4
OSA AIR TO BE 10'-0" AWAY FROM ANY EXHAUST & PLUMBING VENT TYP

4 THERMOSTAT (TEMPERATURE SENSOR), CO2 SENSOR SHALL BE MOUNTED 48"ABOVE FINISHED FLOOR. PROVIDE WITH LOCKABLE COVERS.

5 VRV BRANCH SELECTOR ABOVE CEILING., REFRIGERANT LINE ROUTING SHALL BE AS SHOWN IN VRV SYSTEM DIAGRAM. MOUNTED PER DETAIL H/M-4.1

6 OUTDOOR VRV UNIT MOUNTED PER DETAIL E/M-4.1

7 INSTALL CONDENSATE CONNECTION TO UNIT PER DETAIL C/M-4.1

8 REFRIGERATION PIPING FROM VRV OUTDOOR UNIT TO INSIDE OF BLDG PER DETAIL A/M-4.2

9 RELIEF LOUVER HIGH ON CLEARSTORY WITH INTEGRAL BACK DRAFT DAMPER AND BIRD SCREEN. 28" x 24" RUSKIN ELBD375BD INSTALL PER DETAIL 28/A-1.4

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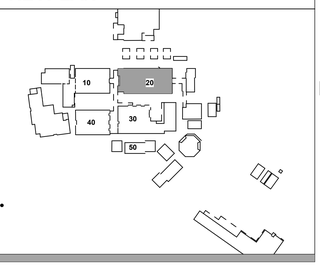
11 CONDENSATE PUMP AT UNIT AND PUMPED CONDENSATE DRAINAGE TO DISCHARGE AT KILN SINK TAILPIECE

KEYPLAN



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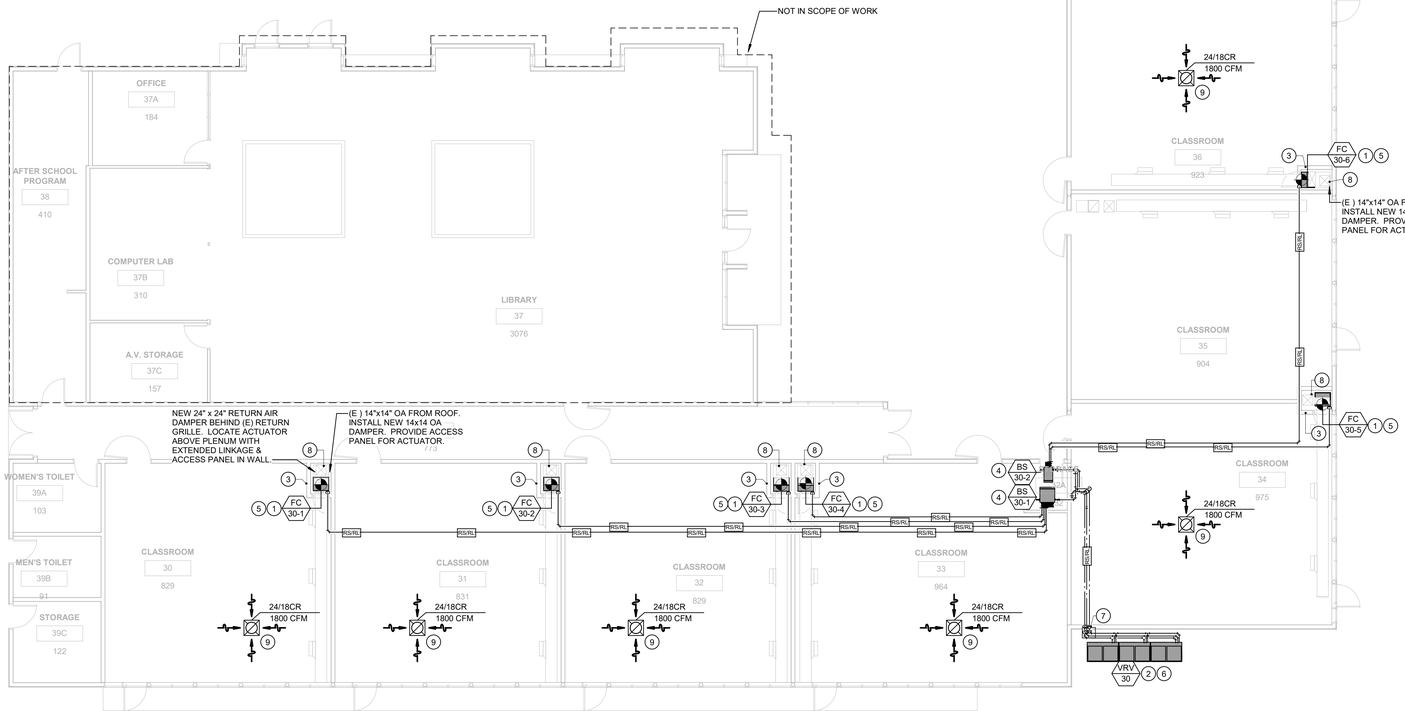
ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL
MARCH 15, 2021

SHEET TITLE
MECHANICAL 20'S WING FLOOR PLAN

SHEET NUMBER
M-2.2



1 MECHANICAL PLAN - 30'S WING

1/8" = 1'-0"

FOR REFRIGERATION PIPE SIZES & WIRING DIAGRAM SEE SHEET M-6.3

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

D ALL EQUIPMENT, MECHANICAL EQUIPMENT, PIPING, VALVING, CONTROLS, ETC. RENDERED USELESS BY THIS WORK SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

E LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

K DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

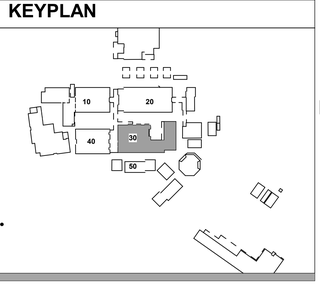
L SUPPORT AND BRACING OF ALL PIPING AND DUCTWORK SHALL BE IN ACCORDANCE WITH THE OPM-0043-13

M WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWING OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER OR FIELD INSPECTOR OF THE GOVERNING AUTHORITY.

SHEET NOTES

1. INSTALL NEW FAN COIL WITH MERV13 2" FILTER PER DETAIL 9/M-4.1
   ROUTE AND CONNECT NEW REFRIGERANT LINES. DRAIN CONDENSATE INTO DRAIN PAN & ROUTE CONDENSATE DRAIN PAN INTO NEAREST SINK TAIL PIECE.
2. VRV UNIT INISDE ENCLOUSURE SAD A-1.2. MOUNT NEW REFRIGERANT LINES, POWER & CONTROL WIRING ON (E) STRUT PIECE ON FASCIA BOARD ABOVE ENCLOSURE WITH NEW CLEVIS CLAMPS.
3. THERMOSTAT (TEMPERATURE SENSOR), CO2 SENSOR SHALL BE MOUNTED 48"ABOVE FINISHED FLOOR. PROVIDE WITH LOCKABLE COVERS.
4. VRV BRANCH SELECTOR ABOVE CEILING,. REFRIGERANT LINE ROUTING SHALL BE AS SHOWN IN VRV SYSTEM DIAGRAM. MOUNTED PER DETAIL H/M-4.1
5. INSTALL NEW FLEXIBLE CONDENSATE CONNECTION. PROVIDE NEW CONDENSATE PUMP. CONNECT TO EXISTING DRAIN LINE.
6. OUTDOOR VRV UNIT MOUNTED PER DETAIL E/M-4.1
7. REFRIGERATION PIPING FROM VRV OUTDOOR UNIT TO INSIDE OF BLDG PER DETAIL A/M-4.2
8. (E) 14"x14" TO GOOSE NECK ON ROOF. INSTALL NEW 14"x14" ACTUATOR DAMPER & ACCESS PANEL.
9. 18"Ø UTR TO GR. PER DETAIL C/M-4.2

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

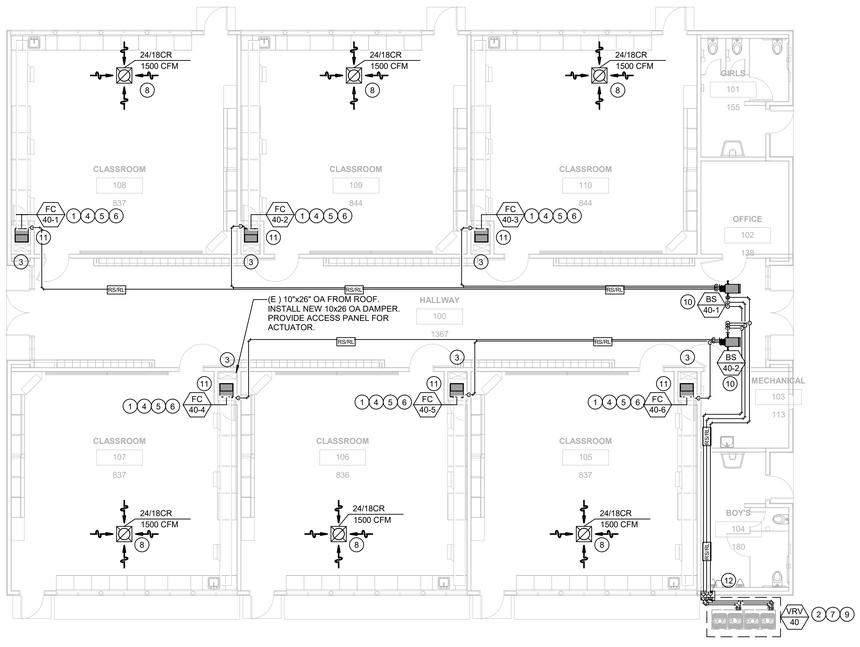
MARCH 15, 2021

SHEET TITLE

MECHANICAL 30'S WING FLOOR PLAN

SHEET NUMBER

M-2.3



1 MECHANICAL PLAN - 40'S WING

1/8" = 1'-0"

FOR REFRIGERATION PIPE SIZES & WIRING DIAGRAM SEE SHEET M-6.4

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

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F PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

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H TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

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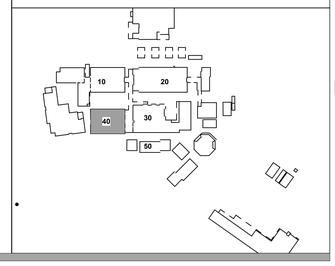
SHEET NOTES

1. INSTALL NEW FAN COIL, WITH EXTERIOR 2" FILTER RACK AND BUILT UP ECONOMIZER. SEE B/M-4.1
   ROUTE AND CONNECT NEW REFRIGERANT LINES.
2. VRV UNIT INISDE ENCLOUSURE SAD A-1.3. MOUNT NEW REFRIGERANT LINES, POWER & CONTROL WIRING ON (E) STRUT PIECE ON FASCIA BOARD ABOVE ENCLOSURE WITH NEW CLEVIS CLAMPS.
3. 10"x26" OUTDOOR AIR DAMPER (OAD)
4. 24"x24" RETURn AIR DAMPER (RAD)
5. INSTALL NEW FLEXIBLE CONDENSATE CONNECTION. PROVIDE NEW CONDENSATE PUMP. CONNECT TO EXISTING DRAIN LINE.
6. FURNISH & INSTALL NEW SHEET METAL PLENUM TO ACCOMMODATE NEW UNIT. PROVIDE 24" X 8" RECTANGULAR TAP TIGHT TO CEILING OFF FRONT OF PLENUM THRU WALL. PROVIDE OFFSET SQUARE TO ROUND TRANSITION AS NECESSARY TO CONNECT TO EXISTING DUCT. PAINT TO MATCH. SAD.
7. PROVIDE 18" CLEAR ACCESS TO PLUMBING WALL ACCESS PANELS
8. 18"Ø UTR TO GR. PER DETAIL C/M-4.2
9. OUTDOOR VRV UNIT MOUNTED PER DETAIL E/M-4.1
10. VRV BRANCH SELECTOR ABOVE CEILING,, REFRIGERANT LINE ROUTING SHALL BE AS SHOWN IN VRV SYSTEM DIAGRAM. MOUNTED PER DETAIL H/M-4.1
11. THERMOSTAT (TEMPERATURE SENSOR), CO2 SENSOR SHALL BE MOUNTED 48"ABOVE FINISHED FLOOR. PROVIDE WITH LOCKABLE COVERS.
12. REFRIGERATION PIPING FROM VRV OUTDOOR UNIT TO INSIDE OF BLDG PER DETAIL A/M-4.2

KEYPLAN



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ARCH PROJECT NO:	1900.00
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DSA SUBMITTAL

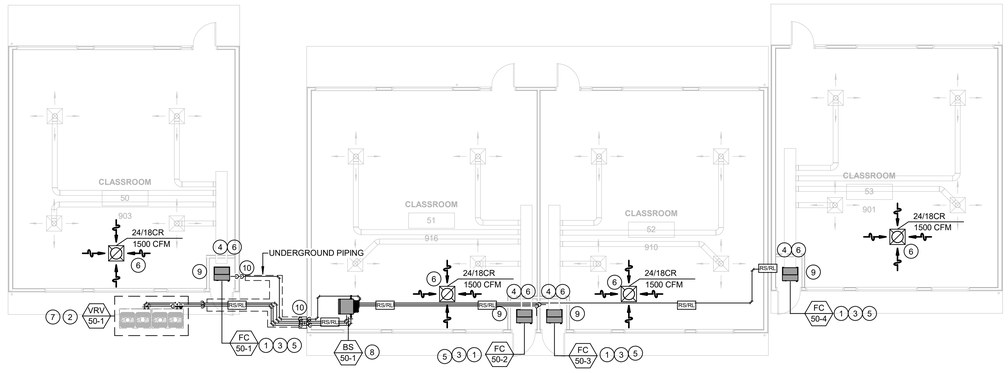
MARCH 15, 2021

SHEET TITLE

MECHANICAL 40'S WING FLOOR PLAN

SHEET NUMBER

M-2.4



1 MECHANICAL PLAN - 50'S WING

1/8" = 1'-0"

FOR REFRIGERATION PIPE SIZES & WIRING DIAGRAM SEE SHEET M-6.5

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

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G ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

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SHEET NOTES

1. INSTALL NEW FAN COIL AND COOLING COIL, WITH EXTERIOR 2" FILTER RACK AND BUILT UP ECONOMIZER. SEE A/M-4.1

   ROUTE AND CONNECT NEW REFRIGERANT LINES.

2. VRV UNIT INISDE ENCLOUSURE SAD A-1.3. MOUNT NEW REFRIGERANT LINES, POWER & CONTROL WIRING ON (E) STRUT PIECE ON FASCIA BOARD ABOVE ENCLOSURE WITH NEW CLEVIS CLAMPS.

3. PROVIDE NEW 28" x 24" OA LOUVER AND MIN 16" x 16" OA DAMPER WITH EXTENDED LINKAGE. LOCATE ACTUATOR IN CLOSET ABOVE PLATFORM. SAD

4. PROVIDE NEW MIN 20" x 20" RA DAMPER WITH EXTENDED LINKAGE. LOCATE ACTUATOR IN CLOSET ABOVE PLATFORM. PROVIDE ACCESS PANEL. WITH NO CUTTING OF JOISTS. TYP

5. PROVIDE NEW CONDENSATE DRAIN. RUN NEW CD LINE OUT THRU WALL AND DISCHARGE IN PLANTED AREA MAX. 8" ABOVE GRADE. PROVIDE SPLASH BLOCK. SEE DETAIL F/M-4.2

6. 18"Ø UTR TO GR. PER DETAIL D/M-4.2

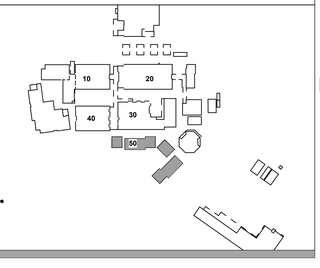
7. OUTDOOR VRV UNIT MOUNTED PER DETAIL E/M-4.1

8. VRV BRANCH SELECTOR ABOVE CEILING,, REFRIGERANT LINE ROUTING SHALL BE AS SHOWN IN VRV SYSTEM DIAGRAM. MOUNTED PER DETAIL H/M-4.1

9. THERMOSTAT (TEMPERATURE SENSOR), CO2 SENSOR SHALL BE MOUNTED 48"ABOVE FINISHED FLOOR. PROVIDE WITH LOCKABLE COVERS.

10. REFRIGERATION PIPING FROM VRV OUTDOOR UNIT TO INSIDE OF BLDG PER DETAIL A/M-4.2

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
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DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

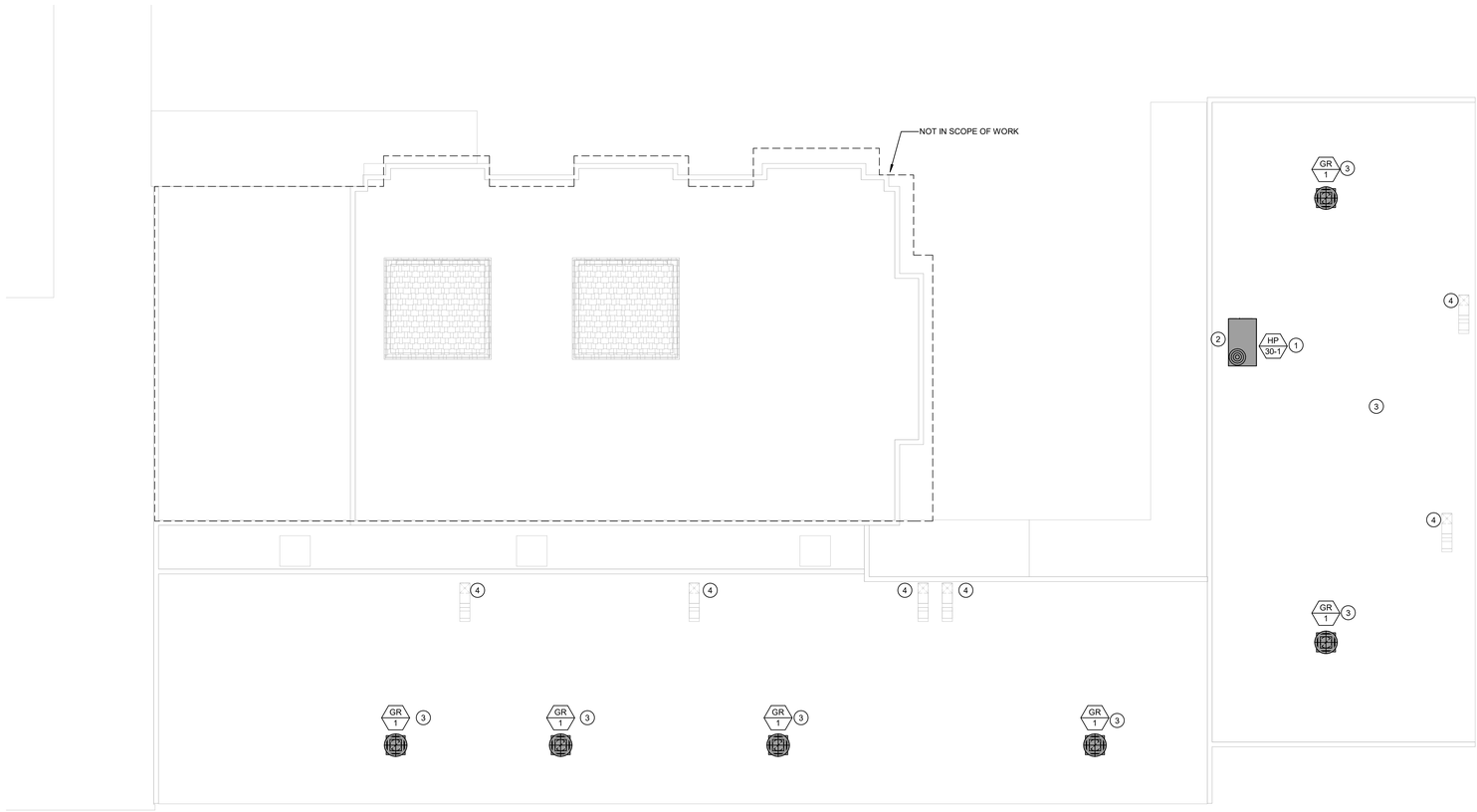
MARCH 15, 2021

SHEET TITLE

MECHANICAL 50'S WING FLOOR PLAN

SHEET NUMBER

M-2.5



1 MECHANICAL ROOF PLAN - 30'S WING

1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C. THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

D. ALL EQUIPMENT, MECHANICAL EQUIPMENT, PIPING, VALVING, CONTROLS, ETC. RENDERED USELESS BY THIS WORK SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

E. LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G. ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

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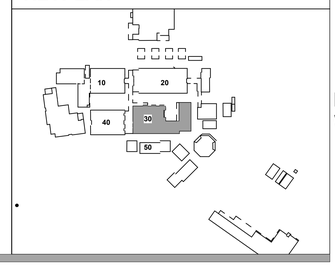
SHEET NOTES

1. MOUNT NEW HEAT PUMP ON EXISTING CURB. SAD FOR ROOFING WORK. SEE INSTALLATION DETAIL D/M-4.1
2. CONNECT CD PIPING TO NEW UNIT. SUPPORT SUPPORT CD PIPING ON ROOF WITH UNATTACHED DURA-BLOK SUPPORT PER DETAIL C/M-4.1 AND SIMILAR G/M-4.1 C/M-4.2
3. GRAVITY RELIEF VENT. MOUNT PER DETAIL SAD FOR ROOF FLASHING 20/A-1.4 "WITH NO CUTTING JOISTS".
4. EXISTING OSA INTAKE GOOSE NECK TO REMAIN

KEYPLAN



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SAN RAFAEL, CA
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DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

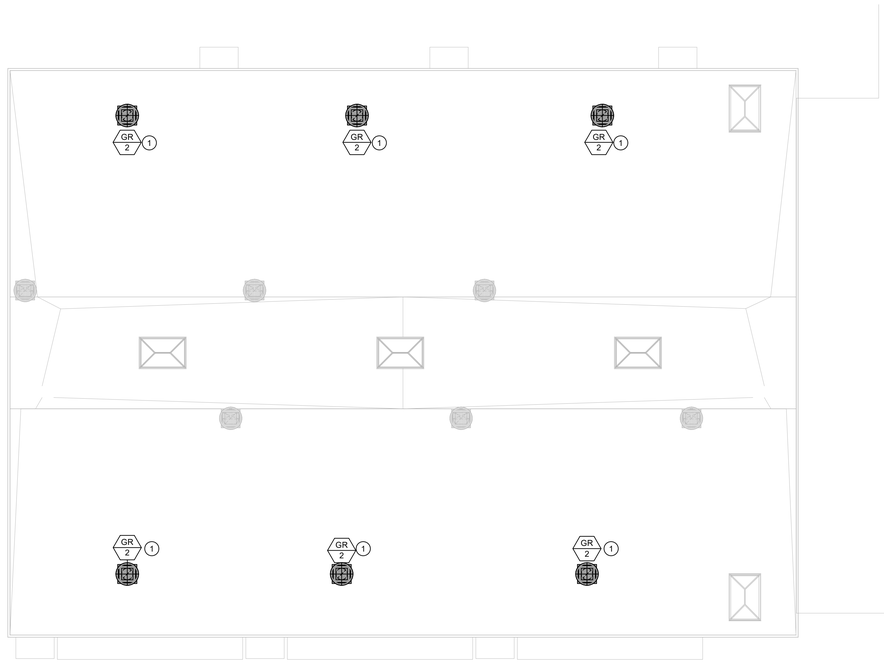
MARCH 15, 2021

SHEET TITLE

MECHANICAL 30'S WING ROOF PLAN

SHEET NUMBER

M-3.3



1 **MECHANICAL ROOF PLAN - 40'S WING**
1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C. THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

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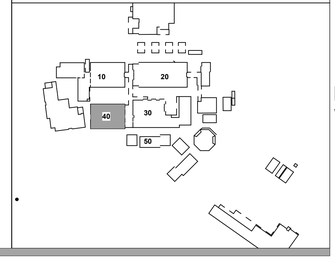
SHEET NOTES

1. GRAVITY RELIEF VENT. MOUNT PER DETAIL C/M-4.2 SAD FOR ROOF FLASHING 20/A-1.4 "WITH NO CUTTING JOISTS".

KEYPLAN



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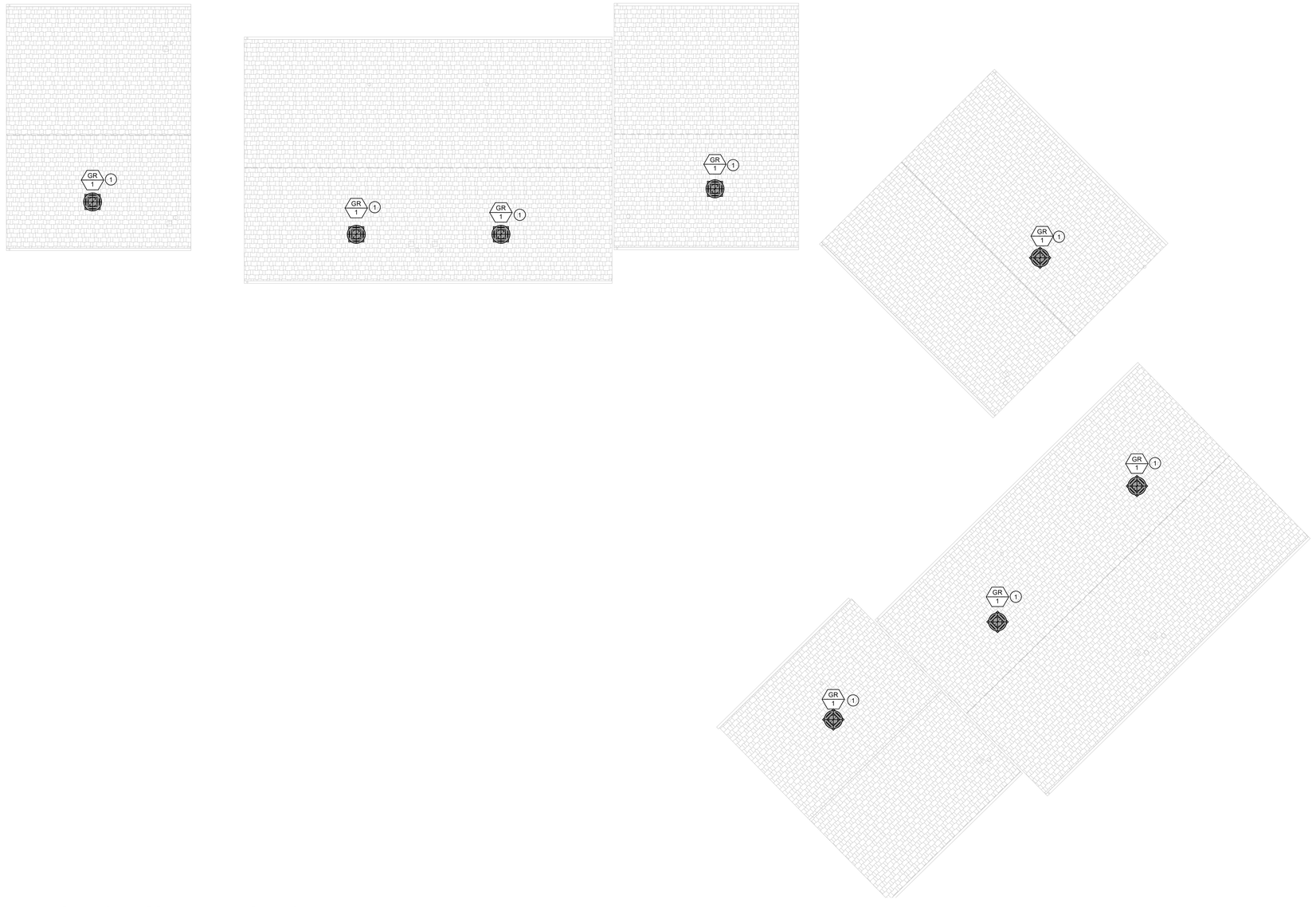
MARCH 15, 2021

SHEET TITLE

MECHANICAL 40'S WING ROOF PLAN

SHEET NUMBER

M-3.4



1 **MECHANICAL ROOF PLAN - 50'S WING**
1/8" = 1'-0"

GENERAL NOTES

A. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M-1.1

B MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES. MAKE ANY OFFSETS AS REQUIRED TO AVOID CONFLICT WITH PIPING, LIGHT FIXTURES, SKYLIGHTS, ETC.

C THIS CONTRACTOR SHALL RETAIN SPECIFIC EQUIPMENT AS DIRECTED BY OWNER AND DELIVER TO OWNER SPECIFIED LOCATION.

D ALL EQUIPMENT, MECHANICAL EQUIPMENT, PIPING, VALVING, CONTROLS, ETC. RENDERED USELESS BY THIS WORK SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

E LOCATION OF EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AIR OUTLETS, PIPING, CONTROLS, VALVING, ETC. HAS BEEN BASED ON THE BEST AVAILABLE INFORMATION OBTAINABLE AT THE SITE AND THROUGH RECORD DRAWINGS. VERIFY EXACT LOCATIONS, SIZES, AND EXTENT OF EXISTING SYSTEMS PRIOR TO START OF DEMOLITION WORK

F PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.

G ASBESTOS CONTAINING PRODUCTS MAY BE PRESENT IN THE EXISTING BUILDING CONSTRUCTION. IF SUSPECT MATERIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH ADDITIONAL WORK. THE CONTRACTOR SHALL IMMEDIATELY POST NOTICES AND TAKE PRECAUTIONS NECESSARY TO ENSURE THE HEALTH AND SAFETY OF ALL WORKERS, THE STAFF, AND THE PUBLIC.

H TEMPORARY CAP EXISTING OPEN DUCTS DURING CONSTRUCTION. PREPARE DUCT FOR RECONNECTION.

J DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

K DEMO AND REMOVE ALL CONTROLS CONDUCTORS, CONDUITS AND ROOF JACKS AND PREPARE FOR NEW.

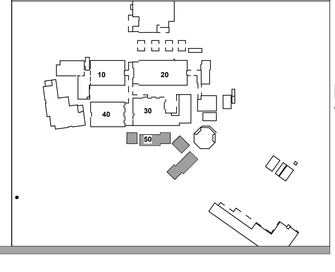
L SUPPORT AND BRACING OF ALL PIPING AND DUCTWORK SHALL BE IN ACCORDANCE WITH THE OPM-0043-13

M WHERE BRACING DETAILS ARE NOT SHOWN ON THE DRAWING OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER OR FIELD INSPECTOR OF THE GOVERNING AUTHORITY.

SHEET NOTES

(1) GRAVITY RELIEF VENT. MOUNT PER DETAIL C/M-4.2 SAD FOR ROOF FLASHING 30/A-1.4 "WITH NO CUTTING JOISTS".

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

SAN RAFAEL
CITY
SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	1/8" = 1'-0"
PTN: 65458-57	FILE NO: 21-39

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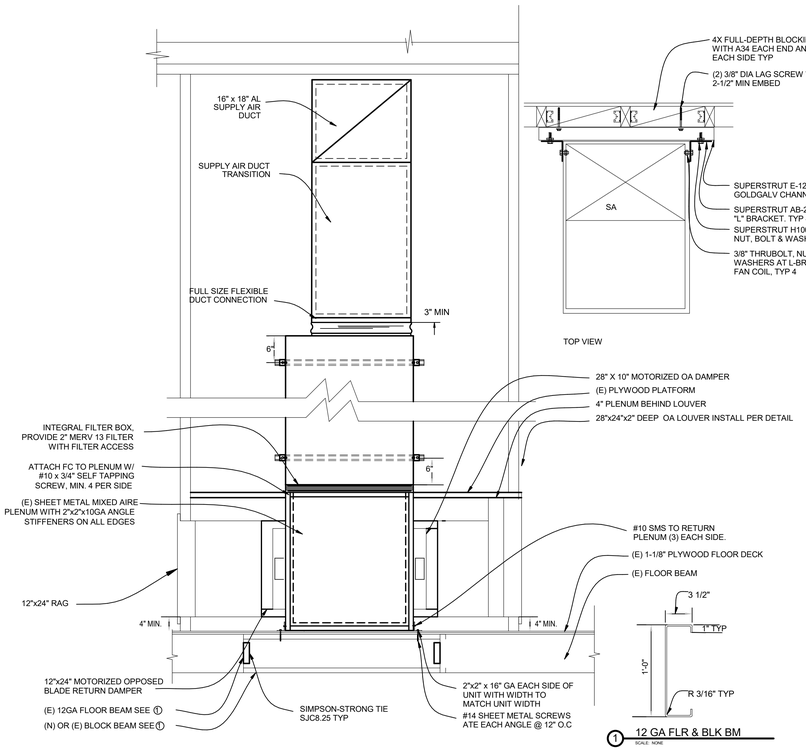
MARCH 15, 2021

SHEET TITLE

MECHANICAL 50'S WING ROOF PLAN

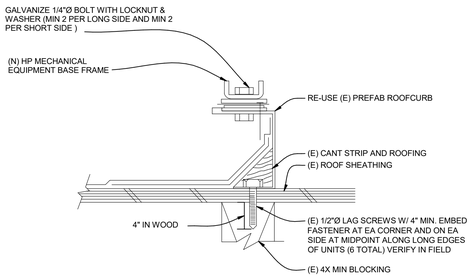
SHEET NUMBER

M-3.5



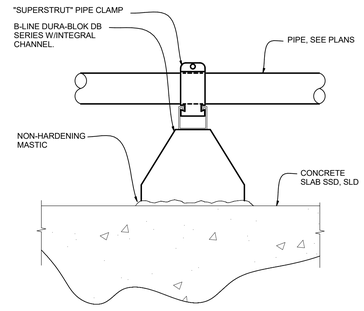
A VERTICAL FAN COIL MOUNTING DETAIL TYPICAL WING 50

SCALE: NONE



D HP UNIT MOUNTING DETAIL

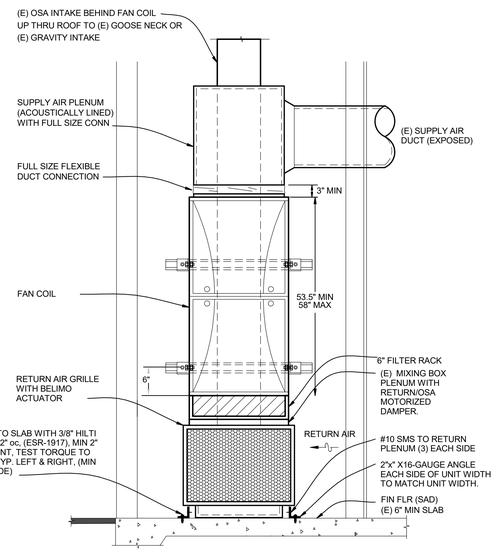
SCALE: NONE



NOTE: SUPPORTS SHALL BE AT 4'-0" ON CENTER & AT ALL CHANGE OF DIRECTION

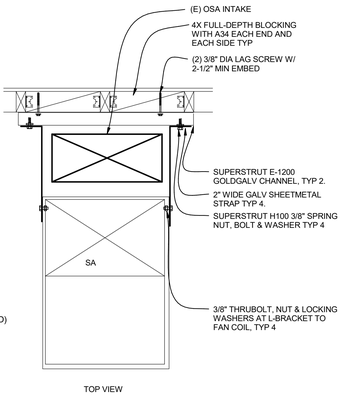
G PIPE SUPPORT ON CONCRETE SLAB DETAIL

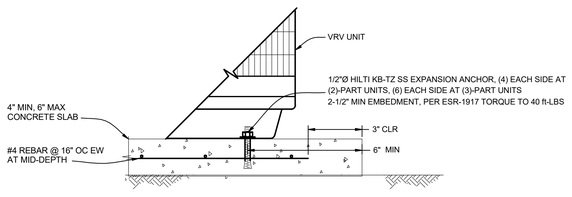
SCALE: NTS



B VRV VERTICAL FAN COIL MOUNTING DETAIL TYPICAL WING 30 & 40

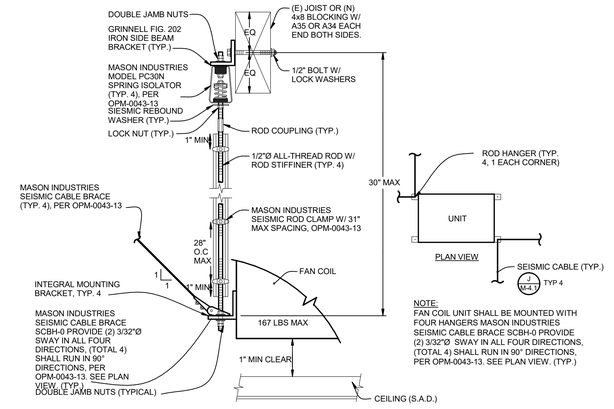
SCALE: NONE





E VRV UNIT MOUNTING DETAIL

SCALE: NTS



NOTE: SEISMIC BRACING NOT REQUIRED IF TOP OF UNIT ATTACHMENT IS LESS THAN 12" FROM ATTACHEMNT TO STRUCTURE

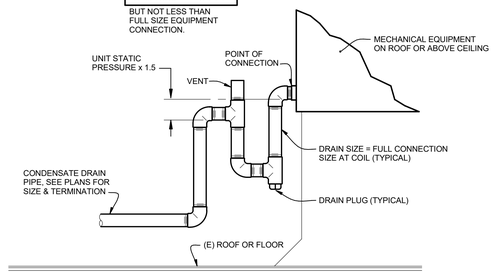
H BS/FAN COIL MOUNTING DETAIL

SCALE: NONE

DRAIN LINE SHALL BE SIZED AS FOLLOWS:

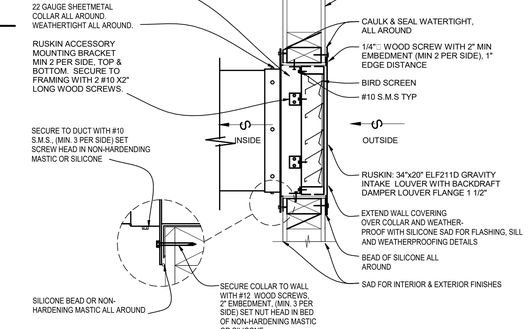
0-20 TONS ------- Ø 3/4"
24-40 TONS ------- Ø 1"
41-90 TONS ------- Ø 1 1/4"

BUT NOT LESS THAN FULL SIZE EQUIPMENT CONNECTION.



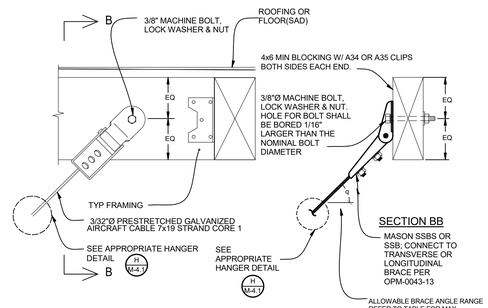
C TYPICAL CONDENSATE DRAIN DETAIL

SCALE: NTS



F OSA LOUVER

SCALE: NONE



BRACE ANGLE RANGE ϕ	MAX ALLOWABLE FORCE PER SEISMIC BRACE ASSEMBLY, Fp
30° - 45°	270 LBS
46° - 60°	190 LBS

J SEISMIC BRACING CONNECTION

SCALE: NONE

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.
REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER J. COSTA NO. 31500 Exp. 12-31-22 MECHANICAL STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

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280 WOODLAND AVE
SAN RAFAEL, CA
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DRAWING SCALE:
PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL

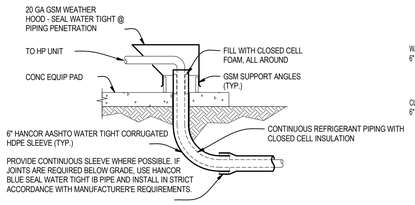
MARCH 15, 2021

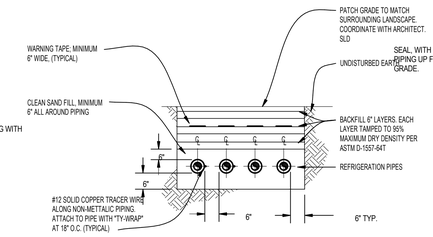
SHEET TITLE

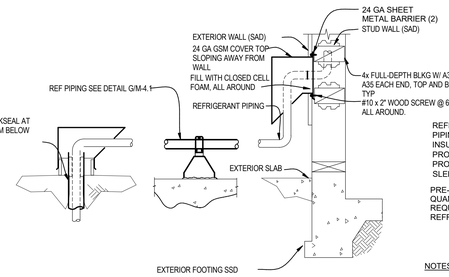
MECHANICAL DETAILS

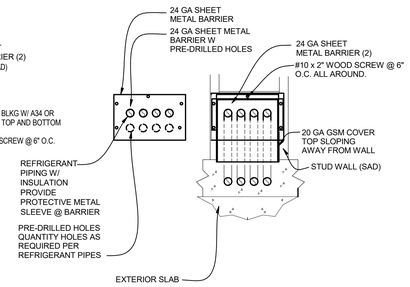
SHEET NUMBER

M-4.1





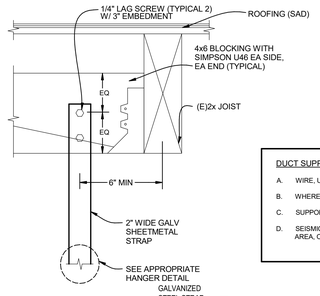




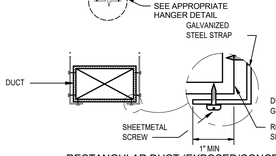
NOTES:
1. INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE IN A TYPICAL TRENCH AT LEAST 18" BELOW GRADE WITH PROPER BED AND BACKFILL MATERIALS.
3. SLEEVE MUST BE WATER TIGHT. DO NOT USE PERFORATED PIPE OR SOIL TIGHT CONNECTIONS.
4. PRESSURE TEST SLEEVE AND PIPING PER MANUFACTURER'S RECOMMENDATIONS PRIOR TO BACKFILL.
5. REFRIGERANT PIPING TO BE INSULATED WITH A MINIMUM OF 1/2" INSULATION ON EACH LINE SEPARATELY. CONTRACTOR TO ASSURE THAT INSULATION IS NOT DAMAGED WHEN INSTALLED INTO SLEEVE.
6. TERMINATE SLEEVE OUTSIDE BUILDING. IF SLEEVE IS TO TERMINATE INSIDE THE BUILDING MECHANICAL ROOM, PROVISIONS FOR WATER DRAINAGE MUST BE PROVIDED.

NOTES:
1. NUMBER OF PIPES VARY. WIDTH OF PIPE ENCLOSURE 22" MAX.
2. RS/RL PIPING SIZES VARIES.
3. PROVIDE CLEARANCE FOR SHEET METAL BARRIER TO RS/RL PIPING 1/4" MAX CAULK & SEAL

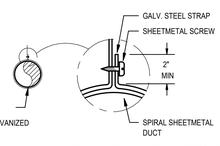
A REFRIGERATION PIPE THRU WALL & DN TO BG
SCALE: NONE



DUCT SUPPORT NOTES:
- A. WIRE, USED IN LIEU OF STRAPS AND RODS, IS NOT ALLOWED.
- B. WHERE APPLICABLE, INSTALL INSULATION AFTER INSTALLING DUCT HANGERS.
- C. SUPPORTS SHALL BE PLACED AT 8'-0" ON CENTER (MAX) AND AT ALL CHANGES IN DIRECTION.
- D. SEISMIC BRACING IS NOT REQUIRED AT HVAC DUCTS THAT ARE 2 FT SQ OR LESS IN CROSS-SECTIONAL AREA, OR WEIGH 10 LB/FT OR LESS.

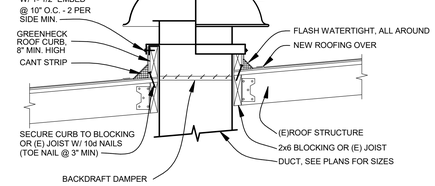


RECTANGULAR DUCT (EXPOSED/CONCEALED)
(WITH CROSS-SECTIONAL AREA SMALLER THAN 2 SQFT)

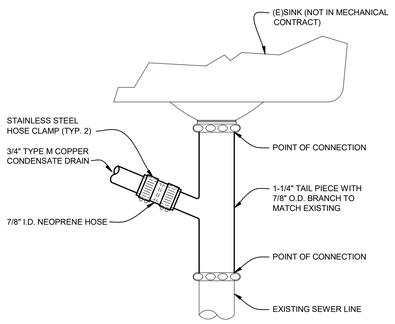


ROUND DUCT (EXPOSED/CONCEALED)
(WITH CROSS-SECTIONAL AREA SMALLER THAN 2 SQFT)

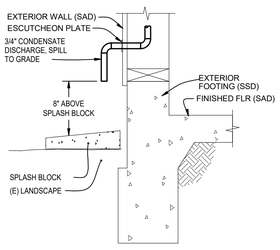
B TYPICAL SMALL DUCT SUPPORT DETAIL
SCALE: NONE



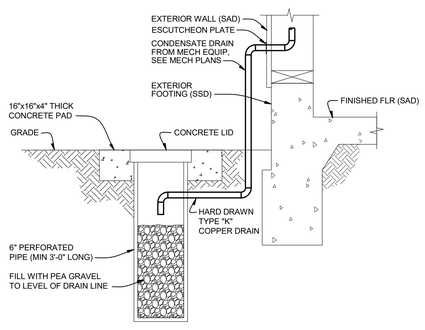
C GRAVITY RELIEF MOUNTING DETAIL 30's & 40's WING
SCALE: NONE



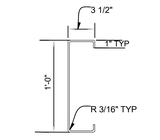
E CONDENSATE TO SINK TAIL PIECE
SCALE: NONE



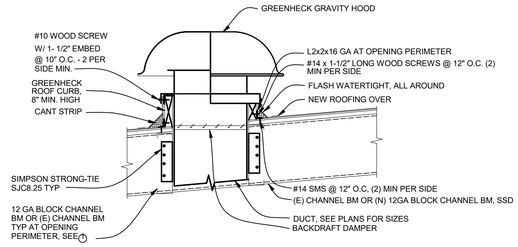
F CONDENSATE TO LANDSCAPE
SCALE: NONE



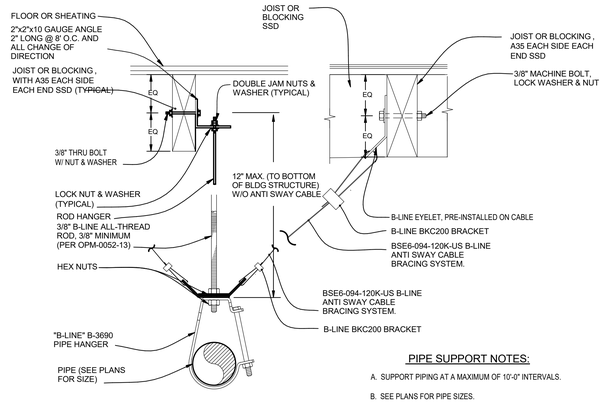
G COND TO DRYWELL DETAIL
SCALE: NONE



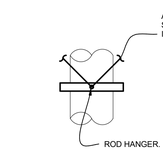
1 12 GA FLR & BLK BM
SCALE: NONE



D GRAVITY RELIEF MOUNTING DETAIL 50's WING
SCALE: NONE



PIPE SUPPORT NOTES:
- A. SUPPORT PIPING AT A MAXIMUM OF 10'-0" INTERVALS.
- B. SEE PLANS FOR PIPE SIZES.
- C. B-LINE CHANNEL ROD STIFFENER @ ALL-THREAD WHERE DIAGONAL BRACE OCCURS. INCLUDE SC228 ASSEMBLY AS RECOMMENDED BY MANUFACTURER.
- D. NO BRACING IS REQUIRED ON GAS PIPES WITH LESS THAN 1" I.D. AND ALL OTHER PIPES LESS THAN 2-1/2" IN DIAMETER, AND WHEN SUPPORTED LESS THAN 12" FROM BOTTOM OF ROOF STRUCTURE.



MINIMUM ROD SIZES (INCHES)	PIPE DIAMETER (INCHES)
3/8"	2" & SMALLER PIPE
1/2"	2-1/2" & 3" PIPE
ANTI SWAY CABLE REQUIRED WHEN ANY PART OF THE PIPE SYSTEM IS BELOW 12" PROVIDE AT EACH PIPE SUPPORT AS REQUIRED.	

H PIPE SUPPORT
SCALE: NONE

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
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600 Main Street, Suite E,
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MARCH 15, 2021
SHEET TITLE

MECHANICAL DETAILS

SHEET NUMBER

M-4.2

VRV System with Factory Controls

1. System Overview

a. Each outdoor condensing unit, indoor fan coil unit, and refrigerant branch selector box will be directly controlled by the VRV factory-provided global controller.
b. Each indoor fan coil unit will be connected (hard wired) to a VRV factory-provided dedicated wall mounted electronic zone temperature sensor.
c. Electronic zone temperature sensors shall have a backlit LCD display and shall include: 1) physical push-buttons for warmer/cooler setpoint control; 2) physical push-button for indoor fan coil unit fan speed control; 3) visual display of room temperature, OSA temperature, and current mode; and 4) physical push-button after-hours override control with user adjustable duration. The after-hours override duration shall have he ability to be limited from the controls front end user interface.
d. The owner standard (Alerton) EMS System shall interface with the VRF system global controller via the factory BACnet interface/gateway control module (by VRF manufacturer), to allow the EMS System to monitor (read), or command (write), certain VRF system control points. See integration points list.

2. Scheduling

a. Scheduled occupied and unoccupied hours shall be programmed thru the EMS Operator Workstation/Graphical User Interface according to EMS time schedule. Occupant manual override to provide "after-hours" system operation shall occur at the local zone temperature sensor. Duration of manual override shall be programmed thru the EMS Operator Workstation/Graphical User Interface (30 minutes min., 2 hours max).

3. Room Temperature Setpoints (adjustable)

a. Room temperature setpoints for scheduled occupied and unoccupied hours shall be programmed thru the EMS Operator Workstation/Graphical User Interface. Occupant override of room temperature setpoint shall occur at the local zone temperature sensor and shall be limited to 2°F higher/lower than programmed setpoints. Room temperature setpoints are as follows:
   - Occupied room heating setpoint: 68°F
   - Unoccupied room heating setpoint: 58°F
   - Occupied room cooling setpoint: 75°F
   - Unoccupied room cooling setpoint: 85°F
b. During periods of Vacancy, whereas a zone is empty for more than 15 minutes during scheduled occupied hours (as seen by EMS via BACnet integration with lighting control system occupancy sensors), the EMS system shall setup/setback the room temperature setpoints by 2°F (adjustable). When room occupancy returns, EMS shall revert back to occupied room temperature setpoint.

4. Unit Fan Operation

a. When the zone is in Occupied Mode or in Afterhours Mode, the fan shall run continuously.
b. During the Unoccupied Mode as determined by EMS time schedule, the unit fan cycles with demand as needed to maintain the unoccupied room heating and cooling temperature setpoints.

5. Automatic Demand Reduction Controls

a. EMS shall be programmed with capability to implement centralized demand shed for all non-critical zones upon call for Automatic Demand Reduction. Critical zones shall not be impacted by demand shed conservation measures.

6. Zone Pre-Occupancy Purge

a. The EMS shall schedule the zone to be in Occupied Mode one hour prior to the actual time of anticipated occupancy.

7. Heating operation

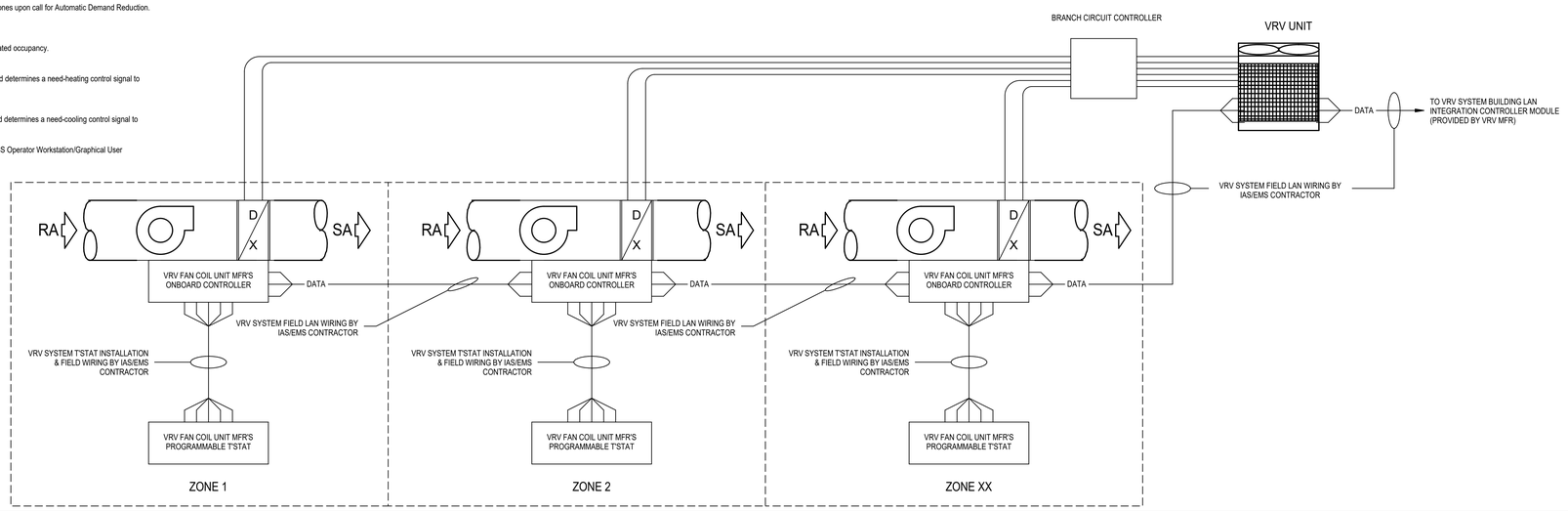
a. The VRF system global controller compares the zone heating setpoint with the space temperature and determines a need-heating control signal to provide mechanical heating.

8. Cooling operation

a. The VRF system global controller compares the zone cooling setpoint with the space temperature and determines a need-cooling control signal to provide mechanical cooling.

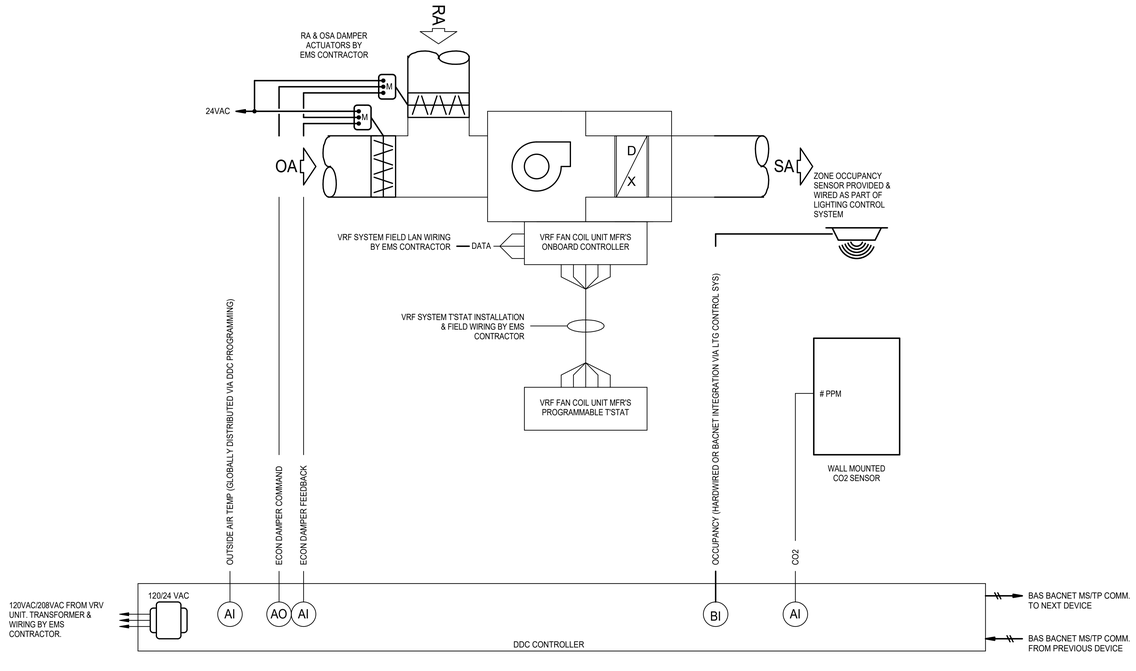
9. Integration Points List - The following VRF system control points shall be displayed on the EMS Operator Workstation/Graphical User Interface via the VRF system factory BACnet interface/gateway control module:

a. Fan coil unit tag identification number.
b. Unit occupancy command.
c. Unit status.
d. Fan status.
e. Zone temperature.
f. Zone occupied cooling setpoint.
g. Zone occupied heating setpoint.
h. Zone unoccupied cooling setpoint.
i. Zone unoccupied heating setpoint.
j. Fan coil unit discharge air temperature.
k. Fan coil unit operation mode.
l. Room occupancy mode (via BACnet integration to lighting control system occupancy sensor).
m. Fan coil unit alarm status.
n. Compressor status.
o. Fan coil unit thermal conditioning status.
p. Fan coil unit thermal conditioning lockout status.



A DAIKIN VRV CONTROL DIAGRAM

SCALE: NONE



B VRV ZONE UNIT W/ ECONOMIZER, DEMAND CONTROL VENTILATION & OCCUPANCY MONITORING

SCALE: NONE

VRV System with Economizer, Demand Control Ventilation, Zone Occupancy Monitoring

1. System Overview

a. Each VRV fan coil unit will be directly controlled by its own dedicated factory-provided VRV fan coil controller and thermostat which serve to provide control of mechanical cooling/heating and fan ventilation in the zone. VRV equipment manufacturer is responsible for all internal sequence of operations programming logic and controls associated with the factory-provided VRV fan coil controller and thermostat.
b. Energy Management System (EMS) unitary controller will be provided by EMS contractor to fully control zone economizer, monitor zone CO2 concentrations, zone occupancy conditions and door/window switch status conditions.
c. EMS unitary controller shall be connected to a wall mounted CO2 sensor.

2. Occupancy/Vacancy Monitoring

a. Zone occupancy and vacancy will be actively monitored by connection to Lighting Control System occupancy sensor(s). If available, monitoring shall be accomplished via BACnet system integration. Otherwise, BAS contractor shall monitor auxiliary contacts on Lighting Control System occupancy sensor(s).

3. Unit Fan Operation

a. When the zone is in Occupied Mode or in Afterhours Mode, the fan shall run continuously, unless Vacant Mode has been triggered.
b. During the Unoccupied Mode as determined by EMS time schedule, the unit fan cycles with demand and the temperature is controlled by the unoccupied space temperature heating and cooling setpoints.

4. Minimum Outdoor Air Ventilation

a. During Occupied Mode or Afterhours Mode, the economizer damper shall be commanded by the EMS unitary controller to maintain a position which satisfies the Minimum Outdoor Air ventilation requirements for the zone. Damper position(s) determined by Air Balancing Contractor.

5. Demand Control Ventilation

a. EMS unitary controller will be connected to a wall mounted CO2 sensor to monitor zone CO2 concentration.
b. During Occupied Mode or Afterhours Mode, the EMS unitary controller shall reset the outside air damper minimum position to maintain the CO2 concentration below 1,000 ppm.

6. Automatic Demand Reduction Controls

a. EMS shall be programmed with capability to implement centralized demand shed for all non-critical zones upon call for Automatic Demand Reduction. Critical zones shall not be impacted by demand shed conservation measures.

7. Vacant Mode Control

a. When the zone has been scheduled for occupancy for at least one hour and the occupancy sensor has confirmed that zone has been vacant for 5 minutes (adjustable: maximum 30 minutes), zone shall be placed into Vacant Mode.
b. Reset cooling and heating setpoints up and down by 2°F (adjustable) or more.
c. Ventilation air in a Vacant zone shall be reduced to zero when permitted to do so according to 2019 California Title 24 Table 120.1A (all Occupancy Categories with Note "F" designation). The unit fan shall be shut off and the economizer shall be closed to the outside air. For all other zones, the economizer shall be set to Minimum Outdoor Air position and the unit fan shall operate to provide minimum ventilation during Vacant Mode.
d. Upon detection of occupancy, Vacant Mode shall be cleared.

8. Zone Pre-Occupancy Purge

a. The EMS shall schedule the zone to be in Occupied Mode one hour prior to the actual time of anticipated occupancy.

9. Heating operation

a. Economizer to be commanded to Min CFM setpoint during heating mode.
b. Heating operation not allowed if door/window switches indicate OPEN for more than 5 minutes (adjustable).

10. Cooling operation

a. Economizer to be commanded to Max CFM setpoint during cooling mode, provided the Economizer Outside Air Lockout Setpoint threshold has not been surpassed.
b. Mechanical cooling operation not allowed if door/window switches indicate OPEN for more than 5 minutes (adjustable).

11. Fault Detection Diagnostics

a. The EMS DDC Controller shall monitor the following economizer actuator Fault Detection Diagnostic conditions and broadcast results via EMS network:
   - Temperature Sensor Failure/Fault
   - Economizer not economizing when enabled
   - Economizer economizing when disabled
   - Economizer damper modulation fault
   - Excess outdoor air

12. Monitoring - The following conditions shall be monitored and displayed at EMS Operator Workstation/Graphical User Interface:

a. Supply air temperature.
b. Room temperature.
c. Room CO2 concentration.
d. Room occupancy status.
e. Current mode (heating/cooling/fan).
f. Economizer actuator feedback status.
g. Door/Window status (OPEN/CLOSED).

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER J. DE COSTA — NO. 21500 Exp. 12-31-22 — MECHANICAL — STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO: 1900.00
DRAWN BY: Author
DRAWING SCALE:
PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL

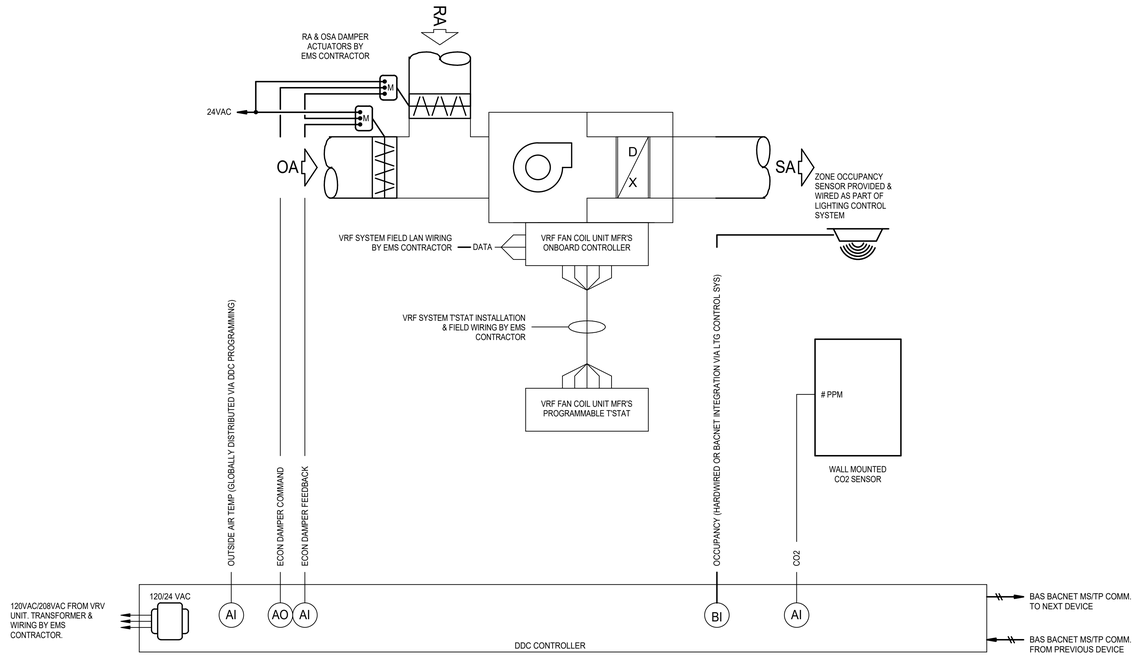
MARCH 15, 2021

SHEET TITLE

CONTROL DIAGRAMS

SHEET NUMBER

M-5.1



A PACKAGE HEAT PUMP W/ ECONOMIZER, DEMAND CONTROL VENTILATION & OCCUPANCY MONITORING

SCALE: NONE

VRV System with Economizer, Demand Control Ventilation, Zone Occupancy Monitoring

1. System Overview

a. Each VRV fan coil unit will be directly controlled by its own dedicated factory-provided VRV fan coil controller and thermostat which serve to provide control of mechanical cooling/heating and fan ventilation in the zone. VRV equipment manufacturer is responsible for all internal sequence of operations programming logic and controls associated with the factory-provided VRV fan coil controller and thermostat.

b. Energy Management System (EMS) unitary controller will be provided by EMS contractor to fully control zone economizer, monitor zone CO2 concentrations, zone occupancy conditions and door/window switch status conditions.

c. EMS unitary controller shall be connected to a wall mounted CO2 sensor.

2. Occupancy/Vacancy Monitoring

a. Zone occupancy and vacancy will be actively monitored by connection to Lighting Control System occupancy sensor(s). If available, monitoring shall be accomplished via BACnet system integration. Otherwise, BAS contractor shall monitor auxiliary contacts on Lighting Control System occupancy sensor(s).

3. Unit Fan Operation

a. When the zone is in Occupied Mode or in Afterhours Mode, the fan shall run continuously, unless Vacant Mode has been triggered.

b. During the Unoccupied Mode as determined by EMS time schedule, the unit fan cycles with demand and the temperature is controlled by the unoccupied space temperature heating and cooling setpoints.

4. Minimum Outdoor Air Ventilation

a. During Occupied Mode or Afterhours Mode, the economizer damper shall be commanded by the EMS unitary controller to maintain a position which satisfies the Minimum Outdoor Air ventilation requirements for the zone. Damper position(s) determined by Air Balancing Contractor.

5. Demand Control Ventilation

a. EMS unitary controller will be connected to a wall mounted CO2 sensor to monitor zone CO2 concentration.

b. During Occupied Mode or Afterhours Mode, the EMS unitary controller shall reset the outside air damper minimum position to maintain the CO2 concentration below 1,000 ppm.

6. Automatic Demand Reduction Controls

a. EMS shall be programmed with capability to implement centralized demand shed for all non-critical zones upon call for Automatic Demand Reduction. Critical zones shall not be impacted by demand shed conservation measures.

7. Vacant Mode Control

a. When the zone has been scheduled for occupancy for at least one hour and the occupancy sensor has confirmed that zone has been vacant for 5 minutes (adjustable: maximum 30 minutes), zone shall be placed into Vacant Mode.

b. Reset cooling and heating setpoints up and down by 2°F (adjustable) or more.

c. Ventilation air in a Vacant zone shall be reduced to zero when permitted to do so according to 2019 California Title 24 Table 120.1A (all Occupancy Categories with Note "F" designation). The unit fan shall be shut off and the economizer shall be closed to the outside air. For all other zones, the economizer shall be set to Minimum Outdoor Air position and the unit fan shall operate to provide minimum ventilation during Vacant Mode.

d. Upon detection of occupancy, Vacant Mode shall be cleared.

8. Zone Pre-Occupancy Purge

a. The EMS shall schedule the zone to be in Occupied Mode one hour prior to the actual time of anticipated occupancy.

9. Heating operation

a. Economizer to be commanded to Min CFM setpoint during heating mode.

b. Heating operation not allowed if door/window switches indicate OPEN for more than 5 minutes (adjustable).

10. Cooling operation

a. Economizer to be commanded to Max CFM setpoint during cooling mode, provided the Economizer Outside Air Lockout Setpoint threshold has not been surpassed.

b. Mechanical cooling operation not allowed if door/window switches indicate OPEN for more than 5 minutes (adjustable).

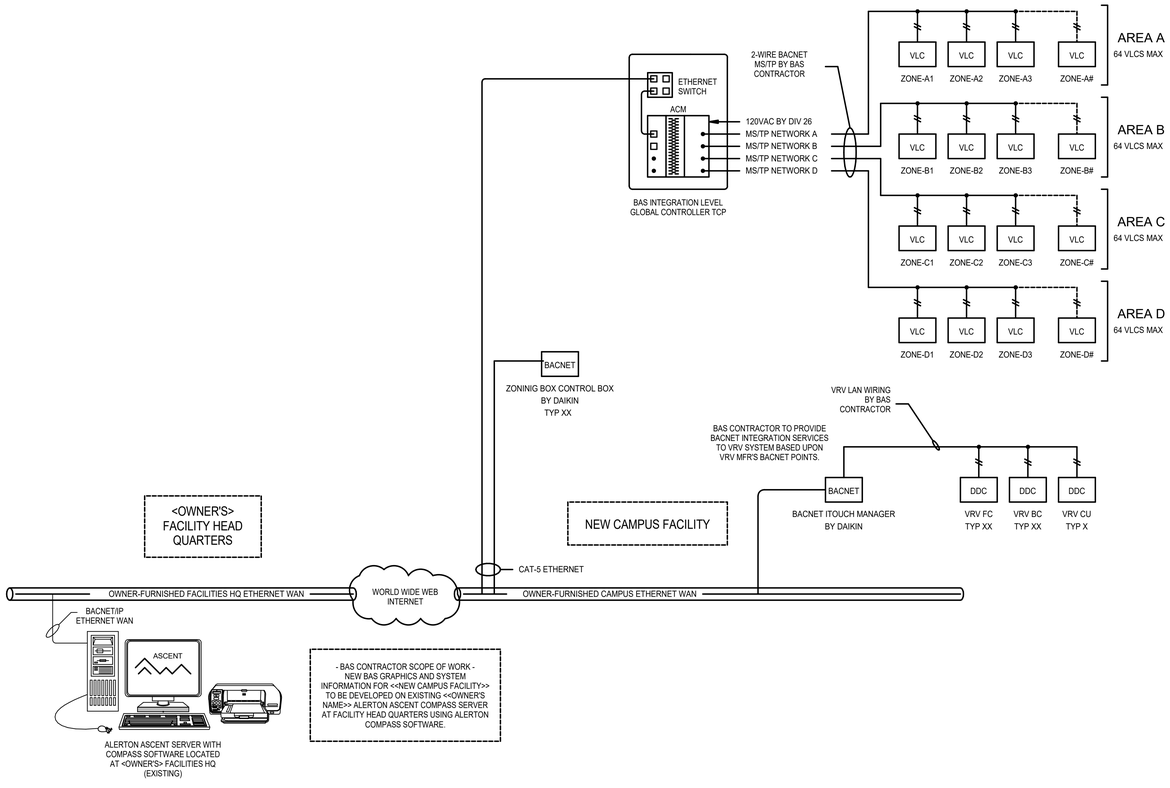
11. Fault Detection Diagnostics

a. The EMS DDC Controller shall monitor the following economizer actuator Fault Detection Diagnostic conditions and broadcast results via EMS network:

- Temperature Sensor Failure/Fault
- Economizer not economizing when enabled
- Economizer economizing when disabled
- Economizer damper modulation fault
- Excess outdoor air

12. Monitoring - The following conditions shall be monitored and displayed at EMS Operator Workstation/Graphical User Interface:

a. Supply air temperature.
b. Room temperature.
c. Room CO2 concentration.
d. Room occupancy status.
e. Current mode (heating/cooling/fan).
f. Economizer actuator feedback status.
g. Door/Window status (OPEN/CLOSED).



B NETWORK ARCHTECTURE

SCALE: NONE

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. DE COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO: 1900.00
DRAWN BY: Author
DRAWING SCALE:
PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

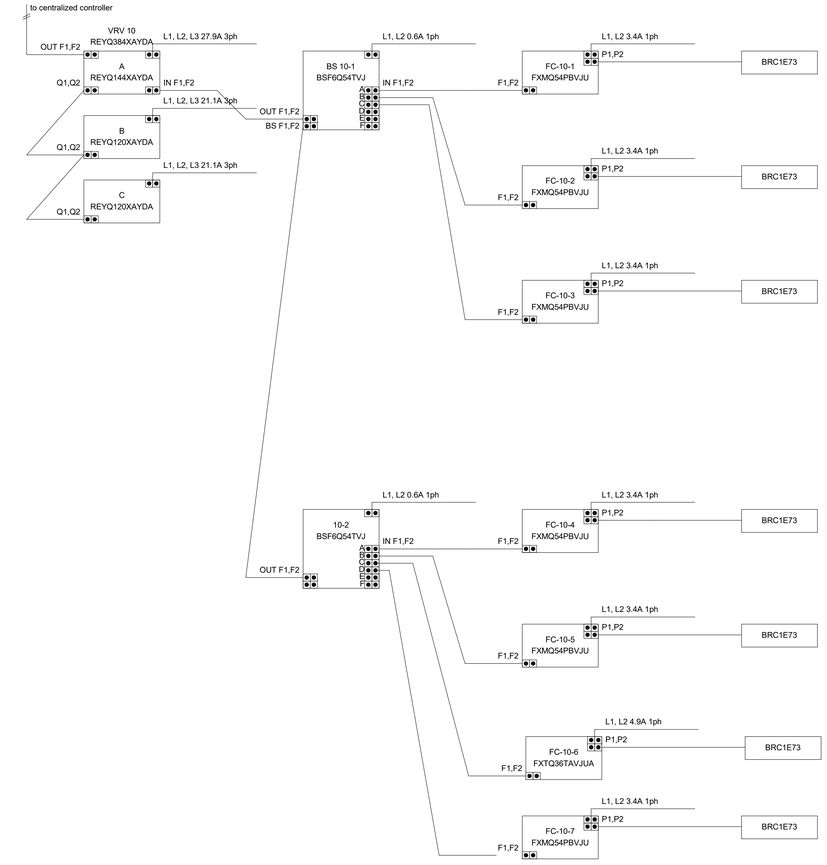
SHEET TITLE

CONTROL DIAGRAMS

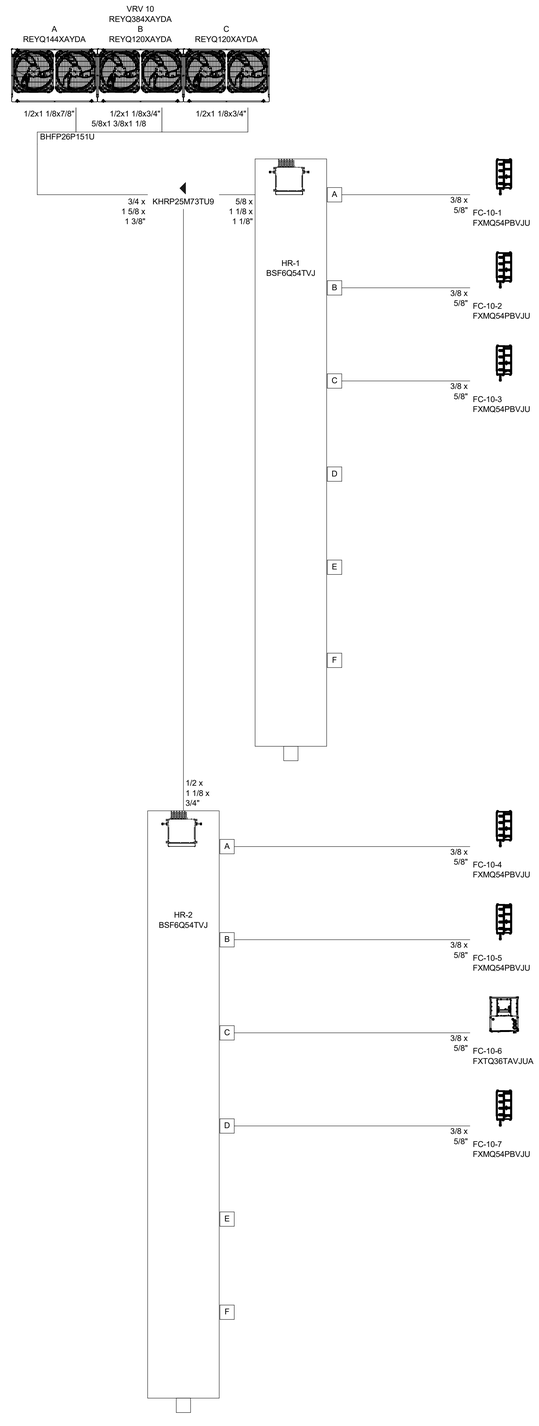
SHEET NUMBER

M-5.2

Client	USA
Project	Davidson Middle School
Title	Wiring schematics ODU-10 Air cooled heat recovery VRV-IV-X -A REYQ384XAYDA
Date	3/4/2021
Drawing No	



Client	USA
Project	Davidson Middle School
Title	Piping schematics ODU-10 Air cooled heat recovery VRV-IV-X -A REYQ384XAYDA
Date	3/4/2021
Drawing No	



A BLDG WING 10'S PIPING & WIRING DIAGRAMS

SCALE: NONE

QUATTROCCHI KWOK ARCHITECTS

Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.

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CHRISTOPHER J. COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
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ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

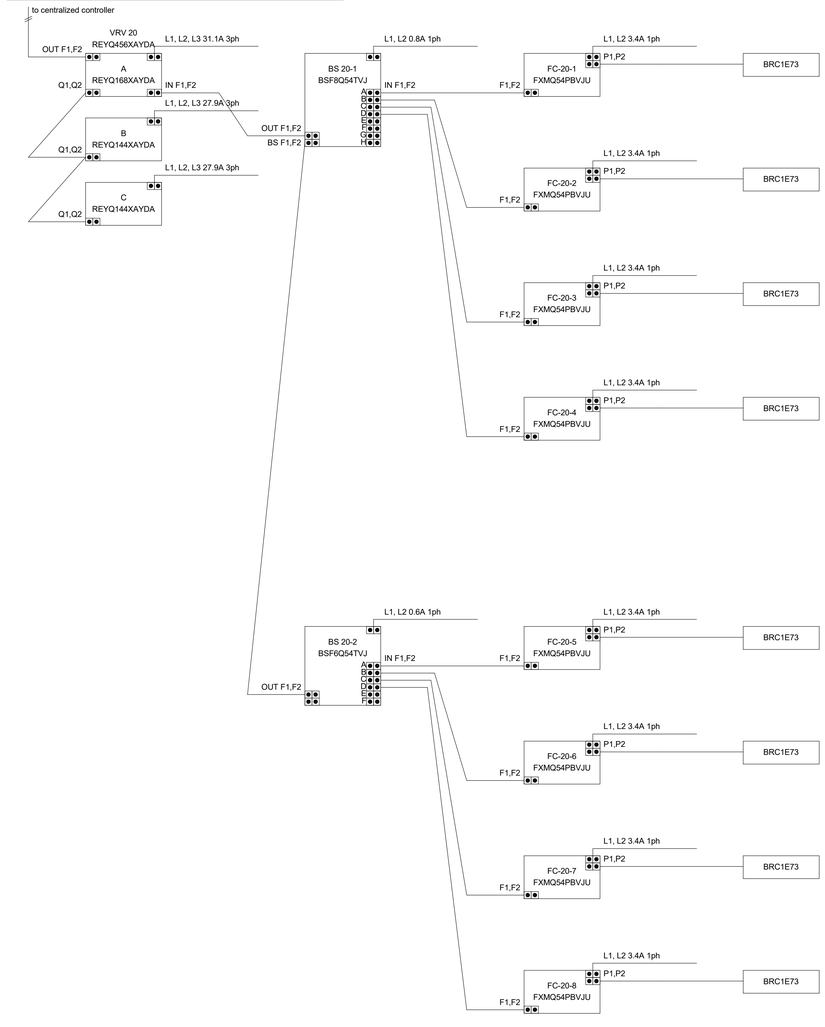
SHEET TITLE

10'S WING PIPING AND WIRING DIAGRAMS

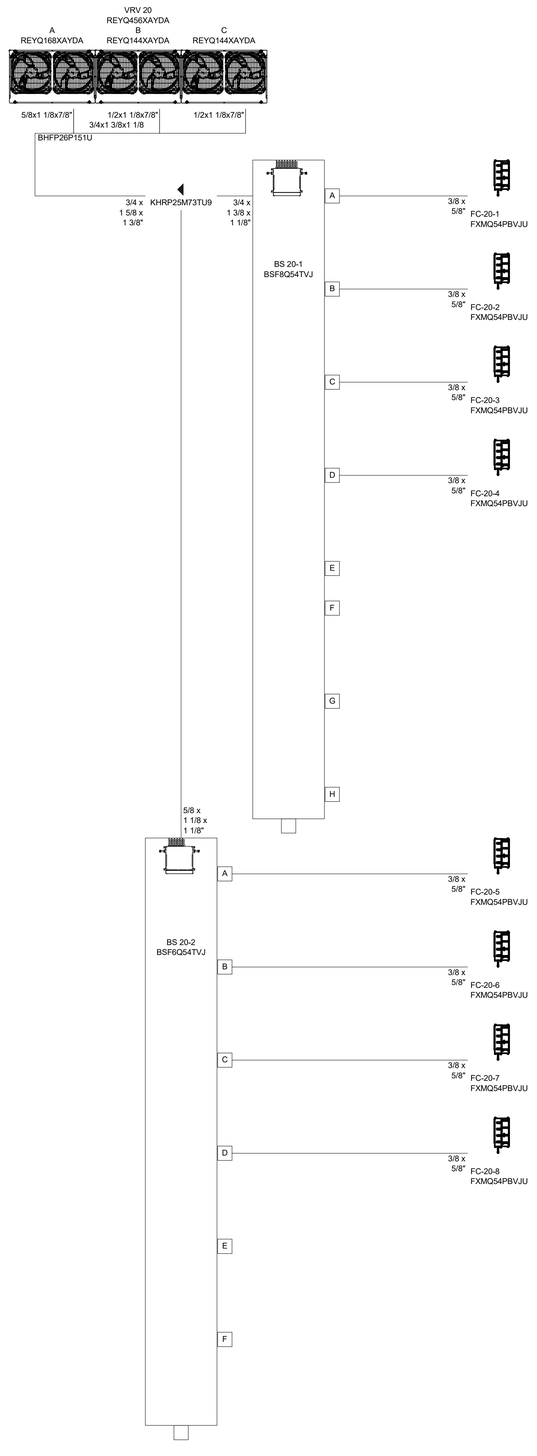
SHEET NUMBER

M-6.1

Client	USA
Project	Davidson Middle School
Title	Wiring schematics ODU-20 Air cooled heat recovery VRV-IV-X -A REYQ456XAYDA
Date	3/4/2021
Drawing No	



Client	USA
Project	Davidson Middle School
Title	Piping schematics ODU-20 Air cooled heat recovery VRV-IV-X -A REYQ456XAYDA
Date	3/4/2021
Drawing No	



A BLDG WING 20'S PIPING & WIRING DIAGRAMS

SCALE: NONE

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Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. DE COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
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ARCH PROJECT NO:	1900.00
DRAWN BY:	Author
DRAWING SCALE:	
PTN: 65458-57	FILE NO: 21-39

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MARCH 15, 2021

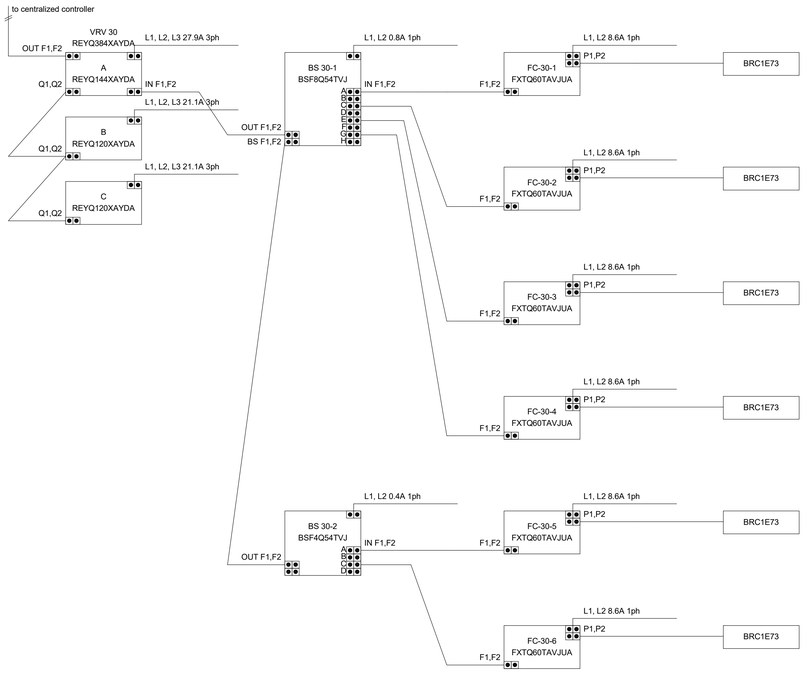
SHEET TITLE

20'S WING PIPING AND WIRING DIAGRAMS

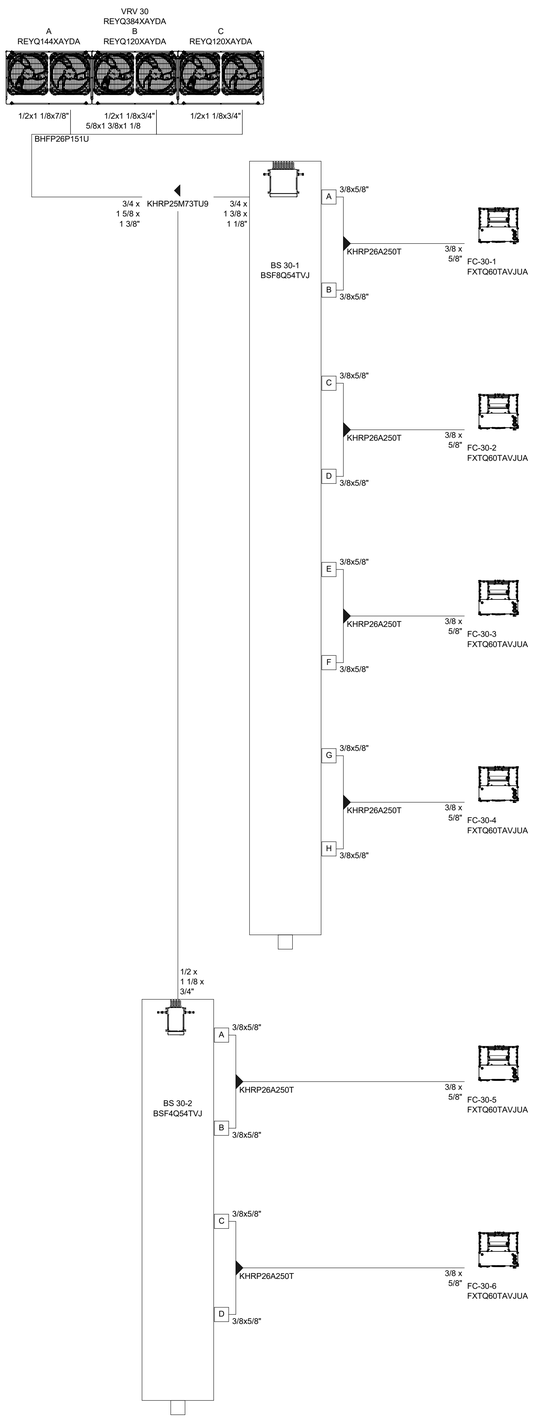
SHEET NUMBER

M-6.2

Client	USA
Project	Davidson Middle School
Title	Wiring schematics ODU-30 Air cooled heat recovery VRV-IV-X -A REYQ384XAYDA
Date	3/4/2021
Drawing No	



Client	USA
Project	Davidson Middle School
Title	Piping schematics ODU-30 Air cooled heat recovery VRV-IV-X -A REYQ384XAYDA
Date	3/4/2021
Drawing No	



A BLDG WING 30'S PIPING & WIRING DIAGRAMS

SCALE: NONE

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Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. DE COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
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DRAWING SCALE:

PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

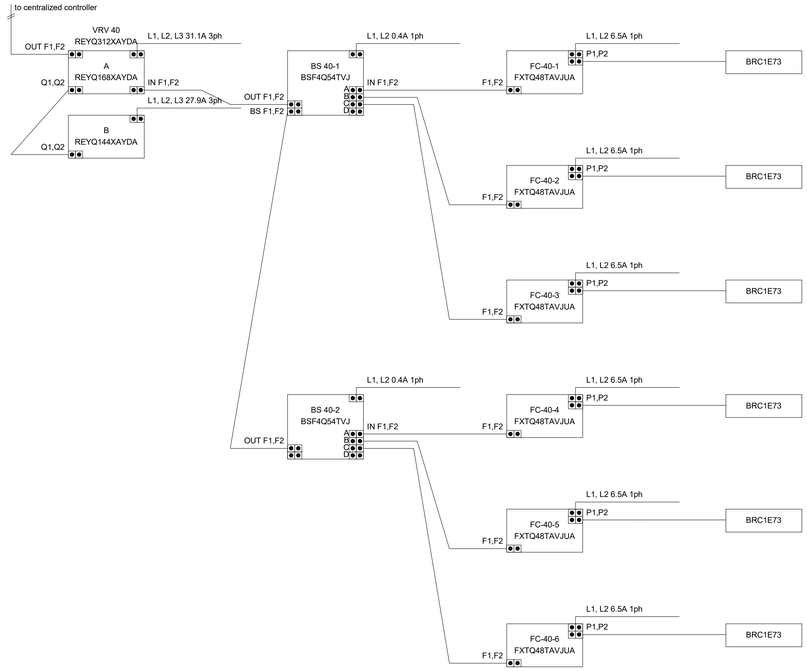
SHEET TITLE

30'S WING PIPING AND WIRING DIAGRAMS

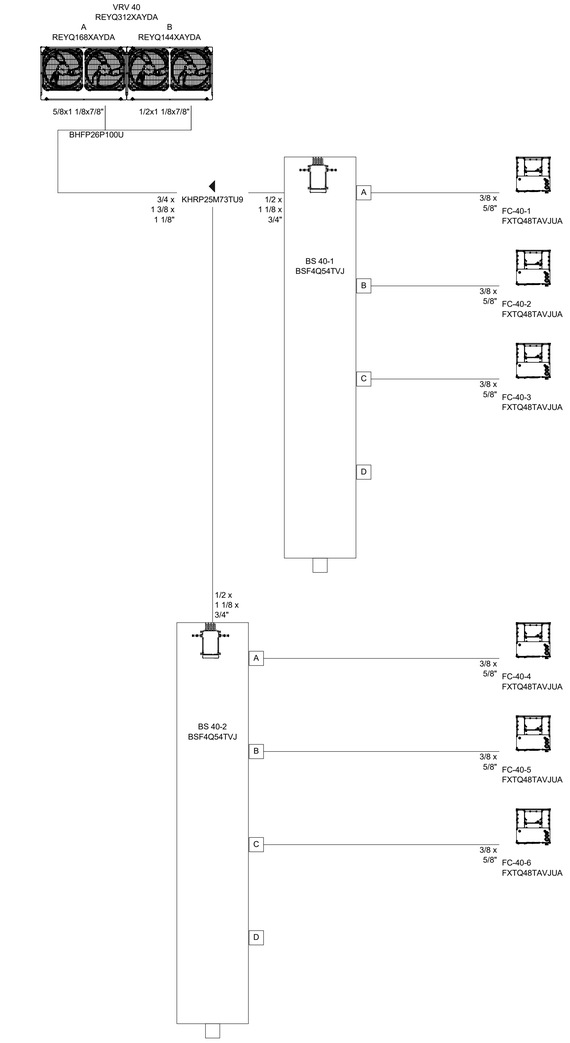
SHEET NUMBER

M-6.3

Client	USA
Project	Davidson Middle School
Title	Wiring schematics ODU-40 Air cooled heat recovery VRV-IV-X -A REYQ312XAYDA
Date	3/4/2021
Drawing No	



Client	USA
Project	Davidson Middle School
Title	Piping schematics ODU-40 Air cooled heat recovery VRV-IV-X -A REYQ312XAYDA
Date	3/4/2021
Drawing No	



A BLDG WING 40'S PIPING & WIRING DIAGRAMS

SCALE: NONE

QUATTROCCHI KWOK ARCHITECTS

Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. DE COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

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ARCH PROJECT NO: 1900.00
DRAWN BY: Author
DRAWING SCALE:
PTN: 65458-57 FILE NO: 21-39

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MARCH 15, 2021

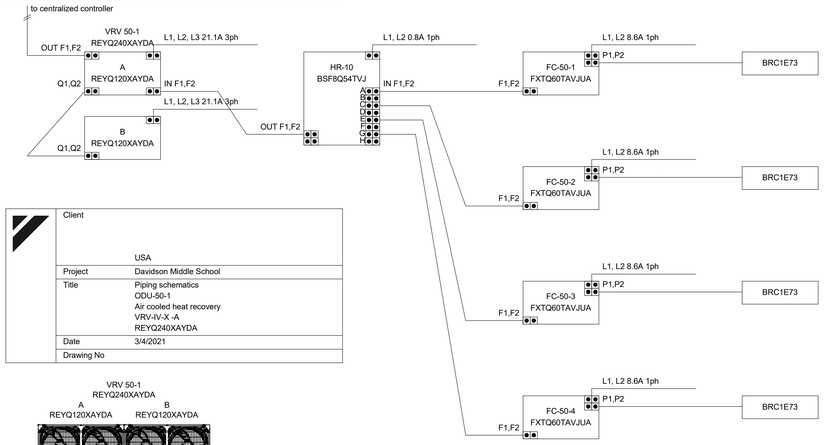
SHEET TITLE

40'S WING PIPING AND WIRING DIAGRAMS

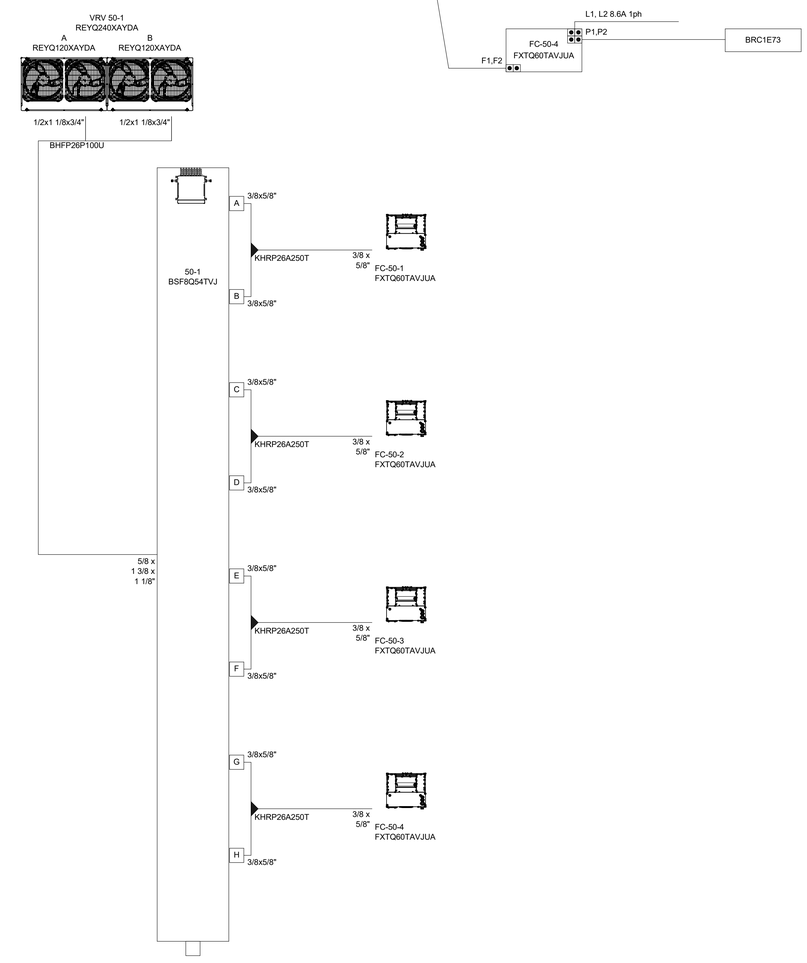
SHEET NUMBER

M-6.4

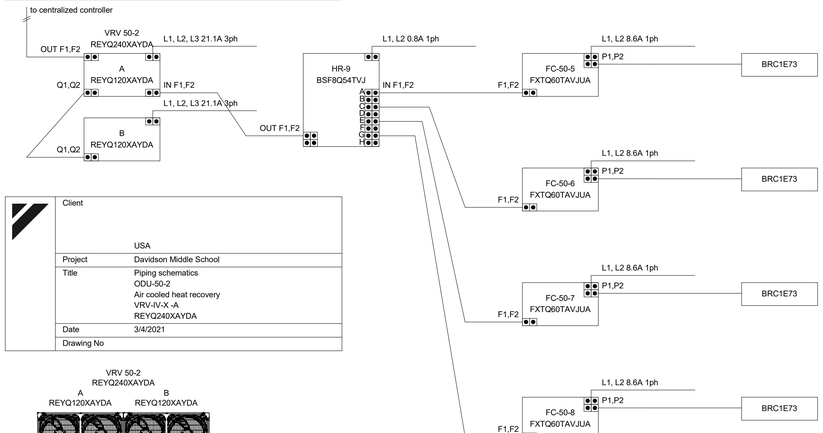
Client	USA
Project	Davidson Middle School
Title	Wiring schematics ODU-50-1 Air cooled heat recovery VRV-IV-X -A REYQ240XAYDA
Date	3/4/2021
Drawing No	



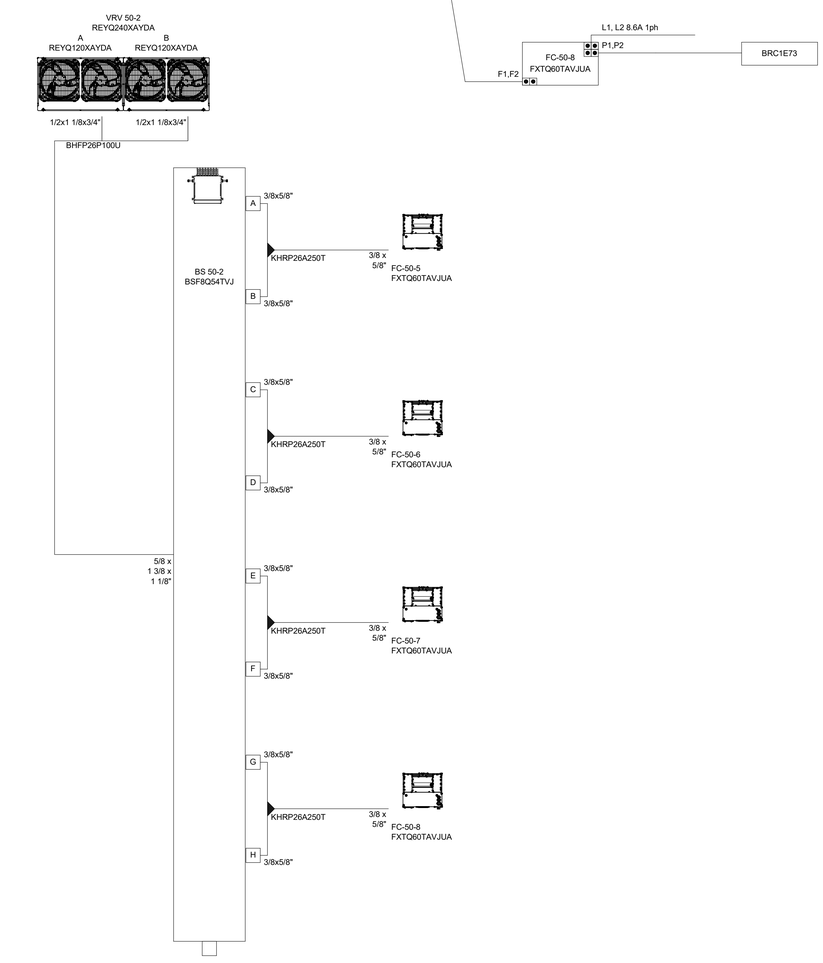
Client	USA
Project	Davidson Middle School
Title	Piping schematics ODU-50-1 Air cooled heat recovery VRV-IV-X -A REYQ240XAYDA
Date	3/4/2021
Drawing No	



Client	USA
Project	Davidson Middle School
Title	Wiring schematics ODU-50-2 Air cooled heat recovery VRV-IV-X -A REYQ240XAYDA
Date	3/4/2021
Drawing No	



Client	USA
Project	Davidson Middle School
Title	Piping schematics ODU-50-2 Air cooled heat recovery VRV-IV-X -A REYQ240XAYDA
Date	3/4/2021
Drawing No	



A BLDG WING 50'S PIPING & WIRING DIAGRAMS

SCALE: NONE

QUATTROCCHI KWOK ARCHITECTS

Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

COSTA ENGINEERS INC.

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. COSTA
NO. 21500
Exp. 12-31-22
MECHANICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA
94901

SAN RAFAEL
CITY
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ARCH PROJECT NO: 1900.00

DRAWN BY: Author

DRAWING SCALE:

PTN: 65458-57 FILE NO: 21-39

DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

50'S WING PIPING AND WIRING DIAGRAMS

SHEET NUMBER

M-6.5

DAVIDSON MS HVAC SYSTEM ASSESSMENT - 220064

ELECTRICAL EQUIPMENT ANCHORAGE

ELECTRICAL ANCHORAGE NOTES:

ALL ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. 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, CHAPTER 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 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 ELECTRICAL COMPONENTS SHALL BE 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 CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

A. COMPONENT 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 WALL.

THE ANCHORAGE OF ALL ELECTRICAL 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 ABOVE REQUIREMENTS.

ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

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 (eg., OSHPD OPM FOR 2013 CBC), 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.

ELECTRICAL DISTRIBUTION SYSTEMS ARE: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

GENERAL DEMOLITION NOTES

1. THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL LINES, LEVELS, DIMENSIONS AND EXISTING CONDITIONS. THE INFORMATION ON THE DRAWINGS REGARDING EXISTING ELECTRICAL EQUIPMENT AND BRANCH CIRCUITS IS THE RESULT OF FIELD SURVEY AND IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. IT IS INTENDED, HOWEVER, AS A GUIDE FOR USE IN VERIFICATION ONLY.
2. ANY EXISTING ELECTRICAL EQUIPMENT IN THE AREA OF NEW CONSTRUCTION NOT SHOWN ON THE EXISTING PLANS SHALL BE DOCUMENTED AND SUBMITTED TO THE ENGINEER FOR DETERMINATION OF ACTION REQUIRED.
3. WHEREVER THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT IS CALLED FOR AND ALL EQUIPMENT ON A PARTICULAR BRANCH CIRCUIT IS TO BE REMOVED, ALL CONDUIT AND WIRE BACK TO THE PANEL SHALL BE ENTIRELY REMOVED AND THE CIRCUIT IN PANEL SHALL BE MARKED "SPARE". THIS APPLIES TO SIGNAL AND COMMUNICATIONS SYSTEMS EQUIPMENT, CONDUIT, AND WIRE AS WELL.
4. WHEREVER THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT IS CALLED FOR AND ALL EQUIPMENT ON A PARTICULAR BRANCH CIRCUIT IS NOT TO BE REMOVED, THE CIRCUIT SHALL BE MAINTAINED CONTINUOUS TO THE EXISTING EQUIPMENT IN USE WITH MINIMUM INTERRUPTIONS OF POWER. THIS APPLIES TO SIGNAL AND COMMUNICATIONS SYSTEMS EQUIPMENT, CONDUIT, AND WIRE AS WELL.
5. WHENEVER THE REMOVAL OF EXISTING CONSTRUCTION REVEALS ELECTRICAL WORK THAT IS TO REMAIN, BUT IS IN CONFLICT WITH NEW CONSTRUCTION, RELOCATE THE EXISTING ELECTRICAL WORK AS NECESSARY TO AVOID ANY CONFLICT. RELOCATION WORK SHALL BE DONE TO MINIMIZE ANY INTERRUPTIONS OF POWER.
6. CARE SHALL BE TAKEN IN ORDER TO IDENTIFY AND PROTECT ALL EXISTING ELECTRICAL WORK THAT IS TO REMAIN.
7. ENSURE RECONNECTION OF EXISTING DEVICES WHOSE CIRCUITS HAVE BEEN INTERRUPTED BY DEMOLITION BY PROVIDING NEW CONNECTION TO ANOTHER EXISTING TO REMAIN DEVICE OR PANEL.
8. ALL EXISTING ELECTRICAL EQUIPMENT SHOWN ON THE PLANS FOR NEW WORK ARE THOSE WHICH ARE TO BE REUSED DURING SOME PHASE OF THE NEW CONSTRUCTION OR REQUIRE SOME SPECIAL CONSIDERATIONS.
9. WHENEVER THE REMOVAL OF EXISTING ELECTRICAL PANELBOARDS ARE CALLED FOR AND ALL EXISTING BRANCH CIRCUITS ARE NOT TO BE REMOVED, THE EXISTING BRANCH CIRCUITS SHALL BE CONNECTED TO OTHER EXISTING ELECTRICAL EQUIPMENT OR PANELS STILL IN USE WITH MINIMUM INTERRUPTIONS OF POWER. ALSO, IF REQUIRED, THESE SAME BRANCH CIRCUITS SHALL BE RECONNECTED TO RELOCATED EXISTING OR NEW PANELBOARDS AS PART OF THE NEW CONSTRUCTION. THIS APPLIES TO SIGNAL AND COMMUNICATIONS SYSTEMS EQUIPMENT, CONDUIT AND WIRE AS WELL.
10. THE ELECTRICAL CONTRACTOR SHALL REVISE EXISTING PANEL SCHEDULES TO CORRESPOND TO ACTUAL CONDITIONS AFTER ALL DEMOLITION AND NEW WORK IS COMPLETED.
11. REMOVE ALL ABANDONED CONDUIT AND WIRE ABOVE CEILINGS.
12. WHEN ELECTRICAL EQUIPMENT OR DEVICE IS REMOVED FROM AN EXISTING WALL OR CEILING WHICH IS TO REMAIN, PATCH ABANDONED OPENINGS TO MATCH EXISTING FINISH.
13. IN GENERAL, THE DEMOLITION PLANS SHOW ALL EXISTING EQUIPMENT THAT IS TO BE REMOVED UNLESS NOTED OTHERWISE. HOWEVER, ELECTRICAL EQUIPMENT, WHETHER SHOWN ON THIS DRAWING OR NOT, WHERE LOCATED IN THE AREA SCHEDULED TO BE DEMOLISHED, SHALL BE REMOVED COMPLETELY (INCLUDING CONDUIT AND WIRES BACK TO THE LAST REMAINING FIXTURE, OUTLET, DEVICE, ETC.) UNLESS OTHERWISE NOTED. COORDINATE DEMOLITION WORK WITH ARCHITECT AND GENERAL CONTRACTOR.
14. EXISTING CONDUIT FEEDS UP THROUGH FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH FLOOR WHERE EXISTING WALLS, ETC., ARE REMOVED. REMOVE CONDUCTORS FROM THE POINT BACK TO LAST OUTLET REMAINING IN SERVICE.
15. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS, EQUIPMENT, ETC. REMAINING IN OPERATION WHICH IS BEING FED BY AN ABANDONED OUTLET. MAINTAINING CONTINUITY SHALL CONSIST OF REROUTING OF CONDUIT, WIRE, ETC. AS REQUIRED.
16. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF EXISTING CIRCUITS AND ADJUST CIRCUIT NUMBERS ACCORDING TO EXISTING CONDITIONS IF REQUIRED
17. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVAL OF EXISTING ELECTRICAL EQUIPMENT AND TURN OVER REMOVED EQUIPMENT THAT THE OWNER REQUESTS, IN AS-FOUND CONDITION. EQUIPMENT THAT IS TO BE TURNED OVER SHALL BE BOXED AND TAGGED TO IDENTIFY THE SPECIFIC EQUIPMENT. EQUIPMENT TO BE TEMPORARILY REMOVED DUE TO THE CONSTRUCTION SHALL BE CLEANED AND RE-INSTALLED IN ITS ORIGINAL CONDITION OR AS REQUIRED.
18. WHERE EXISTING WALLS HAVE BEEN REMOVED, AND THERE ARE EXISTING CONDUIT FEEDS WHICH HAVE BEEN CUT OFF AND CAPPED FLUSH WITH THE FLOOR, IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND DIMENSION ALL SUCH CONDUITS ON THE "AS-BUILT" DRAWINGS.
19. IF ANY EQUIPMENT THAT IS SCHEDULED TO REMAIN IN OPERATION IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPLACED TO ITS ORIGINAL CONDITION SATISFACTORY TO THE OWNER AT CONTRACTOR'S EXPENSE.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
C	CONDUIT
CATV	CABLE TV
CO	CONDUIT ONLY
CU	COPPER
E.C.	ELECTRICAL CONTRACTOR
E	EMERGENCY LIGHT FIXTURE ON EMERGENCY GENERATOR OR INVERTER, SWITCHABLE, U.O.N.
EM	EMERGENCY LIGHT FIXTURE WITH BATTERY PACK, SWITCHABLE
EMS	ENERGY MANAGEMENT SYSTEM
(E)	EXISTING
EQPT	EQUIPMENT
(ER)	EXISTING EQUIPMENT TO BE RELOCATED
(EX)	EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED
EXT	EXTERIOR
FMC	FLEXIBLE METALLIC CONDUIT
FTL	FEED THROUGH LUGS
GFI	GROUND FAULT CIRCUIT INTERRUPTING TYPE RECEPTACLE
IDF	INTERMEDIATE DISTRIBUTION FRAME
L	LOCKABLE
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MDF	MAIN DISTRIBUTION FRAME
MFR	MANUFACTURER
MLO	MAIN LUGS ONLY
MTD	MOUNTED
(N)	NEW
N.E.C.	NATIONAL ELECTRICAL CODE
NEU	NEUTRAL
N.I.E.C.	NOT IN ELECTRICAL CONTRACT
O.A.H.	OVERALL HEIGHT
O.F.C.I.	OWNER FURNISHED, CONTRACTOR INSTALLED
P	INDICATES FIXTURES ON PHOTOCELL CONTROL
PA	PUBLIC ADDRESS
PNL	PANEL
S.A.D.	SEE ARCHITECTURAL DRAWINGS
STC	SIGNAL TERMINAL CABINET
TC	INDICATES FIXTURES ON TIMECLOCK CONTROL
TELE	TELEPHONE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
U.O.N.	UNLESS OTHERWISE NOTED
VAV	VAV BOX, SEE MECHANICAL DIVISION DRAWINGS FOR LOCATIONS. PROVIDE TOGGLE TYPE DISCONNECT SWITCH
WP	WEATHER PROOF, NEMA 3R
WPIU	WEATHER PROOF WHILE IN USE

SYMBOLS LIST

	MAIN SWITCHBOARD, DISTRIBUTION PANEL OR MOTOR CONTROL CENTER
	FLUSH MOUNTED PANELBOARD, 6'-6" TO TOP
	SURFACE MOUNTED PANELBOARD, 6'-6" TO TOP
	FUSED EQUIPMENT DISCONNECT SWITCH WITH FUSE SIZE AS RECOMMENDED BY EQUIPMENT MANUFACTURER
	MOTOR DISCONNECT SWITCH; HORSEPOWER RATED, NON FUSE
	COMBINATION MAGNETIC MOTOR STARTER & MOTOR CIRCUIT PROTECTOR
	MAGNETIC MOTOR STARTER
VFD	VARIABLE FREQUENCY DRIVE, FURNISHED BY MECHANICAL, INSTALLED & CONNECTED COMPLETE BY ELECTRICAL
	MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION
	MOTOR WITH FLEXIBLE CONDUIT CONNECTION AND DISCONNECT
$m	LINE VOLTAGE MOTOR RATED TOGGLE SWITCH INSTALLED AT EQPT SHOWN
T	TRANSFORMER
	CONCRETE PULLBOX, SIZE AS REQUIRED OR SHOWN - CHRISTY OR EQUAL WITH LABELED LID PER USE
	COPPER GROUND ROD
J	FLUSH CEILING MOUNTED JUNCTION BOX, U.O.N.
J	FLUSH WALL MOUNTED JUNCTION BOX, UP 18" U.O.N.
J	JUNCTION BOX FLUSH FLOOR MOUNTED
	20A 3PG 125V DUPLEX RECEPTACLE, UP 18" U.O.N.
	20A 3PG 125V DUPLEX RECEPTACLE, WEATHERPROOF, UP 18" U.O.N.
GFI	20A 3PG 125V DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER TYPE, UP 18" U.O.N.
IG	20A 3PG 125V DUPLEX RECEPTACLE, ISOLATED GROUND TYPE, UP 18" U.O.N.
T	20A 3PG 125V DUPLEX RECEPTACLE, TAMPER RESISTANT, UP 18" U.O.N.
	20A 3PG 125V DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER, U.O.N.
	20A 3PG 125V DOUBLE DUPLEX RECEPTACLE, UP 18" U.O.N.
	20A 3PG 125V DOUBLE DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER, U.O.N.
	20A 3PG 125V SINGLE RECEPTACLE, UP 18" U.O.N.
	20A 3PG 125V SINGLE TWISTLOCK RECEPTACLE, NEMA L5-20R, UP 18" U.O.N.
	SPECIAL RECEPTACLE AS INDICATED ON PLANS
	FLUSH IN FLOOR OUTLET BOX WITH QUANTITY OF 20A 3PG 125V DUPLEX RECEPTACLES AS INDICATED ON PLANS
	FLUSH CEILING MTD. DUPLEX OUTLET, 20A 3PG
T	LINE VOLTAGE THERMOSTAT, PROVIDED & INSTALLED BY ELECTRICAL, CONNECTED COMPLETE BY MECHANICAL
	WEATHERPROOF ENCLOSURE
	CONDUIT AND WIRE CONCEALED IN CEILING OR WALL
	CONDUIT AND WIRE CONCEALED IN OR UNDER SLAB OR UNDERGROUND
	CONDUIT AND WIRE RUN EXPOSED
	CROSSMARKS INDICATE QUANTITY OF #12 CONDUCTORS PLUS PARITY SIZED GROUND CONDUCTOR (INCLUDED BUT NOT INDICATED), NO HASHMARKS INDICATES (2) #12 CONDUCTORS PLUS PARITY SIZED GROUND CONDUCTOR, U.O.N. GROUND WIRE
(#10)	WIRE SIZE 10 AWG FOR ALL CONDUCTORS, INCLUDING GROUND WIRE, THROUGHOUT THE COMPLETE CIRCUIT
	FLEXIBLE METALLIC CONDUIT
	HOMERUN TO PANELBOARD OR TERMINAL BOARD, AS NOTED ON PLANS
	COMPLETE CONNECTION OF EQUIPMENT
	CONDUIT STUBBED OUT, CAPPED AND MARKED
	CONDUIT TURNED UP
	CONDUIT TURNED DOWN
T	TELEPHONE SYSTEM CONDUIT AND PULLWIRE; 3/4" U.O.N.
C	COMPUTER/DATA SYSTEM CONDUIT AND PULLWIRE; 3/4" U.O.N.
D	TELEPHONE/DATA SYSTEM CONDUIT AND PULLWIRE; 3/4" U.O.N.
G	#4/0 COPPER GROUNDING ELECTRODE CONDUCTOR, U.O.N.
VRV 10	MECHANICAL EQUIPMENT DESIGNATION - SEE MECHANICAL PLANS
1	NUMBERED SHEET NOTE
M	UTILITY METER
CT'S	CURRENT TRANSFORMERS
30A 3P	CIRCUIT BREAKER. NUMBER INDICATES 30A 3-POLE
1504N	FEEDER SIZE - SEE POWER SINGLE LINE DIAGRAMS & FEEDER SCHEDULE

GENERAL NOTES

1. PRIOR TO BID THE CONTRACTOR SHALL VISIT THE SITE TO ADEQUATELY DETERMINE ALL PRE-EXISTING CONDITIONS. BY THE ACT OF SUBMITTING A BID, THE CONTRACTOR WILL BE DEEMED TO HAVE COMPLIED WITH THE FOREGOING, TO HAVE ACCEPTED SUCH CONDITIONS, AND TO HAVE MADE ALLOWANCES THEREFORE IN PREPARING THE BID.
2. PROVIDE PARITY SIZED GREEN GROUND WIRE IN ALL POWER CONDUITS, BRANCH CIRCUITS (LIGHTING & POWER) AND HOMERUNS. PROVIDE ADDITIONAL ISOLATED GROUND, GREEN WITH YELLOW STRIPE, TO ALL ISOLATED GROUND RECEPTACLES.
3. PROVIDE PULLROPE IN ALL EMPTY CONDUITS THROUGHOUT THE PROJECT.
4. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION & CONNECTION REQUIREMENTS OF ALL LUMINAIRE(S) AND ALL OUTLET, SWITCH, AND ELECTRICAL RELATED DEVICE MOUNTING HEIGHTS AND LOCATIONS. COORDINATE LOCATIONS OF ALL LUMINAIRE(S) AND JUNCTION BOXES WITH MECHANICAL DIVISION PRIOR TO ROUGH-IN. COORDINATE LOCATIONS OF ELECTRICAL DEVICES WITH FURNITURE PLANS PRIOR TO ROUGH-IN.
5. REFER TO MECHANICAL PLANS FOR EXACT LOCATION(S) OF ALL MECHANICAL EQUIPMENT, AND CONFIRM EXACT CONNECTION REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL DIVISION, PRIOR TO ROUGH-IN. VERIFY EXACT REQUIREMENTS FOR VOLTAGE, PHASE, HORSE-POWER, OR KVA RATINGS, OF ALL MECHANICAL DIVISION EQUIPMENT REQUIRING ELECTRICAL CONNECTION.
6. VERIFY EXACT CONNECTION REQUIREMENTS, OUTLET TYPE(S), MOUNTING HEIGHT(S) AND LOCATION(S) OF ALL OWNER-SUPPLIED EQUIPMENT, AND ALL EQUIPMENT PROVIDED UNDER OTHER SECTIONS OF THE SPECIFICATIONS, PRIOR TO ROUGH-IN. REFER TO ARCHITECTURAL DRAWINGS FOR EQUIPMENT LOCATIONS.
7. COORDINATE TRENCHING WITH OWNER AND OTHER TRADES BEFORE BEGINNING WORK.
8. ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED WALLS AND FLOORS SHALL BE SEALED AND EQUIPPED WITH U.L. LISTED FIRE PENETRATION ASSEMBLIES TO MAINTAIN FIRE SEPARATION RATING.
9. DO NOT INSTALL ANY OUTLETS BACK TO BACK IN STUD WALLS OR DE-MOUNTABLE PARTITIONS.
10. THE CONTRACTOR SHALL VERIFY ALL CEILING TYPES BEFORE ORDERING OF LUMINAIRE(S). ALSO VERIFY THAT ALL FEATURES CALLED FOR IN LUMINAIRE DESCRIPTIONS ON THE LUMINAIRE SCHEDULE ARE INCLUDED WITH CATALOG NUMBERS LISTED ON THE LUMINAIRE SCHEDULE WHEN LUMINAIRE ORDERS ARE PLACED, AND ARE INCLUDED AS PART OF THE LIGHTING SUBMITTALS FOR THIS PROJECT. IF A DISCREPANCY EXISTS, CONTACT THE ARCHITECT AND ELECTRICAL ENGINEER FOR CLARIFICATION PRIOR TO BID.
11. CIRCUITRY AND CONDUIT ROUTING SHOWN ON THE PLANS IS DIAGRAMMATIC ONLY. THIS CONTRACTOR IS RESPONSIBLE FOR BECOMING COMPLETELY FAMILIAR WITH THE ARCHITECTURAL AND STRUCTURAL CONDITIONS AND LIMITATIONS IN THE BUILDING AND TO PROVIDE ALL LABOR, TOOLS AND MATERIALS REQUIRED TO PRODUCE A COMPLETELY CONCEALED INSTALLATION WHEREVER INDICATED ON THE PLANS.
12. MAINTAIN "AS-BUILT" RECORDS AT ALL TIMES, SHOWING EXACT LOCATION OF ALL UNDERGROUND AND/OR CONCEALED CONDUITS AND SERVICES INSTALLED UNDER THIS CONTRACT, INCLUDING CIRCUIT IDENTIFICATION WHERE APPLICABLE. PROVIDE OWNER WITH "AS-BUILT" DOCUMENTS AS INDICATED IN THE SPECIFICATIONS, AND/OR CALLED FOR IN THE SPECIFICATIONS.
13. DRAWINGS INDICATE THE LOCATION(S) OF DEVICES, LUMINAIRE(S) AND EQUIPMENT, AND THE CIRCUIT NUMBER AND PANEL DESIGNATED TO SUPPLY THEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETELY CONNECTING ALL ELECTRICAL DEVICES TO CIRCUITS INDICATED ON THE DRAWINGS.
14. UNLESS OTHERWISE NOTED, ALL WORK SHOWN ON DRAWINGS IS NEW AND TO BE PROVIDED AND INSTALLED COMPLETE UNDER THIS CONTRACT.
15. ALL EQUIPMENT GROUNDING SHALL CONFORM TO ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, LATEST EDITION.
16. ALL EXTERIOR CONDUIT ABOVE GRADE, INCLUDING ALL ROOF MOUNTED CONDUIT, SHALL BE GALVANIZED RIGID STEEL. COAT ALL EXPOSED THREADS WITH GALVANIZING PAINT. PAINT ALL SURFACE MOUNTED RACEWAYS AND PULLBOXES TO MATCH SURROUNDING CONDITIONS, AS DIRECTED BY THE ARCHITECT.
17. ALL ELECTRICAL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF THE N.E.C., AS WELL AS STATE, AND LOCAL CODES AND REQUIREMENTS.
18. ALL CONDUIT SHALL BE CONCEALED, UNLESS OTHERWISE NOTED.
19. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE AVAILABLE SHORT CIRCUIT CURRENT AT THE MAIN SWITCHBOARD INCOMING TERMINALS WITH THE UTILITY COMPANY, AND TO VERIFY THAT ALL POWER AND SIGNAL SERVICE PROVISIONS, INCLUDING CONCRETE EQUIPMENT PADS, CONDUITS, PULLBOXES AND CLEARANCES, MEET THE UTILITY COMPANY'S REQUIREMENTS, PRIOR TO INSTALLATION.
20. EQUIPMENT OVERLOADS AND FUSES SHALL BE PROVIDED AND INSTALLED AS PER NAME PLATE ON THE EQUIPMENT ACTUALLY PROVIDED.
21. THE CONTRACTOR SHALL PAY FOR ALL REQUIRED PERMITS AND INSPECTION FEES.
22. THE CONTRACTOR SHALL VERIFY ALL CRITICAL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
23. ALL EXIT SIGNS SHALL COMPLY WITH THE RELEVANT PORTIONS OF SECTIONS 1008 AND 1013 OF THE CBC.
24. ALL MECHANICAL DIVISION EQUIPMENT LOW VOLTAGE CONTROL WIRING AND RACEWAY SHALL BE PROVIDED AND INSTALLED AS SPECIFIED IN MECHANICAL DIVISION U.O.N.
25. COORDINATE INSTALLATION OF ALL RECESSED LUMINAIRE(S) WITH MECHANICAL DIVISION PRIOR TO INSTALLATION OF HVAC DUCTS AND SPRINKLER HEADS. ENSURE AFTER INSTALLATION OF LUMINAIRE(S) THAT THERE IS NO CONTACT BETWEEN DUCTS AND LUMINAIRE(S) TO AVOID VIBRATION IN LUMINAIRE(S).
26. USE FLEXIBLE CONDUIT FOR ALL MOTOR, TRANSFORMER, RECESSED LUMINAIRE CONNECTIONS, AND CONNECTIONS BETWEEN TWO SEPARATE STRUCTURES AND FOR ALL FINAL CONNECTIONS TO "CRITICAL EQUIPMENT" AS DEFINED IN SPECIFICATIONS. MINIMUM 1/2" DIAMETER, LIQUID TIGHT TYPE USED OUTDOORS AND IN ALL WET LOCATIONS; PROVIDE WITH CODE-SIZE (MINIMUM #12) BARE GROUND WIRE IN ALL FLEXIBLE CONDUIT.
27. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR ALL BRANCH CIRCUITS FEEDING OUTLETS AS NOTED ON THE DRAWINGS.
28. FOR FLUSH MOUNTED PANELBOARDS THE CONTRACTOR SHALL STUB A MINIMUM OF FOUR (4) 3/4" CONDUITS FROM THE PANEL UP INTO THE ACCESSIBLE CEILING ABOVE FOR FUTURE CIRCUITS.
29. ALL CONDUIT CONNECTORS TO OUTLET OR JUNCTION BOXES SHALL HAVE INSULATED THROATS (MANUFACTURED AS AN INTEGRAL PART OF THE CONNECTOR). AFTER-MARKET INSERTABLE THROATS ARE NOT ACCEPTABLE.
30. ALL CIRCUITS IN ALL JUNCTION BOXES AND DEVICES SHALL BE CLEARLY IDENTIFIED BY MEANS OF "EZ" NUMBERING TAGS OR EQUIVALENT, TO IDENTIFY THE CIRCUIT NUMBER OR RELAY SUPPLYING THE CONDUCTOR. ALL JUNCTION BOXES SHALL BE LABELED PER SPECIFICATIONS.
31. ALL SURFACE MOUNTED POWER AND SIGNAL BOXES IN FINISHED AREAS SHALL BE "WIREMOLD" TYPE, WITH MATCHING RACEWAYS. SURFACE MOUNTED STEEL JUNCTION BOXES AND/OR EMT ARE NOT ACCEPTABLE.
32. ALL LOCATIONS OF BARE METAL SURFACE MOUNTED CONDUIT, BOXES, PANEL COVERS, AND RELATED FITTINGS OR ACCESSORIES INSTALLED IN FINISHED AREAS (BOTH INTERIOR AND EXTERIOR) SHALL BE FINISH PAINTED TO MATCH THE SURFACE TO WHICH THEY ARE MOUNTED TO (AFTER INSTALLATION). PAINTING SHALL INCLUDE DIFFERENT COLORS AS REQUIRED TO MATCH EXISTING STRIPING OR OTHER BUILDING FEATURES TO WHICH THE EQUIPMENT IS ATTACHED AND VISIBLE. VERIFY EXACT JUNCTION BOX LOCATION(S) AND ROUTING OF EXPOSED RACEWAYS WITH THE ARCHITECT PRIOR TO ROUGH-IN.
33. PROVIDE A BLANK COVER PLATE (COLOR TO MATCH ADJACENT DEVICES OR AS SPECIFICALLY CALLED FOR IN SPECIFICATIONS) FOR ALL JUNCTION BOXES (NEW AND EXISTING) ON THE PROJECT WHEN NO DEVICE IS INSTALLED.
34. FOR OUTDOOR 15 AND 20-AMPERE, 125 AND 250-VOLT RECEPTACLES: RECEPTACLES LOCATED IN "WET" LOCATIONS SHALL HAVE "IN-USE" TYPE WEATHERPROOF COVER PLATES PROVIDED AND INSTALLED; RECEPTACLES LOCATED IN "DAMP" LOCATIONS SHALL HAVE "IN-USE" TYPE WEATHERPROOF COVER PLATES IN LOCATIONS DEEMED TO BE "IN-USE" WITH CORD AND PLUG ATTACHED.
35. TWO OR THREE DIFFERENT PHASES SUPPLIED BY A 3-PHASE PANEL MAY SHARE A SINGLE NEUTRAL ONLY IF CIRCUIT POSITIONS ARE ADJACENT IN THE PANEL. PROVIDE COMMON HANDLE-TIE ON BREAKERS FOR MULTI-WIRE BRANCH CIRCUITS, WITH COMMON NEUTRAL, PER NEC REQUIREMENTS.
36. WHEN SERIES RATING IS USED ON ANY CIRCUIT BREAKER ON THIS PROJECT PROVIDE A FIELD MARKING PER CEC 110-22 ON THE EQUIPMENT COVER THAT IS VISIBLE TO MAINTENANCE PERSONNEL INDICATING THAT THE BREAKER HAS BEEN APPLIED WITH A SERIES COMBINATION RATING.

LIST OF DRAWINGS

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER

PIETER J. COLENBRANDER
No.14738 Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	LN/TV/JW
DRAWING SCALE:	AS NOTED
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL

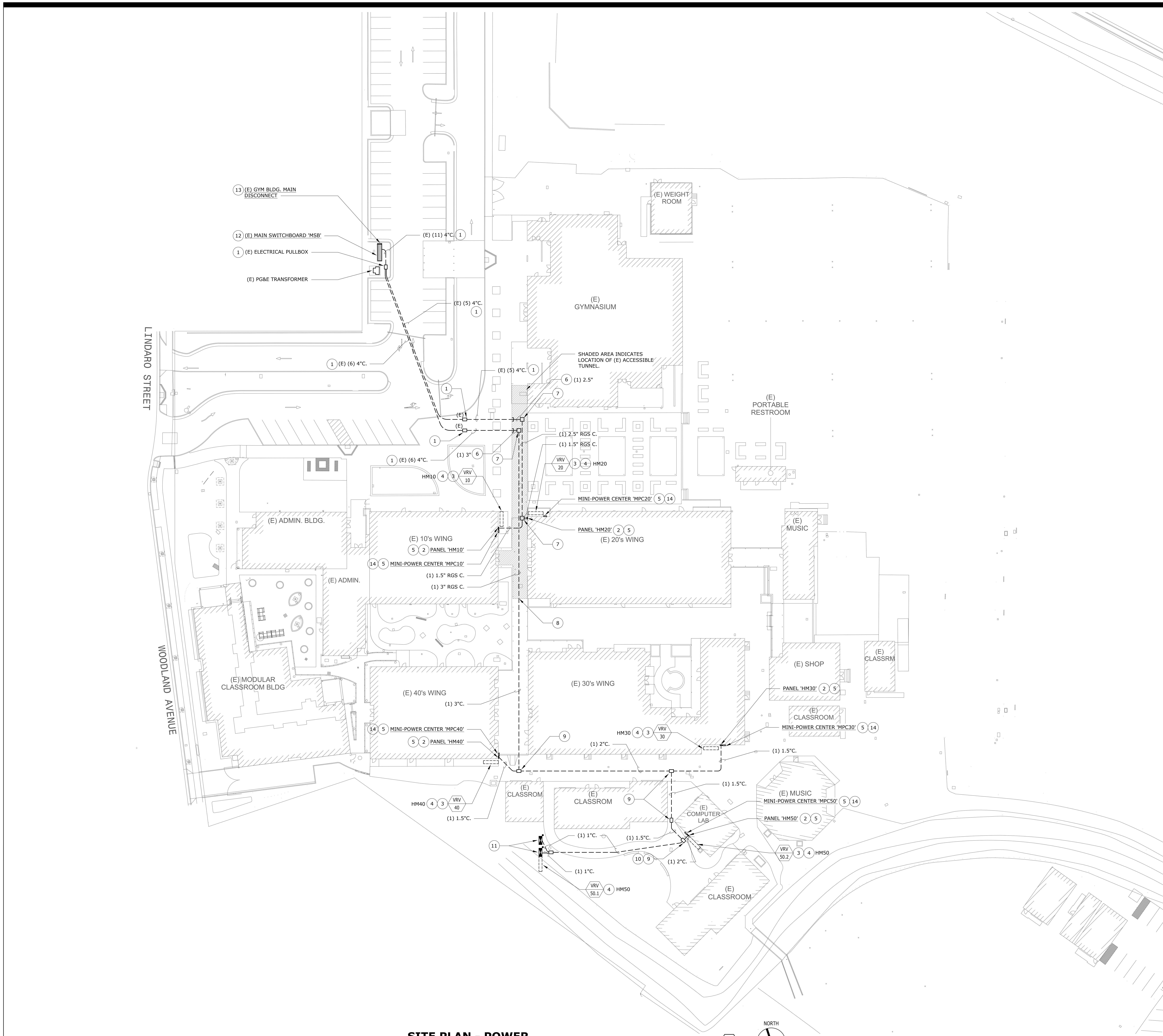
MARCH 15, 2021

SHEET TITLE

SYMBOLS LIST, GENERAL NOTES & LIST OF DRAWINGS

SHEET NUMBER

E-0.1



SITE PLAN - POWER
SCALE: 1" = 30'-0"
1 / E-1.1

NUMBERED SHEET NOTES

1. UTILIZE SPACE IN (E) RACEWAY TO ROUTE WIRING FOR (N) 480V PANELS. SEE E-5.1 FOR WIRING QUANTITY AND SIZES.
2. CONTRACTOR TO PROVIDE ENGRAVED NAMEPLATES AND MOUNT ON OR ADJACENT TO THIS 480V PANEL AND THE EXISTING 208V PANEL IN THE BUILDING ELECTRICAL ROOM. VERBIAGE FOR EACH NAMEPLATE BELOW:
   480V PANEL - "WARNING: THIS BUILDING IS FED BY (2) SOURCES OF POWER, THIS PANEL AND THE 208V PANEL AT THE BUILDING ELECTRICAL ROOM."
   (E) 208V PANEL - "WARNING: THIS BUILDING IS FED BY (2) SOURCES OF POWER, THIS PANEL AND THE 480V PANEL ON THE EXTERIOR OF THE BUILDING."
3. CONTRACTOR TO PROVIDE ENGRAVED NAMEPLATE AND MOUNT ON OR ADJACENT TO MECHANCIAL UNIT. NAMEPLATE TO READ, "SERVICE DISCONNECT FOR HVAC EQUIPMENT LOCATED IN ADJACENT 480V PANEL".
4. CONNECT VRV UNIT COMPLETE TO PANEL SHOWN. SEE E-5.1 FOR CONDUIT AND WIRE QUANTITIES AND SIZES. SEE E-6.1 FOR CIRCUIT INFORMATION.
5. PROVIDE PANEL INDICATED IN A NEMA 3R ENCLOSURE. OPEN UP WALL AND APPLY BLOCKING AS NECESSARY. SEE 1/E-7.1 FOR MINI POWER CENTER MOUNTING AND 2/E-7.1 FOR 480V PANEL MOUNTING. PATCH AND REPAIR EXISTING WALL TO THE SATISFACTION OF THE ARCHITECT. SEE E-5.1 AND E-6.1.
6. EXTEND EXISTING RACEWAY AS NECESSARY WITH NEW RGS RACEWAY AND CONNECT TO PULLCAN IN TUNNEL. SIZE CONDUIT AS INDICATED.
7. PROVIDE AND INSTALL PULLCAN IN TUNNEL. SIZE PER NEC.
8. DRILL THROUGH THE SIDE OF THE EXISTING TUNNEL AND INSTALL NEW RACEWAYS. TRANSITION FROM RGS RACEWAY TO SCHEDULE 40 PVC RACEWAY OF THE SAME SIZE. SEAL ALL PENETRATIONS INTO TUNNEL, TYPICAL THIS PROJECT. SEE 4/E-7.1 FOR TRENCHING DETAIL.
9. PROVIDE AND INSTALL FLUSH IN-GRADE PULLBOX WITH CONCRETE COVER LABELED "POWER". SIZE PER NEC. SEE 5/E-7.1.
10. INSTALL NEW 480V PULLBOX ADJACENT TO NEW 208V PULLBOX. SEE E-3.5.
11. PROVIDE NEMA 3R HEAVY-DUTY FUSED DISCONNECT SWITCH. SEE 9/E-7.1 FOR MOUNTING.
12. PROVIDE AND INSTALL (5) 100A/3P BREAKERS IN AVAILABLE SPACE IN MAIN SWITCHBOARD FOR NEW 480V PANELS THROUGHOUT THE CAMPUS. BREAKERS SHALL MATCH THE MANUFACTURER AND AIC RATING OF THE EXISTING SWITCHBOARD BREAKERS. PROVIDE BREAKER MOUNTING KITS FOR BREAKERS, WITH ALL APPROPRIATE MOUNTING HARDWARE. SEE E-5.1.
13. PROVIDE AND INSTALL MEANS TO LOCK EXISTING GYM BUILDING MAIN DISCONNECT SWITCH IN ON OR OFF POSITION.
14. PROVIDE AND INSTALL EATON MINI-POWER CENTER, MODEL P48G28T1518, OR EQUAL.

GENERAL SHEET NOTES

1. CONTRACTOR SHALL FIELD LOCATE, IDENTIFY AND PROTECT IN PLACE ALL EXISTING UTILITIES WITHIN PROJECT SCOPE.
2. SEE E-5.1 FOR QUANTITIES OF NEW WIRE IN CONDUITS SHOWN ON THIS PLAN.

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER
ELECTRICAL ENGINEERING and LIGHTING DESIGN
4340 REDWOOD HWY, SUITE 245
SAN RAFAEL, CALIFORNIA 94903
(415) 492-0420/FAX (415) 479-9662
www.ommconsulting.com

REGISTERED PROFESSIONAL ENGINEER
PIETER J. COLENBRANDER
No.14738
Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

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DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

SITE PLAN - POWER

SHEET NUMBER

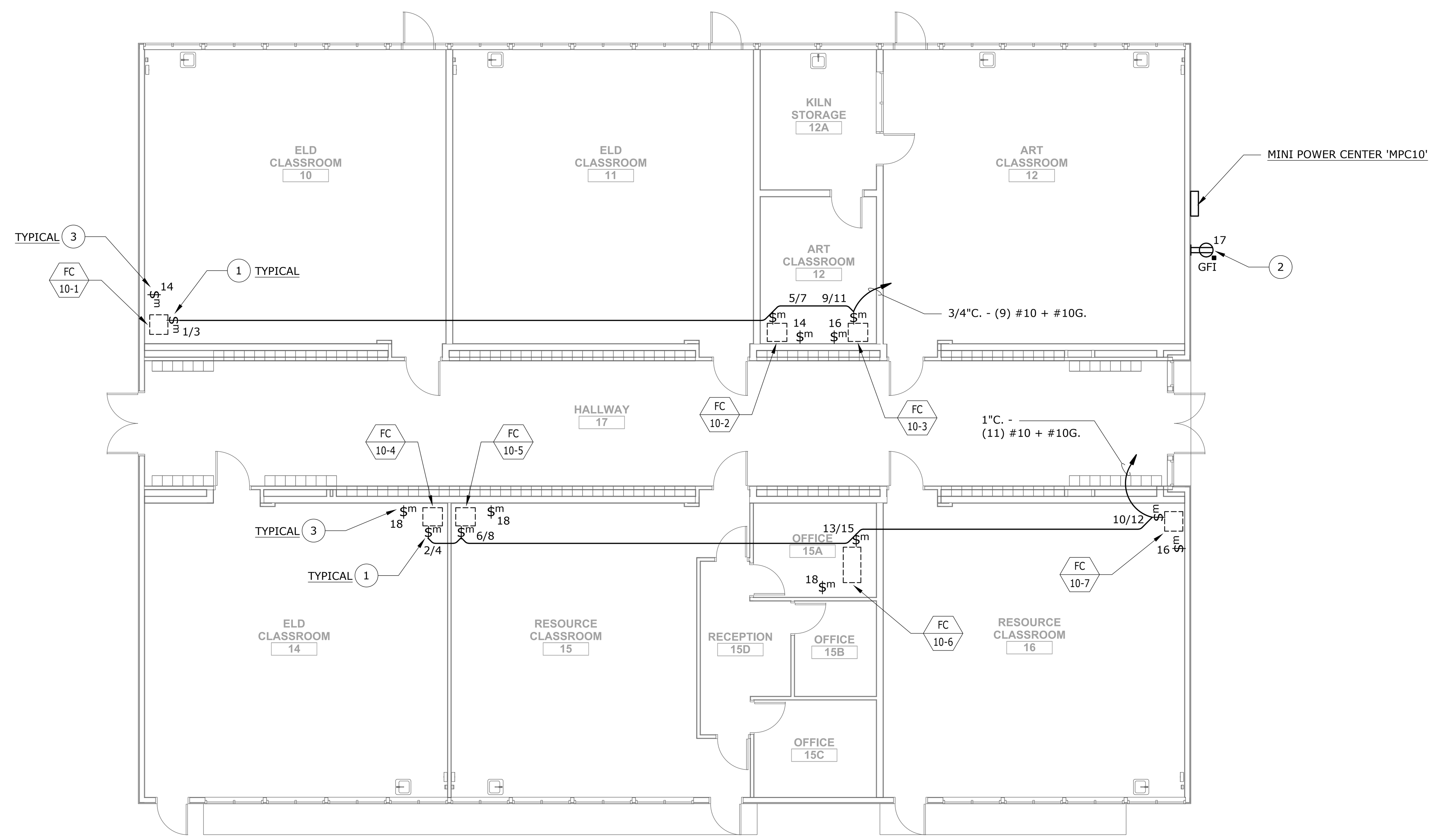
E-1.1

NUMBERED SHEET NOTES

1. PROVIDE AND INSTALL NEW MOTOR RATED SWITCH, CONDUIT AND WIRE INDICATED BACK TO PANEL 'MPC10'. COORDINATE EXACT LOCATION OF MECHANICAL UNIT WITH DIVISION 23. SEE E-6.1.
2. PROVIDE SURFACE MOUNTED WEATHERPROOF GFI RECEPTACLE WITH LOCKABLE COVER, ADJACENT TO VRV MECHANICAL UNIT. SEE E-1.1.
3. PROVIDE MOTOR RATED SWITCH AND POWER CONNECTION FOR ADJACENT FAN COIL UNIT CONDENSATE PUMP. COORDINATE EXACT LOCATION OF PUMP WITH DIVISION 23.

GENERAL SHEET NOTES

1. IN ADDITION TO THE NEW WORK SHOWN ON THE PLAN, CONTRACTOR SHALL FACILITATE THE REMOVAL OF (7) EXISTING FURNACES IN THE BUILDING BY DISCONNECTING THE EXISTING 120V POWER CIRCUIT FROM EACH FURNACE AND REMOVING THE ASSOCIATED EXISTING WIRE AND CONDUIT BACK TO SOURCE. SEE DIVISION 23 SHEET MD-2.1.
2. ALL CIRCUITS SHOWN SHALL HOMERUN TO PANEL 'MPC10'.



10'S WING FLOOR PLAN - POWER 1/E-3.1

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

NORTH

KEYPLAN

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER
ELECTRICAL ENGINEERING and LIGHTING DESIGN
4340 REDWOOD HWY, SUITE 245
SAN RAFAEL, CALIFORNIA 94903
(415) 492-0420/FAX (415) 479-9962
www.omconsulting.com

REGISTERED PROFESSIONAL ENGINEER
PIETER J. COLENBRANDER
No.14738
Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

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DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	LN/TV/JW
DRAWING SCALE:	AS NOTED
PTN: 65458-57	FILE NO: 21-39

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MARCH 15, 2021

SHEET TITLE

10'S WING FLOOR PLAN - POWER

SHEET NUMBER

E-3.1

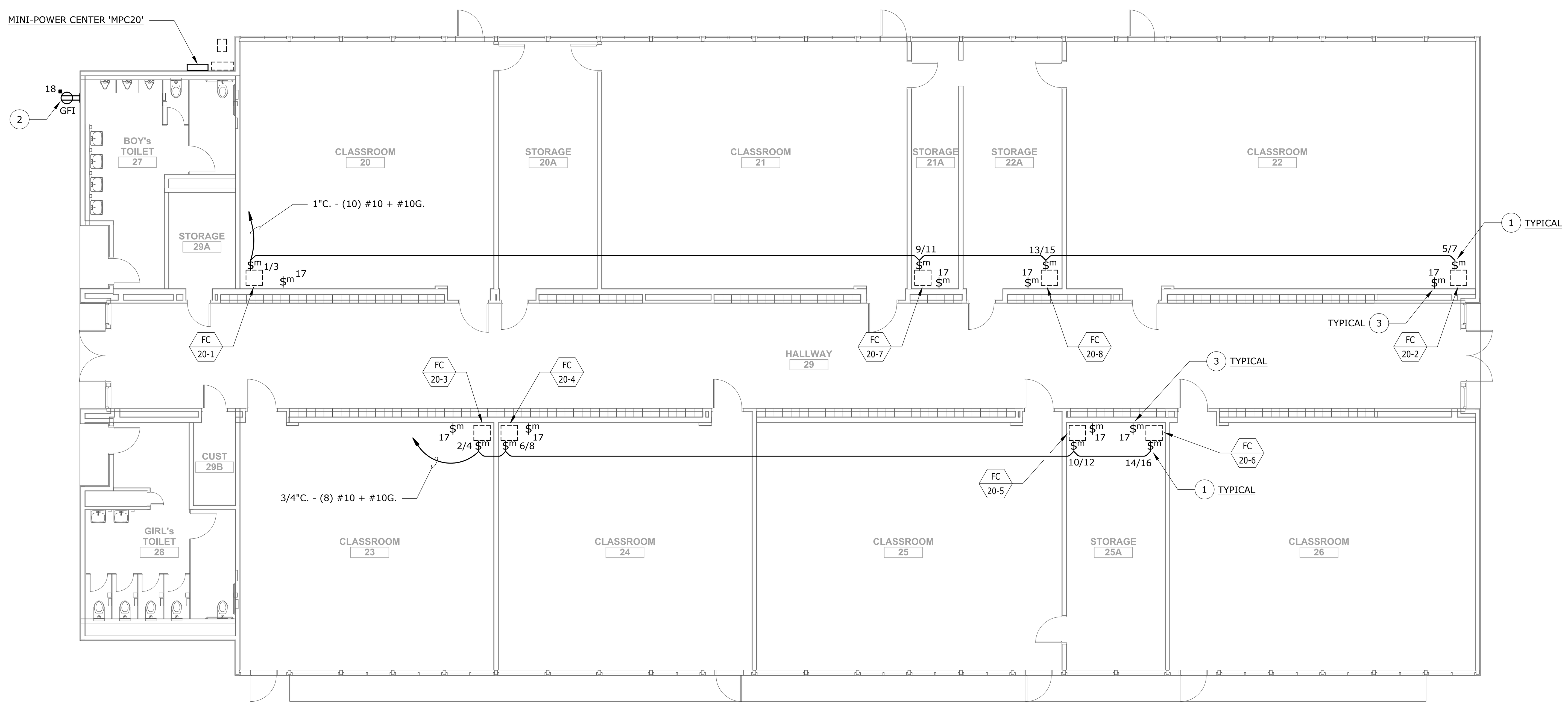
DAVIDSON MS HVAC SYSTEM ASSESSMENT - 220064

NUMBERED SHEET NOTES

1. PROVIDE AND INSTALL NEW MOTOR RATED SWITCH, CONDUIT AND WIRE INDICATED BACK TO PANEL 'MPC20'. COORDINATE EXACT LOCATION OF MECHANICAL UNIT WITH DIVISION 23. SEE E-6.1.
2. PROVIDE SURFACE MOUNTED WEATHERPROOF GFI RECEPTACLE WITH LOCKABLE COVER, ADJACENT TO VRV MECHANICAL UNIT. SEE E-1.1.
3. PROVIDE MOTOR RATED SWITCH AND POWER CONNECTION FOR ADJACENT FAN COIL UNIT CONDENSATE PUMP. COORDINATE EXACT LOCATION OF PUMP WITH DIVISION 23.

GENERAL SHEET NOTES

1. IN ADDITION TO THE NEW WORK SHOWN ON THE PLAN, CONTRACTOR SHALL FACILITATE THE REMOVAL OF (9) EXISTING FURNACES IN THE BUILDING BY DISCONNECTING THE EXISTING 120V POWER CIRCUIT FROM EACH FURNACE AND REMOVING THE ASSOCIATED EXISTING WIRE AND CONDUIT BACK TO SOURCE. SEE DIVISION 23 SHEET MD-2.2.
2. ALL CIRCUITS SHOWN SHALL HOMERUN TO PANEL 'MPC20'.



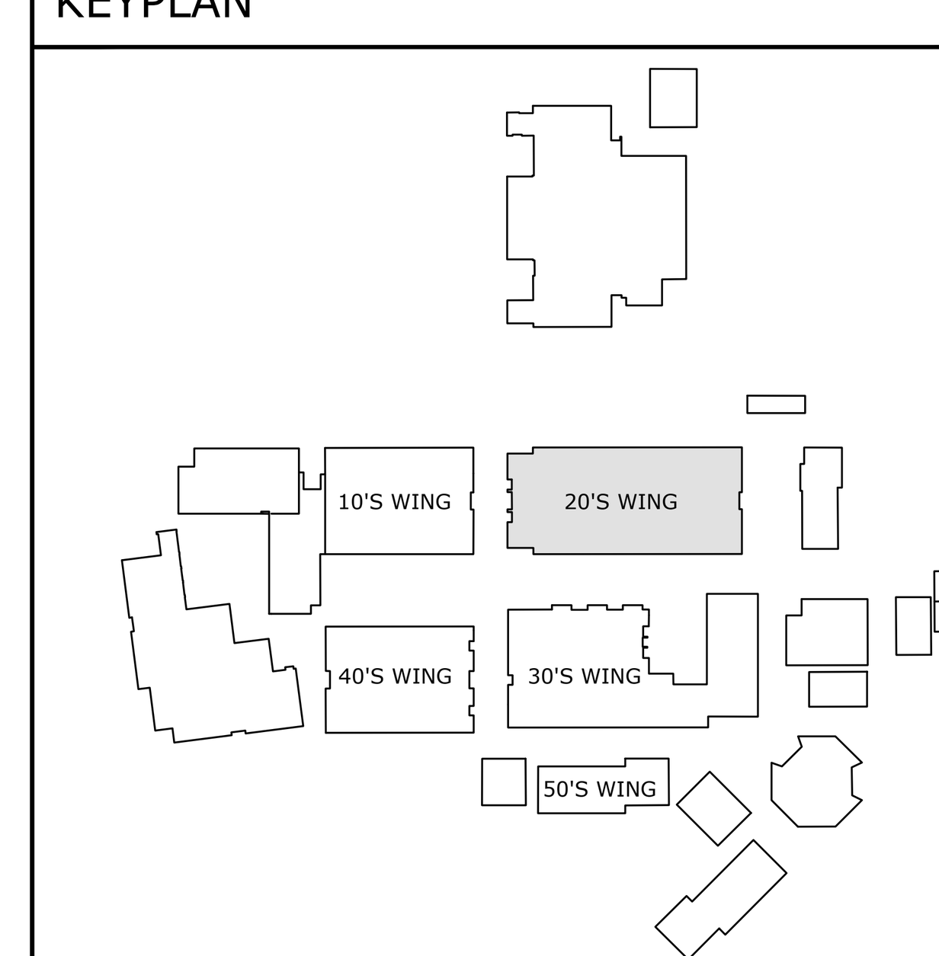
20'S WING FLOOR PLAN - POWER

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

1 E-3.2

NORTH

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main Office: 636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office: 600 Main Street, Suite E, Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER
ELECTRICAL ENGINEERING and LIGHTING DESIGN
4340 REDWOOD HWY., SUITE 245
SAN RAFAEL, CALIFORNIA 94903
(415) 492-0420/FAX (415) 479-9662
www.ommconsulting.com

REGISTERED PROFESSIONAL ENGINEER
PIETER J. COLENBRANDER
No.14738
Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

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MARCH 15, 2021

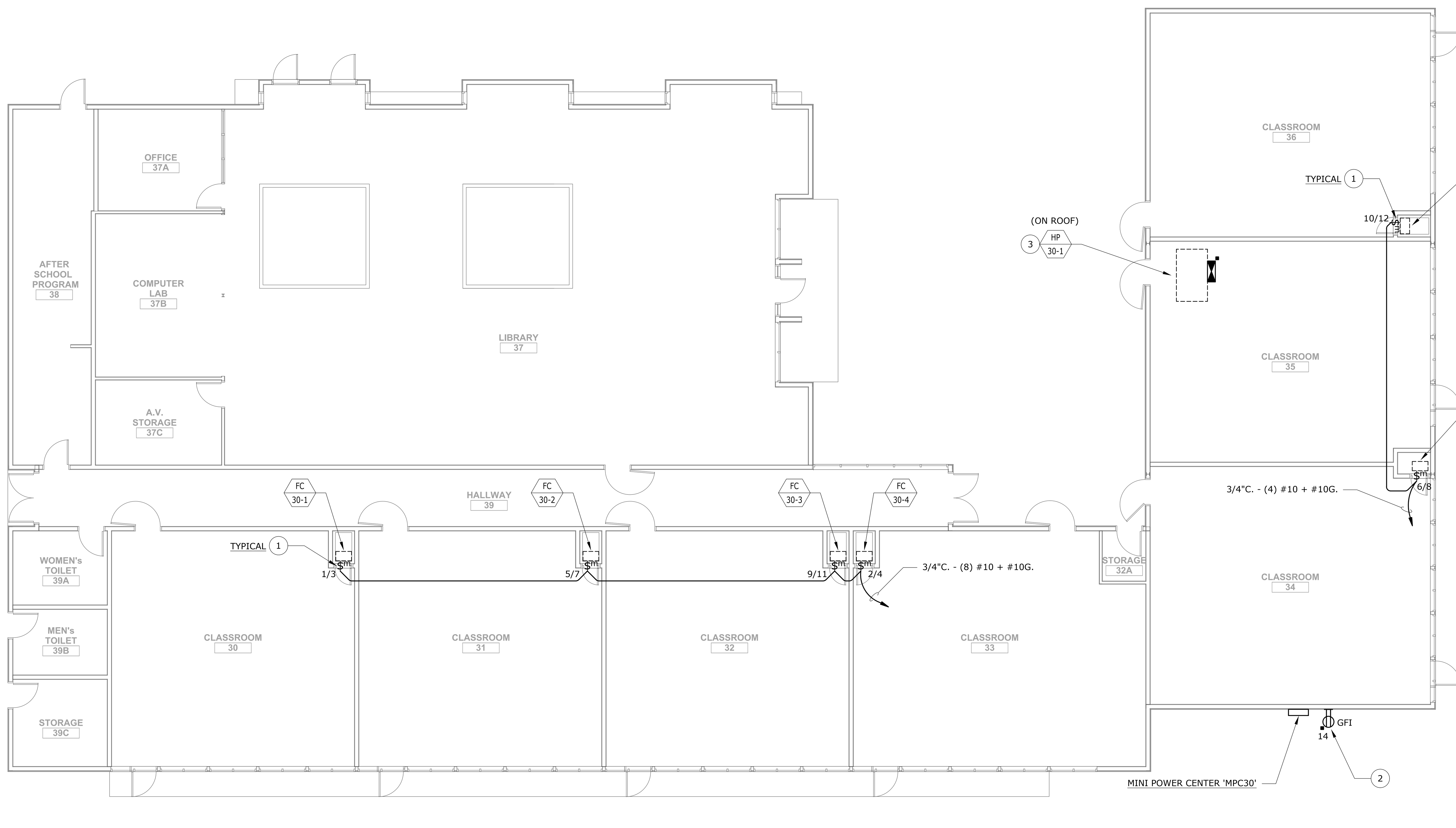
SHEET TITLE

20'S WING FLOOR PLAN - POWER

SHEET NUMBER

E-3.2

DAVIDSON MS HVAC SYSTEM ASSESSMENT – 220064



30'S WING FLOOR PLAN - POWER

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

1 E-3.3

NORTH

NUMBERED SHEET NOTES

1. PROVIDE AND INSTALL NEW MOTOR RATED SWITCH, CONDUIT AND WIRE INDICATED BACK TO PANEL 'MPC30'. COORDINATE EXACT LOCATION OF MECHANICAL UNIT WITH DIVISION 23. SEE E-6.1.
2. PROVIDE SURFACE MOUNTED WEATHERPROOF GFI RECEPTACLE WITH LOCKABLE COVER, ADJACENT TO VRV MECHANICAL UNIT. SEE E-1.1.
3. EXISTING MECHANICAL UNIT AT THIS LOCATION TO BE REPLACED. DISCONNECT POWER FROM EXISTING UNIT TO BE REMOVED AND REMOVE EXISTING DISCONNECT SWITCH. PROTECT AND PRESERVE EXISTING CIRCUITRY FOR REUSE. PROVIDE AND INSTALL NEW NEMA 3R HEAVY-DUTY FUSED DISCONNECT SWITCH FOR NEW MECHANICAL UNIT. CONNECT EXISTING CIRCUITRY FORMERLY CONNECTED TO REMOVED UNIT COMPLETE TO NEW UNIT VIA NEW DISCONNECT SWITCH. IF LOCATION OF NEW UNIT IS DIFFERENT FROM REMOVED UNIT, EXTEND EXISTING CONDUIT AND CIRCUITRY WITH NEW AS NEEDED. COORDINATE SWITCH AND FUSE SIZE WITH DIVISION 23.

GENERAL SHEET NOTES

1. IN ADDITION TO THE NEW WORK SHOWN ON THE PLAN, CONTRACTOR SHALL FACILITATE THE REMOVAL OF (6) EXISTING FURNACES IN THE BUILDING BY DISCONNECTING THE EXISTING 120V POWER CIRCUIT FROM EACH FURNACE AND REMOVING THE ASSOCIATED EXISTING WIRE AND CONDUIT BACK TO SOURCE. SEE DIVISION 23 SHEET MD-2.3.
2. ALL CIRCUITS SHOWN SHALL HOMERUN TO PANEL 'MPC30'.

KEYPLAN

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER
ELECTRICAL ENGINEERING and LIGHTING DESIGN
4340 REDWOOD HWY, SUITE 245
SAN RAFAEL, CALIFORNIA 94903
(415) 492-0420/FAX (415) 479-9662
www.omconsulting.com

REGISTERED PROFESSIONAL ENGINEER
PIETER J. COLENBRANDER
No.14738
Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

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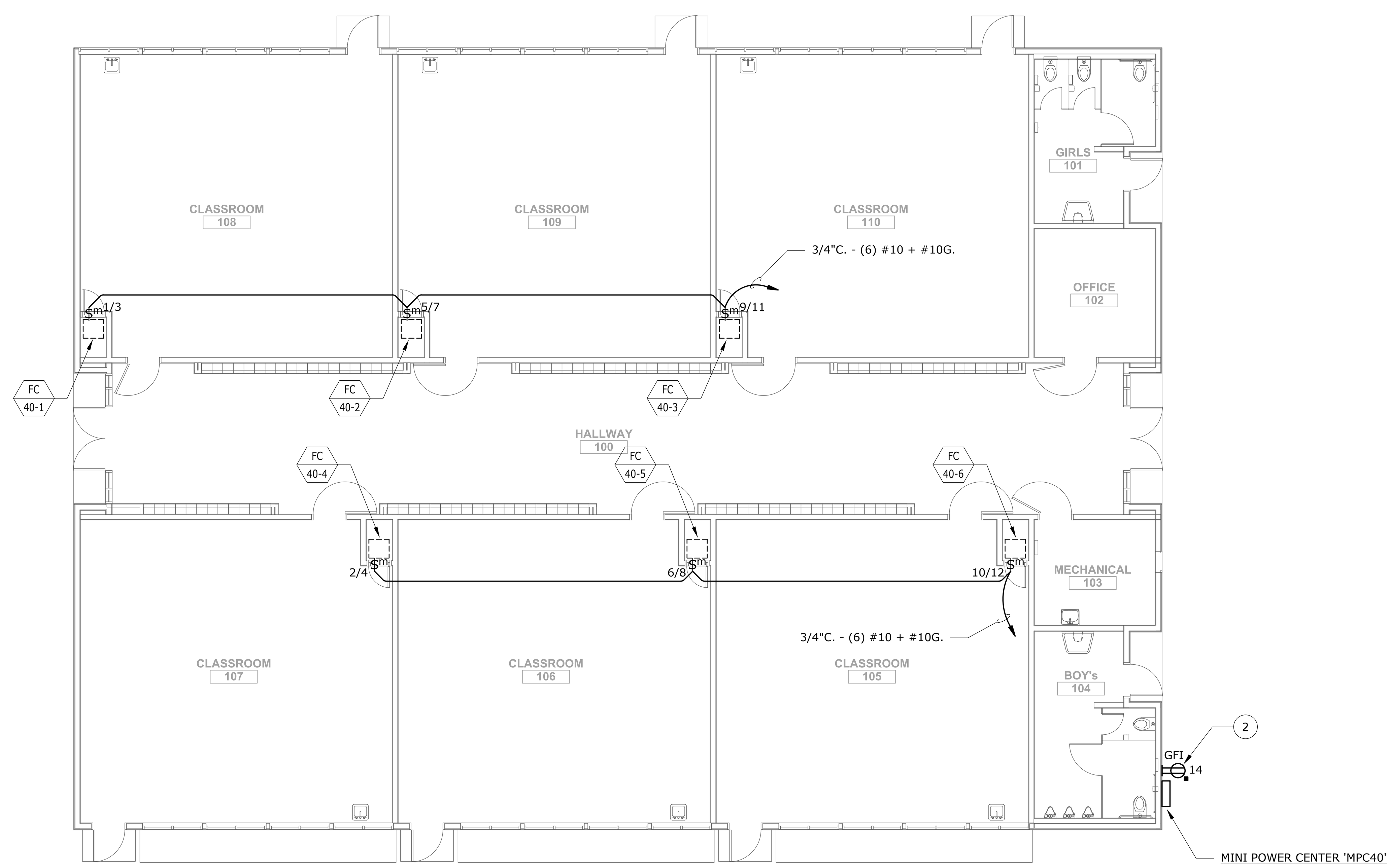
SHEET TITLE

30'S WING FLOOR PLAN - POWER

SHEET NUMBER

E-3.3

DAVIDSON MS HVAC SYSTEM ASSESSMENT – 220064



40's WING FLOOR PLAN - POWER

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

1 / E-3.4

NORTH

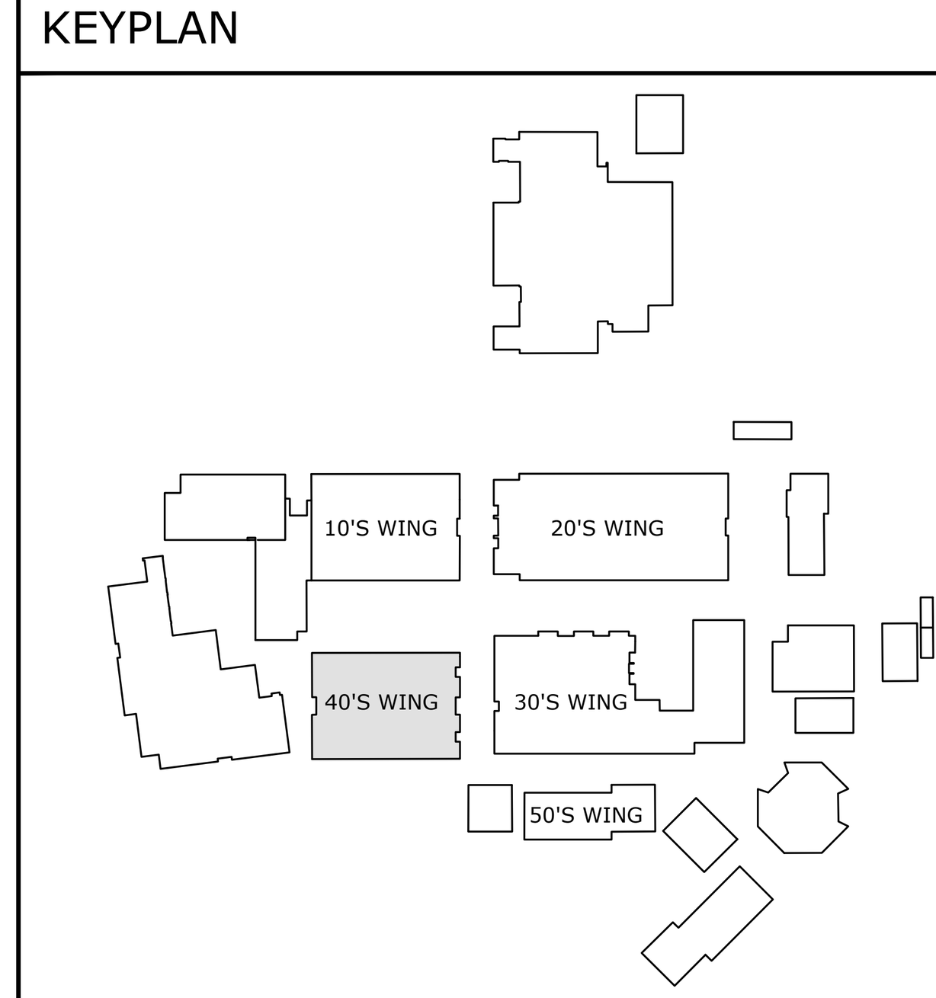
NUMBERED SHEET NOTES

1. PROVIDE AND INSTALL NEW MOTOR RATED SWITCH, CONDUIT AND WIRE INDICATED BACK TO PANEL 'MPC40'. COORDINATE EXACT LOCATION OF MECHANICAL UNIT WITH DIVISION 23. SEE E-6.1.
2. PROVIDE SURFACE MOUNTED WEATHERPROOF GFI RECEPTACLE WITH LOCKABLE COVER, ADJACENT TO VRV MECHANICAL UNIT. SEE E-1.1.

GENERAL SHEET NOTES

1. IN ADDITION TO THE NEW WORK SHOWN ON THE PLAN, CONTRACTOR SHALL FACILITATE THE REMOVAL OF (6) EXISTING FURNACES IN THE BUILDING BY DISCONNECTING THE EXISTING 120V POWER CIRCUIT FROM EACH FURNACE AND REMOVING THE ASSOCIATED EXISTING WIRE AND CONDUIT BACK TO SOURCE. SEE DIVISION 23 SHEET MD-2.4.
2. ALL CIRCUITS SHOWN SHALL HOMERUN TO PANEL 'MPC40'.

KEYPLAN



QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER

REGISTERED PROFESSIONAL ENGINEER
PIETER J. COLENBRANDER
No.14738
Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

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280 WOODLAND AVE
SAN RAFAEL, CA 94901

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MARCH 15, 2021

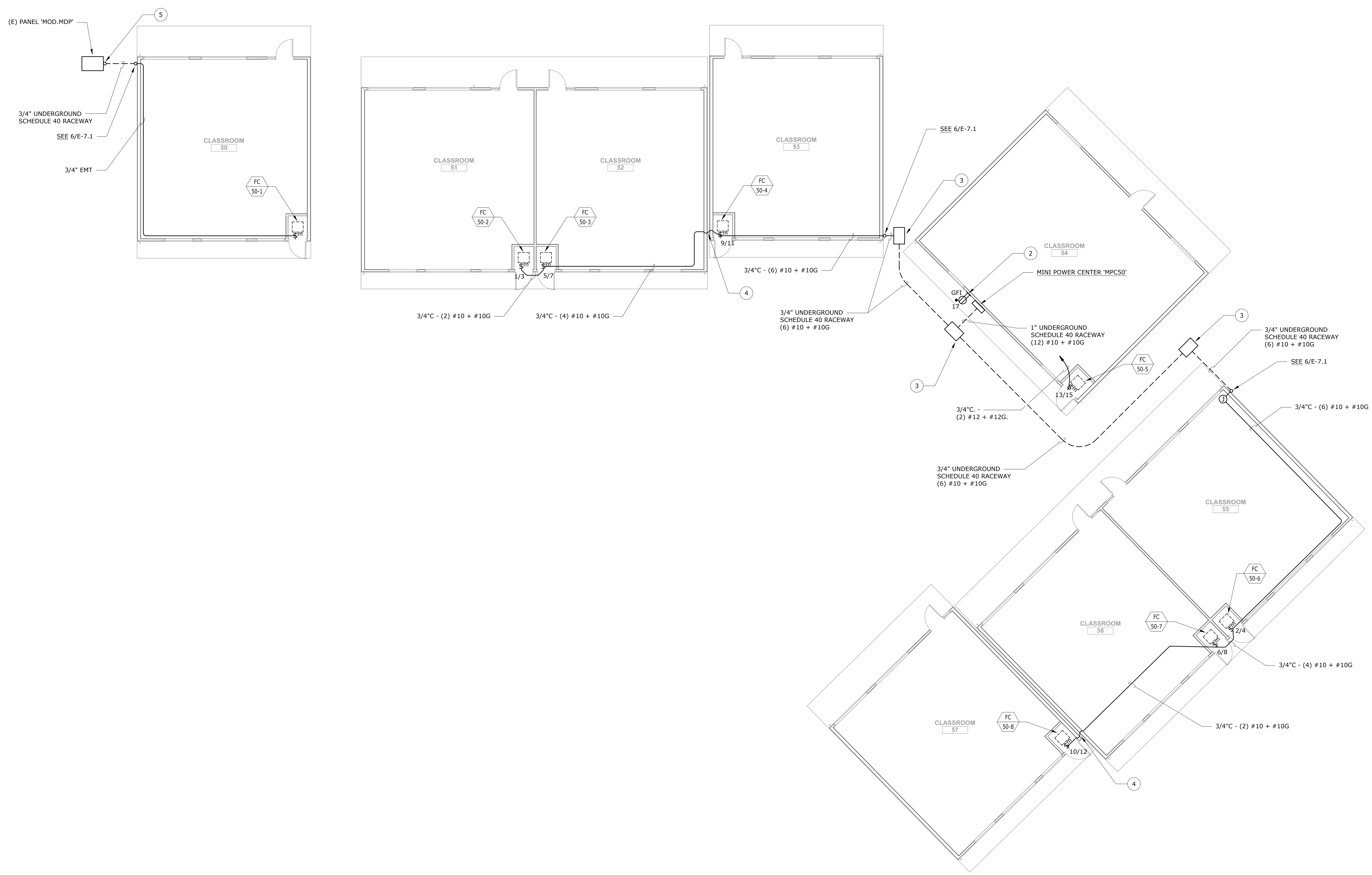
SHEET TITLE

40'S WING FLOOR PLAN - POWER

SHEET NUMBER

E-3.4

DAVIDSON MS HVAC SYSTEM ASSESSMENT - 220064



50'S WING FLOOR PLAN - POWER

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

1
E-3.5

NORTH

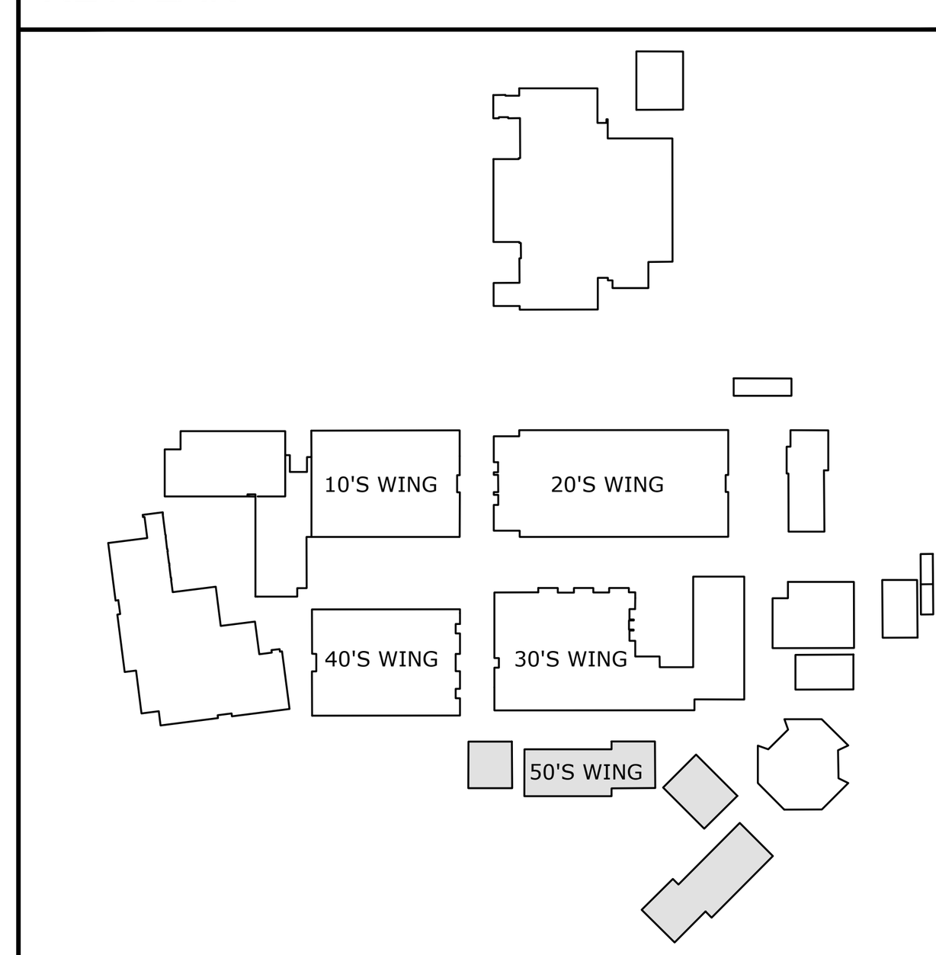
NUMBERED SHEET NOTES

1. PROVIDE AND INSTALL NEW MOTOR RATED SWITCH, CONDUIT AND WIRE INDICATED BACK TO PANEL 'MPC50'. COORDINATE EXACT LOCATION OF MECHANICAL UNIT WITH DIVISION 23. SEE E-6.1.
2. PROVIDE SURFACE MOUNTED WEATHERPROOF GFI RECEPTACLE WITH LOCKABLE COVER, ADJACENT TO VRV MECHANICAL UNIT. SEE E-1.1.
3. PROVIDE AND INSTALL FLUSH IN-GRADE PULLBOX, CHRISTY N9 (OR EQUAL) WITH CONCRETE COVER LABELED "POWER". SEE 5/E-7.1.
4. PROVIDE AND INSTALL 1" FLEXIBLE LIQUID TIGHT METALLIC CONDUIT FOR RUNNING WIRING BETWEEN BUILDINGS. PROVIDE SLACK LENGTH FOR SEISMIC SEPARATION. SEE 8/E-7.1.
5. TRANSITION FROM UNDERGROUND WITH 3/4" RGS RACEWAY. PROVIDE LB AT REQUIRED ELEVATION AND PENETRATE STAND-ALONE PANEL ENCLOSURE WITH 3/4" RGS RACEWAY. SEAL PENETRATION WEATHER TIGHT. PROVIDE AND INSTALL (1) 15A/2P BREAKER THAT MATCHES THE MANUFACTURER AND AIC RATING OF THE EXISTING PANEL BREAKERS AND INSTALL IN AVAILABLE PANEL SPACE. PROVIDE BREAKER MOUNTING KIT FOR BREAKER WITH ALL APPROPRIATE MOUNTING HARDWARE. CONNECT BREAKER COMPLETE TO FC-50-1 USING (2) #12 + #12G, UTILIZING RACEWAY SHOWN.

GENERAL SHEET NOTES

1. IN ADDITION TO THE NEW WORK SHOWN ON THE PLAN, CONTRACTOR SHALL FACILITATE THE REMOVAL OF (8) EXISTING FURNACES IN THE BUILDING BY DISCONNECTING THE EXISTING 120V POWER CIRCUIT FROM EACH FURNACE AND REMOVING THE ASSOCIATED EXISTING WIRE AND CONDUIT BACK TO SOURCE. SEE DIVISION 23 SHEET MD-2.5.
2. ALL CIRCUITS SHOWN SHALL HOMERUN TO PANEL 'MPC50'.

KEYPLAN



QUATTROCCHI KWOK
ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

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280 WOODLAND AVE
SAN RAFAEL, CA 94901

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DSA SUBMITTAL

MARCH 15, 2021

SHEET TITLE

50'S WING FLOOR PLAN - POWER

SHEET NUMBER

E-3.5

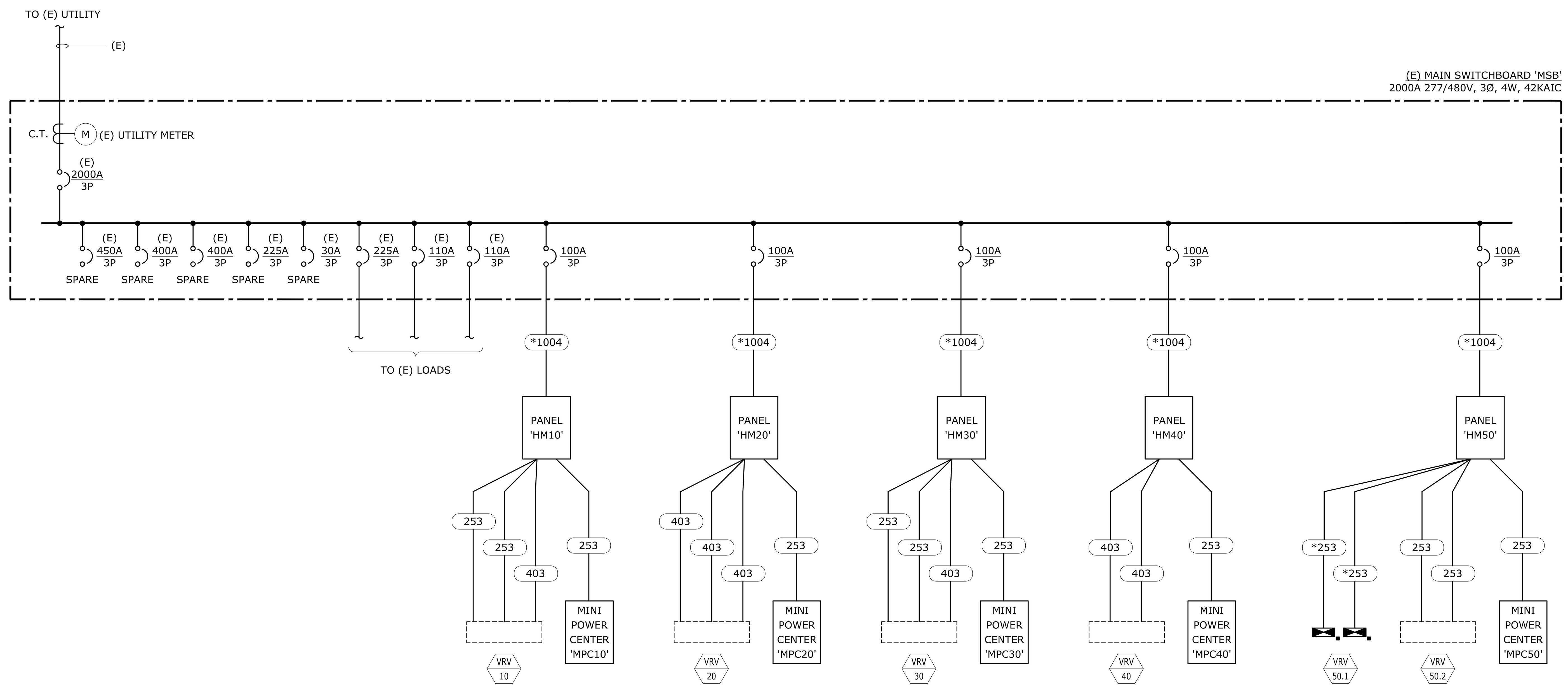
COPPER FEEDER SCHEDULE

FEEDER	CONDUIT	CONDUCTORS
*1004	*	(4) #1 & (1) #6 G.
*253	*	(3) #12 & (1) #12 G.
253	3/4"	(3) #12 & (1) #12 G.
403	1"	(3) #8 & (1) #10 G.

FEEDER TAG KEY

400 4 N
- INDICATES DOUBLE NEUTRAL
- WIRE QUANTITY
- FEEDER AMPACITY

* : SEE E-1.1 FOR CONDUIT QUANTITY AND SIZES



SINGLE LINE DIAGRAM - POWER 1 E-5.1
SCALE: NO SCALE

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER
ELECTRICAL ENGINEERING and LIGHTING DESIGN
4340 REDWOOD HWY, SUITE 245
SAN RAFAEL, CALIFORNIA 94903
(415) 492-0420/FAX (415) 479-0662
www.omconsulting.com

REGISTERED PROFESSIONAL ENGINEER
PIETER J. COLENBRANDER
No.14738
Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

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MARCH 15, 2021

SHEET TITLE

SINGLE LINE DIAGRAM & PANEL SCHEDULES

SHEET NUMBER

E-5.1

DAVIDSON MS HVAC SYSTEM ASSESSMENT – 220064

PANEL MPC40

VOLTS:	120 / 208 V	MAIN BRKR:	MLO
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	40A	MOUNTED:	SURFACE
POLES:	24P	AIC RATING:	14k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
FC 40-1	H	0.54			15/2	1	2	15/2	0.54			H	FC 40-4
/	H		0.54		-	3	4	-		0.54		H	/
FC 40-2	H			0.54	15/2	5	6	15/2			0.54	H	FC 40-5
/	H	0.54			-	7	8	-	0.54			H	/
FC 40-3	H		0.54		15/2	9	10	15/2		0.54		H	FC 40-6
/	H			0.54	-	11	12	-			0.54	H	/
SPARE					20/1	13	14	20/1	0.18			R	EXTERIOR SERVICE OUTLET
SPARE					20/1	15	16	20/1					SPARE
SPARE					20/1	17	18	20/1					SPARE
SPARE					20/1	19	20	20/1					SPARE
SPARE					20/1	21	22	20/1					SPARE
SPARE					20/1	23	24	20/1					SPARE
		1.08	1.08	1.08					1.26	1.08	1.08		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	0.00	100%	0.00
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.18	100%	0.18
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	6.49	100%	6.49
TOTALS:	6.67		6.67

PHASE A: 2.34 KVA
PHASE B: 2.16 KVA
PHASE C: 2.16 KVA
19.53 MAX AMPS / PHASE

PANEL HM50

VOLTS:	277 / 480 V	MAIN BRKR:	100A/3P
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	100A	MOUNTED:	SURFACE
POLES:	30P	AIC RATING:	22k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
\	H	4.68			-	1	2	-	4.68			H	\
VRV 50.1	H		4.68		25/3	3	4	25/3		4.68		H	VRV 50.2
/	H			4.68	-	5	6	-			4.68	H	/
\	H	5.84			-	7	8	-	5.84			H	\
VRV 50.1	H		5.84		25/3	9	10	25/3		5.84		H	VRV 50.2
/	H			5.84	-	11	12	-			5.84	H	/
SPARE	H				20/1	13	14	-	3.58			M	\
SPARE	H				20/1	15	16	25/3		3.58		M	PANEL 'MPC50'
SPARE	H				20/1	17	18	-			3.04	M	/
S P A C E						19	20						S P A C E
S P A C E						21	22						S P A C E
S P A C E						23	24						S P A C E
S P A C E						25	26						S P A C E
S P A C E						27	28						S P A C E
S P A C E						29	30						S P A C E
		10.52	10.52	10.52					14.10	14.10	13.56		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	10.20	100%	10.20
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.00	100%	0.00
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	63.12	100%	63.12
TOTALS:	73.32		73.32

PHASE A: 24.62 KVA
PHASE B: 24.62 KVA
PHASE C: 24.08 KVA
88.88 MAX AMPS / PHASE

PANEL HM10

VOLTS:	277 / 480 V	MAIN BRKR:	100A/3P
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	100A	MOUNTED:	SURFACE
POLES:	30P	AIC RATING:	22k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
\	H	4.68			-	1	2	-	1.74			M	\
VRV 10	H		4.68		25/3	3	4	25/3		1.74		M	PANEL 'MPC10'
/	H			4.68	-	5	6	-			1.61	M	/
\	H	6.18			-	7	8						S P A C E
VRV 10	H		6.18		25/3	9	10						S P A C E
/	H			6.18	-	11	12						S P A C E
\	H	8.61			-	13	14						S P A C E
VRV 10	H		8.61		40/3	15	16						S P A C E
/	H			8.61	-	17	18						S P A C E
SPARE					20/1	19	20						S P A C E
SPARE					20/1	21	22						S P A C E
SPARE					20/1	23	24						S P A C E
S P A C E						25	26						S P A C E
S P A C E						27	28						S P A C E
S P A C E						29	30						S P A C E
		19.47	19.47	19.47					1.74	1.74	1.61		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	5.09	100%	5.09
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.00	100%	0.00
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	58.42	100%	58.42
TOTALS:	63.51		63.51

PHASE A: 21.21 KVA
PHASE B: 21.21 KVA
PHASE C: 21.08 KVA
76.58 MAX AMPS / PHASE

PANEL MPC50

VOLTS:	120 / 208 V	MAIN BRKR:	MLO
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	40A	MOUNTED:	SURFACE
POLES:	24P	AIC RATING:	14k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
FC 50-2	H	0.72			15/2	1	2	15/2	0.72			H	FC 50-6
/	H		0.72		-	3	4	-		0.72		H	/
FC 50-3	H			0.72	15/2	5	6	15/2			0.72	H	FC 50-7
/	H	0.72			-	7	8	-	0.72			H	/
FC 50-4	H		0.72		15/2	9	10	15/2		0.72		H	FC 50-8
/	H			0.72	-	11	12	-			0.72	H	/
FC 50-5	H	0.72			15/2	13	14	20/1					SPARE
/	H		0.72		-	15	16	20/1					SPARE
EXTERIOR SERVICE OUTLET	R			0.18	20/1	17	18	20/1					SPARE
SPARE					20/1	19	20	20/1					SPARE
SPARE					20/1	21	22	20/1					SPARE
SPARE					20/1	23	24	20/1					SPARE
		2.15	2.15	1.61					1.43	1.43	1.43		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	0.00	100%	0.00
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.18	100%	0.18
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	10.02	100%	10.02
TOTALS:	10.20		10.20

PHASE A: 3.58 KVA
PHASE B: 3.58 KVA
PHASE C: 3.04 KVA
29.81 MAX AMPS / PHASE

PANEL MPC10

VOLTS:	120 / 208 V	MAIN BRKR:	MLO
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	40A	MOUNTED:	SURFACE
POLES:	24P	AIC RATING:	14k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
FC 10-1	H	0.28			15/2	1	2	15/2	0.28			H	FC 10-4
/	H		0.28		-	3	4	-		0.28		H	/
FC 10-2	H			0.28	15/2	5	6	15/2			0.28	H	FC 10-5
/	H	0.28			-	7	8	-	0.28			H	/
FC 10-3	H		0.28		15/2	9	10	15/2		0.28		H	FC 10-7
/	H			0.28	-	11	12	-			0.28	H	/
FC 10-6	H	0.41			15/2	13	14	20/1	0.20			M	COND. PUMPS: FP 10-1, FP 10-2
/	H		0.41		-	15	16	20/1		0.20		M	COND. PUMPS: FP 10-3, FP 10-7
EXTERIOR SERVICE OUTLET	R			0.18	20/1	17	18	20/1			0.30	M	COND. PUMPS: FP 10-4, FP 10-5, FP 10-6
SPARE					20/1	19	20	20/1					SPARE
SPARE					20/1	21	22	20/1					SPARE
SPARE					20/1	23	24	20/1					SPARE
		0.97	0.97	0.75					0.77	0.77	0.87		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	0.70	100%	0.70
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.18	100%	0.18
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	4.21	100%	4.21
TOTALS:	5.09		5.09

PHASE A: 1.74 KVA
PHASE B: 1.74 KVA
PHASE C: 1.61 KVA
14.49 MAX AMPS / PHASE

PANEL HM20

VOLTS:	277 / 480 V	MAIN BRKR:	100A/3P
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	100A	MOUNTED:	SURFACE
POLES:	30P	AIC RATING:	22k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
\	H	6.18			-	1	2	-	1.70			M	\
VRV 20	H		6.18		40/3	3	4	25/3		1.70		M	PANEL 'MPC20'
/	H			6.18	-	5	6	-			2.11	M	/
\	H	6.18			-	7	8						S P A C E
VRV 20	H		6.18		40/3	9	10						S P A C E
/	H			6.18	-	11	12						S P A C E
\	H	8.61			-	13	14						S P A C E
VRV 20	H		8.61		40/3	15	16						S P A C E
/	H			8.61	-	17	18						S P A C E
SPARE					20/1	19	20						S P A C E
SPARE					20/1	21	22						S P A C E
SPARE					20/1	23	24						S P A C E
S P A C E						25	26						S P A C E
S P A C E						27	28						S P A C E
S P A C E						29	30						S P A C E
		20.98	20.98	20.98					1.70	1.70	2.11		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	5.51	100%	5.51
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.00	100%	0.00
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	62.94	100%	62.94
TOTALS:	68.45		68.45

PHASE A: 22.68 KVA
PHASE B: 22.68 KVA
PHASE C: 23.09 KVA
83.36 MAX AMPS / PHASE

PANEL MPC30

VOLTS:	120 / 208 V	MAIN BRKR:	MLO
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	40A	MOUNTED:	SURFACE
POLES:	24P	AIC RATING:	14k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
FC 30-1	H	0.72			15/2	1	2	15/2	0.72			H	FC 30-4
/	H		0.72		-	3	4	-		0.72		H	/
FC 30-2	H			0.72	15/2	5	6	15/2			0.72	H	FC 30-5
/	H	0.72			-	7	8	-	0.72			H	/
FC 30-3	H		0.72		15/2	9	10	15/2		0.72		H	FC 30-6
/	H			0.72	-	11	12	-			0.72	H	/
SPARE					20/1	13	14	20/1	0.18			R	EXTERIOR SERVICE OUTLET
SPARE					20/1	15	16	20/1					SPARE
SPARE					20/1	17	18	20/1					SPARE
SPARE					20/1	19	20	20/1					SPARE
SPARE					20/1	21	22	20/1					SPARE
SPARE					20/1	23	24	20/1					SPARE
		1.43	1.43	1.43					1.61	1.43	1.43		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	0.00	100%	0.00
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.18	100%	0.18
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	8.59	100%	8.59
TOTALS:	8.77		8.77

PHASE A: 3.04 KVA
PHASE B: 2.86 KVA
PHASE C: 2.86 KVA
25.35 MAX AMPS / PHASE

PANEL HM30

VOLTS:	277 / 480 V	MAIN BRKR:	100A/3P
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	100A	MOUNTED:	SURFACE
POLES:	30P	AIC RATING:	22k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
\	H	4.68			-	1	2	-	3.04			M	\
VRV 30	H		4.68		25/3	3	4	25/3		2.86		M	PANEL'MPC30'
/	H			4.68	-	5	6	-			2.86	M	/
\	H	6.18			-	7	8						S P A C E
VRV 30	H		6.18		25/3	9	10						S P A C E
/	H			6.18	-	11	12						S P A C E
\	H	8.61			-	13	14						S P A C E
VRV 30	H		8.61		40/3	15	16						S P A C E
/	H			8.61	-	17	18						S P A C E
SPARE					20/1	19	20						S P A C E
SPARE					20/1	21	22						S P A C E
SPARE					20/1	23	24						S P A C E
S P A C E						25	26						S P A C E
S P A C E						27	28						S P A C E
S P A C E						29	30						S P A C E
		19.47	19.47	19.47					3.04	2.86	2.86		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	8.77	100%	8.77
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.00	100%	0.00
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	58.42	100%	58.42
TOTALS:	67.19		67.19

PHASE A: 22.52 KVA
PHASE B: 22.34 KVA
PHASE C: 22.34 KVA
81.28 MAX AMPS / PHASE

PANEL MPC30

VOLTS:	120 / 208 V	MAIN BRKR:	MLO
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	40A	MOUNTED:	SURFACE
POLES:	24P	AIC RATING:	14k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
FC 30-1	H	0.72			15/2	1	2	15/2	0.72			H	FC 30-4
/	H		0.72		-	3	4	-		0.72		H	/
FC 30-2	H			0.72	15/2	5	6	15/2			0.72	H	FC 30-5
/	H	0.72			-	7	8	-	0.72			H	/
FC 30-3	H		0.72		15/2	9	10	15/2		0.72		H	FC 30-6
/	H			0.72	-	11	12	-			0.72	H	/
SPARE					20/1	13	14	20/1	0.18			R	EXTERIOR SERVICE OUTLET
SPARE					20/1	15	16	20/1					SPARE
SPARE					20/1	17	18	20/1					SPARE
SPARE					20/1	19	20	20/1					SPARE
SPARE					20/1	21	22	20/1					SPARE
SPARE					20/1	23	24	20/1					SPARE
		1.43	1.43	1.43					1.61	1.43	1.43		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	0.00	100%	0.00
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.18	100%	0.18
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	8.59	100%	8.59
TOTALS:	8.77		8.77

PHASE A: 3.04 KVA
PHASE B: 2.86 KVA
PHASE C: 2.86 KVA
25.35 MAX AMPS / PHASE

PANEL HM40

VOLTS:	277 / 480 V	MAIN BRKR:	100A/3P
PHASE:	3 PH	FEEDER:	SEE SINGLE LINE
WIRE:	4 W	CONDUIT:	SEE SINGLE LINE
BUSSING:	100A	MOUNTED:	SURFACE
POLES:	30P	AIC RATING:	22k

LOAD DESCRIPTION	TYPE	A	B	C	BRKR.	CKT.	CKT.	BRKR.	A	B	C	TYPE	LOAD DESCRIPTION
\	H	6.18			-	1	2	-	2.34			M	\
VRV 40	H		6.18		40/3	3	4	25/3		2.16		M	PANEL 'MPC40'
/	H			6.18	-	5	6	-			2.16	M	/
\	H	8.61			-	7	8						S P A C E
VRV 40	H		8.61		40/3	9	10						S P A C E
/	H			8.61	-	11	12						S P A C E
SPARE	H				20/1	13	14						S P A C E
SPARE	H				20/1	15	16						S P A C E
SPARE	H				20/1	17	18						S P A C E
S P A C E						19	20						S P A C E
S P A C E						21	22						S P A C E
S P A C E						23	24						S P A C E
S P A C E						25	26						S P A C E
S P A C E						27	28						S P A C E
S P A C E						29	30						S P A C E
		14.80	14.80	14.80					2.34	2.16	2.16		

DEMAND LOAD SUMMARY	CONN. KVA	DEMAND FACTOR	DEMAND KVA
TYPE "M": NON-CONTINUOUS / MISC. LOADS	6.67	100%	6.67
TYPE "L": LIGHTING / CONTINUOUS LOADS	0.00	125%	0.00
TYPE "R": RECEPTACLES (FIRST 10KVA)	0.00	100%	0.00
TYPE "R": RECEPTACLES (OVER 10KVA)	0.00	50%	0.00
TYPE "H": HVAC / MECHANICAL LOADS	44.39	100%	44.39
TOTALS:	51.06		51.06

PHASE A: 17.14 KVA
PHASE B: 16.96 KVA
PHASE C: 16.96 KVA
61.88 MAX AMPS / PHASE

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER
ELECTRICAL ENGINEERING and LIGHTING DESIGN
4340 REDWOOD HWY, SUITE 245
SAN RAFAEL, CALIFORNIA 94903
(415) 492-0420 / FAX (415) 479-9862
www.omconsulting.com

REGISTERED PROFESSIONAL ENGINEER
PIETER J. COLENBRANDER
No. 14738
Exp. 6/21
ELECTRICAL
STATE OF CALIFORNIA

DAVIDSON MIDDLE SCHOOL

HVAC UPGRADES

280 WOODLAND AVE
SAN RAFAEL, CA 94901

SAN RAFAEL CITY SCHOOLS

REVISIONS

DSA APP NO. 01-119448

ARCH PROJECT NO:	1900.00
DRAWN BY:	LN/TV/JW
DRAWING SCALE:	AS NOTED
PTN: 65458-57	FILE NO: 21-39

DSA SUBMITTAL
MARCH 15, 2021

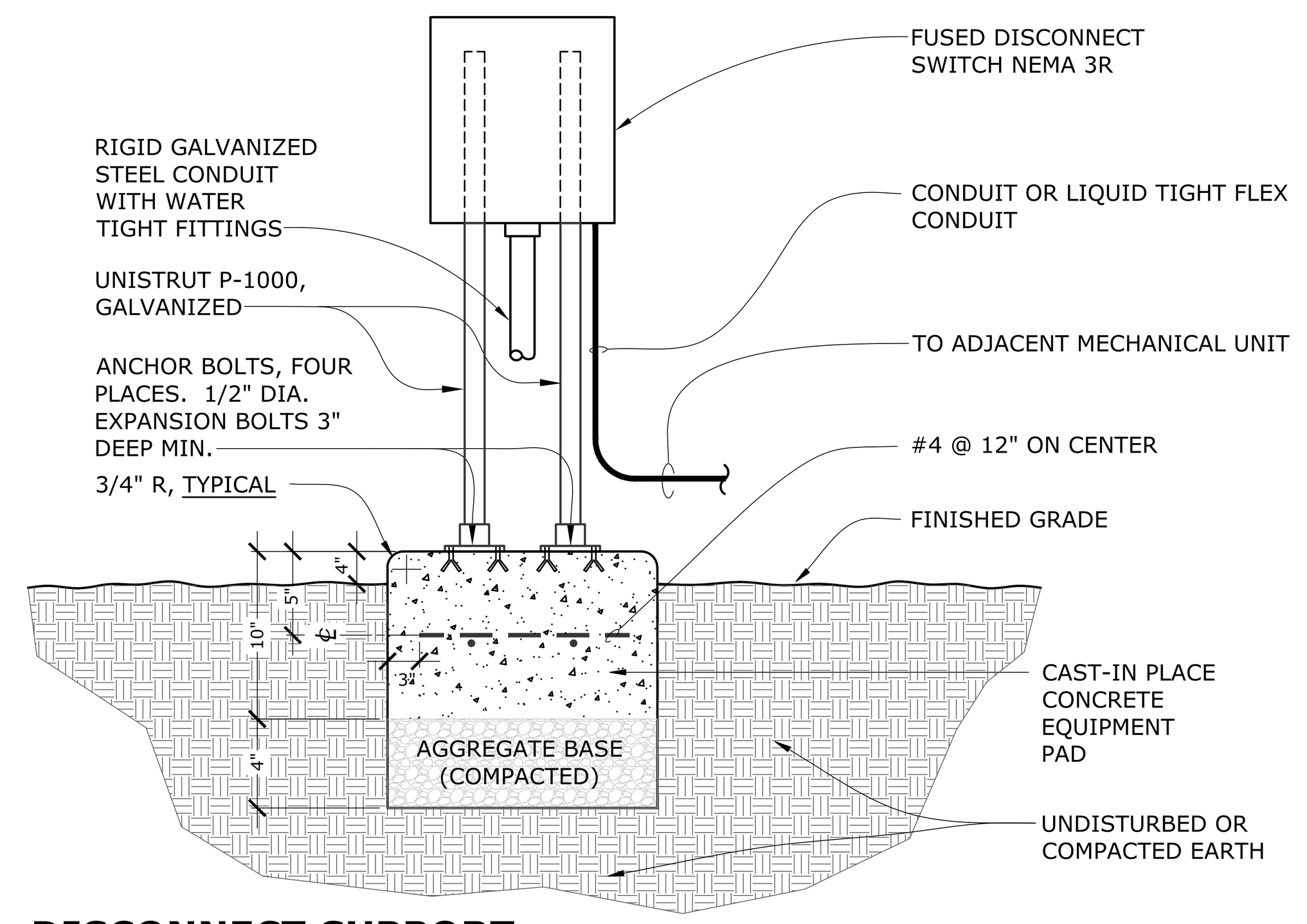
SHEET TITLE

PANEL SCHEDULES

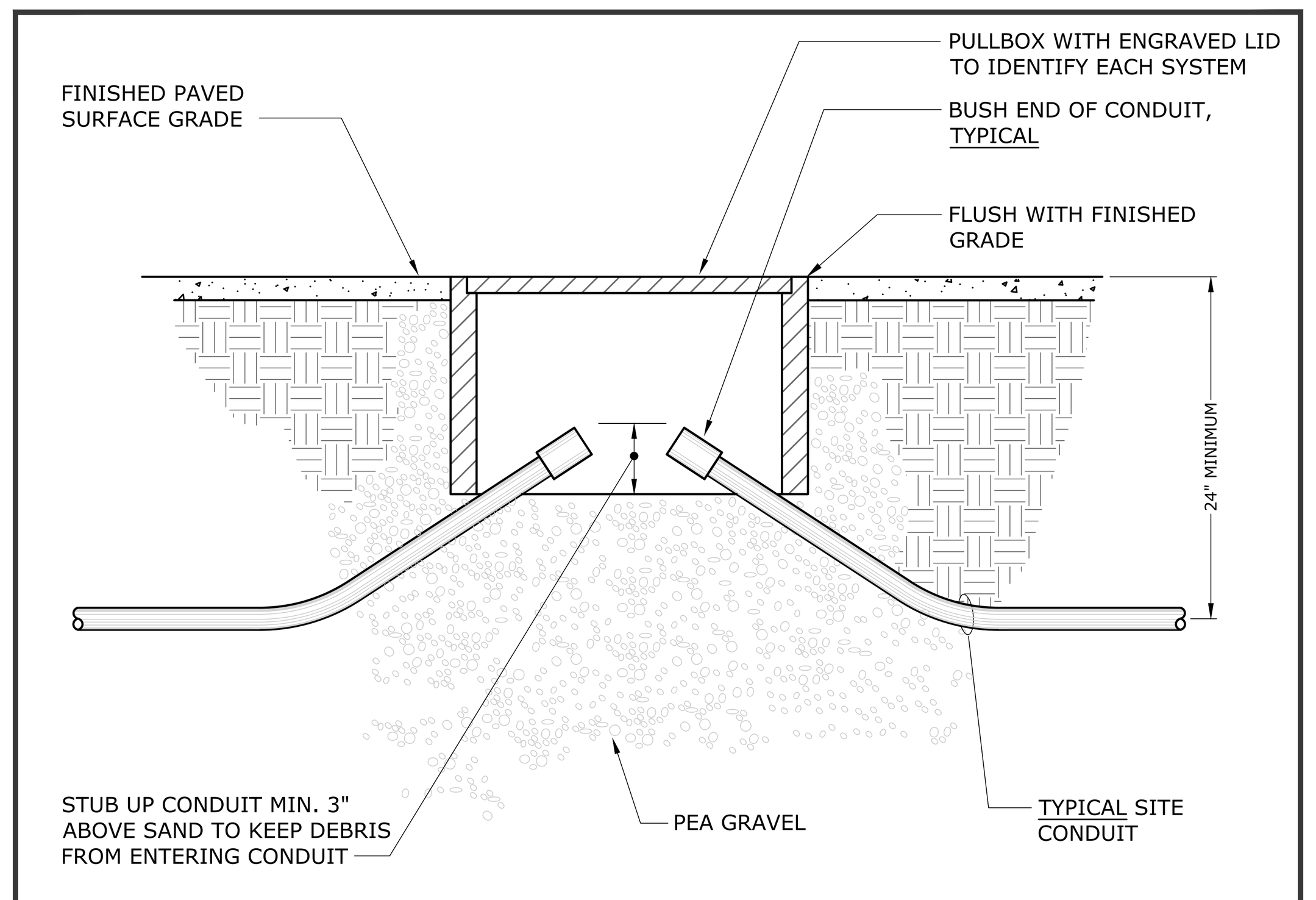
SHEET NUMBER

E-6.1

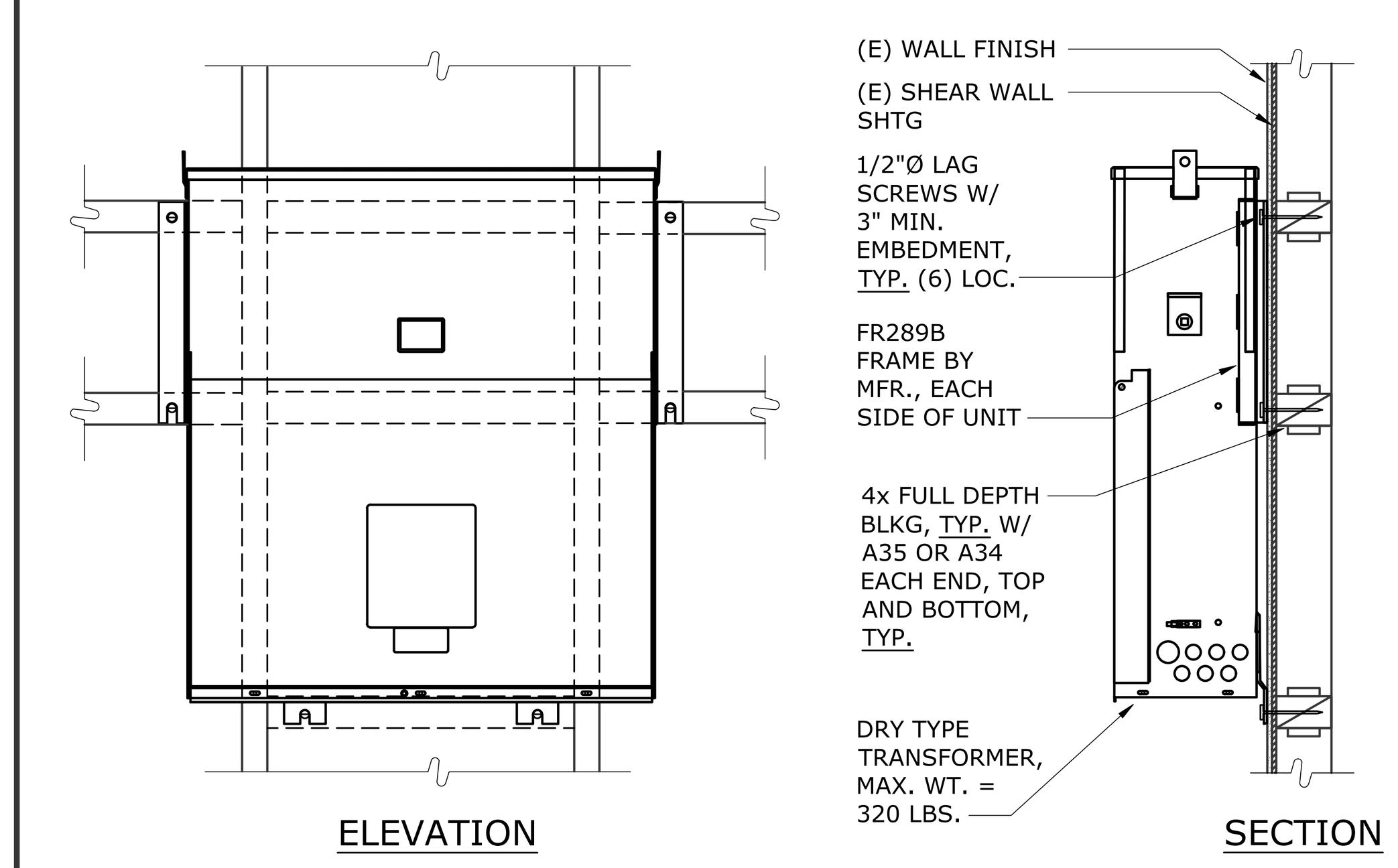
DAVIDSON MS HVAC SYSTEM ASSESSMENT - 220064



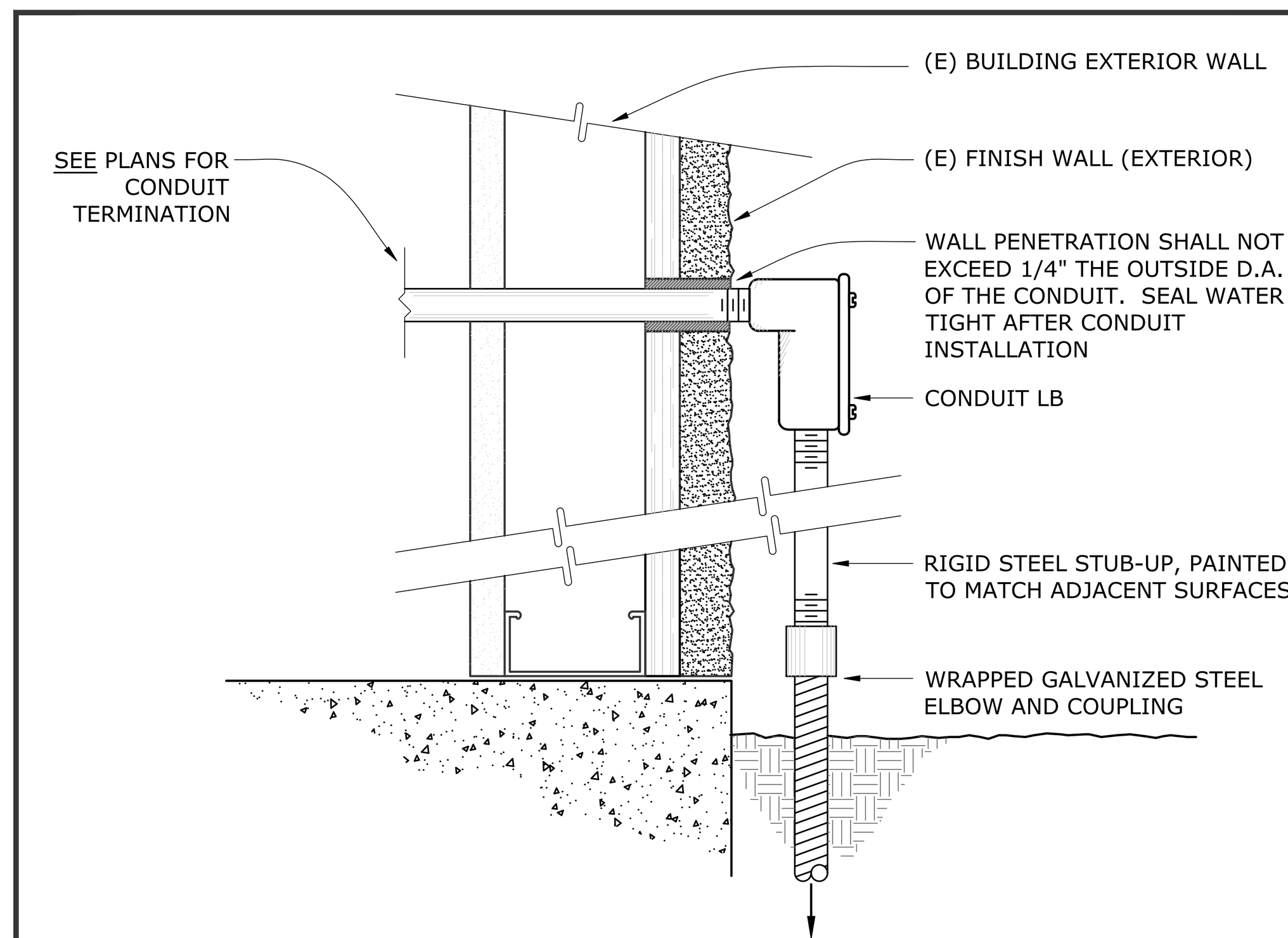
DISCONNECT SUPPORT
SCALE: NONE
9 E-7.1



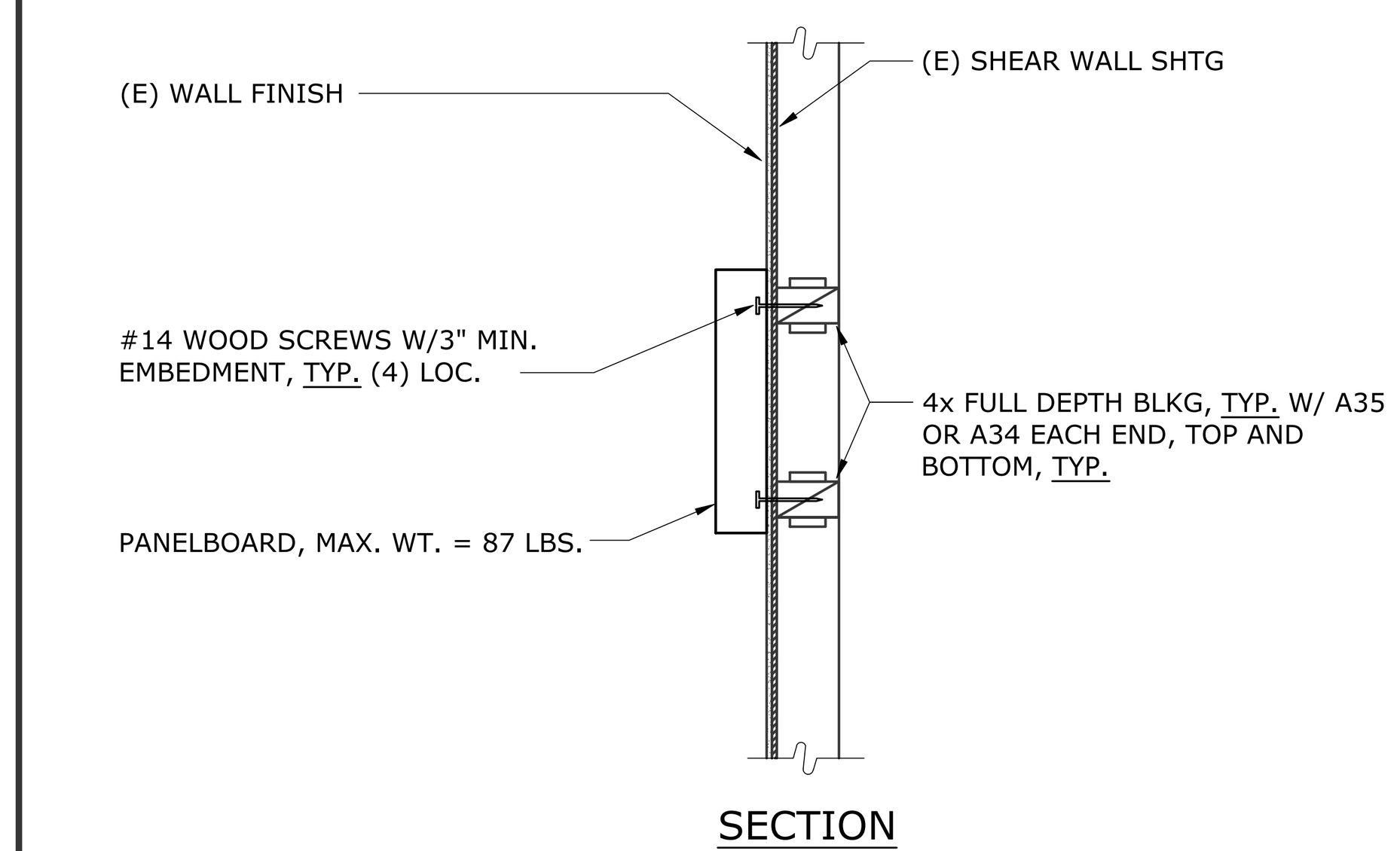
PULLBOX DETAIL - PAVED AREAS
SCALE: NONE
5 E-7.1



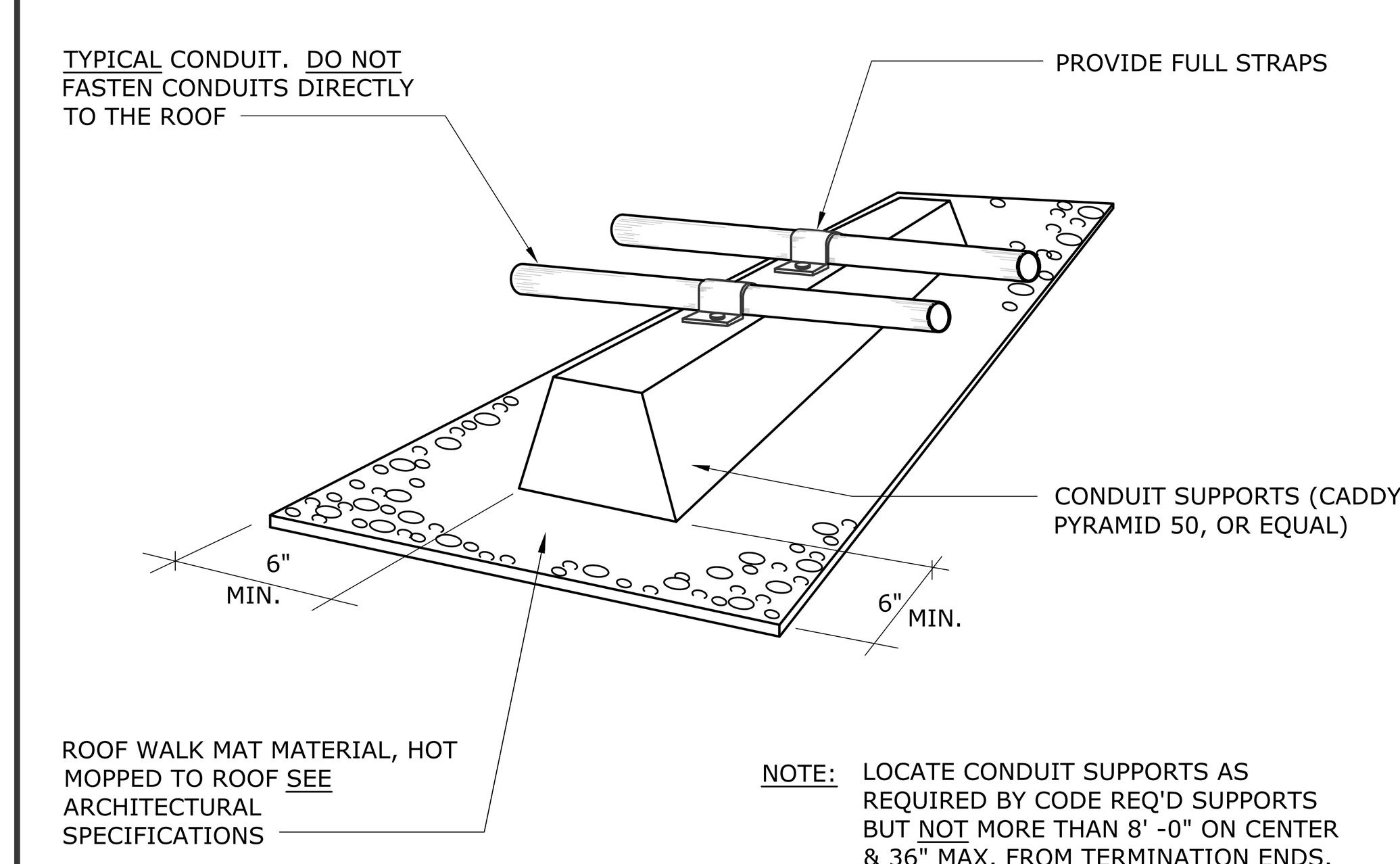
SURFACE MINI POWER CENTER MOUNTING
SCALE: NONE
1 E-7.1



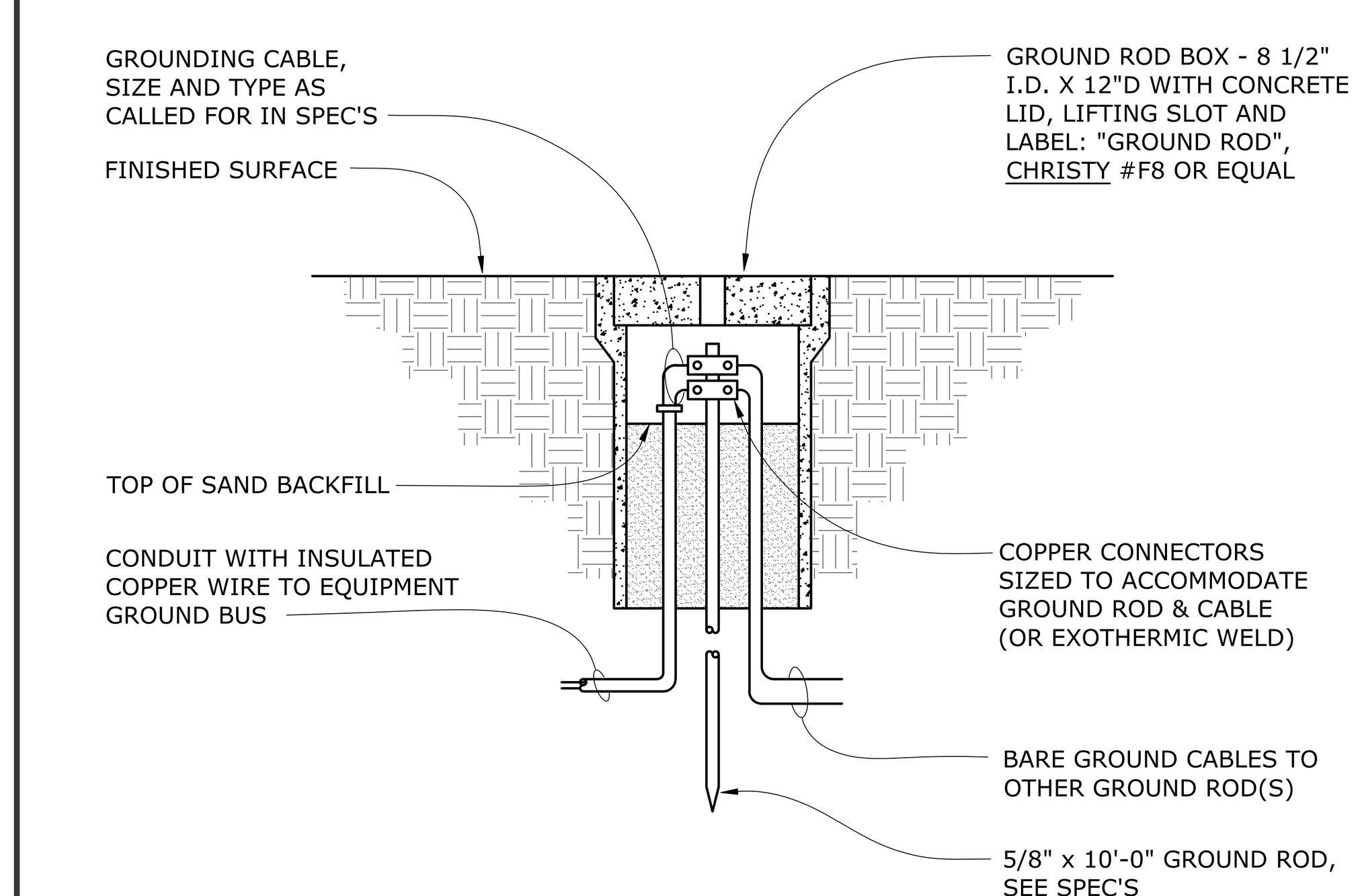
CONDUIT PENETRATION
SCALE: NONE
6 E-7.1



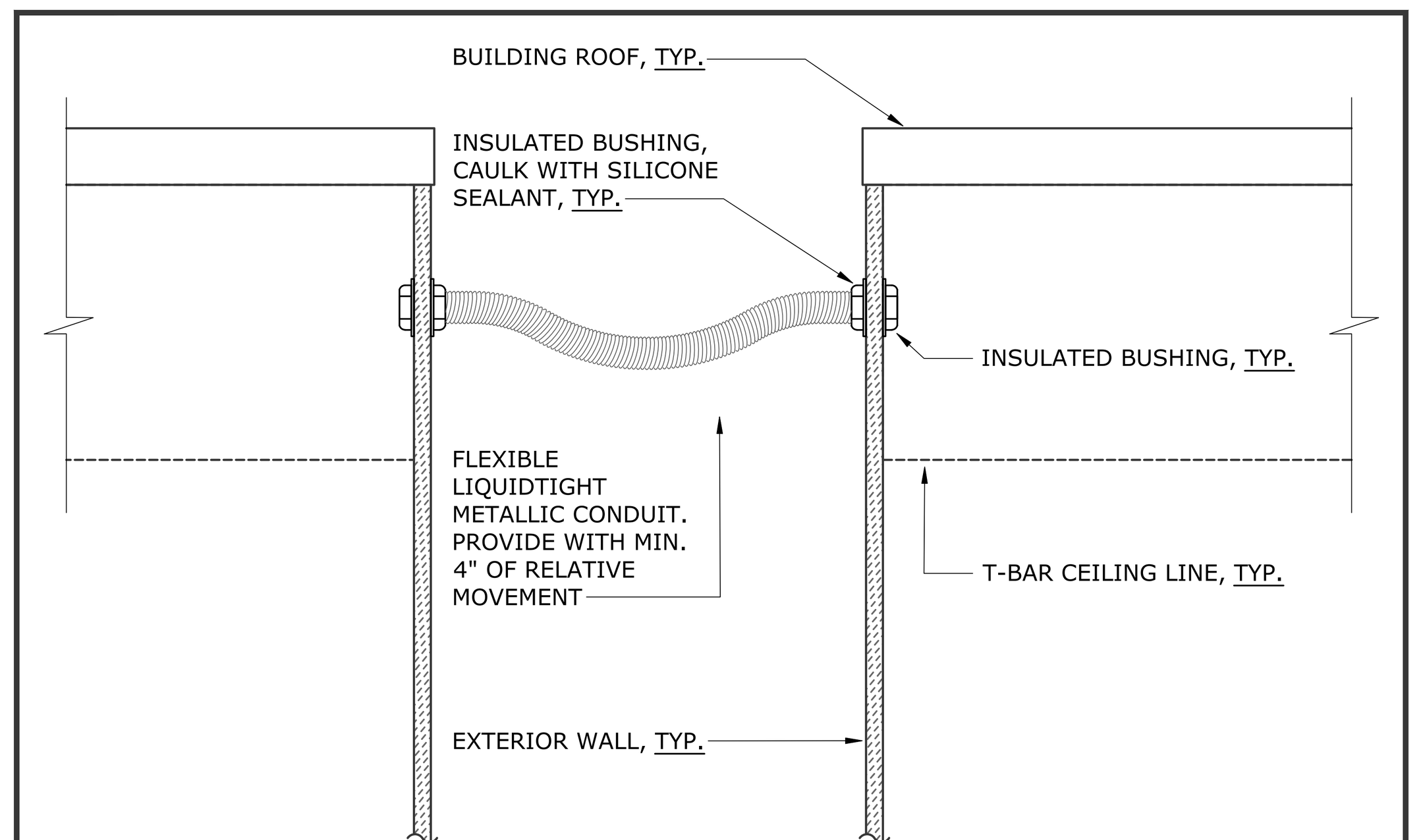
SURFACE PANELBOARD MOUNTING
SCALE: NONE
2 E-7.1



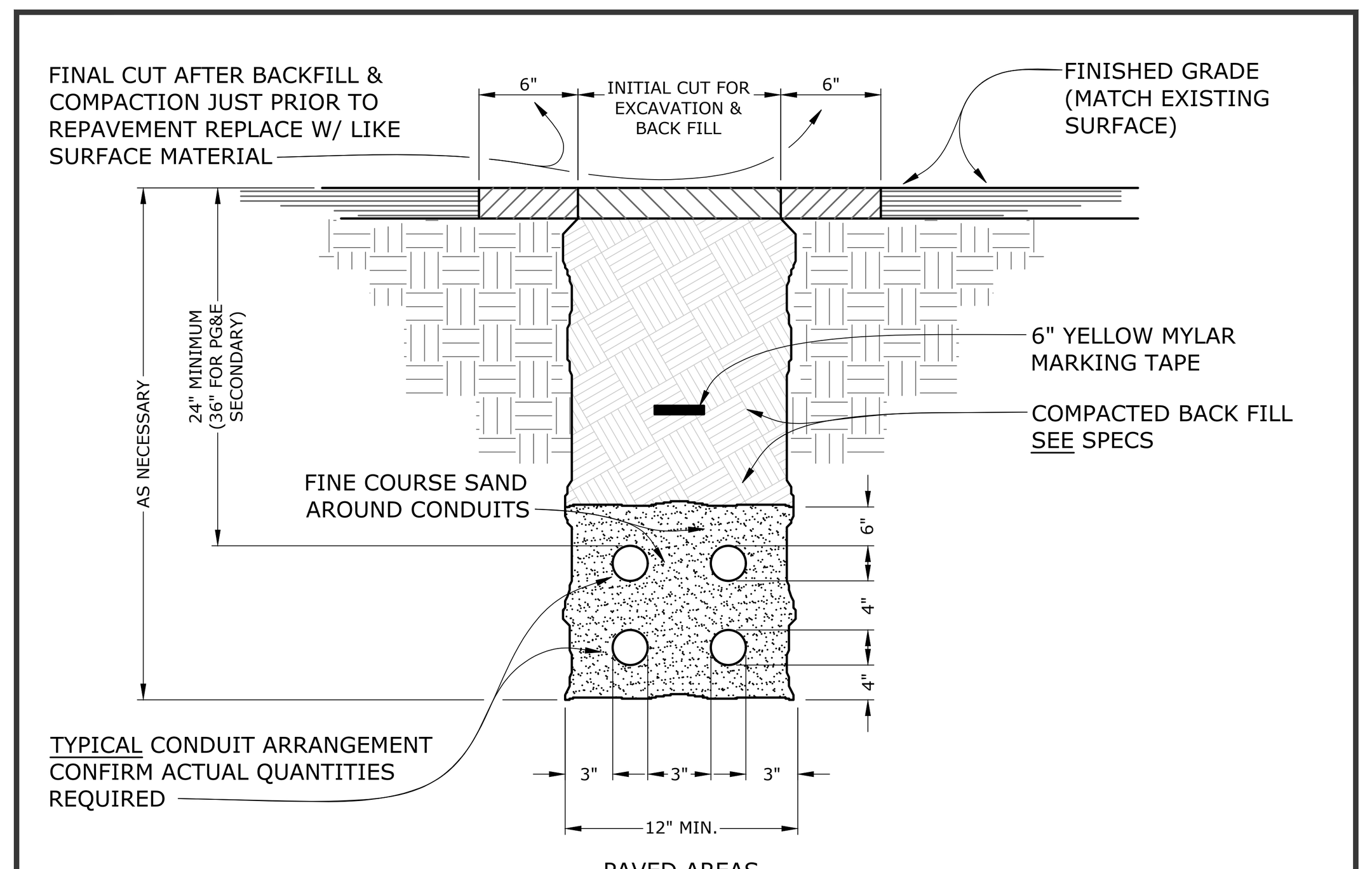
ROOF MOUNTED ELECTRICAL CONDUIT SUPPORTS
SCALE: NONE
7 E-7.1



GROUND ROD INSTALLATION
SCALE: NONE
3 E-7.1



TYPICAL FLEXIBLE CONDUIT CONNECTION IN-BETWEEN BUILDINGS DETAIL
SCALE: NONE
8 E-7.1



TYPICAL TRENCH SECTION
SCALE: NONE
4 E-7.1

QUATTROCCHI KWOK ARCHITECTS
Main Office:
636 Fifth Street, Santa Rosa, CA 95404
Pleasanton Office:
600 Main Street, Suite E,
Pleasanton, CA 94566
(707) 576-0829

O'MAHONY & MYER

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