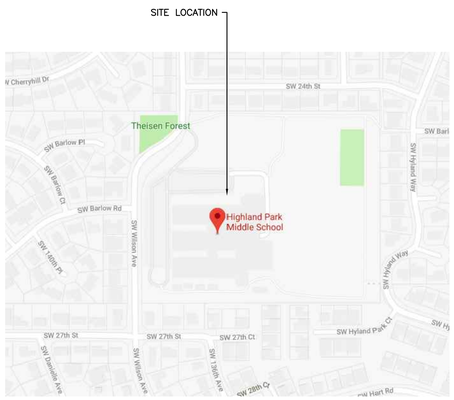
HIGHLAND PARK MIDDLE SCHOOL
7000 SW WILSON AVENUE
BEAVERTON, OREGON 97008



VICINITY MAP



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EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_A00

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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COVER SHEET

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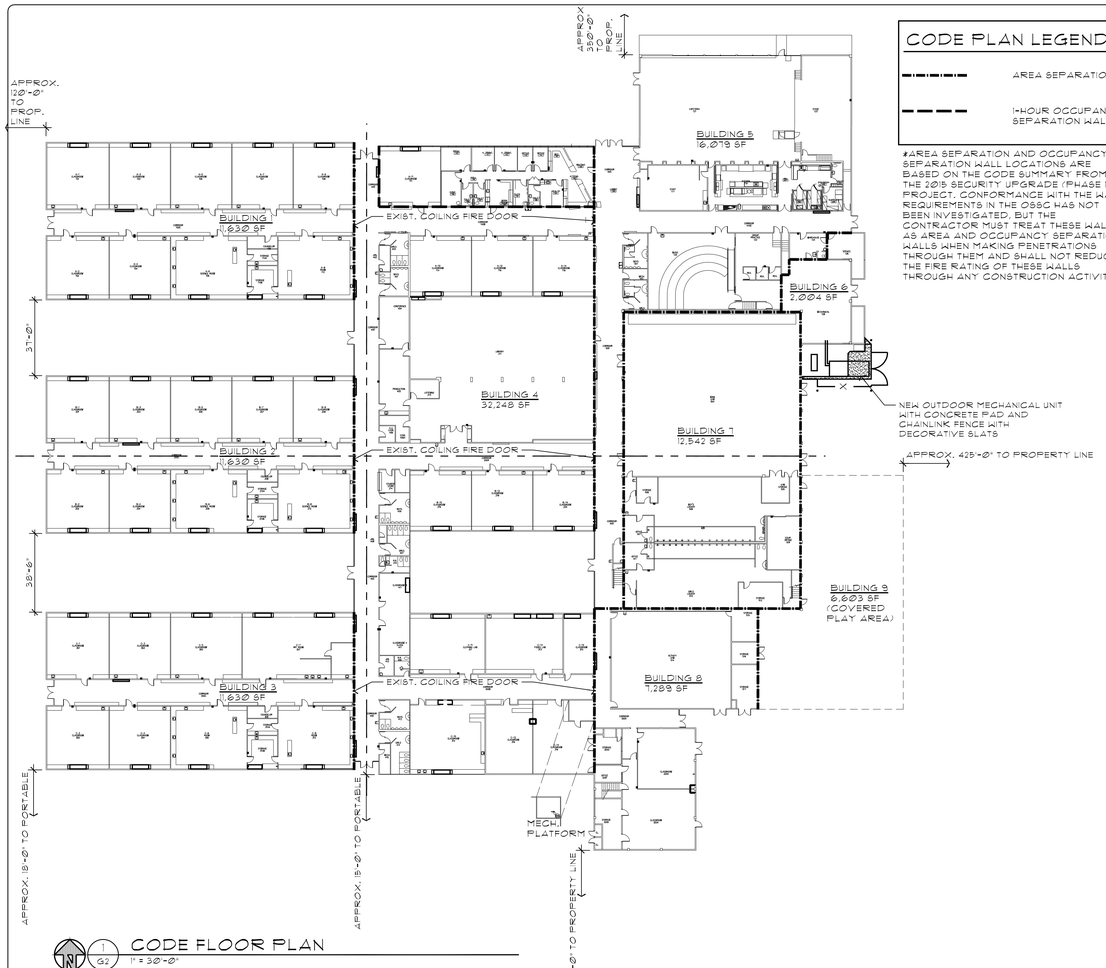
SHEET
A0.0
1

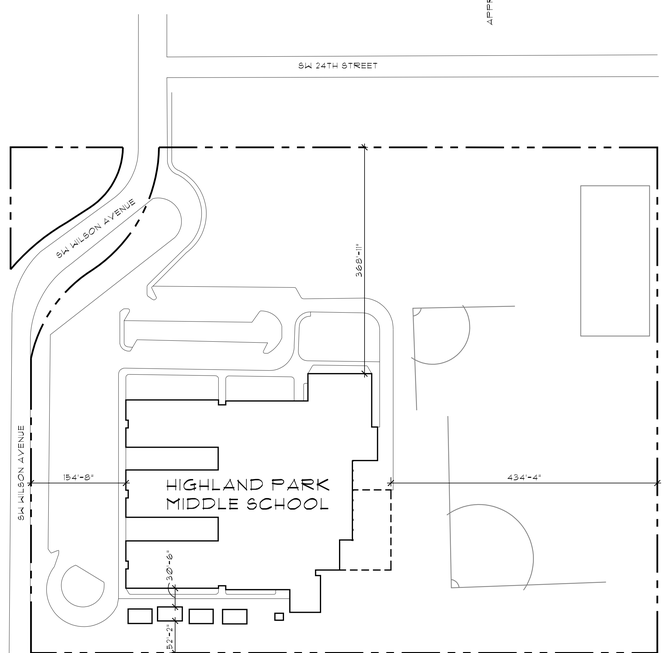


N 1 G2 CODE FLOOR PLAN
1" = 30'-0"

CODE PLAN LEGEND

- AREA SEPARATION WALL#
- 1-HOUR OCCUPANCY SEPARATION WALL#

#AREA SEPARATION AND OCCUPANCY SEPARATION WALL LOCATIONS ARE BASED ON THE CODE SUMMARY FROM THE 2015 SECURITY UPGRADE (PHASE 1) PROJECT. CONFORMANCE WITH THE WALL REQUIREMENTS IN THE OSSC HAS NOT BEEN INVESTIGATED, BUT THE CONTRACTOR MUST TREAT THESE WALLS AS AREA AND OCCUPANCY SEPARATION WALLS WHEN MAKING PENETRATIONS THROUGH THEM AND SHALL NOT REDUCE THE FIRE RATING OF THESE WALLS THROUGH ANY CONSTRUCTION ACTIVITY.



N 2 G2 CODE SITE PLAN
1" = 100'-0"

CODE SUMMARY

APPLICABLE CODE 2014 OSSC

BUILDING CONSTRUCTION DATA (BY BUILDING)

BUILDINGS 1, 2, AND 3

CONSTRUCTION TYPE	VB (UNCHANGED)	HAZARDOUS MATERIALS	NO
BUILDING HEIGHT	(EXISTING UNCHANGED)	SPECIAL INSPECTION	NO
MAXIMUM ALLOWABLE BUILDING HEIGHT	40'	FIRE ALARM	YES
		SPRINKLER	NO
NUMBER OF STORIES	1 (UNCHANGED)	STAND PIPE	NO
BASEMENT			
MAXIMUM ALLOWABLE NUMBER OF STORIES	1		
OCCUPANCY GROUP(S)	E (UNCHANGED)		

FLOOR AREA:

AREA MODIFICATION (SECTION 506.2)

$I_f = 100\left[\frac{F}{P} - 0.25\right]\frac{W}{30} = 100\left[\frac{227}{461} - 0.25\right]\frac{30}{30} = 24$

$A_a = A_t + \left[\frac{A_1}{100}\right] + \left[\frac{A_{1-S}}{100}\right] = 9{,}500 + \left[\frac{9{,}500 \times 24}{100}\right] + \left[\frac{9{,}500 \times 0}{100}\right] = 11{,}780$

TOTAL FLOOR AREA	11,630 SF
MAXIMUM ALLOWABLE FLOOR AREA	11,780 SF (OK)

BUILDING 4

CONSTRUCTION TYPE	VB (UNCHANGED)	HAZARDOUS MATERIALS	NO
BUILDING HEIGHT	(EXISTING UNCHANGED)	SPECIAL INSPECTION	NO
MAXIMUM ALLOWABLE BUILDING HEIGHT	60' (W/SPRINK. INCREASE)	FIRE ALARM	YES
		SPRINKLER	YES
NUMBER OF STORIES	1 (UNCHANGED)	STAND PIPE	NO
BASEMENT			
MAXIMUM ALLOWABLE NUMBER OF STORIES	2 (WITH FIRE SPRINKLER INCREASE)		
OCCUPANCY GROUP(S)	E (UNCHANGED)		

FLOOR AREA:

AREA MODIFICATION (SECTION 506.2)

$I_f = 100\left[\frac{F}{P} - 0.25\right]\frac{W}{30} = 100\left[\frac{234}{850} - 0.25\right]\frac{30}{30} = 3$

$A_a = A_t + \left[\frac{A_1}{100}\right] + \left[\frac{A_{1-S}}{100}\right] = 9{,}500 + \left[\frac{9{,}500 \times 3}{100}\right] + \left[\frac{9{,}500 \times 200}{100}\right] = 28{,}785$

TOTAL FLOOR AREA	32,248 SF
MAXIMUM ALLOWABLE FLOOR AREA	28,785 SF#

#ACTUAL FLOOR AREA EXCEEDS THE MAXIMUM ALLOWABLE FLOOR AREA. HOWEVER, THIS IS AN EXISTING CONDITION AND NO ADDITIONAL FLOOR AREA IS PROPOSED AS PART OF THIS PROJECT

BUILDING 5

CONSTRUCTION TYPE	VB (UNCHANGED)	HAZARDOUS MATERIALS	NO
BUILDING HEIGHT	(EXISTING UNCHANGED)	SPECIAL INSPECTION	NO
MAXIMUM ALLOWABLE BUILDING HEIGHT	40'	FIRE ALARM	YES
		SPRINKLER	NO
NUMBER OF STORIES	1 (UNCHANGED)	STAND PIPE	NO
BASEMENT			
MAXIMUM ALLOWABLE NUMBER OF STORIES	1		
OCCUPANCY GROUP(S)	E (UNCHANGED)		

FLOOR AREA:

AREA MODIFICATION (SECTION 506.2)

$I_f = 100\left[\frac{F}{P} - 0.25\right]\frac{W}{30} = 100\left[\frac{192}{793} - 0.25\right]\frac{30}{30} = 0$

$A_a = A_t + \left[\frac{A_1}{100}\right] + \left[\frac{A_{1-S}}{100}\right] = 9{,}500 + \left[\frac{9{,}500 \times 0}{100}\right] + \left[\frac{9{,}500 \times 0}{100}\right] = 9{,}500$

TOTAL FLOOR AREA	16,079 SF
MAXIMUM ALLOWABLE FLOOR AREA	9,500 SF#

#ACTUAL FLOOR AREA EXCEEDS THE MAXIMUM ALLOWABLE FLOOR AREA. HOWEVER, THIS IS AN EXISTING CONDITION AND NO ADDITIONAL FLOOR AREA IS PROPOSED AS PART OF THIS PROJECT

BUILDING 6

CONSTRUCTION TYPE	VB (UNCHANGED)	HAZARDOUS MATERIALS	NO
BUILDING HEIGHT	(EXISTING UNCHANGED)	SPECIAL INSPECTION	NO
MAXIMUM ALLOWABLE BUILDING HEIGHT	40'	FIRE ALARM	YES
		SPRINKLER	NO
NUMBER OF STORIES	1 (UNCHANGED)	STAND PIPE	NO
BASEMENT			
MAXIMUM ALLOWABLE NUMBER OF STORIES	1		
OCCUPANCY GROUP(S)	E (UNCHANGED)		

FLOOR AREA:

TOTAL FLOOR AREA	2,004 SF
MAXIMUM ALLOWABLE FLOOR AREA#	9,500 SF (OK)

#NO FRONTAGE OR FIRE SPRINKLER INCREASE

BUILDING 7

CONSTRUCTION TYPE	VB (UNCHANGED)		
BUILDING HEIGHT	(EXISTING UNCHANGED)		
MAXIMUM ALLOWABLE BUILDING HEIGHT	40'		
NUMBER OF STORIES	1 (UNCHANGED)	HAZARDOUS MATERIALS	NO
BASEMENT		SPECIAL INSPECTION	NO
MAXIMUM ALLOWABLE NUMBER OF STORIES	1	FIRE ALARM	YES
		SPRINKLER	NO
OCCUPANCY GROUP(S)	E (UNCHANGED)	STAND PIPE	NO

FLOOR AREA:

TOTAL FLOOR AREA	12,542 SF
MAXIMUM ALLOWABLE FLOOR AREA#	9,500 SF##

#NO FRONTAGE OR FIRE SPRINKLER INCREASE

##ACTUAL FLOOR AREA EXCEEDS THE MAXIMUM ALLOWABLE FLOOR AREA. HOWEVER, THIS IS AN EXISTING CONDITION AND NO ADDITIONAL FLOOR AREA IS PROPOSED AS PART OF THIS PROJECT

BUILDING 8

CONSTRUCTION TYPE	VB (UNCHANGED)	HAZARDOUS MATERIALS	NO
BUILDING HEIGHT	(EXISTING UNCHANGED)	SPECIAL INSPECTION	NO
MAXIMUM ALLOWABLE BUILDING HEIGHT	40'	FIRE ALARM	YES
		SPRINKLER	NO
NUMBER OF STORIES	1 (UNCHANGED)	STAND PIPE	NO
BASEMENT			
MAXIMUM ALLOWABLE NUMBER OF STORIES	1		
OCCUPANCY GROUP(S)	E (UNCHANGED)		

FLOOR AREA:

TOTAL FLOOR AREA	7,289 SF
MAXIMUM ALLOWABLE FLOOR AREA#	9,500 SF (OK)

#NO FRONTAGE OR FIRE SPRINKLER INCREASE

BUILDING 9

CONSTRUCTION TYPE	VB (UNCHANGED)	HAZARDOUS MATERIALS	NO
BUILDING HEIGHT	(EXISTING UNCHANGED)	SPECIAL INSPECTION	NO
MAXIMUM ALLOWABLE BUILDING HEIGHT	40'	FIRE ALARM	YES
		SPRINKLER	NO
NUMBER OF STORIES	2 (UNCHANGED)	STAND PIPE	NO
BASEMENT			
MAXIMUM ALLOWABLE NUMBER OF STORIES	1		
OCCUPANCY GROUP(S)	E (UNCHANGED)		

FLOOR AREA:

TOTAL FLOOR AREA	6,603 SF
MAXIMUM ALLOWABLE FLOOR AREA#	9,500 SF (OK)

#NO FRONTAGE OR FIRE SPRINKLER INCREASE

FIRE RESISTING BUILDING REQUIREMENTS IBC TABLE 601

BUILDING ELEMENT	CONST. TYPE VB
STRUCTURAL FRAME	0HR
EXTERIOR BEARING WALLS	0HR
INTERIOR BEARING WALLS	0HR
EXTERIOR NONBEARING WALLS AND PARTITIONS	PER TBL 602#
INTERIOR BEARING WALLS AND PARTITIONS	0HR
FLOOR	0HR
ROOF	0HR

#WHERE SEPARATION DISTANCE IS 0 FEET OR LESS, EXTERIOR NONBEARING WALLS AND PARTITIONS ARE REQUIRED TO BE 1-HOUR RATED. WHERE SEPARATION DISTANCE IS GREATER THAN 0 FEET, EXTERIOR NONBEARING WALLS AND PARTITIONS ARE NOT REQUIRED TO BE FIRE RATED

CONSTRUCTION DOCUMENTS

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REGISTERED ARCHITECT · DOUGLAS A. PRUITT · EXPIRES: DEC 31, 2020 · STATE OF OREGON

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
Chkd By: DAP
DSGN By: DAP
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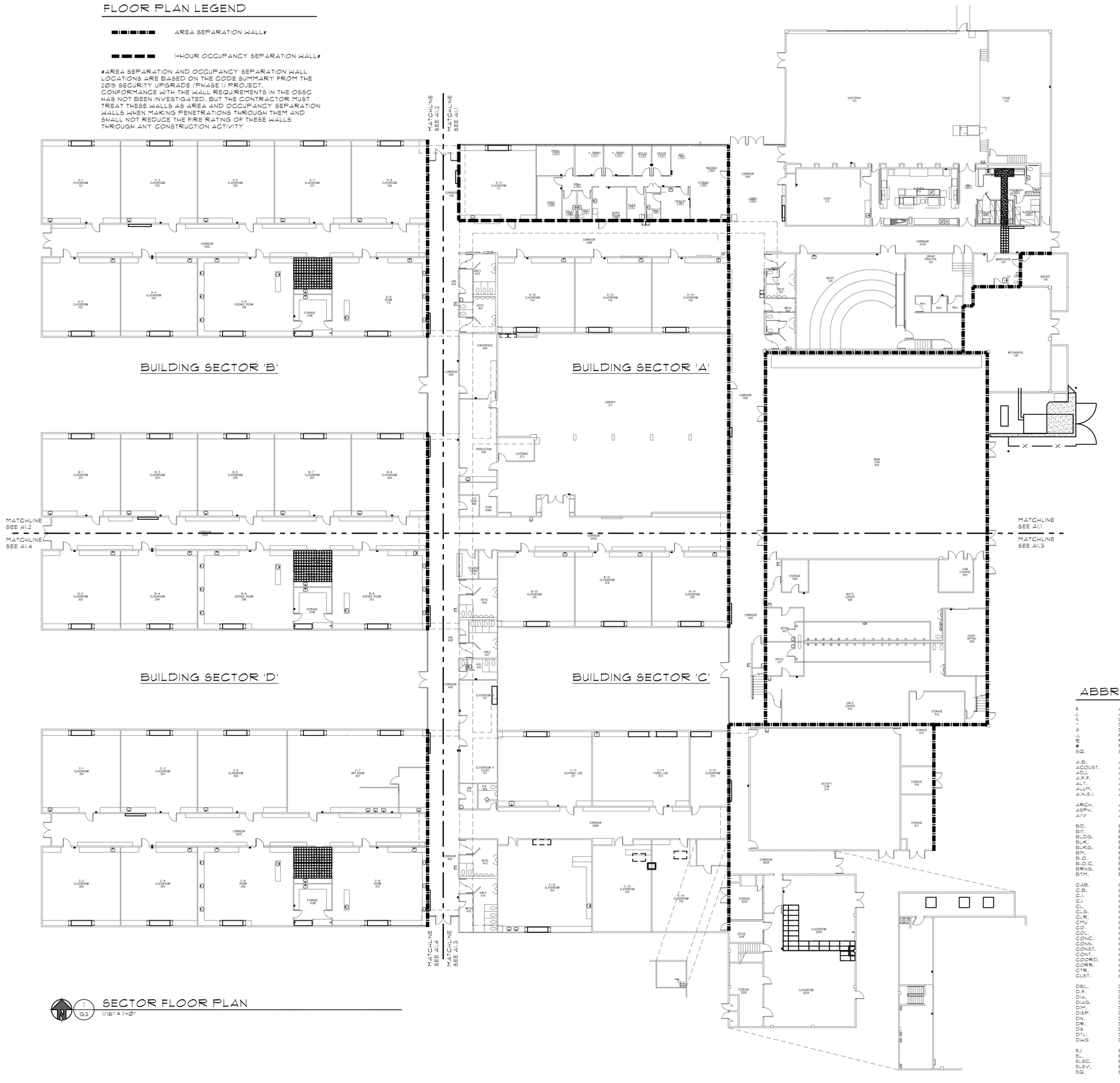
SHEET
G1

FLOOR PLAN LEGEND

AREA SEPARATION WALL*

1-HOUR OCCUPANCY SEPARATION WALL*

*AREA SEPARATION AND OCCUPANCY SEPARATION WALL LOCATIONS ARE BASED ON THE CODE SUMMARY FROM THE 2015 SECURITY UPGRADE (PHASE I) PROJECT. CONFORMANCE WITH THE WALL REQUIREMENTS IN THE OSSC HAS NOT BEEN INVESTIGATED, BUT THE CONTRACTOR MUST TREAT THESE WALLS AS AREA AND OCCUPANCY SEPARATION WALLS WHEN MAKING PENETRATIONS THROUGH THEM AND SHALL NOT REDUCE THE FIRE RATING OF THESE WALLS THROUGH ANY CONSTRUCTION ACTIVITY.



SECTOR FLOOR PLAN
1/16" = 1'-0"

GENERAL SHEET NOTES NOTES

1. SEE ENLARGED PLANS FOR DESCRIPTION OF WORK.
2. PATCH FINISHES AT NEW REFRIGERANT LINE PENETRATIONS.
3. PATCH FINISHES AT NEW DUCTWORK PENETRATIONS.
4. PATCH FINISHES AT NEW MECHANICAL UNITS.

STANDARD SYMBOLS

- EXTERIOR ELEVATION TAG
- BUILDING SECTION FLAG - DIRECTION FLAG OMITTED
- WALL SECTION FLAG - DIRECTION FLAG MAY BE OMITTED
- INTERIOR ELEVATION TAG
- DETAIL FLAG
- DETAIL CALLOUT
- NORTH ARROW
- GRID BUBBLE & GRID LINE
- DOOR TAG
- KEYNOTE TAG
- SHEET NOTE TAG
- DEMOLITION NOTE TAG
- REVISION TAG
- WINDOW TYPE TAG
- WALL TYPE TAG
- CEILING HEIGHT TAG
- FLOOR PLAN ROOM LABEL & NUMBER
- ELEVATION TAG

GENERAL NOTES

1. COORDINATE ALL WORK WITH THE DRAWINGS AND SPECIFICATIONS.
2. CONTRACTOR AND SUB-CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS, LOCATIONS, AND PROJECT REQUIREMENTS PRIOR TO SUBMITTING A BID.
3. CONTRACTOR AND SUB-CONTRACTORS SHALL FIELD VERIFY DIMENSIONS, AND FAMILIARIZE THEMSELVES WITH PROJECT REQUIREMENTS PRIOR TO COMMENCING WITH THE WORK. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO ARCHITECT.
4. WORK SHALL INCLUDE ALL REQUIRED PERMITS, LABOR, MATERIALS, AND EQUIPMENT TO COMPLETE ALL WORK INDICATED ON DRAWINGS AND SPECIFICATIONS.
5. PROVIDE TEMPORARY DUST-PROOF PARTITIONS AS REQUIRED TO PROTECT ALL EXISTING AREAS AND EQUIPMENT FROM DAMAGE DUE TO DEMOLITION OR NEW CONSTRUCTION ACTIVITIES. COORDINATE LOCATIONS AND REQUIREMENTS WITH OWNER.
6. GENERAL CONTRACTOR TO PATCH, REPAIR AND PAINT (REFINISH) SURFACES AND BUILDING ELEMENTS DAMAGED BY MECHANICAL, ELECTRICAL, AND PLUMBING WORK AND WHERE ITEMS ARE REMOVED, RELOCATED OR ADDED.
7. REPAIR FLOORS WHERE DAMAGED BY THE WORK OF THIS PROJECT.
8. PATCH AND REPAIR ALL SURFACES TO MATCH EXISTING WHERE ITEMS ARE REMOVED OR ALTERED - FIELD VERIFY EXTENT REQUIRED.
9. ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ADJACENT FINISHES AND CLEANUP.
10. CONTRACTOR IS RESPONSIBLE FOR FINAL CLEAN-UP OF WORK AREAS AND ALL EXPOSED BUILDING SURFACES AT SUBSTANTIAL COMPLETION.
11. ALL TRASH AND TOOLS SHALL BE REMOVED FROM PREMISES EACH DAY AND THE AREA LEFT CLEAN WHENEVER UNATTENDED. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP. COORDINATE WITH OWNER IF SECURE STORAGE IS NEEDED ONSITE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO FINISHED SURFACES, EQUIPMENT, FURNITURE, EXISTING MATERIALS OR FINISHES, CAUSED AS A RESULT OF HIS WORK. REPAIR OR REPLACE DAMAGED ITEMS AS DIRECTED BY ARCHITECT.
13. ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
14. WORK SHALL BE DONE BY THOSE SKILLED AND EXPERIENCED IN THEIR RESPECTIVE TRADES. WORK SHALL BE OF THE HIGHEST QUALITY WORKMANSHIP.

ABBREVIATIONS (NOT ALL ABBREVIATIONS ARE USED)

&	AND	EXP.	EXPANSION	PL.	PLATE
∠	ANGLE	EXT.	EXTERIOR	PLAM	PLASTIC LAMINATE
℄	CENTERLINE	EXIST. OR (E)	EXISTING	PLYWD.	PLYWOOD
°	DEGREES			PR.	PAIR
ø	DIAMETER OR ROUND	F.D.	FLOOR DRAIN	P.T.	PRESSURE TREATED
⊥	PERPENDICULAR	FDN.	FOUNDATION	PTD	PAPER TOWEL DISPENSER
℄	PLATE	F.E.	FIRE EXTINGUISHER	PTD/R	COMBINATION PAPER TOWEL DISPENSER / RECEPTACLE
#	FOUND OR NUMBER	F.E.C.	FIRE EXTINGUISHER CAB.		
SQ.	SQUARE	F.H.C.	FIRE HOSE CABINET	PTN.	PARTITION
		FIN.	FINISH		
A.B.	ANCHOR BOLT	FLR.	FLOOR	R.	RISER
ACOUST.	ACOUSTICAL	FLUOR.	FLUORESCENT	RAD.	RADIUS
ADJ.	ADJUSTABLE	F.O.C.	FACE OF CONCRETE	R.D.	ROOF DRAIN
A.F.F.	ABOVE FINISH FLOOR	F.O.F.	FACE OF FINISH	REF.	REFRIGERATOR OR REFERENCE
ALT.	ALTERNATE	F.O.S.	FACE OF STUD	REINF.	REINFORCED
ALUM.	ALUMINUM	F.R.T.	FIRE RETARDANT TREATED	REQ'D.	REQUIRED
A.N.S.I.	AMERICAN NATIONAL STANDARDS INSTITUTE A117.1-1980	FT.	FOOT OR FEET	REQ'MTS.	REQUIREMENTS
		FTG.	FOOTING	RESIL.	RESILIENT
ARCH.	ARCHITECTURAL			REV.	REVERSE
ASPH.	ASPHALT	GA.	GAUGE	RM.	ROOM
A/V	AUDIO/VIDEO	GALV.	GALVANIZED	R.O.	ROUGH OPENING
		GC	GENERAL CONTRACTOR		
BD.	BOARD	GFCI	GROUND-FAULT CIRCUIT INTERRUPTER	S.C.	SOLID CORE
BIT.	BITUMINOUS OR BITUMEN	G.L.B.	GLUE LAMINATED BEAM	SCD	SEAT COVER DISPENSER
BLDG.	BUILDING	G.M.U.	GLASS MASONRY UNIT	SCHED.	SCHEDULE
BLK.	BLOCK	GYP.	GYPSUM	SD	SOAP DISPENSER
BLKG.	BLOCKING			SECT.	SECTION
BM.	BEAM	H.B.	HOSE BIB	S.F. OR SQ. FT.	SQUARE FEET
B.O.	BOTTOM OF	H.C.	HOLLOW CORE	SHT'G.	SHEATHING
B.O.C.	BOTTOM OF CURB	HDR.	HEADER	SIM.	SIMILAR
BRNG.	BEARING	H.M.	HOLLOW METAL	SM	SHEET METAL
BTM.	BOTTOM	HORIZ.	HORIZONTAL	SND	SANITARY NAPKIN DISPENSER
		HR.	HOUR	SNR	SANITARY NAPKIN RECEPTACLE
CAB.	CABINET	HT.	HEIGHT	SPEC.	SPECIFICATION
C.B.	CATCH BASIN			SS	STAINLESS STEEL
C.I.	CAST IRON	I.D.	INSIDE DIAMETER OR INSIDE DIMENSION	STL.	STEEL
CJ	CONTROL JOINT	INSUL.	INSULATION	STOR.	STORAGE
CL	CLOSET	INT.	INTERIOR	STRUCT.	STRUCTURAL
CLG.	CEILING			SUSP.	SUSPENDED
CLR.	CLEAR	JT.	JOINT		
CMU	CONCRETE MASONRY UNIT			T.	TREAD
CO	CLEANOUT	LAM.	LAMINATE	T&G	TONGUE AND GROOVE
COL.	COLUMN	LAV.	LAVATORY	TEL.	TELEPHONE
CONC.	CONCRETE	LT.	LIGHT	TEMP.	TEMPERED
CONN.	CONNECT OR CONNECTION			T.O.	TOP OF
CONST.	CONSTRUCTION	MAX.	MAXIMUM	T.O.C.	TOP OF CURB
CONT.	CONTINUOUS	M.B.	MACHINE BOLT	T.O.P.	TOP OF PLYWOOD
COORD.	COORDINATE	M.D.O.	MEDIUM DENSITY OVERLAY	T.O.W.	TOP OF WALL
CORR.	CORRIDOR	MECH.	MECHANICAL	TPD	TOILET PAPER DISPENSER
CTR.	CENTER	MEMB.	MEMBRANE	T.S.	TUBE STEEL
CUST.	CUSTODIAL	MFR. OR MANUF.	MANUFACTURER	TYP.	TYPICAL
		M.H.	MAN HOLE		
DBL.	DOUBLE	MIN.	MINIMUM	U.B.C.	UNIFORM BUILDING CODE
D.F.	DRINKING FOUNTAIN	MISC.	MISCELLANEOUS	U.O.N.	UNLESS OTHERWISE NOTED
DIA.	DIAMETER	M.O.	MASONRY OPENING		
DIAG.	DIAGONAL	MOD. BIT.	MODIFIED BITUMEN	VERT.	VERTICAL
DIM.	DIMENSION	MTL.	METAL	VEST.	VESTIBULE
DISP.	DISPENSER			V.P.	VENEER PLASTER
DN.	DOWN	(N)	NEW		
DR.	DOOR	N.I.C.	NOT IN CONTRACT	W/	WITH
DS	DOWNSPOUT	NO. OR #	NUMBER	W.C.	WATER CLOSET
DTL.	DETAIL	NOM.	NOMINAL	WD.	WOOD
DWG	DRAWING	N.T.S.	NOT TO SCALE	W.H.	WATER HEATER
				W/O	WITHOUT
EJ	EXPANSION JOINT	O.C.	ON CENTER	WP.	WATERPROOF
EL.	ELEVATION	O.D.	OUTSIDE DIAMETER	WT.	WEIGHT
ELEC.	ELECTRICAL	O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED		
ELEV.	ELEVATOR	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED		
EQ.	EQUAL	OPNG.	OPENING		
		OPP.	OPPOSITE		
		O.S.S.C.	OREGON STRUCTURAL SPECIALTY CODE		

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
EXPIRES: 12/31/19
STATE OF OREGON

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
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ARCHITECTURE ■ PLANNING ■ INTERIOR DESIGN
200 North State Street
Lake Oswego, Oregon 97034

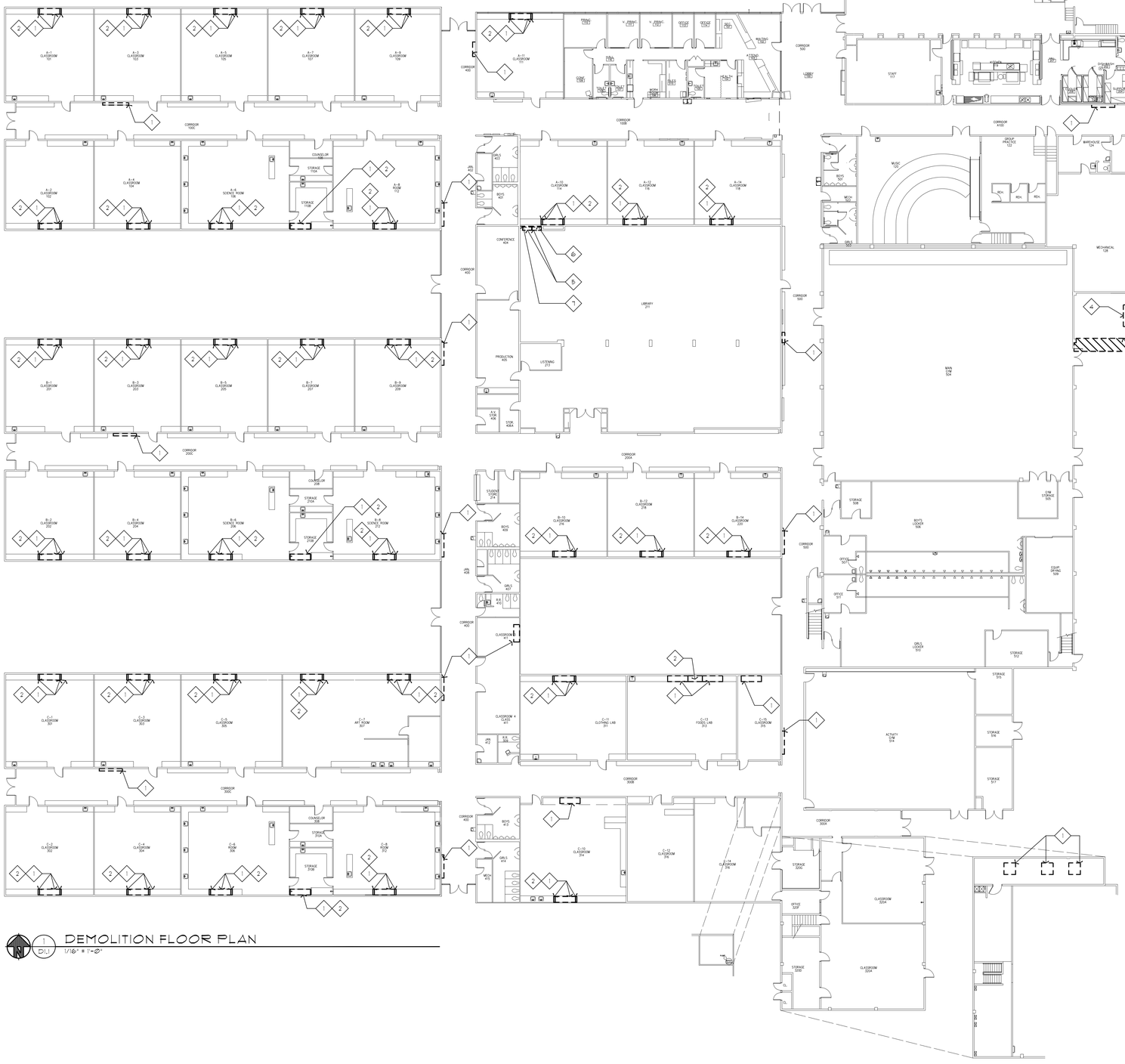
SHEET
G2

GENERAL DEMOLITION NOTES

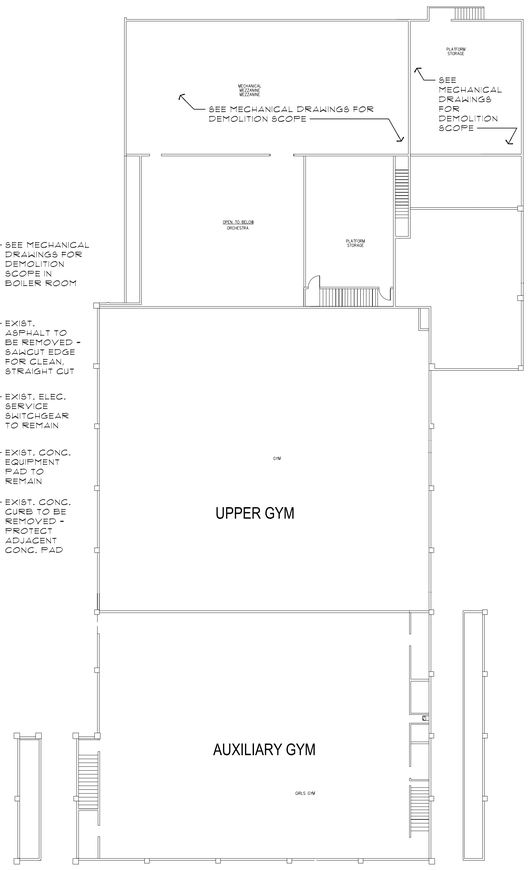
1. PROVIDE TEMPORARY DUSTPROOF PARTITIONS AS REQUIRED TO PROTECT ALL EXISTING AREAS FROM DAMAGE OR DISTURBANCE TO OCCUPIED SPACES DUE TO DEMOLITION OR NEW CONSTRUCTION. COORDINATE LOCATIONS AND REQUIREMENTS WITH OWNER.
2. CONTRACTOR TO PATCH, REPAIR AND PAINT (REFINISH) SURFACES AND BUILDING ELEMENTS DAMAGED BY ADDITION OR REMOVAL OF MECHANICAL AND ELECTRICAL ITEMS.
3. PATCH AND REPAIR ALL SURFACES TO MATCH EXISTING SURFACES WHERE ITEMS ARE REMOVED OR ALTERED. FIELD VERIFY EXTENT OF REQUIRED REPAIRS.
4. PROVIDE TEMPORARY BRACING AND SHORING OF EXISTING STRUCTURAL ELEMENTS AS REQUIRED FOR DEMOLITION OR NEW CONSTRUCTION UNTIL STRUCTURAL SYSTEMS AND MODIFICATIONS ARE SECURE AND IN PLACE.
5. COORDINATE ITEMS TO BE SALVAGED TO OWNER WITH THE SPECIFICATIONS AND OWNER'S REPRESENTATIVE.
6. PROTECT ALL ITEMS NOT NOTED TO BE REMOVED (FIELD VERIFY ALL CONDITIONS) AND COORDINATE ALL WORK WITH OWNER TO MINIMIZE DISRUPTION TO EXISTING FACILITIES OPERATIONS.
7. CONTRACTOR TO VERIFY LOCATION OF EXIST. UTILITIES PRIOR TO START OF DEMOLITION. PROTECT UTILITIES TO REMAIN IN SERVICE.

DEMOLITION NOTES

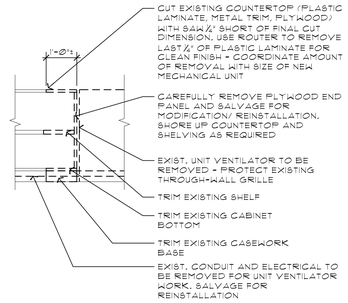
1. EXISTING MECHANICAL UNIT TO BE REMOVED - SEE MECHANICAL DRAWINGS.
2. MODIFY PORTION OF EXISTING CASEWORK AND COUNTERTOP TO ACCOMMODATE NEW MECHANICAL UNIT, SEE 3/D1.1.
3. EXISTING BASE CABINET TO BE REMOVED.
4. EXIST. ELECTRICAL GENERATOR TO BE RELOCATED. SEE SHEET A1.1 AND ELECTRICAL DRAWINGS.
5. REMOVE EXIST. BOOKCASES. SALVAGE FOR REINSTALLATION.
6. REMOVE EXIST. GYPSUM WALL FINISH. REMOVE EXIST. TACKBOARD.
7. REMOVE EXIST. ACCESS PANEL. SALVAGE FOR REINSTALLATION.



1 DEMOLITION FLOOR PLAN
D1.1 1/16" = 1'-0"



2 DEMOLITION FLOOR PLAN - MEZZANINE
D1.1 1/16" = 1'-0"



3 CABINET DEMOLITION DETAIL (ELEVATION)
D1.1 1/2" = 1'-0"

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CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
Chkd By: DAP
DSGN By: DAP
Acad File:

REGISTERED ARCHITECT DOUGLAS A. PRUITT OREGON

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Consulting Engineers
2007 S.E. 4th St.
Portland, OR 97214
PHN: (503) 234-0648
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SHEET
D1.1



GENERAL DEMOLITION NOTES

1. PROVIDE TEMPORARY DUSTPROOF PARTITIONS AS REQUIRED TO PROTECT ALL EXISTING AREAS FROM DAMAGE OR DISTURBANCE TO OCCUPIED SPACES DUE TO DEMOLITION OR NEW CONSTRUCTION. COORDINATE LOCATIONS AND REQUIREMENTS WITH OWNER.
2. CONTRACTOR TO PATCH, REPAIR AND PAINT (REFINISH) SURFACES AND BUILDING ELEMENTS DAMAGED BY ADDITION OR REMOVAL OF MECHANICAL AND ELECTRICAL ITEMS.
3. PATCH AND REPAIR ALL SURFACES TO MATCH EXISTING SURFACES WHERE ITEMS ARE REMOVED OR ALTERED. FIELD VERIFY EXTENT OF REQUIRED REPAIRS.
4. PROVIDE TEMPORARY BRACING AND SHORING OF EXISTING STRUCTURAL ELEMENTS AS REQUIRED FOR DEMOLITION OR NEW CONSTRUCTION UNTIL STRUCTURAL SYSTEMS AND MODIFICATIONS ARE SECURE AND IN PLACE.
5. COORDINATE ITEMS TO BE SALVAGED TO OWNER WITH THE SPECIFICATIONS AND OWNER'S REPRESENTATIVE.
6. PROTECT ALL ITEMS NOT NOTED TO BE REMOVED (FIELD VERIFY ALL CONDITIONS) AND COORDINATE ALL WORK WITH OWNER TO MINIMIZE DISRUPTION TO EXISTING FACILITIES OPERATIONS.
7. CONTRACTOR TO VERIFY LOCATION OF EXIST. UTILITIES PRIOR TO START OF DEMOLITION. PROTECT UTILITIES TO REMAIN IN SERVICE.
8. ENTIRE CEILING IS NOT SHOWN. CEILING HAVE ONLY BEEN SHOWN WHERE ADJACENT TO WORK.

DEMOLITION NOTES

1. REMOVE EXISTING 12x12 GLUE-UP ACOUSTIC CEILING TILES, GYPSUM BOARD, AND FURRING STRIPS AS REQUIRED FOR NEW MECHANICAL WORK. SEE MECHANICAL DRAWINGS.
2. NOT USED.
3. EXISTING GYPSUM BOARD CEILING TO BE REMOVED FOR MECHANICAL WORK. SEE MECHANICAL DRAWINGS.
4. REMOVE EXISTING 2x4 CEILING TILES FOR MECHANICAL WORK. SALVAGE FOR REINSTALLATION.
5. EXISTING MECHANICAL EQUIPMENT TO BE REMOVED. SEE MECHANICAL DRAWINGS.

1 D1.2 DEMOLITION REFLECTED CEILING PLAN
1/16" = 1'-0"

REGISTERED ARCHITECT · DOUGLAS A. PRUITT · EXPIRES: DEC. 31, 2020 · STATE OF OREGON

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
Chkd By: DAP
DSGN By: DAP
Acad File:

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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BEAVERTON OREGON

CONSTRUCTION DOCUMENTS

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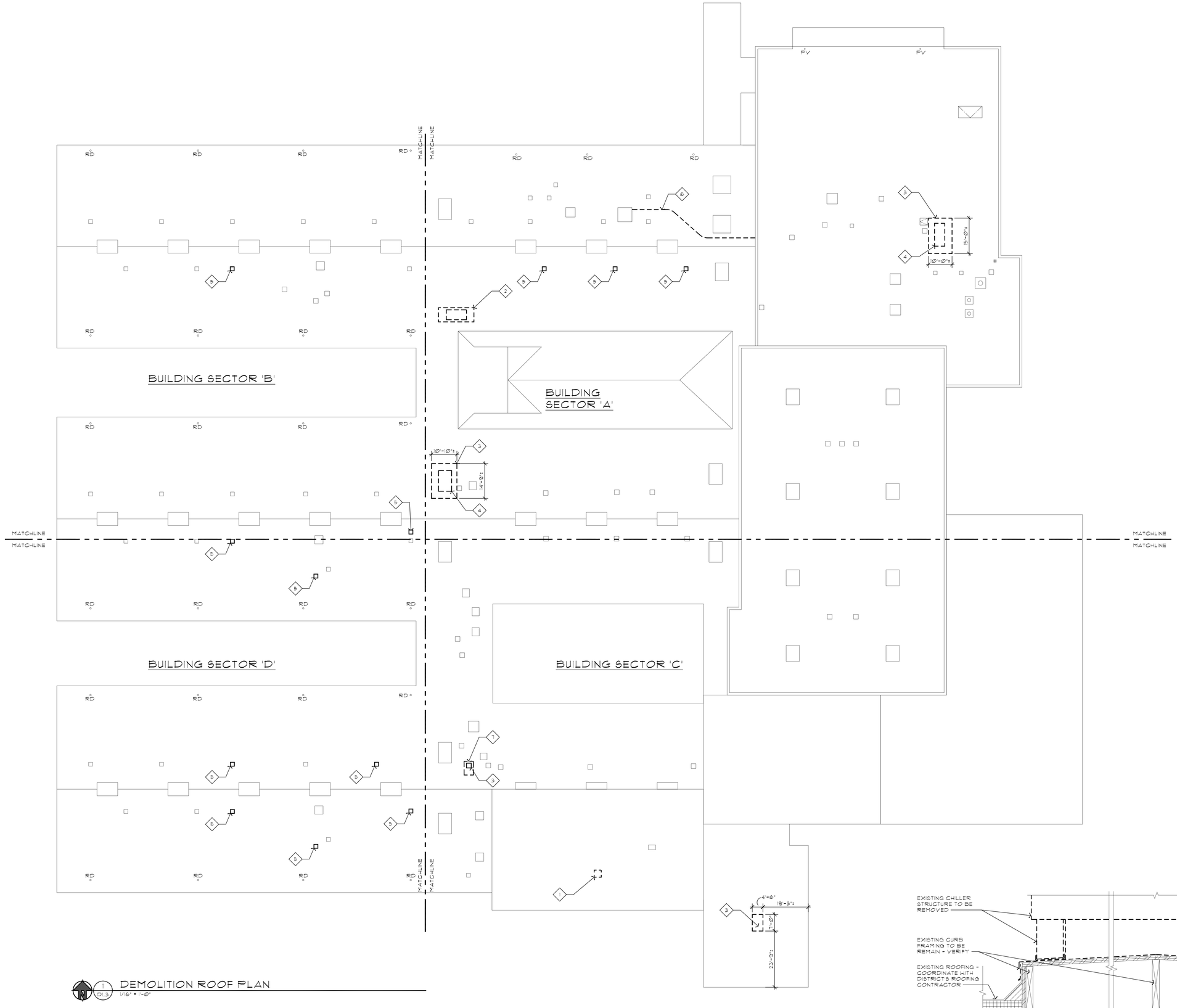
200 North State Street
Lake Oswego, Oregon 97034

SHEET
D1.2



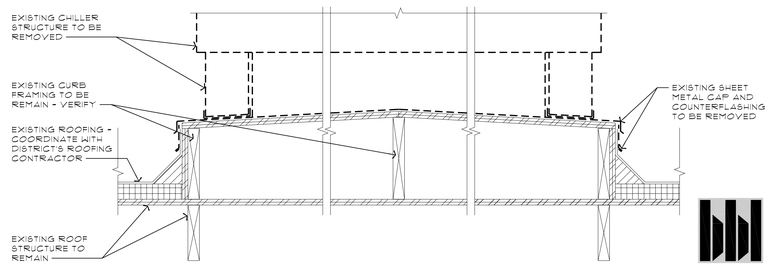
1 D1.3 DEMOLITION ROOF PLAN
1/16" = 1'-0"

DEMOLITION NOTES

1. REMOVE EXISTING EXHAUST FAN AND CURB - SEE MECHANICAL DRAWINGS - COORDINATE ROOFING REMOVAL WITH DISTRICT ROOFING CONTRACTOR.
2. REMOVE EXISTING CHILLER AND ASSOCIATED PIPING AND ELECTRICAL. REMOVE EXISTING SHEET METAL CAP, VERIFY THAT THERE IS EXISTING FRAMING AND PLYWOOD DECK UNDERNEATH SHEET METAL CAP. SEE MECHANICAL DRAWINGS. SEE DETAIL 2/D1.3 - COORDINATE ROOFING REMOVAL WITH DISTRICT ROOFING CONTRACTOR.
3. REMOVE PORTION OF EXISTING BUILT-UP ROOFING AND INSULATION TO THE ROOF DECK FOR NEW MECHANICAL UNIT CURB.
4. REMOVE EXISTING CONDENSING UNITS, SHEET METAL CAP, AND CURB. SALVAGE CONDENSING UNITS FOR REINSTALLATION.
5. REMOVE EXISTING EXHAUST FAN AND SALVAGE FOR REINSTALLATION.
6. REMOVE EXIST. GAS PIPING AND SALVAGE FOR REINSTALLATION.
7. REMOVE EXISTING OUTSIDE AIR UNIT AND CURB - SEE MECHANICAL DRAWINGS - COORDINATE ROOFING REMOVAL WITH DISTRICT ROOFING CONTRACTOR. SALVAGE OUTSIDE AIR UNIT FOR REINSTALLATION.

GENERAL NOTES

1. THE ROOF IS BEING REPLACED BY A SEPARATE CONTRACTOR. ROOF DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER'S ROOFING CONTRACTOR.



2 D1.3 CHILLER DEMOLITION
1 1/2" = 1'-0"

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CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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Date:	03/08/19
Proj No:	9652
Drawn By:	SLK
Chkd By:	DAP
DSGN By:	DAP
Acad File:	

REGISTERED ARCHITECT · DOUGLAS A. PRUITT · LAKE OSWEGO · STATE OF OREGON

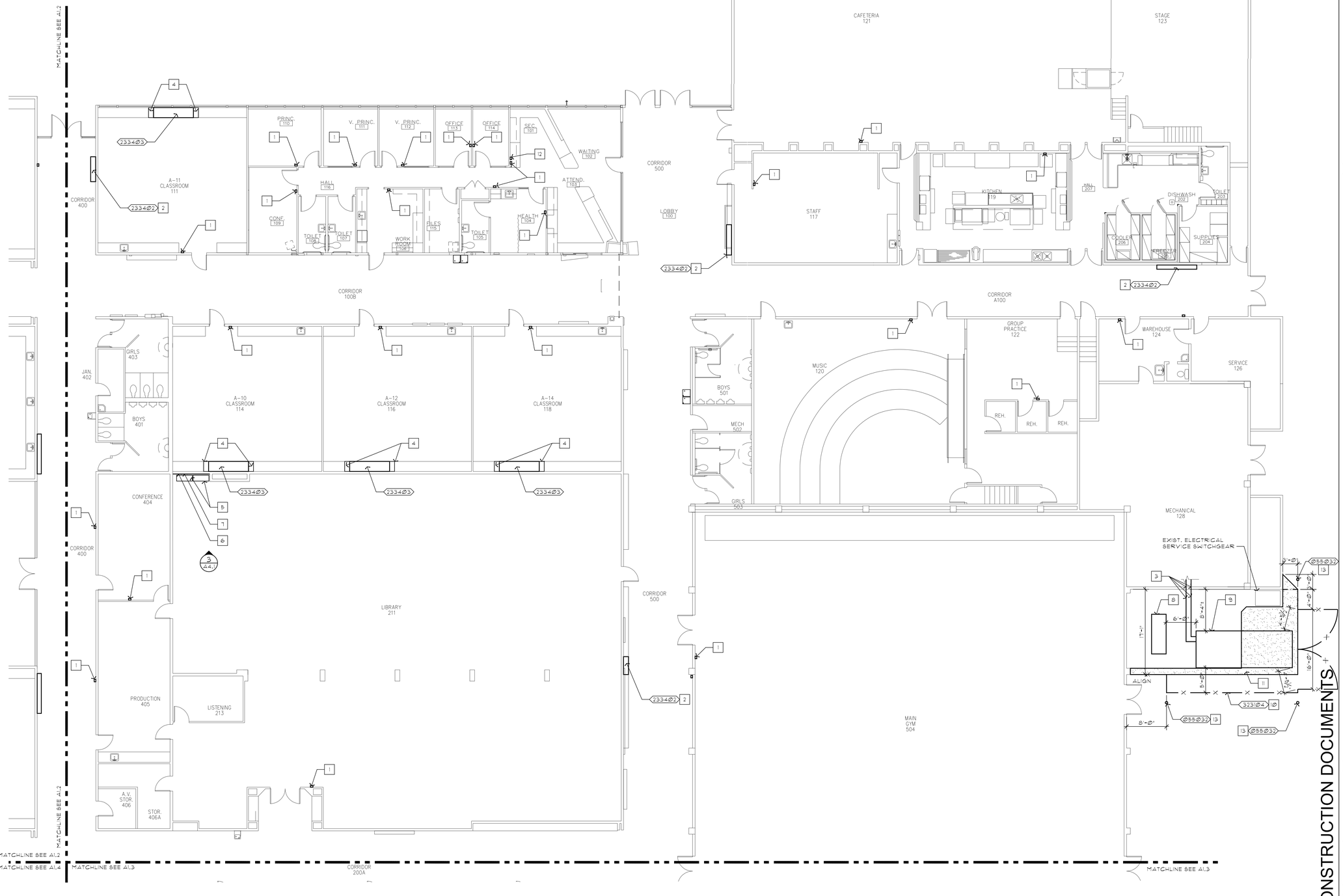
SHEET
D1.3

KEYNOTES

Ø55Ø32 GALV. STEEL BOLLARD - FILL W/ CONC. AND CROWN TOP
233402 CONVECTOR RADIATOR
233403 UNIT VENTILATOR
323Ø4 CHAIN LINK FENCE W/ DECORATIVE SLATTING

SHEET NOTES (THIS SHEET)

1. NEW THERMOSTAT. PROVIDE NEW SURFACE-MOUNTED CONDUIT OVERHEAD FOR CONTROL WIRE(S) TO NEW MECHANICAL UNIT. PAINT NEW CONDUIT TO MATCH ADJACENT FINISHES.
2. NEW MECHANICAL UNIT. PATCH SURROUNDING FINISHES AS REQUIRED.
3. NEW MECHANICAL PIPING. CORE DRILL EXISTING CONCRETE WALL FOR NEW MECHANICAL PIPING PENETRATIONS. COORDINATE CORE DRILLING WITH STRUCTURAL DRAWINGS TO AVOID WALL REINFORCING AND WITH MECHANICAL DRAWINGS FOR REQUIRED LOCATION AND SIZE. SEAL NEW PENETRATIONS WEATHER-TIGHT AND PAINT ENTIRE WALL TO MATCH EXISTING.
4. MODIFY EXISTING BASE CABINET TO ACCOMMODATE NEW LARGER MECHANICAL UNIT. SEE 2/A4.1.
5. REINSTALL SALVAGED BOOKCASES.
6. REINSTALL SALVAGED ACCESS PANEL.
7. NEW GYPSUM BOARD WALL FINISH. PAINT TO MATCH EXISTING ADJACENT FINISHES.
8. RELOCATE EXIST. ELECTRICAL GENERATOR. SEE ELECTRICAL DRAWINGS.
9. NEW CHILLER UNIT. SEE MECHANICAL DRAWINGS.
10. NEW 6'-Ø" TALL CHAIN-LINK FENCE WITH 16'-Ø" PAIR OF SWINGING MAN-GATES WITH LATCH. PROVIDE PRIVACY SLATS AT FENCING AND GATE.
11. NEW 6" THICK CONCRETE SLAB AND REINFORCING. REINFORCING SHALL BE #4 BARS AT 16" O.C. EACH WAY WITH MIN. 1-1/2" CONCRETE COVER AT THE FINISH SIDE OF THE CONCRETE. PROVIDE NEW CURB TO MATCH EXIST.
12. NEW EMERGENCY HVAC SHUT-OFF SWITCH. PATCH FINISHES AROUND NEW DEVICE. SEE MECHANICAL DRAWINGS. COORDINATE FINAL LOCATION WITH OTHER CONTROL BUTTONS.
13. NEW PAINTED STEEL PIPE BOLLARD. SEE 5/A5.1.



ENLARGED FLOOR PLAN - SECTOR 'A'
1/8" = 1'-Ø"

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
EXPIRES: DEC. 31, 2019
STATE OF OREGON

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
Chkd By: DAP
DSGN By: DAP
Acad File:

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
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ARCHITECTURE ■ PLANNING ■ INTERIOR DESIGN
200 North State Street
Lake Oswego, Oregon 97034

SHEET
A1.1

SHEET NOTES (THIS SHEET)

1. NEW THERMOSTAT. PROVIDE NEW SURFACE-MOUNTED CONDUIT OVERHEAD FOR CONTROL WIRE(S) TO NEW MECHANICAL UNIT. PAINT NEW CONDUIT TO MATCH ADJACENT FINISHES
2. NEW MECHANICAL UNIT. SEE MECHANICAL DRAWINGS. PATCH SURROUNDING FINISHES AS REQUIRED.
3. NOT USED.
4. MODIFY EXISTING BASE CABINET TO ACCOMMODATE NEW LARGER MECHANICAL UNIT. SEE 2/A4.1.

KEYNOTES

233402 CONVECTOR RADIATOR
233403 UNIT VENTILATOR
237402 MECHANICAL UNIT



1 A1.2 ENLARGED FLOOR PLAN - SECTOR 'B'
1/8" = 1'-0"

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CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

REGISTERED ARCHITECT · STATE OF OREGON · DOUGLAS A. PRUITT · LAKE OSWEGO

Date:	03/08/19
Proj No:	9652
Drawn By:	SLK
Chkd By:	DAP
DSGN By:	DAP
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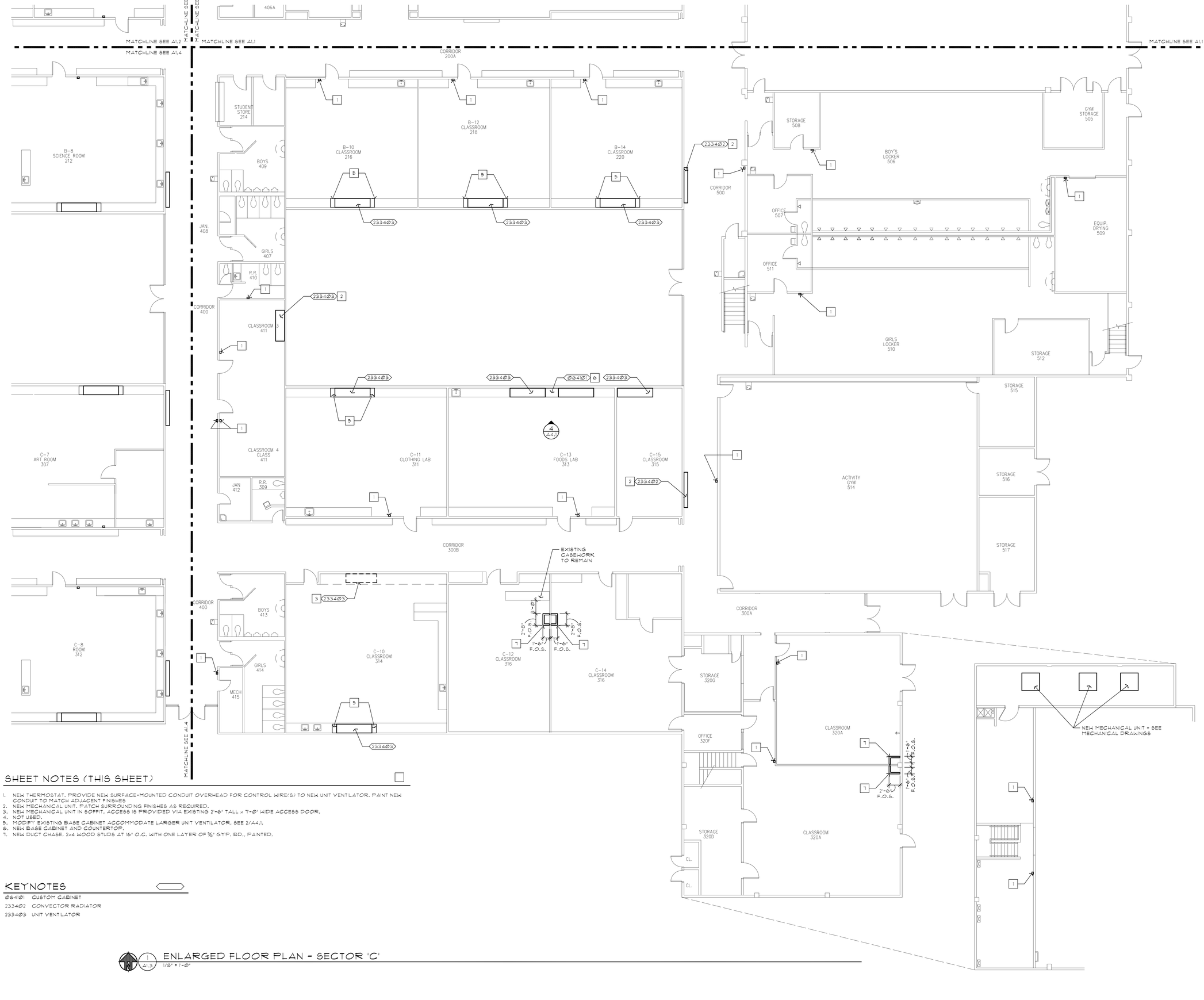
SHEET
A1.2



SHEET NOTES (THIS SHEET)

1. NEW THERMOSTAT. PROVIDE NEW SURFACE-MOUNTED CONDUIT OVERHEAD FOR CONTROL WIRE(S) TO NEW UNIT VENTILATOR. PAINT NEW CONDUIT TO MATCH ADJACENT FINISHES
2. NEW MECHANICAL UNIT. PATCH SURROUNDING FINISHES AS REQUIRED.
3. NEW MECHANICAL UNIT IN SOFFIT. ACCESS IS PROVIDED VIA EXISTING 2'-6" TALL x 1'-0" WIDE ACCESS DOOR.
4. NOT USED.
5. MODIFY EXISTING BASE CABINET ACCOMMODATE LARGER UNIT VENTILATOR. SEE 2/A4.1.
6. NEW BASE CABINET AND COUNTERTOP.
7. NEW DUCT CHASE. 2x4 WOOD STUDS AT 16" O.C. WITH ONE LAYER OF ⅝" GYP. BD., PAINTED.

KEYNOTES

Ø6410| CUSTOM CABINET
2334Ø2 CONVECTOR RADIATOR
2334Ø3 UNIT VENTILATOR

ENLARGED FLOOR PLAN - SECTOR 'C'

1/8" = 1'-0"

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
EXPIRES: 12/31/2020
STATE OF OREGON

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
Chkd By: DAP
DSGN By: DAP
Acad File:

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
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SHEET
A1.3

SHEET NOTES (THIS SHEET)

1. NEW THERMOSTAT. PROVIDE NEW SURFACE-MOUNTED CONDUIT OVERHEAD FOR CONTROL WIRE(S) TO NEW UNIT VENTILATOR. PAINT NEW CONDUIT TO MATCH ADJACENT FINISHES
2. NEW MECHANICAL UNIT. PATCH SURROUNDING FINISHES AS REQUIRED.
3. NOT USED.
4. MODIFY EXISTING BASE CABINET TO ACCOMMODATE NEW LARGER MECHANICAL UNIT. SEE 2/A4.1.

KEYNOTES

233402 CONVECTOR RADIATOR
233403 UNIT VENTILATOR
237402 MECHANICAL UNIT



1 A1.4 ENLARGED FLOOR PLAN - SECTOR 'D'
1/8" = 1'-0"

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
LAKE OSWEGO
STATE OF OREGON

Date:	03/08/19
Proj No:	9652
Drawn By:	SLK
Chkd By:	DAP
DSGN By:	DAP
Acad File:	

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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CONSTRUCTION DOCUMENTS

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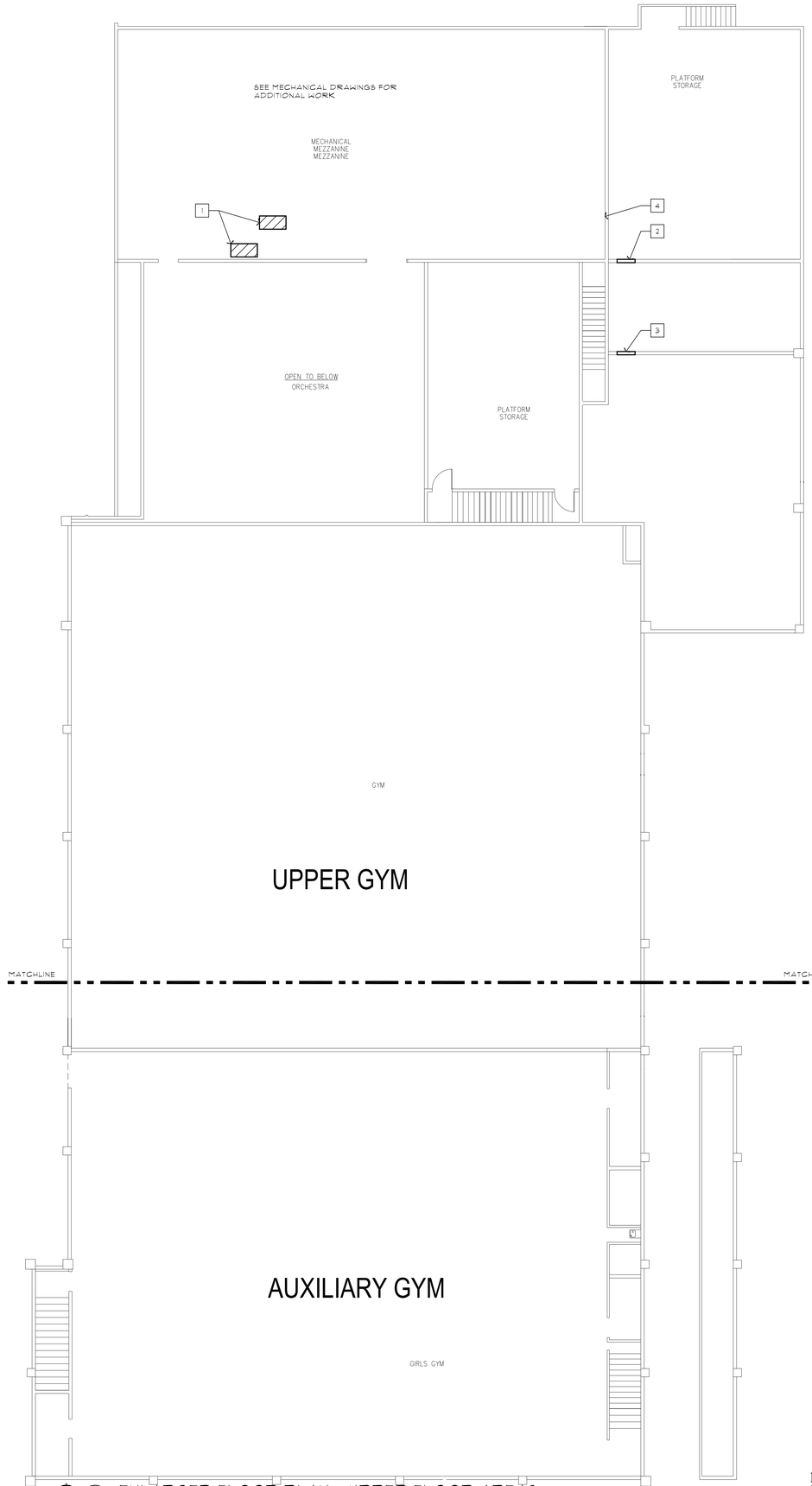
SHEET
A1.4

SHEET NOTES

1. PATCH HOLES IN FLOOR FROM REMOVED DUCTWORK WITH NEW PLYWOOD AND FRAMING AS REQUIRED
2. PATCH HOLE IN WALL FROM REMOVED DUCTWORK WITH WOOD FRAMING AND FIRE-TAPED ⅝" TYPE 'X' GYPSUM BOARD
3. PATCH HOLE IN 2-HOUR RATED AREA SEPARATION WALL FROM REMOVED CHILLED WATER LINES WITH 2-HOUR FIRE STOPPING
4. NEW DUCTWORK IN EXISTING DUCTWORK PENETRATION, SEAL NEW DUCTWORK TIGHT TO WALL



ENLARGED FLOOR PLAN - UPPER FLOOR AREAS

1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

REGISTERED ARCHITECT · STATE OF OREGON · DOUGLAS A. PRUITT · EXPIRES: 12/31/20

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
Chkd By: DAP
DSGN By: DAP
Acad File:

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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200 North State Street
Lake Oswego, Oregon 97034

SHEET
A1.5



1 A1.6 ROOF PLAN
1/16" = 1'-0"

SHEET NOTES

1. NEW MECHANICAL UNIT AND CURB. PROVIDE STRUCTURAL FRAMING AS REQUIRED UNDER THE DECK FOR MECHANICAL UNIT SUPPORT. SEE 6/A5.1. ROOF PATCHING TO BE PERFORMED BY THE DISTRICT'S ROOFING CONTRACTOR UNDER A SEPARATE CONTRACT. COORDINATE WITH THE DISTRICT'S ROOFING CONTRACTOR.
2. INSTALL SALVAGED CONDENSING UNITS ON NEW CURB AND SHEET METAL CAP. SEE 3/A5.1. ROOF PATCHING/REPLACEMENT TO BE PERFORMED BY THE DISTRICT'S ROOFING CONTRACTOR UNDER A SEPARATE CONTRACT. COORDINATE WITH THE DISTRICT'S ROOFING CONTRACTOR.
3. NEW STAINLESS STEEL HOOD FOR MULTI-PIPE MECHANICAL AND ELECTRICAL PENETRATION. SEE 1/A5.1. ROOF PATCHING/REPLACEMENT TO BE PERFORMED BY THE DISTRICT'S ROOFING CONTRACTOR UNDER A SEPARATE CONTRACT. COORDINATE WITH THE DISTRICT'S ROOFING CONTRACTOR.
4. INFILL EXISTING ROOF DECK. SEE STRUCTURAL DRAWINGS.
5. REINSTALL SALVAGED EXHAUST FAN. SEE MECHANICAL DRAWINGS. COORDINATE REINSTALLATION WITH THE DISTRICT'S ROOFING CONTRACTOR.
6. REINSTALL SALVAGED GAS PIPING ON ROOF BLOCKS OR SLEEPERS. COORDINATE REINSTALLATION WITH THE DISTRICT'S ROOFING CONTRACTOR.
7. INSTALL SALVAGED OUTSIDE AIR UNIT ON NEW WOOD CURB. ROOF PATCHING/REPLACEMENT TO BE PERFORMED BY THE DISTRICT'S ROOFING CONTRACTOR UNDER A SEPARATE CONTRACT. COORDINATE WITH THE DISTRICT'S ROOFING CONTRACTOR.

GENERAL NOTES

1. THE ROOF IS BEING REPLACED BY A SEPARATE CONTRACTOR. MECHANICAL AND SCREEN WORK SHALL BE COORDINATED WITH THE OWNER'S ROOFING CONTRACTOR.

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
EXPIRES: 12/31/2020
STATE OF OREGON

Date: 02/08/19
Proj No: 9552
Drawn By: SLK
Chkd By: DAP
DSGN By: DAP
Acad File:

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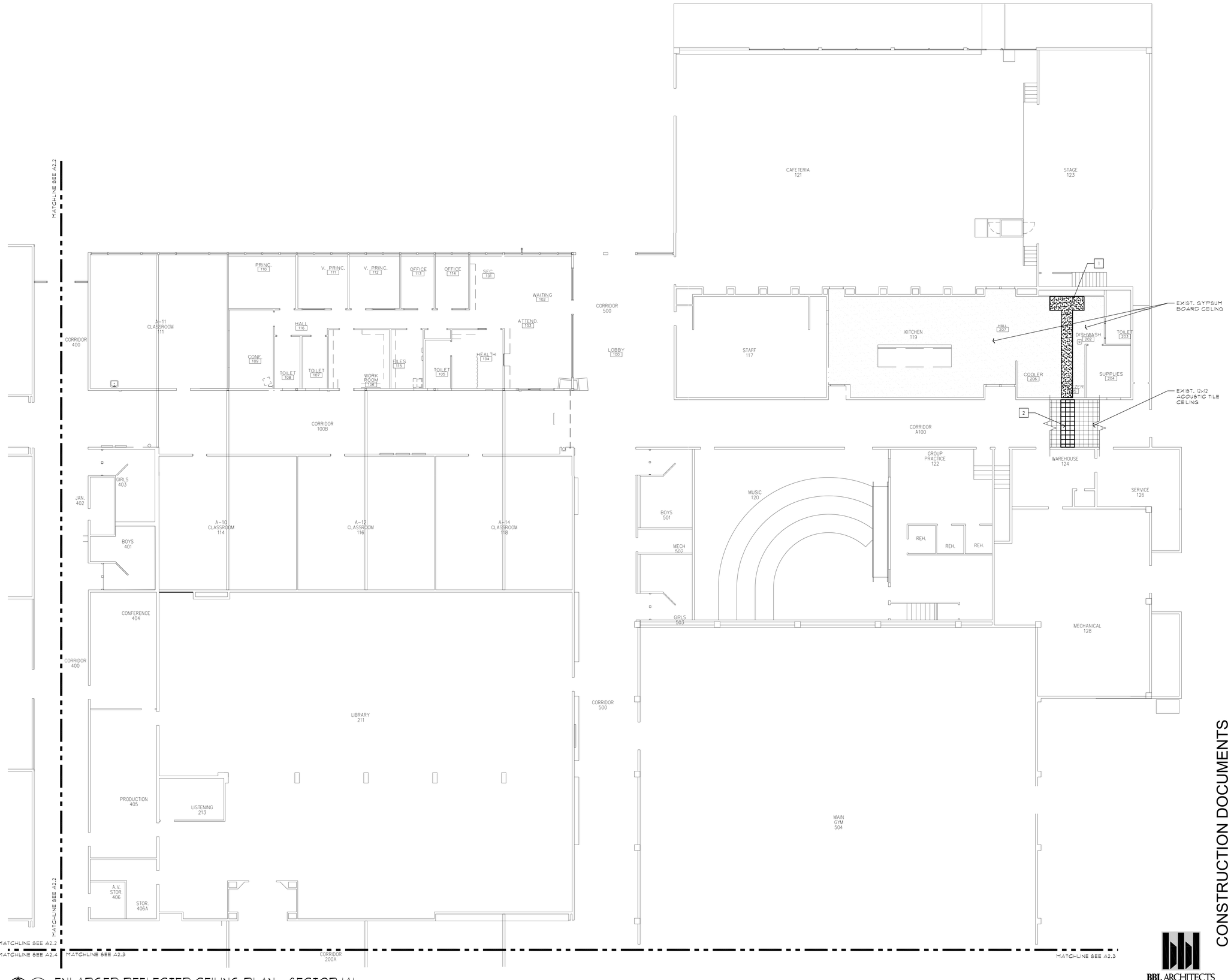
SHEET
A1.6

SHEET NOTES (THIS SHEET)

1. NEW GYPSUM BOARD CEILING. PAINT TO MATCH EXISTING. FEATHER CEILING FINISH TO EXISTING CEILING FOR EVEN TRANSITION.
2. NEW 12x12 GLUE-UP ACOUSTIC TILES TO MATCH EXISTING. PATCH GYPSUM BOARD SUBSTRATE AND WOOD FURRING STRIPS AS REQUIRED.



ENLARGED REFLECTED CEILING PLAN - SECTOR 'A'

A2.1 1/8" = 1'-0"

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
EXPIRES: DEC. 31, 2019
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CONSTRUCTION DOCUMENTS

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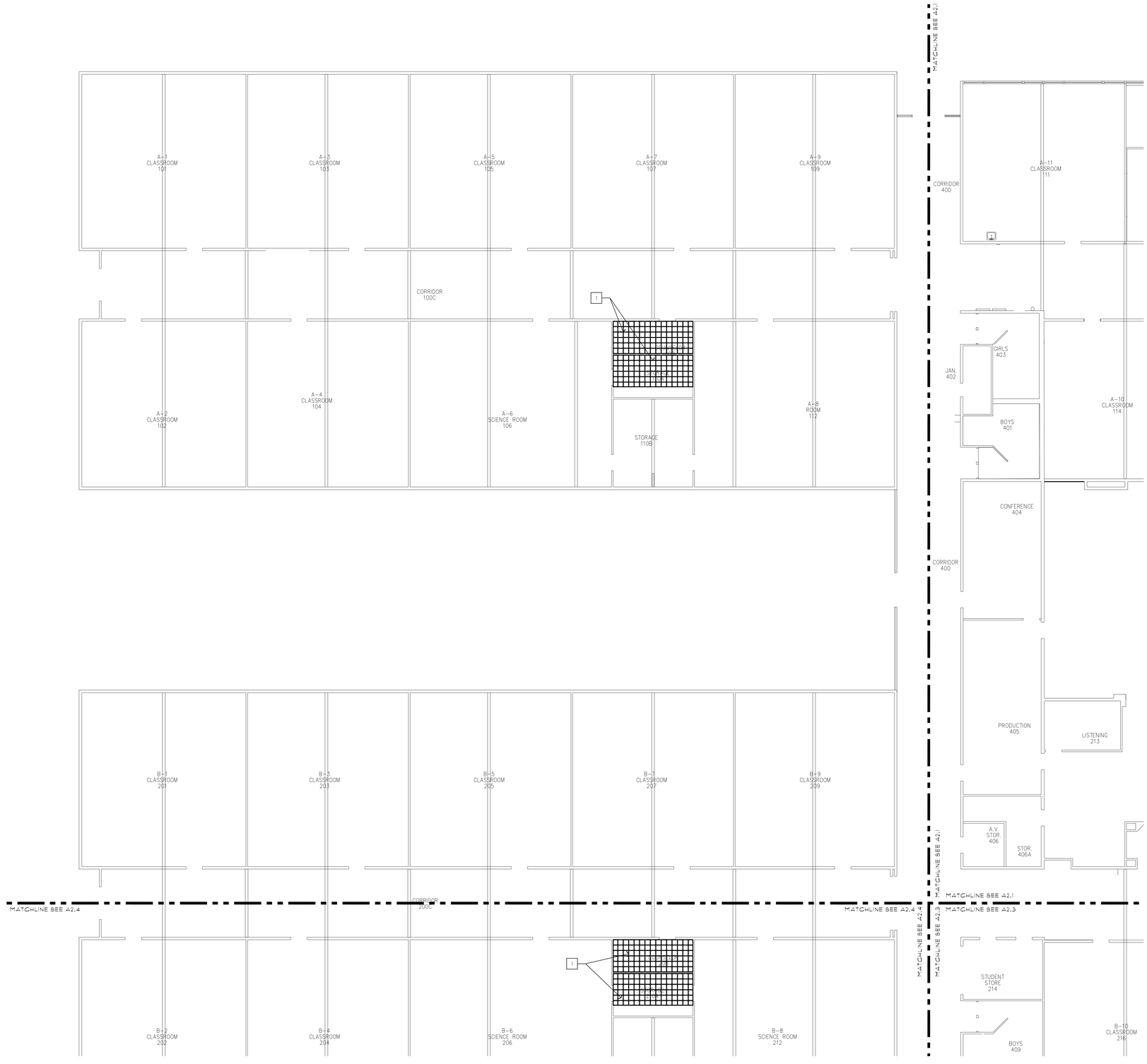
200 North State Street
Lake Oswego, Oregon 97034

SHEET
A2.1

SHEET NOTES (THIS SHEET)

1. NEW 12x12 GLUE-UP ACOUSTIC TILES TO MATCH EXISTING. PATCH GYPSUM BOARD SUBSTRATE AND WOOD FURRING STRIPS AS REQUIRED.



ENLARGED REFLECTED CEILING PLAN - SECTOR 'B'

1/8" = 1'-0"

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
EXPIRES: 12/31/20
STATE OF OREGON

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Proj No:	9652
Drawn By:	SLK
Chkd By:	DAP
DSGN By:	DAP
Acad File:	

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

CONSTRUCTION DOCUMENTS

MFIA INC.
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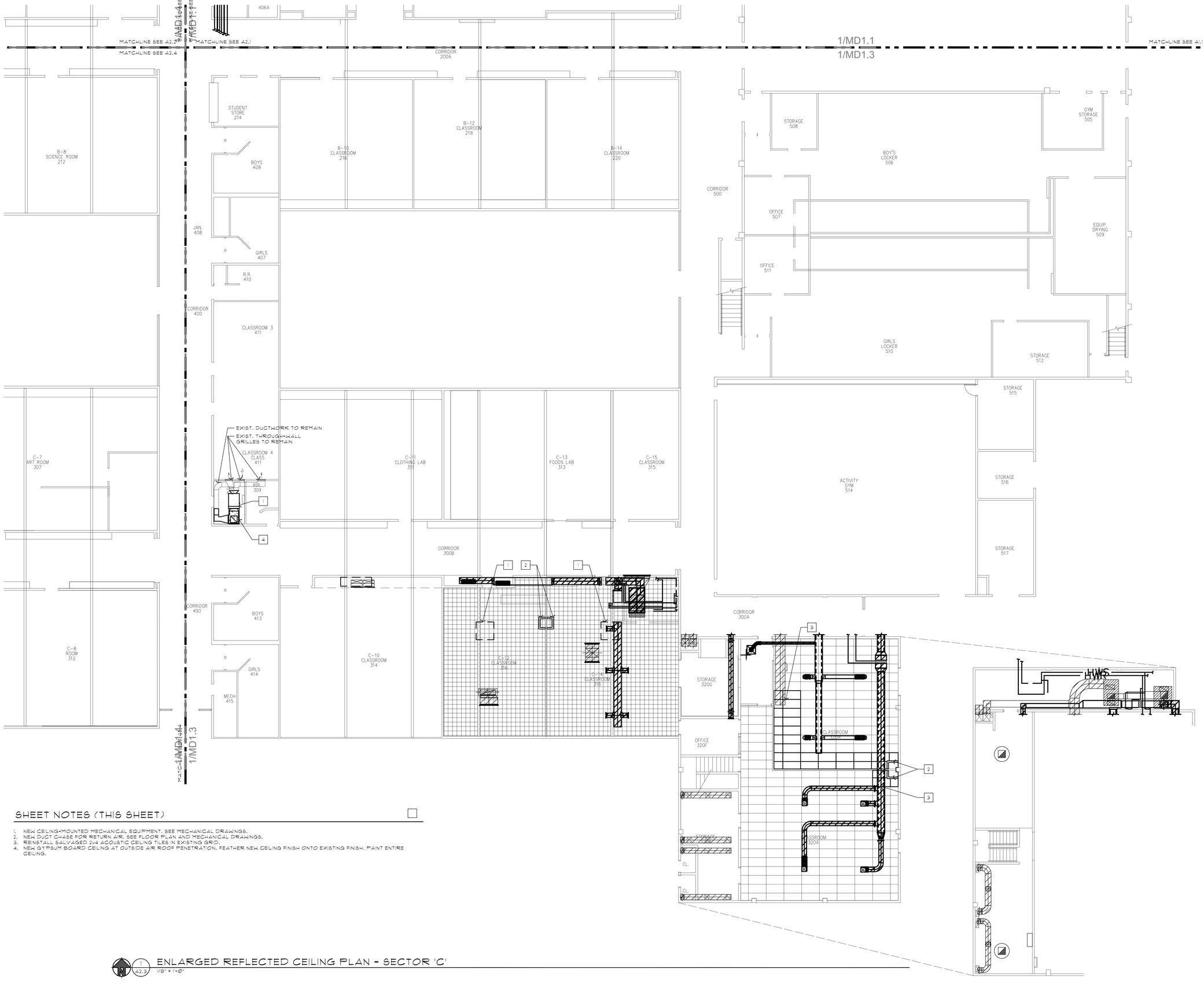
Lake Oswego, Oregon 97034

SHEET
A2.2



SHEET NOTES (THIS SHEET)

1. NEW CEILING-MOUNTED MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS.
2. NEW DUCT CHASE FOR RETURN AIR. SEE FLOOR PLAN AND MECHANICAL DRAWINGS.
3. REINSTALL SALVAGED 2x4 ACOUSTIC CEILING TILES IN EXISTING GRID.
4. NEW GYPSUM BOARD CEILING AT OUTSIDE AIR ROOF PENETRATION. FEATHER NEW CEILING FINISH ONTO EXISTING FINISH. PAINT ENTIRE CEILING.

ENLARGED REFLECTED CEILING PLAN - SECTOR 'C'

1/8" = 1'-0"

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
EXPIRES: 06/30/20
STATE OF OREGON

Date:	03/08/19
Proj No:	9652
Drawn By:	SLK
Chkd By:	DAP
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SHEET
A2.3

SHEET NOTES (THIS SHEET)

1. NEW 12x12 GLUE-UP ACOUSTIC TILES TO MATCH EXISTING. PATCH GYPSUM BOARD SUBSTRATE AND WOOD FURRING STRIPS AS REQUIRED.



N

1 / A2.4 ENLARGED REFLECTED CEILING PLAN - SECTOR 'D'

1/8" = 1'-0"

REGISTERED ARCHITECT
DOUGLAS A. PRUITT
OREGON
STATE OF

Date:	03/08/19
Proj No:	9652
Drawn By:	SLK
Chkd By:	DAP
DSGN By:	DAP
Acad File:	

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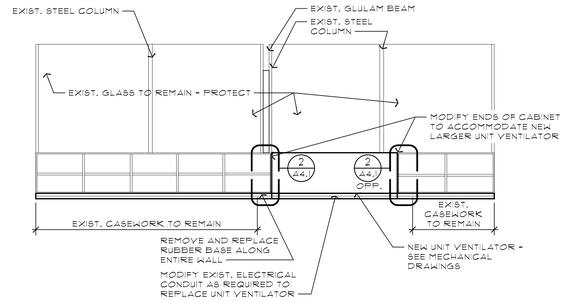
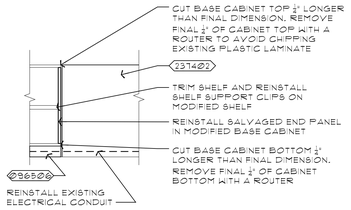
SHEET
A2.4

KEYNOTES

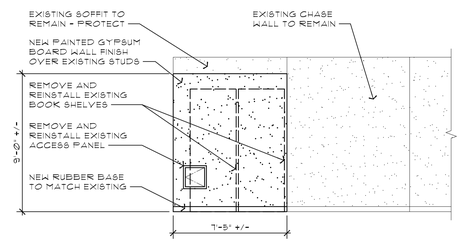
Ø641Ø1 CUSTOM CABINET
Ø9652Ø6 RESILIENT BASE
237402 MECHANICAL UNIT



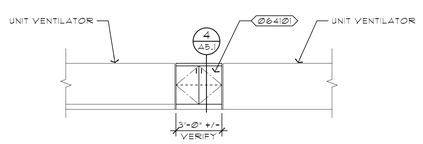
1 A4.1 TYPICAL CLASSROOM ELEVATION
1/4" = 1'-Ø"



2 A4.1 CABINET DETAIL (ELEVATION)
1/2" = 1'-Ø"



3 A4.1 LIBRARY / INTERIOR ELEVATION
1/4" = 1'-Ø"



4 A4.1 CABINET ELEVATION
1/4" = 1'-Ø"

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REGISTERED ARCHITECT
DOUGLAS A. PRUITT
STATE OF OREGON

Date: 03/08/19
Proj No: 9652
Drawn By: SLK
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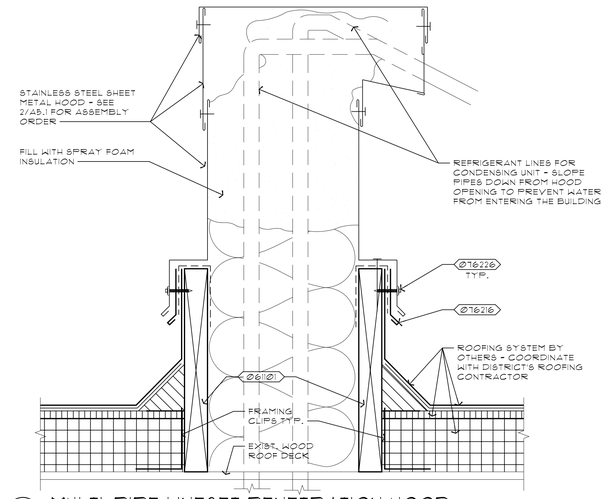
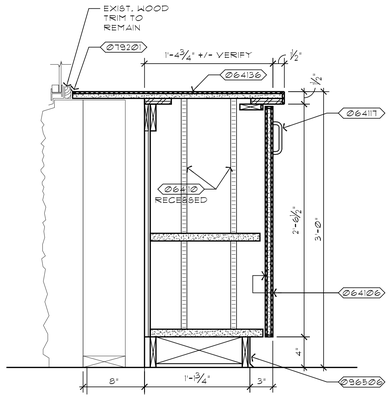
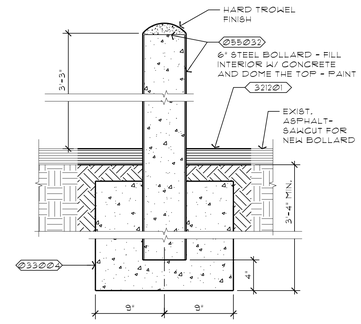
SHEET
A4.1



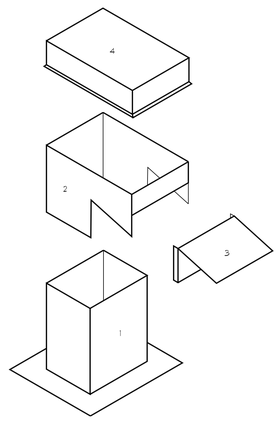
1 A5.1 MULTI-PIPE LINESET PENETRATION HOOD
3" = 1'-Ø"



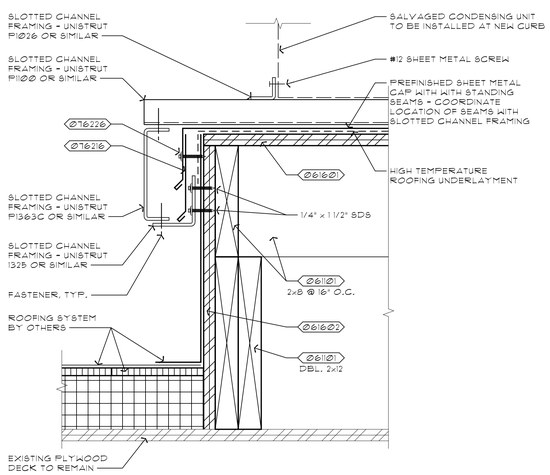
4 A5.1 NEW BASE CABINET
1 1/2" = 1'-Ø" ROOM C-13



5 A5.1 BOLLARD
3" = 1'-Ø"



2 A5.1 MULTI-PIPE LINESET FLASHING ASSEMBLY ORDER
1 1/2" = 1'-Ø"



3 A5.1 CONDENSING UNIT CURB
3" = 1'-Ø"

KEYNOTES

Ø33Ø4	CONCRETE FOOTING
Ø55Ø32	GALV. STEEL BOLLARD - FILL W/ CONC. AND CROWN TOP
Ø6110Ø1	WOOD FRAMING
Ø6160Ø1	PLYWOOD ROOF SHEATHING
Ø6160Ø2	PLYWOOD WALL SHEATHING
Ø6410Ø6	HIGH PRESSURE LAMINATE (ALL SURFACES AND EDGES)
Ø6410Ø	ADJUSTABLE CASEWORK SHELF SUPPORTS
Ø64117	PULL
Ø64136	PLASTIC LAMINATE COUNTERTOP
Ø76216	PREFINISHED SHEET METAL FLASHING
Ø76226	FASTENER W/ NEOPRENE WASHER
Ø7921Ø1	SEALANT
Ø96506	RESILIENT BASE
3212Ø1	ASPHALTIC CONCRETE

REGISTERED ARCHITECT · DOUGLAS A. PRUITT · EXPIRES: DEC 31, 2019 · STATE OF OREGON

Date:	03/08/19
Proj No:	9652
Drawn By:	SLK
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SHEET
A5.1

GENERAL STRUCTURAL NOTES

THESE NOTES SHALL STIPULATE THE MINIMUM STANDARDS OF CONSTRUCTION, AND THE DRAWINGS SHALL GOVERN OVER THE NOTES IN ALL MATTERS SPECIFICALLY STATED. VERIFY DIMENSIONS AND EXISTING CONDITIONS, AND NOTIFY ARCHITECT OR ENGINEER OF DISCREPANCIES BEFORE PROCEEDING. THE CONTRACTOR IS RESPONSIBLE FOR SAFE CONDITIONS AT THE JOBSITE, AND FOR TEMPORARY SUPPORT OF THE BUILDING PRIOR TO THE COMPLETION OF THE VERTICAL AND LATERAL LOAD SYSTEMS. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE.

DESIGN LOADS:
OFFICE FLOOR LIVE LOAD = 50 PSF + PARTITIONS
CORRIDORS, STAIRS & EXITS LIVE LOAD = 100 PSF
ROOF LEVEL MECHANICAL ZONE LIVE LOAD = 50 PSF
ROOF LIVE LOAD = 20 PSF
GROUND SNOW LOAD = 20 PSF
MINIMUM ROOF SNOW LOAD = 14 PSF W/ DRIFTING PER IBC
FLAT ROOF SNOW LOAD, Pf = 25 PSF
SNOW EXPOSURE FACTOR, Ce = 0.9
SNOW LOAD IMPORTANCE FACTOR, Is = 1.0
THERMAL FACTOR, Ct = 1.0
BASIC WIND SPEED = 130 MPH AND WIND EXPOSURE B PER 2014 OREGON VERSION INTERNATIONAL BUILDING CODE DESIGN PROVISIONS, (LRFD 3 SECOND GUST)
SEISMIC DESIGN CATEGORY D AND SITE CLASS D
SEISMIC IMPORTANCE FACTOR, Ie = 1.25
MAPPED SPECTRAL RESPONSE ACCELERATIONS Ss = 0.991 AND S1 = 0.432
SPECTRAL RESPONSE COEFFICIENTS Sds = 0.729 AND Sd1 = 0.451
BASIC SEISMIC-FORCE RESISTING SYSTEM
TYPICAL CONCRETE SHEARWALLS
RESPONSE MODIFICATION FACTOR, R = 3.5
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE
FOOTING DESIGN SOIL PRESSURE = 1500 PSF TOTAL LOAD MAXIMUM BEARING PRESSURE ASSUMED.

COORDINATE LOADS OF MECHANICAL EQUIPMENT, SPRINKLER SYSTEMS AND LOADS FROM OTHER TRADES NOT SHOWN ON THE STRUCTURAL DRAWINGS. LOADS OF GREATER THAN 100 POUNDS SHALL BE SUPPORTED VIA AN APPROVED SUPPORT DEVICE. PROVIDE ADDITIONAL FRAMING MEMBERS TO TRANSFER LOADS TO MAIN BEAMS, GIRDERS OR COLUMNS/WALLS FOR ALL LOADS IN EXCESS OF 250 POUNDS UNLESS APPROVED BY ENGINEER.

SPECIAL INSPECTION REQUIRED:
SPECIAL INSPECTION ACCORDING TO THE REQUIREMENTS OF SECTION 1704 OF THE INTERNATIONAL BUILDING CODE SHALL BE REQUIRED DURING THE CONSTRUCTION OF THE FOLLOWING:

BOLTS INSTALLED IN CONCRETE AND CMU: CAST-IN-PLACE - PRIOR TO AND DURING THE PLACEMENT OF CONCRETE OR GROUT AROUND BOLTS. MECHANICAL - INSPECTOR SHALL INSPECT PER REQUIREMENTS OF IBC 1704.13 THE HOLE DEPTH AND CLEANLINESS AND VERIFY ANCHOR INSTALLATION IS PER MANUFACTURER'S INSTRUCTIONS AND ICBO REPORT. ADHESIVE - INSPECTOR SHALL INSPECT PER THE REQUIREMENT OF IBC 1704.13 THE HOLE DEPTH AND CLEANLINESS, PRODUCT DESCRIPTION, ADHESIVE EXPIRATION DATE; AND VERIFY ANCHOR INSTALLATION IS PER MANUFACTURER'S INSTRUCTIONS AND ICBO REPORT.

WELDING: ALL STRUCTURAL WELDING INCLUDING WELDING OF REINFORCING STEEL. WELDING DONE IN APPROVED FABRICATOR'S SHOP IS ACCEPTED. PERIODIC INSPECTION ACCORDING TO IBC SECTION 1704.3.2 SHALL BE USED FOR DECKS, WELDED STUDS, AND SINGLE PASS WELDS NOT OTHERWISE INDICATED.

WOOD:
LUMBER GRADES SHALL BE AS FOLLOWS, EXCEPT AS NOTED ON DRAWINGS:

JOIST, RAFTERS & 4 INCH NOMINAL BEAMS	#2 GRADE DOUGLAS FIR
POSTS & 6 INCH NOMINAL BEAMS	#1 GRADE DOUGLAS FIR
2x4 FRAMING & STUDS	STUD GRADE DOUGLAS FIR
2x6 LARGER STUDS	#2 GRADE DOUGLAS FIR
BUCKS, BLOCKING AND BRIDGING	#3 GRADE DOUGLAS FIR
PLATES & SILLS ON CONCRETE	PRS, TR. DOUGLAS FIR
2x6 DECKING	COMM. GRADE D.F. OR HEM-FIR

PROVIDE SOLID BLOCKING FOR JOIST AND RAFTERS AT ALL BEARING WALLS AND BEAMS. PROVIDE BRIDGING AND FIRE STOPPING AS REQUIRED BY CODE.

ROOF, WALL AND FLOOR SHEATHING SHALL BE APA RATED SHEATHING EXPOSURE 1 OR CDX OR EQUIVALENT ORIENTATED STRAND BOARD WITH EXTERIOR GLUE. SEE DRAWINGS FOR PANEL INDEX, INSTALLATION, AND NAILING REQUIREMENTS. NAILING INDICATED ON DRAWINGS TO BE WITH COMMON NAILS. SHEAR WALL SHEATHING SHALL BE INSTALLED WITH JOINTS BLOCKED UNLESS OTHERWISE NOTED. USE EXTERIOR TYPE PLYWOOD FOR EXPOSED LOCATIONS SUCH AS SOFFITS. ADHESIVE FOR FIELD GLUING PANELS TO FRAMING SHALL COMPLY WITH APA AFG-01 AND APPROVED FOR PANEL USE.

NAIL ALL MEMBERS WITH MINIMUM NAILING TO CONFORM TO TABLE 2304.9.1 OF THE IBC AND INCREASE WHERE INDICATED. FASTENERS AND HANGERS NOTED ON THE DRAWINGS ARE MODEL NUMBERS OF "SIMPSON STRONG-TIE COMPANY, INC." AND MAY BE REPLACED WITH EQUIVALENT MODELS BY OTHER COMPANIES HAVING EQUIVALENT PROPERTIES AND STRENGTHS. INSTALL ALL CONNECTORS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS WITH NAILING IN ALL AVAILABLE HOLES. SIMPSON OR EQUIVALENT STEEL FASTENERS ATTACHED TO ACQ-TREATED WOOD SHALL HAVE GALVANIZING CONFORMING TO ASTM G185 - SIMPSON PRODUCTS WITH THIS GALVANIZING ARE NOTED AS "ZMAX".

CUTTING OR NOTCHING OF BEAMS, JOISTS, RAFTERS AND COLUMNS NOT ALLOWED WITHOUT PRIOR APPROVAL. JOISTS AND RAFTERS MAY HAVE A CIRCULAR HOLE NOT EXCEEDING 15% OF DEPTH DRILLED AT CENTER OF MEMBER. STUDS IN BEARING WALLS MAY BE NOTCHED NOT EXCEEDING 25% OF DEPTH AT TOP AND BOTTOM 1/5 OF HEIGHT OR MAY HAVE A CIRCULAR HOLE NOT EXCEEDING 1/3 OF MEMBER DEPTH DRILLED AT CENTER AT ANY HEIGHT.

STRUCTURAL STEEL:
STRUCTURAL BEAMS SHALL CONFORM TO ASTM A992 GRADE 50 (BEAMS 21" AND DEEPER CAN BE ASTM A36.) MISCELLANEOUS SHAPES AND PLATES SHALL CONFORM TO ASTM A36. PIPE COLUMNS SHALL CONFORM TO ASTM A53. STEEL TUBES SHALL CONFORM TO ASTM A500 GRADE B (46 KSI). HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A325N. DETAIL AND FABRICATE ALL STEEL MEMBERS ACCORDING TO AISC STANDARDS. ALL WELDING SHALL CONFORM TO AWS STANDARDS. PROVIDE ONE SHOP COAT OF PRIMER ON ALL STEEL MEMBERS AFTER FABRICATION.

STEEL ERECTOR SHALL BE RESPONSIBLE TO CONFIRM THAT CONNECTIONS AND ERECTION METHODS COMPLY WITH OSHA STEEL ERECTION REQUIREMENTS

GALVANIZED STEEL:
ALL STEEL MEMBERS NOTED AS GALVANIZED, OR WHERE EXPOSED (LOCATED OUTSIDE OF BUILDING SKIN) SHALL BE SHOP GALVANIZED AFTER FABRICATION WITH 2.0 MIL ZINC COATING IN ACCORDANCE WITH ASTM A386.

GLULAM WOOD MEMBERS:
GLUE LAMINATED BEAMS SHALL BE ARCHITECTURAL APPEARANCE GRADE WHERE EXPOSED, AND INDUSTRIAL APPEARANCE GRADE WHERE CONCEALED. DOUGLAS FIR COMPLYING WITH CURRENT AITC 117 DESIGN STANDARD. FIBER STRESS IN BENDING SHALL BE Fb = 2400 PSI. Fv SHALL BE EQUAL TO 165 PSI. GLUE SHALL BE OF A WATERPROOF TYPE. MULTIPLE AND CANTILEVER SPAN BEAMS SHALL HAVE FULL STRESS CAPACITY AT TOP OF BEAM WHERE TOP IS STRESSED IN TENSION, AND SHALL BE COMBINATION 24F-V8. PROVIDE STANDARD CAMBER OF 2000 FOOT RADIUS FOR BEAMS NOT OTHERWISE NOTED.

DRILLED ANCHOR BOLTS AND DOWELS:
MECHANICAL ANCHORS: THREADED PORTION OF ANCHOR SHALL CONFORM TO ASTM A307 OR GREATER CAPACITY. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MINIMUM DEPTH OF EMBEDMENT SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS BUT SHALL NOT BE LESS THAN 4.5 BOLT DIAMETERS WITHOUT PRIOR APPROVAL. SEE DRAWINGS FOR DEEPER EMBEDMENT IF REQUIRED. WHEN MANUFACTURER'S INSTALLATION INSTRUCTIONS SPECIFY A MINIMUM TORQUE AND THE ANCHOR HEAD BEARS AGAINST WOOD, AN OVERSIZED WASHER MAY BE NEEDED TO ACHIEVE THAT TORQUE. RECOMMENDED WASHER SIZES ARE AS FOLLOWS: 5" X 5" X 1/4" Φ FOR 3/4" Φ BOLT, 4" X 4" X 1/4" Φ FOR 5/8" Φ BOLT, AND 3" X 3" X 1/4" Φ FOR 1/2" Φ BOLT. IN GROUTED MASONRY, ANCHORS SHALL BE INSTALLED ONLY IN FULLY GROUTED HOLLOW MASONRY CELLS. OBSERVE MINIMUM EDGE REQUIREMENTS OF ANCHOR FROM EDGE OF GROUTED ELEMENT.

APPROVED PRODUCTS FOR CONCRETE INCLUDE:
SIMPSON STRONGBOLT STUD ANCHOR (ICC ESR-1771)

APPROVED PRODUCTS FOR MASONRY INCLUDE:
HILTI KWIK-BOLT 3 ANCHOR (ICC ESR-1385)

ADHESIVE ANCHORS: THREADED STEEL ROD ANCHORS SHALL CONFORM TO ASTM A307 OR GREATER CAPACITY. REINFORCEMENT BARS SHALL BE GRADE 60 AND CONFORM TO ASTM A615 OR A706. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MINIMUM DEPTH OF EMBEDMENT SHALL CONFORM TO MANUFACTURERS REQUIREMENTS BUT SHALL NOT BE LESS THAN 8 BOLT/DOUEL DIAMETERS WITHOUT PRIOR APPROVAL. SEE DRAWINGS FOR DEEPER EMBEDMENT IF REQUIRED.

APPROVED PRODUCTS FOR CONCRETE INCLUDE:
SIMPSON SET-XP (ICC ESR-2508)

APPROVED PRODUCTS FOR MASONRY INCLUDE:
SIMPSON SET (ICC ESR-1772)

DRAWING INDEX

S1.0 GENERAL STRUCTURAL NOTES
S2.5 ROOF PLAN

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Web: www.jgpierson.com

ABBREVIATIONS

#	— NUMBER OR POUNDS
&	— AND
@	— AT
℄	— CENTER LINE
L	— LINTEL
ℙ	— PLATE
φ	— DIAMETER OR ROUND
▯	— SQUARE
(E)	— EXISTING
(N)	— NEW
A.B.	— ANCHOR BOLT
ADH.	— ADHESIVE
ANCH.	— ANCHOR
ARCH.	— ARCHITECT
BD.	— BOARD
BLDG.	— BUILDING
BLK'G.	— BLOCKING
BOT.	— BOTTOM
C.J.	— CONTROL JOINT
CLG.	— CEILING
CLR.	— CLEAR
CTSK.	— COUNTERSINK
COL.	— COLUMN
CONC.	— CONCRETE
CONN.	— CONNECTION
CONT.	— CONTINUOUS
C.S.	— CLOSURE STRIP
CTRL.	— CONTROL
c/c	— CENTER TO CENTER
D.A.	— DRILLED ANCHOR
DBL.	— DOUBLE
DIA.	— DIAMETER
DN.	— DOWN
DTL.	— DETAIL
DWG.	— DRAWING
EA.	— EACH
E.W.	— EACH WAY
EL.	— ELEVATION
ENG.	— ENGINEER
EQ.	— EQUAL
E.J.	— EXPANSION JOINT
EXT.	— EXTERIOR
F.B.	— FLAT BAR
FLR.	— FLOOR
FNDN.	— FOUNDATION
F.O.C.	— FACE OF CONCRETE
F.O.S.	— FACE OF STUD
F.O.M.	— FACE OF MASONRY
FTG.	— FOOTING
GA.	— GAUGE
GALV.	— GALVANIZED
GLB. or GL.	— GLUE LAMINATED BEAM
G.S.B.	— GYPSUM SHEATHING BOARD
G.W.B.	— GYPSUM WALL BOARD
GYP.	— GYPSUM
HNGR.	— HANGER
H.S.S.	— HOLLOW STRUCTURAL SECTION
HORIZ.	— HORIZONTAL
HT.	— HEIGHT
HYD.	— HYDROGEN
I.S.F.	— INSIDE FACE
JST.	— JOIST
JT.	— JOINT
lbs.	— POUNDS
LDGR.	— LEDGER
L.S.L.	— LAMINATED STRAND LUMBER
LVL.	— LAMINATED VENEER LUMBER
L.H.	— LOW HYDROGEN
M.B.	— MACHINE BOLT
MBR.	— MEMBER
MANUF.	— MANUFACTURER
MAS.	— MASONRY
MAX.	— MAXIMUM
MIN.	— MINIMUM
MISC.	— MISCELLANEOUS
NTS	— NOT TO SCALE
NO.	— NUMBER
O/C	— ON CENTER
OPP.	— OPPOSITE
OPP. HD.	— OPPOSITE HAND
OPN'G.	— OPENING
O.S.B.	— ORIENTED STRAND BOARD
O.S.F.	— OUTSIDE FACE
P.S.L.	— PARALLEL STRAND LUMBER
PEN.	— PENETRATION
PL'CS.	— PLACES
PLYD.	— PLYWOOD
P.T. or PRS. TR.	— PRESSURE TREATED
REF.	— REFERENCE
REINF.	— REINFORCING
REQ'D.	— REQUIRED
RF.	— ROOF
S.J.	— SAWCUT JOINT
SHTG.	— SHEATHING
SIM.	— SIMILAR
STD.	— STANDARD
STL.	— STEEL
T&B	— TOP AND BOTTOM
T&G	— TONGUE AND GROOVE
TBRSTRND.	— TIMBERSTRAND
T.O.C.	— TOP OF CONCRETE
T.O.F.	— TOP OF FOOTING
T.O.S.	— TOP OF STEEL
TOT.	— TOTAL
T.O.W.	— TOP OF WALL
T.S.	— STRUCTURAL TUBE
TYP.	— TYPICAL
U.N.O.	— UNLESS NOTED OTHERWISE
VERT.	— VERTICAL
W/	— WITH
W/O	— WITHOUT
WT.	— WEIGHT
WWF	— WELDED WIRE FABRIC

LEGEND

- (A) — BEARING WALL TYPE - SEE BEARING WALL SCHEDULE
- (2) ═══ — SHEARWALL TYPE - SEE SHEARWALL SCHEDULE
- (A) — FOOTING SIZE - SEE FOOTING SCHEDULE
- (2) — COLUMN SIZE - SEE COLUMN SCHEDULE
- (A) — REVISION NUMBER
- (ELEVATION) — WORK POINT
- SECTION MARK: SECTION NUMBER / SHEET NUMBER
- ELEVATION MARK: ELEVATION NUMBER / SHEET NUMBER
- DETAIL MARK: DETAIL NUMBER / SHEET NUMBER
- 1 A — FOOTING SIZE / COLUMN SIZE

LINE DEFINITION
(ON FRAMING PLANS)

- (SOLID WALL) - INDICATES WALLS ABOVE
- (TINY DOTS) - INDICATES WALLS BELOW (NON-BEARING)
- (DASHED) - INDICATES WALLS BELOW (BEARING)

MATERIAL DEFINITION

- CONCRETE/ GROUT
- EARTH, MASONRY UNITS or BRICK VENEER
- GRAVEL
- FOUNDATION INSULATION

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
PETER R. GOLDBERG
83468PE
OREGON
March 19, 1986
EXPIRES: 6-30-19

Date: 02/07/19
Proj No: 9652
Drawn By: PRG
Chkd By: PRG
DSGN By: PRG
Acad File: 9652_HIGHLAND_M25

CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

GENERAL STRUCTURAL NOTES

MFA INC.
Consulting Engineers
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S1.0

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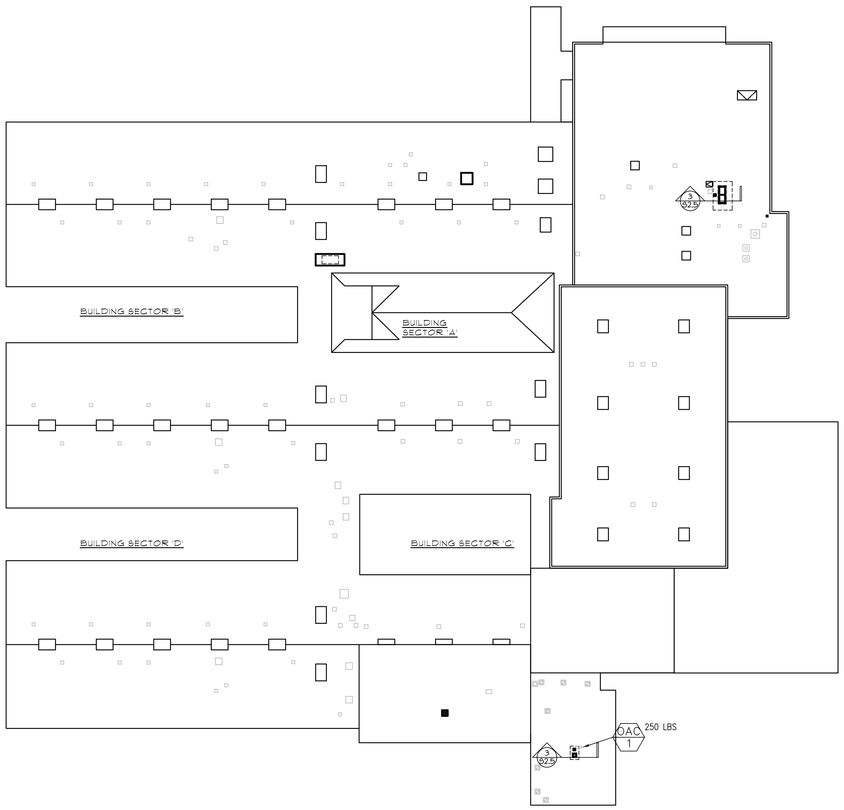
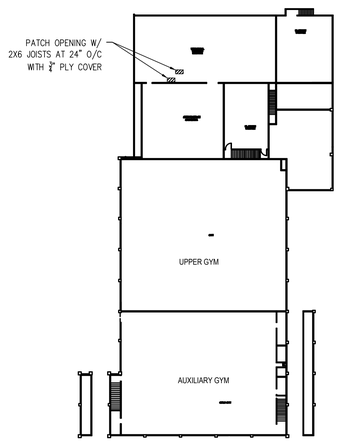
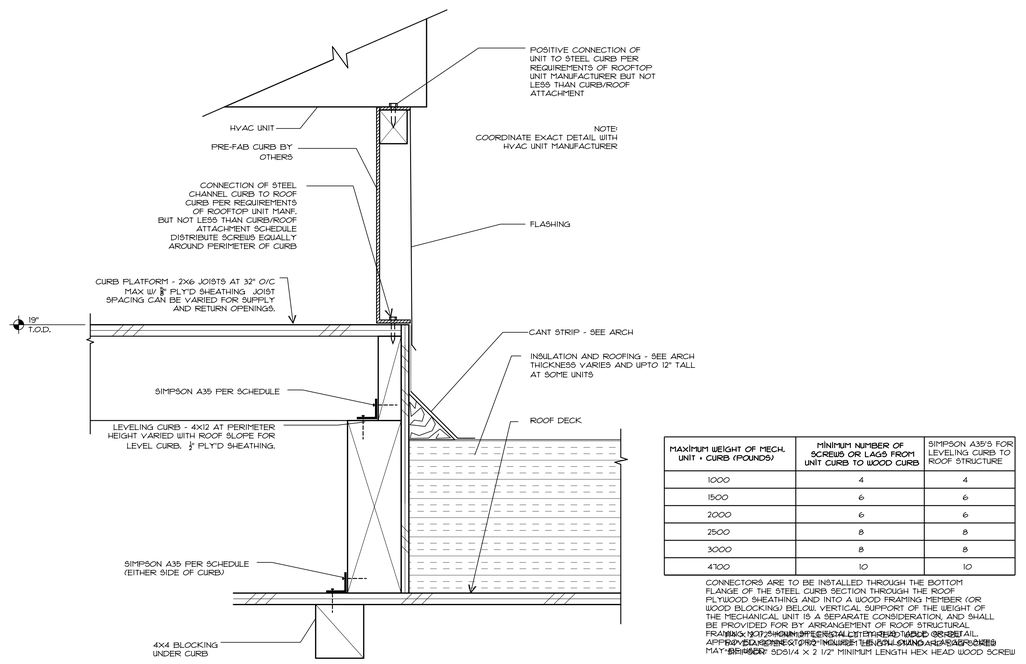
CONTACT: Laura Froelke



1 S2.5 ROOF PLAN
SCALE: 1/32"=1'-0"



2 S2.5 UPPER FLOOR PLAN AREAS
SCALE: 1/32"=1'-0"



MAXIMUM WEIGHT OF MECH. UNIT + CURB (POUNDS)	MINIMUM NUMBER OF SCREWS OR LAGS FROM UNIT CURB TO WOOD CURB	SIMPSON A35'S FOR LEVELING CURB TO ROOF STRUCTURE
1000	4	4
1500	6	6
2000	6	6
2500	8	8
3000	8	8
4100	10	10

CONNECTORS ARE TO BE INSTALLED THROUGH THE BOTTOM FLANGE OF THE STEEL CURB SECTION THROUGH THE ROOF PLYWOOD SHEATHING AND INTO A WOOD FRAMING MEMBER (OR WOOD BLOCKING) BELOW. VERTICAL SUPPORT OF THE WEIGHT OF THE MECHANICAL UNIT IS A SEPARATE CONSIDERATION, AND SHALL BE PROVIDED FOR BY ARRANGEMENT OF ROOF STRUCTURAL FRAMING. [illegible] APPROVED EQUIVALENT. MINIMUM SCREW SIZE SHALL BE #14 GAUGE SD 5/8" MAY BE USED.

3 S2.5 SEISMIC CONNECTION FOR ROOFTOP MECH. UNIT
3" = 1'-0"

James G. Pierson, Inc.
Since 1945
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Consulting Structural Engineers
610 SW Alder Street, Suite 918
Portland, Oregon 97205
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Fax: (503) 226-3130
Email: mail@jgpierson.com
Web: www.jgpierson.com

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
18346PE
OREGON
JULY 19, 1985
PETER R. GOLBERG
EXPIRES: 6-30-19

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ROOF PLAN

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MECHANICAL DEMO NOTES (#)

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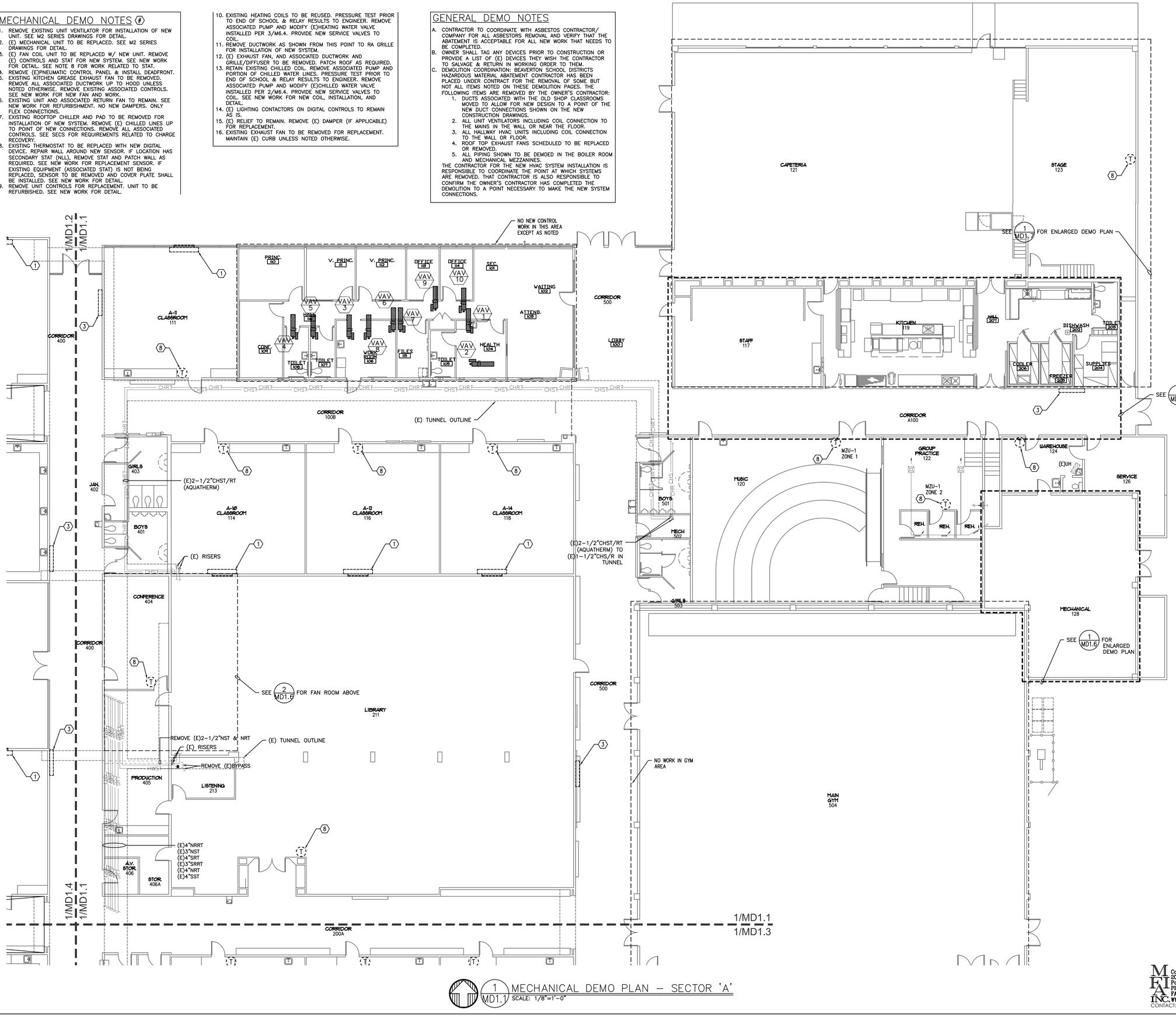

1 MD1.1 MECHANICAL DEMO PLAN – SECTOR 'A'
SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17859
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_MD11

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE OREGON
MECHANICAL DEMO PLAN – SECTOR 'A'
BEAVERTON

CONSTRUCTION DOCUMENTS

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CONTACT: Laura Froelke

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2 MD1.2 MECHANICAL DEMO PLAN – SECTOR 'B'
SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17887
JULY 25, 1985
SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	05/08/19
Proj No:	9652
Drawn By:	LKF
Chkd By:	SWM
DSGN By:	SWM
Acad File:	9652_HIGHLAND_MD12

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

MECHANICAL DEMO PLAN – SECTOR 'B'

CONSTRUCTION DOCUMENTS

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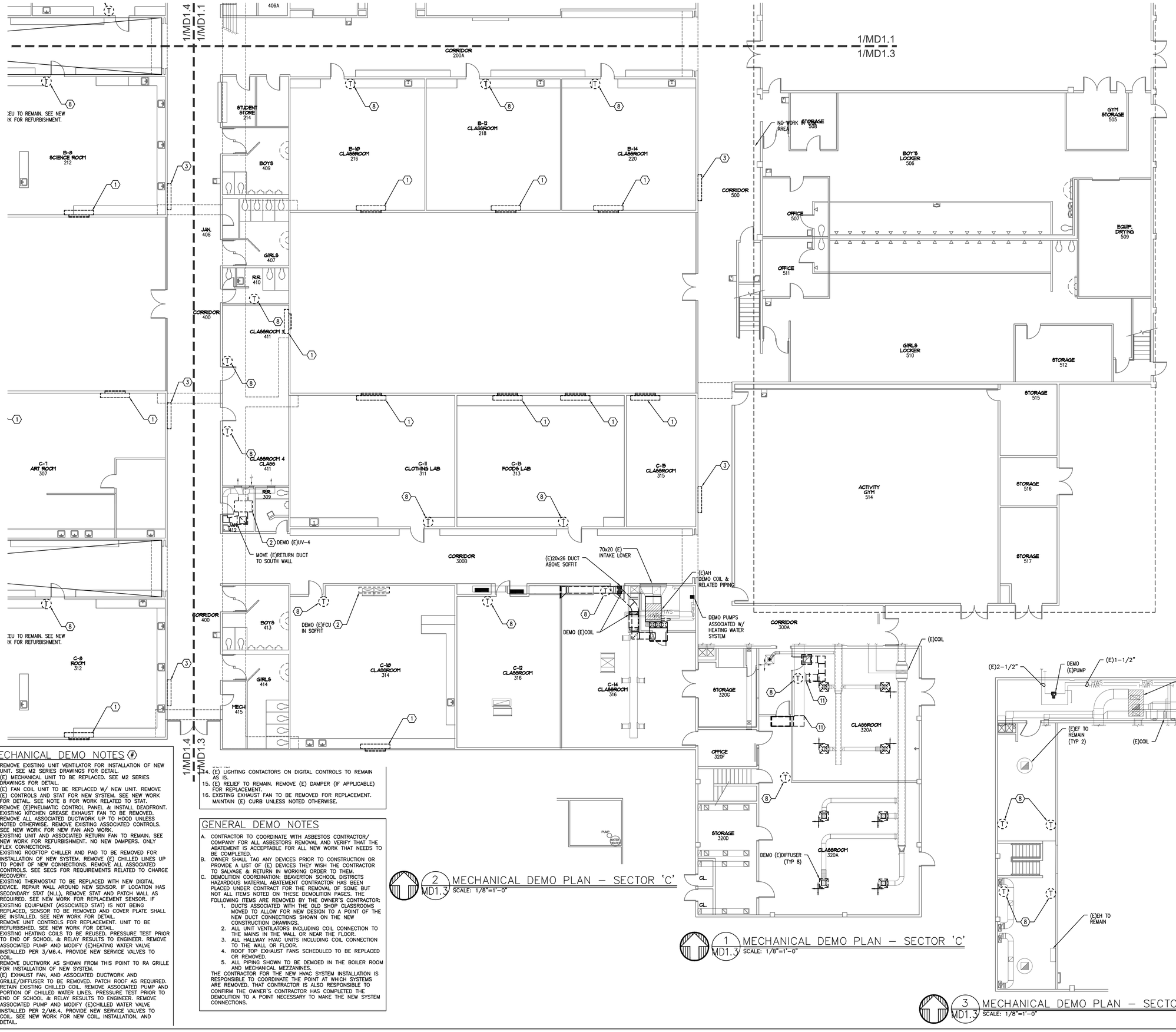

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2 MD1.3 MECHANICAL DEMO PLAN – SECTOR 'C'
SCALE: 1/8"=1'-0"

1 MD1.3 MECHANICAL DEMO PLAN – SECTOR 'C'
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3 MD1.3 MECHANICAL DEMO PLAN – SECTOR 'C'
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REGISTERED PROFESSIONAL ENGINEER
17580
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	05/08/19
Proj No:	9652
Drawn By:	LKF
Chkd By:	SWM
DSGN By:	SWM
Acad File:	9652_HIGHLAND_MD13

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MECHANICAL DEMO PLAN – SECTOR 'C'

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   4. ROOF TOP EXHAUST FANS SCHEDULED TO BE REPLACED OR REMOVED.
   5. ALL PIPING SHOWN TO BE DEMOED IN THE BOILER ROOM AND MECHANICAL MEZZANINES.

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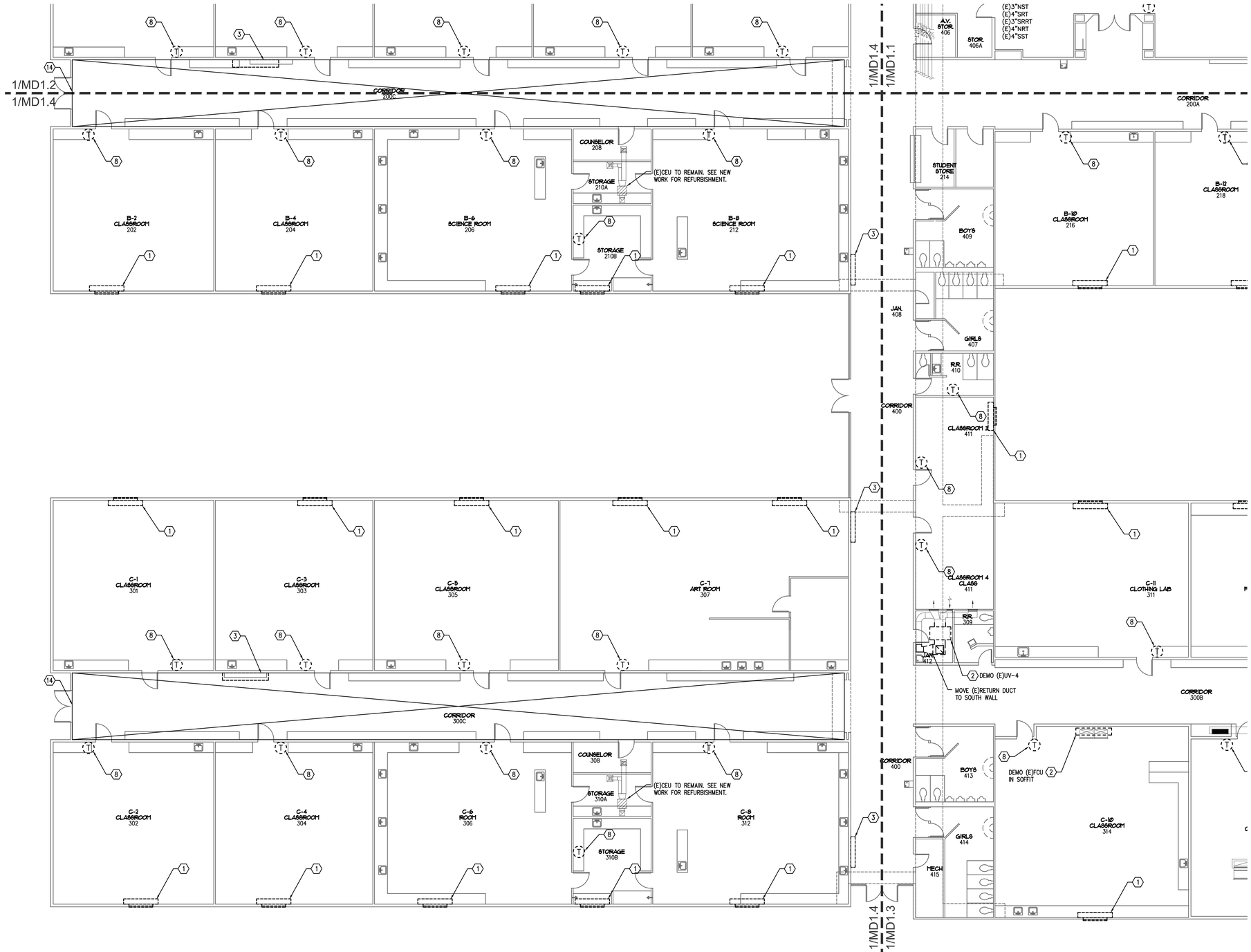

1 MD1.4 MECHANICAL DEMO PLAN – SECTOR 'D'
SCALE: 1/8"=1'-0"

CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	05/08/19
Proj No:	9652
Drawn By:	LKF
Chkd By:	SWM
DSGN By:	SWM
Acad File:	9652_HIGHLAND_MD14

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

MECHANICAL DEMO PLAN – SECTOR 'D'

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SHEET
MD1.4

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Portland, OR 97214
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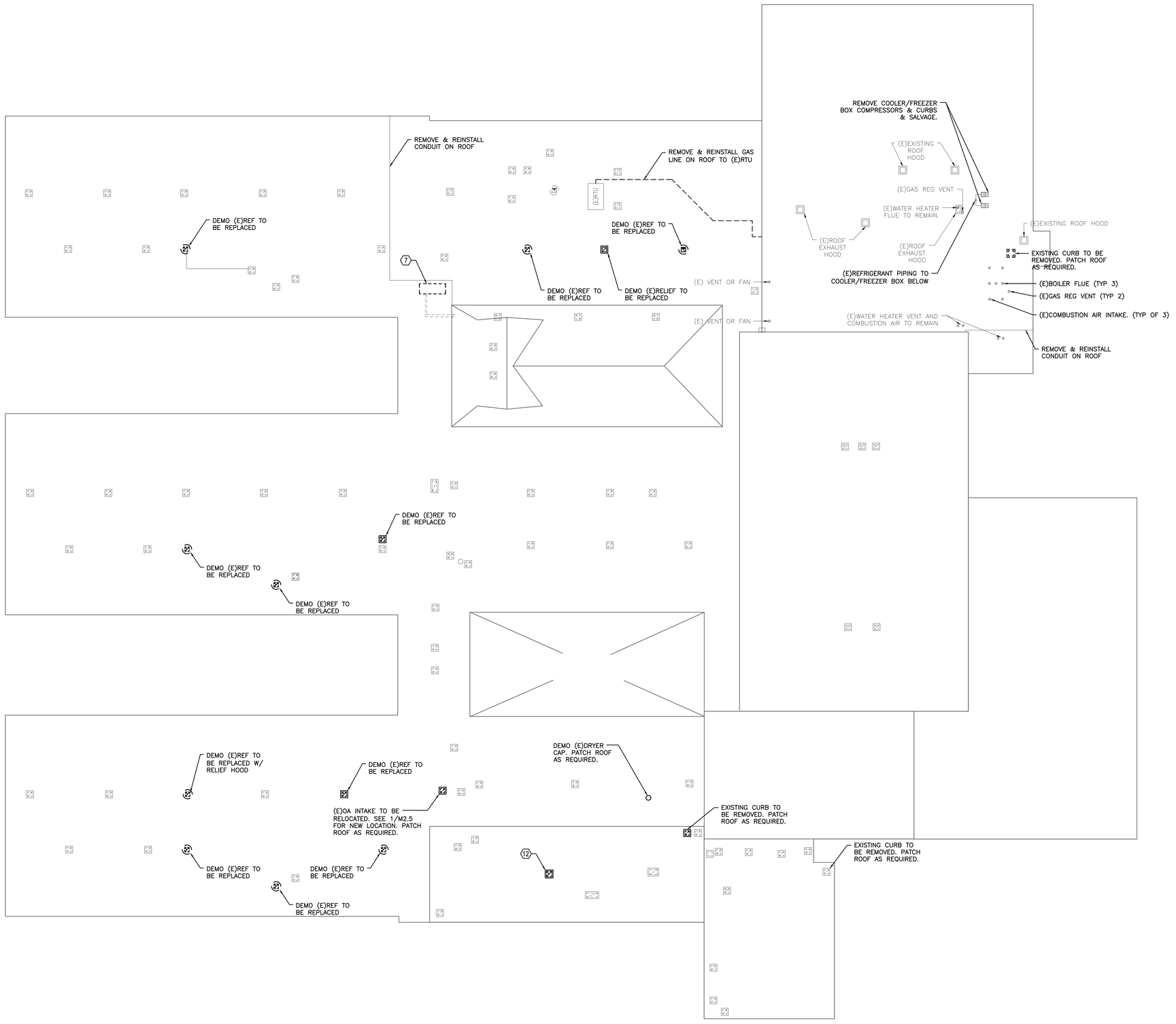
FAX: (503) 234-0677
WWW.MFA-ENG.COM
CONTACT: Laura Froelke



MECHANICAL DEMO NOTES (#)

1. REMOVE EXISTING UNIT VENTILATOR FOR INSTALLATION OF NEW UNIT. SEE M2 SERIES DRAWINGS FOR DETAIL.
2. (E) MECHANICAL UNIT TO BE REPLACED. SEE M2 SERIES DRAWINGS FOR DETAIL.
3. (E) FAN COIL UNIT TO BE REPLACED W/ NEW UNIT. REMOVE (E) CONTROLS AND STAT FOR NEW SYSTEM. SEE NEW WORK FOR DETAIL. SEE NOTE 8 FOR WORK RELATED TO STAT.
4. REMOVE (E)PNEUMATIC CONTROL PANEL & INSTALL DEADFRONT.
5. EXISTING KITCHEN GREASE EXHAUST FAN TO BE REMOVED. REMOVE ALL ASSOCIATED DUCTWORK UP TO HOOD UNLESS NOTED OTHERWISE. REMOVE EXISTING ASSOCIATED CONTROLS. SEE NEW WORK FOR NEW FAN AND WORK.
6. EXISTING UNIT AND ASSOCIATED RETURN FAN TO REMAIN. SEE NEW WORK FOR REFURBISHMENT. NO NEW DAMPERS. ONLY FLEX CONNECTIONS.
7. EXISTING ROOFTOP CHILLER AND PAD TO BE REMOVED FOR INSTALLATION OF NEW SYSTEM. REMOVE (E) CHILLED LINES UP TO POINT OF NEW CONNECTIONS. REMOVE ALL ASSOCIATED CONTROLS. SEE SECS FOR REQUIREMENTS RELATED TO CHARGE RECOVERY.
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1 MD1.5 OVERALL MECHANICAL DEMO ROOF PLAN
SCALE: 1/16"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17599
JULY 29, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_MD15

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON
OVERALL MECHANICAL DEMO ROOF PLAN

CONSTRUCTION DOCUMENTS

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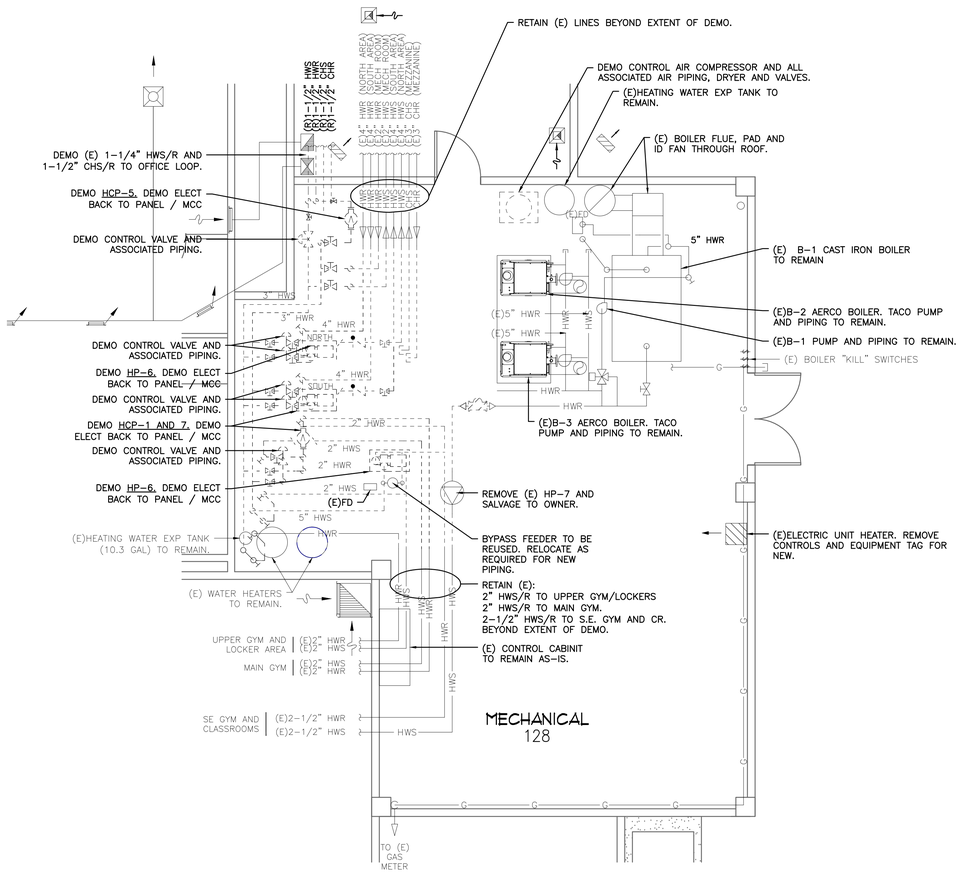
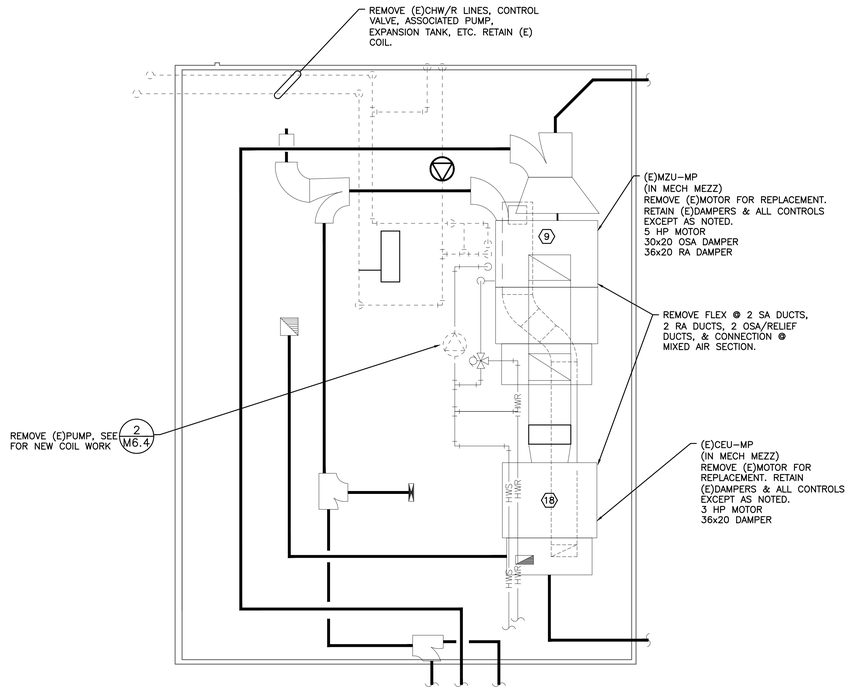


1 MD1.6 ENLARGED BOILER ROOM DEMO PLAN
SCALE: 1/4"=1'-0"



2 MD1.6 LIBRARY FAN ROOM DEMO PLAN
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REGISTERED PROFESSIONAL ENGINEER
17599
JULY 25, 1980
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_MD16

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ENLARGED DEMO PLANS

CONSTRUCTION DOCUMENTS

MFA INC.
Consulting Engineers
2007 S.E. Ash St.
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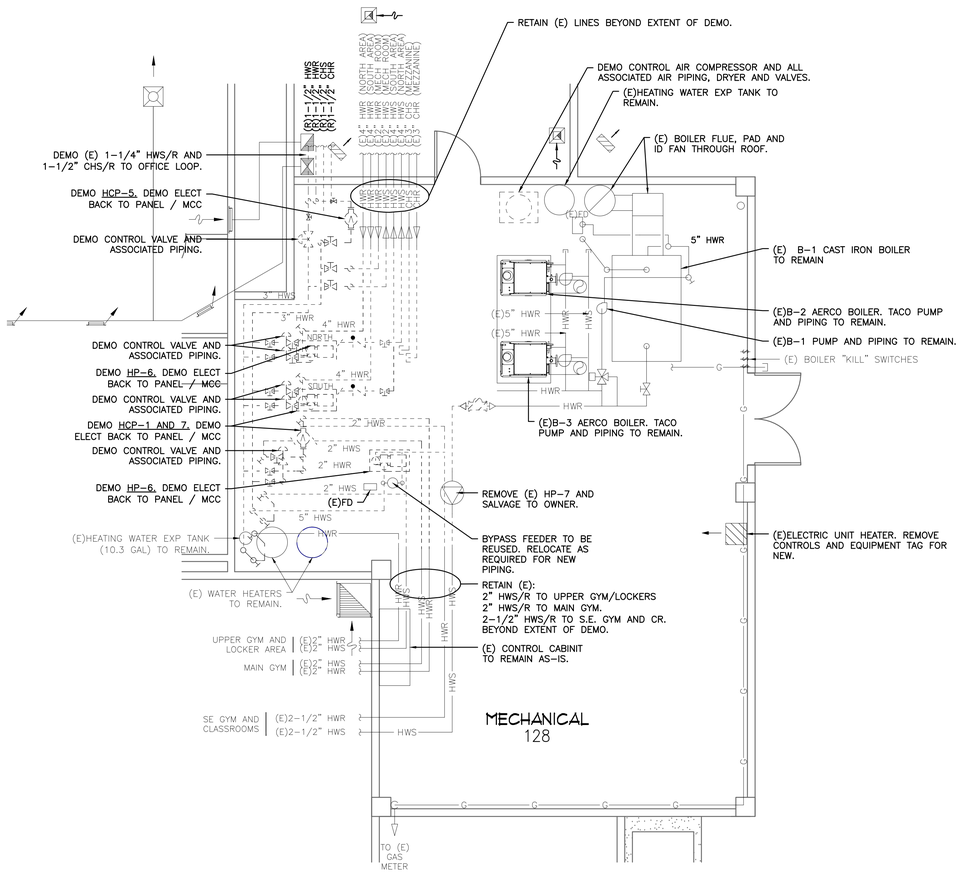
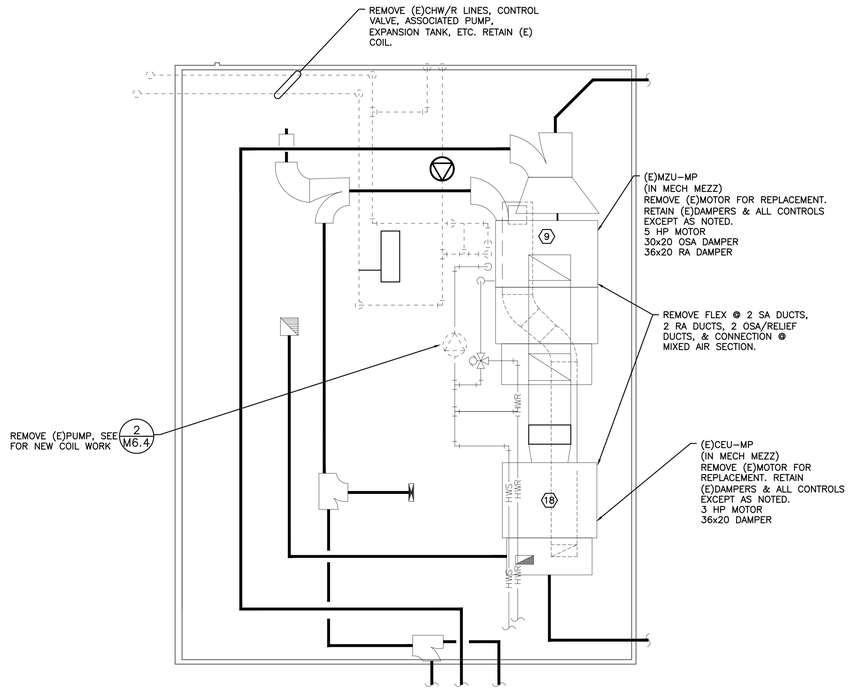
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: Laura Froelke

SHEET
MD1.6



1 MD1.6 ENLARGED BOILER ROOM DEMO PLAN
SCALE: 1/4"=1'-0"



2 MD1.6 LIBRARY FAN ROOM DEMO PLAN
SCALE: 1/4"=1'-0"

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REGISTERED PROFESSIONAL ENGINEER
17599
JULY 25, 1980
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_MD16

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ENLARGED DEMO PLANS

CONSTRUCTION DOCUMENTS

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Consulting Engineers
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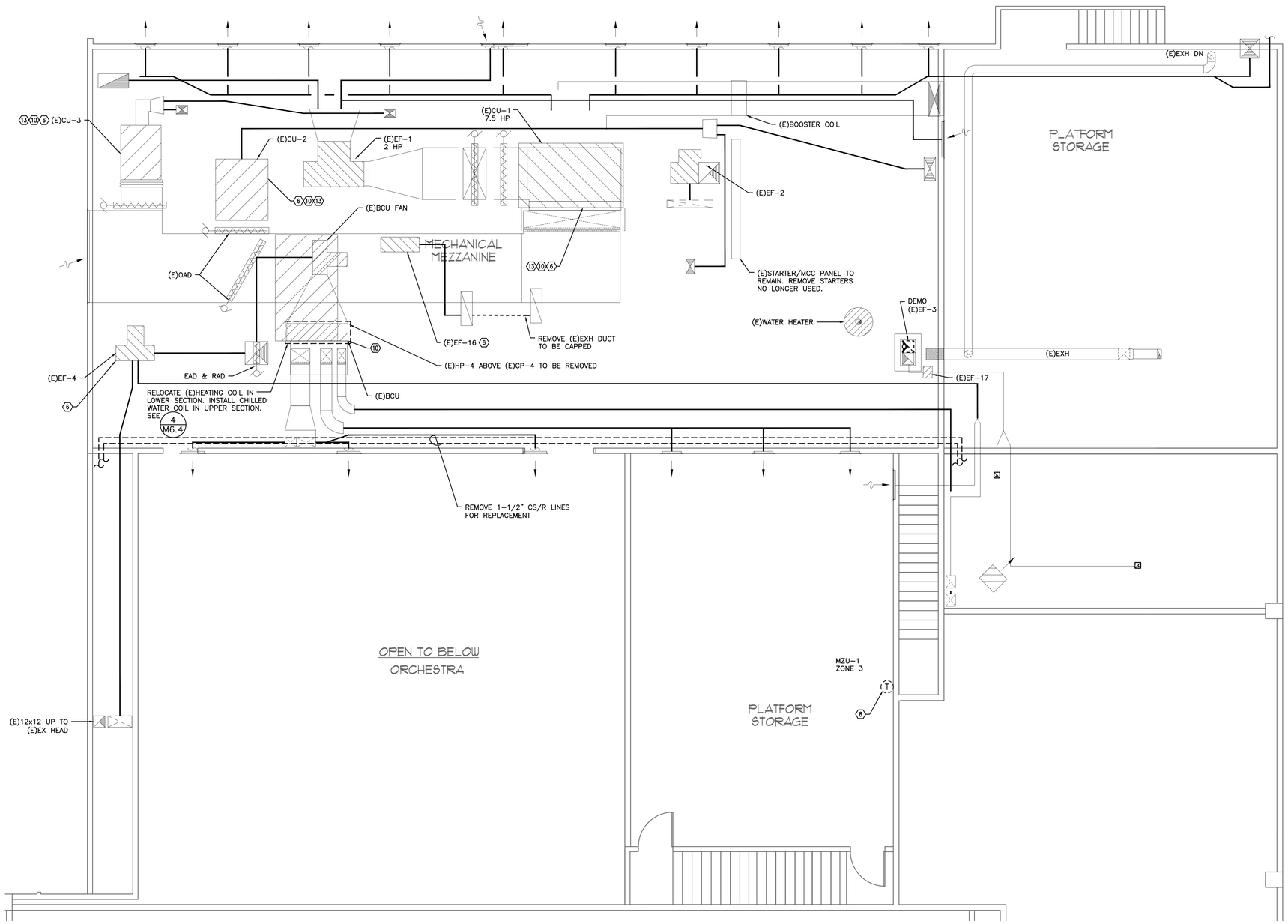
SHEET
MD1.6



1 / MD1.8 HVAC DEMOLITION ENLARGED FLOOR PLAN – MEZZANINE LEVEL
SCALE: 1/4"=1'-0"

MECHANICAL DEMO NOTES (#)

1. REMOVE EXISTING UNIT VENTILATOR FOR INSTALLATION OF NEW UNIT. SEE M2 SERIES DRAWINGS FOR DETAIL.
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REGISTERED PROFESSIONAL ENGINEER
17587
JULY 25, 1980
SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	05/08/19
Proj No:	9652
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MECHANICAL DEMO PLAN

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CONTACT: Laura Froelke

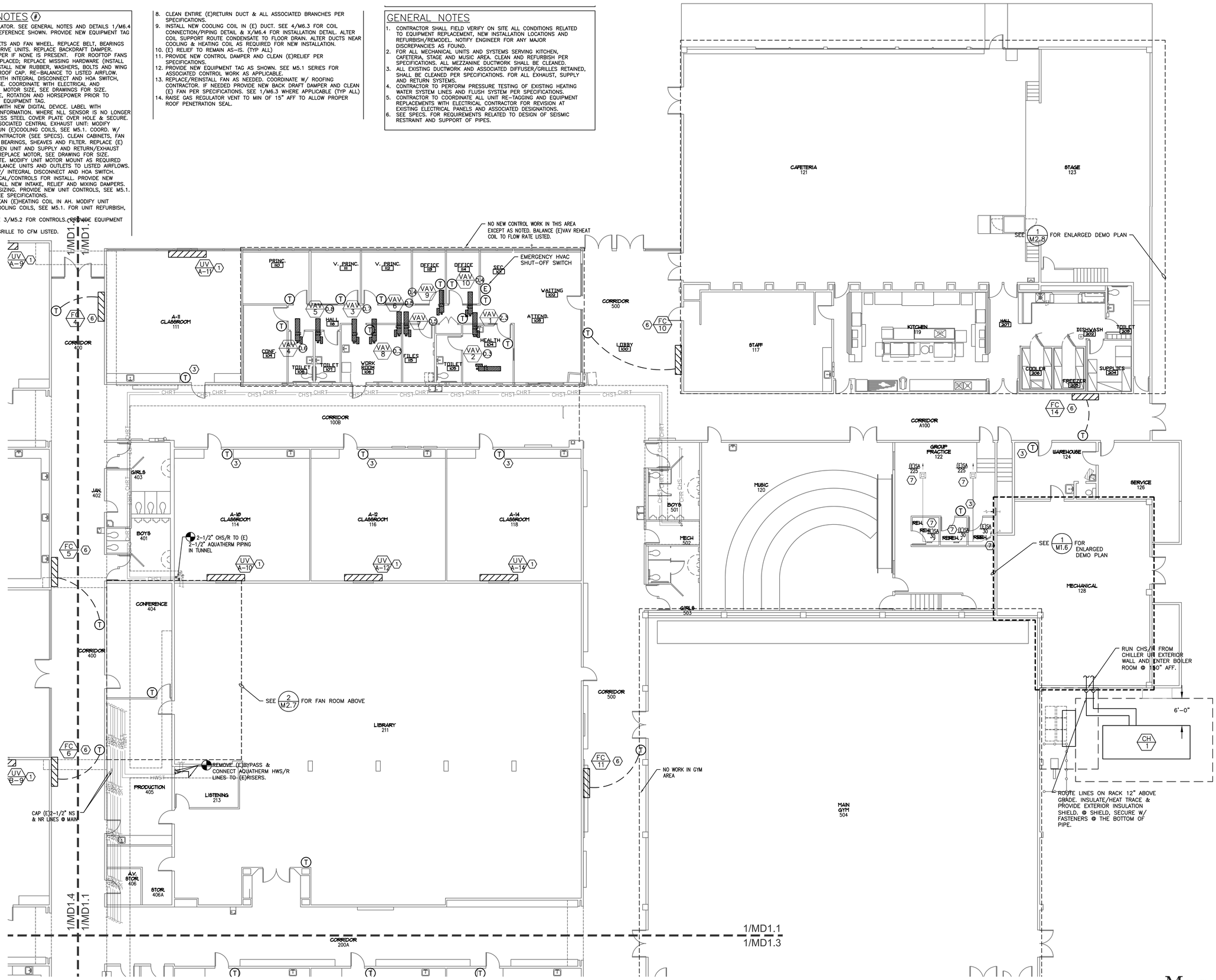
SHEET
MD1.8

MECHANICAL NOTES (#)

1. INSTALL NEW UNIT VENTILATOR. SEE GENERAL NOTES AND DETAILS 1/M6.4 UNLESS OTHER DETAIL REFERENCE SHOWN. PROVIDE NEW EQUIPMENT TAG AS SHOWN.
2. FANS: CLEAN FAN CABINETS AND FAN WHEEL. REPLACE BELT, BEARINGS AND SHEAVES AT BELT DRIVE UNITS. REPLACE BACKDRAFT DAMPER. INSTALL BACKDRAFT DAMPER IF NONE IS PRESENT. FOR ROOFTOP FANS THAT ARE NOT BEING REPLACED; REPLACE MISSING HARDWARE (INSTALL FASTENERS AT CURB. INSTALL NEW RUBBER, WASHERS, BOLTS AND WING NUTS IF MISSING FROM ROOF CAP. RE-BALANCE TO LISTED AIRFLOW. PROVIDE NEW STARTER WITH INTEGRAL DISCONNECT AND HOA SWITCH, UNLESS NOTED OTHERWISE. COORDINATE WITH ELECTRICAL AND CONTROLS. PROVIDE NEW MOTOR SIZE, SEE DRAWINGS FOR SIZE. CONFIRM VOLTAGE, PHASE, ROTATION AND HORSEPOWER PRIOR TO SUBMITTAL. PROVIDE NEW EQUIPMENT TAG.
3. REPLACE ZONE SENSOR WITH NEW DIGITAL DEVICE. LABEL WITH ASSOCIATED EQUIPMENT INFORMATION. WHERE NLL SENSOR IS NO LONGER USED PROVIDE A STAINLESS STEEL COVER PLATE OVER HOLE & SECURE.
4. MULTIZONE UNIT AND ASSOCIATED CENTRAL EXHAUST UNIT: MODIFY (E)UNIT CONTROLS TO RUN (E)COOLING COILS, SEE M5.1. COORD. W/ APPROVED CONTROLS CONTRACTOR (SEE SPECS). CLEAN CABINETS, FAN WHEELS. REPLACE BELT, BEARINGS, SHEAVES AND FILTER. REPLACE (E) FLEX CONNECTON BETWEEN UNIT AND SUPPLY AND RETURN/EXHAUST DUCT WORK WITH NEW. REPLACE MOTOR, SEE DRAWING FOR SIZE. CONFIRM VOLTAGE ON SITE. MODIFY UNIT MOTOR MOUNT AS REQUIRED FOR NEW MOTOR. RE-BALANCE UNITS AND OUTLETS TO LISTED AIRFLOWS. PROVIDE NEW STARTER W/ INTEGRAL DISCONNECT AND HOA SWITCH. COORDINATE W/ ELECTRICAL/CONTROLS FOR INSTALL. PROVIDE NEW EQUIP. TAG SHOWN. INSTALL NEW INTAKE, RELIEF AND MIXING DAMPERS. SEE M6.1 FOR DAMPER SIZING. PROVIDE NEW UNIT CONTROLS, SEE M5.1. FOR UNIT REFURBISH, SEE SPECIFICATIONS.
5. PRESSURE TEST AND CLEAN (E)HEATING COIL IN AH. MODIFY UNIT CONTROLS TO RUN (E)COOLING COILS, SEE M5.1. FOR UNIT REFURBISH, SEE SPECIFICATIONS.
6. NEW FAN COIL UNIT. SEE 3/M5.2 FOR CONTROLS. PROVIDE EQUIPMENT TAG AS SHOWN.
7. BALANCE (E) DIFFUSER/GRILLE TO CFM LISTED.
8. CLEAN ENTIRE (E)RETURN DUCT & ALL ASSOCIATED BRANCHES PER SPECIFICATIONS.
9. INSTALL NEW COOLING COIL IN (E) DUCT. SEE 4/M6.3 FOR COIL CONNECTION/PIPING DETAIL & 3/M6.4 FOR INSTALLATION DETAIL. ALTER COIL SUPPORT ROUTE CONDENSATE TO FLOOR DRAIN. ALTER DUCTS NEAR COOLING & HEATING COIL AS REQUIRED FOR NEW INSTALLATION.
10. (E) RELIEF TO REMAIN AS-IS. (TYP ALL)
11. PROVIDE NEW CONTROL DAMPER AND CLEAN (E)RELIEF PER SPECIFICATIONS.
12. PROVIDE NEW EQUIPMENT TAG AS SHOWN. SEE M5.1 SERIES FOR ASSOCIATED CONTROL WORK AS APPLICABLE.
13. REPLACE/REINSTALL FAN AS NEEDED. COORDINATE W/ ROOFING CONTRACTOR. IF NEEDED PROVIDE NEW BACK DRAFT DAMPER AND CLEAN (E) FAN PER SPECIFICATIONS. SEE 1/M6.3 WHERE APPLICABLE (TYP ALL)
14. RAISE GAS REGULATOR VENT TO MIN OF 15" AFF TO ALLOW PROPER ROOF PENETRATION SEAL.

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY ON SITE ALL CONDITIONS RELATED TO EQUIPMENT REPLACEMENT, NEW INSTALLATION LOCATIONS AND REFURBISH/REMODEL. NOTIFY ENGINEER FOR ANY MAJOR DISCREPANCIES AS FOUND.
2. FOR ALL MECHANICAL UNITS AND SYSTEMS SERVING KITCHEN, CAFETERIA, STAGE AND MUSIC AREA. CLEAN AND REFURBISH PER SPECIFICATIONS. ALL MEZZANINE DUCTWORK SHALL BE CLEANED.
3. ALL EXISTING DUCTWORK AND ASSOCIATED DIFFUSER/GRILLES RETAINED, SHALL BE CLEANED PER SPECIFICATIONS. FOR ALL EXHAUST, SUPPLY AND RETURN SYSTEMS.
4. CONTRACTOR TO PERFORM PRESSURE TESTING OF EXISTING HEATING WATER SYSTEM LINES AND FLUSH SYSTEM PER SPECIFICATIONS.
5. CONTRACTOR TO COORDINATE ALL UNIT RE-TAGGING AND EQUIPMENT REPLACEMENTS WITH ELECTRICAL CONTRACTOR FOR REVISION AT EXISTING ELECTRICAL PANELS AND ASSOCIATED DESIGNATIONS.
6. SEE SPECS. FOR REQUIREMENTS RELATED TO DESIGN OF SEISMIC RESTRAINT AND SUPPORT OF PIPES.



1 M2.1 MECHANICAL PLAN – SECTOR 'A'
SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17889
JULY 25, 1980
SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	05/08/19
Proj No:	9652
Drawn By:	LKF
Chkd By:	SWM
DSGN By:	SWM
Acad File:	9652_HIGHLAND_M21

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON
MECHANICAL PLAN – SECTOR 'A'

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SHEET
M2.1

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GENERAL NOTES

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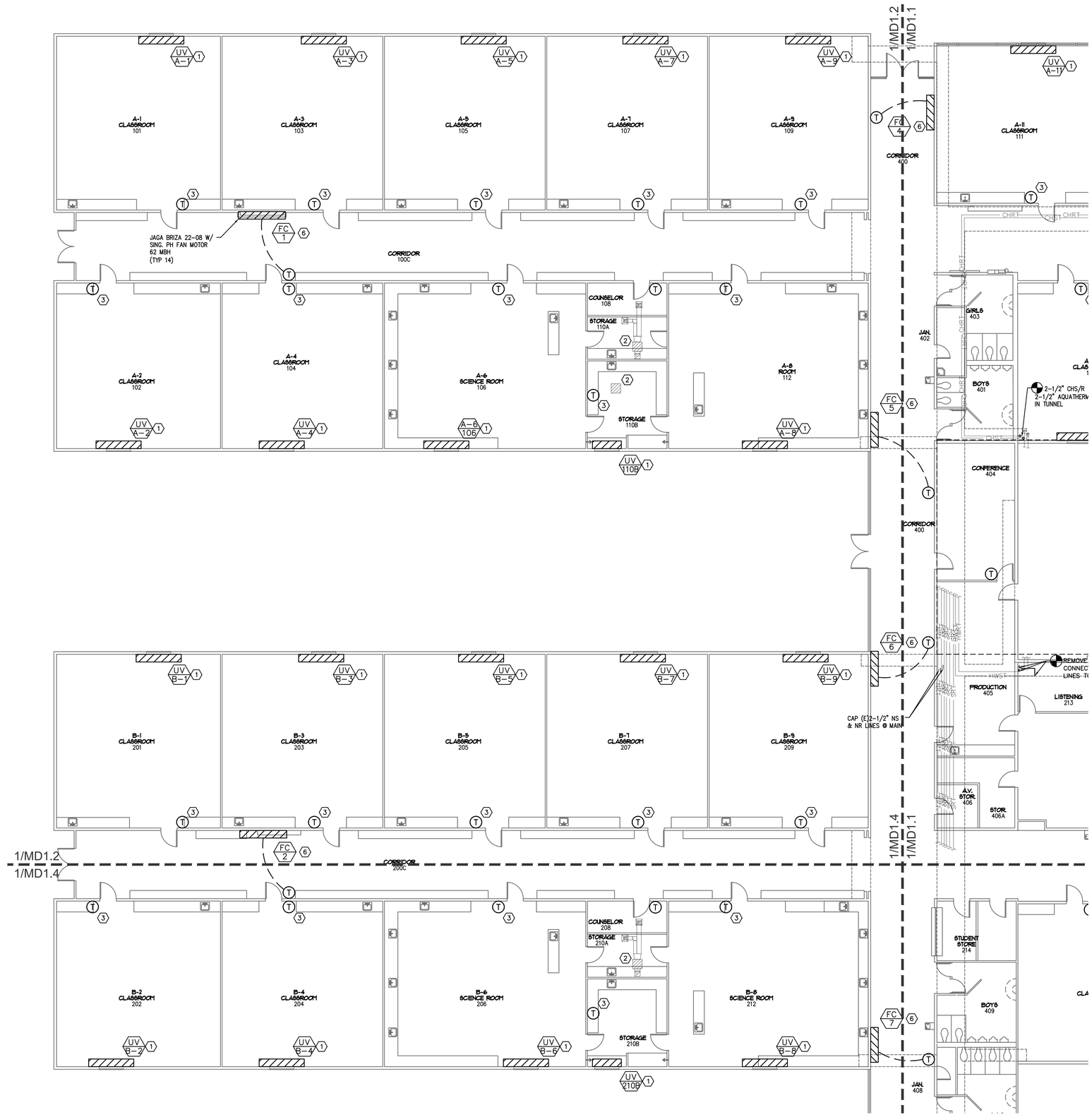

2 / M2.2 MECHANICAL PLAN – SECTOR 'B'
SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17887
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	05/08/19
Proj No:	9652
Drawn By:	LKF
Chkd By:	SWM
DSGN By:	SWM
Acad File:	9652_HIGHLAND_M22

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE BEAVERTON OREGON
MECHANICAL PLAN – SECTOR 'B'

CONSTRUCTION DOCUMENTS

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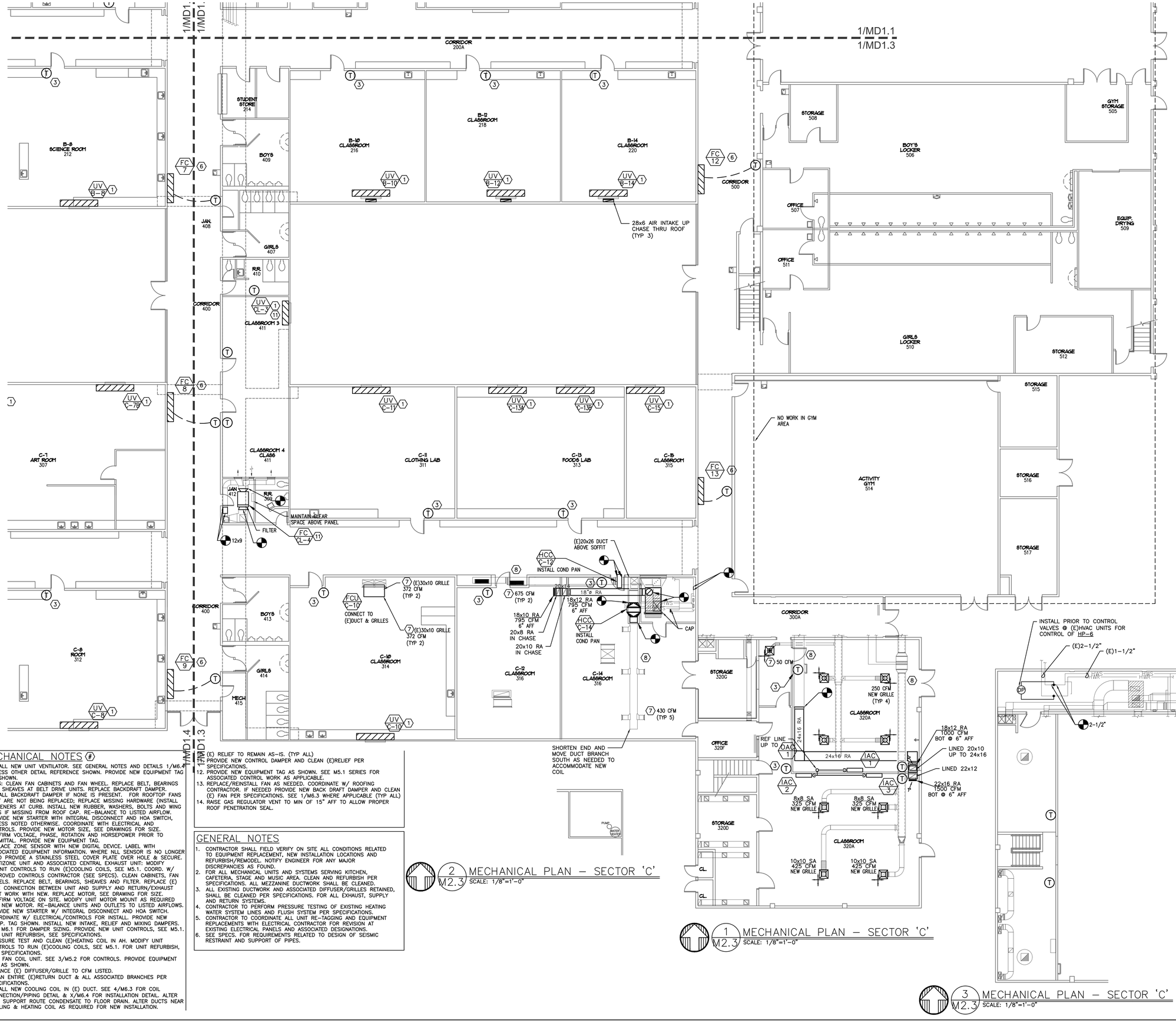

MECHANICAL NOTES (#)

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6. SEE SPECS. FOR REQUIREMENTS RELATED TO DESIGN OF SEISMIC RESTRAINT AND SUPPORT OF PIPES.

2 M2.3 MECHANICAL PLAN – SECTOR 'C'
SCALE: 1/8"=1'-0"

1 M2.3 MECHANICAL PLAN – SECTOR 'C'
SCALE: 1/8"=1'-0"

3 M2.3 MECHANICAL PLAN – SECTOR 'C'
SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17580
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	05/08/19
Proj No:	9652
Drawn By:	LKF
Chkd By:	SWM
DSGN By:	SWM
Acad File:	9652_HIGHLAND_M23

CONSTRUCTION DOCUMENTS

BEAVERTON SCHOOL DISTRICT

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

MECHANICAL PLAN – SECTOR 'C'

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SHEET
M2.3

MFIA INC. Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
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FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: Laura Froelke

MECHANICAL NOTES (#)

1. INSTALL NEW UNIT VENTILATOR. SEE GENERAL NOTES AND DETAILS 1/M6.4 UNLESS OTHER DETAIL REFERENCE SHOWN. PROVIDE NEW EQUIPMENT TAG AS SHOWN.
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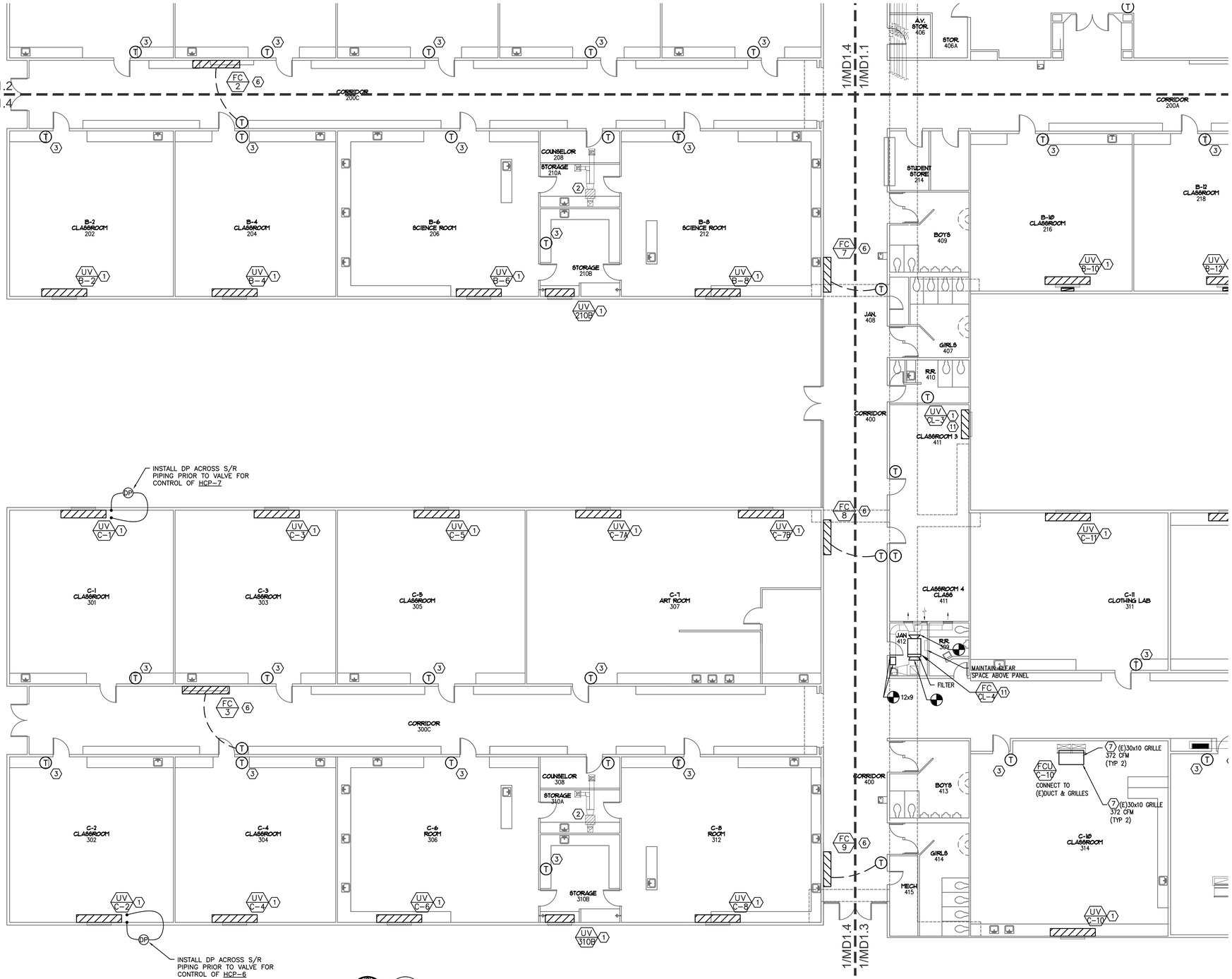

1 M2.4 MECHANICAL PLAN – SECTOR 'D'
SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17589
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_M24

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON
MECHANICAL PLAN – SECTOR 'D'

CONSTRUCTION DOCUMENTS

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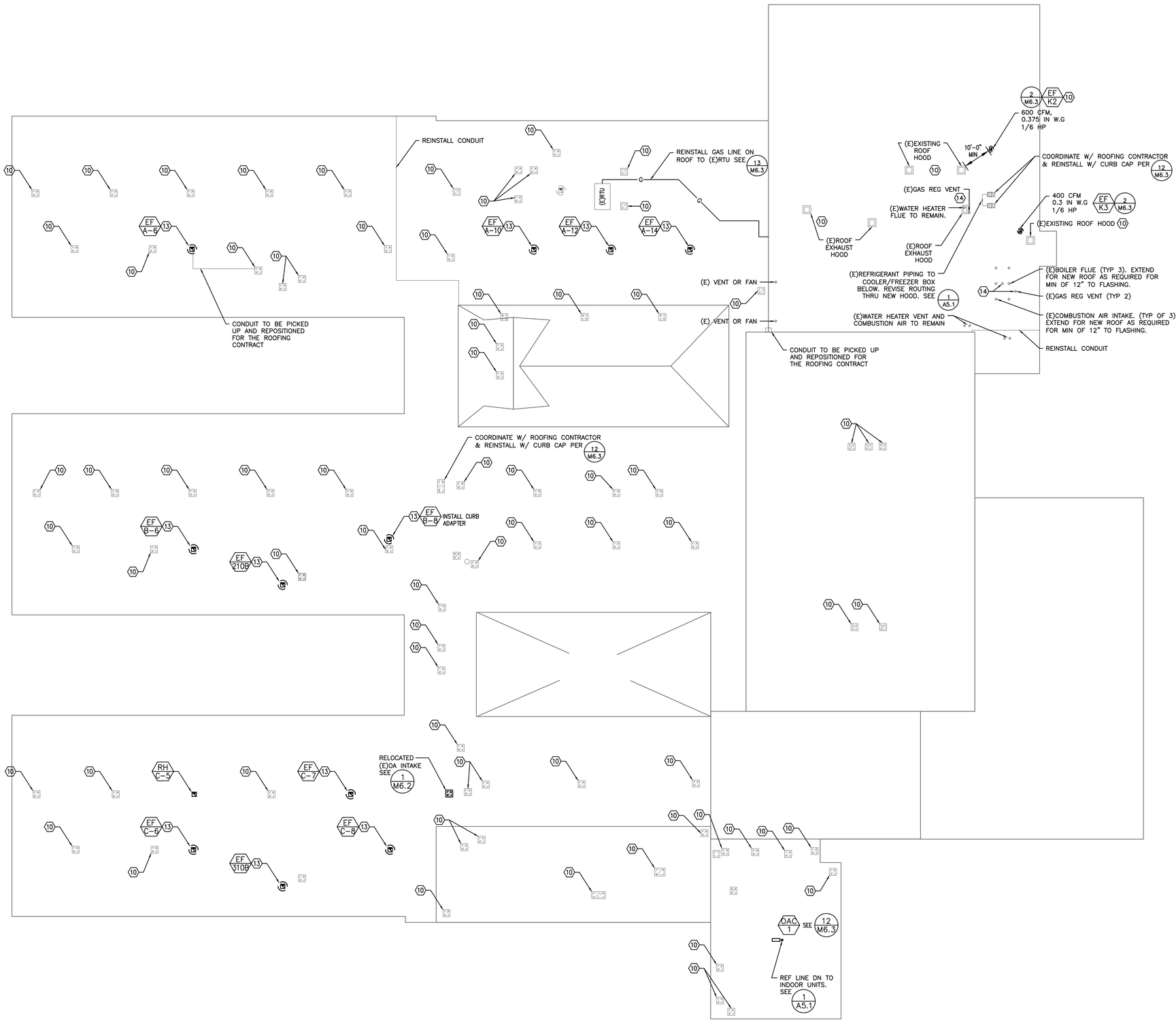
CONTACT: Laura Froelke

SHEET
M2.4



MECHANICAL NOTES

1. INSTALL NEW UNIT VENTILATOR. SEE GENERAL NOTES AND DETAILS 1/M6.4 UNLESS OTHER DETAIL REFERENCE SHOWN. PROVIDE NEW EQUIPMENT TAG AS SHOWN.
2. FANS: CLEAN FAN CABINETS AND FAN WHEEL. REPLACE BELT, BEARINGS AND SHEAVES AT BELT DRIVE UNITS. REPLACE BACKDRAFT DAMPER. INSTALL BACKDRAFT DAMPER IF NONE IS PRESENT. FOR ROOFTOP FANS THAT ARE NOT BEING REPLACED; REPLACE MISSING HARDWARE (INSTALL FASTENERS AT CURB. INSTALL NEW RUBBER, WASHERS, BOLTS AND WING NUTS IF MISSING FROM ROOF CAP. RE-BALANCE TO LISTED AIRFLOW. PROVIDE NEW STARTER WITH INTEGRAL DISCONNECT AND HOA SWITCH, UNLESS NOTED OTHERWISE. COORDINATE WITH ELECTRICAL AND CONTROLS. PROVIDE NEW MOTOR SIZE, SEE DRAWINGS FOR SIZE. CONFIRM VOLTAGE, PHASE, ROTATION AND HORSEPOWER PRIOR TO SUBMITTAL. PROVIDE NEW EQUIPMENT TAG.
3. REPLACE ZONE SENSOR WITH NEW DIGITAL DEVICE. LABEL WITH ASSOCIATED EQUIPMENT INFORMATION. WHERE NLL SENSOR IS NO LONGER USED PROVIDE A STAINLESS STEEL COVER PLATE OVER HOLE & SECURE.
4. MULTIZONE UNIT AND ASSOCIATED CENTRAL EXHAUST UNIT: MODIFY (E)UNIT CONTROLS TO RUN (E)COOLING COILS, SEE M5.1. COORD. W/ APPROVED CONTROLS CONTRACTOR (SEE SPECS). CLEAN CABINETS, FAN WHEELS. REPLACE BELT, BEARINGS, SHEAVES AND FILTER. REPLACE (E) FLEX CONNECTION BETWEEN UNIT AND SUPPLY AND RETURN/EXHAUST DUCT WORK WITH NEW. REPLACE MOTOR, SEE DRAWING FOR SIZE. CONFIRM VOLTAGE ON SITE. MODIFY UNIT MOTOR MOUNT AS REQUIRED FOR NEW MOTOR. RE-BALANCE UNITS AND OUTLETS TO LISTED AIRFLOWS. PROVIDE NEW STARTER W/ INTEGRAL DISCONNECT AND HOA SWITCH. COORDINATE W/ ELECTRICAL/CONTROLS FOR INSTALL. PROVIDE NEW EQUIP. TAG SHOWN. INSTALL NEW INTAKE, RELIEF AND MIXING DAMPERS. SEE M6.1 FOR DAMPER SIZING. PROVIDE NEW UNIT CONTROLS, SEE M5.1. FOR UNIT REFURBISH, SEE SPECIFICATIONS.
5. PRESSURE TEST AND CLEAN (E)HEATING COIL IN AH. MODIFY UNIT CONTROLS TO RUN (E)COOLING COILS, SEE M5.1. FOR UNIT REFURBISH, SEE SPECIFICATIONS.
6. NEW FAN COIL UNIT. SEE 3/M5.2 FOR CONTROLS. PROVIDE EQUIPMENT TAG AS SHOWN.
7. BALANCE (E) DIFFUSER/GRILLE TO CFM LISTED.
8. CLEAN ENTIRE (E)RETURN DUCT & ALL ASSOCIATED BRANCHES PER SPECIFICATIONS.
9. INSTALL NEW COOLING COIL IN (E) DUCT. SEE 4/M6.3 FOR COIL CONNECTION/PIPING DETAIL & X/M6.4 FOR INSTALLATION DETAIL. ALTER COIL SUPPORT ROUTE CONDENSATE TO FLOOR DRAIN. ALTER DUCTS NEAR COOLING & HEATING COIL AS REQUIRED FOR NEW INSTALLATION.
10. (E) RELIEF TO REMAIN AS-IS. (TYP ALL)
11. PROVIDE NEW CONTROL DAMPER AND CLEAN (E)RELIEF PER SPECIFICATIONS.
12. PROVIDE NEW EQUIPMENT TAG AS SHOWN. SEE M5.1 SERIES FOR ASSOCIATED CONTROL WORK AS APPLICABLE.
13. REPLACE/REINSTALL FAN AS NEEDED. COORDINATE W/ ROOFING CONTRACTOR. IF NEEDED PROVIDE NEW BACK DRAFT DAMPER AND CLEAN (E) FAN PER SPECIFICATIONS. SEE 1/M6.3 WHERE APPLICABLE (TYP ALL)
14. RAISE GAS REGULATOR VENT TO MIN OF 15" AFF TO ALLOW PROPER ROOF PENETRATION SEAL.

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY ON SITE ALL CONDITIONS RELATED TO EQUIPMENT REPLACEMENT, NEW INSTALLATION LOCATIONS AND REFURBISH/REMODEL. NOTIFY ENGINEER FOR ANY MAJOR DISCREPANCIES AS FOUND.
2. FOR ALL MECHANICAL UNITS AND SYSTEMS SERVING KITCHEN, CAFETERIA, STAGE AND MUSIC AREA. CLEAN AND REFURBISH PER SPECIFICATIONS. ALL MEZZANINE DUCTWORK SHALL BE CLEANED.
3. ALL EXISTING DUCTWORK AND ASSOCIATED DIFFUSER/GRILLES RETAINED, SHALL BE CLEANED PER SPECIFICATIONS. FOR ALL EXHAUST, SUPPLY AND RETURN SYSTEMS.
4. CONTRACTOR TO PERFORM PRESSURE TESTING OF EXISTING HEATING WATER SYSTEM LINES AND FLUSH SYSTEM PER SPECIFICATIONS.
5. CONTRACTOR TO COORDINATE ALL UNIT RE-TAGGING AND EQUIPMENT REPLACEMENTS WITH ELECTRICAL CONTRACTOR FOR REVISION AT EXISTING ELECTRICAL PANELS AND ASSOCIATED DESIGNATIONS.
6. SEE SPECS. FOR REQUIREMENTS RELATED TO DESIGN OF SEISMIC RESTRAINT AND SUPPORT OF PIPES.

1 M2.5 OVERALL MECHANICAL ROOF PLAN
SCALE: 1/16"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
17580
JULY 25, 1980
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_M25

HIGHLAND PARK MIDDLE SCHOOL - BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON
OVERALL MECHANICAL ROOF PLAN

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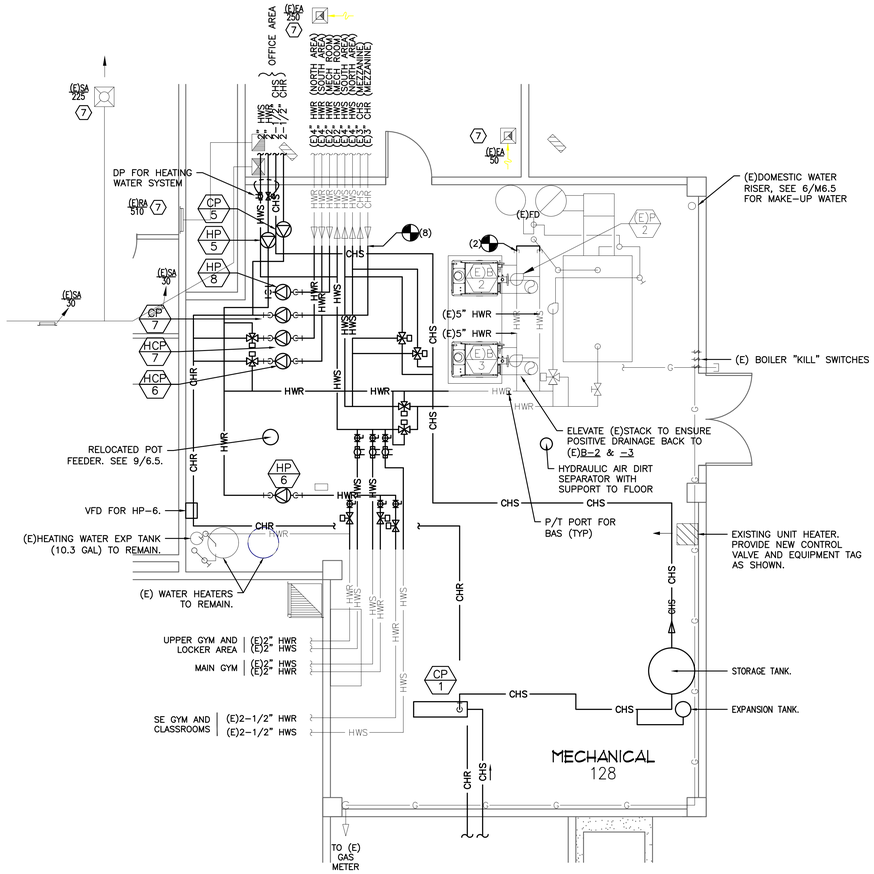
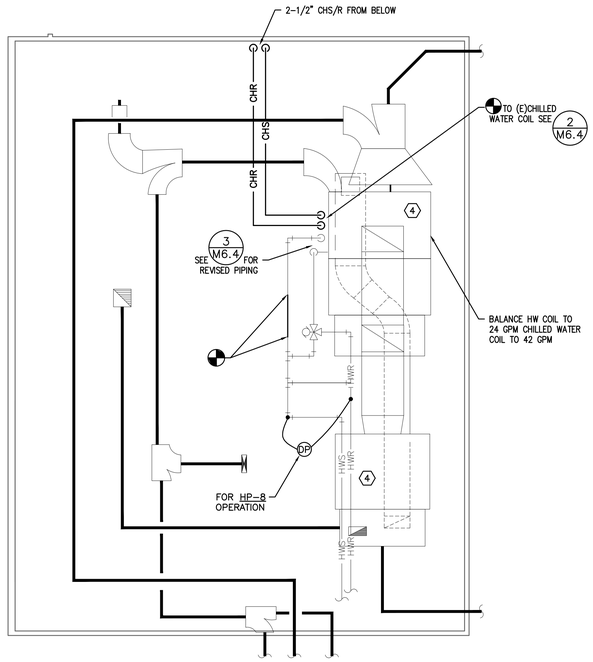


1 M2.6 ENLARGED BOILER ROOM PLAN
SCALE: 1/4"=1'-0"



2 M2.6 LIBRARY FAN ROOM PLAN
SCALE: 1/4"=1'-0"

MECHANICAL NOTES (#)

1. INSTALL NEW UNIT VENTILATOR. SEE GENERAL NOTES AND DETAILS 1/M6.4 UNLESS OTHER DETAIL REFERENCE SHOWN. PROVIDE NEW EQUIPMENT TAG AS SHOWN.
2. FANS: CLEAN FAN CABINETS AND FAN WHEEL. REPLACE BELT, BEARINGS AND SHEAVES AT BELT DRIVE UNITS. REPLACE BACKDRAFT DAMPER. INSTALL BACKDRAFT DAMPER IF NONE IS PRESENT. FOR ROOFTOP FANS THAT ARE NOT BEING REPLACED, REPLACE MISSING HARDWARE (INSTALL FASTENERS AT CURB. INSTALL NEW RUBBER, WASHERS, BOLTS AND WING NUTS IF MISSING FROM ROOF CAP. RE-BALANCE TO LISTED AIRFLOW. PROVIDE NEW STARTER WITH INTEGRAL DISCONNECT AND HOA SWITCH, UNLESS NOTED OTHERWISE. COORDINATE WITH ELECTRICAL AND CONTROLS. PROVIDE NEW MOTOR SIZE, SEE DRAWINGS FOR SIZE. CONFIRM VOLTAGE, PHASE, ROTATION AND HORSEPOWER PRIOR TO SUBMITTAL. PROVIDE NEW EQUIPMENT TAG.
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6. NEW FAN COIL UNIT. SEE 3/M5.2 FOR CONTROLS. PROVIDE EQUIPMENT TAG AS SHOWN.
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12. PROVIDE NEW EQUIPMENT TAG AS SHOWN. SEE M5.1 SERIES FOR ASSOCIATED CONTROL WORK AS APPLICABLE.
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14. RAISE GAS REGULATOR VENT TO MIN OF 15" AFF TO ALLOW PROPER ROOF PENETRATION SEAL.

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY ON SITE ALL CONDITIONS RELATED TO EQUIPMENT REPLACEMENT, NEW INSTALLATION LOCATIONS AND REFURBISH/REMODEL. NOTIFY ENGINEER FOR ANY MAJOR DISCREPANCIES AS FOUND.
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REGISTERED PROFESSIONAL ENGINEER
17580
JULY 25, 1980
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_M26

HIGHLAND PARK MIDDLE SCHOOL - BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ENLARGED PLANS

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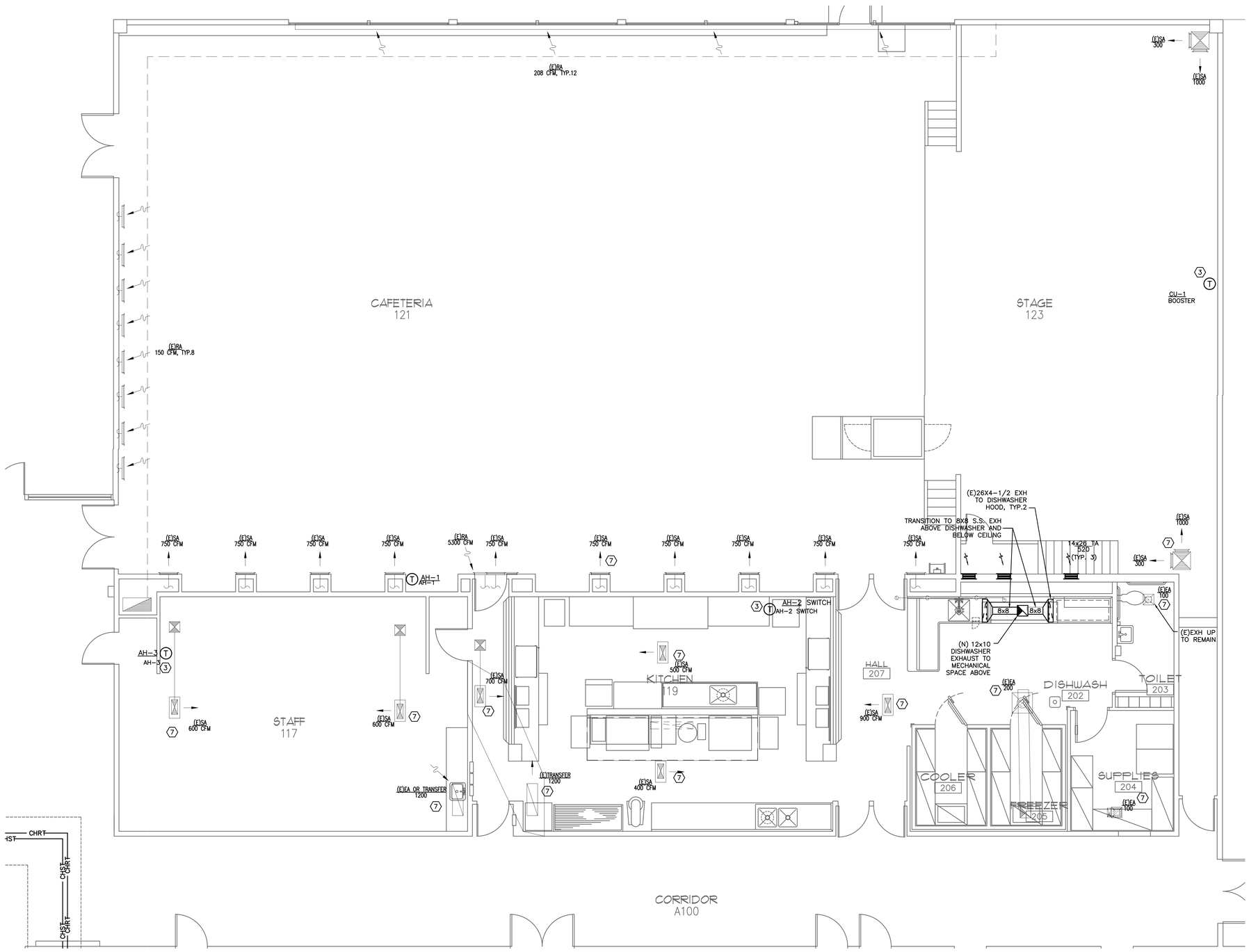

1 M2.7 HVAC FLOOR PLAN – KITCHEN & CAFETERIA ROOM
SCALE: 1/4"=1'-0"

MECHANICAL NOTES (#)

1. INSTALL NEW UNIT VENTILATOR. SEE GENERAL NOTES AND DETAILS 1/M6.4 UNLESS OTHER DETAIL REFERENCE SHOWN. PROVIDE NEW EQUIPMENT TAG AS SHOWN.
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6. SEE SPECS. FOR REQUIREMENTS RELATED TO DESIGN OF SEISMIC RESTRAINT AND SUPPORT OF PIPES.

REGISTERED PROFESSIONAL ENGINEER
17829
JULY 29, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: MG
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_M27

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON
MECHANICAL NEW WORK PLAN – KITCHEN & CAFETERIA

CONSTRUCTION DOCUMENTS

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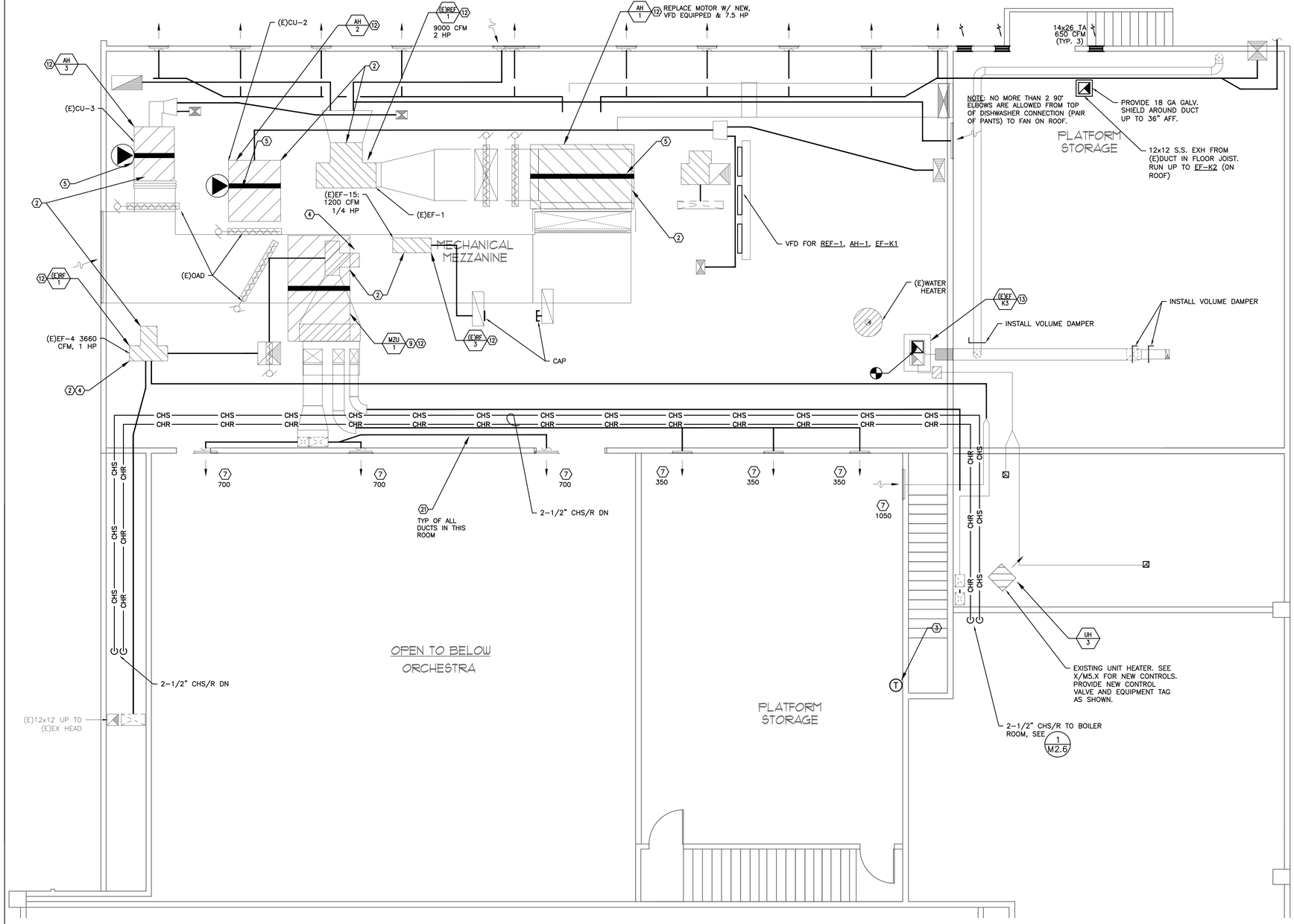
SHEET
M2.7



1 M2.8 HVAC FLOOR PLAN – MEZZANINE LEVEL
SCALE: 1/4"=1'-0"

MECHANICAL NOTES (#)

1. INSTALL NEW UNIT VENTILATOR. SEE GENERAL NOTES AND DETAILS 1/M6.4 UNLESS OTHER DETAIL REFERENCE SHOWN. PROVIDE NEW EQUIPMENT TAG AS SHOWN.
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6. SEE SPECS. FOR REQUIREMENTS RELATED TO DESIGN OF SEISMIC RESTRAINT AND SUPPORT OF PIPES.

REGISTERED PROFESSIONAL ENGINEER
17589
JULY 25, 1980
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: MG
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Acad File: 9652_HIGHLAND_M28

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

MECHANICAL NEW WORK PLAN – MEZZANINE LEVEL

CONSTRUCTION DOCUMENTS

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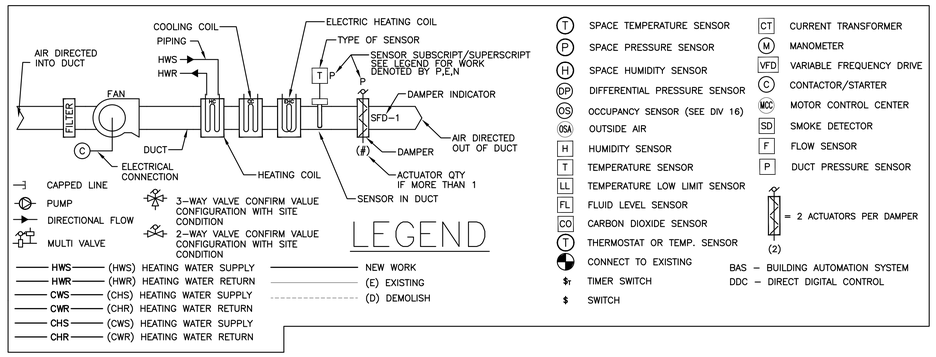


EQUIPMENT ABBREVIATIONS :

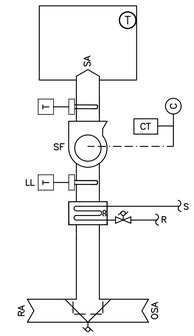
P – PUMP
SP – SUMP PUMP
BP – BOOSTER PUMP
HWP – HEATING WATER PUMP
CHP – CHILLED WATER PUMP
CWP – CONDENSING WATER PUMP
CSP – COOLING TOWER SUMP PUMP
HWRP– DOMESTIC HOT WATER RECIRCULATION
VFD – VARIABLE FREQUENCY DRIVE
CT – CONTACTOR
CC – CONTROL COMPRESSOR
CH – CHILLER
B – BOILER
EF – EXHAUST FAN
RF – RETURN/RELIEF FAN
AH – AIR HANDLER
VAV – VARIABLE AIR VOLUME DAMPER BOX
AD – AREA DAMPER
SD – SMOKE DAMPER
SFD – FIRE SMOKE COMBO DAMPER
H – HUMIDIFIER
V – VALVE
WH – WATER HEATER
BAS – BUILDING AUTOMATION SYSTEM
CW – COLD WATER
MZU – MULTI ZONE UNIT
CEU – CABINET EXH. UNIT
HVU – HEATING VENTILATION UNIT
CFU – CEILING FAN UNIT
REU – ROOF EXH. UNIT
HC – HEATING COIL
ST – STEAM
CD – CONDENSATE RETURN
HWS – HEATING WATER SUPPLY
HWR – HEATING WATER RETURN

PLUMBING ABBREVIATIONS:

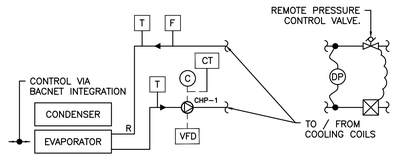
HWS – HEATING WATER SUPPLY
HWR – HEATING WATER RETURN
HW – DOMESTIC HOT WATER
CW – DOMESTIC COLD WATER
GPM – GALLONS PER MINUTE
DB – DOUBLE VALVE OPERATOR

AIR FLOW ABBREVIATIONS

OSA – OUTSIDE AIR
RA – RETURN AIR
SA – SUPPLY AIR
EXH – EXHAUSTED AIR

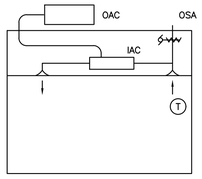


4 M5.1 UNIT VENTILATOR DIAGRAM
SCHEMATIC

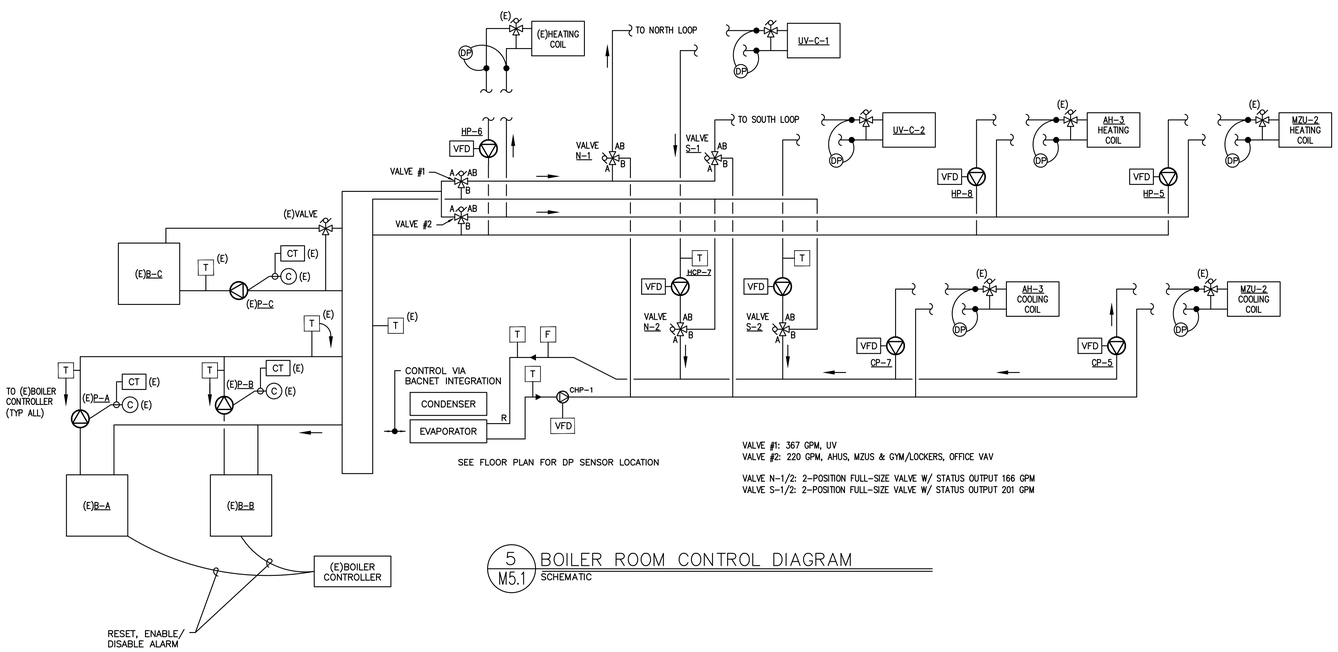


SEE FLOOR PLAN FOR DP SENSOR LOCATION.

1 M5.1 CHILLER CONTROL DIAGRAM
SCHEMATIC



2 M5.1 MINI SPLIT CONTROL DIAGRAM
SCHEMATIC



VALVE #1: 367 GPM, UV
VALVE #2: 220 GPM, AHUS, MZUS & GYM/LOCKERS, OFFICE VAV

VALVE N-1/2: 2-POSITION FULL-SIZE VALVE W/ STATUS OUTPUT 166 GPM
VALVE S-1/2: 2-POSITION FULL-SIZE VALVE W/ STATUS OUTPUT 201 GPM

SEE FLOOR PLAN FOR DP SENSOR LOCATION

5 M5.1 BOILER ROOM CONTROL DIAGRAM
SCHEMATIC

CONTROLS FOR CHILLER SEE 1/M5.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
CHILLER ENABLE/DISABLE *			X			X
CHILLER RESET SIGNAL *		X				
CHILLED WATER PUMP START/STOP			X			X
CHILLED WATER PUMP STATUS	X				X	X
CHILLED WATER PUMP SPEED				X		
CHILLER ALARM *					X	
CHILLED SUPPLY WATER TEMPERATURE *		X				X
CHILLED RETURN WATER TEMPERATURE *		X				X
SYSTEM DIFFERENTIAL PRESSURE		X				
CHILLED WATER FLOW		X				

* VIA BACNET INTEGRATION

CONTROLS FOR DUCTLESS SPLIT, SEE 2/M5.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
SPACE TEMP		X			X	
UNIT START/STOP *			X			
OSA DAMPER			X			

* VIA BACNET INTEGRATION

CONTROLS FOR FAN COIL UNIT, SEE 3/M5.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
SPACE TEMP		X			X	
FAN START/STOP			X			
HEATING WATER VALVE				X	X	

CONTROLS FOR BOILER SYSTEM, SEE 5/M5.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
HTG SYS ENABLE*			X			X
HWS RESET*				X		X
HTG SYS ALARM/FAULT*	X				X	
HW PUMP COMMAND VFD (TYP OF 2)			X			X
HW PUMP STATUS VFD (TYP OF 2)		X			X	
HW PUMP SPEED VFD (TYP OF 2)				X		X
BOILER SUPPLY WATER TEMPERATURE (TYP OF 3)		X				
SYSTEM SUPPLY WATER TEMPERATURE		X				X
SYSTEM RETURN WATER TEMPERATURE		X				X
SYSTEM DIFFERENTIAL PRESSURE		X				
MAKE-UP WATER VALVE (FLOOD VALVE)	X				X	
BOILER SHUT-OFF SWITCH (TYP. OF 3)	X				X	
BOILER START / STOP			X			X
BOILER STATUS	X				X	
BOILER ALARM	X				X	
PUMP START / STOP			X			X
PUMP STATUS	X				X	

* – VALUES TO/FROM (E) BOILER CONTROLLER

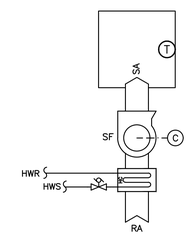
CONTROLS FOR UNIT VENTILATOR, SEE 4/M5.1

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
SPACE TEMP		X			X	
DISCHARGE TEMP		X				
FAN START/STOP			X			
FAN STATUS	X					
HEATING/CHILLED WATER VALVE				X	X	
OSA/RA DAMPER				X	X	

BOILER ROOM CONTROLS*

POINT DESCRIPTION	INPUT		OUTPUT		ALARM	TREND
	DIGITAL	ANALOG	DIGITAL	ANALOG		
CIRC WATER PUMP START/STOP (TYP 7)			X			X
CIRC WATER PUMP STATUS (TYP 7)	X				X	X
CIRC WATER PUMP SPEED (TYP 7)				X		
VALVES S-1, S-2, N-1, N-2			X			
VALVES #1 & #2				X		
TEMP SENSORS (2)		X				
DP (TYP OF 7)				X		

* – ADDED POINTS TO (E)POINTS



3 M5.1 FAN COIL UNIT
SCHEMATIC

Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MFIA-ENG.COM
CONTACT: Laura Froelke

REGISTERED PROFESSIONAL ENGINEER
17887
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_M51

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON
MECHANICAL CONTROLS

CONSTRUCTION DOCUMENTS

MFIA INC.
Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
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WWW.MFIA-ENG.COM

SHEET
M5.1

MECHANICAL LEGEND

- SUPPLY AIR DIFFUSER
- RETURN AIR DIFFUSER
- EXHAUST AIR DIFFUSER
- DIRECTIONAL AIR FLOW
- MANUAL VOLUME DAMPER
- SUPPLY AIR DUCT UP & DOWN
- RETURN AIR DUCT UP & DOWN
- EXHAUST OR OUTSIDE AIR DUCT UP & DOWN
- SUPPLY AIR DUCT UP & DOWN
- RETURN AIR DUCT UP & DOWN
- EXHAUST OR OUTSIDE AIR DUCT UP & DOWN
- VAV TERMINAL UNIT W/ REHEAT COIL
- (D) DEMOLISH
- (E) EXISTING
- CONNECT TO EXISTING
- (T)F-? THERMOSTAT
- (S) TEMPERATURE SENSOR
- (?) NOTE
- (XX ?) EQUIPMENT DESIGNATOR
- GATE VALVE
- CHECK VALVE
- BALANCING VALVE
- THERMOMETER
- DIRECTION OF FLOW
- PUMP
- STRAINER
- PRESSURE GUAGE
- PETE'S PLUG
- DOUBLE CHECK ASSEMBLY
- PRESSURE REDUCING VALVE
- UNION
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- CAP
- MOTORIZED DAMPER
- BALL SHUT OFF VALVE
- FIRE DAMPER
- FIRE / SMOKE DAMPER
- SMOKE DAMPER

AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
B.D.	BOTTOM OF DUCT
BHP	BRAKE HORSEPOWER
BOG	BOTTOM OF GRILLE
BTU	BRITISH THERMAL UNITS
CFM	CUBIC FEET PER MINUTE
CONN.	CONNECTION
CONT.	CONTINUATION
CW	DOMESTIC COLD WATER
DB	DRY BULB
DIA.	DIAMETER
DIST.	DISTRIBUTION
EXH	EXHAUST AIR
EDB	ENTERING DRY BULB TEMPERATURE
EWB	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
FF	FINISH FLOOR
FIXT.	FIXTURE
F.O.B.	FLAT ON BOTTOM
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT.	FEET / FOOT
GA.	GAUGE
GEXH	GREASE EXHAUST AIR DUCT
GPM	GALLONS PER MINUTE
H	HEIGHT
HP	HORSEPOWER
I.D.	INSIDE DIAMETER
IN.	INCHES
L	LENGTH
LBS.	POUNDS
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MA	MAKE UP AIR
MAX.	MAXIMUM
MBH	THOUSANDS OF BTUs PER HOUR
MD	MOTORIZED DAMPER
MIN.	MINIMUM
MVD	MANUAL VOLUME DAMPER
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
N.I.M.	NOT IN MECHANICAL
NO.	NUMBER
N.O.	NORMALLY OPEN
O.A.	OUTSIDE AIR
P	PERSON
PSI	POUNDS PER SQUARE INCH
P/T	PRESSURE / TEMPERATURE
R.A.	RETURN AIR
RECT.	RECTANGULAR
REQ'D	REQUIRED
S.A.	SUPPLY AIR
S.P.	STATIC PRESSURE
SQ.	SQUARE
TEMP.	TEMPERATURE
TYP.	TYPICAL
VAV	VARIABLE AIR VOLUME
W	WIDTH
WB	WET BULB
WPD	WATER PRESSURE DROP
ø	DIAMETER

—HWS—	(HWS) HEATING WATER SUPPLY
—HWR—	(HWR) HEATING WATER RETURN
——	(HWRR) HEATING WATER REVERSE RETURN
—CHS—	(CHS) CHILLED WATER SUPPLY
—CHR—	(CHR) CHILLED WATER RETURN
—PC—	PUMPED CONDENSATE
—S—	(HPS) HIGH PRESSURE STEAM
—V4—V4—	(HT) HEAT TRACED DOMESTIC HOT WATER
—CHST—	(CHST) CHILLED WATER SUPPLY IN TUNNEL
—CHRT—	(CHRT) CHILLED WATER RETURN IN TUNNEL
—SST—	(SST) SOUTH ZONE HEATING WATER SUPPLY IN TUNNEL
—SRT—	(SRT) SOUTH ZONE HEATING WATER RETURN IN TUNNEL
—NST—	(NST) NORTH ZONE HEATING WATER SUPPLY IN TUNNEL
—NRT—	(NRT) NORTH ZONE HEATING WATER RETURN IN TUNNEL
—NRRT—	(NRRT) NORTH ZONE HEATING WATER REVERSE RETURN IN TUNNEL
—SRRT—	(SRRT) SOUTH ZONE HEATING WATER REVERSE RETURN IN TUNNEL

PUMPS

MARK NUMBER	CHP 1	HP 6	HCP 7	HCP 6	HP 8	HP 5	CP 5	CP 7
TYPE	BASE	IN-LINE SPLIT COUPLE						
APPLICATION	CHILLER	GYM/LR	N UV	S UV	MEZZ HEAT	OFF & LIB	LIB COOL	MEZZ COOL
FLOW RATE (GPM)	545	120	170	200	70	35	42	136
HEAD (FT)	45	55	85	85	45	30	30	35
EFFICIENCY	81	62	68	70	61	48	52	67
BRAKE HP	7.8	2.8	5.5	6.25	1.3	0.56	0.64	1.8
MOTOR HP	10	5	10	10	3	1	1	3
MOTOR RPM	1750	1750	1750	1750	1750	1750	1750	1750
VFD	YES	YES	YES	YES	YES	YES	YES	YES
DESIGN WEIGHT (LBS)	400	260	385	435	245	200	200	245
% GLYCOL	20	20	20	20	20	20	20	20
VOLTAGE/PH	480/3	480/3	480/3	480/3	480/3	480/3	480/3	480/3
BASIS OF DESIGN (B&G)	1510 4BC	80SC 2.5x2.5x9 1/2B	80SC 2.5x2.5x9 1/2B	80SC 3x3x9.5B	80SC 2.5x2.5x7	80SC 1.5x1.5x7B	80SC 1.5x1.5x7B	80SC 2.5x2.5x7

VENTILATION AIR SCHEDULE -

ROOM NUMBER AND NAME	AREA (SQ. FT.) Az	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS Pz	OUTSIDE AIR REQUIREMENT (CFM/P) Rp	OUTSIDE AIR REQUIREMENT (CFM/SQ FT.) Ra	OUTSIDE AIR REQUIRED (CFM) Vbz	Ez	ZONE OSA (CFM) Voz	SUPPLY AIR (CFM) Vpz	PRIMARY OSA FRACTION Zp	RETURN AIR (CFM)	EXHAUST AIR (CFM)	Zone Ventilation Efficiency Evz	Corrected OSA CFM	AIR SYSTEMS
CLASSROOM UNIT VENTILATORS															
A WING STD CLASSROOM	1137	35	40	10	0.12	536	1.0	536	1500	0.36	1500	0	1.00	536	UV
B WING STD CLASSROOM	1137	35	40	10	0.12	536	1.0	536	1500	0.36	1500	0	1.00	536	UV
C WING STD CLASSROOM	1137	35	40	10	0.12	536	1.0	536	1500	0.36	1500	0	1.00	536	UV
C-7	1547	35	55	10	0.12	736	1.0	736	3000	0.25	3000	0	1.00	736	UV
C-10	1298	20	26	10	0.18	494	1.0	494	1000	0.49	1000	0	1.00	494	UV/FCU
SCI PREP															
110B	1000	25	25	10	0.18	430	1.0	430	750	0.57	1000	0	1.00	430.00	UV-110B
210B	1000	25	25	10	0.18	430	1.0	430	750	0.57	1000	0	1.00	430.00	UV-210B
310B	1000	25	25	10	0.18	430	1.0	430	750	0.57	1000	0	1.00	430.00	UV-310B
SE CLASSROOMS															
ART C-10	1298	35	46	10	0.12	616	1.0	616	2244	0.27	2244	0	1.00	616	FCU/UV=C-10
TOTAL	**1298**		**46**			**616**		**616**	**2244**		**2244**	**0**	**1.00**	**616**	
								Vou	**Vps**				**Ev**		
CLASSROOM C-12	781	35	28	10	0.12	374	1.0	374	1350	0.28	1350	0	0.93	402	CU-6
COMPUTER C-14	935	25	24	10	0.12	352	1.0	352	2150	0.16	2150	0	1.03	411	CU-6
TOTAL	**1716**		**52**			**726**		**726**	**3500**		**3500**	**0**	**0.93**	**813**	
								Vou	**Vps**				**Ev**		
CLASSROOM 320A	821	35	29	10	0.06	339	1.0	339	1000	0.34	1000	0	0.86	396	HVU-CEU-2
DRAMA 320A	1146	35	41	10	0.06	479	1.0	479	1500	0.32	1500	0	0.88	559	HVU-CEU-2
STORAGE	239	0	0	0	0.12	29	1.0	29	750	0.04	1000	0	1.16	33	RTU-1
OFFICE	106	5	1	5	0.06	11	1.0	11	1000	0.01	1000	0	1.18	13	RTU-1
TOTAL	**4963**		**147**			**1936**		**1936**	**9900**		**10150**	**0**	**0.86**	**2226**	
								Vou	**Vps**				**Ev**		
COUNSELOR															
CLASSROOM 3	294	5	2	5	0.06	28	1.0	28	750	0.04	750	0	1.00	28	UV-CL-3
CLASSROOM 4	294	5	2	5	0.06	28	1.0	28	750	0.04	750	0	1.00	28	UV-CL-4
TOTAL	**588**		**4**			**55**		**55**	**1500**		**1500**	**0**	**1.00**	**55**	
								Vou	**Vps**				**Ev**		
AH-1															
CAFETERIA/FAST FOOD DINING	5400	100	540	7.5	0.18	5022	1.0	5022	9500	0.53	9500	0	1.00	5022	AH-1
TOTAL	**5400**		**540**			**5022**		**5022**	**9500**		**9500**	**0**	**1.00**	**5022**	
								Vou	**Vps**				**Ev**		
AH-2															
KITCHEN	1290	0	0	0	0.7	903	1.0	903	2500	0.36	2500	0	1.00	903	AH-2
TOTAL	**1290**		**0**			**903**		**903**	**2500**		**2500**	**0**	**1.00**	**903**	
								Vou	**Vps**				**Ev**		
AH-3															
STAFF LOUNGE	713	70	50	7.5	0.18	503	1.0	503	1200	0.42	1200	0	1.00	503	AH-3
TOTAL	**713**		**50**			**503**		**503**	**1200**		**1200**	**0**	**1.00**	**503**	
								Vou	**Vps**				**Ev**		
MZU-1															
MUSIC	1600	35	56	10	0.12	752	1.0	752	2100	0.36	2100	0	1.05	1035	MZU-1
ORCHESTRA	775	35	28	10	0.12	373	1.0	373	1050	0.36	1050	0	1.05	513	MZU-1
PRACTICE	775	35	28	10	0.12	373	1.0	373	550	0.68	550	0	0.73	513	MZU-1
TOTAL	**3150**		**112**			**373**		**1498**	**3700**		**3700**	**0**	**0.73**	**2061**	
								Vou	**Vps**				**Ev**		
MZU-2															
LIBRARY	7145	12.5	90	10	0.12	1757	1.0	1757	7095	0.25	7095	0	1.16	2418	MZU-2
TOTAL	**7145**		**90**			**1757**		**1757**	**7095**		**7095**	**0**	**1.16**	**2418**	
								Vou	**Vps**				**Ev**		

MZU CHILLED WATER COIL

MARK NUMBER	CC MZU-1
SYSTEM	MZU-1
CFM	3950
STATIC PRESS ("WC) (MAX)	0.35
VELOCITY (FPM)	511
ENTERING AIR TEMP (°F)(DB/WB)	77/63
LEAVING AIR TEMP (°F)(DB/WB)	55/53
SENSIBLE CAPACITY (MBH)	89
TOTAL CAPACITY (MBH)	101
APPROX COIL SIZE WxH (IN)(2)	48X34
COIL ROWS	4
FINS PER INCH	11
PERCENT GLYCOL	20%
FLOW RATE GPM(1)	25
(E) CONNECTION SIZE (2)	1-1/2
VALVE TYPE	3-WAY

EXHAUST FANS

MARK NUMBER	EF K2 (2)(4)	EF K3	EF 210B (2)	EF 310B (2)	EF A-6 / EF B-6 / EF B-8 / EF C-6 / EF C-8 (2)	EF A-10 / EF A-12 / EF A-14 (2)
EXISTING CURB SIZE IF RE-USED (1)	N/A	N/A				
AREA SERVED	DISHWASHER	RR/SUPP	210B	310B	A-6/B-6/B-8/C-6/C-8	A-10/A-12/A-14
TYPE	ROOF	BLOWER	ROOFTOP	ROOFTOP	ROOFTOP	ROOFTOP
CFM	600	400	240	240	1162	414
TOTAL SP. (IN H20)	0.716	0.3	0.3	0.3	0.3	0.3
FAN RPM	1725	853	1550	1550	1000	1267
MOTOR HP	1/6	1/4	1/30	1/30	1/4	1/10
CONTROLLED BY	DDC/SWITCH	DDC	DDC	DDC	DDC	DDC
INTERLOCK WITH	DISHWASHER	AH-2	STAT	STAT	STAT	STAT
VFD	NO	–	–	–	–	–
BACK DRAFT DAMPER / 2-POSITION CTRL DAMPER	MOTORIZED	MOTORIZED	BDD	BDD	BDD	BDD
ISOLATION	RUBBER IN SHEAR					
DESIGN WEIGHT (LBS)	26	169	21	21	41	26
MAX. INLET SONES	10.7	3.4	4.5	4.5	7.5	5.3
BASIS OF DESIGN: GREENHECK	G-095-VG	USF-110-BI	G-070-D	G-070-D	G-133-VB	G-90-VG

1. NEW EXHAUST ON EXISTING CURB. CONTRACTOR TO VERIFY SIZE ON SITE PRIOR TO ORDER AND INSTALLATION.
2. PROVIDE W/ EC MOTOR FOR SPEED CONTROL.
3. FAN TO OPERATE @ LOW SPEED WHEN HOOD SWITCH IS OFF TO BALANCE AH-2, OPERATE @ HIGH SPEED WHEN HOOD SWITCH IS ON.
4. DISABLE (E)EF-K3 OPERATION WHEN EF-K2 IS ON.

INTAKE / RELIEF HEAD

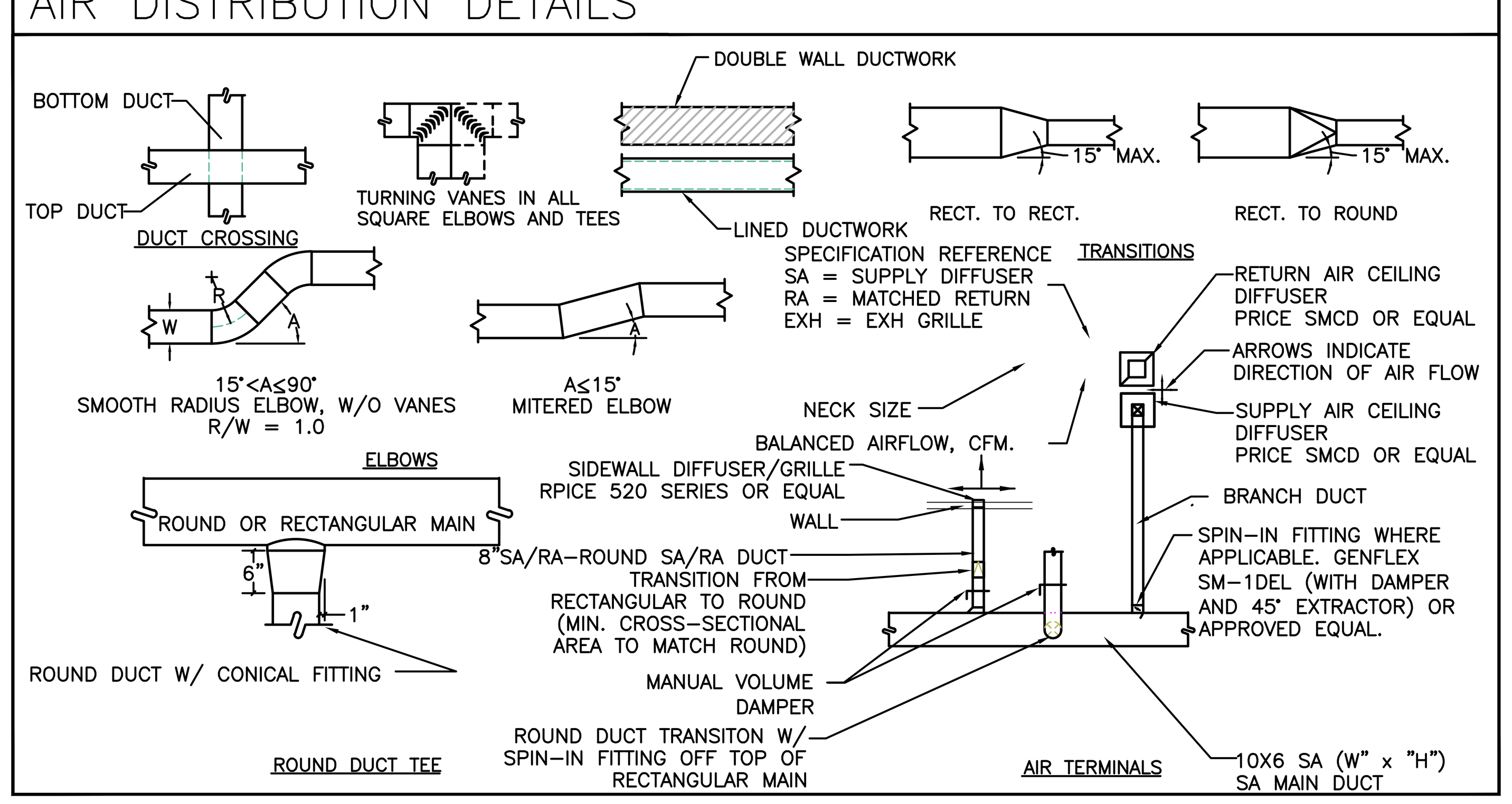
MARK NUMBER	
SYSTEM	CR C-5
TYPE	ROOF MOUNT SPUN ALUMINUM
CFM	1500
THROAT AREA (SQ FT)	3
THROAT VEL. (FPM)	500
THROAT SIZE (IN. x IN.)	18x24
HOOD SIZE (IN. x IN.)	24x30
MAX PRESSURE DROP ("H20)	0.06
DESIGN WT (LBS)	57
DAMPER — NEW	YES
DAMPER — BLADE CONFIGURATION	OPPOSED
DAMPER — DAMPER OPERATION	MODULATING
DAMPER — DUCT SIZE	–
BASIS OF DESIGN: GREENHECK	FGR

C-12, C-14 C/H WATER COIL*

MARK NUMBER		HCC C-12	HCC C-14
SYSTEM		CR C-12	CR C-14
TOTAL CFM		1350	2150
TO FIT UNIT		DUCT-MOUNTED	
COOLING	MAX FACE VELOCITY (FPM)	579.1	408.2
COOLING	ENT. AIR TEMP (DB/WB)	80/64	80/64
COOLING	LVG AIR TEMP (DB/WB)	62/58	59/56
COOLING	TOTAL (TONS)	3	3.5
COOLING	GPM FOR 55/60 DEG CHS	7.1	9.4
COOLING	MAX AIR PRESS LOSS (IN H20)	0.61	0.37
COOLING	MAX WATER PRSS LOSS (FT H20)	0.8	9.8
COOLING	APPROX FACE	26x18	36x18
COOLING	% GLYCOL	20%	20%
HEATING	STATIC PRESS (" H20) (MAX)	0.61	0.37
HEATING	VELOCITY (FPM)	579.1	408.2
HEATING	INLET WATER TEMP. °F	140	140
HEATING	OUTLET WATER TEMP. °F	110	110
HEATING	INLET AIR TEMP.	55	55
HEATING	OUTLET AIR TEMP.	110	110
HEATING	PERCENT GLYCOL	20%	20%
HEATING	TOTAL CAPACITY MBH	108	113
HEATING	FLOW RATE GPM	6.7	5.0
HEATING	3-WAY OR 2-WAY VALVES	2	3

* COILS SHALL BE CASED.

AIR DISTRIBUTION DETAILS



CHILLER

MARK NUMBER		CH 1
NOMINAL TONS *		170
DESCRIPTION		AIR COOLED SCROLL
CHILLED WATER	FULL FLOW (GPM)	545
CHILLED WATER	MIN / MAX FLOW (GPM)	150/625
CHILLED WATER	ENT. WATER (° F.)	54
CHILLED WATER	LVG. WATER (° F.)	44
CHILLED WATER	MAX PD @ FULL FLOW (FT H20)	18.0
MIN FULL LOAD EFFICIENCY (EER)		9.7
MIN IPLV (EER)		16.1
REFRIGERANT		410A
% GLYCOL		20
ELECTRIC		480-3 SINGLE CON.
MCA		376
MOCP		400
DESIGN WEIGHT (LBS)		8675
DESIGN BASIS		YORK YLAA SERIES

* – MINIMUM CAPACITY ARI CONDITIONS

SPLIT SYSTEM COOLING

TYPE	COOLING ONLY	COOLING ONLY	COOLING ONLY
SYSTEM	NORTH CR 320A	SOUTH CR 320A	SOUTH CR 320A
INDOOR UNIT MARK NUMBER	IAC 1	IAC 2	IAC 3
TYPE (INDOOR UNIT)	WALL MOUNTED UNIT		
COOLING CAPACITY (EACH)	20,000 BTH/HR	15,000 BTH/HR	15,000 BTH/HR
AIRFLOW (CFM)	635	500	500
INDOOR UNIT DESIGN WT.	31 LBS.	31 LBS.	31 LBS.
BASIS OF DESIGN:	DAIKIN FXAQ24PVJU	DAIKIN FXAQ18PVJU	
OUTDOOR UNIT MARK NUMBER	OAC 1		
TYPE (OUTDOOR UNIT)	ROOF MOUNT		
EFFICIENCY (EER)	9.8		
COP	–		
COOLING CAPACITY	51,433 BTUH		
MAX PIPING LENGTH	229'		
OUTDOOR UNIT DESIGN WT.	225 LBS.		
REFRIGERANT	R-410A		
BASIS OF DESIGN:	DAIKIN RXTQ60TAVJU		

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CONTACT: Laura Froelke

CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER 17884 OREGON JULY 25, 1995 SCOTT W. MILLER
EXPIRES: 31DEC18

Date:	03/08/19
Proj No:	9652
Drawn By:	LKF
Chkd By:	SWM
DSGN By:	SWM
Acad File:	9652_HIGHLAND_M61

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

MECHANICAL SCHEDULES

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SHEET
M6.1

UNIT VENTILATOR SCHEDULE *

MARK NUMBER	UV A-1 (5)(6)	UV A-2 (5)(6)	UV A-3	UV A-4	UV A-5	UV A-6	UV A-7	UV A-8	UV A-9	UV A-10	UV A-11	UV A-12	UV A-14	UV B-1 (5)(6)	UV B-2 (5)(6)	UV B-3	UV B-4	UV B-5	UV B-6	UV B-7	UV B-8	UV B-9	UV B-10	UV B-12	UV B-14	UV C-1 (5)(6)	UV C-2 (5)(6)	UV C-3	UV C-4	UV C-5	UV C-6	UV C-7	UV C-7B	UV C-8	UV C-10	UV C-17	UV C-13A	UV C-13B	UV 110B	UV 210B	UV 310B	UV L-1S	UV L-3	UV L-4
LOCATION	CR A-1	CR A-2	CR A-3	CR A-4	CR A-5	CR A-6	CR A-7	CR A-8	CR A-9	CR A-10	CR A-11	CR A-13	CR A-15	CR B-1	CR B-2	CR B-3	CR B-4	CR B-5	CR B-6	CR B-7	CR B-8	CR B-9	CR B-10	CR B-12	CR B-14	CR C-1	CR C-2	CR C-3	CR C-4	CR C-5	CR C-6	CR C-7	CR C-7	CR C-8	CR C-10	CR C-10	CR C-13	CR C-13	SCI PREP 110B	SCI PREP 210B	SCI PREP 310B	CR 3	CR 3	CR 4
ARRANGEMENT	VERTICAL																																										HORIZONTAL
MAXIMUM UNIT DIMENSIONS (SEE NOTE 4)	EXISTING UNIT SIZE; MAXIMUM LENGTH 100"																																					64L X 30H X 17D			62Lx30Hx17D	62Lx30Hx17D	62Lx17Hx36D
TOTAL CFM (HIGH SPEED)	1500																																					750			750	750	750
OSA MINIMUM **	467																																					430			30	30	30
COIL PRESSURE DROP	4.2 FT H20																																					4.2 FT H20			4.2 FT H20	4.2 FT H20	4.2 FT H20
FLOW RATE (GPM)	8																																					4			4	4	4
HEATING: HEATING COIL INLET/OUTLET TEMP	57/107																																					53/110			53/110	53/110	70/110
HEATING: HEATING WATER TEMP	140/110																																					140/110			140/110	140/110	180/117
HEATING: HEATING CAPACITY (BTU/HR)	78,000																																					39,000			39,000	39,000	39,000
LOUVER SIZE	EXISTING SEE NOTE #1																																										
% PROPYLENE GLYCOL	20%																																										
COOLING: ENTERING AIR TEMP (°F) (DB/WB)	83/64																																					83/64			83/64	83/64	83/64
COOLING: LEAVING AIR TEMP (°F) (DB/WB)	56/53																																					56/53			56/53	56/53	56/53
COOLING: TOTAL CAPACITY (BTU/HR)	47,711																																					24,000			24,000	24,000	24,000
COOLING: SENSIBLE CAPACITY (BTU/HR)	40,900																																					20,500			20,500	20,500	20,500
COOLING: EWT/LWT	44/56																																					44/56			44/56	44/56	44/56
BASIS OF DESIGN	DAIKIN AVV S15																																					DAIKIN AVV S07			DAIKIN AVV S07	DAIKIN AVV S07	DAIKIN AHV H07

UNIT VENTILATOR NOTES:

1. RE-USE EXISTING LOUVER (AND GRILLE). REMOVE BIRD SCREEN, CLEAN LOUVER AND APPLY NEW GALV. BIRD SCREEN.
2. SEE SPECS FOR ALTERNATE RELATED TO UNIT CONTROLS
3. PROVIDE WITH SUB BASE TO MATCH EXISTING UNIT HEIGHT.
4. CONTRACTOR TO VERIFY ALL SITE CONDITIONS AND DIMENSIONS PRIOR TO EQUIPMENT SUBMITTAL.
5. 3-WAY CHILLED VALVE
6. 3-WAY HEATING VALVE

* UVs TO BE PREPURCHASED BY OWNER. SEE SPEC SECTION 011100.
** SEE SPECS FOR FURTHER DETAIL.

CORRIDOR FAN COIL UNITS

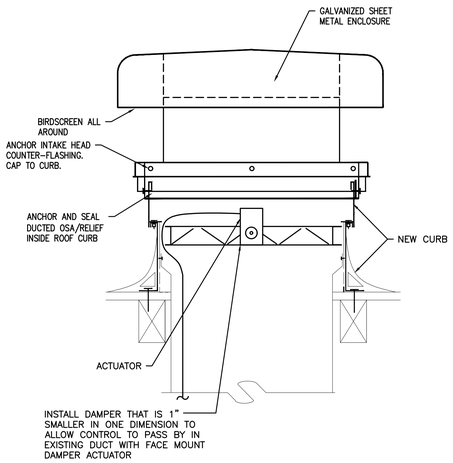
MARK NUMBER	FC 1	FC 2	FC 3	FC 4	FC 5	FC 6	FC 7	FC 8	FC 9	FC 10	FC 11	FC 12	FC 13	FC 14	FC 110B	FC 210B	FC 310B
SYSTEM	CORRIDOR SECTOR A	CORRIDOR SECTOR B	CORRIDOR SECTOR C	CENTER CORR 400	CENTER CORR 400	CENTER CORR 400	CENTER CORR 400	CENTER CORR 400	CENTER CORR 400	HALL 1 SECTOR C	CENT CORR 500	CENT CORR 500	CORR 300A	CORR A100	SCI PREP SECTOR C	SCI PREP SECTOR D	SCI PREP SECTOR D
TYPE	WALL																
HEATING CAPACITY, MBH	62.0																
CFM	1000																
ENT./LVG. WATER TEMP. (°F)	140/110																
WATER P.D., FT W.C.	6																
FLOW RATE, GPM	4																
UNIT WEIGHT, LBS	180																
UNIT SIZE	69Lx10Wx30H																
BASIS OF DESIGN	JAGA BRIZA 22 BAFF																
MOTOR HP	1 @ 1/10 & 1 @ 1/15																
ELECTRICAL (V/PH/AMPS)	115/1/2.2																

ART CR C-10 FAN COIL UNIT

MARK NUMBER	FC C-10
SYSTEM	ART CR C-10
TYPE	RECESSED WALL
CFM	744
HEATING: HEATING COIL INLET/OUTLET TEMP	
HEATING: HEATING WATER TEMP	
HEATING: HEATING COIL PRESSURE DROP	9.1 FT H2O
HEATING: HEATING WATER FLOW RATE (GPM)	3.61
HEATING: HEATING CAPACITY, MBH	36.1
COOLING: ENTERING AIR TEMP (°F) (DB/WB)	
COOLING: LEAVING AIR TEMP (°F) (DB/WB)	
COOLING: TOTAL CAPACITY (BTU/HR)	21.4
COOLING: SENSIBLE CAPACITY (BTU/HR)	19.0
COOLING: CHILLED WATER GPM	4.29
COOLING: EWT/LWT	
COOLING: CHILLED WATER P.D.	6.10
UNIT WEIGHT, LBS	97
UNIT SIZE	61Lx9Wx22H
MOTOR HP	–
ELECTRICAL (V/PH/AMPS)	115/1/1.1
BASIS OF DESIGN: JAGA	BRIZA 22 BABC/BABW

COUNSEL C-4 FAN COIL UNIT

MARK NUMBER	FC C-4
SYSTEM	COUNSELOR C-4
TYPE	HORIZ DUCTED
CFM	600
HEATING: HEATING COIL INLET/OUTLET TEMP	
HEATING: HEATING WATER TEMP	
HEATING: HEATING COIL PRESSURE DROP	
HEATING: HEATING WATER FLOW RATE (GPM)	
HEATING: HEATING CAPACITY, MBH	2.4
COOLING: ENTERING AIR TEMP (°F) (DB/WB)	
COOLING: LEAVING AIR TEMP (°F) (DB/WB)	
COOLING: TOTAL CAPACITY (BTU/HR)	4.1
COOLING: SENSIBLE CAPACITY (BTU/HR)	
COOLING: CHILLED WATER GPM	
COOLING: EWT/LWT	
COOLING: CHILLED WATER P.D.	
UNIT WEIGHT, LBS	
UNIT SIZE	26Lx35Wx17H
MOTOR HP	
ELECTRICAL (V/PH/AMPS)	
BASIS OF DESIGN: ENGINEERED COMFORT	35FH-6



1 / M6.2 RELOCATED OUTDOOR AIR INTAKE
SCALE: DETAIL

CONSTRUCTION DOCUMENTS

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REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

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Proj No: 9652
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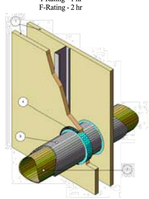
SHEET
M6.2

Design No. FS 119 W
August 1, 2003
FIRE PENETRATION SEAL (Mechanical)
Penetrating Item Type A
T-Rating - 1 hr
F-Rating - 2 hr

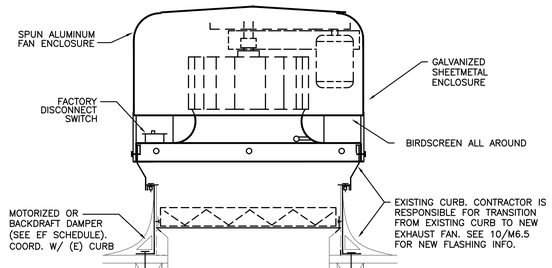


1. GYPSUM WALL ASSEMBLY: The framed opening in the wall shall be 7-1/2 in. wider and higher than the diameter of the penetrating item such that, when the penetrating item is centered in the opening, a 3-3/4 in. clearance is present between the penetrating item and the framing on all four sides. Two hour fire-rated wall assembly shall include one of the following features:
   A. Max. diameter of opening in gypsum wallboard layers is to be 22-1/2 in. for steel stud wall assemblies. When steel studs are used and the diameter of the opening exceeds the width of the stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs, and screw-attached to the steel studs at each end. Min. 25 GA galvanized steel studs spaced 24 in. o.c. measuring 3-5/8 in. wide with 1-1/4-in. legs. Studs attached with min. #6 x 3/8-in. steel stud framing screws to channel shaped floor and ceiling runners measuring 1/2-in. deep by 3-5/8-in wide, which are secured to floor and ceiling with 1-in. long concrete fasteners spaced max. 18-in. o.c. Studs and runners covered with two layers of 5/8 in. thick, Type X gypsum wallboard on each face. The base layer of gypsum wallboard fastened to steel studs with #6 1-1/8 in. bugle head phillips drywall screws spaced 12 in. o.c. The face layer of gypsum wallboard fastened with #6, 1-5/8 in. long bugle head phillips drywall screws spaced 8 in. o.c. Joint Tape and Compound - vinyl or casein, dry or premixed joint compound applied to face layers of gypsum wallboard in two coats to all exposed screw heads and gypsum wallboard joints. A min. 2-in. wide paper, plastic or fiberglass tape embedded in first layer of compound over joints in gypsum wallboard.
   B. Max. diameter of opening in gypsum wallboard layers is to be 14-1/2 in. for wood stud wall assemblies. Wood studs are to consist of min. nom. 2 x 4 lumber. spaced 16 in. o.c. Studs attached with min. 16d common nails to 2 x 4 lumber floor and ceiling runners, which are secured to floor and ceiling with 3-in. concrete fasteners spaced max. 18-in. o.c. Studs and runners covered with two layers of 5/8 in. thick, Type X gypsum wallboard on each face. The base layer of gypsum wallboard fastened to wood studs with #6 1-1/8 in. bugle head phillips drywall screws 12 in. o.c. The face layer of gypsum wallboard fastened with #6 1-5/8 in. long bugle head phillips drywall screws spaced 8 in. o.c. Joint Tape and Compound - vinyl or casein, dry or premixed joint compound applied to face layers of gypsum wallboard in two coats to all exposed screw heads and gypsum wallboard joints. A min. 2-in. wide paper, plastic or fiberglass tape embedded in first layer of compound over joints in gypsum wallboard.
2. PENETRATING ITEM: One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the through opening. The penetrating item is to be rigidly supported on both sides of the wall assembly. The following types and sizes of metallic pipes, conduit or tubing may be used:
   A. Steel Pipe: Schedule 10 (or heavier) nom. 24 in. diameter (or smaller) steel pipe.
   B. Conduit: Nom. 4 in. diameter (or smaller) electrical metallic tubing or steel conduit.
   C. Copper Tubing: Type L (or heavier) nom. 6 in. diameter (or smaller) copper tubing.
   D. Copper Pipe: Nom. 6 in. diameter (or smaller) Regular (or heavier) copper pipe.
3. PIPE COVERING MATERIALS: Nom. 1 in. thick hollow cylindrical heavy density (min. 3.5 pcf) glass fiber units, jacketed on the outside with an all service jacket. Longitudinal joints shall be tightly butted and sealed with metal fasteners or factory applied self-sealing lap tape. Transverse joints shall be secured with metal fasteners or with butt tape supplied with the product. A nom. annular space of 3/4 in. is required within the fire stop system. Any listed pipe covering material meeting the above specifications with a flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4. FILL, VOID OR CAVITY MATERIAL: Min. of 1-1/4 in. thickness of sealant fill material is to be applied within the annulus on both faces of the wall through-penetration. Additional fill material is to be installed such that a min. 1/4 in. crown is formed around the penetrating item.

Listed Manufacturer:
3M -
Firestopping
Firestopping Sealant
3M Fire Barrier™ 2000 Silicone Joint Sealant
3M Fire Barrier™ 2000+ Silicone Joint Sealant

This material was extracted and drawn by 3M Fire Protection Products from the 2006 Product Directory, Intertek/Omega Point Laboratories Inc.©

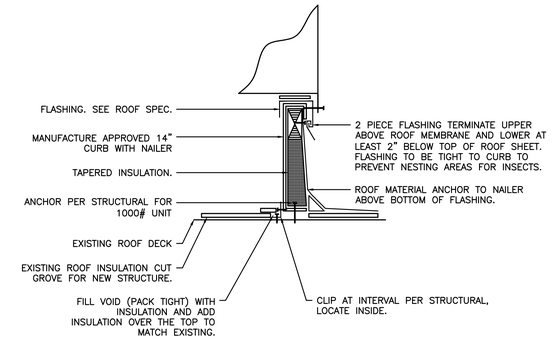
11 / M6.3 PIPING FIRE PENETRATION SEAL
DETAIL



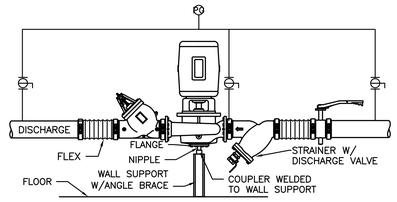
8 / M6.3 NEW ROOF MOUNT EXHAUST FAN ON (E) CURB
SCALE: DETAIL

NOT USED

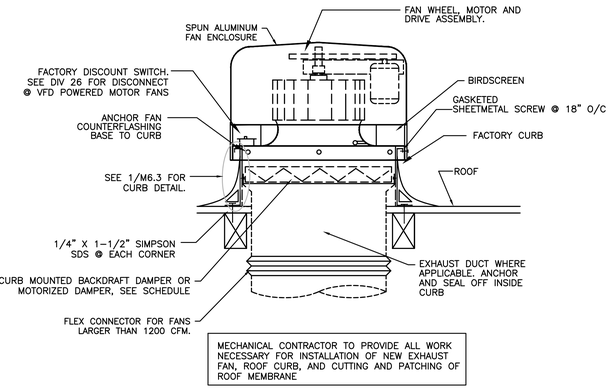
5 / M6.3 NOT USED
SCALE: DETAIL



1 / M6.3 EX FAN CURB DETAIL
SCALE: DETAIL

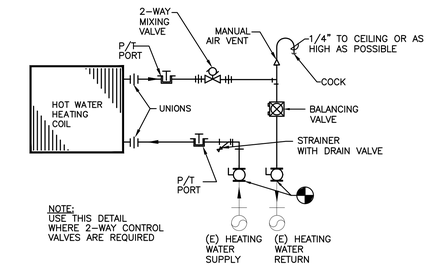


6 / M6.3 IN-LINE PUMP
SCALE: DETAIL



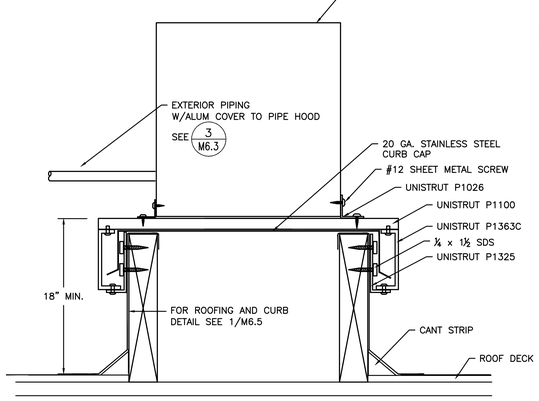
MECHANICAL CONTRACTOR TO PROVIDE ALL WORK NECESSARY FOR INSTALLATION OF NEW EXHAUST FAN, ROOF CURB, AND CUTTING AND PATCHING OF ROOF MEMBRANE.

2 / M6.3 ROOF MOUNT EXH FAN – NEW
DETAIL



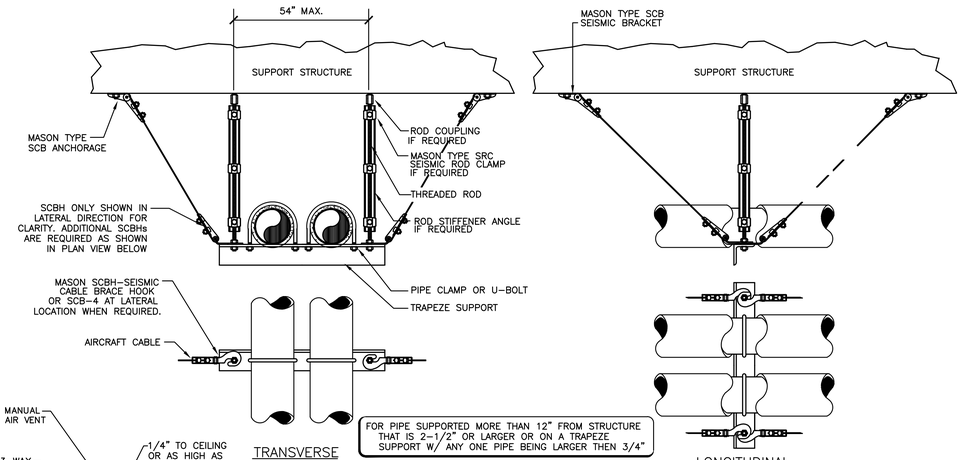
2-WAY CONTROL VALVE

9 / M6.3 COIL PIPING DIAGRAM
SCALE: DETAIL



DO NOT ATTACH UNIT DIRECTLY TO CURB CAP

12 / M6.3 CONDENSING UNIT ON CURB
SCALE: DETAIL



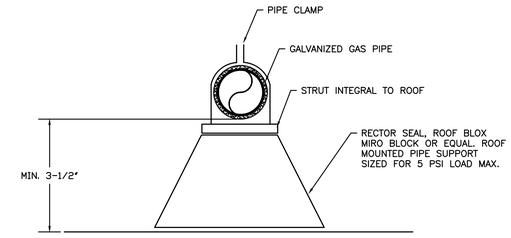
FOR PIPE SUPPORTED MORE THAN 12" FROM STRUCTURE THAT IS 2-1/2" OR LARGER OR ON A TRAPEZE SUPPORT W/ ANY ONE PIPE BEING LARGER THEN 3/4"

NOTE: MATERIALS BASED ON MASON INDUSTRIES. SIZE MATERIALS BASED ON APPLICATION & MANUFACTURER REQUIREMENT.

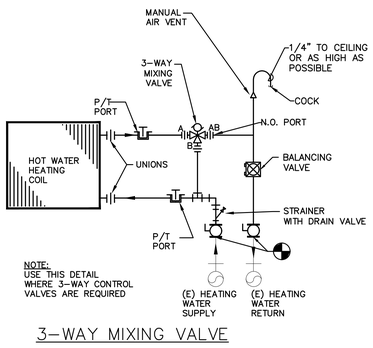
7 / M6.3 SEISMIC PIPE SUPPORT
SCALE: DETAIL

NOT USED

3 / M6.3 PIPE HOOD DETAIL
SCALE: DETAIL

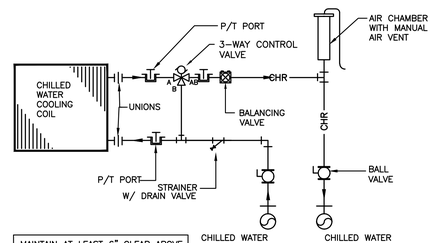


13 / M6.3 ROOF MOUNTED GAS PIPE
SCALE: DETAIL



3-WAY MIXING VALVE

10 / M6.3 COIL PIPING DETAIL
SCALE: DETAIL



4 / M6.3 3-WAY CHILLED WATER COIL
SCALE: DETAIL

CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER
17887
JULY 29, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_M61

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

MECHANICAL DETAILS

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SHEET
M6.3

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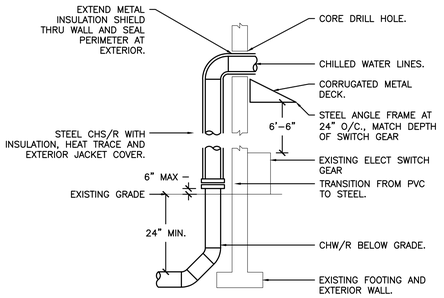
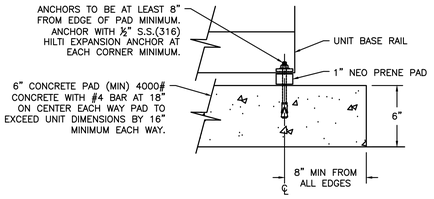
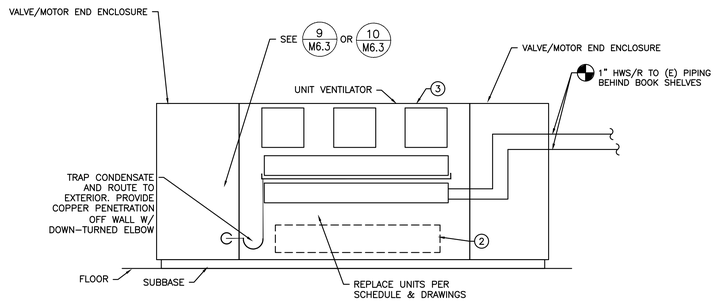
CONTACT: Laura Froelke



7 M6.4 CHILLED WATER GRADE TRANSITION
SCALE: DETAIL

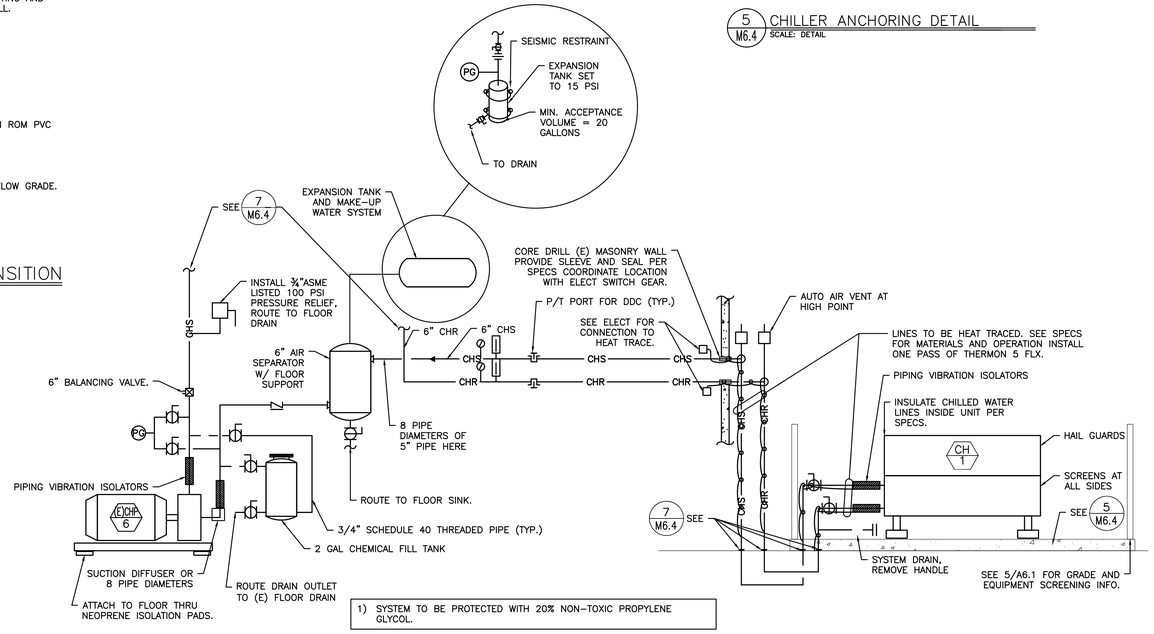


5 M6.4 CHILLER ANCHORING DETAIL
SCALE: DETAIL



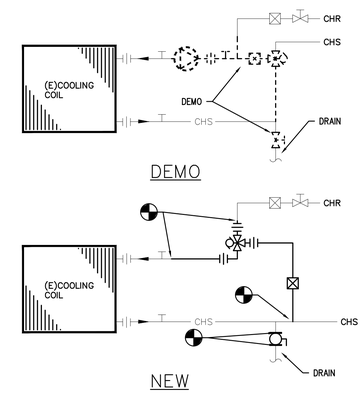
NOTES:
1) CONFIRM WHICH SIDE OF THE UNIT THE CONNECTION FOR HEATING WATER IS PRIOR TO ORDERING/SUBMITTAL. NEW UNITS TO MATCH SITE CONNECTION.
2) RE USE EXISTING LOUVER, CLEAN LOUVER.
3) SET TOP TO MATCH EXISTING.
4) PROVIDE MOCKUP FOR REVIEW INCLUDING CONTROLS PRIOR TO INSTALLING MORE THAN 1 UNIT

1 M6.4 UNIT VENTILATOR PIPING
SCALE: DETAIL



1) SYSTEM TO BE PROTECTED WITH 20% NON-TOXIC PROPYLENE GLYCOL.

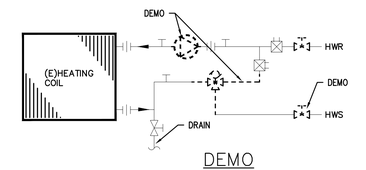
6 M6.4 CHILLER PIPING DIAGRAM
NTS



DEMO

NEW

2 M6.4 CHILLED COIL PIPING DETAIL
SCALE: DETAIL



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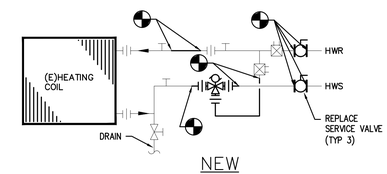
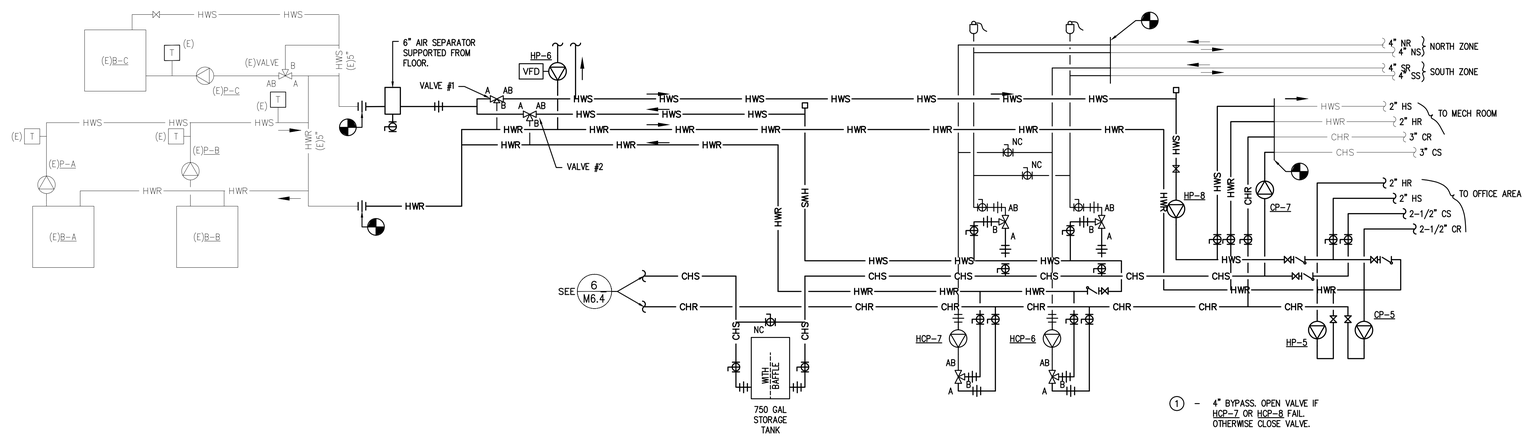


NEW

3 M6.4 HEATING COIL PIPING DETAIL
SCALE: DETAIL



7 M6.4 BOILER ROOM PIPING DIAGRAM
NTS

4 M6.4 MZU DETAIL
SCALE: DETAIL

CONSTRUCTION DOCUMENTS

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REGISTERED PROFESSIONAL ENGINEER
17582
JULY 25, 1995
SCOTT W. MILLER
EXPIRES: 31DEC18

Date: 05/08/19
Proj No: 9652
Drawn By: LKF
Chkd By: SWM
DSGN By: SWM
Acad File: 9652_HIGHLAND_M61

HIGHLAND PARK MIDDLE SCHOOL - BEAVERTON SCHOOL DISTRICT
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MECHANICAL DETAILS

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SHEET
M6.4

ELECTRICAL SYMBOL LIST

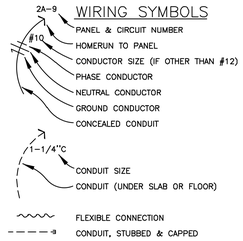
LIGHTING SYMBOLS

- LIGHT FIXTURE, RECESSED
- LIGHT FIXTURE, RECESSED – EMERGENCY
- LIGHT FIXTURE, SURFACE MOUNT
- LIGHT FIXTURE, SURFACE MOUNT – EMERGENCY
- LIGHT FIXTURE, STRIP
- LIGHT FIXTURE, STRIP – EMERGENCY
- DOWNLIGHT FIXTURE, RECESSED
- DOWNLIGHT FIXTURE, RECESSED, WALLWASH
- DOWNLIGHT FIXTURE, RECESSED – EMERGENCY
- LIGHT FIXTURE, WALL MOUNT
- LIGHT FIXTURE, CEILING MOUNT
- RECESSED LIGHT FIXTURE, WALL MOUNT
- LIGHT FIXTURE, WALL MOUNT
- LIGHT FIXTURE, WALL SCONCE
- LIGHT FIXTURE, TRACK W/ HEADS AS SHOWN ON PLAN
- EXIT SIGN, UNIVERSAL MOUNT, W/ DIRECTIONAL ARROW
- EXIT SIGN, WALL MOUNT, +8'–0" A.F.F.
- EMERGENCY LIGHT W/ BATTERY PACK, +8'–0" A.F.F.
- FLOOD LIGHT
- AREA LUMINAIRE
- AREA LUMINAIRE W/STANDBY LAMP
- AREA LUMINAIRE, WALL MOUNT
- AREA LUMINAIRE, POLE MOUNT

SWITCH SYMBOLS

- $\$$ SWITCH, SINGLE–POLE +48" A.F.F.
- $\$_2$ SWITCH, DOUBLE–POLE +48" A.F.F.
- $\$_3$ SWITCH, 3–WAY +48" A.F.F.
- $\$_4$ SWITCH, 4–WAY +48" A.F.F.
- $\$_M$ SWITCH, MOMENTARY +48" A.F.F.
- $\$_D$ SWITCH, DIMMER +48" A.F.F.
- $\$_P$ SWITCH, SPST, W/PILOT LIGHT +48" A.F.F.
- $\$_{3P}$ SWITCH, 3–WAY, W/PILOT LIGHT +48" A.F.F.
- $\$_K$ SWITCH, KEY–OPERATED +48" A.F.F.
- $\$_T$ SWITCH, TIMED +48" A.F.F.
- $\$_{LV}$ SWITCH, LOW–VOLTAGE/DIGITAL +48" A.F.F.
- $\$_{OS}$ SWITCH, OCCUPANCY SENSOR +48" A.F.F.
- PC PHOTOCELL CONTROL
- OS OCCUPANCY SENSOR – CEILING MTD

WIRING SYMBOLS



- PANEL & CIRCUIT NUMBER
- HOMERUN TO PANEL
- CONDUCTOR SIZE (IF OTHER THAN #12)
- PHASE CONDUCTOR
- NEUTRAL CONDUCTOR
- GROUND CONDUCTOR
- CONCEALED CONDUIT
- CONDUIT SIZE
- CONDUIT (UNDER SLAB OR FLOOR)
- FLEXIBLE CONNECTION
- CONDUIT, STUBBED & CAPPED

POWER SYMBOLS

- RECEPTACLE, SINGLE +18" A.F.F. (U.O.N)
- RECEPTACLE, DUPLEX +18" A.F.F.
- RECEPTACLE, QUAD +18" A.F.F.
- RECEPTACLE, DUPLEX +6" ABV COUNTER
- RECEPTACLE, DUPLEX +18" A.F.F. (ONE OUTLET SWITCHED)
- RECEPTACLE, DUPLEX +18" A.F.F. (BOTH OUTLETS SWITCHED)
- RECEPTACLE, DUPLEX, PEDESTAL MOUNT
- RECEPTACLE, DUPLEX, FLUSH FLOOR MOUNT
- RECEPTACLE, SPECIAL (COORDINATE WITH EQUIPMENT SERVED)
- 12' PLUGMOLD RACEWAY LENGTH & OUTLET CENTERS AS INDICATED ON PLAN
- POWER POLE
- MAGNETIC MOTOR STARTER
- MAGNETIC CONTACTOR
- RELAY
- TIME CLOCK CONTROL
- PUSHBUTTON STATION
- JUNCTION BOX
- JUNCTION BOX, EMERGENCY CIRCUIT
- THERMOSTAT
- TRANSFORMER
- DISCONNECT, NON–FUSED
- DISCONNECT, FUSED
- ELECTRICAL CONNECTION
- ELECTRICAL CONNECTION, SINGLE MOTOR
- ELECTRICAL CONNECTION, MULTI–MOTOR
- EXISTING RECEPTACLE
- ELECTRICAL DISTRIBUTION PANEL, RECESSED
- ELECTRICAL DISTRIBUTION PANEL, SURFACE
- MISCELLANEOUS PANEL, RECESSED
- MISCELLANEOUS PANEL, SURFACE
- FLUSH FLOOR BOX (W/ DEVICES AS SHOWN ON PLAN)
- 250W ELECTRIC BASEBOARD HEATER (WATTAGE NOTED)

SIGNAL SYMBOLS

- TELEPHONE OUTLET +18" A.F.F.
- DATA OUTLET +18" A.F.F.
- DATA/TELEPHONE OUTLET +18" A.F.F.
- TELEPHONE OUTLET, PEDESTAL MOUNT
- CLOCK
- SIGNAL BELL
- SIGNAL BUZZER
- SIGNAL HORN
- VISUAL ALARM SIGNAL (COLOR AS INDICATED ON PLAN)
- P.A. SPEAKER
- P.A. CALL SWITCH
- CATV OUTLET (LOCATE AS SHOWN ON PLANS)
- CCTV CAMERA
- INTRUSION SENSOR

FIRE ALARM SYMBOLS

- F FIRE ALARM MANUAL PULL STATION, +48" A.F.F.
- MAGNETIC DOOR HOLDER
- SMOKE DETECTOR, DUCT, IONIZATION TYPE W/SAMPLING TUBE
- SMOKE DETECTOR, DUCT, PHOTO TYPE W/SAMPLING TUBE
- I SMOKE DETECTOR, IONIZATION TYPE
- P SMOKE DETECTOR, PHOTO TYPE
- H HEAT DETECTOR, RATE–OF–RISE OR FIXED TEMP.
- FIRE MAIN FLOW DETECTION SWITCH
- FIRE MAIN TAMPER DETECTION SWITCH
- FIRE ALARM BELL, +80" A.F.F., U.O.N.
- FIRE ALARM HORN, +80" A.F.F.
- FIRE ALARM HORN/STROBE, +80" TO 96" A.F.F.
- F OR FIRE ALARM STROBE, +80" TO 96" A.F.F.
- IM FIRE ALARM INPUT MODULE
- OM FIRE ALARM OUTPUT MODULE
- FACP FIRE ALARM CONTROL PANEL
- FARA FIRE ALARM REMOTE ANNUNCIATOR
- S FIRE ALARM STAND ALONE SMOKE DETECTOR
- CO CARBON MONOXIDE ALARM

ONE–LINE DIAGRAM SYMBOLS

- PANEL 'A' ELECTRICAL DISTRIBUTION PANELBOARD (MLO)
- PANEL A ELECTRICAL DISTRIBUTION PANELBOARD (MCB)
- SUB–FEED CIRCUIT BREAKER
- 200/3 CIRCUIT BREAKER (TRIP RATING & POLES AS INDICATED ON PLAN)
- MAIN SWITCH (RATING & POLES AS INDICATED ON PLAN)
- 200/3 FUSE (RATING & CLASS AS INDICATED ON PLAN)
- 200/3 TRANSFER SWITCH (MANUAL OR AUTOMATIC)
- 400/3 GEN GENERATOR (RATING AS INDICATED ON PLAN)
- 480V T1 75KVA Δ–Y 208/120V TRANSFORMER (RATING AS INDICATED ON PLAN)
- 200A RK1 FUSE (RATING & CLASS AS INDICATED ON PLAN)
- GROUND #2/0 CU GROUND SYSTEM (SIZE AS INDICATED ON PLAN)
- WATER PIPE GROUND ELECTRODE
- SURGE PROTECTION DEVICE (SPD)
- M UTILITY METER & METER BASE
- VERT UTILITY METER CURRENT TRANSFORMER
- X OR X FEEDER NO. (SEE FEEDER SCHEDULE)
- MOTOR STARTER
- 'NEMA' SIZE (AS INDICATED ON PLAN)
- '1' STARTER TYPE (AS INDICATED ON PLAN)
- OL
- 15 NAME 1 MOTOR (HORSEPOWER AS INDICATED ON PLAN)
- V VOLTMETER (SCALE AS INDICATED ON PLANS)
- A AMMETER (SCALE AS INDICATED ON PLANS)
- W WATTMETER (SCALE AS INDICATED ON PLANS)
- CURRENT TRANSFORMER (RATING AS INDICATED ON PLANS)
- POTENTIAL TRANSFORMER (RATING AS INDICATED ON PLANS)
- X INSTRUMENT SWITCH (TYPE AS INDICATED ON PLANS)

ABBREVIATIONS

'A', 'AE'	LIGHT FIXTURE TYPE (SEE FIXTURE LIST)
A.F.F.	ABOVE FINISHED FLOOR
A.T.S.	TRANSFER SWITCH, AUTOMATIC
C	CONDUIT
C.O.	CONDUIT ONLY
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
C.T.	CURRENT TRANSFORMER
(E)	EXISTING
E.L.	EMERGENCY LIGHT
E.L.C.	EXTERIOR LIGHTING CONTROL
FACP	FIRE ALARM CONTROL PANEL
G.F.I.	GROUND FAULT INTERRUPTER
GND	GROUND
H.I.D.	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HTR	HEATER
I.G.	ISOLATED GROUND
I R	INFRARED
JB	JUNCTION BOX
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
M.T.S.	TRANSFER SWITCH, MANUAL
(N)	NEW
N.I.C.	NOT IN CONTRACT
N.L.	NIGHT LIGHT
OL	OVERLOAD
O.L.C.	OFFICE LIGHTING CONTROL
P	POLE
P.A.	PUBLIC ADDRESS
PH	PHASE
PRI	PRIMARY
RTU	REMOTE TELEMETRY UNIT
SEC	SECONDARY
T.R.	TAMPER RESISTANT
U.G.	UNDERGROUND
U.O.N.	UNLESS OTHERWISE NOTED
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
W.G.	WIRE GUARD
W.P.	WEATHER–PROOF
W.R.	WEATHER RESISTANT
W.T.	WATERTIGHT
X.P.	EXPLOSION PROOF

NOTATIONS

- X DRAWING NOTE
- DETAIL REFERENCE: TOP=DETAIL NO., BOTTOM=SHEET NO.
- MECHANICAL EQUIPMENT MARK NO. (SEE EQUIPMENT SCHEDULE)
- X EQUIPMENT NO. (SEE EQUIPMENT SCHEDULE)
- X EQUIPMENT NO. (SEE EQUIPMENT SCHEDULE)
- X FEEDER NO. (SEE FEEDER SCHEDULE)
- X / X FIXTURE REFERENCE: TOP=TYPE, BOTTOM=LAMP QTY & WATTS

NOTES:

1. SOME OF THE SYMBOLS AND ABBREVIATIONS ON THIS LIST MAY NOT APPLY TO THIS PROJECT.
2. MOUNTING HEIGHTS INDICATED ARE TO THE CENTER OF THE DEVICE UNLESS OTHERWISE NOTED.
3. MOUNTING HEIGHTS INDICATED SHALL BE USED UNLESS OTHERWISE NOTED ON THE PLANS.

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1985 ROBERT L. CONNELL
EXPIRES 12-31-2019

Date: 02-08-2019
Proj No: 9562
Drawn By: PRS
Chkd By: RLC
DSGN By: RLC
Acad File: 9562_HIGHLAND_E

CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ELECTRICAL SYMBOLS

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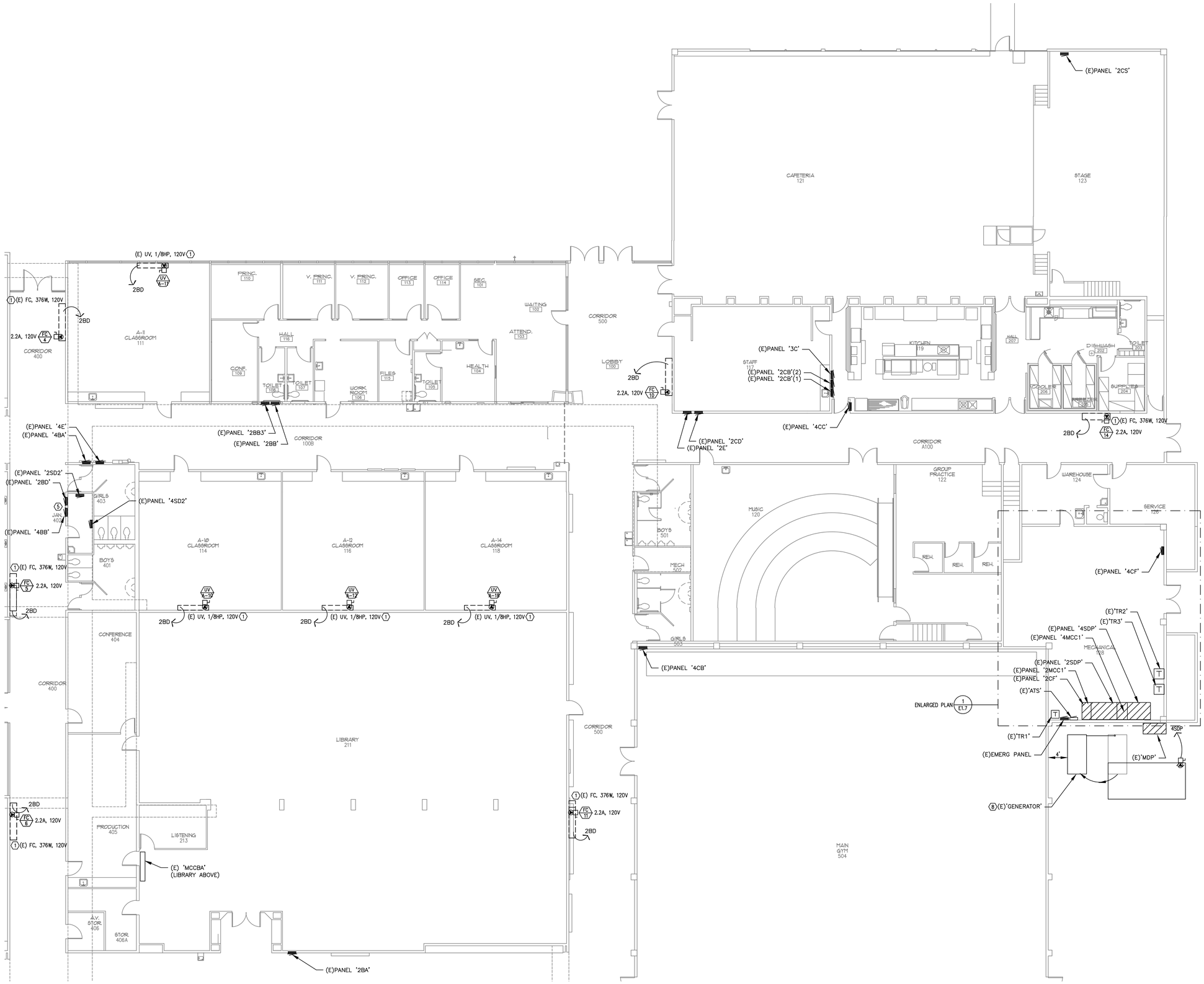
SHEET
E1.0



GENERAL NOTES:

A. PROVIDE NEW LABELS IN EACH PANEL SERVING MECHANICAL EQUIPMENT THAT IS RECEIVING NEW EQUIPMENT TAGS PER THE MECHANICAL DRAWINGS.

B. DISABLE ELECTRICAL CIRCUITS BY DISCONNECTION OF BOTH ENDS AND MAKE SAFE WITH WIRE NUTS OR OTHER APPROVED METHODS. REMOVE CONDUIT TO CONCEALED LOCATIONS. REMOVE WIRE TO PANEL OR J-BOX IF CIRCUIT IS USED FOR OTHER DEVICES.

KEYED NOTES:

1. DISCONNECT ELECTRICAL CONNECTION TO UNIT VENTILATOR OR FAN COIL UNIT. RECONNECT TO NEW UNIT THROUGH CONTROLS PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE ADDITIONAL CONDUIT AND CONDUCTORS TO MATCH EXISTING AND ACCESSORIES FOR A COMPLETE AND OPERABLE SYSTEM. REPLACE EXISTING CIRCUIT BREAKER SERVING EXISTING UNIT VENTILATOR WITH A 15A 1P AND CONNECT TO EXISTING CONDUCTORS.
2. DISCONNECT ELECTRICAL CONNECTION TO ALL MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. REMOVE ALL CONDUIT AND CONDUCTORS BACK TO SOURCE. LABEL CIRCUIT BREAKERS OR MCC STARTERS AS SPARE.
3. DISCONNECT AND RECONNECT ELECTRICAL CONNECTION AS REQUIRED TO ALLOW MECHANICAL WORK. COORDINATE WITH MECHANICAL CONTRACTOR.
4. NOT USED.
5. REMOVE EXISTING CONTACTORS USED TO CONTROL UNIT VENTILATORS AND FAN COIL UNITS. ROUT FEEDER AROUND REMOVED CONTACTORS TO PROVIDE A CONTINUOUS POWER SOURCE.
6. NOT USED.
7. NOT USED.
8. DISCONNECT AND RELOCATE EXISTING GENERATOR. EXTEND FEEDER, TRANSFER CONTROLS, HEATER CIRCUITING, ETC. ABOVE GROUND TO NEW LOCATION.
9. DISCONNECT ELECTRICAL CONNECTION SERVING MECHANICAL UNIT MOTOR. RECONNECT ELECTRICAL CONNECTION THRU NEW CONTACTOR/STARTER SUPPLIED BY MECHANICAL CONTRACTOR. PROVIDE CONDUIT, CONDUCTORS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.

1 E1.1 ELECTRICAL PLAN – SECTOR 'A'
SCALE: 1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1985 ROBERT L. CONNELL
EXPIRES 12-31-2019

Date:	02-08-2019
Proj No:	9562
Drawn By:	PRS
Chkd By:	RLC
DSGN By:	RLC
Acad File:	9562_HIGHLAND_E

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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ELECTRICAL PLAN – SECTOR 'A'

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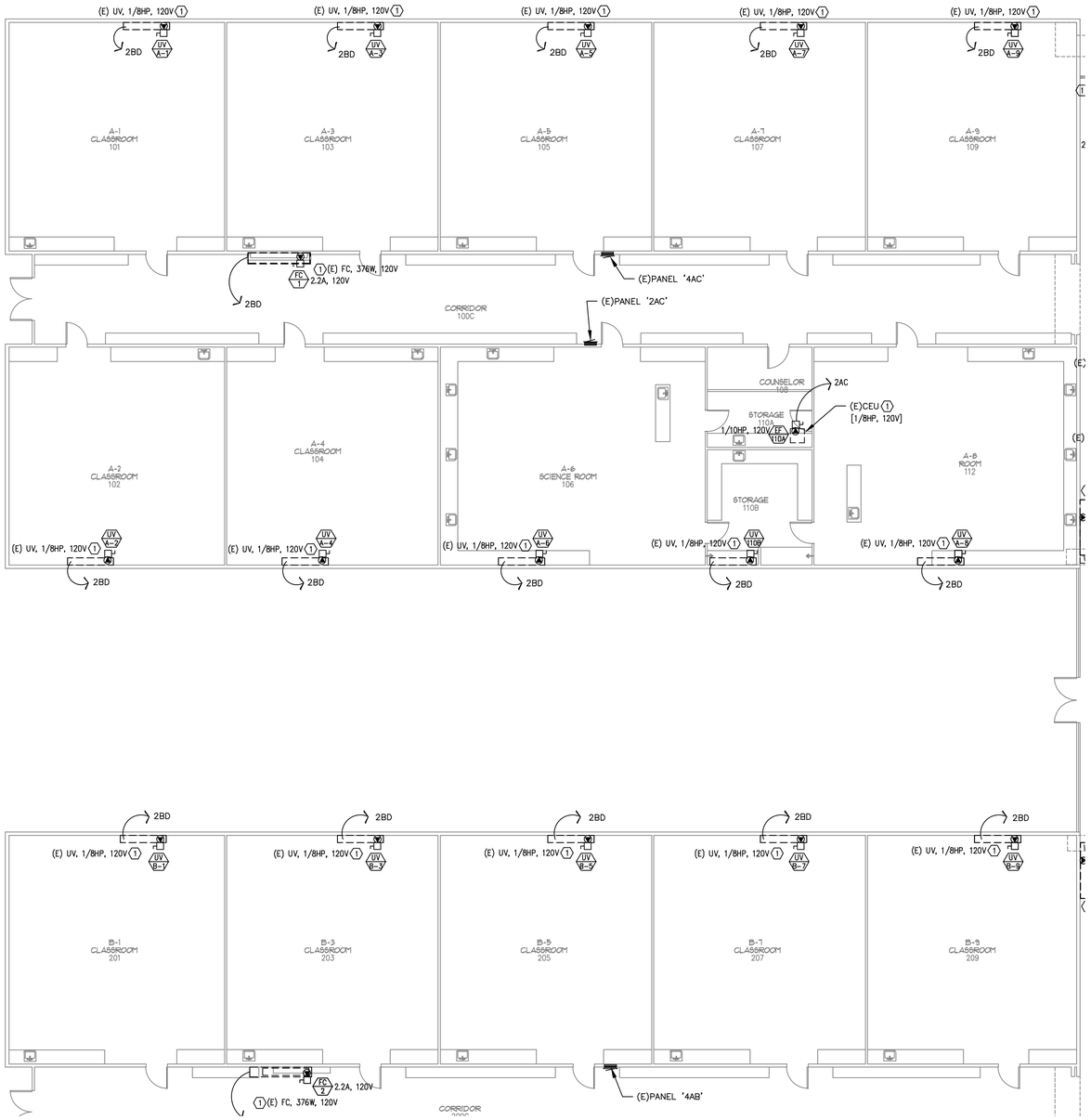
SHEET
E1.1



1 E1.2 ELECTRICAL PLAN – SECTOR 'B'
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE NEW LABELS IN EACH PANEL SERVING MECHANICAL EQUIPMENT THAT IS RECEIVING NEW EQUIPMENT TAGS PER THE MECHANICAL DRAWINGS.

B. DISABLE ELECTRICAL CIRCUITS BY DISCONNECTION OF BOTH ENDS AND MAKE SAFE WITH WIRE NUTS OR OTHER APPROVED METHODS. REMOVE CONDUIT TO CONCEALED LOCATIONS. REMOVE WIRE TO PANEL OR J–BOX IF CIRCUIT IS USED FOR OTHER DEVICES.

KEYED NOTES:

1. DISCONNECT ELECTRICAL CONNECTION TO UNIT VENTILATOR OR FAN COIL UNIT. RECONNECT TO NEW UNIT THROUGH CONTROLS PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE ADDITIONAL CONDUIT AND CONDUCTORS TO MATCH EXISTING AND ACCESSORIES FOR A COMPLETE AND OPERABLE SYSTEM. REPLACE EXISTING CIRCUIT BREAKER SERVING EXISTING UNIT VENTILATOR WITH A 15A 1P AND CONNECT TO EXISTING CONDUCTORS.
2. DISCONNECT ELECTRICAL CONNECTION TO ALL MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. REMOVE ALL CONDUIT AND CONDUCTORS BACK TO SOURCE. LABEL CIRCUIT BREAKERS OR MCC STARTERS AS SPARE.
3. DISCONNECT AND RECONNECT ELECTRICAL CONNECTION AS REQUIRED TO ALLOW MECHANICAL WORK. COORDINATE WITH MECHANICAL CONTRACTOR.
4. NOT USED.
5. REMOVE EXISTING CONTACTORS USED TO CONTROL UNIT VENTILATORS AND FAN COIL UNITS. ROUT FEEDER AROUND REMOVED CONTACTORS TO PROVIDE A CONTINUOUS POWER SOURCE.
6. NOT USED.
7. NOT USED.
8. DISCONNECT AND RELOCATE EXISTING GENERATOR. EXTEND FEEDER, TRANSFER CONTROLS, HEATER CIRCUITING, ETC. ABOVE GROUND TO NEW LOCATION.
9. DISCONNECT ELECTRICAL CONNECTION SERVING MECHANICAL UNIT MOTOR. RECONNECT ELECTRICAL CONNECTION THRU NEW CONTACTOR/STARTER SUPPLIED BY MECHANICAL CONTRACTOR. PROVIDE CONDUIT, CONDUCTORS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1985 ROBERT L. CONNELL
EXPIRES 12-31-2019

Date: 02-08-2019
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Drawn By: PRS
Chkd By: RLC
DSGN By: RLC
Acad File: 9562_HIGHLAND_E

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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BEAVERTON OREGON
ELECTRICAL PLAN – SECTOR 'B'

CONSTRUCTION DOCUMENTS

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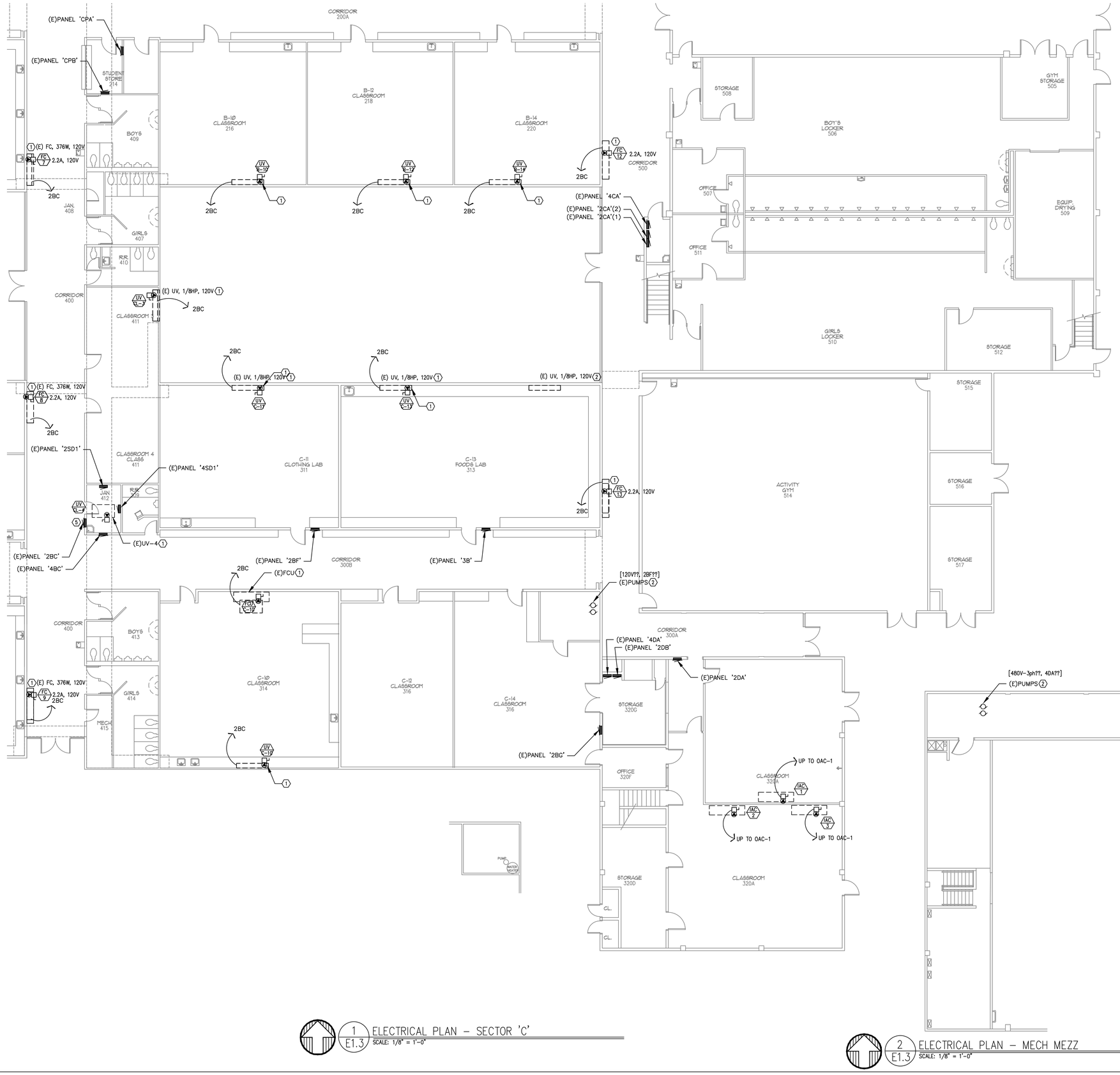
SHEET
E1.2



1 E1.3 ELECTRICAL PLAN – SECTOR 'C'
SCALE: 1/8" = 1'-0"

2 E1.3 ELECTRICAL PLAN – MECH MEZZ
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE NEW LABELS IN EACH PANEL SERVING MECHANICAL EQUIPMENT THAT IS RECEIVING NEW EQUIPMENT TAGS PER THE MECHANICAL DRAWINGS.

B. DISABLE ELECTRICAL CIRCUITS BY DISCONNECTION OF BOTH ENDS AND MAKE SAFE WITH WIRE NUTS OR OTHER APPROVED METHODS. REMOVE CONDUIT TO CONCEALED LOCATIONS. REMOVE WIRE TO PANEL OR J-BOX IF CIRCUIT IS USED FOR OTHER DEVICES.

KEYED NOTES:

1. DISCONNECT ELECTRICAL CONNECTION TO UNIT VENTILATOR OR FAN COIL UNIT. RECONNECT TO NEW UNIT THROUGH CONTROLS PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE ADDITIONAL CONDUIT AND CONDUCTORS TO MATCH EXISTING AND ACCESSORIES FOR A COMPLETE AND OPERABLE SYSTEM. REPLACE EXISTING CIRCUIT BREAKER SERVING EXISTING UNIT VENTILATOR WITH A 15A 1P AND CONNECT TO EXISTING CONDUCTORS.
2. DISCONNECT ELECTRICAL CONNECTION TO ALL MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. REMOVE ALL CONDUIT AND CONDUCTORS BACK TO SOURCE. LABEL CIRCUIT BREAKERS OR MCC STARTERS AS SPARE.
3. DISCONNECT AND RECONNECT ELECTRICAL CONNECTION AS REQUIRED TO ALLOW MECHANICAL WORK. COORDINATE WITH MECHANICAL CONTRACTOR.
4. NOT USED.
5. REMOVE EXISTING CONTACTORS USED TO CONTROL UNIT VENTILATORS AND FAN COIL UNITS. ROUT FEEDER AROUND REMOVED CONTACTORS TO PROVIDE A CONTINUOUS POWER SOURCE.
6. NOT USED.
7. NOT USED.
8. DISCONNECT AND RELOCATE EXISTING GENERATOR. EXTEND FEEDER, TRANSFER CONTROLS, HEATER CIRCUITING, ETC. ABOVE GROUND TO NEW LOCATION.
9. DISCONNECT ELECTRICAL CONNECTION SERVING MECHANICAL UNIT MOTOR. RECONNECT ELECTRICAL CONNECTION THRU NEW CONTACTOR/STARTER SUPPLIED BY MECHANICAL CONTRACTOR. PROVIDE CONDUIT, CONDUCTORS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER
16,597
OREGON
JULY 20, 1985
ROBERT L. CONNELL
EXPIRES 12-31-2019

Date:	02-06-2019
Proj No:	9562
Drawn By:	PRS
Chkd By:	RLC
DSGN By:	RLC
Acad File:	9562_HIGHLAND_E

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
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BEAVERTON OREGON

ELECTRICAL PLAN – SECTOR 'C'

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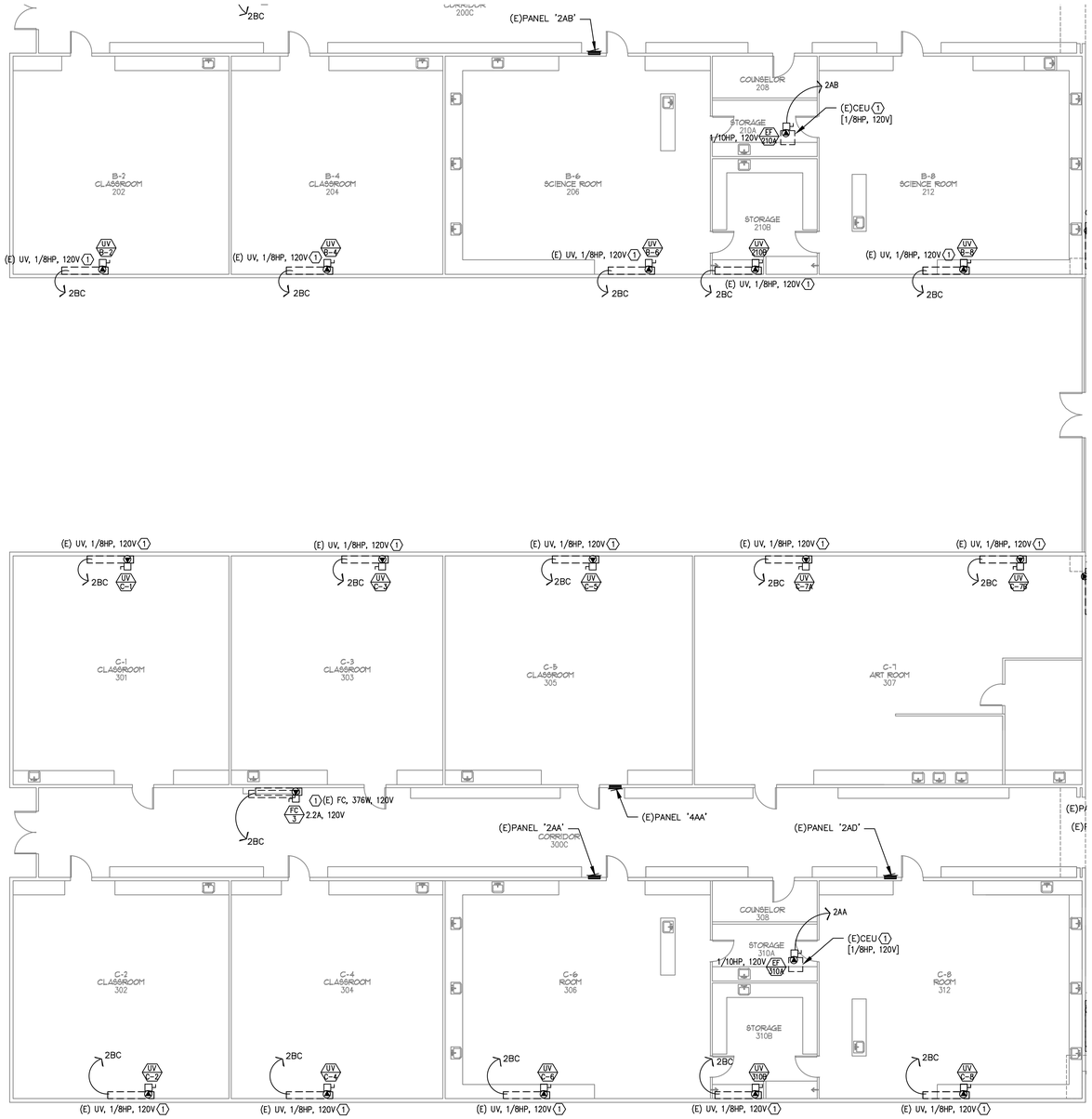
SHEET
E1.3



1 E1.4 ELECTRICAL PLAN – SECTOR 'D'
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE NEW LABELS IN EACH PANEL SERVING MECHANICAL EQUIPMENT THAT IS RECEIVING NEW EQUIPMENT TAGS PER THE MECHANICAL DRAWINGS.

B. DISABLE ELECTRICAL CIRCUITS BY DISCONNECTION OF BOTH ENDS AND MAKE SAFE WITH WIRE NUTS OR OTHER APPROVED METHODS. REMOVE CONDUIT TO CONCEALED LOCATIONS. REMOVE WIRE TO PANEL OR J-BOX IF CIRCUIT IS USED FOR OTHER DEVICES.

KEYED NOTES:

1. DISCONNECT ELECTRICAL CONNECTION TO UNIT VENTILATOR OR FAN COIL UNIT. RECONNECT TO NEW UNIT THROUGH CONTROLS PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE ADDITIONAL CONDUIT AND CONDUCTORS TO MATCH EXISTING AND ACCESSORIES FOR A COMPLETE AND OPERABLE SYSTEM. REPLACE EXISTING CIRCUIT BREAKER SERVING EXISTING UNIT VENTILATOR WITH A 15A 1P AND CONNECT TO EXISTING CONDUCTORS.

2. DISCONNECT ELECTRICAL CONNECTION TO ALL MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. REMOVE ALL CONDUIT AND CONDUCTORS BACK TO SOURCE. LABEL CIRCUIT BREAKERS OR MCC STARTERS AS SPARE.

3. DISCONNECT AND RECONNECT ELECTRICAL CONNECTION AS REQUIRED TO ALLOW MECHANICAL WORK. COORDINATE WITH MECHANICAL CONTRACTOR.

4. NOT USED.

5. REMOVE EXISTING CONTACTORS USED TO CONTROL UNIT VENTILATORS AND FAN COIL UNITS. ROUT FEEDER AROUND REMOVED CONTACTORS TO PROVIDE A CONTINUOUS POWER SOURCE.

6. NOT USED.

7. NOT USED.

8. DISCONNECT AND RELOCATE EXISTING GENERATOR. EXTEND FEEDER, TRANSFER CONTROLS, HEATER CIRCUITING, ETC. ABOVE GROUND TO NEW LOCATION.

9. DISCONNECT ELECTRICAL CONNECTION SERVING MECHANICAL UNIT MOTOR. RECONNECT ELECTRICAL CONNECTION THRU NEW CONTACTOR/STARTER SUPPLIED BY MECHANICAL CONTRACTOR. PROVIDE CONDUIT, CONDUCTORS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER
16,597
OREGON
JULY 20, 1985
ROBERT L. CONNELL
EXPIRES 12-31-2019

Date: 02-08-2019
Proj No: 9582
Drawn By: PRS
Chkd By: RLC
DSGN By: RLC
Acad File: 9582_HIGHLAND_E

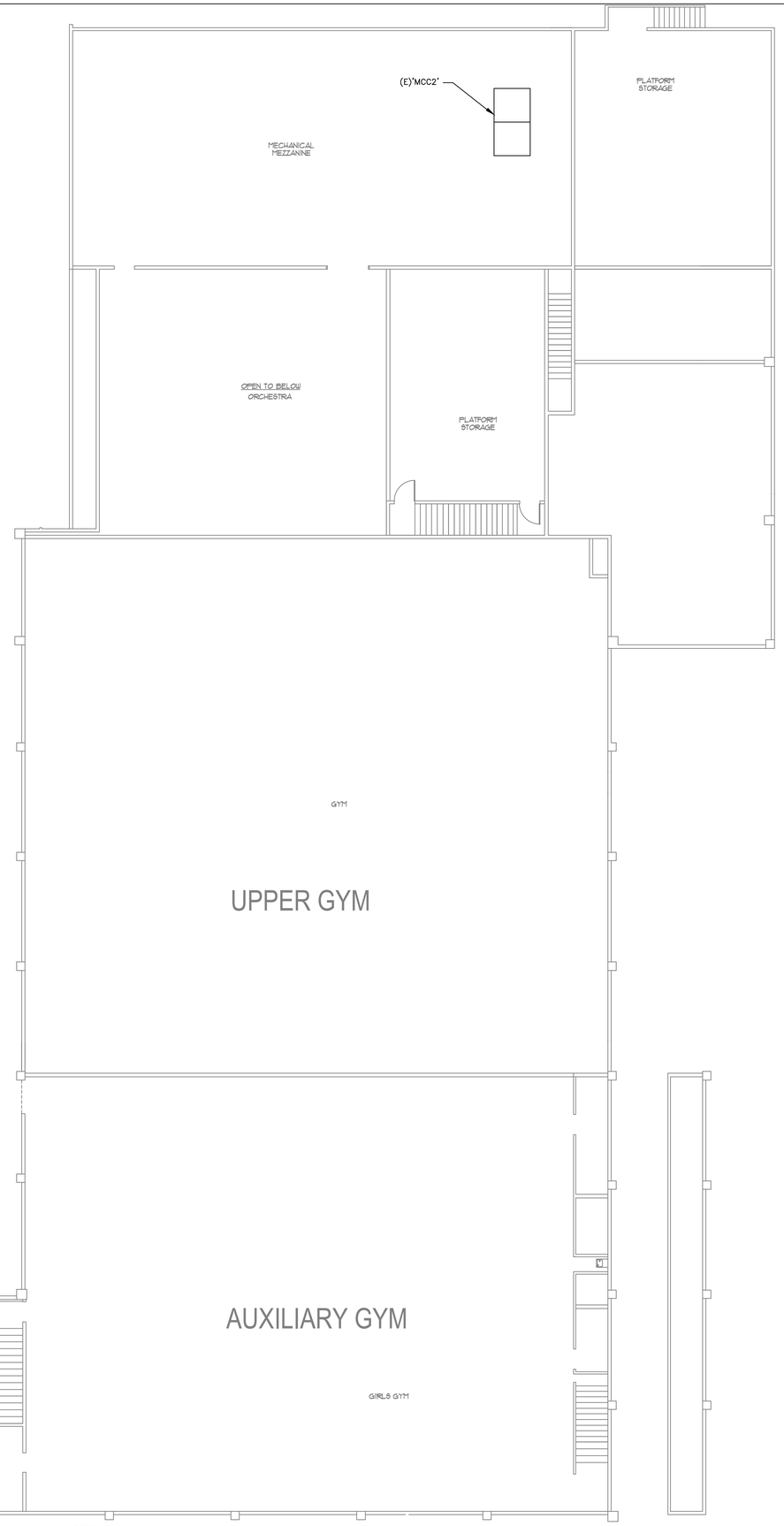
CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ELECTRICAL PLAN – SECTOR 'D'

MEA INC.
Consulting Engineers
2007 S.E. Ash St.
Portland, OR 97214
PHN: (503) 234-0548
FAX: (503) 234-0677
WWW.MEA-ENG.COM

SHEET
E1.4



1 E1.5 ELECTRICAL PLAN UPPER – SECTORS 'A' & 'C'
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE NEW LABELS IN EACH PANEL SERVING MECHANICAL EQUIPMENT THAT IS RECEIVING NEW EQUIPMENT TAGS PER THE MECHANICAL DRAWINGS.

B. DISABLE ELECTRICAL CIRCUITS BY DISCONNECTION OF BOTH ENDS AND MAKE SAFE WITH WIRE NUTS OR OTHER APPROVED METHODS. REMOVE CONDUIT TO CONCEALED LOCATIONS. REMOVE WIRE TO PANEL OR J–BOX IF CIRCUIT IS USED FOR OTHER DEVICES.

KEYED NOTES:

1. DISCONNECT ELECTRICAL CONNECTION TO UNIT VENTILATOR OR FAN COIL UNIT. RECONNECT TO NEW UNIT THROUGH CONTROLS PROVIDED BY MECHANICAL CONTRACTOR. PROVIDE ADDITIONAL CONDUIT AND CONDUCTORS TO MATCH EXISTING AND ACCESSORIES FOR A COMPLETE AND OPERABLE SYSTEM. REPLACE EXISTING CIRCUIT BREAKER SERVING EXISTING UNIT VENTILATOR WITH A 15A 1P AND CONNECT TO EXISTING CONDUCTORS.
2. DISCONNECT ELECTRICAL CONNECTION TO ALL MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. REMOVE ALL CONDUIT AND CONDUCTORS BACK TO SOURCE. LABEL CIRCUIT BREAKERS OR MCC STARTERS AS SPARE.
3. DISCONNECT AND RECONNECT ELECTRICAL CONNECTION AS REQUIRED TO ALLOW MECHANICAL WORK. COORDINATE WITH MECHANICAL CONTRACTOR.
4. NOT USED.
5. REMOVE EXISTING CONTACTORS USED TO CONTROL UNIT VENTILATORS AND FAN COIL UNITS. ROUT FEEDER AROUND REMOVED CONTACTORS TO PROVIDE A CONTINUOUS POWER SOURCE.
6. NOT USED.
7. NOT USED.
8. DISCONNECT AND RELOCATE EXISTING GENERATOR. EXTEND FEEDER, TRANSFER CONTROLS, HEATER CIRCUITING, ETC. ABOVE GROUND TO NEW LOCATION.
9. DISCONNECT ELECTRICAL CONNECTION SERVING MECHANICAL UNIT MOTOR. RECONNECT ELECTRICAL CONNECTION THRU NEW CONTACTOR/STARTER SUPPLIED BY MECHANICAL CONTRACTOR. PROVIDE CONDUIT, CONDUCTORS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1985 ROBERT L. CONNELL
EXPIRES 12-31-2019

Date:	02-08-2019
Proj No:	9562
Drawn By:	PRS
Chkd By:	RLC
DSGN By:	RLC
Acad File:	9562_HIGHLAND_E

CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ELECTRICAL PLAN UPPER – SECTORS 'A' & 'C'

MFIA INC.
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FAX: (503) 234-0677
WWW.MFIA-ENG.COM

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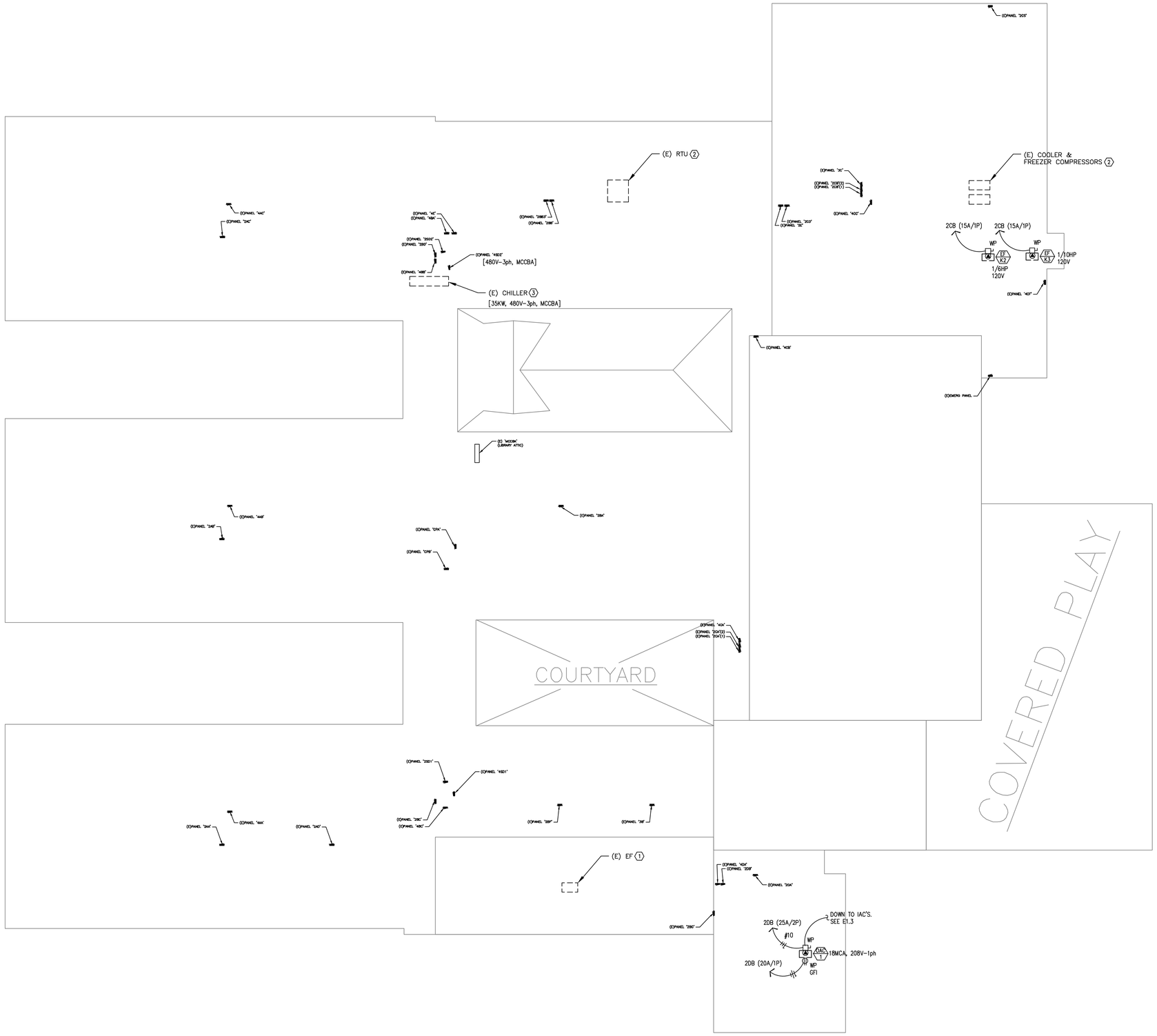

1 E1.6 ELECTRICAL PLAN – ROOF
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

A. PROVIDE NEW LABELS IN EACH PANEL SERVING MECHANICAL EQUIPMENT THAT IS RECEIVING NEW EQUIPMENT TAGS PER THE MECHANICAL DRAWINGS.

B. DISABLE ELECTRICAL CIRCUITS BY DISCONNECTION OF BOTH ENDS AND MAKE SAFE WITH WIRE NUTS OR OTHER APPROVED METHODS. REMOVE CONDUIT TO CONCEALED LOCATIONS. REMOVE WIRE TO PANEL OR J-BOX IF CIRCUIT IS USED FOR OTHER DEVICES.

KEYED NOTES:

1. REMOVE ELECTRICAL CONNECTION TO EXISTING HVAC BACK TO SOURCE. REMOVE ALL ASSOCIATED CONDUIT, CONDUCTORS AND STARTER. LABEL CIRCUIT BREAKER OR MCC BUCKET AS SPARE.
2. DISCONNECT ELECTRICAL CONNECTION TO EXISTING UNIT FOR RE-ROOFING. RECONNECT UNIT AFTER REINSTALLATION.
3. REMOVE ELECTRICAL CONNECTION TO CHILLER BACK TO SOURCE. REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS. RELABEL MCC BUCKET AS SPARE.
4. NOT USED.
5. NOT USED.
6. DISCONNECT AND RECONNECT ELECTRICAL CONNECTION AS REQUIRED TO ALLOW MECHANICAL WORK. COORDINATE WITH MECHANICAL CONTRACTOR.
7. DISCONNECT ELECTRICAL CONNECTION TO EXISTING FAN SCHEDULED FOR DEMOLITION. EXTEND TO NEW FAN.
8. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANEL AND CONNECT.

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1985 ROBERT L. CONNELL
EXPIRES 12-31-2019

Date: 02-06-2019
Proj No: 9562
Drawn By: PRS
Chkd By: RLC
DSGN By: RLC
Acad File: 9562_HIGHLAND_E

CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE BEAVERTON OREGON
ELECTRICAL PLAN – ROOF

MFA INC.
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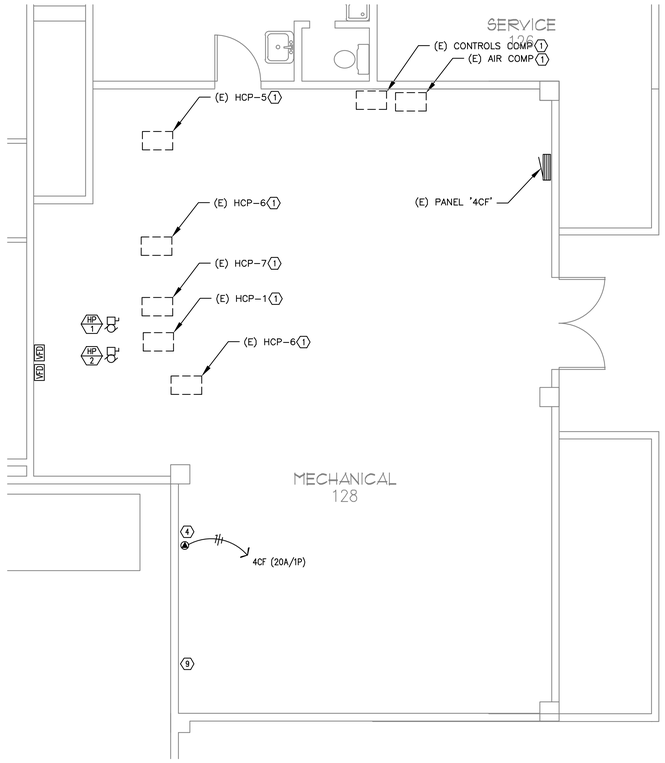
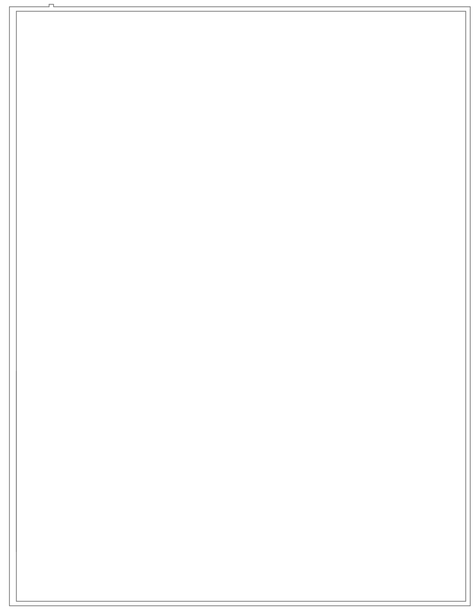


1 E1.7 ELECTRICAL PLAN – BOILER ROOM
SCALE: 1/8" = 1'-0"



2 E1.7 ELECTRICAL PLAN – LIBRARY FAN ROOM
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE NEW LABELS IN EACH PANEL SERVING MECHANICAL EQUIPMENT THAT IS RECEIVING NEW EQUIPMENT TAGS PER THE MECHANICAL DRAWINGS.

B. DISABLE ELECTRICAL CIRCUITS BY DISCONNECTION OF BOTH ENDS AND MAKE SAFE WITH WIRE NUTS OR OTHER APPROVED METHODS. REMOVE CONDUIT TO CONCEALED LOCATIONS. REMOVE WIRE TO PANEL OR J-BOX IF CIRCUIT IS USED FOR OTHER DEVICES.

KEYED NOTES:

1. DISCONNECT ELECTRICAL CONNECTION TO ALL MECHANICAL EQUIPMENT SCHEDULED FOR DEMOLITION. REMOVE ALL CONDUIT AND CONDUCTORS BACK TO SOURCE. LABEL CIRCUIT BREAKERS OR MCC STARTERS AS SPARE.

2. PROVIDE 5W/FT FREEZE PROTECTION CABLE WITHIN THE INSULATION OF THE CHILLED WATER SUPPLY AND RETURN LINES BETWEEN THE CHILLER AND THE BUILDING. APPROXIMATELY 40' PER LINE. SELF-REGULATING TRACING CABLE WITH BRAIDED TINNED COPPER UNDER TPR OUTER JACKET AND ALL NECESSARY ACCESSORIES INCLUDING CONTROLS, BULB-STAT WITH 3' CAPILLARY, JUNCTION/POWER CONNECTION KIT, POWER TERMINATION KIT, END SEAL CAPS, ETC. CHROMALOX SRF EQUIVALENT RAYCHEM, THERMON OR APPROVED SUBSTITUTE.

3. PROVIDE HEAT TRACE CONTROL PANEL TO CONTROL ALL NEW HEAT TRACE CIRCUITS ON THE ROOF AND GROUND LEVEL. PANEL TO PROVIDE INTEGRAL GFCI PROTECTION. MINIMUM (2) 30A CIRCUITS AT 277V.

4. PROVIDE NEW DEDICATED ELECTRICAL CONNECTION FOR MAIN BAS CONTROLS PANEL. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION AND REQUIREMENTS. FIELD LOCATE CLOSEST AVAILABLE SOURCE AND FIELD VERIFY AVAILABLE CAPACITY. PROVIDE CONDUIT, CONDUCTORS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.

5. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANEL AND CONNECT.

6. FOR EACH NEW MOTOR CIRCUIT WIRING THOUGH NEW VARIABLE FREQUENCY DRIVE (VFD) PROVIDE NEW VFD RATED DISCONNECT WITH INTEGRAL MAKE BEFORE BREAK AUXILIARY CONTACT. HUBBEL HBLDS3VFD FOR 30A OR APPROVED EQUAL.

7. PROVIDE NEW 450A 3P CIRCUIT BREAKER IN EXISTING MDP.

8. DISCONNECT ELECTRICAL CONNECTION SERVING MECHANICAL UNIT MOTOR. RECONNECT ELECTRICAL CONNECTION THRU NEW CONTACTOR/STARTER SUPPLIED BY MECHANICAL CONTRACTOR. PROVIDE CONDUIT, CONDUCTORS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.

9. DISCONNECT EXISTING CONTROL WIRING BETWEEN PNEUMATIC CONTROL PANEL AND MCC, AND REMOVE BACK TO MCC.

REGISTERED PROFESSIONAL ENGINEER
16,597
OREGON
JULY 20, 1985
ROBERT L. CONNELL
EXPIRES 12-31-2019

Date: 02-08-2019
Proj No: 9562
Drawn By: PRS
Chkd By: RLC
DSGN By: RLC
Acad File: 9562_HIGHLAND_E

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ELARGED ELECTRICAL PLANS

CONSTRUCTION DOCUMENTS

MFIA INC.
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(E) Panel 2BD (150A Feed)		
Removed Equipment	HP/W/A	VA
(E) Unit Vent * 18	1/8HP ea	-8640
(E) Fan Coil * 5	376W ea	-1880
Added Equipment		
Fan Coil * 6	2.2A ea	1584
Unit Vent * 18	4.7A ea	10152
Net Added Load (VA)		1216
Net Added Load (Amps)		3

(E) Panel 2BC (125A Feed)		
Removed Equipment	HP/W/A	VA
(E) Unit Vent * 23	1/8HP ea	-11040
(E) Fan Coil * 8	376W ea	-3008
Added Equipment		
Unit Vent * 23	4.7A ea	12972
Fan Coil * 8	2.2A ea	2112
Net Added Load (VA)		1036
Net Added Load (Amps)		3

(E) MCC-BA-480 (100A Feed)		
Removed Equipment	HP/W/A	VA
(E) Chiller	35KW	-38889
Added Equipment		
None		
Net Added Load (VA)		-38889
Net Added Load (Amps)		-47

HIGHLAND PARK MIDDLE SCHOOL - BEAVERTON, OR 2/8/2019
MDP (277/480V 3-PHASE 4-WIRE) 1200A BUS

LOAD:	LIGHTS	RECEPT	HEAT	KITCHEN	EQUIP	MOTORS	MISC	LARGEST MOTOR
PEAK DEMAND KW							193,000	
NEW CHILLER						312,456		
SUBTOTAL	0	0	0	0	0	312,456	193,000	0
X-FACTOR	1.25	1 + .5	1	0.65	1	1	1.25	0.25
CODE LOAD:	0	0	0	0	0	312,456	241,250	0

CONN LOAD:	505	KVA

VOLTS:	480	3ph
TOTAL CALC:	554	KVA
CALC AMPS:	666	AMPS

NOTE: UPDATE CIRCUIT DIRECTORY AT ALL PANELS AFFECTED DURING THIS UPGRADE TO REFLECT REMOVED, RENAMED, OR NEW CIRCUITS.

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1985 ROBERT L. CONNELL
EXPIRES 12-31-2019

Date: 02-08-2019
Proj No: 9562
Drawn By: PRS
Chkd By: RLC
DSGN By: RLC
Acad File: 9562_HIGHLAND_E

CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL – BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE BEAVERTON OREGON

ELECTRICAL SCHEDULES

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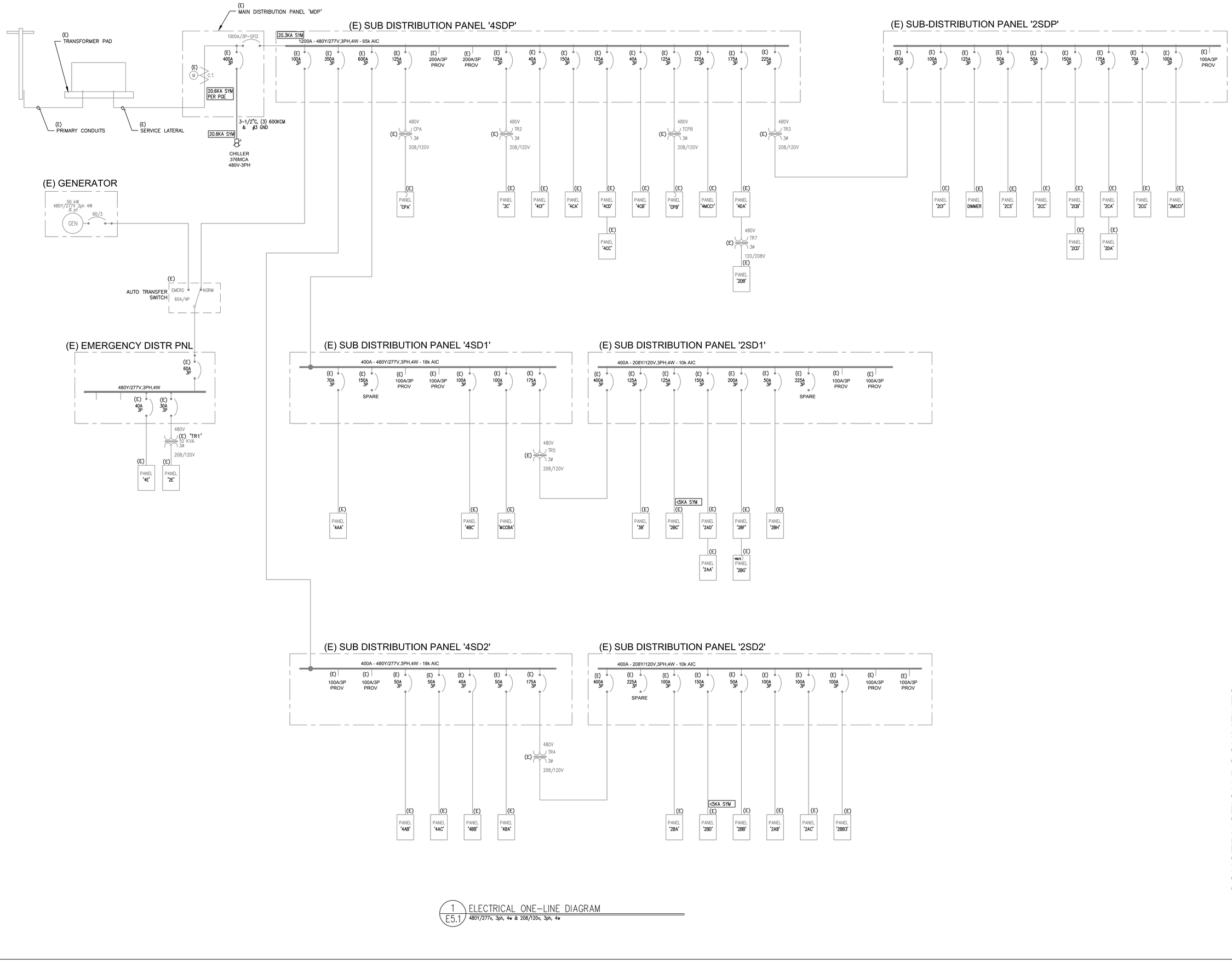

1 E5.1 ELECTRICAL ONE-LINE DIAGRAM

480Y/277v, 3ph, 4w & 208/120v, 3ph, 4w

REGISTERED PROFESSIONAL ENGINEER 16,597 OREGON JULY 20, 1982 ROBERT L. CONNELL EXPIRES 12-31-2019

Date:	02-08-2019
Proj No:	9582
Drawn By:	PRS
Chkd By:	RLC
DSGN By:	RLC
Acad File:	9582_HIGHLAND_E

CONSTRUCTION DOCUMENTS

HIGHLAND PARK MIDDLE SCHOOL - BEAVERTON SCHOOL DISTRICT
7000 SW WILSON AVENUE
BEAVERTON OREGON

ELECTRICAL ONE-LINE DIAGRAM

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