PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1815 EAST SALT LAKE STREET
PASCO, WA 99301

VOLUME 2

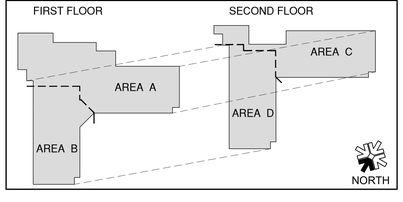
GENERAL NOTES

1. CONTRACTOR TO VERIFY WITH UTILITIES EXACT LOCATION OF EXISTING UNDERGROUND SERVICES. CONTACT CALL BEFORE YOU DIG AT: (800) 424-5555
2. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THESE DRAWINGS, THE SPECIFICATIONS, AND THE CURRENT EDITIONS OF THE IBC, IMC, NEC AND THE WASHINGTON STATE ENERGY CODE, AND ALL CITY OF PASCO REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND PROVIDING ALL REQUIRED DOCUMENTATION FOR ISSUANCE OF PERMITS, INCLUDING ANY AND ALL ENGINEERING, STAMPED AND SIGNED BY REGISTERED PROFESSIONAL ENGINEERS IN THE STATE OF WASHINGTON APPROPRIATE TO THE DISCIPLINE.
3. THE CONTRACTOR AGREES TO ASSUME SAFE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE DURING THE COURSE OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE ARCHITECT AND OWNER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ARCHITECT, OR THIRD PARTY IN VIOLATION OF THE LAW OR IN TRESPASS. THE CONTRACTOR SHALL PRACTICE SAFETY AT ALL TIMES AND SHALL FURNISH, ERECT, AND MAINTAIN SUCH FENCES, BARRICADES, LIGHTS, AND SIGNS NECESSARY TO GIVE ADEQUATE PROTECTION TO THE PUBLIC AT ALL TIMES. THE ARCHITECT MAKES NO WARRANTY THAT THE CONSTRUCTION-PHASE FENCES, ETC., ARE ADEQUATE TO ENSURE SAFETY DURING CONSTRUCTION OPERATIONS.
4. DURING CONSTRUCTION THE SAFETY OF THE WORKERS, VISITORS, AND THE PROTECTION OF PROPERTY IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THE ARCHITECT SHALL NOT INCLUDE OBSERVATION OF SAFETY MEASURES IN SITE VISIT OBSERVATION REPORTS.
5. REFERENCE G1/A7.10 FOR STANDARD ADA MOUNTING HEIGHTS, TYPICAL THROUGHOUT.

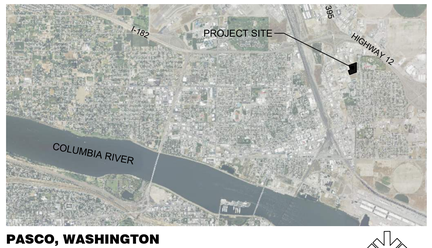
ABBREVIATIONS

ACOUST.	ACOUSTICAL	MB	MASONRY BEAM	SIM.	SIMILAR
ADJ.	ADJACENT	MAS.	MASONRY	SOFTWD.	SOFTWOOD
ADJA.	ADJUSTABLE	MAX	MAXIMUM	S.C.W.	SOLID CORE
AFF	ABOVE FINISHED FLOOR	MDPD	MEDIUM-DENSITY PARTICLE BOARD	SQ.	SQUARE
ALT.	ALTERNATE			S.S.	STAINLESS STEEL
ALUM.	ALUMINUM	MEMB.	MEMBRANE	STD.	STANDARD
L	ANGLE	MET.	METAL	STOR.	STORAGE
ASPH.	ASPHALT	MIN	MINIMUM	STRUCT.	STRUCTURAL
ASSEM.	ASSEMBLY	NONPERF.	NONPERFORATED	SURFS.	SURFACES
BF	BRACE FRAME	NTS	NOT TO SCALE	SUSP.	SUSPENDED
BM.	BEAM	NO.	NUMBER	SV.	SHEET VINYL
BRG.	BEARING	O.C.	ON CENTER	SYNTH.	SYNTHETIC
B.M.	BENCH MARK	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	SYST.	SYSTEM
BLK.	BLOCK			TEL.	TELEPHONE
BLKG.	BLOCKING	OFOI	OWNER FURNISHED OWNER INSTALLED	T.V.	TELEVISION
BLDG.	BUILDING			TEMPRD.	TEMPERED
BD.	BOARD	OPNG.	OPENING	TEMP.	TEMPORARY
BOT.	BOTTOM	OPP.	OPPOSITE	TEXT.	TEXTURE
B.O	BOTTOM OF	O.D.	OUTSIDE DIAMETER	T	THICK
B.U.	BUILT-UP	O.H.	OVERHEAD	THICK	THICKENED
CAB.	CABINET	O.S.	OVERFLOW SCUPPER	THRESH.	THRESHOLD
C.I.	CAST IRON	d	PENNY	T&G	TONGUE & GROOVE
CLG.	CEILING	PERF.	PERFORATED	T.O.	TOP OF
CL	CENTER LINE	PERIM.	PERIMETER	T.G.	TOP OF GRADE
CERAM.	CERAMIC	PL	PLATE	T.O.D.	TOP OF ROOF DECK
C	CHANNEL	PLYWD.	PLYWOOD	T.S.	TOP OF SIDEWALK
CHEM.	CHEMICAL	PLAST.	PLASTIC	T&B	TOP AND BOTTOM
C.O.	CLEAN OUT	P.O.C.	POINT OF CONNECTION	TRANS.	TRANSITION
CLR.	CLEAR	POS.	POSITIVE	T.W.C.	TACKABLE WALL COVERING
C.C.T.V.	CLOSED CIRCUIT TELEVISION	LB.	POUND	TYP.	TYPICAL
COL.	COLUMN	PREFAB.	PREFABRICATED	UBC	UNIFORM BUILDING CODE
COMP.	COMPOSITION	PREMANUF.	PREMANUFACTURED	U.N.O.	UNLESS NOTED OTHERWISE
CONC.	CONCRETE	PT	PAINT	VAN.	VANITY
CMU	CONCRETE MASONRY UNIT	P.T.	PRESSURE TREATED	V.B.	VENTED BASE
CONSTR.	CONSTRUCTION	PTD.	PAPER TOWEL DISPENSER	VCT.	VINYL COMPOSITION TILE
CONT.	CONTINUOUS	R	RADIUS	VERT.	VERTICAL
CONT. JT.	CONTROL JOINT	R.B.	RUBBER BASE	V.W.C.	VINYL WALL COVERING
CORRUG.	CORRUGATED	R.D.	ROOF DRAIN	WAINS.	WAINSCOT
CPT	CARPET	REF.	REFERENCE	WAREHSE.	WAREHOUSE
CT.	CERAMIC TILE	REINF.	REINFORCED	W	WIDE
C.F.	CUBIC FEET	REQD.	REQUIRED	W.C.	WATER CLOSET
CJ	CONTROL JOINT	RESIST	RESIST	W.F.	WIDE FLANGE
CUST.	CUSTODIAL	RET.	RETAINING	W/	WITH
DEG.	DEGREE	RETRACT.	RETRACTABLE	W/O	WITH OUT
DENS.	DENSITY	REV.	REVISION	WD.	WOOD
DISP.	DISPENSER	R.O.	ROUGH OPENING		
D.F.	DRINKING FOUNTIAN	SALV.	SALVAGE		
DIA.	DIAMETER	SCHED.	SCHEDULE		
DIV.	DIVISION	S.C.	SEALED CONCRETE		
DIR.	DIRECT	S.D.	SOAP DISPENSER		
DIST.	DISTRIBUTION	SERV.	SERVICE		
DBL.	DOUBLE	SHEATHG.	SHEATHING		
EA.	EACH	SHT.	SHEET		
ELASTO.	ELASTOMERIC				
ELEC.	ELECTRICAL				
E.W.C.	ELECTRIC WATER COOLER				
ELEV.	ELEVATION				
ENGRD.	ENGINEERED				
EPXY.	EPOXY PAINT				
EQ.	EQUAL OR EQUIVALENT				
EXIST	EXISTING				
EXP.	EXPANSION				
EXT.	EXTERIOR				
FD.	FLOOR DRAIN				
FIN.	FINISH				
F.E.	SURFACE MT FIRE EXTINGUISHER				
F.E.C.	FIRE EXTINGUISHER & CABINET				
F.F.	FINISHED FLOOR				
FLR.	FLOOR				
FLRG.	FLOORING				
FLDG.	FOLDING				
F.T.	FIRE TREATED				
FTG.	FOOTING				
F.V.	FIELD VERIFY				
FWD.	FORWARD				
FDN.	FOUNDATION				
FRAMG.	FRAMING				
FURRG.	FURRING				
GALV.	GALVANIZED				
GA.	GAUGE				
GB.	GRAB BAR				
GR.	GRADE				
GYP.	GYPSUM				
HDBD.	HARDBOARD				
HDWD.	HARDWOOD				
H.	HIGH				
HD.	HAND DRYER				
HT.	HEIGHT				
HORIZ.	HORIZONTAL				
H.C.W.	HOLLOW CORE				
H.M.	HOLLOW METAL				
HORIZ.	HORIZONTAL				
HR.	HOUR				
HW.	HARDWOOD				
IBC	INTERNATIONAL BUILDING CODE				
INFILTR.	INFILTRATION				
I.D.	INSIDE DIAMETER				
INSUL.	INSULATION				
IRRIG.	IRRIGATION				
JT.	JOINT				
L.	LONG				
LAM.	LAMINATED				
LAMIN.	LAMINATE				
LAT.	LATERAL				
L.M.B.	LIQUID MARKER BOARD				
LT.	LIGHT				
M.	MIRROR				
M.H.	MAN HOLE				
MANUF.	MANUFACTURER				
M.O.	MASONRY OPENING				

KEYPLAN



VICINITY MAP



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CONTACT:
JT TURNBOW

SYMBOLS

BUILDING SECTION — A1 / A5.20
WALL SECTION — A1 / A5.20
DETAIL — A1 / A5.20
ELEVATION MARK — 100'-0" T.O.FLOOR
REVISIONS — E
WINDOW TYPES — 01 — SEE SHEET A6.01
FLOOR & WALL ASSEMBLIES — A1 — SEE SHEET A8.00
ROOF ASSEMBLIES — A1 — SEE SHEET A8.20
DOOR NUMBER — 01
EXTERIOR ELEVATION — A1/4.00
INTERIOR ELEVATION — A1/4.00

MATERIAL KEY

- EARTH
- CMU
- CONCRETE
- STEEL CONT.
- PLYWOOD
- FINISH WOOD
- WOOD BLKNG
- CONT. WOOD
- BATT INSUL.
- RIGID INSUL.
- CRUSHED GRAVEL
- SAND

DRAWING INDEX

VOLUME 1 (SEE SEPARATE SET)

GENERAL:

G1.00A	TITLE SHEET
G1.01	CODE SUMMARY
G1.02	WSEC SUMMARY
G1.03	PROJECT INFORMATION

CIVIL:

C0.01	GENERAL NOTES AND LEGEND
C0.03	SURVEY
C0.04	SURVEY
C0.05	EROSION CONTROL PLAN
C0.06	SOUTH PARCEL EROSION CONTROL AND GRADING PLAN
C1.00	OVERALL DEMOLITION PLAN
C1.01	PARTIAL DEMOLITION PLANS
C2.00	OVERALL SITE PLAN
C2.01	PARTIAL SITE PLAN
C2.02	PARTIAL SITE PLAN
C2.03	PARTIAL SITE PLAN
C2.04	PARTIAL SITE PLAN
C3.00	OVERALL GRADING PLAN
C3.01	PARTIAL GRADING PLAN
C3.02	PARTIAL GRADING PLAN
C3.03	PARTIAL GRADING PLAN
C3.04	PARTIAL GRADING PLAN
C4.00	OVERALL UTILITY PLAN
C4.01	PARTIAL UTILITY PLAN
C4.02	PARTIAL UTILITY PLAN
C4.03	PARTIAL UTILITY PLAN
C4.04	PARTIAL UTILITY PLAN
C5.01	SECTIONS AND DETAILS
C5.02	SECTIONS AND DETAILS
C6.00	OVERALL ROAD PLAN
C6.01	ROAD PLAN AND PROFILE
C6.02	ROAD PLAN AND PROFILE
C6.03	ROAD PLAN AND PROFILE
C6.04	ROAD PLAN AND PROFILE
C6.05	ROAD PLAN AND PROFILE

LANDSCAPE:

L1.00	IRRIGATION PLAN
L1.01	IRRIGATION PLAN
L1.02	IRRIGATION DETAILS
L1.03	IRRIGATION DETAILS
L2.00	PLANTING PLAN
L2.01	PLANTING PLAN
L3.00	SITE FURNISHING PLAN
L3.01	SITE FURNISHING PLAN
L4.00	SITE FURNISHING DETAILS
L4.01	SITE FURNISHING DETAILS
L4.02	SITE FURNISHING DETAILS
L4.03	PLANTING DETAILS

ARCHITECTURAL:

A3.30a	COMPOSITE FIRST FLOOR PLAN
A3.30b	COMPOSITE SECOND FLOOR PLAN
A3.30c	COMPOSITE SECOND UPPER FLOOR PLAN
A3.30d	CHILLER - MAINT. & STORAGE BLDG - BID ALT
A3.31	FIRST FLOOR PLAN - AREA A
A3.32	FIRST FLOOR PLAN - AREA B
A3.33	SECOND FLOOR PLAN - AREA C
A3.34	SECOND FLOOR PLAN - AREA D
A3.36	ENLARGED PLANS
A3.37	ENLARGED PLANS
A3.41	FIRST FLOOR FINISH PLAN
A3.42	SECOND FLOOR FINISH PLAN
A3.44	FIRST FLOOR SIGNAGE PLAN
A3.45	SECOND FLOOR SIGNAGE PLAN
A3.51	FIRST FLOOR RCP - AREA A
A3.52	FIRST FLOOR RCP - AREA B
A3.53	SECOND FLOOR RCP - AREA C
A3.54	SECOND FLOOR RCP - AREA D
A3.60	ROOF PLAN
A4.01	EXTERIOR ELEVATION
A4.02	ENLARGED EXTERIOR ELEVATION
A4.03	ROOF EXTERIOR ELEVATION
A5.01	BUILDING SECTIONS
A5.10	WALL SECTIONS
A5.11	WALL SECTIONS
A6.01	DOOR AND WINDOW TYPES
A6.10	DOOR AND WINDOW DETAILS
A6.11	DOOR AND WINDOW DETAILS
A7.01	TYPICAL MILLWORK
A7.10	INTERIOR ELEVATION
A7.11	INTERIOR ELEVATION
A7.12	INTERIOR ELEVATION
A7.13	INTERIOR ELEVATION
A7.14	INTERIOR ELEVATION
A7.15	INTERIOR ELEVATION
A7.16	INTERIOR ELEVATION
A7.17	INTERIOR ELEVATION
A7.18	INTERIOR ELEVATION
A7.19	INTERIOR ELEVATION
A7.20	INTERIOR ELEVATION
A7.21	INTERIOR ELEVATION
A7.22	INTERIOR ELEVATION
A8.00	ASSEMBLIES
A8.20	CEILING ASSEMBLIES
A8.30	ROOF ASSEMBLIES
A8.31	ROOF ASSEMBLIES
A8.40	EXTERIOR DETAILS
A8.50	INTERIOR DETAILS
A8.51	INTERIOR DETAILS
A8.52	INTERIOR DETAILS

STRUCTURAL:

S0.01	GENERAL NOTES AND LEGEND
S0.02	SPECIAL INSPECTION TABLES
S1.01	FOUNDATION PLAN AREA A
S1.02	FOUNDATION PLAN AREA B
S1.03	MICS. PLANS AND DETAILS
S1.04	READER BOARD PLANS AND DETAILS
S1.11	SECOND FLOOR FRAMING PLAN AREA A
S1.12	SECOND FLOOR FRAMING PLAN AREA B
S1.21	ROOF FRAMING PLAN AREA A
S1.22	ROOF FRAMING PLAN AREA B
S1.23	ROOF FRAMING PLAN AREA A
S1.51	MAINT. & STORAGE BLDG. BID ALT
S2.01	FRAMING ELEVATIONS
S2.02	TRUSS PROFILE
S2.11	BRACE FRAME ELEVATIONS
S2.12	BRACE FRAME ELEVATIONS
S4.01	STAIR FRAMING PLANS AND DETAILS
S5.01	SECTIONS AND DETAILS
S5.02	SECTIONS AND DETAILS
S5.03	SECTIONS AND DETAILS
S5.11	SECTIONS AND DETAILS
S5.12	SECTIONS AND DETAILS
S5.13	SECTIONS AND DETAILS
S5.21	SECTIONS AND DETAILS
S5.22	SECTIONS AND DETAILS
S6.01	SCHEDULES
S6.02	LOADING DIAGRAM
S6.03	SCHEDULES

VOLUME 2 (THIS SET)

GENERAL:

G1.00B	TITLE SHEET

PLUMBING:

P0.01	PLUMBING SYMBOLS, LEGENDS, ABBREV. AND NOTES
P1.01	PLUMBING SCHEDULES
P1.02	PLUMBING SCHEDULES
P2.20	OVERALL PLAN - FOUNDATION - PLUMBING
P2.21	AREA A - FOUNDATION - PLUMBING
P2.22	AREA B - FOUNDATION - PLUMBING
P2.30	OVERALL PLAN - FIRST FLOOR - PLUMBING
P2.31	AREA A - FIRST FLOOR - PLUMBING
P2.32	AREA B - FIRST FLOOR - PLUMBING
P2.40	OVERALL PLAN - SECOND FLOOR - PLUMBING
P2.41	AREA C - SECOND FLOOR - PLUMBING
P2.42	AREA D - SECOND FLOOR - PLUMBING
P2.50	ROOF PLAN - PLUMBING
P4.20	ENLARGED PLAN - MECH/CUST - FOUNDATION
P4.21	ENLARGED PLAN - KITCHEN - FOUNDATION
P4.22	ENLARGED PLAN - STUDENT STORE/RR - FOUNDATION
P4.23	ENLARGED PLANS - AREA B - FOUNDATION
P4.30	ENLARGED PLAN - MECH/CUST - LEVEL 1
P4.31	ENLARGED PLAN - KITCHEN - LEVEL 1
P4.32	ENLARGED PLAN - STUDENT STORE/RR - LEVEL 1
P4.33	ENLARGED PLAN - LEVEL 1
P4.34	ENLARGED PLANS - AREA B - LEVEL 1
P4.40	ENLARGED PLANS - AREA C/D - LEVEL 2
P4.41	ENLARGED PLANS - AREA D
P5.01	DETAILS - PLUMBING
P5.02	DETAILS - PLUMBING

MECHANICAL:

M0.01	MECHANICAL LEGENDS & ABBREVIATIONS
M1.01	MECHANICAL SCHEDULES
M1.02	MECHANICAL SCHEDULES
M1.03	MECHANICAL SCHEDULES
M1.04	MECHANICAL SCHEDULES
M2.30	OVERALL PLAN - FIRST FLOOR - HVAC
M2.31	AREA A - FIRST FLOOR - HVAC
M2.32	AREA B - FIRST FLOOR - HVAC
M2.40	OVERALL PLAN - SECOND FLOOR - HVAC
M2.41	AREA C - SECOND FLOOR - HVAC
M2.42	AREA D - SECOND FLOOR - HVAC
M2.50	ROOF PLAN - HVAC
M2.60	ENLARGED MECHANICAL ROOM PLANS - HVAC
M2.70	ALTERNATE 3 & 4
M3.20	SITE PLAN - HYDRONICS
M3.30	OVERALL PLAN - FIRST FLOOR HYDRONICS
M3.31	AREA A - FIRST FLOOR - HYDRONICS
M3.32	AREA B - FIRST FLOOR - HYDRONICS
M3.40	OVERALL PLAN - SECOND FLOOR - HYDRONICS
M3.41	AREA C - SECOND FLOOR HYDRONICS
M3.42	AREA D - SECOND FLOOR - HYDRONICS
M3.50	ROOF PLAN - HYDRONICS
M3.60	ENLARGED MECHANICAL ROOM PLANS - HYDRONIC
M4.01	MECHANICAL SECTIONS
M4.02	MECHANICAL SECTIONS
M4.03	MECHANICAL SECTIONS
M4.04	MECHANICAL SECTIONS
M4.05	MECHANICAL SECTIONS
M4.10	MECHANICAL SECTIONS - 3D
M4.11	MECHANICAL SECTIONS - 3D
M4.12	MECHANICAL SECTIONS - 3D
M5.01	HVAC DETAILS
M5.02	HVAC DETAILS
M5.03	HVAC DETAILS
M5.04	AHU DETAILS
M5.05	HRU DETAILS
M6.01	HYDRONIC DETAILS
M6.02	HYDRONIC DETAILS
M6.03	HYDRONIC DETAILS
M7.01	MECHANICAL CONTROLS
M7.02	MECHANICAL CONTROLS
M7.03	MECHANICAL CONTROLS
M7.04	MECHANICAL CONTROLS
M7.05	MECHANICAL CONTROLS

FIRE PROTECTION:

FP2.30	OVERALL PLAN - 1ST FLOOR - FIRE PROTECTION
FP2.40	OVERALL PLAN - 2ND FLOOR - FIRE PROTECTION

ELECTRICAL:

E0.01	GENERAL NOTES AND SYMBOLS
E0.02	SCHEDULES
E0.03	SCHEDULES
E1.01	SITE PLAN ELECTRICAL
E1.02	ELECTRICAL SITE PLAN DETAILS
E1.03	ROOM PLAN ELECTRICAL
E2.01	FIRST FLOOR PLAN LIGHTING AREA 'A'
E2.02	FIRST FLOOR PLAN LIGHTING AREA 'B'
E2.03	SECOND FLOOR PLAN LIGHTING AREA 'C'
E2.04	SECOND FLOOR PLAN LIGHTING AREA 'D'
E3.01	FIRST FLOOR PLAN ELECTRICAL AREA 'A'
E3.02	FIRST FLOOR PLAN ELECTRICAL AREA 'B'
E3.03	SECOND FLOOR PLAN ELECTRICAL AREA 'C'
E3.04	SECOND FLOOR PLAN ELECTRICAL AREA 'D'
E3.05	SECOND FLOOR PLAN ELECTRICAL AREA 'D'
E4.01	ONE-LINE DIAGRAM
E4.02	TELECOM DETAILS
E5.01	PANEL SCHEDULES
E5.02	PANEL SCHEDULES
E5.03	PANEL SCHEDULES
E6.01	ELECTRICAL DETAILS
E6.02	ELECTRICAL DETAILS
E6.03	ELECTRICAL DETAILS

FOOD SERVICE:

FS1.00	FOOD SERVICE EQUIPMENT PLAN
FS2.1	FOOD SERVICE EQUIPMENT SCHEDULE
FS3.1	FOOD SERVICE PLUMBING ROUGH-IN PLAN
FS4.1	FOOD SERVICE ELECTRICAL ROUGH-IN PLAN
FS5.1	FOOD SERVICE BUILDING CONDITION PLAN
FS6.1	FOOD SERVICE ELEVATIONS
FS7.1	EXHAUST HOOD DETAILS
FS7.2	EXHAUST HOOD DETAILS
FS7.3	EXHAUST HOOD DETAILS
FS7.4	EXHAUST HOOD DETAILS
FS7.4	EXHAUST HOOD DETAILS
FS7.4	EXHAUST HOOD DETAILS
FS7.5	WALK-IN MANUFACTURER DRAWING

DESIGN WEST ARCHITECTS, P.A.
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• KENNEWICK, WASHINGTON • PORTLAND, OREGON •
• SPOKANE, WASHINGTON
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CHECKED BY
BW

JOB NUMBER
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ORION HIGH SCHOOL

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PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
TITLE SHEET

SHEET
G1.00B

HANGERS AND SUPPORTS

1. HANGERS, SUPPORTS AND ANCHORS FOR MECHANICAL AND PLUMBING SYSTEMS AND EQUIPMENT ARE NOT NECESSARILY DESIGNED OR SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPPORT MEMBERS, HANGERS, BRACKETS, HARDWARE, CLEVIS HANGERS, RODS, ETC. TO SECURELY HANG, BRACE AND SUPPORT MECHANICAL SYSTEMS, DUCTWORK, PIPING, EQUIPMENT AND OTHER DEVICES. ANCHOR SUPPORTS TO BUILDING STRUCTURE OR OTHER APPROPRIATE BUILDING ELEMENTS. SEE TYPICAL MECHANICAL DETAILS ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION, LIMITATIONS AND DETAILS.
2. DO NOT ANCHOR TO OR SUSPEND EQUIPMENT, DUCTWORK OR PIPING DIRECTLY OFF OF BARE METAL ROOF DECKING.

PLUMBING PIPING

1. PLENUMS: PIPES AND WIRING IN PLENUMS SHALL BE RATED FOR PLENUM USE. PVC, ABS, PLASTIC PIPING IS NOT ACCEPTABLE IN PLENUM APPLICATIONS UNLESS INSULATED AND WRAPPED IN APPROVED FIRE RATED JACKETING.
2. SMALL PIPING OR COMPONENTS: PIPING PLANS DO NOT NECESSARILY SHOW ALL SMALL PIPING OR COMPONENTS, INSTRUMENT TAPS OR DRAINS. PROVIDE ALL PIPING, VALVES, SPECIALTY ITEMS, INSTRUMENTATION, ETC. AS INDICATED ON THE PIPING FLOW DIAGRAMS, PIPING/EQUIPMENT DETAILS AND/OR CONTROL/INSTRUMENTATION DIAGRAMS.

TESTING, BALANCING AND COMMISSIONING

1. MECHANICAL SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH THE 2018 WA STATE ENERGY CODE, THE PROJECT SPECIFICATIONS AND GENERALLY ACCEPTED ENGINEERING STANDARDS TO ENSURE AT A MINIMUM THAT FLOW RATES ARE MEASURED AND ADJUSTED TO DELIVER THE DESIGN RATES WITHIN SPECIFIED TOLERANCES.
2. A BUILDING COMMISSIONING PROCESS LEAD BY A CERTIFIED COMMISSIONING PROFESSIONAL SHALL BE COMPLETED FOR MECHANICAL SYSTEMS IN ACCORDANCE WITH ALL REQUIREMENTS OF SECTION 408 OF THE 2018 WA STATE ENERGY CODE.

LOCATIONS & COORDINATION

1. THE MECHANICAL AND PLUMBING PLANS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS AND FITTINGS. PROVIDE ALL NECESSARY OFFSETS, TRANSITIONS AND FITTINGS REQUIRED FOR A COMPLETE SYSTEM. REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING AND ELECTRICAL DRAWINGS FOR COORDINATION PURPOSES TO AVOID CONFLICTS.
2. INSTALL ALL MECHANICAL AND PLUMBING WORK AS HIGH AS POSSIBLE, TIGHT TO STRUCTURE ABOVE, UNLESS NOTED OTHERWISE. IN GENERAL IT IS THE INTENT THAT ALL MECHANICAL SYSTEMS BE CONCEALED ABOVE CEILINGS OR INSIDE WALLS AND SHAFTS.
3. COORDINATE ALL EXPOSED MECHANICAL SYSTEMS, PIPING AND DUCTWORK SO THAT LOCATIONS AND ROUTING ARE INTEGRATED WITH THE OTHER BUILDING ELEMENTS (WALLS, ROOFS, JOISTS, LIGHTS, ETC.). GENERALLY RUN SYSTEMS PARALLEL OR PERPENDICULAR TO BUILDING ELEMENTS AND RUN IN A MANNER TO CONCEAL OR BLEND WITH BUILDING LINES.
4. PROVIDE NEC CODE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCES FOR ALL ELECTRICAL PANELS AND EQUIPMENT. OFFSET MECHANICAL WORK AS REQUIRED.
5. COORDINATE ALL WORK WITH THAT OF OTHER TRADES TO ENSURE PROPER INTERFACE, ADEQUATE CLEARANCES, AND TO AVOID CONFLICTS. PROVIDE FIELD COORDINATION AND/OR DRAWINGS PRIOR TO FABRICATION AND/OR INSTALLATION. CONFLICTS AND INTERFERENCES THAT COULD HAVE BEEN AVOIDED BY PROPER PRE-PLANNING AND COORDINATION SHALL BE REMOVED AND CORRECTED AT NO COST TO THE OWNER.
6. FIELD LOCATE ALL ROOF, FLOOR AND WALL PENETRATIONS AND ADJUST TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS, BEAMS, CROSS-BRACING, ARCHITECTURAL ELEMENTS. DIV. 23/22 CONTRACTOR RESPONSIBLE FOR LOCATING AND COORDINATING ALL SAW CUTTING AND DRILLING REQUIRED FOR MECHANICAL SYSTEM OPENINGS.

ELECTRICAL COORDINATION

1. INFORMATION LISTED IN EQUIPMENT SCHEDULES IS BASED ON THE EQUIPMENT AS SELECTED BY THE ENGINEER DURING THE DESIGN PROCESS. THE ACTUAL EQUIPMENT SELECTED BY THE CONTRACTOR MAY BE DIFFERENT AND HAVE DIFFERING ELECTRICAL CHARACTERISTICS. PRIOR TO ROUGH-IN OR ORDERING EQUIPMENT, COORDINATE WITH THE ELECTRICAL CONTRACTOR TO ESTABLISH ACTUAL ELECTRICAL CHARACTERISTICS, ELECTRICAL LOAD, VOLTAGE, OVERCURRENT PROTECTION REQUIREMENTS FOR EACH PIECE OF EQUIPMENT, TO ASSURE PROPER ELECTRICAL CONNECTIONS AND SERVICES ARE PROVIDED.
2. COORDINATE THE FURNISHINGS AND INSTALLATION OF ALL ELECTRICAL DISCONNECT SWITCHES, STARTERS, VFDS, ETC., IN ORDER TO ASSURE THAT ALL ENERGIZED MECHANICAL IS PROVIDED WITH THE REQUIRED CIRCUIT PROTECTION METHODS AND CONTROL DEVICES. WHERE DRAWINGS NOTES, SCHEDULES AND EQUIPMENT SPECIFICATIONS ARE SILENT OR UNCLEAR AS TO WHICH DIVISION (22-PLBG, 23-HVAC, OR 26-ELECTRICAL) IS TO PROVIDE THESE DEVICES, THE CONTRACTOR SHALL CONTACT ENGINEER, PRIOR TO BID FOR DIRECTION.

GENERAL NOTES

1. THE MECHANICAL & PLUMBING SYSTEM SHALL CONSIST OF ALL WORK SHOWN ON DRAWINGS, DIAGRAMS AND AS DESCRIBED IN SPECIFICATIONS.
2. COORDINATE WITH SPECIFICATIONS. IN CASE OF DISCREPANCY BETWEEN SPECIFICATIONS AND DRAWINGS REFER TO THE GENERAL CONDITIONS AND NOTIFY THE A/E FOR DIRECTION.
3. INSTALL ALL MECHANICAL WORK AS HIGH AS POSSIBLE, TIGHT TO STRUCTURE ABOVE. COORDINATE ALL EXPOSED MECHANICAL SYSTEMS, PIPING AND DUCTWORK SO THAT LOCATIONS AND ROUTING ARE INTEGRATED WITH THE OTHER BUILDING ELEMENTS (WALLS, ROOFS, JOISTS, LIGHTS, ETC.). GENERALLY RUN SYSTEMS PARALLEL OR PERPENDICULAR TO BUILDING ELEMENTS AND RUN IN A MANNER TO CONCEAL OR BLEND WITH BUILDING LINES.
4. THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS AND FITTINGS. PROVIDE TRANSITIONS AS REQUIRED TO CONNECT DUCTWORK TO AIR TERMINAL UNITS, FAN AND OTHER MECHANICAL EQUIPMENT AND PROVIDE ALL NECESSARY OFFSETS, TRANSITIONS AND FITTINGS REQUIRED FOR A COMPLETE SYSTEM. REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING AND ELECTRICAL DRAWINGS FOR COORDINATION PURPOSES TO AVOID CONFLICTS.
5. PROVIDE NEC CODE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCES FOR ALL ELECTRICAL PANELS AND EQUIPMENT. OFFSET MECHANICAL WORK AS REQUIRED.
6. COORDINATE ALL MECHANICAL WORK WITH THAT OF OTHER TRADES TO ENSURE PROPER INTERFACE, ADEQUATE CLEARANCES, AND TO AVOID CONFLICTS. PROVIDE FIELD COORDINATION AND/OR DRAWINGS PRIOR TO FABRICATION AND/OR INSTALLATION. CONFLICTS AND INTERFERENCES THAT COULD HAVE BEEN AVOIDED BY PROPER PRE-PLANNING AND COORDINATION SHALL BE REMOVED AND CORRECTED AT NO COST TO THE OWNER.
7. FIELD LOCATE ALL ROOF, FLOOR AND WALL PENETRATIONS AND ADJUST TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS, BEAMS, CROSS-BRACING, ARCHITECTURAL ELEMENTS. DIV. 23/22 CONTRACTOR RESPONSIBLE FOR LOCATING AND COORDINATING ALL SAW CUTTING AND DRILLING REQUIRED FOR MECHANICAL SYSTEM OPENINGS.
8. ALL REQUIRED FIRESTOPPING FOR DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATION SECTIONS FOR FIRESTOPPING MATERIALS AND METHODS.
9. PROVIDE ALL NECESSARY SUPPORT MEMBERS, HANGERS, BRACKETS, HARDWARE, CLEVIS HANGERS, RODS, ETC. TO SECURELY HANG, BRACE AND SUPPORT MECHANICAL SYSTEMS, DUCTWORK, PIPING, EQUIPMENT AND OTHER DEVICES. ANCHOR SUPPORTS TO BUILDING STRUCTURE OR OTHER APPROPRIATE BUILDING ELEMENTS. SEE TYPICAL MECHANICAL DETAILS ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION, LIMITATIONS AND DETAILS.
10. ITEMS NOTED "TYPICAL" OR "TYP" ON ANY SHEET APPLY TO THAT PARTICULAR SHEET.
11. PLENUMS: PIPES AND WIRING IN PLENUMS SHALL BE RATED FOR PLENUM USE. PVC, ABS, PLASTIC PIPING IS NOT ACCEPTABLE IN PLENUM APPLICATIONS.
12. MODEL NUMBERS OF EQUIPMENT SHOWN ON THE SCHEDULES AND THROUGHOUT THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MFR/MODEL ALONE. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS OF DESIGN.
13. ALL PLUMBING (DIVISION 22) PIPING LOCATED IN ACCESSIBLE SPACES BELOW THE 10' LEVEL SHALL BE COVERED IN PVC JACKETING.
14. PROVIDE TRAP PRIMERS ON ALL FLOOR DRAINS AND FLOOR SINKS, UNLESS NOTED OTHERWISE. TRAP PRIMER SOURCES SHALL BE EITHER FROM AUTOMATIC, ELECTRONIC TRAP PRIMER UNITS LOCATED IN THE VICINITY (FOR CLUSTERS OF MULTIPLE DRAINS), WATER CLOSET FLUSH VALVE TAPS, SINK TAIL PIECE BRANCHES, OR PRESSURE DROP OPERATED UNITS AS BEST FITS THE SITUATION. ALL FLOOR DRAINS AND FLOOR SINKS IN KITCHENS, MECHANICAL MEZZANINES, AND MECHANICAL ROOMS ARE REQUIRED TO BE INSTALLED WITH AUTOMATIC ELECTRONIC TRAP PRIMER UNITS.
15. PROVIDE WATER HAMMER ARRESTORS IN HOT AND COLD WATER SERVING ALL RESTROOMS. PROVIDE WATER HAMMER ARRESTORS AT ALL FLUSH VALVE, AND QUICK ACTING VALVE LOCATIONS. PROVIDE WATER HAMMER ARRESTORS AT ALL FIXTURES LOCATED AT THE END OF MAIN AND BRANCH PIPING RUNS. PROVIDE WATER HAMMER ARRESTORS IN WATER SUPPLY LINES TO REMOTE LOCATED SINKS AND WATER SUPPLY LINES TO FAST ACTING VALVES. PROVIDE AN ACCESS PANEL WHERE REQUIRED FOR ACCESS TO WATER HAMMER ARRESTORS.
16. PROVIDE RPBA'S AS REQUIRED BY CODE. RPBA'S TO BE PROVIDED FOR, BUT NOT LIMITED TO, THE FOLLOWING:
    A. HOSE BIBBS LOCATED IN MECHANICAL ROOMS, MECHANICAL YARDS, AND/OR IN DUMPSTER LOCATIONS.
    B. FUME HOODS
    C. COMBI OVENS

    RPBA'S TO BE ACCESSIBLE FOR MAINTENANCE. INSTALL AT A MAXIMUM OF 5'-0" AFF.

SEISMIC DESIGN CRITERIA

1. SEE STRUCTURAL DRAWINGS FOR THE SEISMIC DESIGN CATEGORY (SDC) AND ASSOCIATED DESIGN CRITERIA FOR THIS PROJECT LOCATION.
2. ALL MECHANICAL SYSTEMS, PIPING AND EQUIPMENT CONVEYING OR USING NATURAL GAS (GAS PIPING, BOILERS, WATER HEATERS, ETC.) SHALL BE SEISMICALLY BRACED AND ANCHORED.
3. DELEGATED DESIGN: THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A QUALIFIED SEISMIC DESIGNER TO PROVIDE ENGINEERING OF ALL SEISMIC RESTRAINT AND ANCHORING SYSTEMS. SEISMIC DESIGN AND INSTALLATION SHALL BE CONTRACTOR FURNISHED.
4. SEISMIC BRACING PRODUCTS AND SYSTEMS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, SECTION 22 05 50, AND AS DETERMINED BY THE SEISMIC DESIGNER.

ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ABV	ABOVE
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFS	AIR FLOW SWITCH
AFF	ABOVE FINISHED FLOOR
AG	ABOVE GROUND
AHU	AIR HANDLING UNIT
AL	ACOUSTICALLY LINED
ALUM	ALUMINUM
APD	AIR PRESSURE DROP
ARCH	ARCHITECT
AVG	AVERAGE
AWT	AVERAGE WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACKDRAFT DAMPER
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BG	BELOW GROUND
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BP	BYPASS
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BSMT	BASEMENT
BV	BALANCING VALVE
C	CELSIUS
CA	COMBUSTION AIR
CAP	CAPACITY
CC	CENTER TO CENTER OR COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CI	CAST IRON
CLG	CEILING
COG	CLEAN OUT TO GRADE
CO	CLEAN OUT
COMB	COMBUSTION
COND	CONDENSATE OR CONDENSER
CONC	CONCRETE
CONST	CONSTRUCTION
COP	COEFFICIENT OF PERFORMANCE
CU	COPPER
CUH	CABINET UNIT HEATER
CW	COLD WATER
CU	CONDENSING UNIT
CR	CONDENSATE RETURN
CL	CENTER LINE
D	DEEP OR DEPTH
DB	DRY BULB OR DECIBEL
DBA	A-WEIGHTED DECIBELS
DDC	DIRECT DIGITAL CONTROLS
DEMO	DEMOLITION
DN	DOWN
DIA, Ø	DIAMETER Ø
DPS	DIFFERENTIAL PRESSURE SWITCH
DP	DROP
DPR	DAMPER
DWG	DRAWING
(E)	EXISTING
EA	EACH OR EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EEF	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATION
EMCS	ENERGY MANAGEMENT AND CONTROL SYSTEM
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EST	ESTIMATE(D)
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAHRENHEIT
FA	FRESH AIR (OUTSIDE AIR)
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER OR FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FF	FINAL FILTER
FLA	FULL LOAD AMPS
FLR	FLOOR
FLEX	FLEXIBLE
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FPI	FINS PER INCH
FPS	FEET PER SECOND
FP	FIRE PROTECTION
FS	FLOOR SINK
FT	FEET/FOOT OR FINNED TUBE
FV	FACE VELOCITY
G	GAS (NATURAL)
GA	GAUGE OR GAGE
GAL	GALLONS
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
GYP	GYPSUM WALL BOARD
H	HIGH OR HEIGHT
HB	HOSE BIBB
HC	HEATING COIL
HD	HEAD
HGBP	HOT GAS BYPASS
HL	HIGH LIMIT
HP	HORSEPOWER OR HIGH POINT
HR	HOUR
HTG	HEATING
HUM	HUMIDIFIER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HX	HEAT EXCHANGER
HZ	HERTZ
ID	INSIDE DIAMETER
INV	INVERT
I.E.	INVERT ELEVATION
INSUL	INSULATION
IND	INDIRECT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LENGTH OR LOUVER
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LDB	LEAVING DRY BULB
LF	LINEAR FOOT
LWT	LEAVING WATER TEMPERATURE
LG	LONG OR LENGTH
L/P	LOW POINT
LWB	LEAVING WET BULB
LWG	LOW WALL GRILLE
LWT	LEAVING WATER TEMPERATURE
LVG	LEAVING
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MBH	THOUSAND (1000) BTU PER HOUR
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MS	MOTOR STARTER
MTD	MOUNTED
MTG	MOUNTING
MAU	MAKE-UP AIR UNIT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
MOD	MOTOR-OPERATED DAMPER
NIC	NOT IN CONTRACT
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OSA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OF	OVERFLOW
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
PD	PRESSURE DROP
PH	PHASE
PIAC	PRESSURE INDEPENDENT AIR CONTROLLER
PG	PROPYLENE GLYCOL
PLBG	PLUMBING
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	PRESSURE & TEMPERATURE
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RAT	RETURN AIR TEMPERATURE
RD	ROOF DRAIN
RET	RETURN
REV	REVISION
RF	RETURN FAN
RPM	REVOLUTIONS PER MINUTE
RHW	RECIRCULATING HOT WATER
RTU	ROOF TOP UNIT
S	SINK
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SEER	SEASONAL ENERGY EFFICIENT RATIO
SENS	SENSIBLE
SD	SMOKE DETECTOR OR DAMPER
SF	SUPPLY FAN
SFD	SMOKE-FIRE DAMPER
SHT	SHEET
SP	STATIC PRESSURE
SQ	SQUARE
SQ	FT SQUARE FOOT
SS	STAINLESS STEEL
STD	STANDARD
TA	TRANSFER AIR
TEMP	TEMPERATURE
TH	THICK OR THICKNESS
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TP	TRAP PRIMER
TU	TERMINAL UNIT
TYP	TYPICAL
UF	UNDER FLOOR
UG	UNDERGROUND
UH	UNIT HEATER
UR	URINAL
US	UNDER SLAB
V	VENT OR VOLT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VRF	VARIABLE REFRIGERANT FLOW
VRV	VARIABLE REFRIGERANT VOLUME
VTR	VENT THRU ROOF
VD	VOLUME DAMPER
W	WIDE OR WIDTH
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
WT	WEIGHT

PLUMBING SYMBOLS

- ELBOW UP
- ELBOW DOWN
- TEE UP
- TEE DOWN
- CONCENTRIC REDUCER/INCREASER
- ECCENTRIC REDUCER/INCREASER
- UNION
- RISE/DROP IN PIPE
- VENT THRU ROOF
- CAP
- CLEAN-OUT (WALL)
- CLEAN-OUT (FLUSH TO FLOOR OR GRADE)
- FLOOR DRAIN
- CIRCULATING PUMP (POINTS IN DIRECTION OF FLOW)
- VALVE (AS INDICATED OR SPECIFIED)
- CHECK VALVE
- PRESSURE & TEMPERATURE RELIEF VALVE
- PRESSURE REDUCING VALVE (POINTS TOWARDS LOW PRESSURE)
- GAS VALVE
- SOLENOID VALVE
- HOSE BIBB
- CIRCUIT SETTER
- VALVE BOX W/ VALVE (AS SPECIFIED)
- THERMOMETER
- PRESSURE GAGE

PLUMBING LEGEND

- COLD WATER
- HOT WATER
- HOT WATER RETURN
- T — TEMPERED HOT WATER
- V — VENT
- W — WASTE
- ESW — ELEVATOR SUMP WASTE
- RL — RAIN LEADER
- ORL — OVERFLOW RAIN LEADER
- CD — CONDENSATE DRAIN
- F — FIRE PROTECTION
- KHW — KITCHEN HOT WATER
- KHWR — KITCHEN HOT WATER RETURN
- SW — SOFT COLD WATER
- N20 — NITROUS OXIDE
- N2 — NITROGEN
- CA — COMPRESSED AIR
- G — NATURAL GAS
- GW — GREASE WASTE
- AW — ACID WASTE
- AV — ACID VENT

GENERAL SYMBOLS

- M5.01 — CROSS-SECTION SYMBOL; SECTION IDENTIFYING NUMBER; SHEET WHERE SECTION IS SHOWN
- 1 / M6.01 — DETAIL SYMBOL; DETAIL IDENTIFYING NUMBER; SHEET WHERE DETAIL IS SHOWN
- POINT OF CONNECTION (POC) SYMBOL
- EQUIP. TYPE-NUMBER (SEE SCHEDULES)
- RCP-1 / RCP-1 — EQUIPMENT IDENTIFIER (OPTIONAL TAG STYLE)
- 1 — REVISION CLOUD AND REVISION NUMBER

LINEWEIGHT LEGEND

- LIGHT SOLID LINES INDICATES EXISTING ITEMS TO REMAIN
- LIGHT DASHED LINES GENERALLY INDICATE HIDDEN OR UNDERGROUND PIPING OR EQUIPMENT
- DARK LINE INDICATES NEW PIPING & EQUIPMENT
- DARK DASHED LINES INDICATE EXISTING PIPING & EQUIPMENT TO BE REMOVED (FLOOR PLANS & SECTIONS)
- DASHED LINES INDICATE EXISTING PIPING & EQUIPMENT TO BE REMOVED (DEMOLITION DETAILS & FLOW DIAGRAMS)

NOTE:
LINEWEIGHTS ARE GENERAL GUIDES ONLY. REFER TO DRAWING NOTES AND WORK PHASES (DEMO OR NEW) FOR ADDITIONAL DISTINCTIONS.

NOTE: SYMBOLS AND ABBREVIATIONS ON THE DRAWINGS ARE TO BE INTERPRETED IN ACCORDANCE WITH THE LEGENDS ON THIS SHEET. NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED ON THIS SHEET ARE NECESSARILY USED FOR THIS PROJECT.

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DATE
12/18/23

SHEET NAME
PLUMBING SYMBOLS, LEGENDS, ABBREV. AND NOTES

SHEET
P0.01

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DOMESTIC HOT WATER RECIRCULATION PUMPS

#	MFR	MODEL #	TYPE	SERVICE	FLOW (GPM)	HEAD (FT)	RPM	ELECTRICAL				NOTES
								HP	V	PHASE	HZ	
RCP-1	B&G	XL N 95-160	IN-LINE	HW WATER RECIRC	26	60	VARIES	2.0	208	3	60	(1) (2)
RCP-2	B&G	XL N 55-45	IN-LINE	HW WATER RECIRC	3	35	VARIES	.5	208	1	60	(1) (2)

NOTE:
(1) LOCATED IN MECHANICAL ROOM. (2) STAINLESS STEEL CONSTRUCTION.

ROOF DRAIN SCHEDULE

#	MANUFACTURER	MODEL NO.	STYLE	BODY MATERIAL	DOME STRAINER	NOTES
RD-1	JAY R. SMITH	1010-Y(C)(R)	NO-HUB	DUCO CAST IRON	POLYETHYLENE	-
RD-2	JAY R. SMITH	1070-Y(C)(R)	NO-HUB	DUCO CAST IRON	POLYETHYLENE	-
DSN-1	JAY R. SMITH	1770	WALL FLANGE	CAST BRASS	-	(1)

NOTES:
(1) PROVIDE WITH BIRD SCREEN OPTION.

GAS PRESSURE REGULATOR

#	MFR	MODEL NO.	INPUT MBH	INLET (PSIG)	PIPE SIZE (INCHES)	OUTLET (PSIG)	PIPE SIZE (INCHES)	NOTES
GPRV-1	PIETRO FIORENTINI	31051 1/2"	150	2.0	(4)	4"-11"W.C.	(4)	(1) (3)
GPRV-2	PIETRO FIORENTINI	31051 1/2"	150	2.0	(4)	4"-11"W.C.	(4)	(1) (2)
GPRV-3	PIETRO FIORENTINI	31051 1/2"	150	2.0	(4)	4"-11"W.C.	(4)	(1) (3)
GPRV-4	PIETRO FIORENTINI	31051 1/2"	150	2.0	(4)	4"-11"W.C.	(4)	(1) (2)
GPRV-5	PIETRO FIORENTINI	31051 1/2"	18	2.0	(4)	4"-11"W.C.	(4)	(1) (2)
GPRV-6	PIETRO FIORENTINI	31153 1-1/4"	1500	2.0	(4)	6"-14"W.C.	(4)	(1) (3)
GPRV-7	PIETRO FIORENTINI	31153 1-1/4"	1500	2.0	(4)	6"-14"W.C.	(4)	(1) (2)

NOTE:
(1) THESE REGULATORS HAVE CSA APPROVED INTEGRAL EXTERNAL VENT LIMITERS (NO VENT PIPING REQUIRED). VERIFY WITH LOCAL AUTHORITY IF VENT PIPING IS REQUIRED.
(2) IF VENT PIPING IS REQUIRED, PROVIDE MINIMUM 1/2" VENT WITH AN INCREASE OF 1 PIPE SIZE FOR EVERY 10'-0" OF LENGTH TO VENT TERMINATION AT THE ROOF W/ TURNED DOWN GOOSENECK FITTING AND BUG SCREEN.
(3) IF VENT PIPING IS REQUIRED, PROVIDE MINIMUM 1/4" VENT WITH AN INCREASE OF 1 PIPE SIZE FOR EVERY 10'-0" OF LENGTH TO VENT TERMINATION AT THE ROOF W/ TURNED GOOSE NECK FITTING AND BUG SCREEN.
(4) SEE DRAWINGS FOR PIPE SIZES.

THERMOSTATIC MIXING VALVE

#	MFR	MODEL #	PRESSURE DROP (PSI)	FLOW RATE (MIN. GPM)	VALVE SIZE (INLET/OUTLET)	SET TEMP.	NOTES
TMV-1	BRADLEY	S59-3130-H-P-SS	15 @ 71 GPM	.5	1-1/4"x1-1/2"	120°	(1) (2)
TMV-2	BRADLEY	S59-3045-H-P-SS	15 @ 24 GPM	.5	3/4"x1"	140°	(1) (2)

NOTE:
(1) PROVIDE WITH STSTL SURFACE MOUNTED CABINET. (2) PROVIDE WIITH HIGH THERMOSTAT

PLUMBING FIXTURES (11)

#	FIXTURE	MFR	MODEL #	MOUNTING	MATERIAL	SIZE	MFR & MODEL# OF FAUCET & VALVE	DRAIN	CARRIER	TRAP	ACCESSORIES	W	V	HW	CW	STOPS	GAS	CA	TEMP	NOTES
P1	WATER CLOSET	AMERICAN STANDARD	AFWALL 2257.103	WALL	VITREOUS CHINA	ELONGATED BOWL	SLOAN ROYAL 111-1.6-TP	-	JAY R. SMITH 200/400 SERIES	INTEGRAL	-	4"	2"	-	1"	INTEGRAL	-	-	-	(3) (4)
P2	ADA WATER CLOSET	AMERICAN STANDARD	AFWALL 2257.103	WALL	VITREOUS CHINA	ELONGATED BOWL	SLOAN ROYAL 111-1.6-TP	-	JAY R. SMITH 200/400 SERIES	INTEGRAL	-	4"	2"	-	1"	INTEGRAL	-	-	-	(2) (3) (4)
P3	ADA URINAL	AMERICAN STANDARD	WASHBROOK 6590.001	WALL	VITREOUS CHINA	-	SLOAN ROYAL 186-0.125	INTEGRAL	JAY R. SMITH 0600 SERIES	-	-	2"	2"	-	3/4"	INTEGRAL	-	-	-	(2) (3)
P4	ADA LAVATORY	AMERICAN STANDARD	LUCERNE 0355.012	WALL	VITREOUS CHINA	20"x18"	CHICAGO 3512-4E2805AB	ELKAY LKAD174	JAY R. SMITH 0700 SERIES	1¼"x17GA C.P.	-	1½"	1½"	1/2"	1/2"	BRASS CRAFT STCR1915A	-	-	-	(1) (2) (3)
P5	BOTTLE FILLER/ WATER COOLER	ELKAY	LZSTL8WSLK	SURFACE	STAINLESS STEEL	DUAL HEIGHT	INTEGRAL	INTEGRAL	-	1¼"x17GA C.P.	-	1½"	1½"	-	1/2"	BRASS CRAFT TO SUIT	-	-	-	(2) (5)
P6	HEALTH LAB SINK	-	-	-	-	-	CHICAGO 930-GN8BVBE7-317XK	-	-	BOTTLE TRAP ORION BT1	-	1½"	1½"	1/2"	1/2"	BRASS CRAFT STCR1920A	-	-	-	(2) (3) (12)
P7	EMERGENCY SHOWER	GUARDIAN	ADA GBF 1909 (10)	FLOOR	STAINLESS STEEL WASH BOWL	-	INTEGRAL	3" FD-1	-	3" CAST IRON	-	3"	2"	3/4"	3/4"	INTEGRAL	-	-	1"	(2) (3)
P8	MOP SINK	ACORN	TDF-32TF2	FLOOR	TERRAZZO	32"x32"x12"	CHICAGO #897-CP	INTEGRAL	-	3"C.I.	MOP HANGER & HOSE HOOK	3"	2"	3/4"	3/4"	INTEGRAL	-	-	-	(3)
P9	HEALTH SINK	ELKAY	LRAD221965	COUNTER	STAINLESS STEEL	22"x191/2"x6-1/2"	CHICAGO #786-E29CP	ELKAY LK18	-	1½"x17GA C.P.	-	1½"	1½"	1/2"	1/2"	BRASS CRAFT STCR1920A	-	-	-	(2) (3)
P10	SINK ADA SINGLE BOWL	ELKAY	LRAD221965	COUNTER	STAINLESS STEEL	22"x191/2"x6-1/2"	CHICAGO #786-E29CP	ELKAY LK99	-	1½"x17GA C.P.	-	1½"	1½"	1/2"	1/2"	BRASS CRAFT STCR1920A	-	-	-	(2) (3)
P11	WASHER BOX	GUY GRAY	B200	WALL	16 GA. STEEL	10-3/4"x9"	INTEGRAL	-	-	2" DEEP SEAL P-TRAP	-	2"	2"	3/4"	3/4"	-	-	-	-	(3)
P12	SINK ADA DOUBLE BOWL	ELKAY	LRAD331965	COUNTER	STAINLESS STEEL	33"x19-1/2"x6-1/2"	CHICAGO 2301-8ABCP	ELKAY LK99	-	BOTTLE TRAP ORION BT1	(6) (7)	1½"	1½"	1/2"	1/2"	BRASS CRAFT STCR1920A	-	-	-	(2) (3)
P13	WASH FOUNTAIN	BRADLEY	SN2033 (8)	WALL/ CORNER	STAINLESS STEEL	36"x24"x34"	INTEGRAL	INTEGRAL	-	1½"x17GA C.P.	(9)	2"	2"	3/4"	3/4"	BRASS CRAFT STCR1920A	-	-	-	(2) (3)
P14	WASH SINK DOUBLE BOWL	ELKAY	14-2C16X20-0X	WALL/ FLOOR	STAINLESS STEEL	39"x26"x44"	CHICAGO 943-317CP	ELKAY (2) LK99	-	1½"x17GA C.P.	(13)	2"	1½"	1/2"	1/2"	BRASS CRAFT STCR1920A	-	-	-	(2) (3)

NOTES:
(1) PROVIDE WITH TRUEBRO TRAP & SUPPLIES WRAP KIT.
(2) MOUNT PER ADA REQUIREMENTS.
(3) CAULK FIXTURE AT FLOOR, COUNTERTOP AND/OR WALL SURFACE WITH CAULKING.
(4) PROVIDE 0500 SERIES COMPACT FIXTURE SUPPORTS WHERE REQUIRED BY CONSTRUCTION.
(5) ELECTRICAL LOAD: 115V, 60 HZ, 2.8 AMPS PROVIDE WITH INTEGRAL FACTORY MOUNTED WATER FILTER
(6) PROVIDE DUAL SUPPLY STOPS ON HOT WATER SIDE FOR CONNECTION TO DISHWASHER. ADD TO P14 IN CHEM PREP 228.
(7) PROVIDE W/VACUUM BREAKER, DRAIN LINE, & TAIL PIECE W/ BARBED CONNECTION FOR DISHWASHER. ADD TO P14 IN CHEM PREP 228.
(8) ELECTRICAL: 12 VDC PLUG-IN TO A STANDARD GFCI PROTECTED OUTLET.
(9) PROVIDE INFRARED ACTIVATION AND THERMOSTATIC MIXING VALVE.
(10) PROVIDE WITH MODEL G3700LF TMV MOUNTED IN WALL W/IN RECESSED VALVE BOX ADJACENT TO SHOWER.
(11) PLEASE NOTE THAT THIS IS PLUMBING FIXTURE EQUIPMENT SCHEDULE ONLY. WHILE IT MAY INDICATE TO MOUNT SOME FIXTURES PER ADA REQUIREMENTS, THE EXACT FIXTURE MOUNTING LOCATION AND ELEVATIONS SHALL BE DETERMINED BY THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
(12) SCIENCE LAB SINKS PROVIDED WITH CASEWORK.
(13) PROVIDE ORION SINK/TAIL PIECE ADAPTOR FRPP NH.

PLUMBING SPECIALTIES

#	FIXTURE	MFR	MODEL #	MOUNTING	MATERIAL	SIZE	MFR & MODEL# OF FAUCET & VALVE	DRAIN	CARRIER	TRAP	ACCESSORIES	W	V	HW	CW	STOPS	GAS	CA	TEMP	NOTES
OB-1	ICE MAKER BOX	GUY GRAY	BMI875	WALL	16 GA. STEEL	10-3/4"x9"	INTEGRAL	-	-	-	-	-	-	-	1/2"	-	-	-	-	(1)
LT-1	LAB TURRET	CHICAGO	982-WSV909CAGCP	COUNTER	CHROME PLATED BRASS	-	-	-	-	-	-	-	-	-	-	1/2" BALL VALVE	-	1/2"	-	(1)

NOTES: (1) CAULK FIXTURE AT FLOOR, COUNTERTOP AND/OR WALL SURFACE WITH CAULKING.

WATER HEATER SCHEDULE

#	MFR	MODEL	GALLONS	BTUH INPUT	TEMPERATURES OUTLET (°F)	TEMPERATURES RISE (°F)	RECOVERY (GPH)	VENT / INTAKE AIR SIZE (" / ")	FUEL	ELECTRICAL	NOTES
WH-1	AO SMITH	BTH-150	100	150,000	130	90	178	4 / 4 (1)	NG	120V/60HZ/1PH (5.0 AMP DRAW)	(2) (3)
WH-2	A.O.SMITH	BTH-150	100	150,000	130	90	178	4 / 4 (1)	NG	120V/60HZ/1PH (5.0 AMP DRAW)	(2) (3)
WH-3	A.O.SMITH	BTH-150	100	150,000	150	110	162	4/4 (1)	NG	120V/60HZ/1PH (5.0 AMP DRAW)	(2) (3)
WH-4	A.O.SMITH	BTH-150	100	150,000	150	110	162	4 / 4 (1)	NG	120V/60HZ/1PH (5.0 AMP DRAW)	(2) (3)
DET-1	AMTROL	ST-25V-C	10.3	-	-	-	-	-	-	-	(4)

NOTES:
(1) EQUIPMENT CONNECTION SIZE(S). SIZE VENT AND INTAKE AIR PER MFR RECOMMENDATION.
(2) PROVIDE CONCENTRIC VENT KIT (VERTICAL TERMINATION THROUGH ROOF).
(3) PROVIDE CONDENSATE NEUTRALIZATION KIT (TERMINATE AT FLOOR DRAIN).
(4) PROVIDE (1) DET-1 AT WH-1/WH-2 AND (1) DET-1 AT WH-3/WH-4.

FLOOR DRAIN SCHEDULE

#	MFR	MODEL	TYPE	BODY		STRAINER/GRATE		VARIATION	NOTES
				STYLE	MATERIAL	STYLE	MATERIAL		
FD-1	JAY R. SMITH	2005Y-A-P-U	FLOOR DRAIN	-	CAST IRON	VANDAL-PROOF ROUND	NICKEL BRONZED	TRAP PRIMER	(1)
FD-2	JAY R. SMITH	2120Y-P050	FLOOR DRAIN	-	CAST IRON	ROUND	CAST IRON	TRAP PRIMER	-
FS-1	JAY R. SMITH	3120Y-12	FLOOR SINK	-	CAST IRON	-	NICKEL BRONZED	TRAP PRIMER	(1) (2)
SI-1	JAY R. SMITH	8715T	SOLIDS INTERCEPTOR	-	CAST IRON	-	-	-	-

NOTE: (1) PROVIDE WITH SUFFIX -C WHEN LOCATED IN MECHANICAL ROOMS AND SIMILAR SPACES.
(2) INSTALL FLOOR SINK GRATES FLUSH TO FINISH FLOOR IN MECHANICAL SPACES AND KITCHENS

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TRAP PRIMER VALVE SCHEDULE

#	MANUFACTURER	MODEL #	SERVICE	ACCESSORIES	ELECTRICAL	NOTES
TPV-1	PPP	SP-500-24V	TRAP PRIMER	-	24V	(2) (3)
TPV-2	PPP	PTS-8-EMS-24V	TRAP PRIMER	-	24V	(1) (2)

NOTES:

(1) PROVIDE TO SERVE 2 TO 8 DRAINS OR FLOOR SINKS. PROVIDE MC500 OUTLETS CAPS WHERE NEEDED TO CAP UN-USED MANIFOLD OUTLETS.

(2) INTERLOCK WITH BUILDING EMCS BY DIV 23.

(3) PROVIDE ONE TRAP PRIMER PER FLOOR DRAIN /SINK UNLESS NOTED OTHERWISE ON PLANS.

WATER HAMMER ARRESTER SIZING CHART

SYMBOL	FIXTURE UNIT RATING	CONNECTION TO SUPPLY PIPE
WHA-1	1-11	3/4"
WHA-2	12-32	1"
WHA-3	33-60	1"
WHA-4	61-113	1"

NOTES:

BACKFLOW PREVENTION DEVICES

#	MANUFACTURER	MODEL #	SIZE	SERVICE	NOTES
BFP-1	WATTS	LF009	4"	DOMESTIC WATER MAIN	(1)
BFP-2	WATTS	LF007	3/4"	STUDENT STORE 138 ICE MAKER	(1)

NOTES:

(1) PROVIDE WITH AIR GAP FITTING AND DRAIN UNDIMINISHED IN SIZE TO FLOOR DRAIN.

WALL HYDRANT SCHEDULE

#	MANUFACTURER	MODEL #	SIZE	NOTES
HB-1	WOODFORD	MODEL 24	3/4"	(2)
HB-2	WOODFORD	MODEL B22	1/2"	PROVIDE WITH CHROME FINISHED BOX
FPWH-1	JAY R. SMITH	MODEL 5519	3/4"	AUTO DRAINING, VACUUM BREAKER, LOOSE - TEE KEY (1)
FPRH-1	MAPA	MPH-24FP	3/4"	ROOF HYDRANT

NOTES:

(1) VERIFY WALL THICKNESS. (2) LOCATED IN MECHANICAL ROOM

SUBMERSIBLE PUMP

#	MFR	PUMP MODEL#	TYPE	SERVICE	FLOW (GPM)	HEAD (FT)	MOTOR RPM	ELECTRICAL HP	ELECTRICAL V/□	NOTES
SP-1	ZOELLER	MODEL BN153	SUBMERSIBLE PUMPS	ELEVATOR SUMP	52	20	1750	1/2	115/1	(1)

NOTES:

(1) PROVIDE WITH OIL SMART PUMP SWITCH, 115V PIGGY BACK POWER PLUG, SIMPLEX OIL SMART ALARM PANEL MODEL 10-2149, AND LIQUID SMART SENSOR.

LAB VALVE ENCLOSURE SCHEDULE

#	VALVE BOX MANUFACTURER	MODEL NO.	VALVE MANUFACTURER	MODEL NO.	SIZE	NOTES
GVB-1	METCRAFT	A605	MILWAUKEE	BB2-100	3/4"GAS	

NOTES:

DUPLEX BOOSTER PUMPS

#	MFR	PUMP MODEL# (4)	TYPE	SERVICE	FLOW (GPM) (4)	HEAD (FT) (4)	MOTOR RPM	ELECTRICAL (4) HP	ELECTRICAL (4) V/Ø	NOTES
DBP-1	QUANTUMFLO	PRODIGY QES_40-125B-5	BOOSTER PUMPS	DOMESTIC WATER	203	69.30	3450	5	460/3	(1)(2)(3)(4)

NOTES:

(1) PROVIDE SKID MOUNTED SYSTEM WITH CONTROL PANEL FOR SINGLE POINT ELECTRICAL CONNECTION.

(2) DUPLEX ARRANGEMENT (3) PUMPING SEQUENCE: 0-203 GPM PUMP 1 SHALL RUN 203-406 GPM PUMP 1 & PUMP 2 SHALL RUN CONCURRENTLY

(4) CRITERIA APPLIES TO EACH PUMP

AIR COMPRESSOR SCHEDULE

#	MFR.	MODEL #	PRESSURE (PSIG)	SCFM	RECEIVER SIZE (GAL.)	ELECTRICAL RPM	ELECTRICAL HP	ELECTRICAL V	ELECTRICAL PHASE	ELECTRICAL HZ	WEIGHT (LBS)	NOTES
AC-1	ROGERS	KIV-20 (2)	100	28-75	120	-	20	480	3	60	-	(1)(2)(3)

NOTES:

(1) TANK MOUNTED, VARIABLE SPEED COMPRESSOR

(2) PROVIDE WITH FLX 1.1 DRYER

(3) PROVIDE WITH INTEGRATED HIGH EFFICINECY COELESCING FILTER.

WATER SOFTENER

#	MANUFACTURER	MODEL #	GPM CONTINUOUS AT 15PSI PD	RESIN CAPCACITY	SIZE	ELECTRICAL	NOTES
WS-1	CULLIGAN	CTM-210	65	7.0 C/FT	2"	120V/60HZ	(1)

NOTES:

(1) PROVIDE COMPLETE ASSEMBLY AND INCLUDE ALL INCIDENTALS FOR COMPLETE INSTALLATION AND OPERATION.

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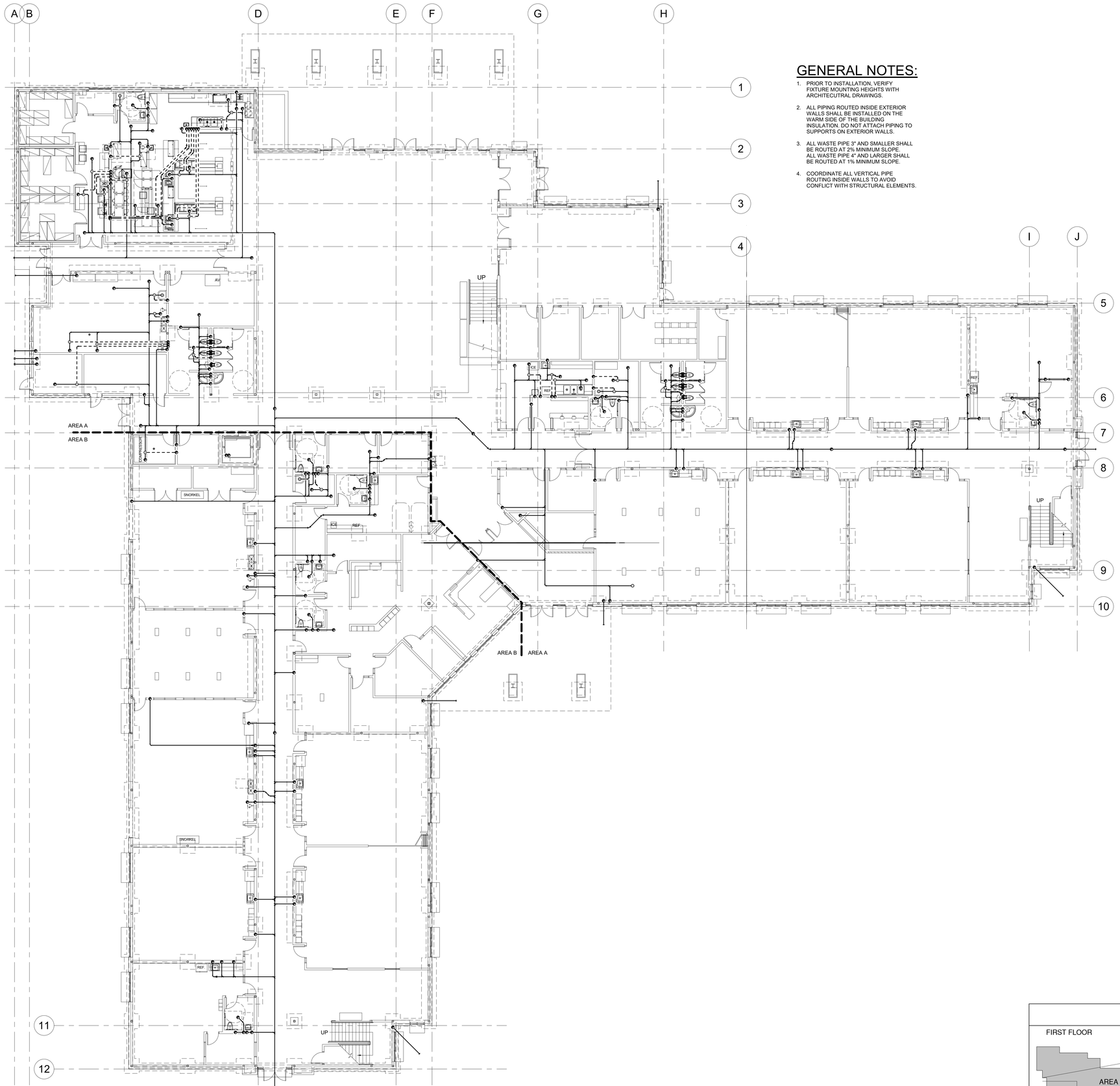
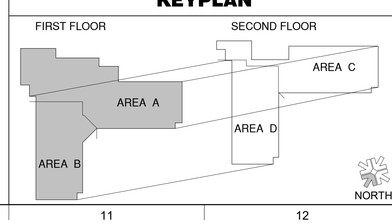


GENERAL NOTES:

1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

1 **OVERALL - FOUNDATION - PLUMBING**
SCALE: 3/32" = 1'-0"

KEYPLAN



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OVERALL PLAN - FOUNDATION - PLUMBING

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GENERAL NOTES:

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4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

(1) 4" W UP TO FLOOR CLEANOUT.

(2) 4" W UP.

(3) 4" W TO 5'-0" OUTSIDE OF BUILDING. I.E. = -4'-0" BFF.

(4) 2" V UP.

(5) 2" W UP.

(6) 2" W UP W/ P-TRAP AND PRIMER.

(7) COORDINATE W/ ARCHITECT FOR EXACT DRAIN LOCATION.

(8) 6" RL TO 5'-0" OUTSIDE OF BUILDING. I.E. = -4'-0" BFF. (ROOF AREA = 9,000 SF)

(9) 6" RL UP.

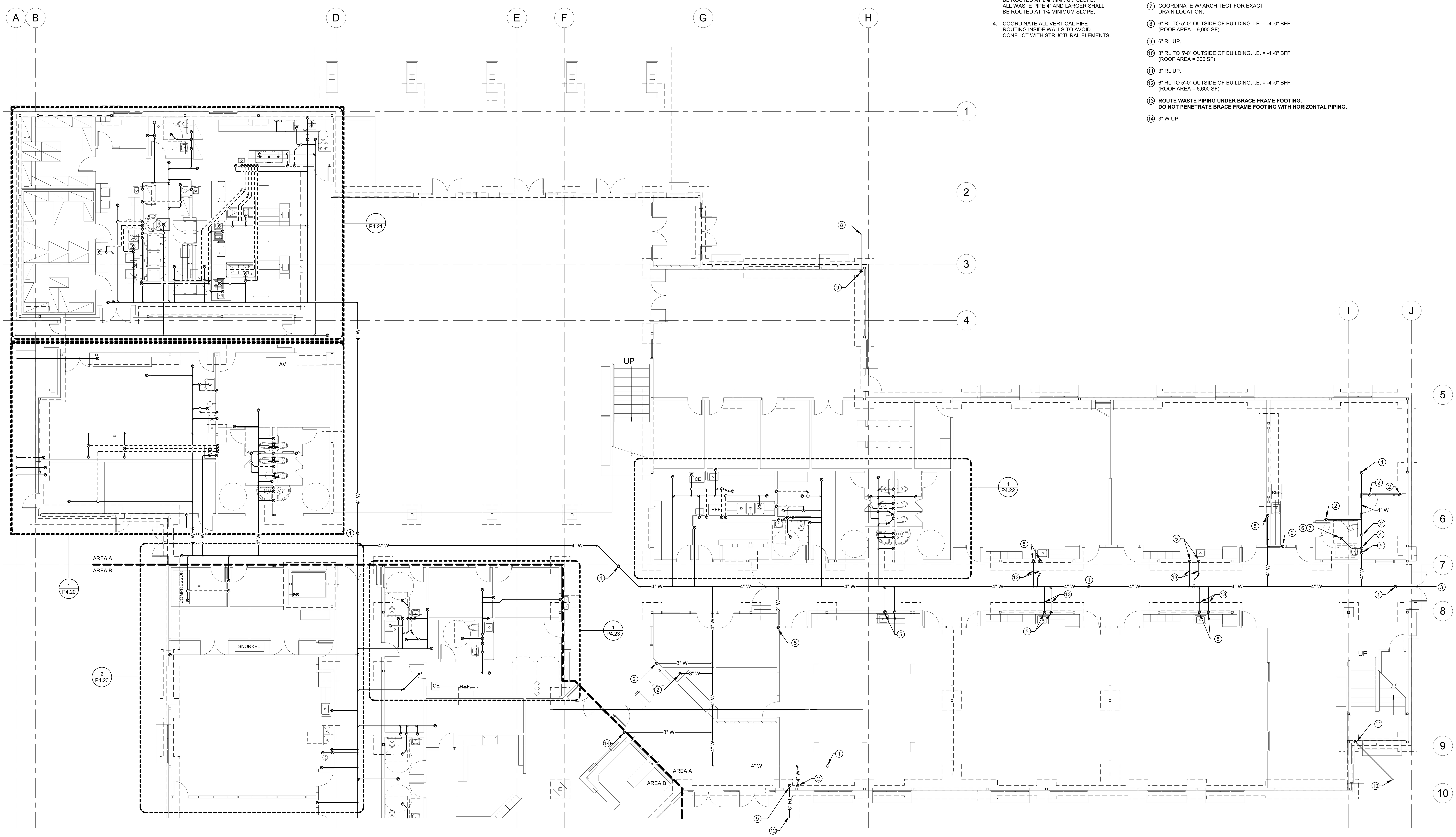
(10) 3" RL TO 5'-0" OUTSIDE OF BUILDING. I.E. = -4'-0" BFF. (ROOF AREA = 300 SF)

(11) 3" RL UP.

(12) 6" RL TO 5'-0" OUTSIDE OF BUILDING. I.E. = -4'-0" BFF. (ROOF AREA = 6,600 SF)

(13) **ROUTE WASTE PIPING UNDER BRACE FRAME FOOTING. DO NOT PENETRATE BRACE FRAME FOOTING WITH HORIZONTAL PIPING.**

(14) 3" W UP.



1 AREA A - FOUNDATION - PLUMBING

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

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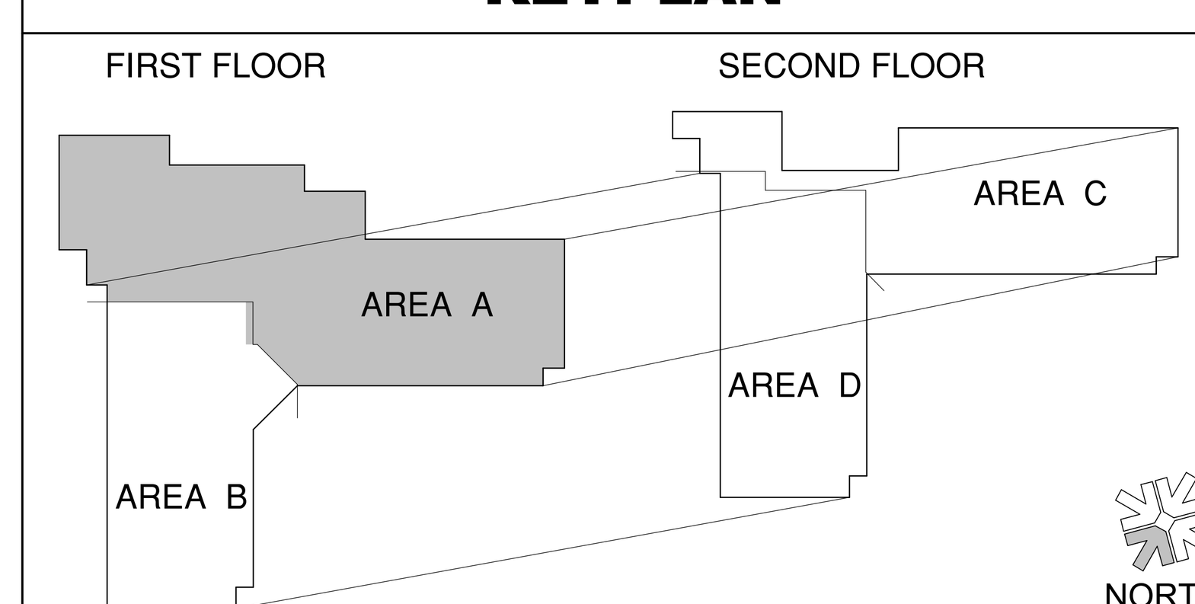

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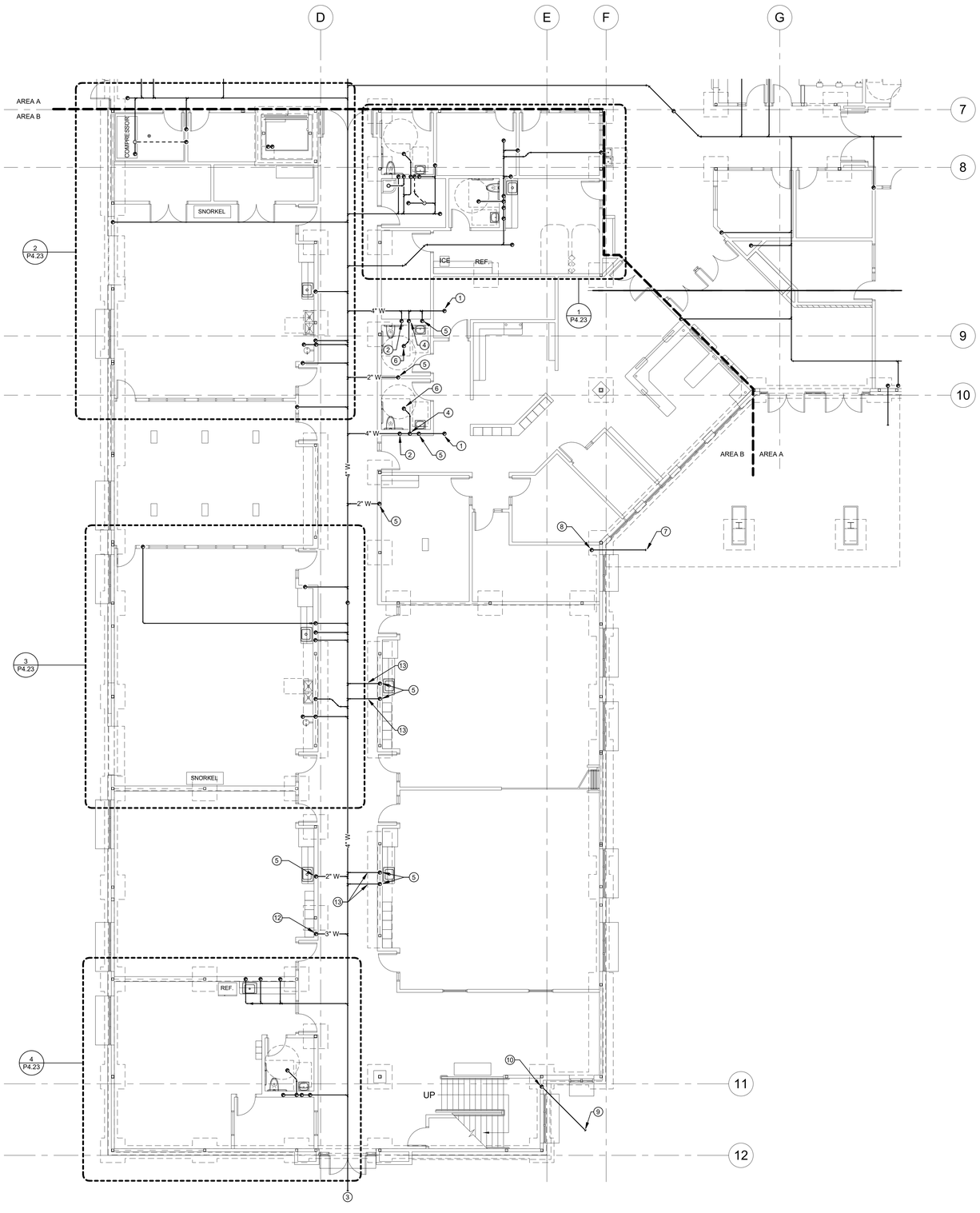

1 **AREA B - FOUNDATION - PLUMBING**
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

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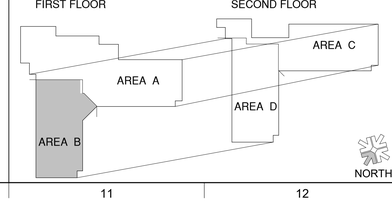
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

1. 4" W UP TO FLOOR CLEANOUT.
2. 4" W UP.
3. 4" W UP TO 5' - 0" OUTSIDE OF BUILDING I.E. = -8' - 6" BFF.
4. 2" V UP.
5. 2" W UP.
6. 2" W UP W/ P-TRAP AND PRIMER.
7. 6" RL TO 5'-0" OUTSIDE OF BUILDING. I.E. = -4'-0" BFF. (ROOF AREA = 6,600 SF)
8. 6" RL UP.
9. 3" RL TO 5'-0" OUTSIDE OF BUILDING. I.E. = -4'-0" BFF. (ROOF AREA = 300 SF)
10. 3" RL UP.
11. **ROUTE WASTE PIPING UNDER BRACE FRAME FOOTING. DO NOT PENETRATE BRACE FRAME FOOTING WITH HORIZONTAL PIPING.**
12. 3" W UP.

KEYPLAN



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1 **OVERALL - FIRST FLOOR - PLUMBING**
SCALE: 3/32" = 1'-0"

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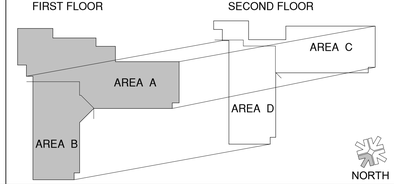

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PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1815 E. SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/23

SHEET NAME
OVERALL PLAN - FIRST FLOOR - PLUMBING

SHEET
P2.30

12/18/2023 3:23:48 PM

GENERAL NOTES:

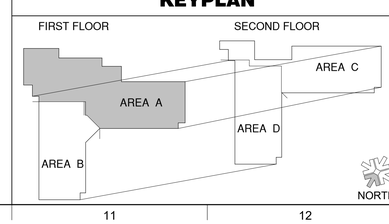
1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

1. 2" W UP & DN.
2. 1/2" CW UP.
3. 4" W DN.
4. 3" RL UP AND DN.
5. 3" ORL UP.
6. 4" RL UP.
7. 4" ORL UP.
8. 4" RL DN TO DOWNSPOUT BY OTHERS. COORDINATE WITH ARCHITECT FOR OD OF DOWNSPOUT.
9. 4" ORL DN.
10. 6" RL UP.
11. 6" ORL UP.
12. 6" RL DN.
13. 6" ORL DN.
14. 6" ORL DN (ROUTED BELOW RL).
15. ROUTE PIPING UNDER WIDE FLANGE. KEEP AS TIGHT TO STRUCTURE AS POSSIBLE.
16. REFERENCE ARCHITECTURAL ELEVATION(S) FOR EXACT LOCATION.
17. 3/4" CW DN.
18. 2" V UP.
19. 3" W UP W/ P-TRAP AND PRIMER.
20. 3" W DN.
21. 3/4" CW UP.

1 **AREA A - FIRST FLOOR - PLUMBING**
SCALE: 1/8" = 1'-0"

KEYPLAN



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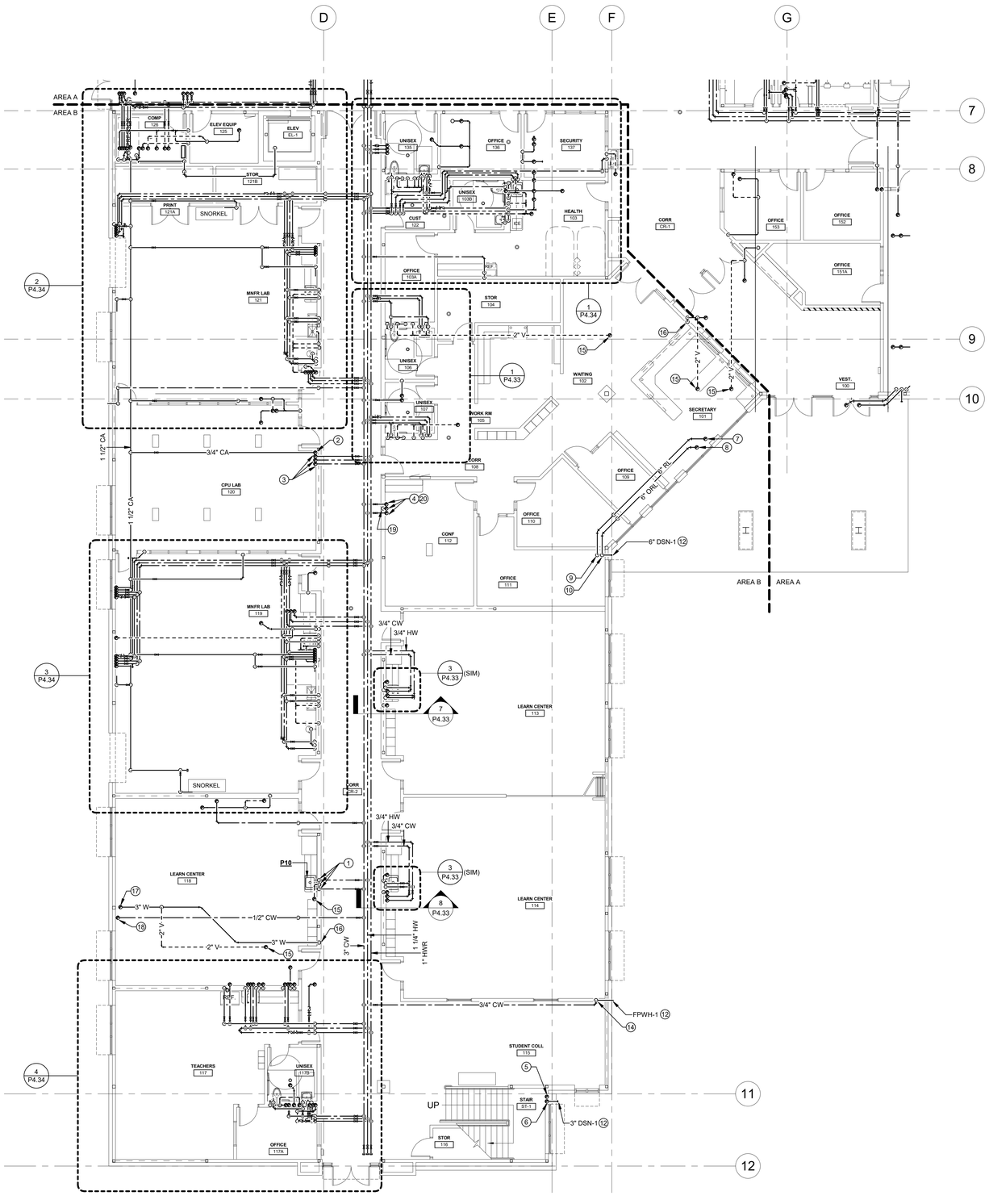
DATE 12/18/23

SHEET NAME
AREA A - FIRST FLOOR - PLUMBING

SHEET P2.31

12/18/2023 3:24:06 PM



1 **AREA B - FIRST FLOOR - PLUMBING**
SCALE: 1/8" = 1'-0"

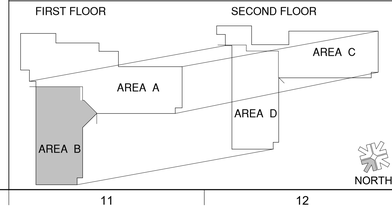
GENERAL NOTES:

1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

1. 1/2" HW, 1/2" CW AND 2" V DN.
2. 1/2" CA UP.
3. 3/4" HW, 1/2" HWR AND 3/4" CW UP.
4. 1/2" HW, 1/2" CW AND 2" W UP.
5. 3" RL UP AN DN.
6. 3" ORL UP.
7. 6" RL UP.
8. 6" ORL UP.
9. 6" RL DN.
10. 6" ORL DN.
11. ROUTE PIPING UNDER WIDE FLANGE. KEEP AS TIGHT TO STRUCTURE AS POSSIBLE.
12. REFERENCE ARCHITECTURAL ELEVATION(S) FOR EXACT LOCATION.
13. END OF LINE CLEANOUT.
14. 3/4" CW DN.
15. 2" V UP.
16. 3" W DN.
17. 3" W UP W/ P-TRAP AND PRIMER.
18. 1/2" CW UP.
19. 2" W DN.
20. OFFSET WASTE AS NECESSARY TO AVOID BEAM.

KEYPLAN



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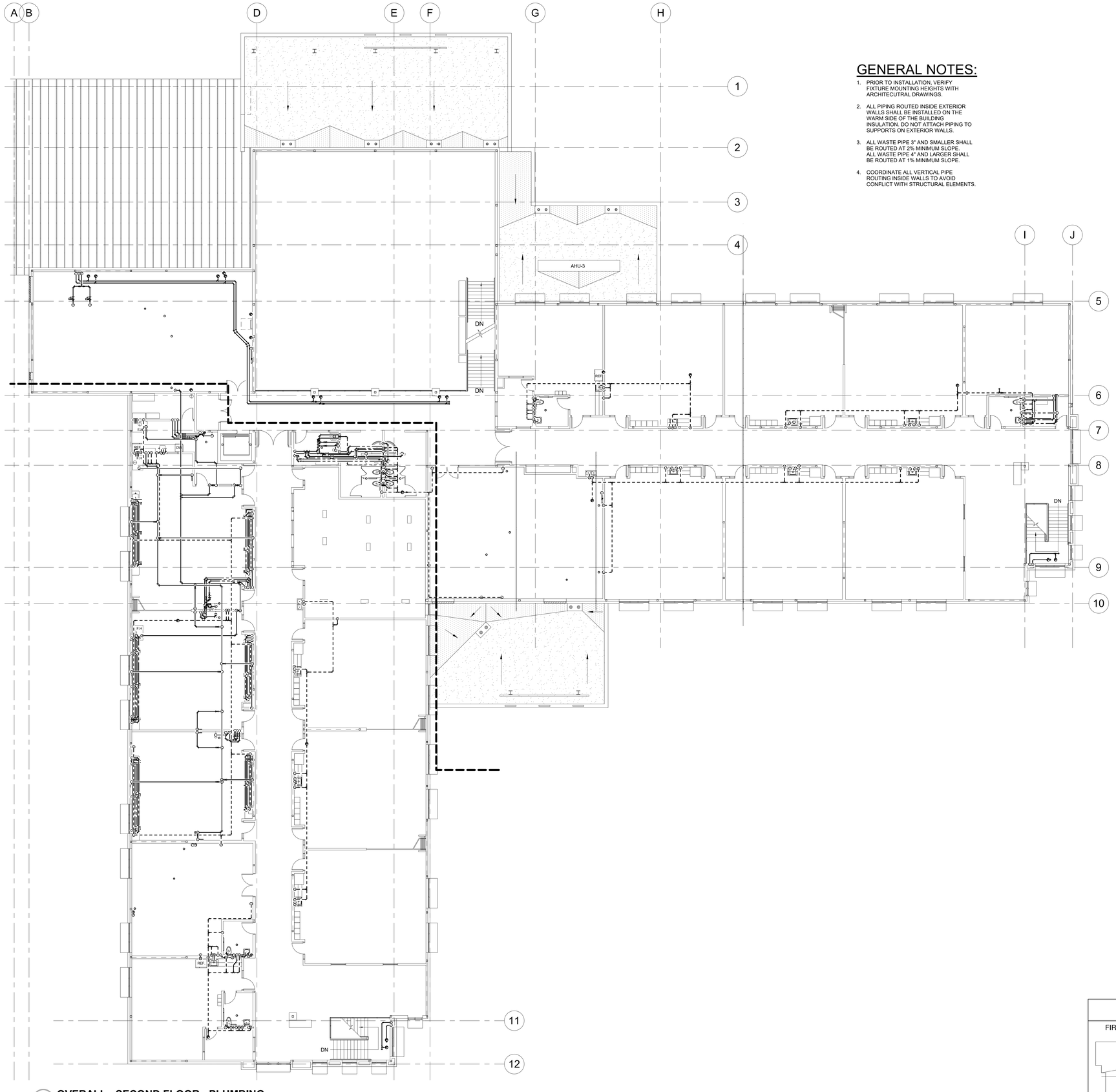
PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1015 E. SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/23

SHEET NAME
AREA B - FIRST FLOOR - PLUMBING

SHEET
P2.32

12/18/2023 5:24:15 PM



GENERAL NOTES:

1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

1 **OVERALL - SECOND FLOOR - PLUMBING**
SCALE: 3/32" = 1'-0"

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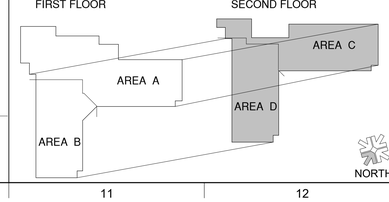
KEYPLAN



PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1815 E. SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/23

SHEET NAME
OVERALL PLAN - SECOND FLOOR - PLUMBING

SHEET
P2.40

12/18/2023 5:24:29 PM

GENERAL NOTES:

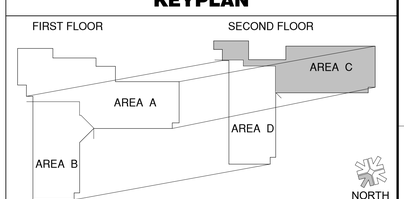
1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

1. 3" V UP TO 3" VTR.
2. 3" V DN.
3. 1/2" CW AND 2" V DN.
4. 2" V UP TO 2" VTR.
5. 2" V DN.
6. 1/2" HW, 1/2" CW AND 2" V DN.
7. 3" RL UP.
8. 3" ORL UP.
9. 3" RL DN.
10. 3" ORL DN.
11. 4" RL DN.
12. 4" ORL DN.
13. END OF LINE CLEANOUT.
14. 2" G DN.
15. 2" NG DN TO BOILER. PROVIDE SHUT-OFF VALVE, UNION AND 6" DIRT LEG. CONNECTION SIZE PER MANUFACTURER RECOMMENDATION.
16. 1/2" G DN.
17. 3/4" CW DN.

1 **AREA C - SECOND FLOOR - PLUMBING**
SCALE: 1/8" = 1'-0"

KEYPLAN



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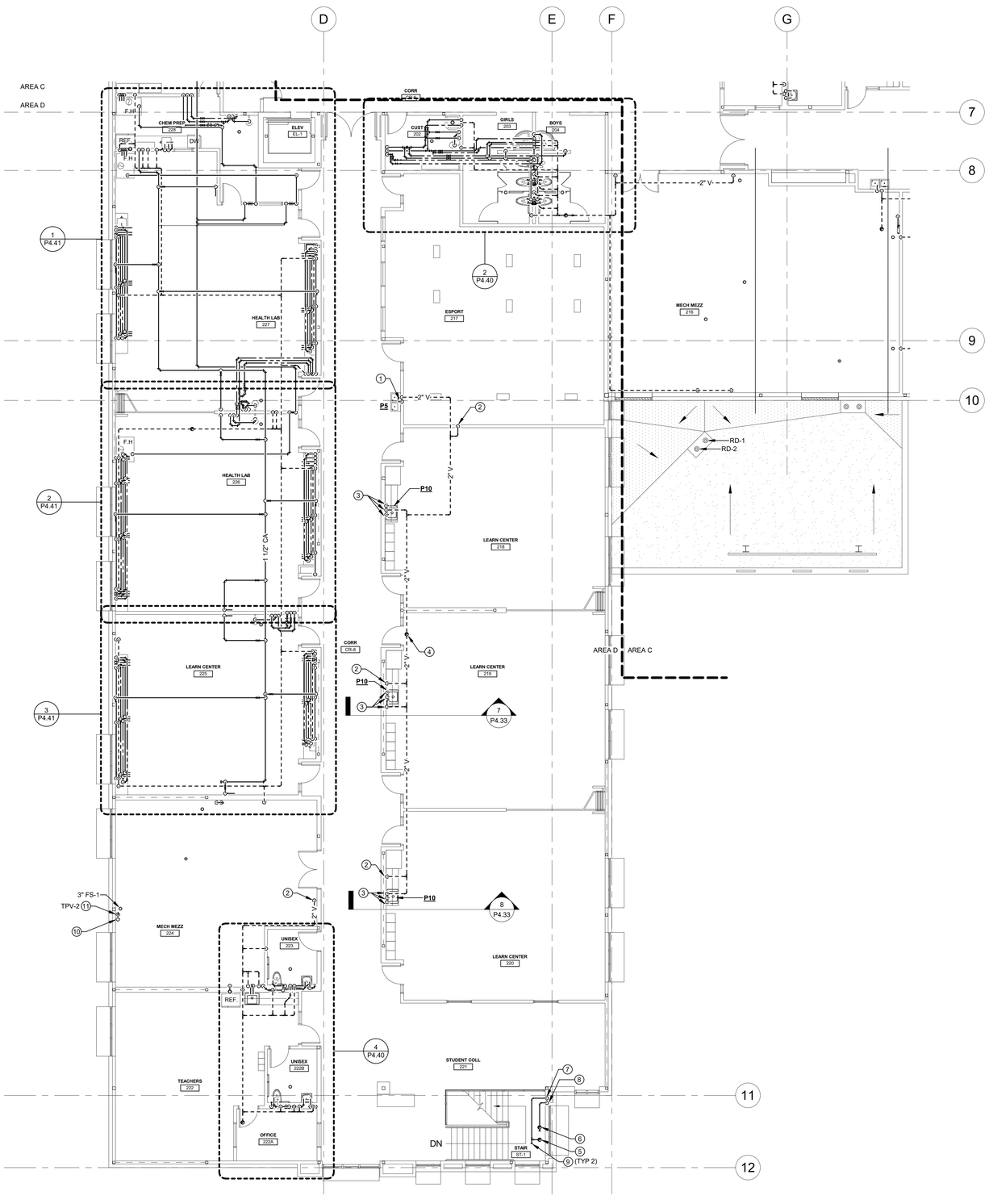
SHEET NAME
AREA C - SECOND FLOOR - PLUMBING

SHEET
P2.41

12/18/2023 5:24:43 PM



1 AREA D - SECOND FLOOR - PLUMBING
SCALE: 1/8" = 1'-0"

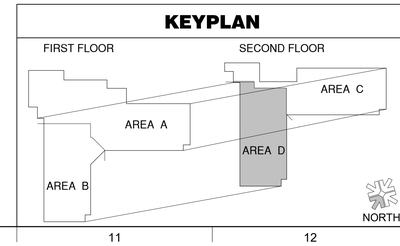
GENERAL NOTES:

1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

1. 1/2" CW AND 2" V DN.
2. 2" V DN.
3. 1/2" HW, 1/2" CW AND 2" V DN.
4. 2" VTR.
5. 3" RL UP.
6. 3" ORL UP.
7. 3" RL DN.
8. 3" ORL DN.
9. END OF LINE CLEANOUT.
10. 3/4" DN.
11. 3/4" DN TO TRAP PRIMER VALVE.

KEYPLAN



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DATE
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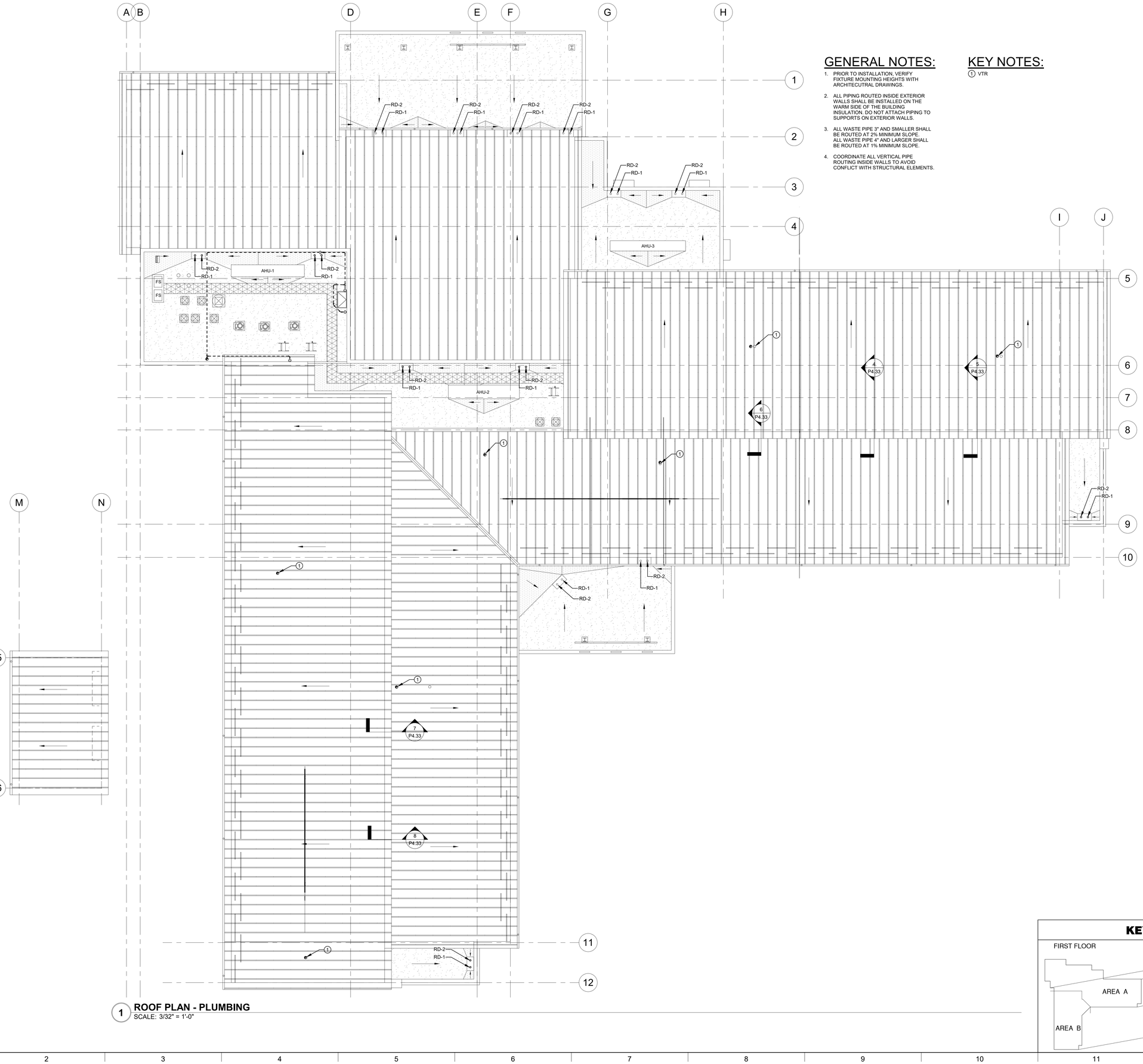
SHEET NAME
AREA D - SECOND FLOOR - PLUMBING

SHEET
P2.42

12/18/2023 5:24:51 PM



GENERAL NOTES:

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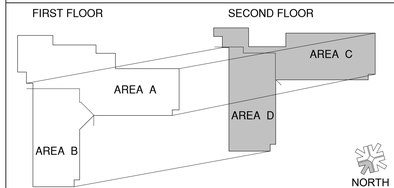
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

(1) VTR

1 ROOF PLAN - PLUMBING
SCALE: 3/32" = 1'-0"

KEYPLAN



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DATE
12/18/23

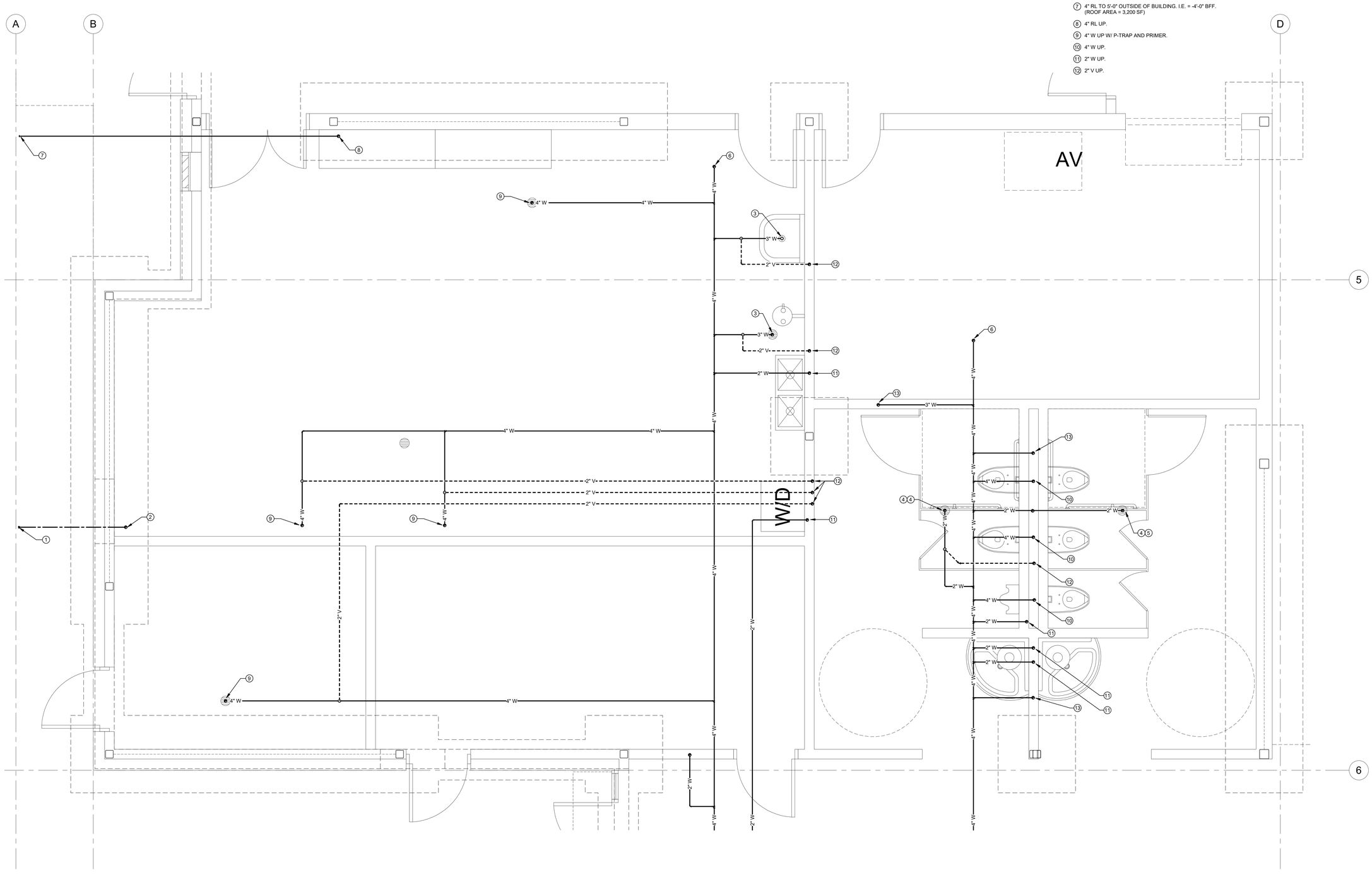
SHEET NAME
ROOF PLAN - PLUMBING

SHEET
P2.50

12/18/2023 3:25:02 PM

KEY NOTES:

1. 4" CW TO 5' - 0" OUTSIDE OF BLDG
2. 4" CW UP.
3. 3" W UP W/ P-TRAP AND PRIMER.
4. 2" W UP W/ P-TRAP AND PRIMER.
5. COORDINATE W/ ARCHITECT FOR EXACT DRAIN LOCATION.
6. 4" W UP TO FCO.
7. 4" RL TO 5'-0" OUTSIDE OF BUILDING. I.E. = -4'-0" BFF. (ROOF AREA = 3,200 SF)
8. 4" RL UP.
9. 4" W UP W/ P-TRAP AND PRIMER.
10. 4" W UP.
11. 2" W UP.
12. 2" V UP.



1 ENLARGED MECH/CUST - FOUNDATION - PLUMBING
SCALE: 1/2" = 1'-0"

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1915 E. SALT LAKE STREET
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DATE
12/18/23

SHEET NAME
ENLARGED PLAN - MECH/CUST - FOUNDATION

SHEET
P4.20

12/18/2023 2:23:03 PM

KEY NOTES:

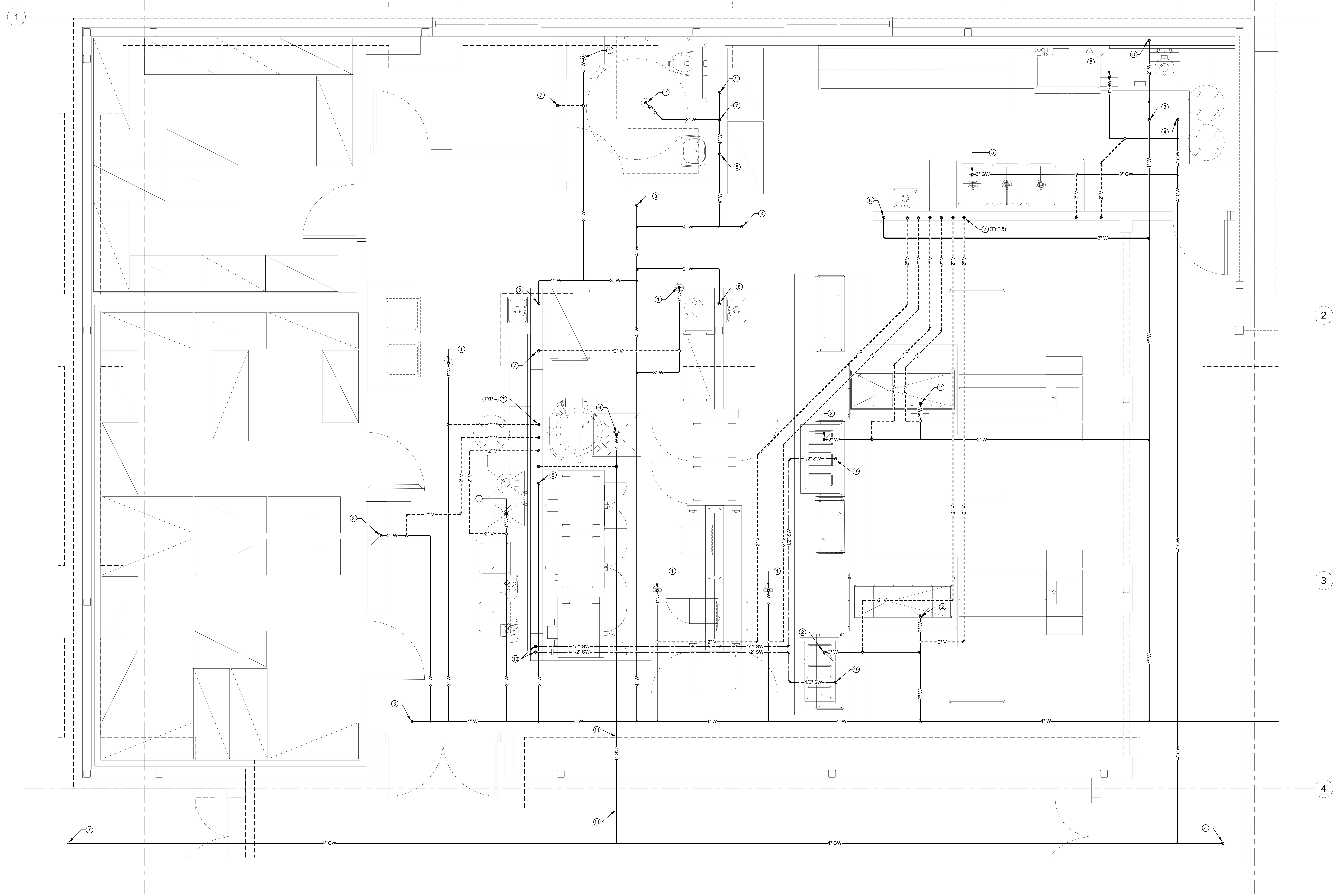
1. 3" W UP W/ P-TRAP AND PRIMER.
2. 2" W UP W/ P-TRAP AND PRIMER.
3. 4" W UP TO FLOOR CLEANOUT.
4. 4" GW UP TO FLOOR CLEANOUT.
5. 3" GW UP W/ P-TRAP AND PRIMER.

KEY NOTES:

6. 4" GW UP W/ P-TRAP AND PRIMER.
7. 2" V UP.
8. 2" W UP.
9. 4" W UP.
10. 1/2" SW UP.

KEY NOTES:

11. **ROUTE WASTE PIPING UNDER BRACE FRAME FOOTING. DO NOT PENETRATE BRACE FRAME FOOTING WITH HORIZONTAL PIPING.**



ENLARGED KITCHEN - FOUNDATION - PLUMBING
1
SCALE: 1/2" = 1'-0"

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PASCO, WASHINGTON 99301

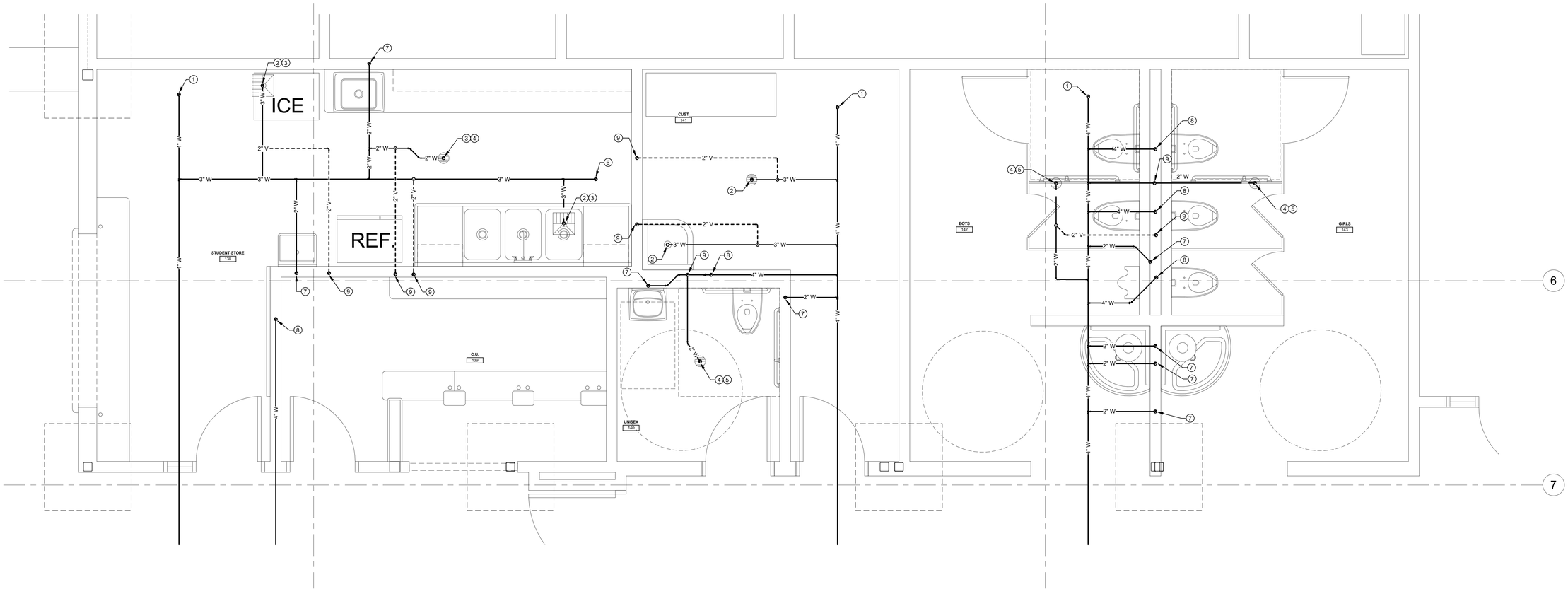
DATE
12/18/23

SHEET NAME
ENLARGED PLAN - KITCHEN - FOUNDATION

SHEET
P4.21

KEY NOTES:

1. 4" W UP TO FLOOR CLEANOUT.
2. 3" W UP W/ P-TRAP AND PRIMER.
3. COORDINATE WITH FOOD SERVICE CONSULTANT FOR EXACT DRAIN LOCATION.
4. 2" W UP W/ P-TRAP AND PRIMER.
5. COORDINATE WITH ARCHITECT FOR EXACT DRAIN LOCATION.
6. 3" W UP TO FLOOR CLEANOUT.
7. 2" W UP.
8. 4" W UP.
9. 2" V UP.



N 1 **ENLARGED STUDENT STORE/RR - FOUNDATION - PLUMBING**
SCALE: 1/2" = 1'-0"

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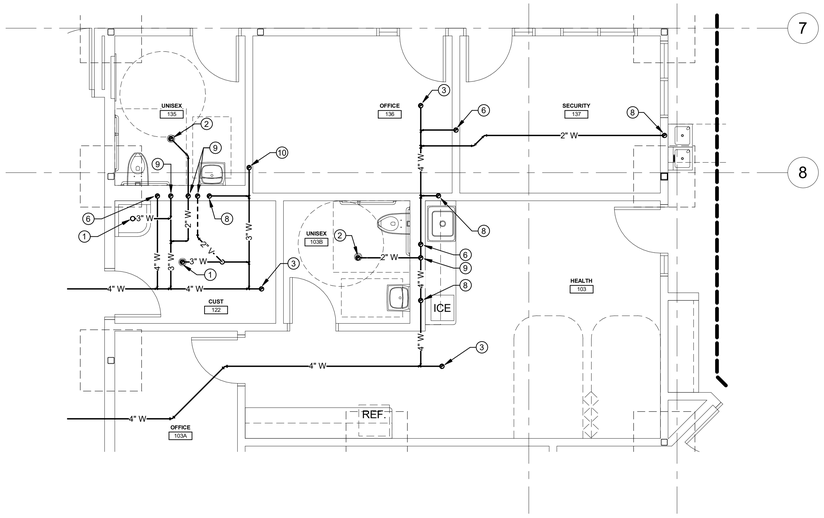
DATE
12/18/23

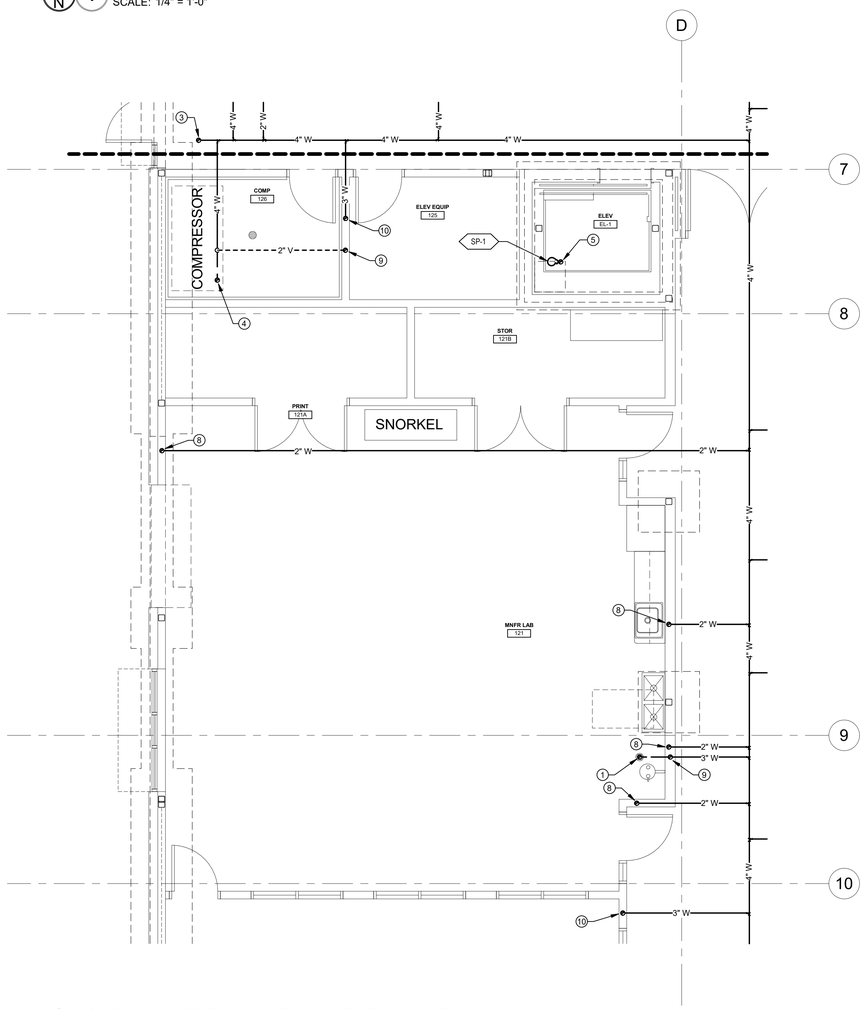
SHEET NAME
ENLARGED PLAN - STUDENT STORE/RR - FOUNDATION

SHEET
P4.22

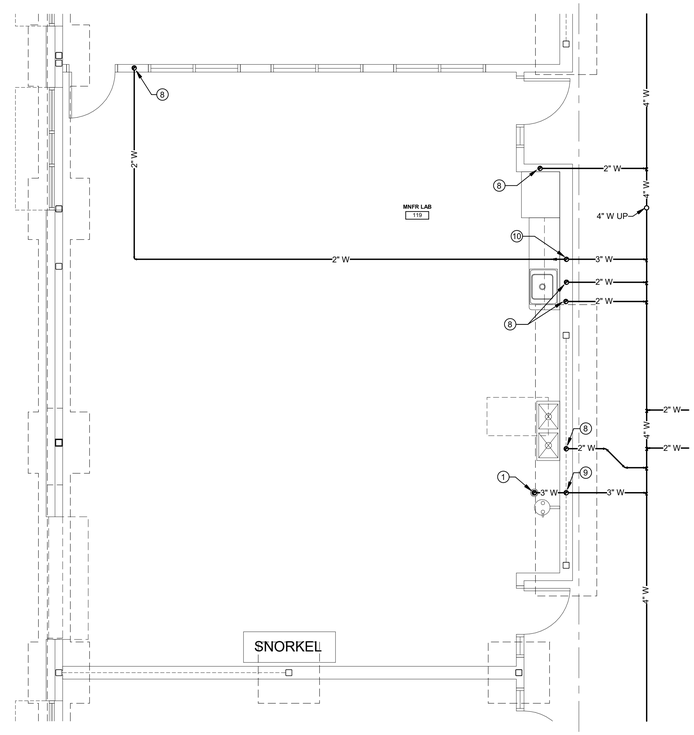
12/18/2023 5:25:07 PM



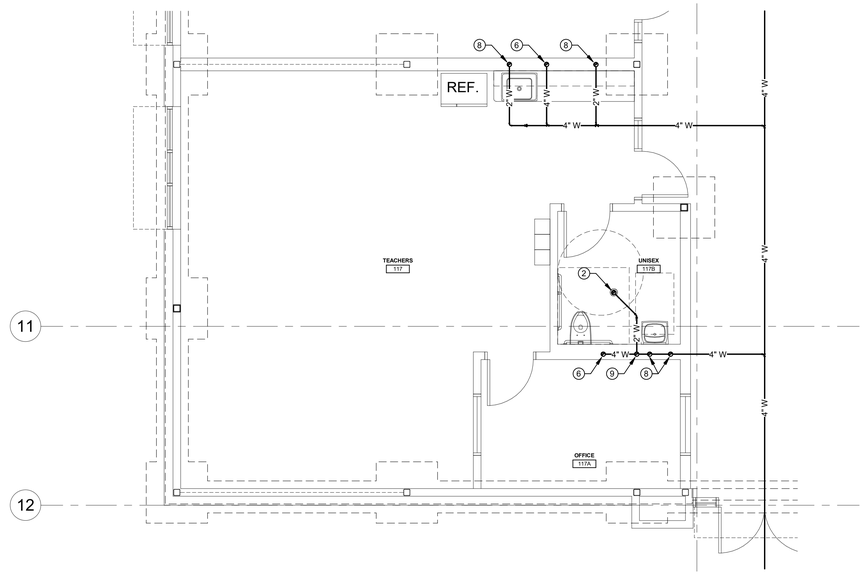
N 1 **ENLARGED FOUNDATION AREA B - PLUMBING**
SCALE: 1/4" = 1'-0"



N 2 **ENLARGED FOUNDATION AREA B - PLUMBING**
SCALE: 1/4" = 1'-0"



N 3 **ENLARGED FOUNDATION AREA B - PLUMBING**
SCALE: 1/4" = 1'-0"



N 4 **ENLARGED FOUNDATION AREA B - PLUMBING**
SCALE: 1/4" = 1'-0"

KEY NOTES:

1. 3" W UP W/ P-TRAP AND PRIMER.
2. 2" W UP W/ P-TRAP AND PRIMER.
3. 4" W UP TO FLOOR CLEANOUT.
4. 4" W UP W/ P-TRAP & PRIMER.
5. 2" ELEVATOR SUMP WASTE UP.
6. 4" W UP.
7. **ROUTE WASTE PIPING UNDER BRACE FRAME FOOTING. DO NOT PENETRATE BRACE FRAME FOOTING WITH HORIZONTAL PIPING.**
8. 2" W UP.
9. 2" V UP.
10. 3" W UP.

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DATE
12/18/23

SHEET NAME
ENLARGED PLANS - AREA B - FOUNDATION

SHEET
P4.23

12/18/2023 5:25:09 PM

GAS LOAD TABLE

BOILER (B-1)	1500	CFH
BOILER (B-2)	1500	CFH
WATER HEATER (WH-1)	150	CFH
WATER HEATER (WH-2)	150	CFH
WATER HEATER (WH-3)	150	CFH
WATER HEATER (WH-4)	150	CFH
FUME HOOD	6	CFH
FUME HOOD	6	CFH
FUME HOOD	6	CFH
TOTAL LOAD	3318	CFH

LONGEST EQUIVALENT LENGTH OF 300 FT.
BUILDING SUPPLY PRESSURE OF 2 PSIG
(DOWNSTREAM OF UTILITY METER / REGULATOR).

GENERAL NOTES:

1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KEY NOTES:

1. 3" V UP.
2. 4" RL UP AND DN.
3. 4" ORL UP.
4. 4" ORL DN.
5. REFERENCE ARCHITECTURAL ELEVATION(S) FOR EXACT LOCATION.
6. 2" G DN.
7. CONNECT TO G METER (2 PSIG DELIVERY METER PROVIDED BY OTHERS).
8. 2" G UP.
9. 1/2" G UP.
10. DOMESTIC WATER HEADER. MAINTAIN REQUIRED SERVICE CLEARANCE(S).

KEY NOTES:

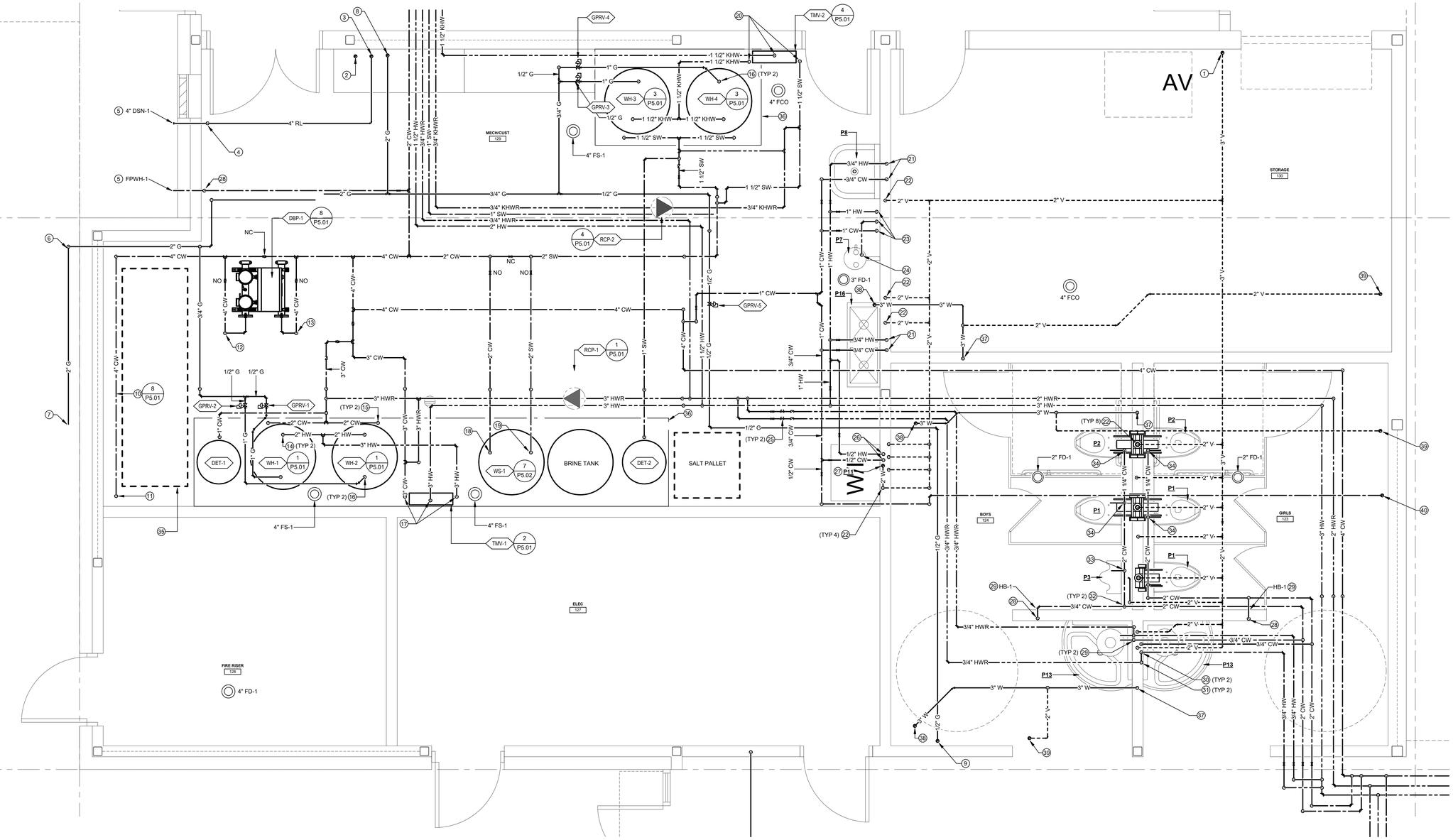
11. 4" CW DN.
12. 4" CW DN TO BOOSTER PUMP INLET.
13. 4" CW DN TO BOOSTER PUMP OUTLET.
14. 2" HW DN TO WATER HEATER.
15. 2" CW DN TO WATER HEATER.
16. 1" G DN T WATER HEATER. PROVIDE SHUT-OFF VALVE, UNION AND 6" DIRT LEG. CONNECTION SIZE PER MANUFACTURER RECOMMENDATION.
17. 3" HW, 3" CW AND 3" HW (TEMPERED) DN TO MIXING VALVE. SURFACE MOUNT MIXING VALVE ON WALL.
18. 2" CW DN TO SOFTENER.
19. 2" SW DN TO SOFTENER.

KEY NOTES:

20. 1 1/2" SW, 1 1/2" KHW AND 1 1/2" KHW (TEMPERED) DN TO MIXING VALVE.
21. 3/4" HW AND 3/4" CW DN.
22. 2" V DN.
23. 1" HW, 1" CW AND 1-1/4" T DN TO P7 MIXING VALVE. SURFACE MOUNT MIXING VALVE ON WALL.
24. 1-1/4" T DN.
25. HWR BALANCING VALVE SET AT 0.5 GPM.
26. 1/2" HW AND 1/2" CW DN.
27. 2" W STANDPIPE SERVING P11.
28. 3/4" CW DN TO WALL FAUCET.
29. FACE FAUCET TOWARD INTERIOR OF RESTROOM.

KEY NOTES:

30. 3/4" HW DN.
31. 3/4" HWR DN.
32. 2" CW DN.
33. 1" CW TO URINAL (3/4" CW STUB OUT).
34. 1 1/4" CW TO WATER CLOSET (1" STUB OUT).
35. DOMESTIC WATER HEADER TESTING AND SERVICE CLEARANCE.
36. APPROXIMATE OUTLINE OF HOUSEKEEPING PAD (BY OTHERS). SEE M1.01 FOR DIMENSIONS.
37. 3" W DN.
38. 3" W UP W/ P-TRAP AND PRIMER.
39. 2" V UP.
40. 3/4" CW UP.



1 **ENLARGED MECH/CUST - LEVEL 1 - PLUMBING**
SCALE: 1/2" = 1'-0"

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DATE
12/18/23

SHEET NAME
ENLARGED PLAN - MECH/CUST - LEVEL 1

SHEET
P4.30

GENERAL NOTES:

1. PRIOR TO INSTALLATION, VERIFY FIXTURE MOUNTING HEIGHTS WITH ARCHITECUTRAL DRAWINGS.
2. ALL PIPING ROUTED INSIDE EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION. DO NOT ATTACH PIPING TO SUPPORTS ON EXTERIOR WALLS.
3. ALL WASTE PIPE 3" AND SMALLER SHALL BE ROUTED AT 2% MINIMUM SLOPE. ALL WASTE PIPE 4" AND LARGER SHALL BE ROUTED AT 1% MINIMUM SLOPE.
4. COORDINATE ALL VERTICAL PIPE ROUTING INSIDE WALLS TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS.

KITCHEN NOTES:

1. THE DIVISION (DIV) 22 CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF KITCHEN EQUIPMENT WITH THE FOOD SERVICE FINAL SHOP DRAWINGS.

2. THE DIV 22 CONTRACTOR SHALL BE RESPONSIBLE FOR ROUGH-IN AND CONNECTION OF KITCHEN EQUIPMENT ONLY. THE DIVISION 22 CONTRACTOR SHALL PROVIDE PIPING, STOPS, TAILPIECES, TRAPS, VALVES, INDIRECT WASTE AND ALL INCIDENTALS REQUIRED FOR COMPLETE INSTALLATION AND OPERATION OF KITCHEN EQUIPMENT SUPPLIED UNDER FOOD SERVICE SCOPE OF WORK.

3.KITCHEN EQUIPMENT SINKS, FAUCETS AND STRAINERS NOT SUPPLIED UNDER DIV 22.

4. REFERENCE FOOD SERVICE FINAL SHOP DRAWINGS FOR ALL ROUGH-IN AND CONNECTION REQUIREMENTS OF KITCHEN EQUIPMENT.

5. DIV 22 CONTRACTOR TO PROVIDE ALL INDIRECT WASTE PIPING FROM KITCHEN EQUIPMENT TO FLOOR SINKS OR DRAINS. SEE KITCHEN EQUIPMENT DRAWINGS FOR REQUIREMENTS. ALL INDIRECT WASTE PIPING TO BE TYPE "M" COPPER WITH SOLDERED JOINTS.

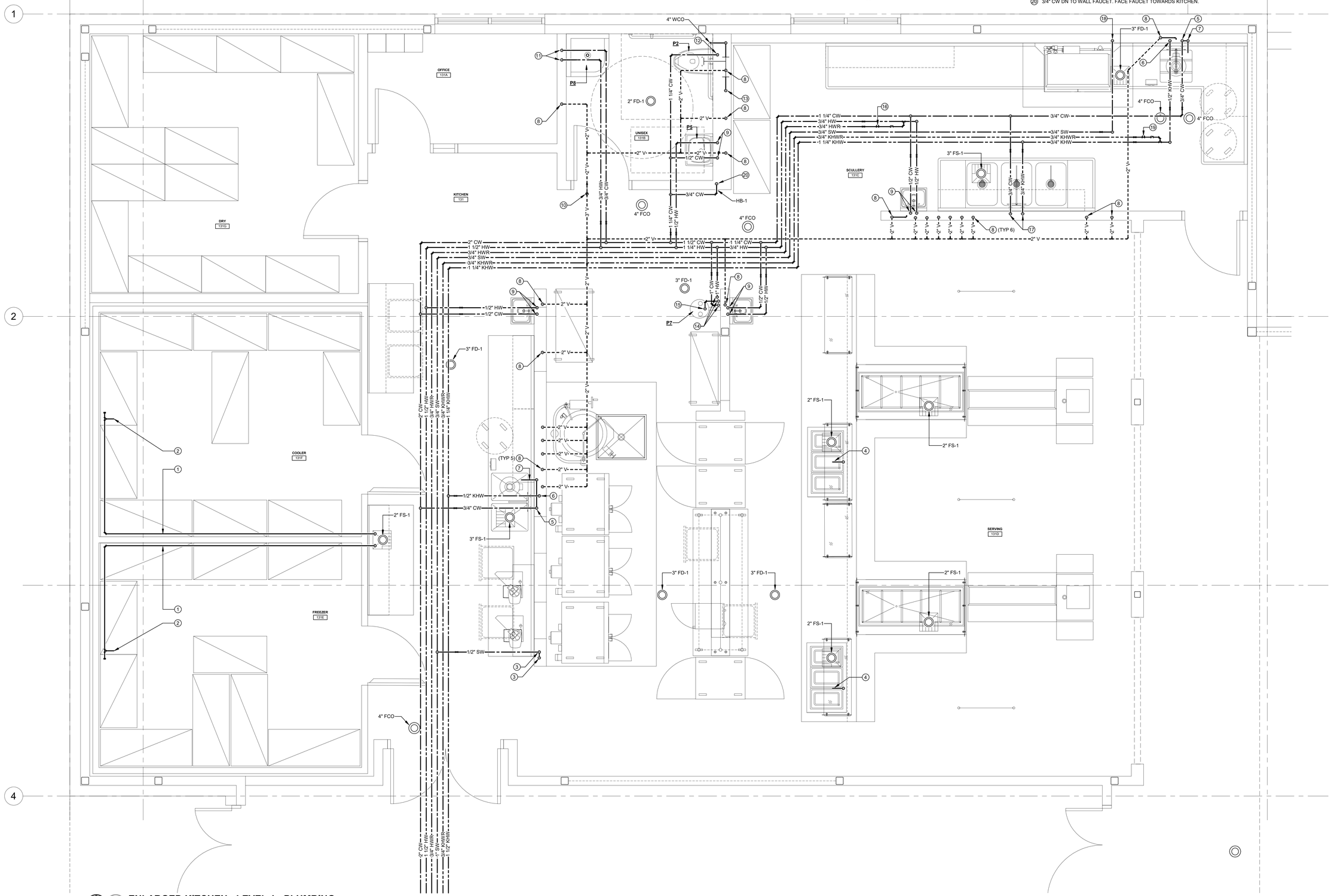
6. REFERENCE FOOD SERVICE INSTALLATION DRAWINGS FOR EQUIPMENT ROUGH-IN REQUIREMENTS.

KEYNOTES:

1. CONDENSATE DRAIN LINE. SEE KITCHEN PLAN FOR SIZE(S).
2. MAKE CONNECTION TO CONDENSATE DRAIN OUTLET.
3. 1/2" SW DN.
4. 1/2" SW TO HOT FOOD WELL.
5. 3/4" CW DN (1/2" CW TO FAUCET / 1/2" CW TO DISPOSER).
6. 1/2" KHW DN.
7. 1/2" CW TO DISPOSER.
8. 2" V DN.
9. 1/2" HW AND 1/2" CW DN.
10. 3" V UP TO 3" VTR.

KEYNOTES:

11. 3/4" HW AND 3/4" CW DN.
12. 1-1/4" CW DN.
13. 4" W DN.
14. 1" HW, 1" CW AND 1-1/4" T DN TO P7 MIXING VALVE. SURFACE MOUNT MIXING VALVE ON WALL BELOW CEILING.
15. 1-1/4" T DN.
16. HWR BALANCING VALVE SET AT 2.0 GPM.
17. 3/4" KHW AND 3/4" CW DN.
18. 3/4" SW DN TO DISH MACHINE.
19. KHWR BALANCING VALVE SET AT 2.0 GPM.
20. 3/4" CW DN TO WALL FAUCET. FACE FAUCET TOWARDS KITCHEN.



N 1 **ENLARGED KITCHEN - LEVEL 1 - PLUMBING**
SCALE: 1/2" = 1'-0"

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SHEET NAME
ENLARGED PLAN - KITCHEN - LEVEL 1

SHEET
P4.31

STUDENT STORE NOTES:

1. THE DIVISION (DIV) 22 CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF STUDENT STORE EQUIPMENT WITH THE FOOD SERVICE FINAL SHOP DRAWINGS.

2. THE DIV 22 CONTRACTOR SHALL BE RESPONSIBLE FOR ROUGH-IN AND CONNECTION OF STUDENT STORE EQUIPMENT ONLY. THE DIVISION 22 CONTRACTOR SHALL PROVIDE PIPING, STOPS, TAILPIECES, TRAPS, VALVES, INDIRECT WASTE AND ALL INCIDENTALS REQUIRED FOR COMPLETE INSTALLATION AND OPERATION OF STUDENT STORE EQUIPMENT SUPPLIED UNDER FOOD SERVICE SCOPE OF WORK.

3. STUDENT STORE EQUIPMENT SINKS, FAUCETS AND STRAINERS NOT SUPPLIED UNDER DIV 22.

4. REFERENCE FOOD SERVICE FINAL SHOP DRAWINGS FOR ALL ROUGH-IN AND CONNECTION REQUIREMENTS OF STUDENT STORE EQUIPMENT.

5. DIV 22 CONTRACTOR TO PROVIDE ALL INDIRECT WASTE PIPING FROM STUDENT STORE EQUIPMENT TO FLOOR SINKS OR DRAINS. SEE STUDENT STORE EQUIPMENT DRAWINGS FOR REQUIREMENTS. ALL INDIRECT WASTE PIPING TO BE TYPE "M" COPPER WITH SOLDERED JOINTS.

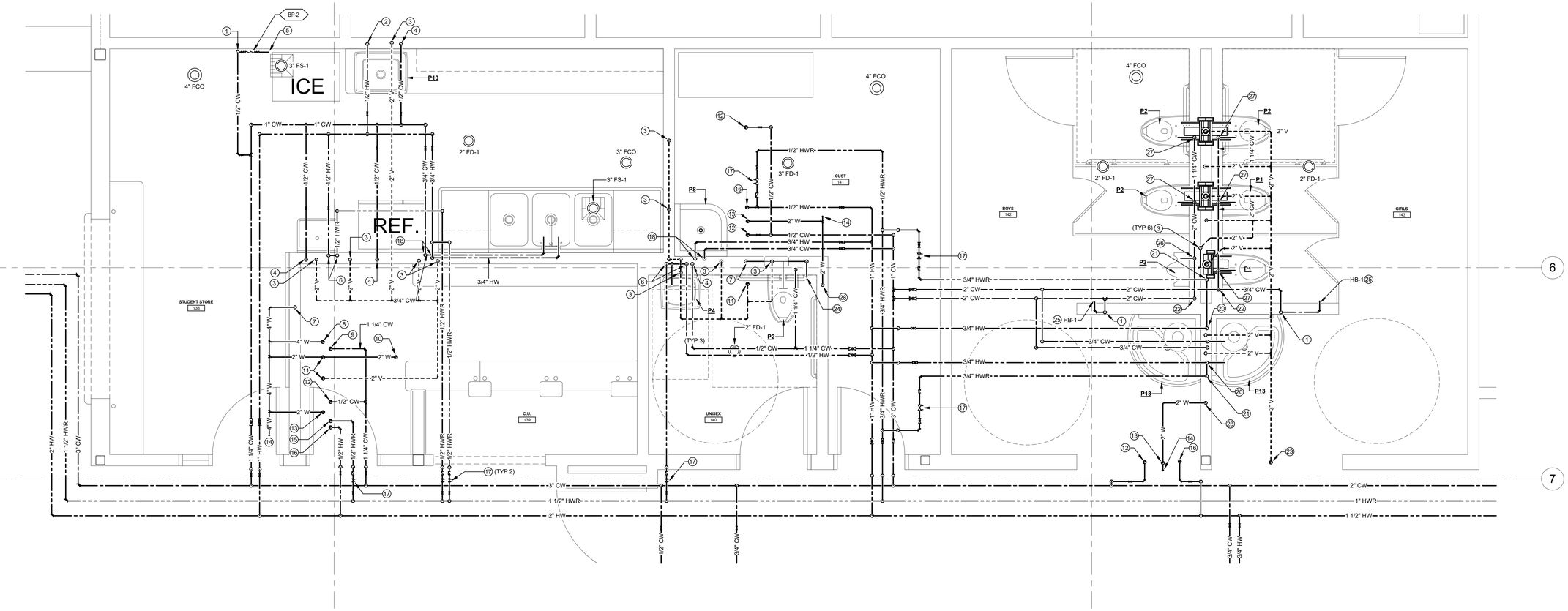
6. REFERENCE FOOD SERVICE INSTALLATION DRAWINGS FOR EQUIPMENT ROUGH-IN REQUIREMENTS.

KEY NOTES:

1. 3/4" CW DN.
2. 1/2" HW DN.
3. 2" V DN.
4. 1/2" CW DN.
5. CONNECTION SIZE PER MANUFACTURER RECOMMENDATION.
6. 1/2" HW AND 1/2" HWR DN. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL X/P5.01).
7. 4" W DN.
8. 4" W UP.
9. 1-1/4" CW UP.
10. 2" W UP W/ P-TRAP AND PRIMER.
11. 2" V UP.
12. 1/2" CW UP.
13. 2" W UP.

KEY NOTES:

14. END OF LINE CLEANOUT.
15. 1/2" HWR UP. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL 6/P5.02).
16. 1/2" HW UP.
17. HWR BALANCING VALVE SET AT 0.5 GPM.
18. 3/4" HW AND 3/4" CW DN.
19. 1-1/4" CW DN.
20. 3/4" HW DN.
21. 3/4" HWR DN. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL 6/P5.02).
22. 2" CW DN.
23. 3" V UP.
24. END OF LINE WALL CLEANOUT.
25. FACE FAUCET TOWARD INTERIOR OF RESTROOM.
26. 1" CW TO URINAL (3/4" CW STUB OUT).
27. 1 1/4" CW TO WATER CLOSET (1" STUB OUT).
28. 2" W DN.



1 ENLARGED STUDENT STORE/RR - LEVEL 1 - PLUMBING

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

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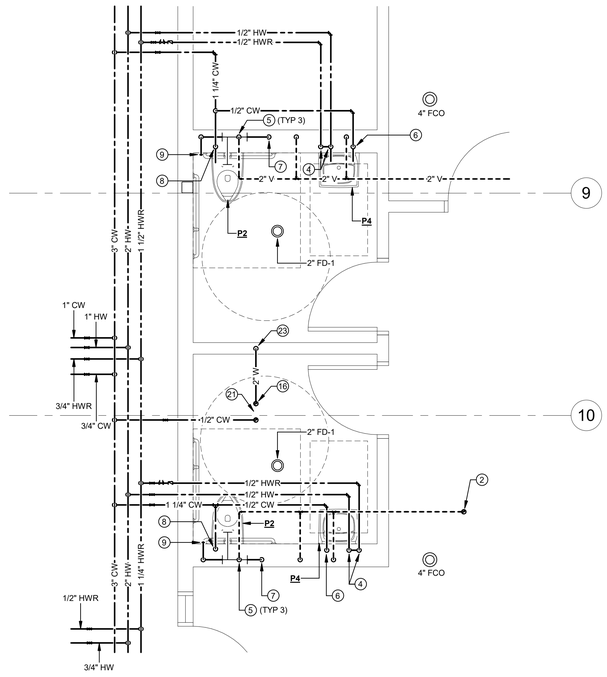
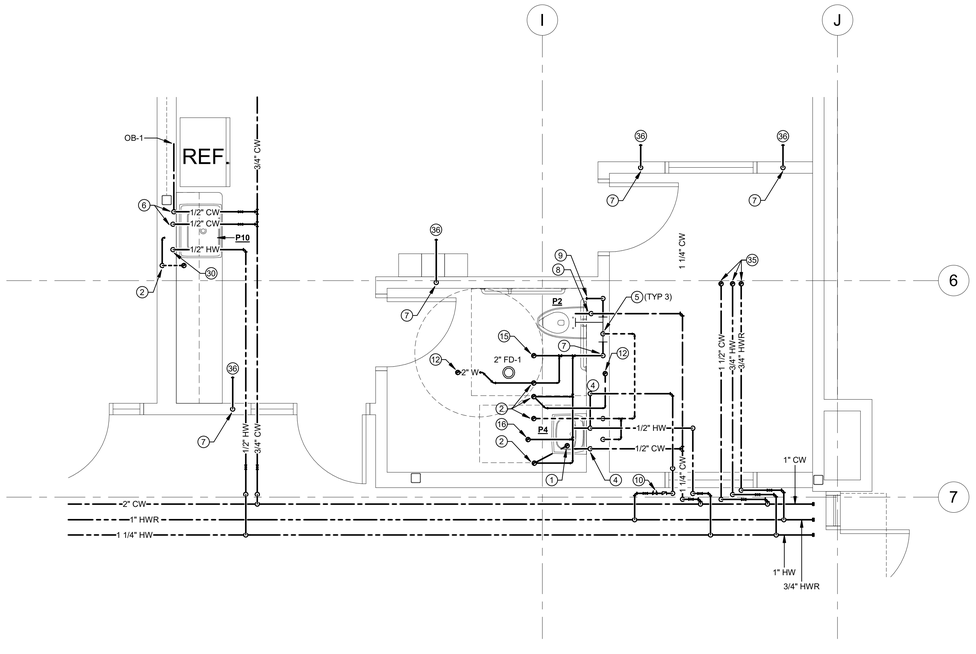
ENLARGED PLAN - STUDENT STORE/RR - LEVEL 1

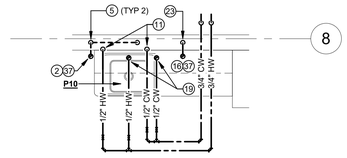
SHEET
P4.32



N 1 **ENLARGED PLAN - LEVEL 1 - PLUMBING**
SCALE: 3/8" = 1'-0"

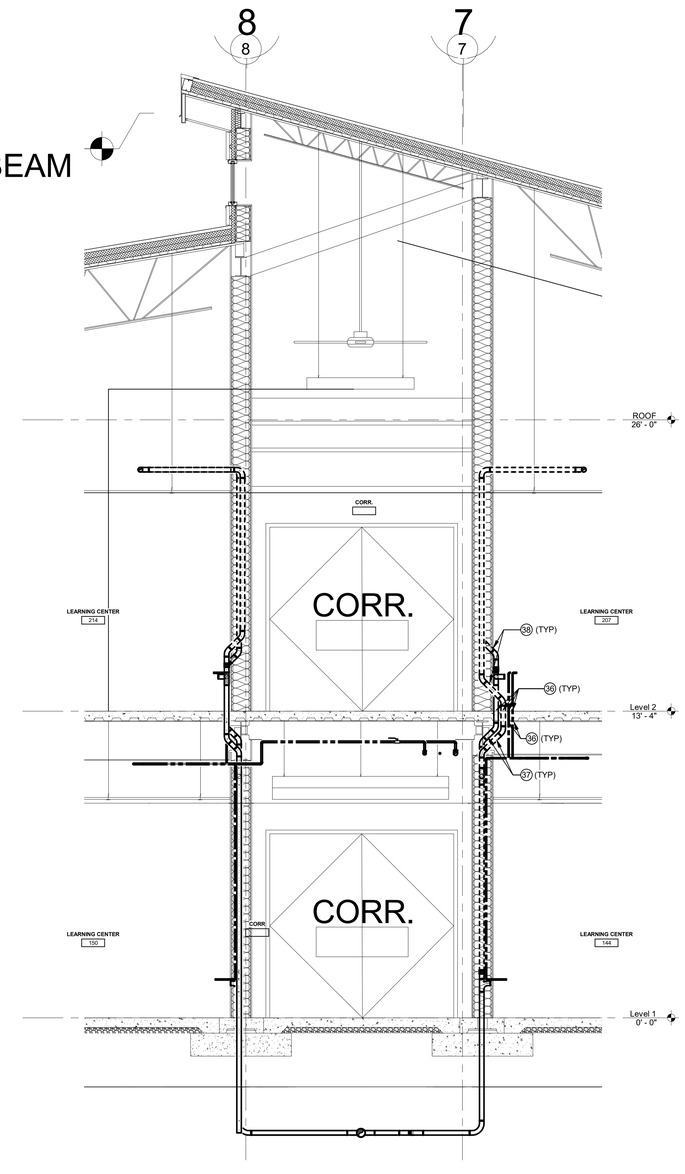


N 2 **ENLARGED PLAN - LEVEL 1 - PLUMBING**
SCALE: 3/8" = 1'-0"



N 3 **ENLARGED PLAN - LEVEL 1 - PLUMBING**
SCALE: 3/8" = 1'-0"

T.O. BEAM



4 **PLUMBING CORRIDOR SECTION**
SCALE: 3/8" = 1'-0"

5 **PLUMBING CORRIDOR SECTION - (SIMILAR TO 4/P4.33)**
SCALE: 3/8" = 1'-0"

6 **PLUMBING CORRIDOR SECTION - (SIMILAR TO 4/P4.33)**
SCALE: 3/8" = 1'-0"

7 **PLUMBING CORRIDOR SECTION - (SIMILAR TO 4/P4.33)**
SCALE: 3/8" = 1'-0"

8 **PLUMBING CORRIDOR SECTION - (SIMILAR TO 4/P4.33)**
SCALE: 3/8" = 1'-0"

KEY NOTES:

1. 3" W UP W/ P-TRAP AND PRIMER.
2. 2" V UP.
3. 3" W DN.
4. 1/2" HW AND 1/2" HWR DN. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL 6/P5.02).
5. 2" V DN.
6. 1/2" CW DN.
7. 4" W DN.
8. 1-1/4" CW DN.
9. END OF LINE WALL CLEANOUT.
10. HWR BALANCING VALVE SET AT 0.5 GPM.
11. 1/2" HW AND 1/2" CW DN.
12. 2" W UP W/ P-TRAP AND PRIMER.
13. END OF LINE CLEANOUT.
14. 3" V UP.
15. 4" W UP.
16. 2" W UP.
17. ELEVATOR SUMP PUMP CONTROL PANEL.
18. 3/4" HW, 3/4" CW AND 3/4" HWR UP.
19. 1/2" HW AND 1/2" CW UP.
20. 1/2" CA UP.
21. 1/2" CW UP.
22. 2" ELEVATOR SUMP WASTE DN.
23. 2" W DN.
24. 3/4" HW, 3/4" CW, 1/2" HWR AND 3/4" CA UP.
25. 2" W UP.
26. 3/4" HW AND 3/4" CW DN.
27. 1" HW, 1" CW AND 3/4" HWR UP.
28. 3/4" HW, 3/4" CW AND 1" DN TO MIXING VALVE.
29. 1" T DN.
30. 1/2" HW DN.
31. 2" W UP AND DN.
32. 1/2" HW AND 1-1/4" CW UP.
33. 1/2" HWR UP. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL 6/P5.02).
34. 2" V UP AND DN.
35. 3/4" HW, 1-1/2" CW AND 3/4" HWR UP.
36. PIPING SHOWN OFFSET FOR CLARITY. STUB PIPING UP AT BACK OF CABINET.
37. OFFSET WASTE AND VENT PIPING TO AVOID BEAM CONFLICT.
38. OFFSET VENT PIPING INTO WALL CAVITY.

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ENLARGED PLANS - LEVEL 1

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P4.33

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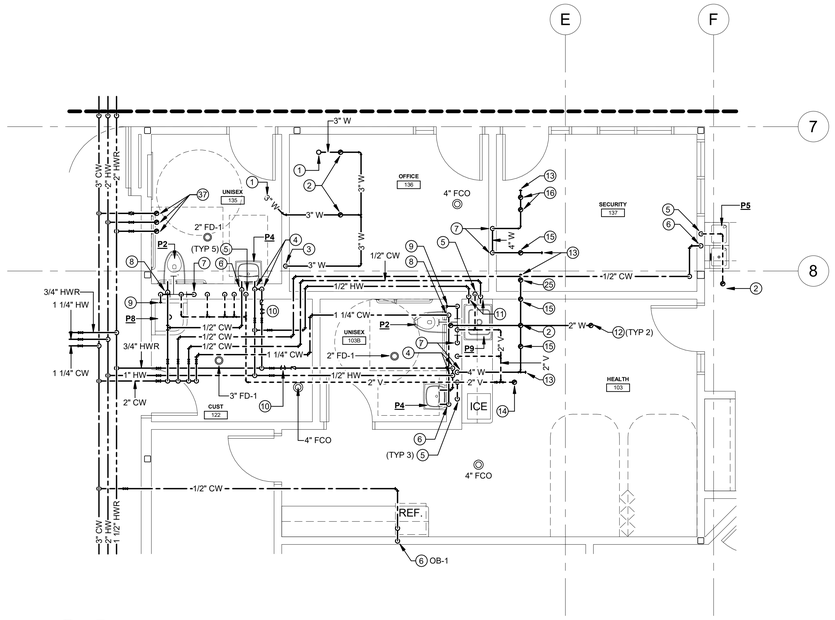
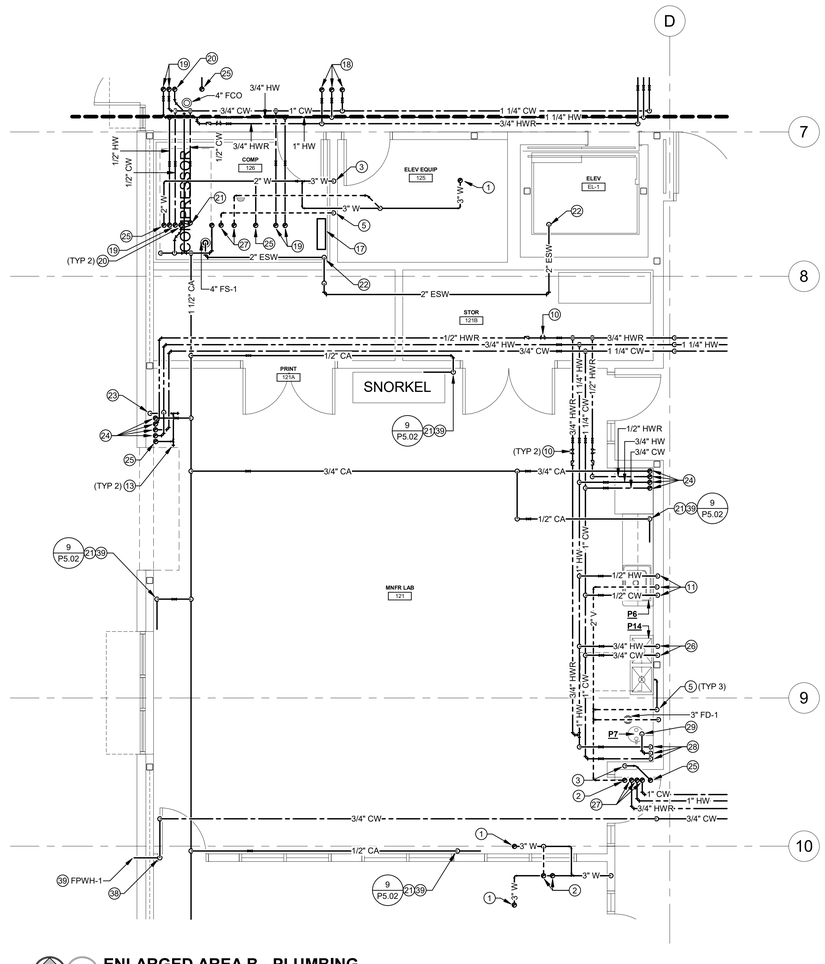
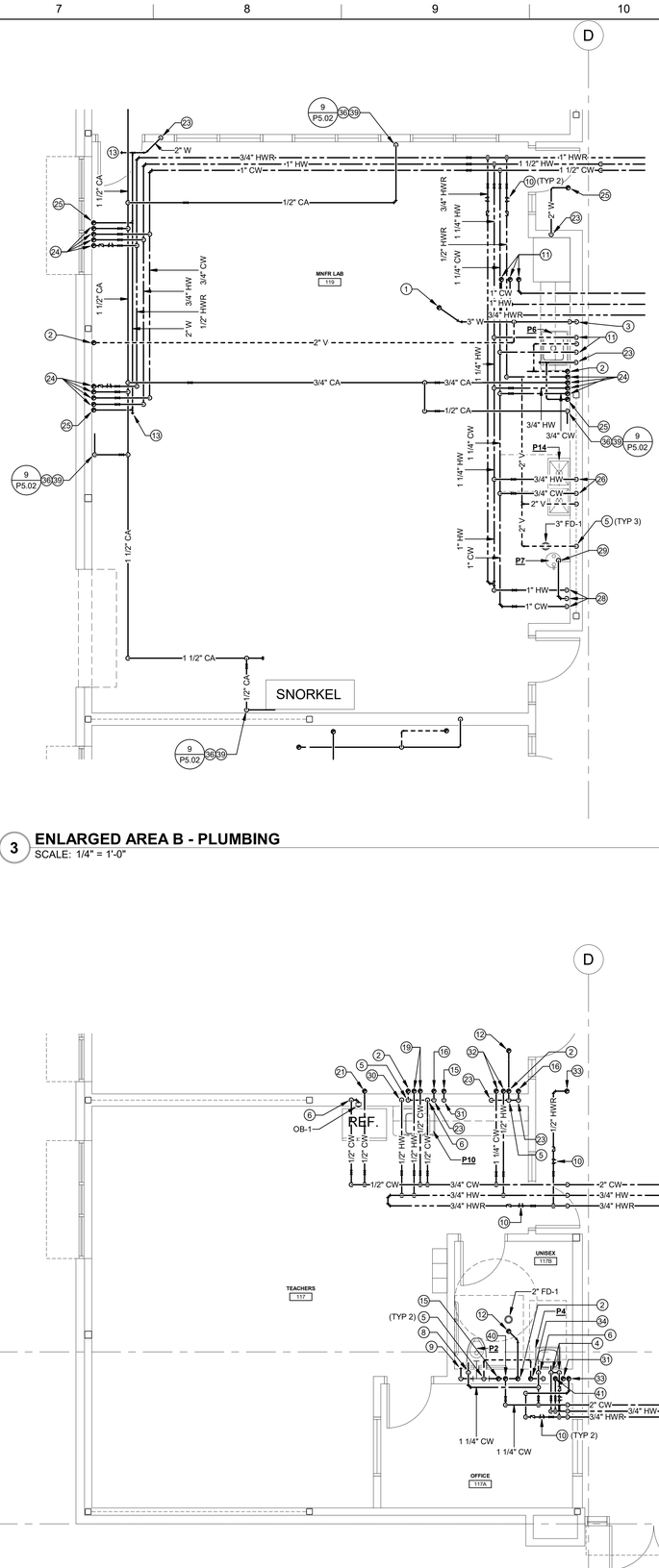


1 ENLARGED AREA B - PLUMBING
SCALE: 1/4" = 1'-0"



2 ENLARGED AREA B - PLUMBING
SCALE: 1/4" = 1'-0"



3 ENLARGED AREA B - PLUMBING
SCALE: 1/4" = 1'-0"

4 ENLARGED AREA B - PLUMBING
SCALE: 1/4" = 1'-0"

KEY NOTES:

1. 3" W UP W/ P-TRAP AND PRIMER.
2. 2" V UP.
3. 3" W DN.
4. 1/2" HW AND 1/2" HWR DN. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL 6/P5.02).
5. 2" V DN.
6. 1/2" CW DN.
7. 4" W DN.
8. 1-1/4" CW DN.
9. END OF LINE WALL CLEANOUT.
10. HWR BALANCING VALVE SET AT 0.5 GPM.
11. 1/2" HW AND 1/2" CW DN.
12. 2" W UP W/ P-TRAP AND PRIMER.
13. END OF LINE CLEANOUT.
14. 3" V UP.
15. 4" W UP.
16. 2" W UP.
17. ELEVATOR SUMP PUMP CONTROL PANEL.
18. 1" HW, 1" CW AND 3/4" HWR UP.
19. 1/2" HW AND 1/2" CW UP.
20. 1/2" CA UP.
21. 1/2" CW UP.
22. 2" ELEVATOR SUMP WASTE DN.
23. 2" W DN.
24. 3/4" HW, 3/4" CW, 1/2" HWR AND 3/4" CA UP.
25. 2" W UP.
26. 3/4" HW AND 3/4" CW DN.
27. 1" HW, 1" CW AND 3/4" HWR UP.
28. 1" HW, 1" CW AND 1 1/4" T DN TO MIXING VALVE.
29. 1 1/4" T DN. ROUTE FIXTURE DISCHARGE TO DRAIN.
30. 1/2" HW DN.
31. 2" W UP AND DN.
32. 1/2" HW AND 1-1/4" CW UP.
33. 1/2" HWR UP. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL 6/P5.02).
34. 2" V UP AND DN.
35. 3/4" HW, 1 1/2" CW AND 3/4" HWR UP.
36. 1/2" CA DN.
37. 1 1/4" HW, 3" CW AND 3/4" HWR UP.
38. 3/4" CW DN.
39. REFERENCE ARCHITECTURAL ELEVATION(S) FOR EXACT LOCATION.
40. 1 1/4" CW UP.
41. 1/2" HW UP.

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ENLARGED PLANS - AREA B - LEVEL 1

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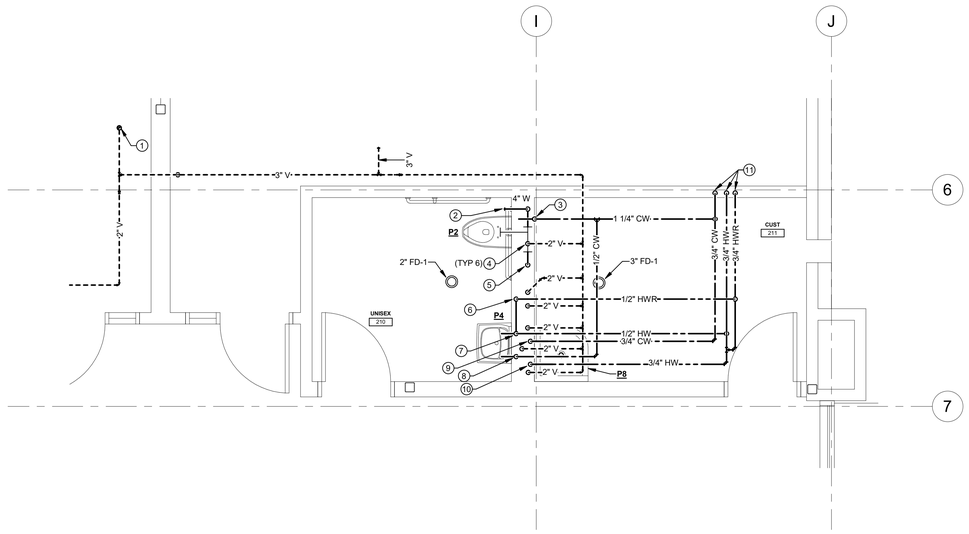
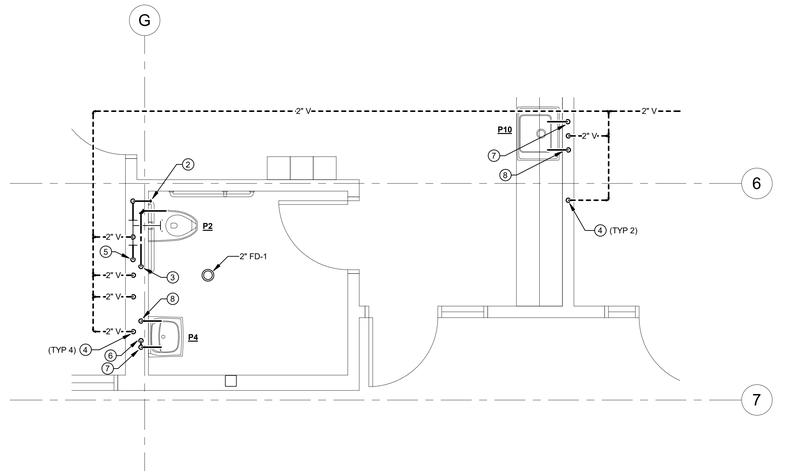
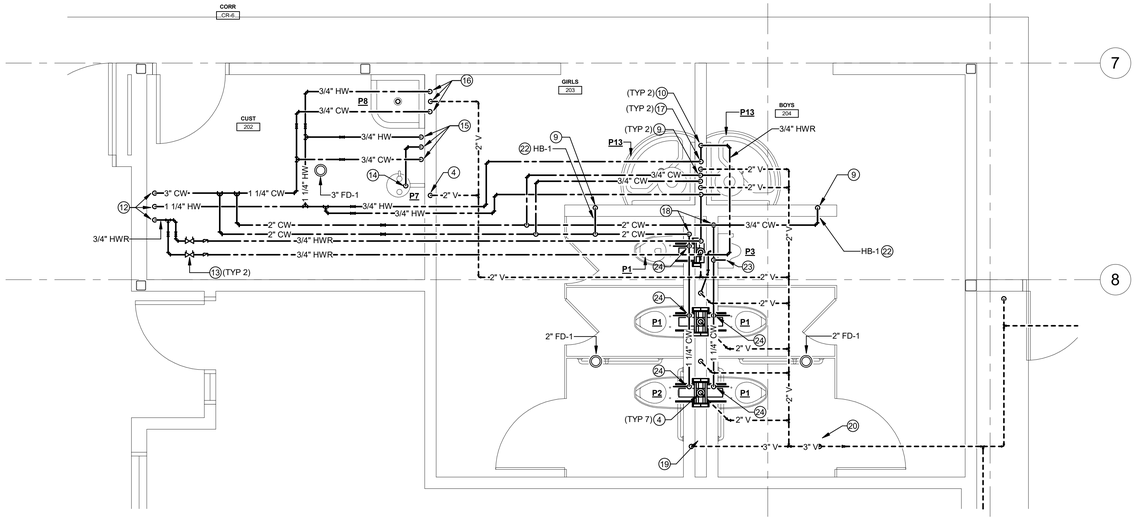


1 ENLARGED PLAN - LEVEL 2 - PLUMBING
SCALE: 3/8" = 1'-0"



3 ENLARGED PLAN - LEVEL 2 - PLUMBING
SCALE: 3/8" = 1'-0"



2 ENLARGED PLAN - LEVEL 2 - PLUMBING
SCALE: 3/8" = 1'-0"

KEY NOTES:

1. 2" V UP.
2. END OF LINE WALL CLEANOUT.
3. 1-1/4" CW DN.
4. 2" V DN.
5. 4" W DN.
6. 1/2" HWR DN. ROUTE HWR TO WITHIN 24" OF FIXTURE OUTLET (DETAIL 6/P5.02).
7. 1/2" HW DN.
8. 1/2" CW DN.
9. 3/4" CW DN.
10. 3/4" HW DN.
11. 3/4" HW, 1-1/2" CW AND 3/4" HWR DN.
12. 1-1/4" HW, 3" CW AND 3/4" HWR DN.
13. HWR BALANCING VALVE SET AT 0.5 GPM.
14. 1" T DN.
15. 3/4" HW, 3/4" CW AND 1" T DN TO MIXING VALVE.
16. 3/4" HW, 3/4" CW AND 2" V DN.
17. 3/4" HWR DN.
18. 2" CW DN.
19. 3" V DN.
20. 3" V UP.
21. 3/4" CA DN.
22. FACE FAUCET TOWARD INTERIOR OF RESTROOM.
23. 1" CW TO URINAL (3/4" CW STUB OUT).
24. 1 1/4" CW TO WATER CLOSET (1" STUB OUT).

4 ENLARGED PLAN - LEVEL 2 - PLUMBING
SCALE: 3/8" = 1'-0"

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SHEET
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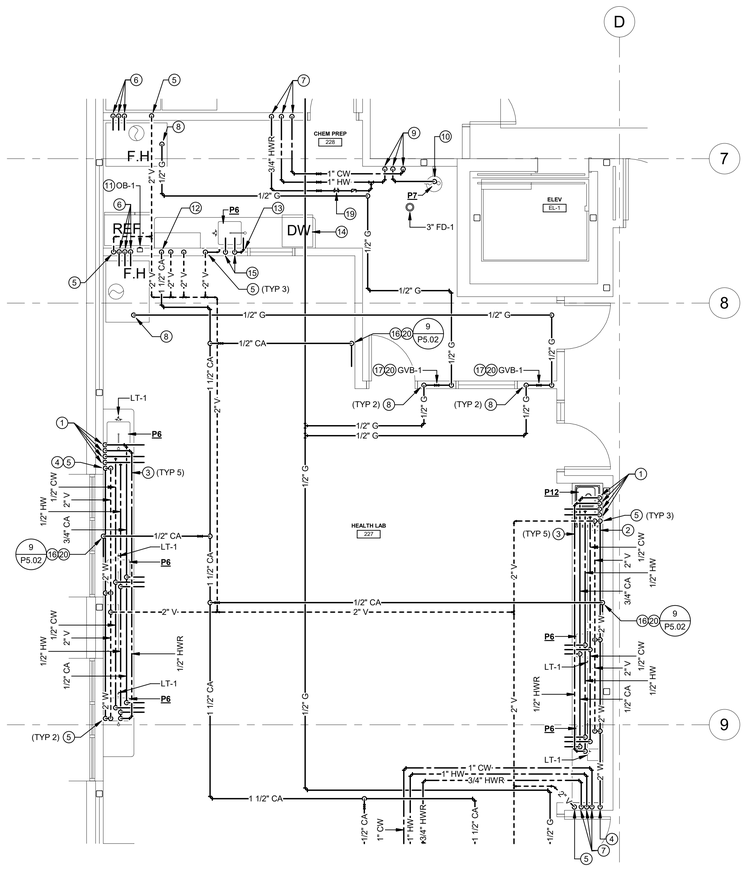
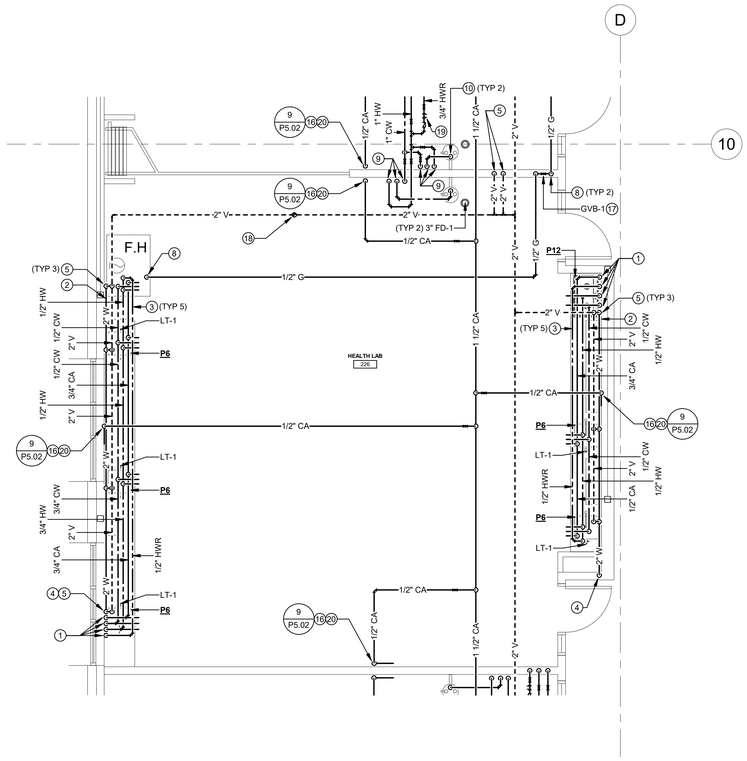


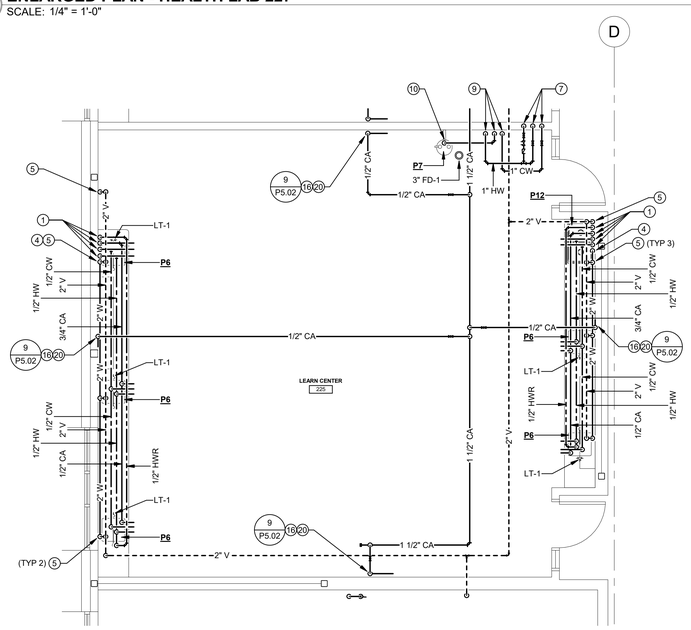
KEY NOTES:

1. 3/4" CW, 3/4" HW, 1/2" HWR AND 3/4" CA DN TO BELOW WITH 1/2" HW AND 1/2" CW TO P14.
2. RACK WASTE PIPING ON BACK WALL OF CABINET.
3. CW, HW, HWR, V AND CA PIPING SHOWN OFFSET FOR CLARITY. RACK PIPING ON BACK WALL OF CABINET.
4. 2" W DN.
5. 2" V DN.
6. 1/2" HW, 1/2" CW AND 1/2" CA DN.
7. 1" HW, 1" CW AND 3/4" HWR DN.
8. 1/2" G DN.
9. 1" HW, 1" CW AND 1 1/4" T DN TO MIXING VALVE.
10. 1 1/4" T DN. ROUTE FIXTURE DISCHARGE TO DRAIN.
11. 1/2" CW DN.
12. 1 1/2" CA DN.
13. PROVIDE SEPARATE 1/2" HW STUB TO SERVE DISHWASHER.
14. ROUTE DISHWASHER DRAIN TO AIRGAP AT P6.
15. 1/2" HW AND 1/2" CW DN.
16. 1/2" CA DN.
17. GAS EMERGENCY SHUT-OFF VALVE.
18. 3" V UP TO 3" VTR.
19. HWR BALANCING VALVE SET AT 1.0 GPM.
20. REFERENCE ARCHITECTURAL ELEVATION(S) FOR EXACT LOCATION.

N 1 **ENLARGED PLAN - HEALTH LAB 227**
SCALE: 1/4" = 1'-0"



N 2 **ENLARGED PLAN - HEALTH LAB 226 / HEALTH LAB 227**
SCALE: 1/4" = 1'-0"



N 3 **ENLARGED PLAN - LEARN CENTER 225**
SCALE: 1/4" = 1'-0"

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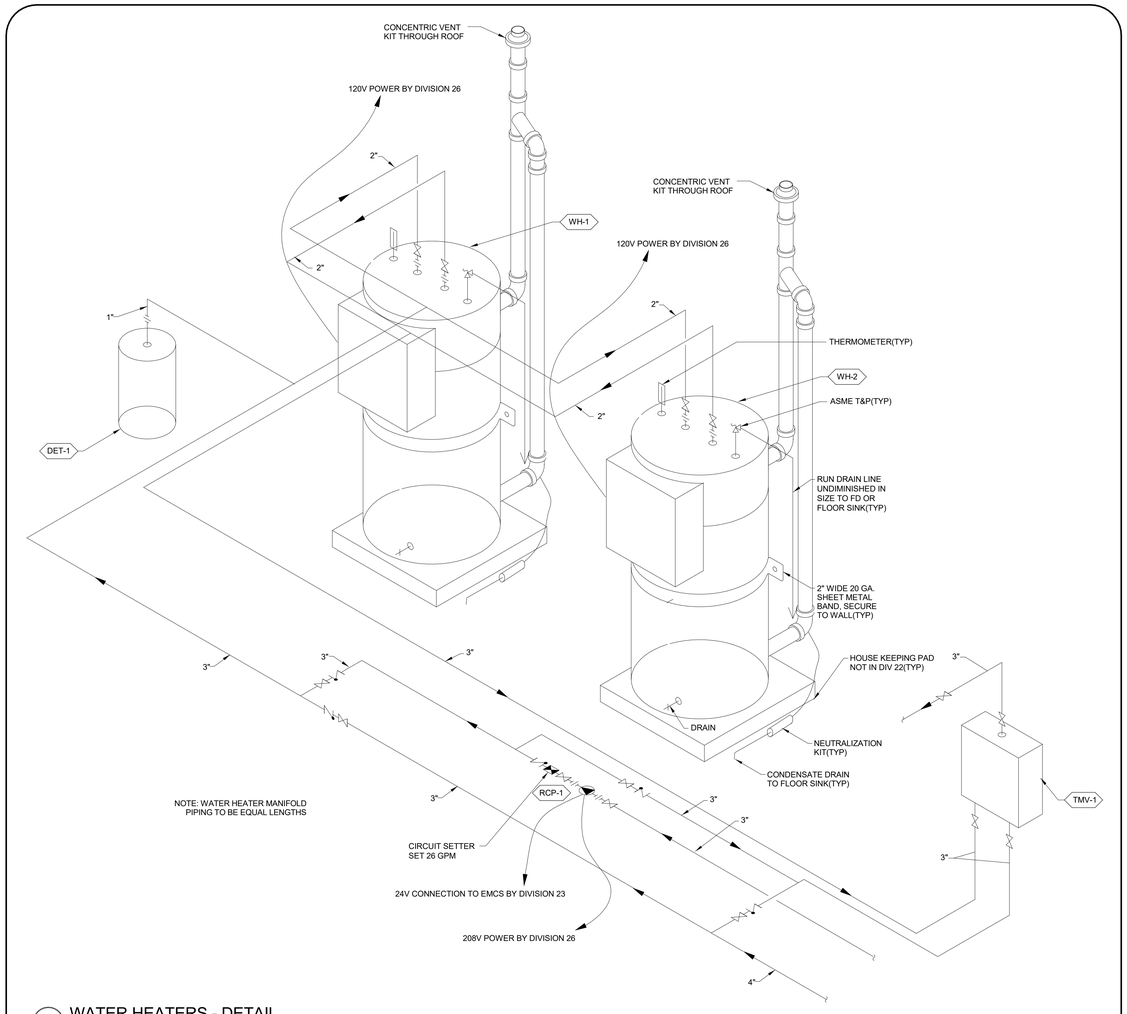
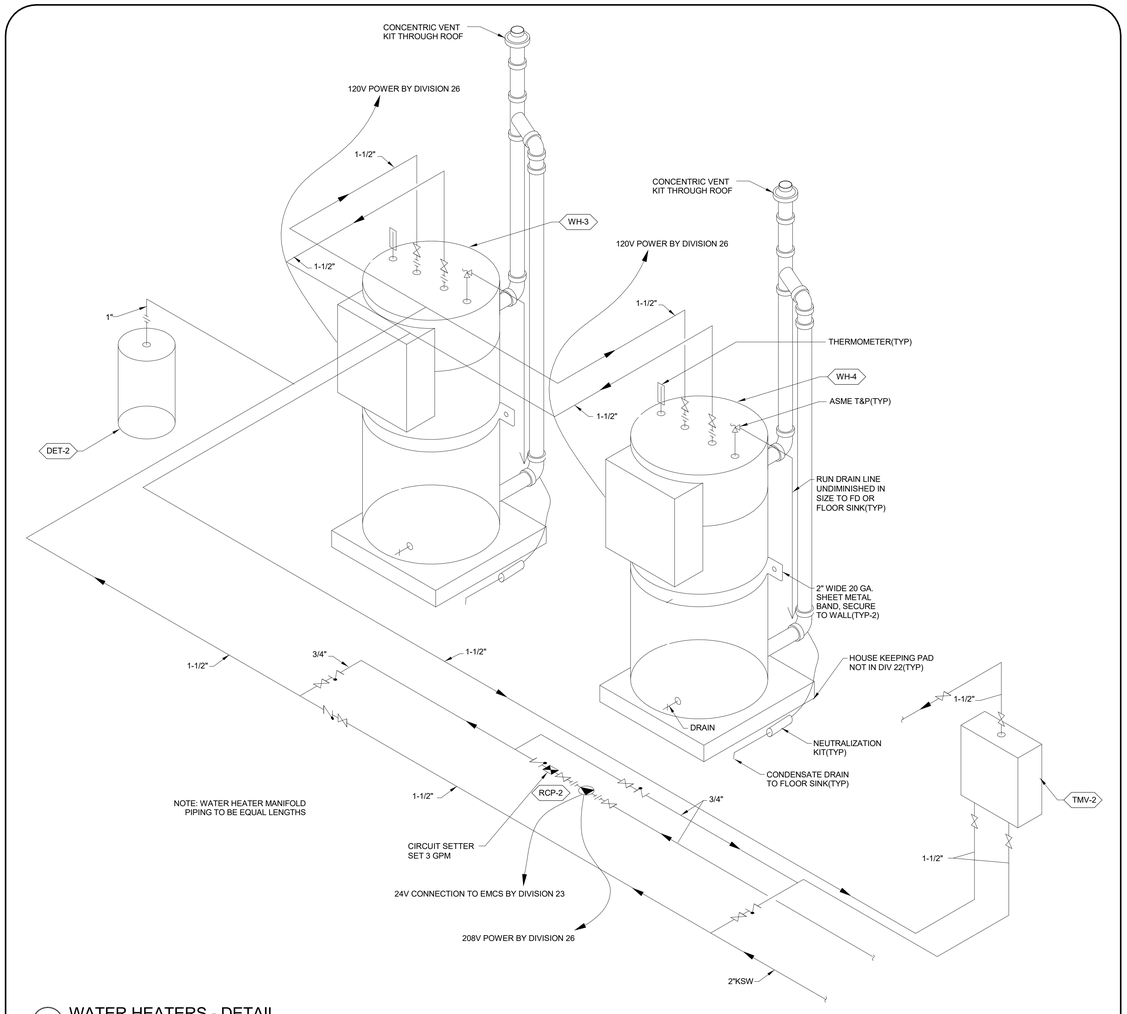
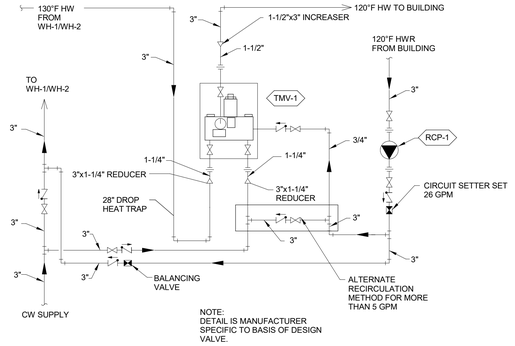


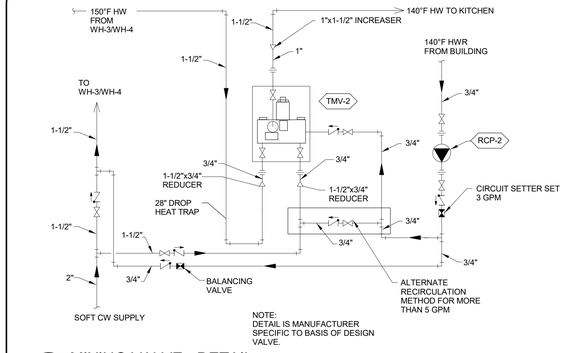
1 WATER HEATERS - DETAIL
Scale: NOT TO SCALE



3 WATER HEATERS - DETAIL
Scale: NOT TO SCALE



2 MIXING VALVE - DETAIL
Scale: NOT TO SCALE



4 MIXING VALVE - DETAIL
Scale: NOT TO SCALE

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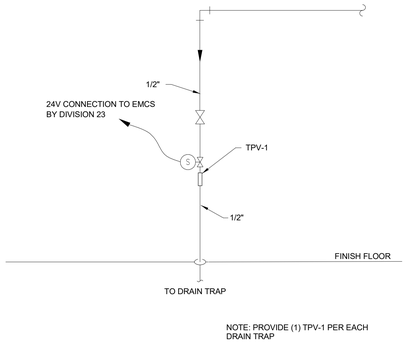

1 TRAP PRIMER TPV-1 DETAIL
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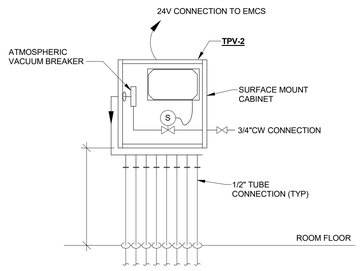
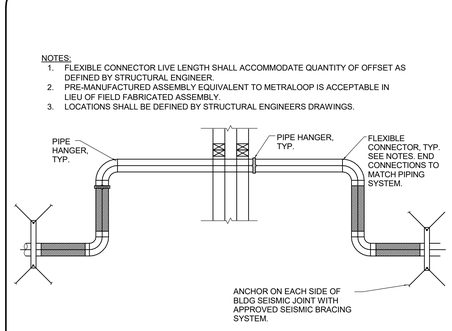
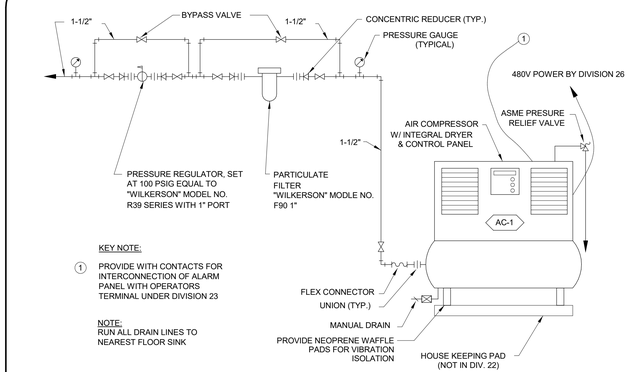


2 TRAP PRIMER TPV-2 DETAIL
Scale: NOT TO SCALE



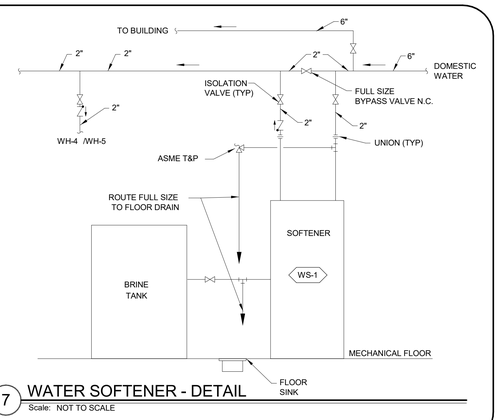
3 PIPING ACROSS BUILDING SEISMIC JOINT DETAIL
Scale: NOT TO SCALE



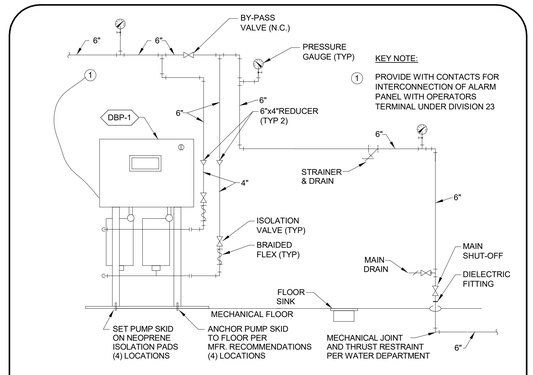
4 AIR COMPRESSOR DETAIL
Scale: NOT TO SCALE

5 SENSOR OPERATED FAUCET - DETAIL
Scale: NOT TO SCALE

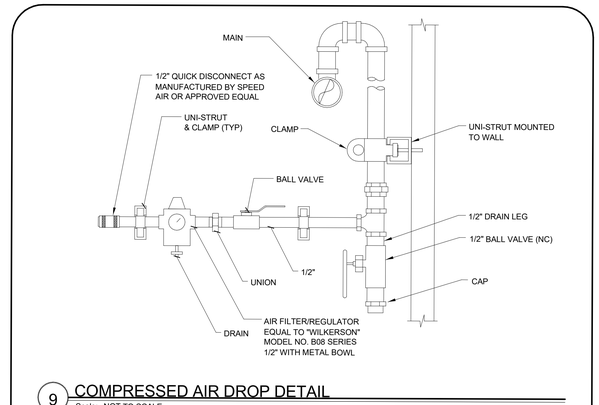
6 SENSOR OPERATED FLUSH VALVE - DETAIL
Scale: NOT TO SCALE



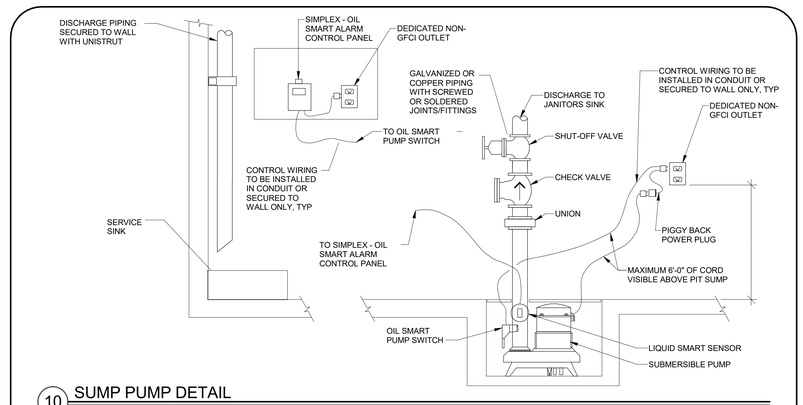
7 WATER SOFTENER - DETAIL
Scale: NOT TO SCALE



8 WATER HEADER DETAIL
Scale: NOT TO SCALE



9 COMPRESSED AIR DROP DETAIL
Scale: NOT TO SCALE



10 SUMP PUMP DETAIL
Scale: NOT TO SCALE

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HVAC CLIMATE DESIGN CRITERIA

PROJECT LOCATION	PASCO, WA	
ASHRAE WEATHER DATA	TRI CITIES AIRPORT, WA	SEE NOTE 1
DESIGN ALTITUDE	387 FT	
CLIMATE ZONE	5B	SEE NOTE 2
OUTDOOR DESIGN TEMPS:	HEATING: 10.2°F DB COOLING: 99.2°F DB/69.4°F WB	SEE NOTE 3
INDOOR DESIGN TEMPS:	HEATING: 72°F DB COOLING: 75°F DB/67°F WB	SEE NOTE 4

NOTES:
1. CLIMATE DATA PROVIDED BY ASHRAE.
2. PER 2018 WSEC, TABLE C301.1.
3. OUTDOOR DESIGN TEMPS PER 2018 WSEC, C302.2 APPDX C.
4. INDOOR DESIGN TEMPS PER 2018 WSEC, C302.1.

SEISMIC DESIGN CRITERIA

1. SEE STRUCTURAL DRAWINGS FOR THE SEISMIC DESIGN CATEGORY (SDC) AND ASSOCIATED DESIGN CRITERIA FOR THIS PROJECT LOCATION.
2. ALL MECHANICAL SYSTEMS, PIPING AND EQUIPMENT CONVEYING OR USING NATURAL GAS (GAS PIPING, BOILERS, WATER HEATERS, ETC.) SHALL BE SEISMICALLY BRACED AND ANCHORED.
3. DELEGATED DESIGN: THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A QUALIFIED SEISMIC DESIGNER TO PROVIDE ENGINEERING OF ALL SEISMIC RESTRAINT AND ANCHORING SYSTEMS. SEISMIC DESIGN AND INSTALLATION SHALL BE CONTRACTOR FURNISHED.
4. SEISMIC BRACING PRODUCTS AND SYSTEMS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, SECTION 23 05 50, AND AS DETERMINED BY THE SEISMIC DESIGNER.

TESTING, BALANCING AND COMMISSIONING

1. MECHANICAL SYSTEMS INCLUDING AIR, HYDRONIC AND SERVICE WATER HEATING SYSTEMS INCLUDING PLUMBING SHALL BE BALANCED IN ACCORDANCE WITH THE 2018 WA STATE ENERGY CODE, THE PROJECT SPECIFICATIONS AND GENERALLY ACCEPTED ENGINEERING STANDARDS TO ENSURE AT A MINIMUM THAT AIR AND WATER FLOW RATES ARE MEASURED AND ADJUSTED TO DELIVER THE DESIGN RATES WITHIN SPECIFIED TOLERANCES.
2. A BUILDING COMMISSIONING PROCESS LED BY A CERTIFIED COMMISSIONING PROFESSIONAL SHALL BE COMPLETED FOR MECHANICAL SYSTEMS, SERVICE WATER HEATING SYSTEMS,PLUMBING, ELECTRICAL POWER AND LIGHTING SYSTEMS AND ENERGY METERING IN ACCORDANCE WITH ALL REQUIREMENTS OF SECTION 408 OF THE 2018 WA STATE ENERGY CODE.

NOTE: SYMBOLS AND ABBREVIATIONS ON THE DRAWINGS ARE TO BE INTERPRETED IN ACCORDANCE WITH THE LEGENDS ON THIS SHEET. NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED ON THIS SHEET ARE NECESSARILY USED FOR THIS PROJECT.

GENERAL NOTES

1. THE MECHANICAL SYSTEMS SHALL CONSIST OF ALL WORK SHOWN ON THE MECHANICAL DRAWINGS, DIAGRAMS AND AS DESCRIBED IN ASSOCIATED TECHNICAL SPECIFICATIONS.
2. REFER TO SPECIFICATIONS AND ALL OTHER DIVISION DOCUMENTS FOR ADDITIONAL REQUIREMENTS. COORDINATE WORK SHOWN ON THE DRAWINGS WITH THE SPECIFICATIONS. IN CASE OF DISCREPANCY BETWEEN SPECIFICATIONS AND DRAWINGS REFER TO THE GENERAL CONDITIONS AND NOTIFY THE A/E FOR DIRECTION.
3. MECHANICAL CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES.
4. MECHANICAL CONTRACTOR SHALL ARRANGE ALL INSPECTIONS AND PAY ALL FEES. SUBMIT COPIES OF INSPECTIONS TO OWNER.
5. ALL MATERIALS SHALL BE NEW AND IN GOOD CONDITION. USED OR DAMAGED MATERIALS, PRODUCTS, ETC. ARE NOT ALLOWED AND IF DISCOVERED SHALL BE REMOVED AND REPLACED.
6. MODEL NUMBERS OF EQUIPMENT SHOWN ON THE SCHEDULES AND THROUGHOUT THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MFR/MODEL ALONE. REVIEW THE COMPLETE DESCRIPTION, LOCATION AND ARRANGEMENT ON THE DRAWINGS, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL, CONFIGURATION AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS OF DESIGN.
7. WHEN & WHERE APPLICABLE, THE NEW MECHANICAL EQUIPMENT MAY NOT BE USED FOR TEMPORARY VENTILATION, HEATING, COOLING OR SERVICE UNLESS SPECIFICALLY NOTED OTHERWISE FOR PHASED CONSTRUCTION OR OCCUPANCY.
8. WHERE EXISTING REFRIGERATION SYSTEMS ARE DISTURBED BY THE DEMOLITION OR NEW WORK, THE EXISTING REFRIGERANT GAS CHARGE SHALL NOT BE VENTED TO THE ATMOSPHERE BUT SHALL BE CAPTURED AND RECLAIMED/RESTORED (IN GOOD CONDITION) OR DISPOSED OF IN A SAFE AND LEGAL MANNER.
9. WHERE EXISTING GLYCOL ANTI-FREEZE HYDRONIC SYSTEMS ARE IMPACTED BY THE WORK, THE EXISTING ANTI-FREEZE GLYCOL-WATER SOLUTIONS SHALL BE EITHER CAPTURED AND STORED FOR REUSE, OR DISPOSED OF IN A SAFE AND LEGAL MANNER. REFILL SYSTEMS WITH SAME LEVEL OF GLYCOL PROTECTION AS ORIGINAL (OR AS SPECIFIED NEW).

LOCATIONS & COORDINATION

1. THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS AND FITTINGS. PROVIDE ALL NECESSARY OFFSETS, TRANSITIONS AND FITTINGS REQUIRED FOR A COMPLETE SYSTEM. REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING AND ELECTRICAL DRAWINGS FOR COORDINATION PURPOSES TO AVOID CONFLICTS.
2. INSTALL ALL MECHANICAL WORK AS HIGH AS POSSIBLE, TIGHT TO STRUCTURE ABOVE, UNLESS NOTED OTHERWISE. IN GENERAL IT IS THE INTENT THAT ALL MECHANICAL SYSTEMS BE CONCEALED ABOVE CEILINGS OR INSIDE WALLS AND SHAFTS.
3. COORDINATE ALL EXPOSED MECHANICAL SYSTEMS, PIPING AND DUCTWORK SO THAT LOCATIONS AND ROUTING ARE INTEGRATED WITH THE OTHER BUILDING ELEMENTS (WALLS, ROOFS, JOISTS, LIGHTS, ETC.). GENERALLY RUN SYSTEMS PARALLEL OR PERPENDICULAR TO BUILDING ELEMENTS AND RUN IN A MANNER TO CONCEAL OR BLEND WITH BUILDING LINES.
4. PROVIDE NEC CODE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCES FOR ALL ELECTRICAL PANELS AND EQUIPMENT. OFFSET MECHANICAL WORK AS REQUIRED.
5. COORDINATE ALL MECHANICAL WORK WITH THAT OF OTHER TRADES TO ENSURE PROPER INTERFACE, ADEQUATE CLEARANCES, AND TO AVOID CONFLICTS. PROVIDE FIELD COORDINATION AND/OR DRAWINGS PRIOR TO FABRICATION AND/OR INSTALLATION. CONFLICTS AND INTERFERENCES THAT COULD HAVE BEEN AVOIDED BY PROPER PRE-PLANNING AND COORDINATION SHALL BE REMOVED AND CORRECTED AT NO COST TO THE OWNER.
6. FIELD LOCATE ALL ROOF, FLOOR AND WALL PENETRATIONS AND ADJUST TO AVOID CONFLICT WITH STRUCTURAL ELEMENTS, BEAMS, CROSS-BRACING, ARCHITECTURAL ELEMENTS. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR LOCATING AND COORDINATING ALL SAW CUTTING AND DRILLING REQUIRED FOR MECHANICAL SYSTEM OPENINGS.

SYSTEMS SUPPORTS & BASES

1. HANGERS, SUPPORTS AND ANCHORS FOR MECHANICAL SYSTEMS AND EQUIPMENT ARE NOT NECESSARILY DESIGNED OR SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPPORT MEMBERS, HANGERS, BRACKETS, HARDWARE, CLEVIS HANGERS, RODS, ETC. TO SECURELY HANG, BRACE AND SUPPORT MECHANICAL SYSTEMS, DUCTWORK, PIPING, EQUIPMENT AND OTHER DEVICES. ANCHOR SUPPORTS TO BUILDING STRUCTURE OR OTHER APPROPRIATE BUILDING ELEMENTS. SEE TYPICAL MECHANICAL DETAILS, ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION, LIMITATIONS AND DETAILS.
2. DO NOT ANCHOR TO OR SUSPEND MECHANICAL SYSTEMS DIRECTLY OFF OF BARE METAL ROOF DECKING.
3. ROOF CURBS: ROOF CURBS SHALL BE MOUNTED PLUMB AND LEVEL ON PITCHED ROOFS. PROVIDE FACTORY CURBS WITH CORRECT SLOPE OR PROVIDE FIELD INSTALLED BLOCKING AND SHIMS BELOW CURB. ALL WOOD PRODUCTS SHALL BE PRESSURE TREATED LUMBER.
4. SEISMIC BRACING: PROVIDE SEISMIC ANCHORING OR BRACING FOR ALL NATURAL GAS, PROPANE OR FUEL OIL PIPING. PROVIDE SEISMIC ANCHORING FOR ALL GAS-FIRED EQUIPMENT. FOR ADDITIONAL SEISMIC BRACING REQUIREMENTS REFER TO SPECIFICATIONS AND SEISMIC NOTES.

MECHANICAL & ELECTRICAL COORDINATION

1. INFORMATION LISTED IN SCHEDULES IS BASED ON THE EQUIPMENT AS SELECTED BY THE ENGINEER DURING THE DESIGN. THE ACTUAL EQUIPMENT SELECTED BY THE CONTRACTOR MAY BE DIFFERENT AND HAVE DIFFERING ELECTRICAL CHARACTERISTICS. PRIOR TO ROUGH-IN OR ORDERING EQUIPMENT, COORDINATE WITH THE ELECTRICAL CONTRACTOR TO ESTABLISH ACTUAL ELECTRICAL CHARACTERISTICS, ELECTRICAL LOAD, VOLTAGE, OVERCURRENT PROTECTION REQUIREMENTS FOR EACH PIECE OF EQUIPMENT. TO ASSURE PROPER ELECTRICAL CONNECTIONS AND SERVICES ARE PROVIDED.
2. COORDINATE THE EXACT LOCATION OF ALL ROOM THERMOSTATS AND/OR ROOM TEMPERATURE/CO2 SENSORS WITH ELECTRICAL PLANS & ROOM ELEVATIONS, PRIOR TO INSTALLATION, SO AS TO AVOID CONFLICT WITH CASEWORK, MARKER BOARDS, WALL SWITCHES, ETC.
3. COORDINATE THE FURNISHING AND INSTALLATION OF ALL ELECTRICAL DISCONNECT SWITCHES, STARTERS, VFDS, ETC., IN ORDER TO ASSURE THAT ALL ENERGIZED MECHANICAL IS PROVIDED WITH THE REQUIRED CIRCUIT PROTECTION METHODS AND CONTROL DEVICES. WHERE DRAWINGS NOTES, SCHEDULES AND EQUIPMENT SPECIFICATIONS ARE SILENT OR UNCLEAR AS TO WHICH DIVISION (22-PLBG, 23-HVAC, OR 26-ELECTRICAL) IS TO PROVIDE THESE DEVICES, THE CONTRACTOR SHALL CONTACT THE ENGINEER, PRIOR TO BID, FOR DIRECTION.

DUCTWORK & AIR DISTRIBUTION

1. VOLUME DAMPERS ARE NOT SHOWN FOR CLARITY. PROVIDE A DAMPER FOR EACH SUPPLY, RETURN AND EXHAUST OPENING AND IN BRANCHES WHERE THREE OR MORE OPENINGS ARE ASSOCIATED WITH THE BRANCH AND ELSEWHERE AS NOTED ON THE DRAWINGS OR SPECIFICATIONS.
2. PROVIDE CONCEALED DAMPER REGULATORS FOR ALL VOLUME DAMPERS OVER INACCESSIBLE CEILINGS AND SOFFITS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
3. PROVIDE DIFFUSER AND GRILLE FRAMES COMPATIBLE WITH ARCHITECTURAL CEILING TYPE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPE.
4. INSTALL FIRE DAMPERS, SMOKE DAMPERS AND/OR COMBO FIRE-SMOKE DAMPERS AT ALL LOCATIONS WHERE DUCTS PENETRATE FIRE RATED WALLS. COORDINATE DAMPER ACCESS WITH GENERAL CONTRACTOR AND ELECTRICAL CONNECTIONS WITH ELECTRICAL CONTRACTOR.
5. ALL DUCTWORK SIZES SHOWN ARE OUTSIDE DIMENSIONS, UNLESS SPECIFICALLY NOTED ON PLANS. DUCT LINER HAS BEEN ACCOUNTED FOR ON LINED DUCT. ACCOUNT FOR ADDITIONAL CLEARANCE ON EXTERNALLY INSULATED DUCT.
6. PROVIDE 1" THICK DUCT LINER IN ALL TRANSFER AIR DUCTWORK UNLESS NOTED OTHERWISE.
7. TURNING VANES: ALL RECTANGULAR DUCT ELBOWS SHALL BE PROVIDED WITH TURNING VANES, WHETHER OR NOT SPECIFICALLY SHOWN ON THE DUCTWORK DRAWING PLANS AND SECTIONS.
8. RADIUS ELBOWS (NO VANES): UTILIZE RADIUS ELBOWS ON ALL MATERIAL HANDLING TYPE DUCTWORK, KITCHEN HOOD EXHAUST DUCTS (BOTH TYPE I & II), LOCKER ROOM (LINT) EXHAUST, PATIENT ROOM (LINT) EXHAUST, AND ELSEWHERE AS INDICATED. CONTRACTOR'S OPTION TO UTILIZE RADIUS ELBOWS (WHERE SPACE ALLOWS) IN LIEU OF RECTANGULAR VANED ELBOWS.
9. PROVIDE TRANSITIONS AS REQUIRED TO TO CONNECT DUCTWORK TO TERMINAL UNITS, FANS, AIR HANDLERS CONNECTIONS, ETC.
10. PROVIDE FLEXIBLE DUCT FITTINGS ON CONNECTIONS TO ALL ENERGIZED AIR MOVING EQUIPMENT (FANS, AIR HANDLERS, ETC.).
11. MAXIMUM FLEXIBLE DUCTWORK LENGTH FROM MAIN DUCT TO DIFFUSERS SHALL BE APPROXIMATELY 5 FT, WITH MINIMAL OFFSET AND NO KINKS.

PIPING & HYDRONICS

1. PLENUMS: PIPES AND WIRING IN PLENUMS SHALL BE RATED FOR PLENUM USE. PVC, ABS, PLASTIC PIPING IS NOT ACCEPTABLE IN PLENUM APPLICATIONS UNLESS INSULATED AND WRAPPED IN APPROVED FIRE RATED JACKETING.
2. SMALL PIPING OR COMPONENTS: PIPING PLANS DO NOT NECESSARILY SHOW ALL SMALL PIPING OR COMPONENTS, INSTRUMENT TAPS OR DRAINS. PROVIDE ALL PIPING, VALVES, SPECIALTY ITEMS, INSTRUMENTATION, ETC. AS INDICATED ON THE PIPING FLOW DIAGRAMS, PIPING/EQUIPMENT DETAILS.
3. SIZES FOR SUPPLY AND RETURN PIPING CONNECTIONS TO EQUIPMENT, COILS, ETC. SHALL BE EQUAL TO THE FULL BRANCH RUN-OUT SIZES INDICATED ON THE DRAWINGS. PROVIDE REDUCERS AT EQUIPMENT CONNECTIONS AND BEFORE AND AFTER CONTROL VALVES, BALANCE VALVES, ETC. WHEN NECESSARY. ALL NEAR-COIL/EQUIPMENT PIPING SHALL BE FULL BRANCH LINE SIZE, INCLUDING BYPASS LINES, ETC. AND SHALL ONLY BE REDUCED FOR SMALLER DIAMETER CONTROL VALVES OR COIL/EQUIPMENT CONNECTIONS.
4. WHERE AIR HANDLING UNITS ARE PROVIDED WITH MULTIPLE (STACKED) COIL BANKS, PROVIDE DIVIDED BRANCH SUPPLY AND RETURN PIPING CONNECTIONS TO EACH COIL IN THE BANK, WHETHER OR NOT INDICATED ON THE DRAWINGS OR PIPING DETAILS. BRANCH PIPING TO EACH COIL IN THE BANK MAY BE REDUCED FROM THE MAIN INDICATED PIPE SIZE, BUT NOT TO BE SMALLER THAN THE COIL CONNECTION SIZES.
5. PROVIDE AIR VENTS ON HYDRONIC DISTRIBUTION PIPING AT HIGH POINTS, CHANGES IN DIRECTION FROM HORIZONTAL TO VERTICAL, AND ALONG HORIZONTAL RUNS AT APPROXIMATELY 100 FT. INTERVALS.
6. INSTALL UNIONS, IN PIPING 2" AND SMALLER, AT FINAL CONNECTIONS TO EACH PIECE OF EQUIPMENT, ON EACH SIDE OF CONTROL VALVES AND ELSEWHERE AS INDICATED.
7. INSTALL FLANGES, IN PIPING 2 ½" AND LARGER, AT FINAL CONNECTIONS TO EQUIPMENT AND AT ALL FLANGED VALVES AND DEVICES.

MECHANICAL ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	HW	HOT WATER
ABV	ABOVE	HX	HEAT EXCHANGER
AD	ACCESS DOOR	HZ	HERTZ
AFS	AIR FLOW SWITCH	ID	INSIDE DIAMETER
AFF	ABOVE FINISHED FLOOR	INV	INVERT
AG	ABOVE GROUND	I.E.	INVERT ELEVATION
AHU	AIR HANDLING UNIT	INSUL	INSULATION
AL	ACOUSTICALLY LINED	IND	INDIRECT
ALUM	ALUMINUM	KW	KILOWATT
APD	AIR PRESSURE DROP	KWH	KILOWATT HOUR
ARCH	ARCHITECT	LAT	LEAVING AIR TEMPERATURE
AVG	AVERAGE	LBS	POUNDS
AWT	AVERAGE WATER TEMPERATURE	LDB	LEAVING DRY BULB
BAS	BUILDING AUTOMATION SYSTEM	LF	LINEAR FOOT
BDD	BACKDRAFT DAMPER	LWT	LEAVING WATER TEMPERATURE
BFF	BELOW FINISHED FLOOR	LG	LONG OR LENGTH
BFP	BACKFLOW PREVENTER	L/P	LOW POINT
BG	BELOW GROUND	LWB	LEAVING WET BULB
BHP	BRAKE HORSEPOWER	LWG	LOW WALL GRILLE
BLDG	BUILDING	LWT	LEAVING WATER TEMPERATURE
BP	BYPASS	LVG	LEAVING
BTU	BRITISH THERMAL UNIT	MCA	MINIMUM CIRCUIT AMPACITY
BTUH	BRITISH THERMAL UNITS PER HOUR	MOCP	MAXIMUM OVERCURRENT PROTECTION
BOD	BOTTOM OF DUCT	MBH	THOUSAND (1000) BTU PER HOUR
BOP	BOTTOM OF PIPE	MCC	MOTOR CONTROL CENTER
BSMT	BASEMENT	MFR	MANUFACTURER
BV	BALANCING VALVE	MS	MOTOR STARTER
CA	COMBUSTION AIR	MTD	MOUNTED
CAP	CAPACITY	MTG	MOUNTING
CC	CENTER TO CENTER OR COOLING COIL	NC	NORMALLY CLOSED
CD	CEILING DIFFUSER	NO	NORMALLY OPEN
CFM	CUBIC FEET PER MINUTE	MOD	MOTOR-OPERATED DAMPER
CG	CEILING GRILLE	NIC	NOT IN CONTRACT
CI	CAST IRON	NPT	NATIONAL PIPE THREAD
CLG	CEILING	NTS	NOT TO SCALE
COG	CLEAN OUT TO GRADE	OA	OUTDOOR AIR
CO	CLEAN OUT	OBD	OPPOSED BLADE DAMPER
COMB	COMBUSTION	OD	OUTSIDE DIAMETER
COND	CONDENSATE OR CONDENSER	OSA	OUTSIDE AIR
CONC	CONCRETE	OAT	OUTSIDE AIR TEMPERATURE
CONST	CONSTRUCTION	OF	OVERFLOW
COP	COEFFICIENT OF PERFORMANCE	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
CU	COPPER	PD	PRESSURE DROP
CUH	CABINET UNIT HEATER	PH	PHASE
CW	COLD WATER	PIAC	PRESSURE INDEPENDENT AIR CONTROLLER
CU	CONDENSING UNIT	PG	PROPYLENE GLYCOL
CR	CONDENSATE RETURN	PLBG	PLUMBING
CL	CENTER LINE	POC	POINT OF CONNECTION
D	DEEP OR DEPTH	PRV	PRESSURE REDUCING VALVE
DB	DRY BULB OR DECIBEL	PSI	POUNDS PER SQUARE INCH
DBA	A-WEIGHTED DECIBELS	PSIG	POUNDS PER SQUARE INCH GAUGE
DCV	DEMAND CONTROL VENTILATION	PT	PRESSURE & TEMPERATURE
DDC	DIRECT DIGITAL CONTROLS	RA	RETURN AIR
DEMO	DEMOLITION	RAG	RETURN AIR GRILLE
DN	DOWN	RAT	RETURN AIR TEMPERATURE
DIA,	DIAMETER Ø	RD	ROOF DRAIN
DPS	DIFFERENTIAL PRESSURE SWITCH	RET	RETURN
DP	DROP	REV	REVISION
DPR	DAMPER	RF	RETURN FAN
DWG	DRAWING	RPM	REVOLUTIONS PER MINUTE
(E)	EXISTING	RTU	ROOF TOP UNIT
EA	EACH OR EXHAUST AIR	SA	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	SAT	SUPPLY AIR TEMPERATURE
EDB	ENTERING DRY BULB	SEER	SEASONAL ENERGY EFFICIENT RATIO
EER	ENERGY EFFICIENCY RATIO	SENS	SENSIBLE
EF	EXHAUST FAN	SD	SMOKE DETECTOR OR DAMPER
EFF	EFFICIENCY	SF	SUPPLY FAN
EG	EXHAUST GRILLE	SFD	SMOKE-FIRE DAMPER
ELEC	ELECTRIC OR ELECTRICAL	SHT	SHEET
ELEV	ELEVATION	SP	STATIC PRESSURE
EMCS	ENERGY MANAGEMENT AND CONTROL SYSTEM	SQ	SQUARE
ENCL	ENCLOSURE	SQ	FT SQUARE FOOT
ESP	EXTERNAL STATIC PRESSURE	SS	STAINLESS STEEL
EST	ESTIMATE(D)	STD	STANDARD
EWB	ENTERING WET BULB	TA	TRANSFER AIR
EWT	ENTERING WATER TEMPERATURE	TEMP	TEMPERATURE
EXH	EXHAUST	TH	THICK OR THICKNESS
FA	FRESH AIR (OUTSIDE AIR)	TOD	TOP OF DUCT
FCO	FLOOR CLEAN OUT	TOP	TOP OF PIPE
FCU	FAN COIL UNIT	TP	TRAP PRIMER
FD	FIRE DAMPER OR FLOOR DRAIN	TU	TERMINAL UNIT
FDC	FIRE DEPARTMENT CONNECTION	TYP	TYPICAL
FF	FINAL FILTER	UF	UNDER FLOOR
FLA	FULL LOAD AMPS	UG	UNDERGROUND
FLR	FLOOR	UH	UNIT HEATER
FOB	FLAT ON BOTTOM	UR	URINAL
FOT	FLAT ON TOP	US	UNDER SLAB
FPM	FEET PER MINUTE	V	VENT OR VOLT
FPI	FINS PER INCH	VAC	VACUUM
FPS	FEET PER SECOND	VAV	VARIABLE AIR VOLUME
FP	FIRE PROTECTION	VEL	VELOCITY
FS	FLOOR SINK	VFD	VARIABLE FREQUENCY DRIVE
FT	FEET/FOOT OR FINNED TUBE	VRF	VARIABLE REFRIGERANT FLOW
FV	FACE VELOCITY	VRV	VARIABLE REFRIGERANT VOLUME
G	GAS (NATURAL)	VTR	VENT THRU ROOF
GA	GAUGE OR GAGE	VD	VOLUME DAMPER
GAL	GALLONS	WB	WET BULB
GALV	GALVANIZED	WC	WATER CLOSET
GPM	GALLONS PER MINUTE	WCO	WALL CLEAN OUT
GPH	GALLONS PER HOUR	WH	WATER HEATER
H	HIGH OR HEIGHT	WHA	WATER HAMMER ARRESTOR
HB	HOSE BIBB	WG	WATER GAUGE
HC	HEATING COIL	WPD	WATER PRESSURE DROP
HD	HEAD	WT	WEIGHT
HGBP	HOT GAS BYPASS		
HL	HIGH LIMIT		
HP	HORSEPOWER OR HIGH POINT		
HR	HOUR		
HTG	HEATING		
HUM	HUMIDIFIER		

HVAC PIPING LEGEND

- HWS — HEATED WATER SUPPLY
- HWR — HEATED WATER RETURN
- CWS — CHILLED WATER SUPPLY
- CWR — CHILLED WATER RETURN
- CHS — CHILLER CIRC RETURN
- CHR — CHILLER CIRC RETURN
- CD — CONDENSATE DRAIN
- D — DRAIN
- PC — PUMPED CONDENSATE
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- REF — REFRIGERANT LINE SET
- G — NATURAL GAS

GENERAL PIPING SYMBOLS

- PIPE PITCH DIRECTION (DOWN)
- DIRECTION OF FLOW
- ANCHOR
- REDUCER OR INCREASER
- ECCENTRIC REDUCER
- TOP CONNECTION
- BOTTOM CONNECTION
- SIDE CONNECTION
- CAPPED OUTLET
- RISE OR DROP IN PIPE
- UNION
- PIPE UP
- PIPE DOWN

VALVE AND EQUIPMENT SYMBOLS

- GENERIC VALVE (TYPE AS SPECIFIED)
- CHECK VALVE
- WYE STRAINER (WITH BALL VALVE & QUICK COUPLE HOSE CONNECTOR)
- FLEXIBLE CONNECTION
- MODULATING CONTROL VALVE
- TWO POSITION CONTROL VALVE
- PRESSURE REGULATING VALVE
- PRESSURE SAFETY RELIEF VALVE
- BALANCING VALVE (MANUAL OR AUTOFLOW AS SPECIFIED)
- PRESSURE REDUCING VALVE (PRV)
- THERMOMETER
- PRESSURE GAGE
- TEST PLUG (PRESSURE/TEMPERATURE)
- AV — AUTOMATIC AIR VENT
- MV — MANUAL AIR VENT
- QUICK-COUPLE HOSE CONNECTOR
- A — PLANT COMPRESSED AIR OUTLET QUICK CONNECT
- PUMP

LINEWEIGHT LEGEND

- LIGHT LINES INDICATES EXISTING ITEMS TO REMAIN
- LIGHT DASHED LINES HIDDEN OR UNDERGROUND ITEMS
- BOLD LINES INDICATES NEW ITEMS
- BOLD DASHED LINES INDICATE EXISTING ITEMS TO BE REMOVED

NOTE:
LINEWEIGHTS ARE GENERAL GUIDES ONLY. REFER TO DRAWING NOTES AND WORK PHASES (DEMO OR NEW) FOR ADDITIONAL DISTINCTIONS.

HVAC SYMBOLS

- 12x8 — RECT. DUCT SIZE (INCHES) (FACING SIDE LISTED FIRST)
- 12Ø — CIRCULAR DUCT DIAMETER (INCHES)
- 24x18 F.O. — FLAT OVAL DUCT SIZE (INCHES)(FACING SIDE LISTED FIRST)
- ACOUSTICALLY LINED DUCT, 1" THICK UNLESS NOTED OTHERWISE, DUCT SIZE INCLUDES ALLOWANCE FOR LINER
- R — DUCT RISE IN DIRECTION OF ARROW
- D — DUCT DROP IN DIRECTION OF ARROW
- # — FIRE OR FIRE/SMOKE DAMPER (# INDICATES TYPE)
- TURNING VANES
- HIGH EFFICIENCY BRANCH TAP
- FLEXIBLE DUCT CONNECTOR
- VD — VOLUME CONTROL DAMPER (SEE GENERAL NOTES)
- M — MOTORIZED DAMPER & ACTUATOR
- SUPPLY/OSA DUCT TURNED UP
- SUPPLY/OSA DUCT TURNED DOWN
- RETURN AIR DUCT TURNED UP
- RETURN AIR DUCT TURNED DOWN
- EXHAUST/RELIEF DUCT TURNED UP
- EXHAUST/RELIEF DUCT TURNED DOWN
- FLEXIBLE DUCT
- SIDEWALL DIFFUSER/GRILLE
- LINEAR SLOT DIFFUSER
- AIR OUTLET (SUPPLY)
- AIR INLET (RETURN/RELIEF)
- AIR INLET (EXHAUST)
- LOUVER
- T A — THERMOSTAT OR TEMPERATURE SENSOR (SUBSCRIPT A=AVERAGING, G=PROTECTIVE GUARD, C=CO2 SENSOR)
- H — HUMIDISTAT OR HUMIDITY SENSOR
- CO2 — CARBON DIOXIDE SENSOR
- SD — SMOKE DETECTOR

GENERAL SYMBOLS

- 1 / M5.01 — SECTION IDENTIFYING NUMBER; CROSS-SECTION SYMBOL; SHEET WHERE SECTION IS SHOWN
- 1 / M6.01 — DETAIL IDENTIFYING NUMBER; DETAIL SYMBOL; SHEET WHERE DETAIL IS SHOWN
- POINT OF CONNECTION (POC) SYMBOL
- AHU-1 / AHU-1 — EQUIP. TYPE-NUMBER (SEE SCHEDULES); EQUIPMENT IDENTIFIER (OPTIONAL TAG STYLE)
- SIZE # CFM — DIFFUSER OR REGISTER/GRILLE TAG; CFM VALUE; DIFFUSER TYPE (SEE SCHEDULES); DIFFUSER SIZE
- 1 — REVISION CLOUD AND REVISION NUMBER

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DATE 12/18/23

SHEET NAME
MECHANICAL LEGENDS & ABBREVIATIONS

SHEET M0.01

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HOUSEKEEPING PAD SCHEDULE

EQUIPMENT SERVED	LOCATION ROOM #	CONC. PAD SIZE (L X W)	CONC. PAD THICKNESS (")	NOTES
HYDRONIC PUMPS	MECH. G101	44'x8'	4"	1 2
BOILERS, EXPANSION TANK, GLYCOL FEEDER, & RECOVERY TANK	MECH. G101	20'x8'	4"	1 2 3
AIR SEPARATORS	MECH. G101	10'x8'	4"	1 2
WATER HEATERS	MECH. G101	30'x10'	4"	1 2
WATER SOFTENER	MECH. G101	12'x10'	4"	1 2
DOMESTIC WATER PUMP	MECH. G101	10'x10'	4"	1 2
CHILLER	UTILITY YARD	30'x9'	8"	1 2
HRU-1	MEZZ.	22' x 10'	4"	1 2
HRU-2	MEZZ.	21' x 12'	4"	1 2
AC-1	MEZZ.	4' x 8'	4"	1 2

NOTES:

1. VERIFY EQUIPMENT PAD SIZE WITH ACTUAL DIMENSIONS OF EQUIPMENT TO BE PROVIDED AND ADJUST TO PROVIDE A MINIMUM OF 12" (MECHANICAL ROOMS) OR 6" (ROOF TOP EQUIPMENT) OVERLAP IN EVERY DIRECTION.
2. CONCRETE HOUSEKEEPING PADS ARE NOT PROVIDED BY DIV. 22/23
3. PROVIDE CORNER CUTS WHERE NECESSARY TO MAINTAIN WALKING CLEARANCE IN MECHANICAL ROOM.

AIR OUTLETS SCHEDULE

#	MFR	MODEL	SERVICE	TYPE	MATERIAL	PATTERN	BLADE SPC (")	BLADE POS	BLADE DEFL (°)	NOTES
1	PRICE	SMCD	SUPPLY	DIFFUSER	STEEL	4-WAY ADJUST.	-	-	-	1 2 3 4
2	PRICE	530	RETURN/ EXHAUST/ TRANSFER	GRILLE	STEEL	FIXED	3/4"	FACE HORIZ.	45	1 2 3 4
3	PRICE	510	SUPPLY	GRILLE	STEEL	FIXED	3/4"	FACE HORIZ.	0	1 2 3 4 5
4	PRICE	SDS150	SUPPLY	LINEAR SLOT DIFFUSER	STEEL	ADJ. ICE TONGS	1-1/2"	3 SLOTS	-	1 2 3 7 8
5	PRICE	SDR100	RETURN	LINEAR SLOT DIFFUSER	STEEL	ADJ. ICE TONGS	1"	3 SLOTS	-	1 2 3 7 8
6	PRICE	RCD	SUPPLY	DIFFUSER	STEEL	FIXED	ADJ.	-	ADJ.	1 2 3
7	HALTON	KCD	SUPPLY	KITCHEN CEILING DIFFUSER	STEEL	FIXED	-	10" DIA INLET	-	1 2 3

NOTES:

1. FINISH ON OUTLETS TO BE WHITE.
2. PROVIDE BALANCING DAMPER IN BRANCH DUCT SERVING AIR OUTLET AT TAKEOFF FROM TRUNK DUCT.
3. PROVIDE TRANSITION FROM AIR OUTLET NECK TO BRANCH DUCT AS REQUIRED.
4. PROVIDE 24"x24" PAN FOR LAY-IN CEILING INSTALLATION AS REQUIRED (SEE HVAC FLOOR PLANS).
5. PROVIDE SPIRAL DUCT FRAME AS REQUIRED (SEE HVAC FLOOR PLANS). SEE DETAILS.
6. PROVIDE COLOR TO BE SELECTED BY ARCHITECT FROM STANDARD RANGE OF COLORS.
7. PROVIDE SDB PLENUM.
8. FINISH ON DIFFUSERS TO BE BLACK.

LOUVER SCHEDULE

#	MFR	MODEL	TYPE	SERVICE	SIZE (W"XH")	MIN FREE/AREA (SQ. FT)	CFM	FPM	MAX S.P. (" WC)	BLADE SP (")	BLADE POS	BLADE DEFL (°)	NOTES
L-1	RUSKIN	ELF365DX	STATIONARY LOUVER	MECH 129 INTAKE	24X18	1.2	600	500	0.06	6	FIXED	37.5	1 3 4
L-2	RUSKIN	ELF365DX	STATIONARY LOUVER	EF-2, 4, 5	60X18	6	3,000	500	0.06	6	FIXED	37.5	1 3 4
L-3	RUSKIN	ELF365DX	STATIONARY LOUVER	ELECT 127 INTAKE	24X18	1.2	600	500	0.06	6	FIXED	37.5	1 3 4
L-4	RUSKIN	ELF365DX	STATIONARY LOUVER	EF-9 EXHAUST	12X12	0.5	225	450	0.06	6	FIXED	37.5	1 3 4
L-5	RUSKIN	ELF365DX	STATIONARY LOUVER	HRU-1 EXHAUST	72X72	20	9,500	475	0.06	6	FIXED	37.5	1 3 4
L-6	RUSKIN	ELF365DX	STATIONARY LOUVER	HRU-1 INTAKE	72X72	20	9,500	475	0.06	6	FIXED	37.5	1 3 4
L-7	RUSKIN	ELF365DX	STATIONARY LOUVER	HRU-2 INTAKE	84X84	24	12,000	500	0.06	6	FIXED	37.5	1 3 4
L-8	RUSKIN	ELF365DX	STATIONARY LOUVER	MECH 200 INTAKE	24X18	1.2	600	500	0.06	6	FIXED	37.5	1 3 4
L-9	RUSKIN	ELF365DX	STATIONARY LOUVER	EF-20, EF-21	24X18	1.2	550	450	0.06	6	FIXED	37.5	1 3 4
L-10	RUSKIN	ELF365DX	STATIONARY LOUVER	EF-22	24X18	1.2	600	500	0.06	6	FIXED	37.5	1 3 4
L-11	RUSKIN	ELF365DX	STATIONARY LOUVER	COMP 126 INTAKE	30X14	1.2	600	500	0.06	6	FIXED	37.5	1 3 4
L-12	RUSKIN	ELF365DX	STATIONARY LOUVER	EF-23	30X14	1.2	600	500	0.06	6	FIXED	37.5	1 3 4

NOTES:

1. PROVIDE BIRDSCREEN.
2. PROVIDE MOTORIZED, INSULATED THERMALLY BROKEN, LEAKAGE CLASS 1 CONTROL DAMPER. SEE CONTROL DIAGRAMS.
3. PROVIDE CUSTOM COLOR BY ARCH.
4. SEE ARCHITECTURAL ELEVATIONS FOR EXACT LOUVER LOCATIONS.

ROOF HOOD SCHEDULE

#	MFR	MODEL	SERVICE	CFM	PD (WC")	ROOF OPENING/ THROAT SIZE L (")	ROOF OPENING/ THROAT SIZE W (")	ROOF OPENING/ THROAT SIZE AREA (SQ FT)	HOOD SIZE L (")	HOOD SIZE W (")	HOOD SIZE H (")	NOTES
RH-1	COOK	GR	EXHAUST	12,000	0.05	42	42	12.25	72	72	24-5/8	1

NOTES:

1. PROVIDE WITH FACTORY ROOF CURB

AIR COOLED CHILLER SCHEDULE

#	MFR	MODEL	TYPE	ACTUAL CAPACITY (TONS)	EER/IPLV	EVAPORATOR GPM	EVAPORATOR EWT (°F)	EVAPORATOR LWT (°F)	EVAPORATOR GLYCOL (%)	EVAPORATOR PD (FEET)	EVAPORATOR AMBIENT AIR (°F)	COMPRESSORS #	COMPRESSORS RLA	COND. FANS #	COND. FANS FLA	ELECTRICAL V/PH	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT (LBS)	NOTES
CH-1	YORK	YVAA0176	SCREW	149.8	11.34/19.95	358	56	44	30	15.8	105	2	116.3/122.4	6x2	2.4/2.4	460/3	300.4	400	16,000	1 2 3 4

NOTES:

1. R-513A REFRIGERANT
2. SEE SPECIFICATIONS FOR OPTIONS AND ACCESSORIES
3. PROVIDE ACOUSTIC BLANKET AND LOW SOUND FANS
4. EFFICIENCIES GIVEN ARE FOR AHRI CONDITIONS.

CHILLER ACOUSTIC DATA

#	SOUND MEASUREMENT RATING	SOUND MEASUREMENT DISTANCE	OCTAVE BAND FREQUENCY SOUND POWER/PRESSURE (DB) 63	125	250	500	1000	2000	4000	8000	NOTES
CH-1	SOUND POWER LEVELS	30'	67	67	68	71	67	62	58	54	1

NOTES:

1. SOUND DATA MEASURED IN ACCORDANCE WITH AHRI STANDARD 370.

PUMP SCHEDULE

#	MFR	MODEL	TYPE	SERVICE	SIZE	FLOW (GPM)	HEAD (FT)	RPM	IMP (IN)	EFF	ELECTRICAL HP	ELECTRICAL V/PH	ELECTRICAL RPM	GLYCOL	WT (LBS)	NOTES
HWP-1	ARMSTRONG	4300	SPLIT COUPLED VERTICAL IN-LINE	HEATING WATER	4 X 4 X 11.5	400	100	1800 VFD	10.89	75%	20	460/3	1700	30%	750	1 2
HWP-2	ARMSTRONG	4300	SPLIT COUPLED VERTICAL IN-LINE	HEATING WATER	4 X 4 X 11.5	400	100	1800 VFD	10.89	75%	20	460/3	1700	30%	750	1 2
BP-1	ARMSTRONG	4380	CLOSE COUPLED VERTICAL IN-LINE	BOILER CIRC	3 X 3 X 6	150	15	1800 VFD	4.94	71%	1	460/3	1760	30%	250	1 3
BP-2	ARMSTRONG	4380	CLOSE COUPLED VERTICAL IN-LINE	BOILER CIRC	3 X 3 X 6	150	15	1800 VFD	4.94	71%	1	460/3	1760	30%	250	1 3
CWP-1	ARMSTRONG	4300	SPLIT COUPLED VERTICAL IN-LINE	CHILLED WATER	4 X 4 X 11.5	400	100	1800 VFD	10.83	75%	20	460/3	1713	30%	750	1 2
CHP-1	ARMSTRONG	4300	SPLIT COUPLED VERTICAL IN-LINE	CHILLER CIRC-CLG	4 X 4 X 11.5	360	65	1800 VFD	10.03	71%	15	460/3	1561	30%	750	1 3

NOTES:

1. GLYCOL HAS BEEN ACCOUNTED FOR IN BOTH PUMP HORSEPOWER AND SYSTEM HEAD INDICATED.
2. VARIABLE FLOW/SPEED APPLICATION.
3. CONSTANT FLOW/SPEED APPLICATION. VFD FOR SOFT START, DISCONNECT AND BALANCING PURPOSES.

BOILER SCHEDULE

#	MFR	MODEL	CAPACITY (MBH) INPUT	CAPACITY (MBH) OUTPUT	CAPACITY (MBH) TURN DOWN	HEATING WATER EWT	HEATING WATER LWT	HEATING WATER GPM	ELECTRICAL V/PH	ELECTRICAL MCA	ELECTRICAL MOC	AIR DIA (IN)	FLUE DIA (OUT)	OPER. WEIGHT (LBS)	AHRI THERMAL EFFICIENCY	NOTES
B-1	CLEAVER BROOKS	CFC-E 1500	1500	1427	10:1	120	140	154	120/1	15.5	20.0	8	8	2,778	96.0%	1 2 3 4
B-2	CLEAVER BROOKS	CFC-E 1500	1500	1427	10:1	120	140	154	120/1	15.5	20.0	8	8	2,778	96.0%	1 2 3 4

NOTES:

1. SIZED FOR 30% GLYCOL
2. PROVIDE WITH CONDENSATE NEUTRALIZATION KIT.
3. PROVIDE WITH 100 PSIG RELIEF VALVE.
4. PROVIDE WITH A TRANSFORMER AS NEEDED.

WATER TREATMENT SCHEDULE

#	MFR	DESCRIPTION	TYPE	TYPE	ELECTRICAL V/PH	ELECTRICAL MCA	ELECTRICAL MOC	NOTES
GF-1	FLINT SERVICES	GLYCOL FEEDER	DUAL PUMP	HW/CW LOOP	208/1	15.1	20	1 2
GT-1	FLINT SERVICES	GLYCOL RECOVERY TANK	30-GAL POLY	HEATING WATER LOOP	--	--	--	1
FLT-1	SHELCO	4F0S1 SIDESTREAM FILTER	200 MESH 75 MICRON CARTRIDGE	HEATING WATER LOOP	--	--	--	1
FLT-2	SHELCO	4F0S1 SIDESTREAM FILTER	200 MESH 75 MICRON CARTRIDGE	CHILLED WATER LOOP	--	--	--	1
PF-1	--	CHEMICAL BYPASS POT FEEDER	DOMED BOTTOM	HEATING WATER LOOP	--	--	--	1
PF-2	--	CHEMICAL BYPASS POT FEEDER	DOMED BOTTOM	CHILLED WATER LOOP	--	--	--	1

NOTES:

1. SYSTEM CONTAINS 30% PROPYLENE GLYCOL
2. PROVIDE DDC CONNECTION.

EXPANSION TANK SCHEDULE

#	MFR	MODEL	TYPE	SERVICE	VOLUME (GAL) TANK	VOLUME (GAL) ACCEPT REQ'D	FILL PRESS. (PSI)	MAX PRESS (PSI)	FILL TEMP (°F)	MAX TEMP (°F)	MAX WEIGHT (LBS)	NOTES
ET-1	ARMSTRONG	A400-L	BLADDER	HEATING WATER	106	106	12	75	50	140	750	1 2
ET-2	ARMSTRONG	A200-L	BLADDER	CHILLED WATER	53	53	12	75	50	65	300	1 2

NOTES:

1. 30% GLYCOL
2. FULL ACCEPTANCE REMOVABLE BLADDER.

AIR SEPARATOR SCHEDULE

#	MFR	MODEL	SERVICE	TYPE	FLOW (GPM)	INLET FPS	P.D. (FT)	CONN. (")	OP. WT. (LB)	NOTES
AS-1	SPIROVENT	VDN600FA	HEATING WATER	COMBO AIR/DIRT	400	4.4	1	6	2,000	1
AS-2	SPIROVENT	VDN600FA	CHILLED WATER	COMBO AIR/DIRT	400	4.4	1	6	2,000	1

NOTES:

1. SEE DETAILS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS & APPURTENANCES.

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AIR HANDLING UNIT SCHEDULE

#	MFR	MODEL #	LOCATION	AREA SERVED	SUPPLY FAN: MAX TOTAL CFM	MIN TOTAL CFM	OSA MAX CFM	TSP IN.WC.	ESP IN.WC.	RPM MAX	QTY	HP	RETURN FAN: MAX TOTAL CFM	MIN TOTAL CFM	TSP IN.WC.	ESP IN.WC.	MAX RPM	QTY	HP	HOT WATER HEATING: MBH	EDB	LDB	EWT	LWT	GPM	ROWS/ TUBES	WPD FT.WC.	CHILLED WATER COOLING: MBH	EDB	LDB	EWT	LWT	GPM	ROWS/ TUBES	WPD FT.WC.	SOUND OCTAVE BANDS (INLET/DISCHARGE): 62.5 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	WT LBS	ELECTRICAL: V/PH	MCA	MOP	NOTES
AHU-1	YORK/JCI	XTO	ROOF	KITCHEN	2,500	2,500	500	5.42	1.5	2,940	1	7.5	2,500	2,500	2.61	0.75	2,136	1	2.0	119	48	95	140	120	12.4	2/8	5.5	95	90	55	44	56	16.8	8/16	8.4	72/83	71/77	83/81	78/84	70/84	68/81	67/77	66/75	4,500	460/3	13.78	20	1 2 3 4
AHU-2	YORK/JCI	XTO	ROOF	COMMONS	6,000	6,000	1,200	6.04	2.0	2,263	1	10	6,000	6,000	2.69	1.00	1,855	1	5.0	484	22	95	140	120	50.8	3/6	7.8	283	98	55	44	56	49.4	6/12	17.1	76/88	78/82	88/89	79/87	75/85	74/81	74/79	73/78	6,000	460/3	22.23	30	1 2 3 5
AHU-3	YORK/JCI	XTO	ROOF	133, 133A, 133B, 133C	2,500	2,500	500	5.42	1.5	2,940	1	7.5	2,500	2,500	2.61	0.75	2,136	1	2.0	119	48	95	140	120	12.4	2/8	5.5	95	90	55	44	56	16.8	8/16	8.4	72/83	71/77	83/81	78/84	70/84	68/81	67/77	66/75	4,500	460/3	13.78	20	1 2 3 5

NOTES:

1. • SEE AHU DETAILS ON M5 SERIES SHEETS.
   • TOTAL STATIC PRESSURE SHALL INCLUDE 1.5" FOR LOADED FILTERS.
   • PROVIDE WITH THE FOLLOWING:
   - 18" ROOF CURB
   - 100% ECONOMIZER
   - COILS SIZED FOR 30% PROPYLENE GLYCOL
   - INTEGRAL PIPING VESTIBULE CONTAINING HEATING AND COOLING WATER PIPING. COORDINATE SIZE WITH ALL TRADES PRIOR TO ORDERING EQUIPMENT. REFER TO DETAILS.
   - VFD'S OR EC MOTORS WITH 0-10V REMOTE SIGNAL FROM BAS ON SUPPLY AND EXHAUST FANS. WHERE A FAN ARRAY IS INDICATED TO HAVE A VFD PROVIDE A SINGLE VFD FOR THE ARRAY.
2. PROVIDE WITH SINGLE POINT POWER CONNECTION WITH EXCEPTION TO A SEPARATE 120V CIRCUIT FOR INTERNAL LIGHTING AN CONVENIENCE OUTLET TO BE PROVIDED BY DIV 26. PROVIDE FACTORY INTERNAL WIRING FROM THE POINT OF CONNECTION. DISCONNECT BY DIV 26.
3. DDC CONTROLS BY CONTROL CONTRACTOR. SEE CONTROL DIAGRAM. PROVIDE AIRFLOW MEASURING STATIONS WHERE INDICATED ON DIAGRAMS.
4. PROVIDE 2-WAY HW + CW CONTROL VALVE.
5. PROVIDE 3-WAY HW + CW CONTROL VALVE.

HEAT RECOVERY UNIT SCHEDULE

#	MFR	MODEL #	LOCATION	AREA SERVED	SUPPLY FAN: MAX TOTAL CFM	MIN TOTAL CFM	TSP IN.WC.	ESP IN.WC.	RPM MAX	QTY	HP	RETURN FAN: MAX TOTAL CFM	MIN TOTAL CFM	TSP IN.WC.	ESP IN.WC.	MAX RPM	QTY	HP	HOT WATER HEATING: MBH	EDB	LDB	EWT	LWT	GPM	ROWS/ FPI	WPD FT.WC.	HEAT RECOVERY - SUMMER: OUTDOOR AIR CFM	OUTDOOR AIR EDB	OUTDOOR AIR EWB	OUTDOOR AIR LDB	OUTDOOR AIR LWB	EXHAUST CFM	EXHAUST EDB	EXHAUST RH(%)	SENS. EFF. (%)	HEAT RECOVERY - WINTER: OUTDOOR AIR EDB	OUTDOOR AIR EWB	OUTDOOR AIR LDB	OUTDOOR AIR LWB	EXHAUST EDB	EXHAUST RH(%)	SENS. EFF. (%)	SOUND OCTAVE BANDS (INLET/DISCHARGE): 62.5 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	WT LBS	ELECTRICAL: V/PH	MCA	MOP	NOTES
HRU-1	INNOVENT	ERU-OU-PL	MECH. MEZZ.	AREAS A & C	9,500	9,500	5.72	3.00	2,562	2	7.5	9,500	9,500	3.68	1.50	2,245	2	5.0	400	41.2	80	180	160	40.9	1/10	3.4	9,500	101	65	86	62	9,500	75	45	60	0.0	-1.5	40	33	70	30	57	82/91	80/87	94/96	86/94	84/95	83/89	81/86	77/81	10,000	460/3	35.4	40	1 2 3 4 5 6 7 8 9
HRU-2	INNOVENT	ERU-OU-PL	MECH. MEZZ.	AREAS B & D	12,000	12,000	5.78	3.00	2,289	2	10.0	12,000	12,000	3.77	1.50	3,392	2	7.5	515	40	80	180	160	52.7	1/10	6.1	12,000	101	65	86	62	12,000	75	45	60	0.0	-1.5	40	33	70	30	57	90/90	86/86	96/97	86/94	86/96	84/88	81/85	78/80	11,000	460/3	47.8	60	1 2 3 4 5 6 7 8 9

NOTES:

1. SEE M5 SERIES SHEETS FOR OVERALL UNIT DIMENSIONS AND CONFIGURATION
2. PROVIDE WITH SINGLE POINT POWER CONNECTION. DISCONNECT BY DIV 26. A SEPARATE 120V CIRCUIT FOR INTERNAL LIGHTING AN CONVENIENCE OUTLET TO BE PROVIDED BY DIV 26. PROVIDE FACTORY INTERNAL WIRING FROM THE POINT OF CONNECTION.
3. DDC CONTROLS BY CONTROL CONTRACTOR.
4. INDOOR CONSTRUCTION. TO BE MOUNTED ON CONCRETE PAD
5. COILS SIZED FOR 30% PROPYLENE GLYCOL.
6. TOTAL STATIC PRESSURE SHALL INCLUDE 1.5" FOR LOADED FILTERS.
7. PROVIDE A VFD FOR EACH SUPPLY AND EXHAUST FAN.
8. PROVIDE WITH ENTHALPIC PLATE ENERGY RECOVERY WITH BYPASS.
9. PROVIDE 2-WAY HW + CW CONTROL VALVE.

HIGH VOLUME LOW SPEED CEILING FAN SCHEDULE

#	MFR	MODEL	SIZE	SERVICE	DRIVE	MAX FAN RPM	SOUND (DBA)	IP RATING	ELECTRICAL: V/PH	AMPS	WEIGHT (LBS)	NOTES
CF-1	DELTA T CORP.	i6	72"	CR-7	DIRECT	140	<35	IP43	120/1	10	50	1 2 3 4 5 6
CF-2	DELTA T CORP.	i6	72"	CR-7	DIRECT	140	<35	IP43	120/1	10	50	1 2 3 4 5 6
CF-3	DELTA T CORP.	i6	72"	CR-7	DIRECT	140	<35	IP43	120/1	10	50	1 2 3 4 5 6
CF-4	DELTA T CORP.	i6	72"	CR-8	DIRECT	140	<35	IP43	120/1	10	50	1 2 3 4 5 6
CF-5	DELTA T CORP.	i6	72"	CR-8	DIRECT	140	<35	IP43	120/1	10	50	1 2 3 4 5 6
CF-6	DELTA T CORP.	i6	72"	CR-8	DIRECT	140	<35	IP43	120/1	10	50	1 2 3 4 5 6

NOTES:

1. DELTA T CORP. D.B.A. "BIG ASS FANS". MFR LABELING / BRANDING SHALL NOT BE EXPOSED TO VIEW.
2. PROVIDE FACTORY EXTENSION TUBE AS NEEDED SO THAT FAN IS INSTALLED AT 16' ELEVATION A.F.F.
3. SUBMIT TO ARCH FOR COLOR CHOICES.
4. PROVIDE WITH FACTORY - CERTIFIED INSTALLATION.
5. PROVIDE CONTROLS INTERFACE TO ALLOW STARTING, STOPPING, AND SPEED CONTROL THROUGH THE DDC.
6. DISCONNECT PROVIDED BY DIV 26. COORDINATE WITH DIV 26.

AIR CURTAIN FAN SCHEDULE

#	MFR	MODEL	SERVICE	CFM	FPM	DIMENSIONS (IN): WIDTH	HEIGHT	DEPTH	ELECTRICAL: V/PH	FLA	WEIGHT (LBS)	NOTES
ACR-1	QMARK	MLP42001110GA	KITCHEN DOOR	1200	1800	42	8	9	120/1	1.6	37	1

NOTES:

1. FEATURES, OPTIONS AND ACCESSORIES SHALL INCLUDE:
   - PROVIDE DOOR LIMIT SWITCH FOR AUTO ON/OFF CONTROL FOR EACH UNIT
   - PROVIDE WASHABLE ALUMINUM AIR FILTER KIT.
   - COLOR BY ARCHITECT.
   - INSTALL OVER DOORWAY PER MANUFACTURER RECOMMENDATIONS.

FAN SCHEDULE

#	MFR	MODEL	TYPE	SERVICE	CFM	DRIVE	ESP (")	FAN RPM	INLET SONES	MOTOR: HP	MOTOR: V/PH	DAMPER: TYPE	DAMPER: V/PH	WT (LBS)	NOTES
EF-1	COOK	GC-148	CABINET	KITCHEN, RR 131B	75	DIRECT	.25	632	.3	1/25	115/1	N/A	N/A	15	2 3 5
EF-2	COOK	GN1000	INLINE	GENERAL ADMIN	1,500	DIRECT	.50	1,100	5.5	1/2	115/1	AUTO	115/1	85	2 3 5
EF-3	FANTECH	DEDPV-705 UL	INLINE	W/D BOOSTER	N/A	DIRECT	N/A	N/L	N/L	0.75A	115/1	N/A	N/A	10	2 3 5
EF-4	COOK	GNVF-700	INLINE	ELECTRICAL 127	400	EC	.30	1,086	2.5	1/3	115/1	AUTO	115/1	40	2 3 5
EF-5	COOK	GNVF-700	INLINE	MECHANICAL 129	600	EC	.30	1,313	4.5	1/3	115/1	AUTO	115/1	40	2 3 5
EF-6	COOK	GNVF-700	INLINE	PRINTER 129A	400	EC	.50	1,309	4.0	1/3	115/1	AUTO	115/1	40	2 3 5 8
EF-7	COOK	60SQN-B	INLINE	ROOM 121 SNORKLE	150	BELT	3.0	3,704	25.0	1	115/1	AUTO	115/1	80	2 3 5 8
EF-8	COOK	GC-148	CABINET	RR 146B	75	DIRECT	.25	632	.3	1/25	115/1	N/A	N/A	15	2 3 5
EF-9	COOK	GNVF-500	INLINE	RR 210, CUST 211	225	EC	.25	1,120	2.5	1/6	115/1	AUTO	115/1	35	2 3 5
EF-10	COOK	101 ACED	DOWNBLAST	STUDENT STORE	400	EC	.30	1,101	4.9	1/8	115/1	AUTO	115/1	15	1 2 3 5 7 8
EF-11	COOK	135 ACED	DOWNBLAST	GENERAL EXHAUST	1,375	EC	.50	1,190	9.7	1/3	115/1	AUTO	115/1	25	1 2 3 5
EF-12	COOK	GNVF-700	INLINE	ROOM 151 3D PRINT	400	EC	.50	1,309	4.0	1/3	115/1	AUTO	115/1	40	2 3 5 8
EF-13	COOK	150 VCRHD	UPBLAST	DISHWASHER	600	EC	.75	1,165	6.9	1/6	115/1	AUTO	115/1	90	1 2 3 5
EF-14	COOK	210 VCRD-HP	UPBLAST	KITCHEN	2,500	EC	1.5	1,154	14.2	1.25	115/1	N/A	N/A	220	1 2 3 4 5
EF-15	COOK	GNVF-700	INLINE	MECH 200	600	EC	.50	1,483	5.0	1/3	115/1	AUTO	115/1	40	2 3 5
EF-16	COOK	100TCNHBLE06	UPBLAST	FUME HOOD	600	BELT	.70	2,600	15.0	3/4	115/1	N/A	N/A	270	1 2 3 4 5 6
EF-17	COOK	100TCNHBLE06	UPBLAST	FUME HOOD	600	BELT	.70	2,600	15.0	3/4	115/1	N/A	N/A	270	1 2 3 4 5 6
EF-18	COOK	100TCNHBLE06	UPBLAST	FUME HOOD	600	BELT	.70	2,600	15.0	3/4	115/1	N/A	N/A	270	1 2 3 4 5 6
EF-19	COOK	GNVF-900	INLINE	CHEM PREP	700	EC	.50	998	3.0	1/2	115/1	AUTO	115/1	85	2 3 5
EF-20	COOK	60SQN-B	INLINE	ROOM 119 SNORKLE	150	BELT	3.0	3,704	25.0	1	115/1	AUTO	115/1	80	2 3 5 8
EF-21	COOK	GN1000	INLINE	AREA B&D GEN EXHAUST	1,500	DIRECT	.50	1,100	5.5	1/2	115/1	AUTO	115/1	85	2 3 5
EF-22	COOK	GNVF-700	INLINE	ROOM 120 3D PRINT	600	EC	.50	1,483	5.0	1/3	115/1	AUTO	115/1	40	2 3 5 8
EF-23	COOK	GNVF-700	INLINE	COMP ROOM 126	600	EC	.50	1,483	5.0	1/3	115/1	AUTO	115/1	40	2 3 5

NOTES:

1. PROVIDE WITH MFR'S ROOF CURB. COORDINATE WITH ROOF SLOPE TO PROVIDE LEVEL FAN MOUNTING SURFACE 18" ABOVE ROOF INSULATION.
2. PROVIDE WITH MOTORIZED EXHAUST DAMPER WIRED IN PARALLEL WITH FAN POWER (OPENS WHEN FAN RUNS).
3. PROVIDE MOTOR-RATED RELAY. DISCONNECTS BY DIV. 26.
4. PROVIDE WITH VENTED CURB EXTENSION.
5. SEE CONTROLS DIAGRAMS FOR OPERATION AND INTEGRATION.
6. INTERLOCK WITH FUME HOOD (NOT IN DIV. 23).
7. FAN TO BE CAPABLE OF TWO-SPEED OPERATION.
8. INTERLOCK WITH WALL SWITCH.

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PASCO, WASHINGTON 99301

DATE 12/18/23

SHEET NAME
MECHANICAL SCHEDULES

SHEET M1.02

12/18/2023 5:56:29 PM

AIR VALVE SCHEDULE

#	MFR	MODEL	SIZE	MIN OSA CFM	MAX OSA CFM	MAX ΔP ("WG)	NC RAD/ DISCH	NOTES
AV-101	PRICE	SDV	4	25	125	0.25	<20	1 2
AV-103	PRICE	SDV	12	1,425	1,425	0.25	<20	1 2
AV-112	PRICE	SDV	4	35	175	0.25	<20	1 2
AV-113	PRICE	SDV	7	105	525	0.25	<20	1 2
AV-114	PRICE	SDV	7	115	575	0.25	<20	1 2
AV-115	PRICE	SDV	4	35	175	0.25	<20	1 2
AV-117	PRICE	SDV	4	30	150	0.25	<20	1 2
AV-118	PRICE	SDV	7	100	500	0.25	<20	1 2
AV-119	PRICE	SDV	16	300	2,160	0.25	<20	1 2 3
AV-120	PRICE	SDV	6	75	375	0.25	<20	1 2
AV-121	PRICE	SDV	14	300	1,800	0.25	<20	1 2 3
AV-138	PRICE	SDV	5	40	200	0.25	<20	1 2
AV-144	PRICE	SDV	7	105	525	0.25	<20	1 2
AV-145	PRICE	SDV	7	105	525	0.25	<20	1 2
AV-146	PRICE	SDV	4	30	150	0.25	<20	1 2
AV-148	PRICE	SDV	4	35	175	0.25	<20	1 2
AV-149	PRICE	SDV	7	110	550	0.25	<20	1 2
AV-150	PRICE	SDV	7	110	550	0.25	<20	1 2
AV-151	PRICE	SDV	7	115	575	0.25	<20	1 2
AV-205	PRICE	SDV	4	30	150	0.25	<20	1 2
AV-206	PRICE	SDV	7	105	525	0.25	<20	1 2
AV-207	PRICE	SDV	7	100	500	0.25	<20	1 2
AV-208	PRICE	SDV	7	115	575	0.25	<20	1 2
AV-209	PRICE	SDV	6	75	375	0.25	<20	1 2
AV-212	PRICE	SDV	4	25	125	0.25	<20	1 2
AV-213	PRICE	SDV	7	110	550	0.25	<20	1 2
AV-214	PRICE	SDV	7	110	550	0.25	<20	1 2
AV-215	PRICE	SDV	7	110	550	0.25	<20	1 2
AV-217	PRICE	SDV	8	120	600	0.25	<20	1 2
AV-218	PRICE	SDV	7	100	500	0.25	<20	1 2
AV-219	PRICE	SDV	7	110	550	0.25	<20	1 2
AV-220	PRICE	SDV	7	110	550	0.25	<20	1 2
AV-221	PRICE	SDV	5	40	200	0.25	<20	1 2
AV-222	PRICE	SDV	4	30	150	0.25	<20	1 2
AV-225	PRICE	SDV	14	300	1,800	0.25	<20	1 2 3
AV-226	PRICE	SDV	16	300	2,160	0.25	<20	1 2 3
AV-227	PRICE	SDV	16	300	2,460	0.25	<20	1 2 3

NOTES:

1. DDC CONTROLS BY CONTRACTOR. SEE CONTROL DIAGRAMS.
2. AV NUMBER TO MATCH CORRESPONDING FC NUMBER.
3. MAX OSA IS PURGE EXHAUST. OSA RANGE FOR CO2 CONTROL TO BE 300-800 CFM.

FAN COIL UNIT SCHEDULE

#	MFR	MODEL	UNIT SIZE	CONFIGURATION	SUPPLY CFM	ESP ("WC)	FAN SPEED/ RPM	HEATING WATER COIL								CHILLED WATER COIL										ELECTRICAL		WEIGHT LBS.	DISCHARGE SOUND POWERED BY OCTAVE BAND							SPACES SERVED	NOTES
								MBH	EDB (°F)	LDB (°F)	EWT (°F)	LWT (°F)	GPM	ROWS	WPD (FEET)	MBH (TOT)	MBH (SENS)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	EWT (°F)	LWT (°F)	GPM	ROWS	WPD (FEET)	V/PH	HP		63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ		
FC-101	ENVIROTEC	VDD	30	VERTICAL	2,350	0.8	1,197	83.15	65	97.8	140	120	8.7	2	1.31	69.37	69.37	82	62	53.9	51.2	44	56	12.2	6	7.68	460/3	1	550	61	77	75	73	71	68	67	101, 102, 109, 110, 111 123, 124, CR-3	1 2 3 4 5 6 8 9 10
FC-103	ENVIROTEC	VDD	16	VERTICAL	1,425	0.8	1,181	47.31	65	95.8	140	120	5	2	3.26	40.75	40.75	82	62	54.8	51.5	44	56	7.1	6	12.86	460/3	1	343	60	84	74	70	70	66	66	103, 103A, 122, 136, 137, CR-3	1 2 3 4 5 6 8 9 10
FC-112	ENVIROTEC	VDD	16	VERTICAL	1,400	0.8	1,173	46.78	65	96	140	120	4.9	2	3.22	40.01	40.01	82	62	54.8	51.6	44	56	7	6	12.38	460/3	1	343	60	84	74	70	70	65	66	104, 105, 108, 112, CR-2	1 2 3 4 5 6 8 9 10
FC-113	ENVIROTEC	VDD	30	VERTICAL	2,000	0.8	1,322	80.39	65	98.9	140	120	8.4	2	6.68	68.03	68.03	82	62	52.6	50.6	44	56	11.9	6	7.31	460/3	1.5	544	71	86	79	75	77	73	74	113, CR-2	1 2 3 4 5 6 8 9 10
FC-114	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	114	1 2 3 4 5 6 8 9 10
FC-115	ENVIROTEC	VDD	12	VERTICAL	950	0.8	1,410	33.63	65	97.8	140	120	3.5	2	4.47	27.29	27.29	82	62	54.7	51.5	44	56	4.8	6	5.52	460/3	1	296	58	81	72	69	70	67	64	115, CR-2	1 2 3 4 5 6 8 9 10
FC-117	ENVIROTEC	VDD	16	VERTICAL	1,450	0.8	1,203	47.84	65	95.6	140	120	5	2	3.37	44.72	44.64	82	62	52.7	50.6	44	56	7.8	6	15.38	460/3	1	343	61	85	74	70	71	66	66	117, 117A	1 2 3 4 5 6 8 9 10
FC-118	ENVIROTEC	VDD	16	VERTICAL	1,560	0.8	1,265	57.43	65	98.3	140	120	6	2	4.68	48.93	48.82	82	62	53	50.7	44	56	8.6	6	18.08	460/3	1	343	63	85	76	72	72	68	68	118	1 2 3 4 5 6 8 9 10
FC-119	ENVIROTEC	VDD	30	VERTICAL	2,160	0.8	1,322	80.39	65	98.9	140	120	8.4	2	6.68	68.03	68.03	82	62	52.6	50.6	44	56	11.9	6	7.31	460/3	1.5	544	71	86	79	75	77	73	74	119	1 2 3 4 5 6 8 9 10
FC-120	ENVIROTEC	VDD	16	VERTICAL	1,560	0.8	1,265	57.43	65	98.3	140	120	6	2	4.68	48.93	48.82	82	62	53	50.7	44	56	8.6	6	18.08	460/3	1	343	63	85	76	72	72	68	68	120	1 2 3 4 5 6 8 9 10
FC-121	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	121	1 2 3 4 5 6 8 9 10
FC-138	ENVIROTEC	VDD	20	VERTICAL	1,870	0.8	1,311	60.64	65	95.1	140	120	6.4	2	.83	57.62	57.62	82	62	52.7	50.6	44	56	10	6	9.69	460/3	1.5	406	67	85	77	73	75	71	70	100, 138, 139, 152, 153, CR-1	1 2 3 4 5 6 8 9 10
FC-144	ENVIROTEC	VDD	30	VERTICAL	2,225	0.8	1,331	80.06	65	98.4	140	120	8.4	2	1.23	69.3	69.3	82	62	52.4	50.5	44	56	12.2	6	7.68	460/3	1.5	544	71	86	79	75	77	73	74	141, 142, 143, 144, 144A	1 2 3 4 5 6 8 9 10
FC-145	ENVIROTEC	VDD	16	VERTICAL	1,600	0.8	1,265	57.43	65	98.3	140	120	6	2	4.68	48.93	48.82	82	62	53	50.7	44	56	8.6	6	18.08	460/3	1	343	63	85	76	72	72	68	68	145	1 2 3 4 5 6 8 9 10
FC-146	ENVIROTEC	VDD	16	VERTICAL	1,450	0.8	1,203	47.84	65	95.6	140	120	5	2	3.37	44.72	44.64	82	62	52.7	50.6	44	56	7.8	6	15.38	460/3	1	343	61	85	74	70	71	66	66	146, 146A	1 2 3 4 5 6 8 9 10
FC-148	ENVIROTEC	VDD	16	VERTICAL	1,550	0.8	1,245	56.3	65	98.7	140	120	5.9	2	4.52	44.74	47.6	82	62	52.8	50.6	44	56	8.4	6	17.53	460/3	1	343	62	85	75	71	72	67	67	148, CR-4	1 2 3 4 5 6 8 9 10
FC-149	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	149	1 2 3 4 5 6 8 9 10
FC-150	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	150	1 2 3 4 5 6 8 9 10
FC-151	ENVIROTEC	VDD	30	VERTICAL	2,180	0.8	1,322	80.39	65	98.9	140	120	8.4	2	6.68	68.03	68.03	82	62	52.6	50.6	44	56	11.9	6	7.31	460/3	1.5	544	71	86	79	75	77	73	74	151, 151A	1 2 3 4 5 7 8 9 10
FC-205	ENVIROTEC	HDD	16	HORIZONTAL	1,400	0.8	1,187	46.78	65	96	140	120	4.9	2	3.22	43.18	48.13	82	62	52.7	50.6	44	56	7.5	6	14.35	460/3	1	349	60	84	74	70	70	66	66	205, 205A	1 2 3 4 5 6 8 9
FC-206	ENVIROTEC	HDD	16	HORIZONTAL	1,590	0.8	1,183	53.58	65	96.1	140	120	5.6	2	0.66	47.06	47.06	82	62	54	51.2	44	56	8.3	6	6.63	460/3	1	410	62	84	74	71	71	66	67	206	1 2 3 4 5 6 8 9
FC-207	ENVIROTEC	VDD	16	VERTICAL	1,600	0.8	1,265	57.43	65	98.3	140	120	6	2	4.68	48.93	48.82	82	62	53	50.7	44	56	8.6	6	18.08	460/3	1	343	63	85	76	72	72	68	68	207	1 2 3 4 5 6 8 9 10
FC-208	ENVIROTEC	HDD	30	HORIZONTAL	2,190	0.8	1,183	80.39	65	98.9	140	120	8.4	2	6.68	68.03	68.03	82	62	52.6	50.6	44	56	11.9	6	7.31	460/3	1.5	551	71	86	79	75	77	73	74	208, CR-7	1 2 3 4 5 6 8 9
FC-209	ENVIROTEC	HDD	20	HORIZONTAL	1,715	0.8	1,209	59.83	65	97.2	140	120	8.7	2	7.36	49.8	49.8	82	62	54.5	51.4	44	56	8.7	6	7.36	460/3	1	410	63	84	75	71	72	67	68	209, 211	1 2 3 4 5 6 8 9
FC-212	ENVIROTEC	HDD	20	HORIZONTAL	1,850	0.8	1,291	62.65	65	96.4	140	120	9.6	2	8.91	54.34	54.34	82	62	54	51.2	44	56	9.6	6	8.91	460/3	1.5	410	67	85	77	73	75	70	70	212, CR-7, ST-2	1 2 3 4 5 6 8 9
FC-213	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	213	1 2 3 4 5 7 8 9 10
FC-214	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	214	1 2 3 4 5 6 8 9 10
FC-215	ENVIROTEC	HDD	20	HORIZONTAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.32	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	410	66	85	77	73	74	70	70	215	1 2 3 4 5 6 8 9
FC-217	ENVIROTEC	VDD	30	VERTICAL	2,570	0.8	1,260	89.82	65	97	140	120	9.4	2	8.24	81.44	81.44	82	62	52.2	50.4	44	56	14.2	6	10.34	460/3	1	544	63	78	76	74	73	69	69	202, 203, 204, 217	1 2 3 4 5 6 8 9 10
FC-218	ENVIROTEC	VDD	30	VERTICAL	2,160	0.8	1,322	80.39	65	98.9	140	120	8.4	2	6.68	68.03	68.03	82	62	52.6	50.6	44	56	11.9	6	7.31	460/3	1.5	544	71	86	79	75	77	73	74	218, CR-8	1 2 3 4 5 6 8 9 10
FC-219	ENVIROTEC	HDD	20	HORIZONTAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.32	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	410	66	85	77	73	74	70	70	219	1 2 3 4 5 6 8 9
FC-220	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	220	1 2 3 4 5 6 8 9 10
FC-221	ENVIROTEC	HDD	20	HORIZONTAL	1,850	0.8	1,291	62.65	65	96.4	140	120	9.6	2	8.91	54.34	54.34	82	62	54	51.2	44	56	9.6	6	8.91	460/3	1.5	410	67	85	77	73	75	70	70	221, CR-8, ST-1	1 2 3 4 5 6 8 9
FC-222	ENVIROTEC	VDD	16	VERTICAL	1,450	0.8	1,203	47.84	65	95.6	140	120	5	2	3.37	44.72	44.64	82	62	52.7	50.6	44	56	7.8	6	15.38	460/3	1	343	61	85	74	70	71	66	66	222, 222A	1 2 3 4 5 7 8 9 10
FC-225	ENVIROTEC	VDD	20	VERTICAL	1,800	0.8	1,277	61.63	65	96.8	140	120	6.5	2	3.22	52.3	52.3	82	62	54.3	51.4	44	56	9.1	6	8.12	460/3	1.5	406	66	85	77	73	74	70	70	225	1 2 3 4 5 7 8 9 10
FC-226	ENVIROTEC	VDD	30	VERTICAL	2,160	0.8	1,322	80.39	65	98.9	140	120	8.4	2	6.68	68.03	68.03	82	62	52.6	50.6	44	56	11.9	6	7.31	460/3	1.5	544	71	86	79	75	77	73	74	226	1 2 3 4 5 6 8 9 10
FC-227	ENVIROTEC	VDD	30	VERTICAL	2,460	0.8	1,231	87.1	65	97.3	140	120	9.1	2	1.43	73.45	73.45	82	62	54	51.2	44	56	12.8	6	8.43	460/3	1	544	62	77	76	73	72	69	68	227, 228, 228A	1 2 3 4 5 6 8 9 10

NOTES:

1. PROVIDE WITH SINGLE-POINT POWER CONNECTION. DISCONNECTS PROVIDED BY DIV 26.
2. SEE CONTROL DIAGRAMS & DETAILS FOR ADDITIONAL REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY COIL CONNECTION SIDE BEFORE ORDERING.
4. PROVIDE DIRECT-DRIVE FANS WITH VARIABLE SPEED EC MOTOR CONFIGURED FOR 2-10V INPUT CONTROL SIGNAL FROM DDC.
5. TOTAL STATIC PRESSURE SHALL INCLUDE:
   A. COOLING COIL
   B. HEATING COIL
   C. CABINET LOSS (INCLUDING DIRTY FILTER @ 1")
   D. EXTERNAL STATIC SCHEDULED (FILTER SHALL BE INCLUDED W/ CABINET LOSS)
6. PROVIDE 2-WAY HEATING & COOLING CONTROL VALVES ON HOT & CHILLED WATER COILS.
7. PROVIDE 3-WAY HEATING & COOLING CONTROL VALVE. ON HOT AND CHILLED WATER COILS.
8. PROVIDE ALL REQ'D COMPONENTS TO THE PRIMARY FAN ACCESS SIDE OF THE UNIT TO ENSURE TRUE "ALL ONE SIDED" ACCESSIBILITY.
9. ALL FAN EFFICIENCY GRADE SHALL BE NOT LESS THAN FEG 71 AS DEFINED IN AMCA 205
10. FLOOR-MOUNTED FAN COIL UNITS TO BE PLACED ON NEOPRENE ISOLATION PADS PER SPEC 22XXXX VIBRATION ISOLATION. NO HOUSEKEEPING PAD REQUIRED.

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ORION HIGH SCHOOL

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PASCO, WASHINGTON 99301

DATE **12/18/23**

SHEET NAME **MECHANICAL SCHEDULES**

SHEET **M1.03**

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SOUND ATTENUATOR SCHEDULE

#	MFR	MODEL	LOCATION	TYPE	WxH (IN)	LENGTH (IN)	CFM	FPM	IN.WG.	INSERTION LOSS (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	NOTES
SA-1	PRICE	ERM 48/9B	AHU-2 SUPPLY	ELBOW	30X30	39X39	6,000	960	0.07	6	10	14	18	21	20	17	15	1 2
SA-2	PRICE	ERM 48/9B	AHU-2 RETURN	ELBOW	30X30	39X39	6,000	960	0.07	7	11	15	19	22	20	17	15	1 2

NOTES:

1. PROVIDE DUCT TRANSITION AS NEEDED.
2. PROVIDE ACOUSTICAL CALCULATIONS FOR AIR SYSTEM TO SHOW THAT NC-35 OR BETTER IS BEING ACHIEVED IN THE SPACES BELOW IF OTHER THAN BASIS-OF-DESIGN AIR HANDLER OR SOUND ATTENUATOR ARE INSTALLED.

DUCTLESS SPLIT SYSTEM AC UNIT SCHEDULE

#	MFR	MODEL #	TYPE	LOCATION	COOLING CAPACITY MBH	COOLING CAPACITY SEER	FAN CFM	FAN SPEED	FAN WATTS	WEIGHT (LBS)	NOTES
AC-1	SAMSUNG	AC036MNTDCH/AA	SIDEWALL	ELEV. EQUIP. 125	36.0	18	770	HIGH	74	75	1 2 3 4 5
AC-2	SAMSUNG	AC036MNTDCH/AA	SIDEWALL	MDF 133D	36.0	18	770	HIGH	74	75	1 2 3 4 5
AC-3	SAMSUNG	AC036MNTDCH/AA	SIDEWALL	IDF 201	36.0	18	770	HIGH	74	75	1 2 3 4 5

NOTES:

1. SEE SPEC SECTION 238126.
2. AMBIENT OSA 95°F, RETURN AIR 80 / 67°F.
3. PROVIDE CONDENSATE PUMP.
4. PROVIDE HARDWIRED CONTROL.
5. INDOOR UNIT IS POWERED THROUGH OUTDOOR UNIT.

DUCTLESS SPLIT SYSTEM CONDENSING UNIT SCHEDULE

#	MFR	MODEL #	LOCATION	SERVING	NOM. CAP. TONS	AMB. DB (°F)	AMB. WB (°F)	REFRIG. TYPE	VOLT/PH	MCA	MOCP	WEIGHT (LBS)	NOTES
CU-1	SAMSUNG	AC036MXSCCC/AA	ROOF	AC-1	3.0	95	65	R-410A	208/1	19.5	20	220	1 2 3 4
CU-2	SAMSUNG	AC036JXADCH/AA	ROOF	AC-2	3.0	95	65	R-410A	208/1	23.2	35	220	1 2 3 4 5
CU-3	SAMSUNG	AC036MXSCCC/AA	ROOF	AC-3	3.0	95	65	R-410A	208/1	19.5	20	220	1 2 3 4

NOTES:

1. SEE SPEC SECTION 238126.
2. PROVIDE FACTORY PRE-CHARGED, INSULATED LINE SET SIZED FOR LONG LINE APPLICATION.
3. PROVIDE LOW AMBIENT KIT, WINTER START KIT AND WIND BAFFLES.
4. PROVIDE CRANK CASE HEATER.
5. UNIT TO BE A HEAT PUMP.

ELECTRIC UNIT HEATER SCHEDULE

#	MFR	MODEL	MOUNTING	COLOR	ELECTRICAL WATTS	ELECTRICAL V/PH	SERVICE	NOTES
UH-1	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	MECH/CUST 129	1
UH-2	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	FIRE RISER 128	1
UH-3	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	ELEC 127	1
UH-4	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	COMP 126	1
UH-5	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	MECH MEZZ 200	1
UH-6	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	MECH MEZZ 216	1
UH-7	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	MECH MEZZ 224	1
UH-8	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	MAINT. BLDG 301	1 2
UH-9	MARLEY	MUH0581	WALL HUNG 8-FT AFF	NORTHERN WHITE	5000	208/1	MAINT. BLDG 401	1 2

NOTES:

1. PROVIDE:
   - THERMAL OVERHEAT MANUAL RESET
   - UNIT HEATERS TO BE CONTROLLED BY DDC
   - PERMANENTLY LUBRICATED & ENCLOSED FAN MOTOR
   - AUTOMATIC FAN DELAY AT START-UP & SHUTDOWN
   - CONCEALED POWER ON/OFF SWITCH FOR MAINTENANCE
   - FACTORY DISCONNECT
   - MOUNTING KIT FOR SUSPENDED INSTALLATION
2. UNIT PROVIDED ONLY UNDER ALTERNATE BID. SEE FLOOR PLANS.

ELECTRIC WALL HEATER SCHEDULE

#	MFR	MODEL	TYPE	ELECTRICAL WATTS	ELECTRICAL V/PH	SERVICE	NOTES
EWH-1	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	CR-5	1
EWH-2	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	132	1
EWH-3	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	CR-3	1
EWH-4	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	100	1
EWH-5	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	CR-4	1
EWH-6	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	147	1
EWH-7	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	CR-2	1
EWH-8	BERKO	FRC	RECESSED 18" AFF	1,000	208/1	116	1

NOTES:

1. PROVIDE:
   - THERMAL OVERHEAT MANUAL RESET
   - BUILT-IN TAMPER-RESISTANT T-STAT
   - PERMANENTLY LUBRICATED & ENCLOSED FAN MOTOR
   - AUTOMATIC FAN DELAY AT START-UP & SHUTDOWN
   - CONCEALED POWER ON/OFF SWITCH FOR MAINTENANCE

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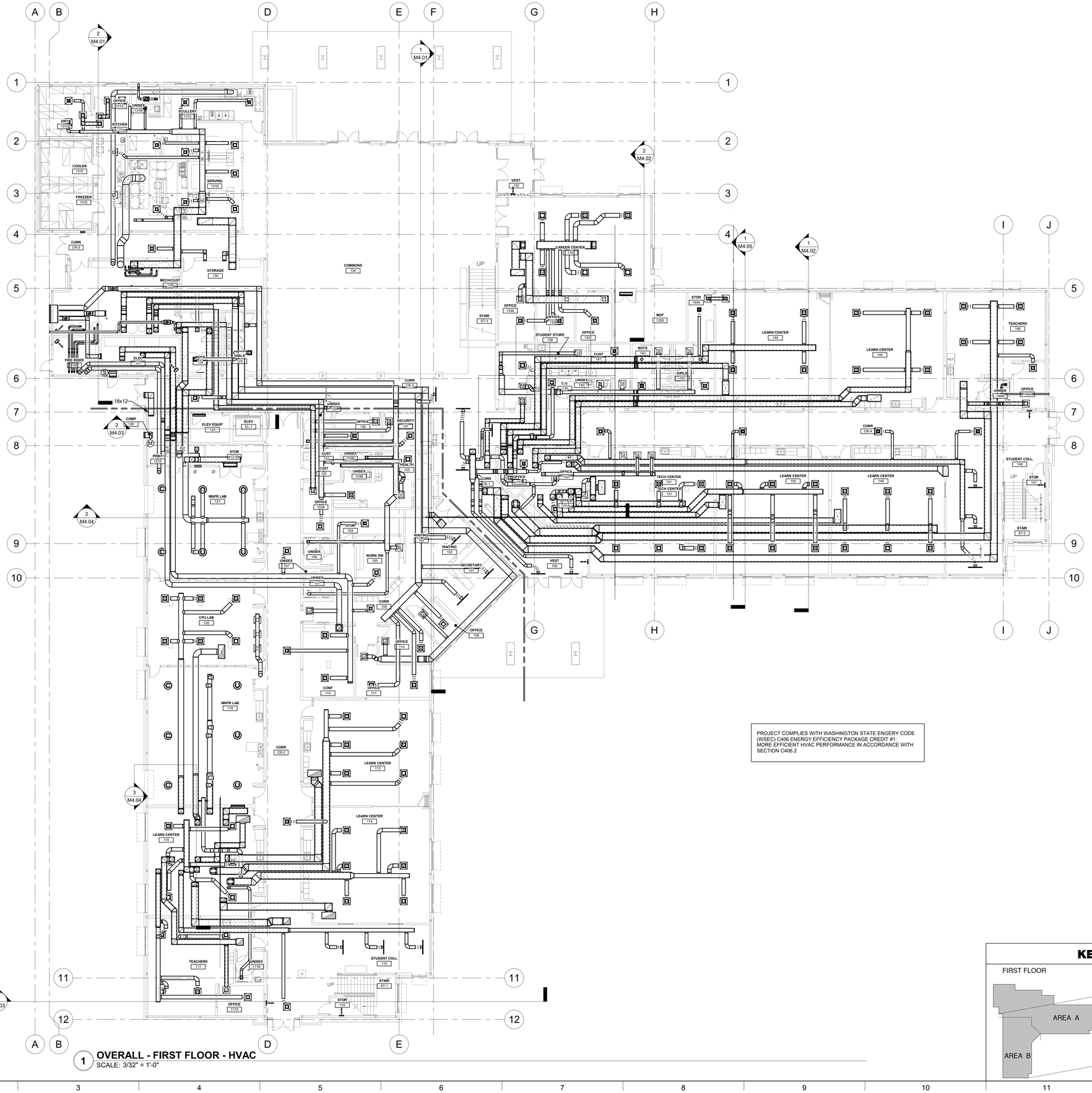
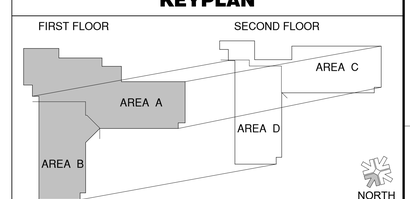


PROJECT COMPLIES WITH WASHINGTON STATE ENGERY CODE (WSEC) C406 ENERGY EFFICIENCY PACKAGE CREDIT #1: MORE EFFICIENT HVAC PERFORMANCE IN ACCORDANCE WITH SECTION C406.2

1 OVERALL - FIRST FLOOR - HVAC
SCALE: 3/32" = 1'-0"

KEYPLAN



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OVERALL PLAN - FIRST FLOOR - HVAC

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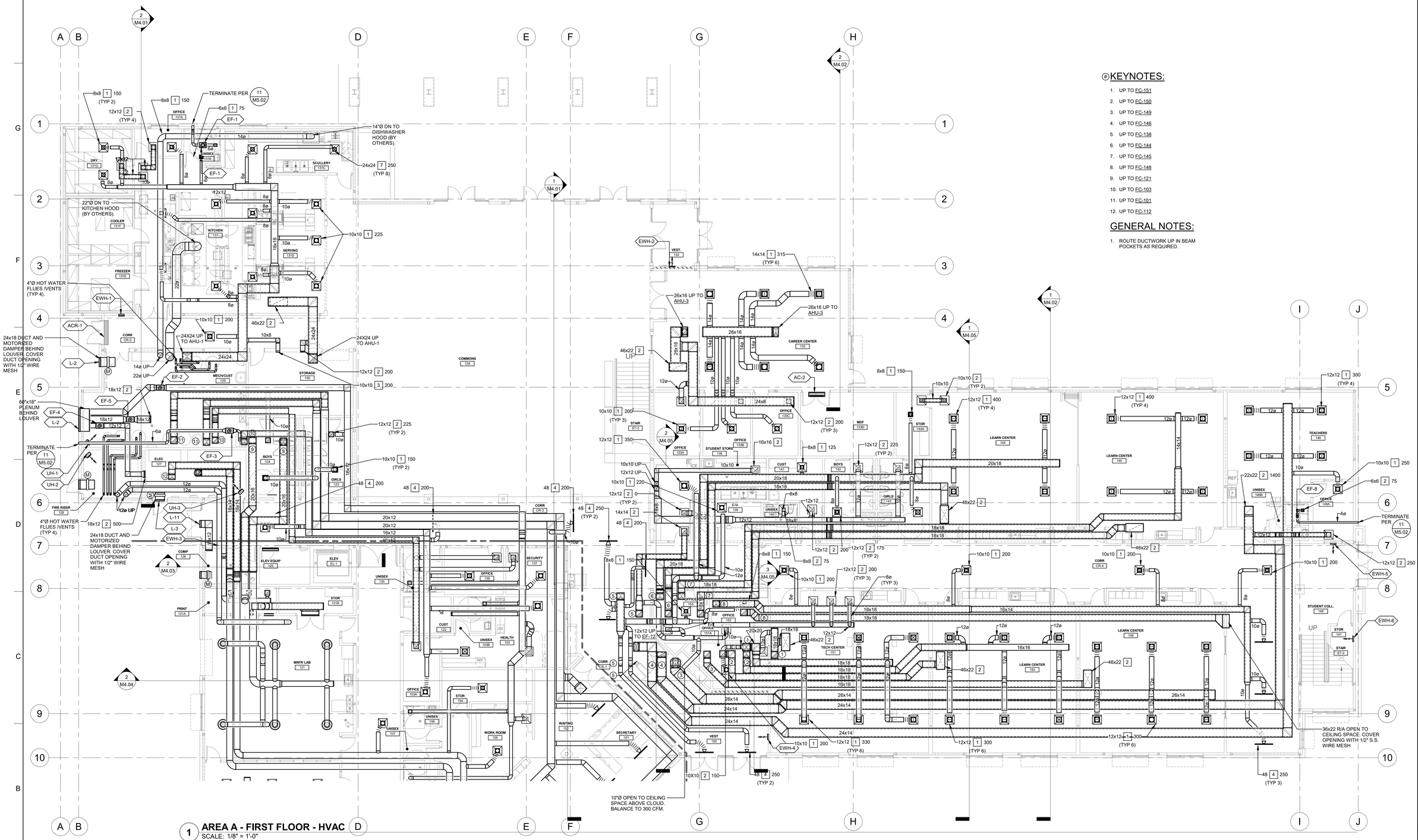


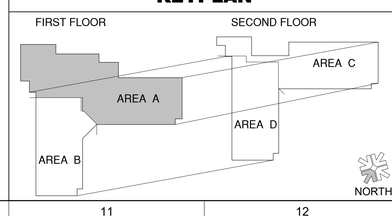
KEYNOTES:

1. UP TO FC-151
2. UP TO FC-150
3. UP TO FC-149
4. UP TO FC-146
5. UP TO FC-138
6. UP TO FC-144
7. UP TO FC-145
8. UP TO FC-148
9. UP TO FC-121
10. UP TO FC-103
11. UP TO FC-101
12. UP TO FC-112

GENERAL NOTES:

1. ROUTE DUCTWORK UP IN BEAM POCKETS AS REQUIRED.

KEYPLAN



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AREA A - FIRST FLOOR - HVAC

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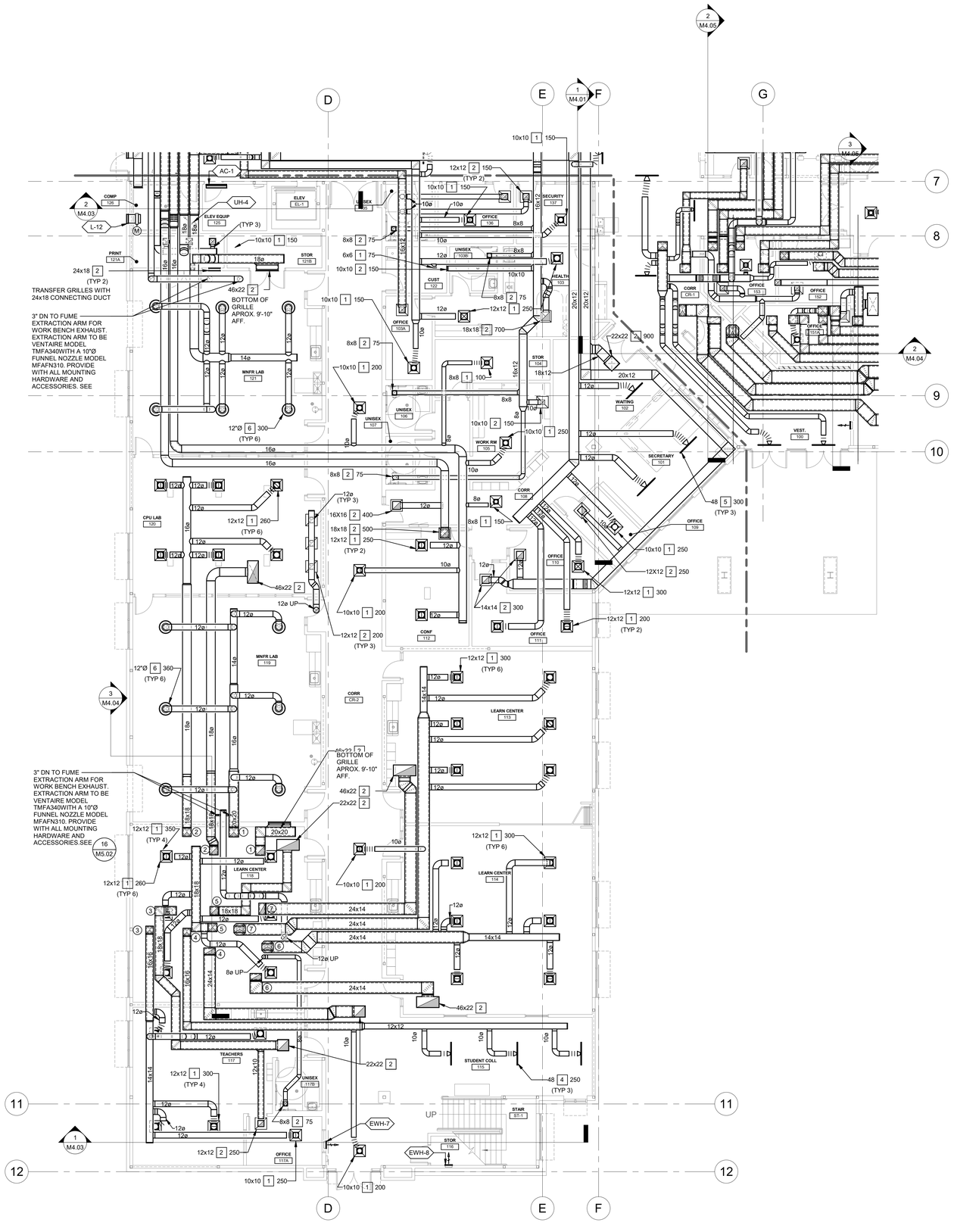

1 AREA B - FIRST FLOOR - HVAC

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

KEYNOTES:

1. UP TO FC-119
2. UP TO FC-120
3. UP TO FC-117
4. UP TO FC-115
5. UP TO FC-118
6. UP TO FC-114
7. UP TO FC-113

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AREA B - FIRST FLOOR - HVAC

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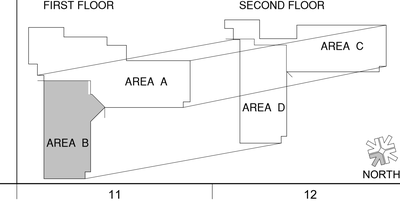
KEYPLAN



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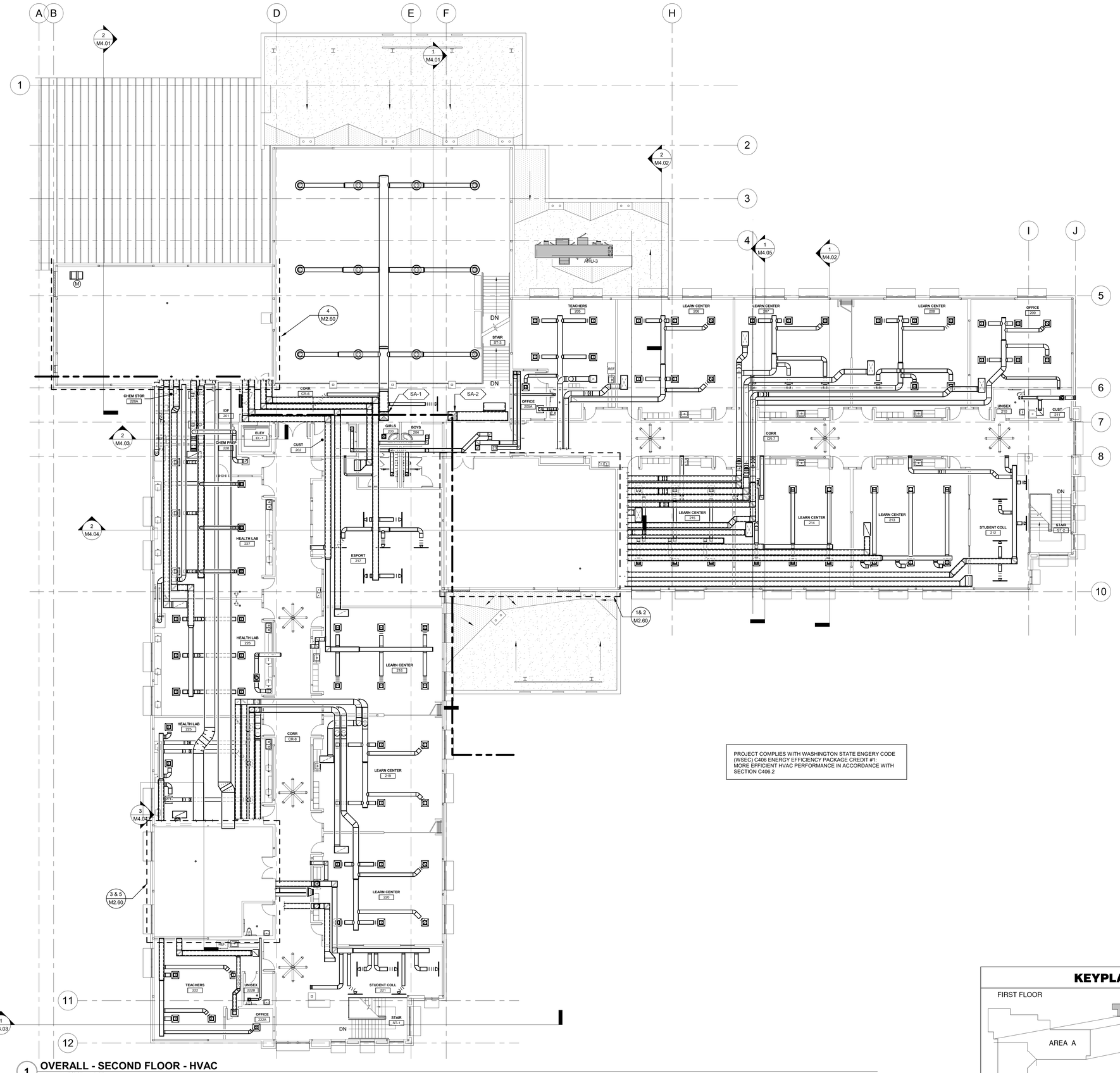
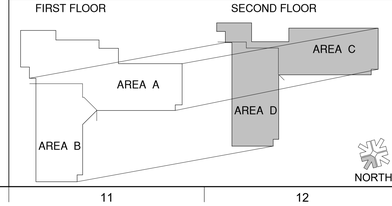


1 **OVERALL - SECOND FLOOR - HVAC**
SCALE: 3/32" = 1'-0"

PROJECT COMPLIES WITH WASHINGTON STATE ENGERY CODE (WSEC) C406 ENERGY EFFICIENCY PACKAGE CREDIT #1: MORE EFFICIENT HVAC PERFORMANCE IN ACCORDANCE WITH SECTION C406.2

KEYPLAN



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OVERALL PLAN - SECOND FLOOR - HVAC

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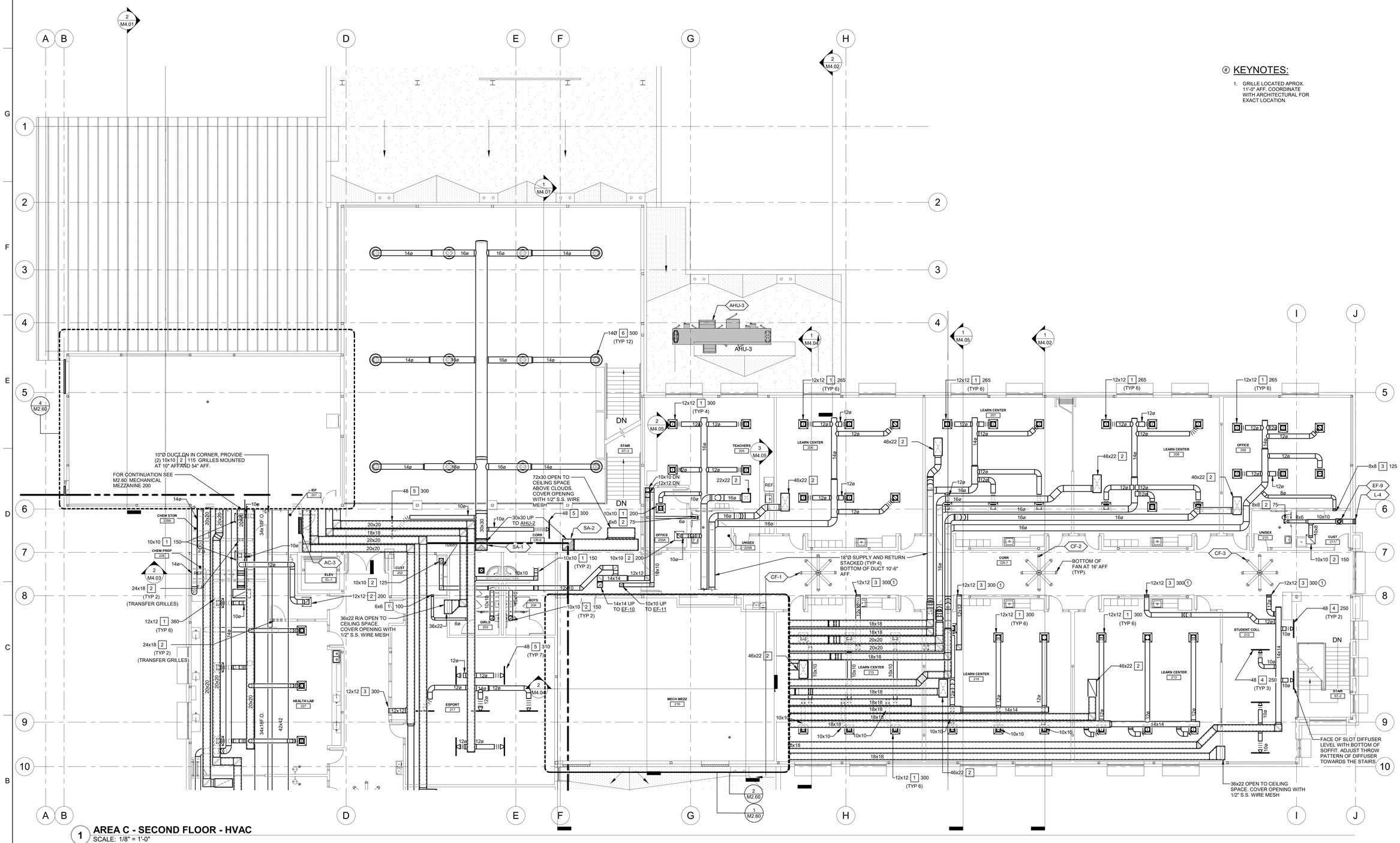
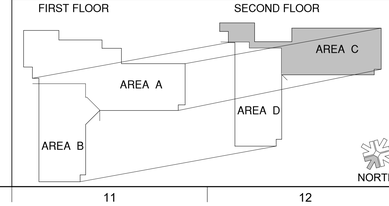


KEYNOTES:

1. GRILLE LOCATED APROX. 11'-0" AFF. COORDINATE WITH ARCHITECTURAL FOR EXACT LOCATION.

1 AREA C - SECOND FLOOR - HVAC
SCALE: 1/8" = 1'-0"

KEYPLAN



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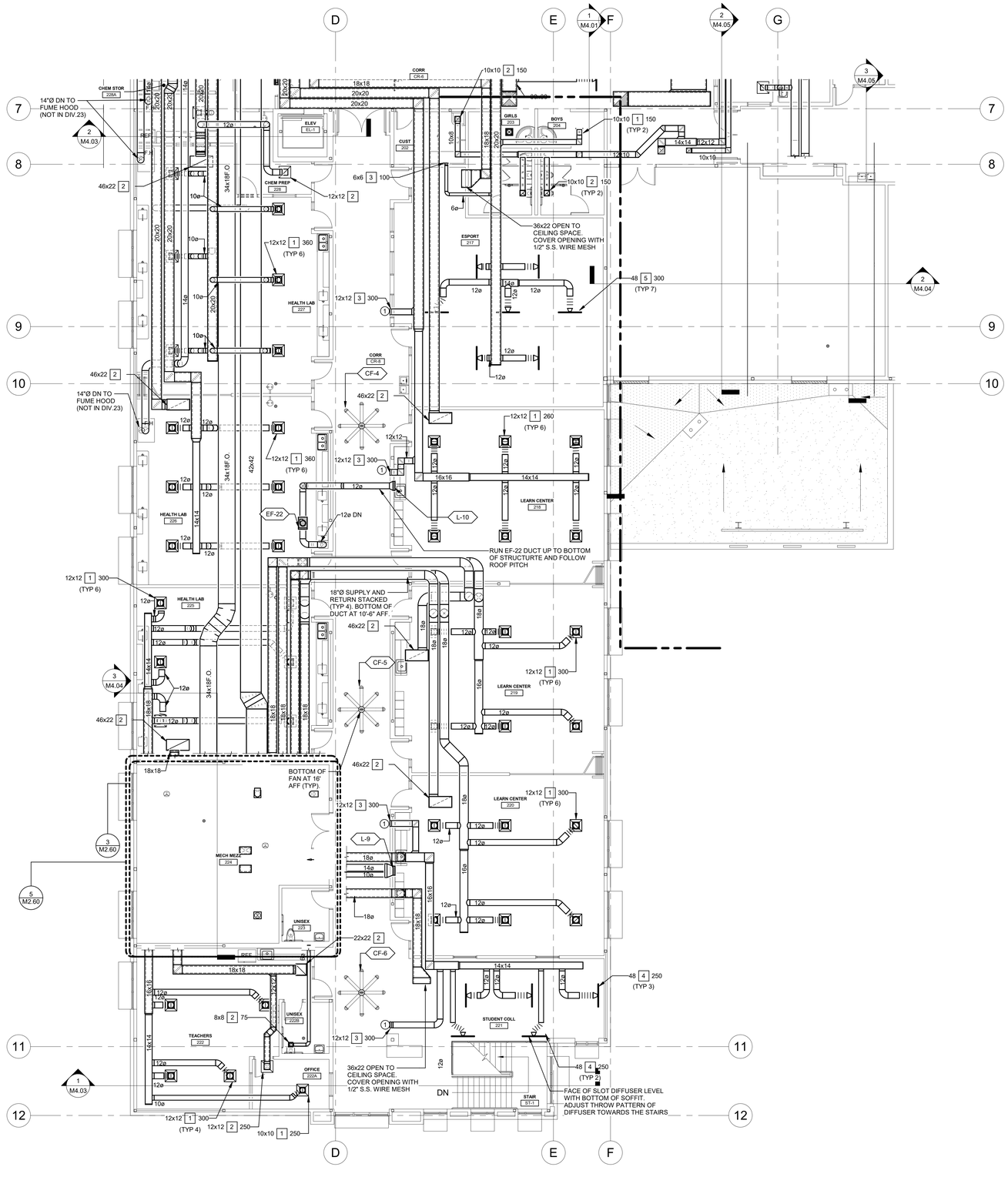
PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1815 E. SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/23

SHEET NAME
AREA C - SECOND FLOOR - HVAC

SHEET
M2.41

12/18/2023 5:06:39 PM

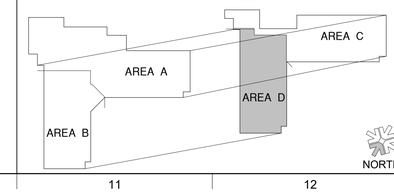


1 **AREA D - SECOND FLOOR - HVAC**
SCALE: 1/8" = 1'-0"

KEYNOTES:

1. GRILLE LOCATED APROX. 11'-0" AFF. COORDINATE WITH ARCHITECTURAL FOR EXACT LOCATION.

KEYPLAN



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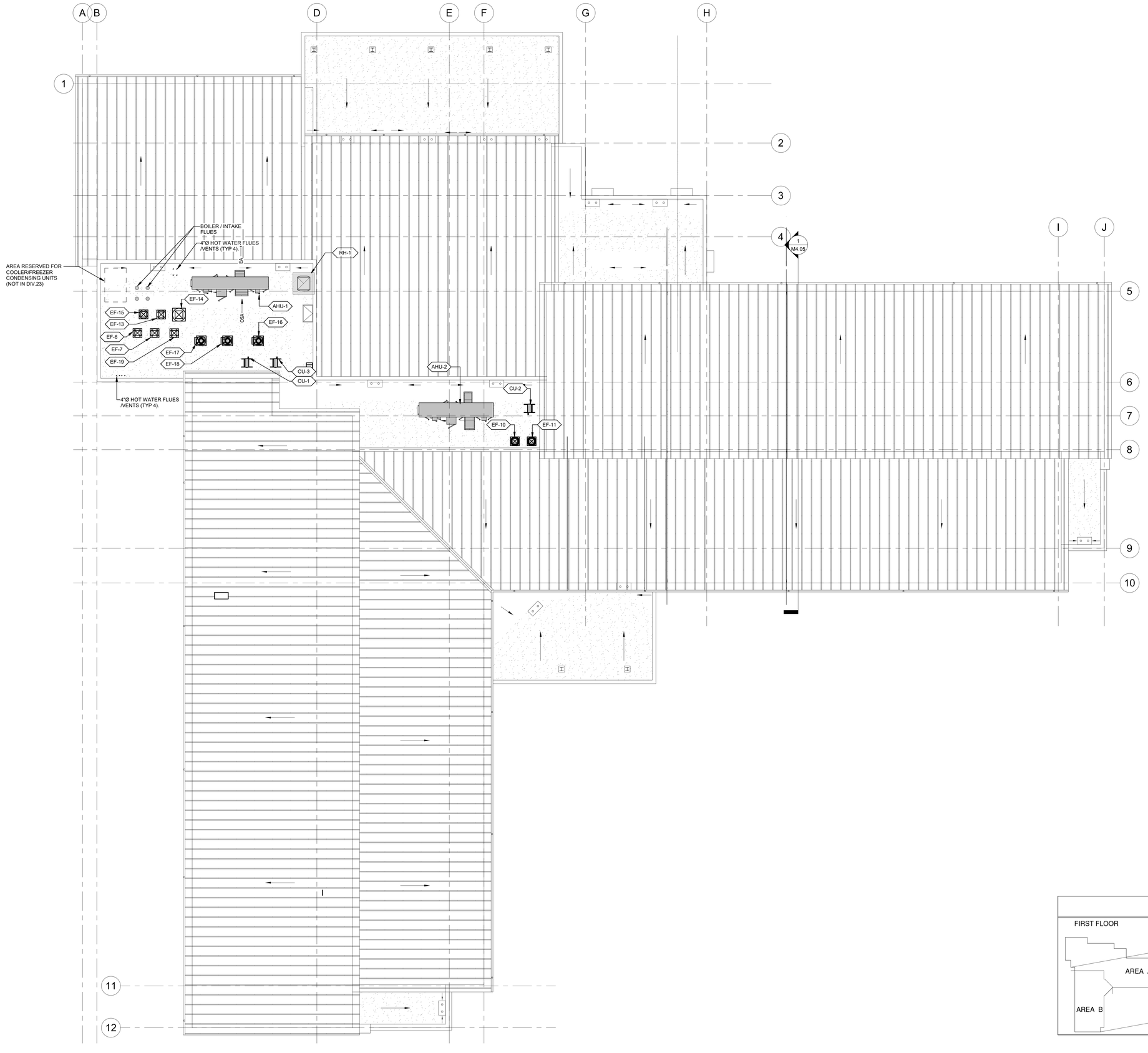
DATE
12/18/23

SHEET NAME
AREA D - SECOND FLOOR - HVAC

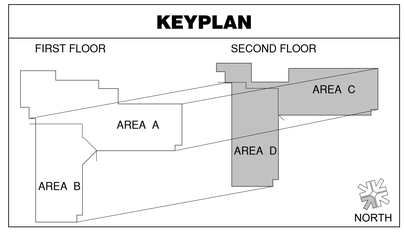
SHEET
M2.42

12/18/2023 5:56:47 PM



1 ROOF PLAN - HVAC
SCALE: 3/32" = 1'-0"

KEYPLAN



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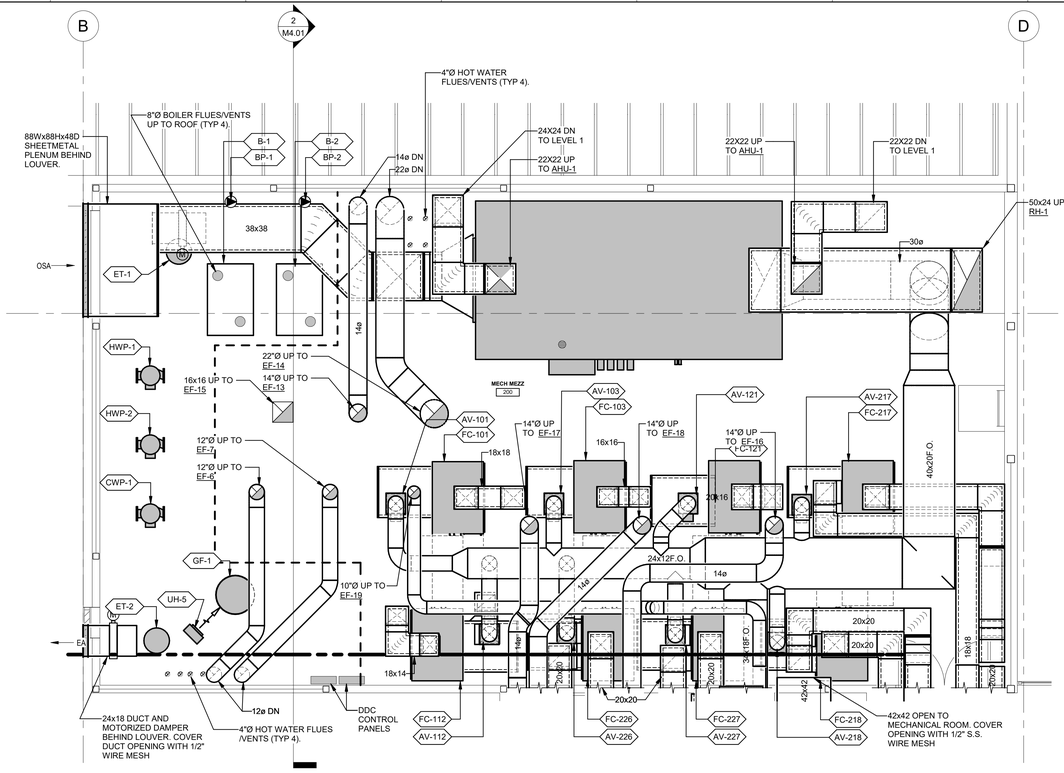
DATE
12/18/23

SHEET NAME
ROOF PLAN - HVAC

SHEET
M2.50

12/18/2023 5:06:48 PM



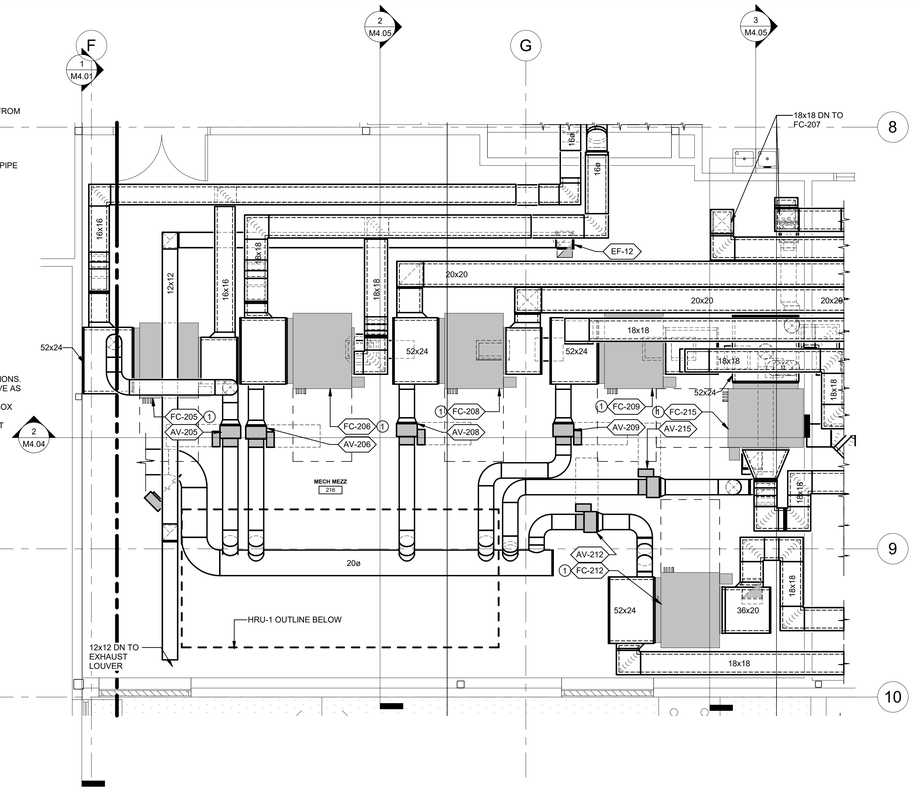
4 AREA C - SECOND FLOOR - MECHANICAL MEZZANINE 200 - HVAC
SCALE: 1/4" = 1'-0"

KEY NOTES:

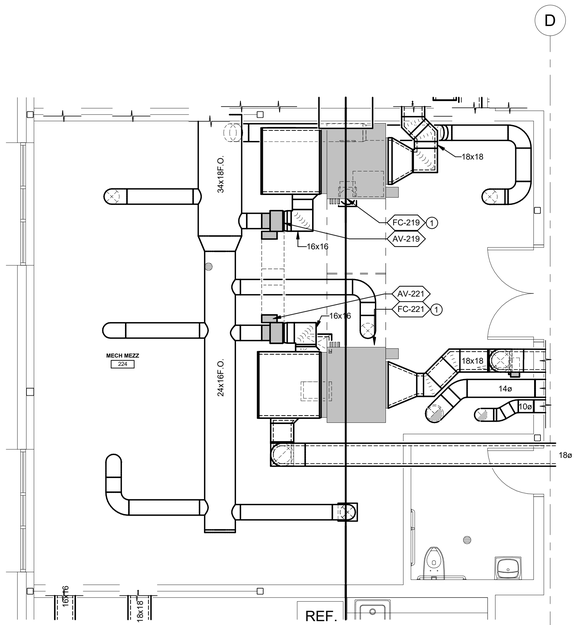
1. HORIZONTAL FAN COIL UNIT SUSPENDED FROM STRUCTURE. SEE 6/M5.03.
2. CONTRACTOR TO COORDINATE ALL DUCT/PIPE FLOOR PENETRATIONS WITH STRUCTURE DURING SHOP DRAWING CREATION.

5 GENERAL NOTES:

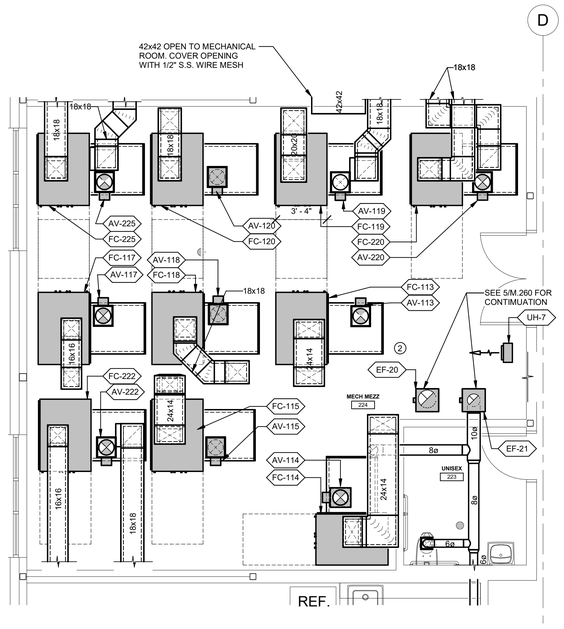
1. SEE ARCHITECTURAL FOR LOUVER LOCATIONS.
2. MECH MEZZ 200 AND MECH MEZZ 216 SERVE AS RELIEF PLENUMS.
3. AV INLET AND OUTLET DUCTS TO MATCH BOX CONNECTION SIZE.
4. FAN COIL RETURN PLENUM TO MATCH UNIT CONNECTION SIZE.



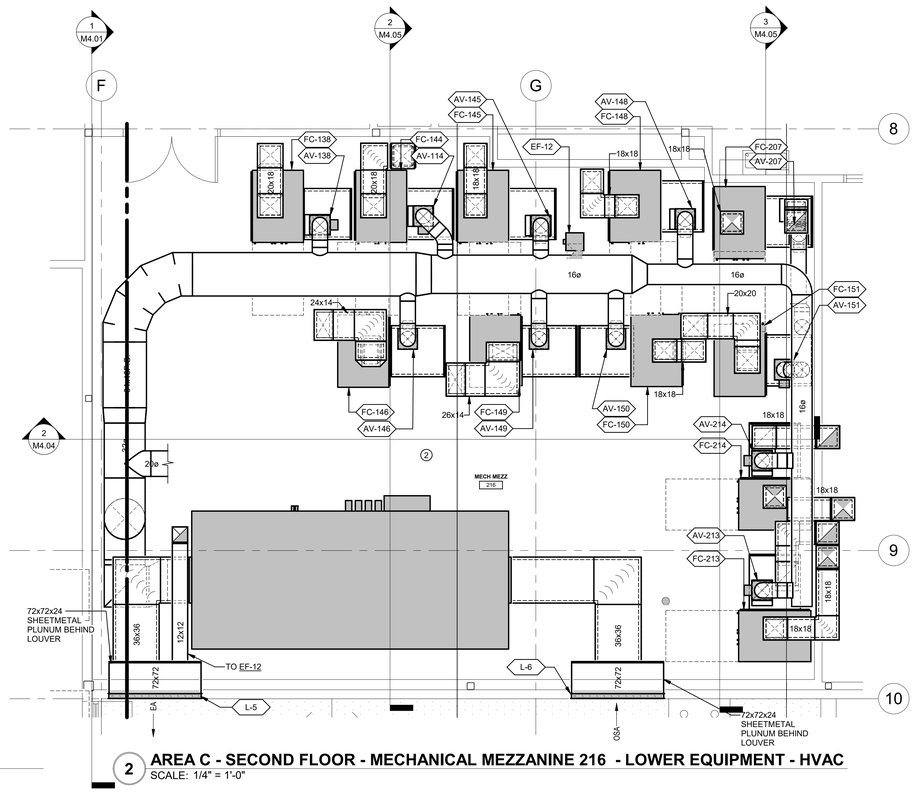
1 AREA C - SECOND FLOOR - MECHANICAL MEZZANINE - UPPER EQUIPMENT
SCALE: 1/4" = 1'-0"



5 AREA D - UPPER EQUIPMENT - MECHANICAL MEZZANINE 224 - HVAC
SCALE: 1/4" = 1'-0"



3 AREA D - LOWER EQUIPMENT - MECHANICAL MEZZANINE 224 - HVAC
SCALE: 1/4" = 1'-0"



2 AREA C - SECOND FLOOR - MECHANICAL MEZZANINE 216 - LOWER EQUIPMENT - HVAC
SCALE: 1/4" = 1'-0"

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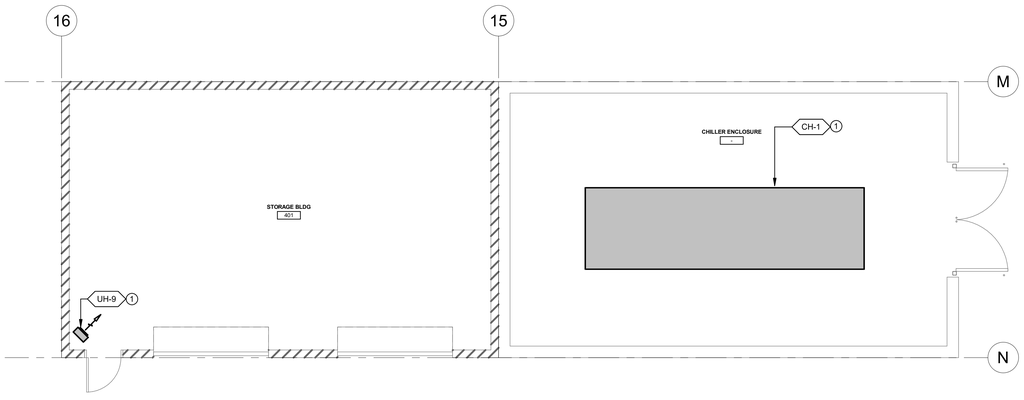
DATE
12/18/23

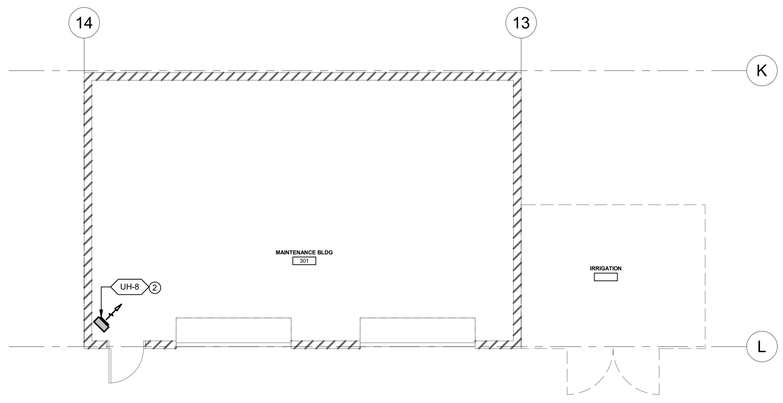
SHEET NAME
ENLARGED MECHANICAL ROOM PLANS - HVAC

SHEET
M2.60

12/18/2023 5:07:06 PM



4 ALTERNATE #4 LEVEL 1
SCALE: 3/16" = 1'-0"



2 ALTERNATE #3 LEVEL 1
SCALE: 3/16" = 1'-0"

KEYNOTES:

1. EQUIPMENT PROVIDED UNDER BASE BID.
2. EQUIPMENT PROVIDED UNDER ALTERNATE BID.

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DATE
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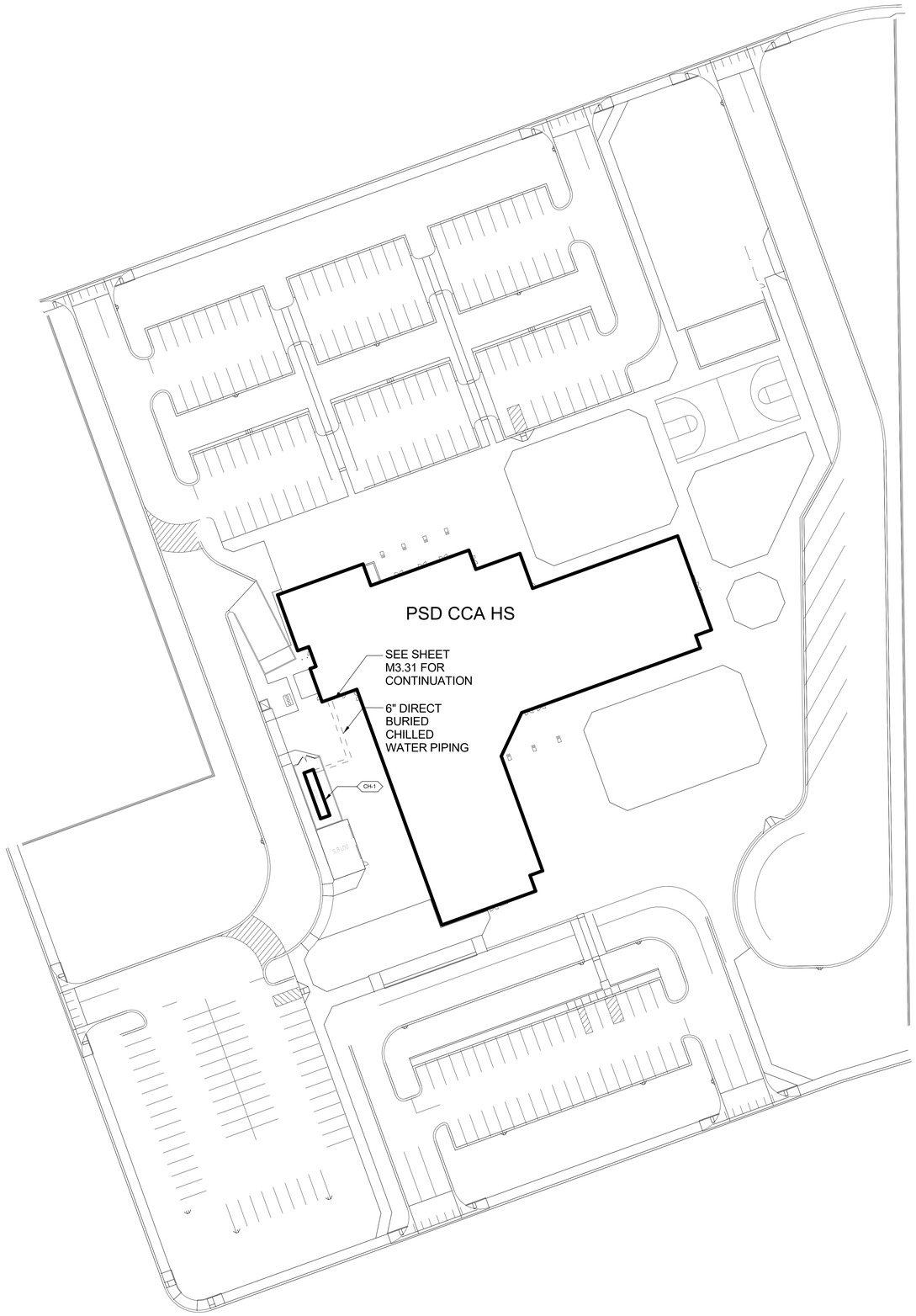
SHEET NAME
ALTERNATE 3 & 4

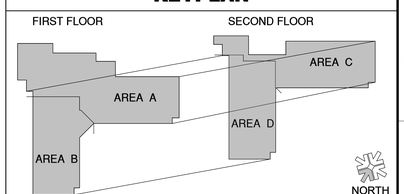
SHEET
M2.70

12/18/2023 5:07:07 PM



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

KEYPLAN



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96416
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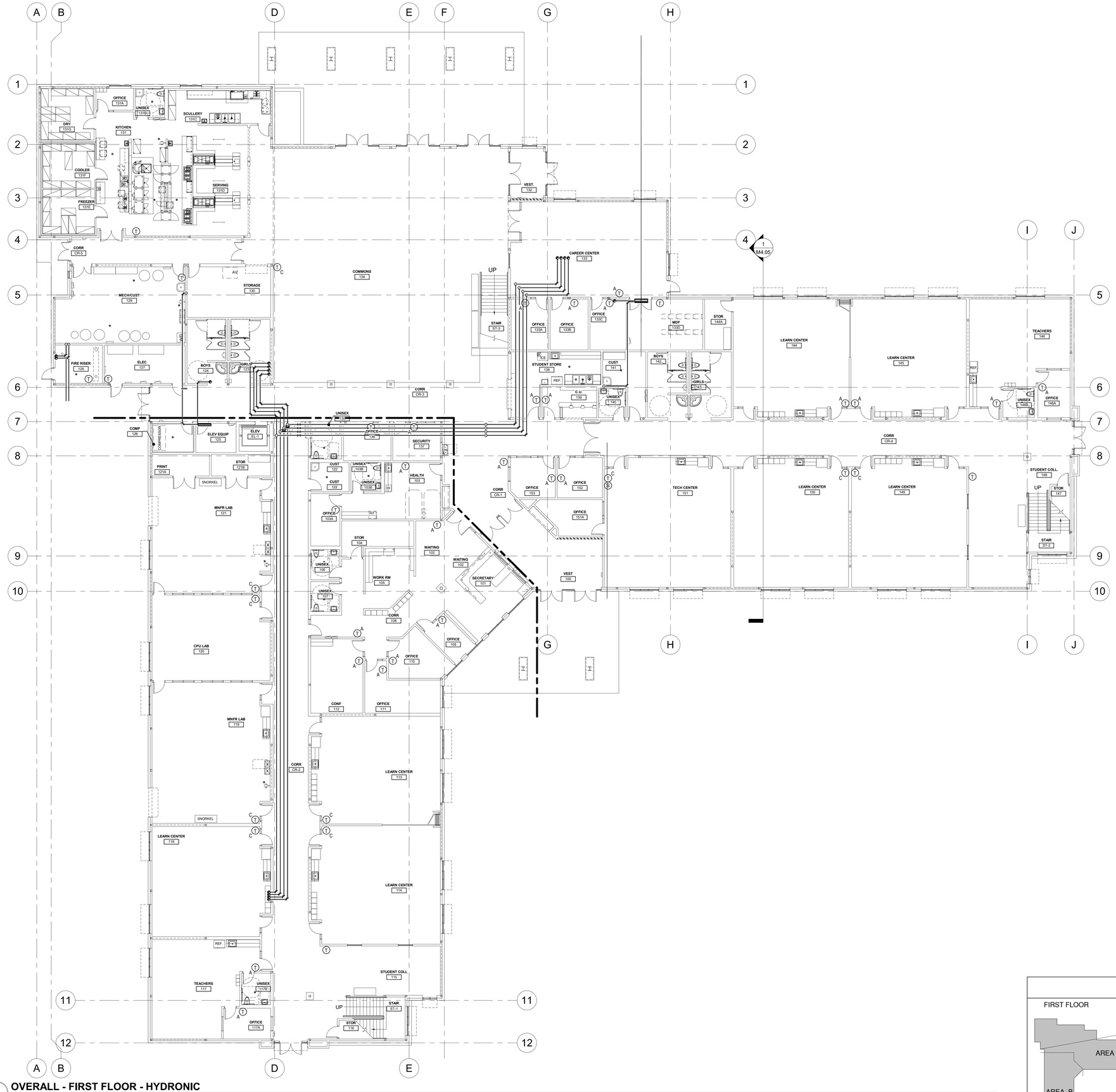
PASCO, WASHINGTON 99301

DATE
12/18/23

SHEET NAME
SITE PLAN - HYDRONICS

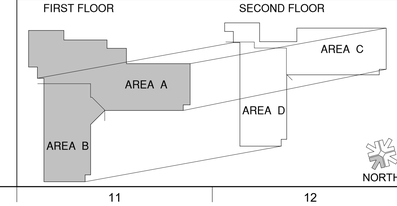
SHEET
M3.20

12/18/2023 5:07:08 PM



1 OVERALL - FIRST FLOOR - HYDRONIC
SCALE: 3/32" = 1'-0"

KEYPLAN



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DATE
12/18/23

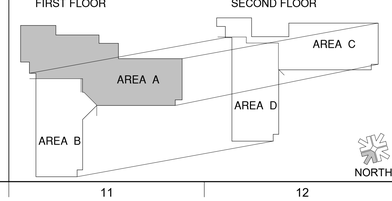
SHEET NAME
OVERALL PLAN - FIRST FLOOR - HYDRONICS

SHEET
M3.30

12/18/2023 5:07:13 PM

1 AREA A - FIRST FLOOR - HYDRONIC
SCALE: 1/8" = 1'-0"

KEYPLAN



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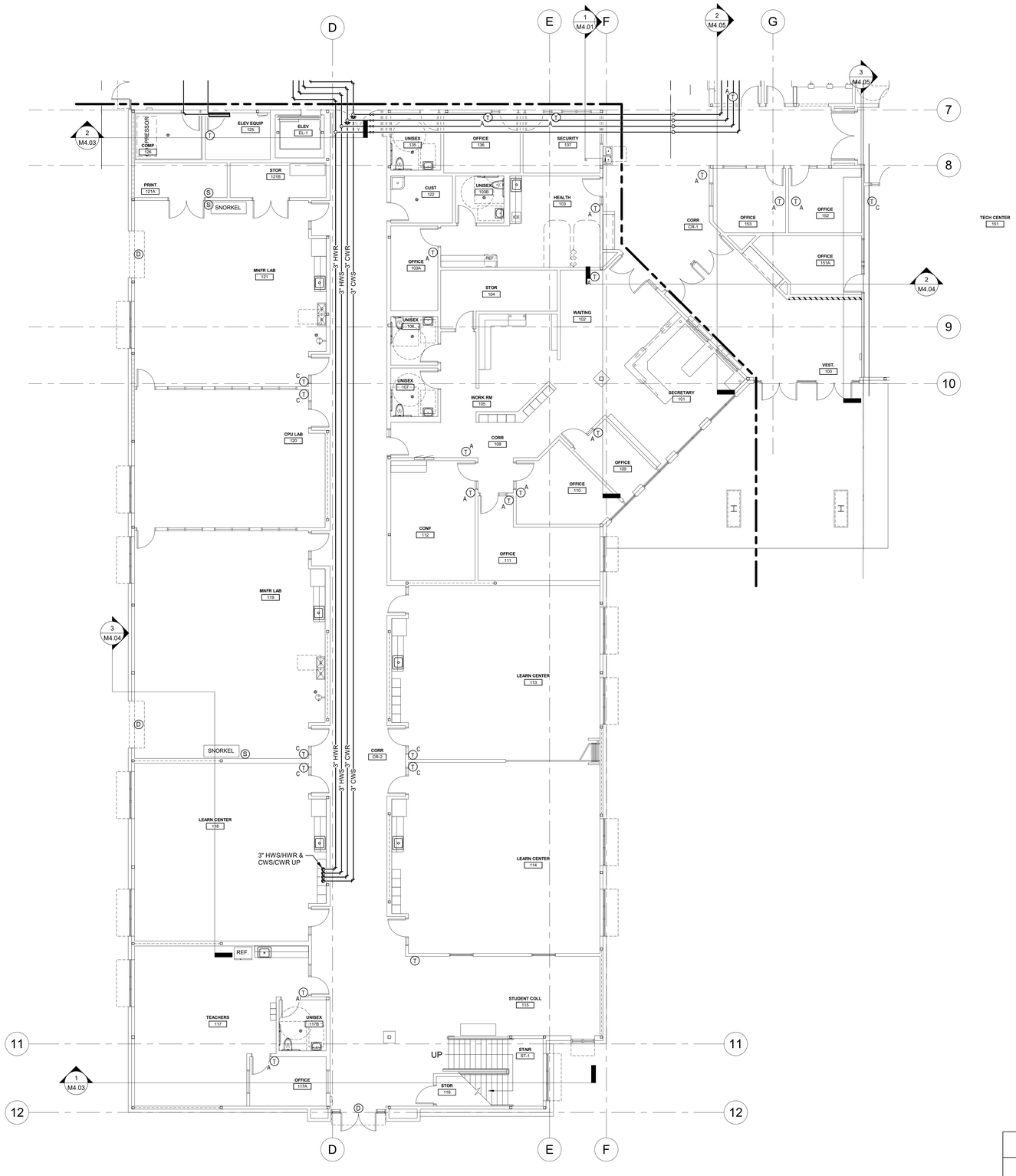
DATE
12/18/23

SHEET NAME
AREA A - FIRST FLOOR - HYDRONICS

SHEET
M3.31

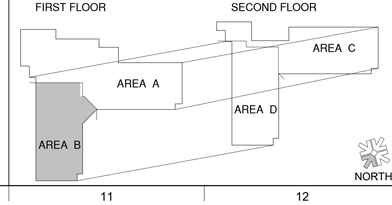
12/18/2023 5:07:18 PM



AREA B - FIRST FLOOR - HYDRONIC

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

KEYPLAN



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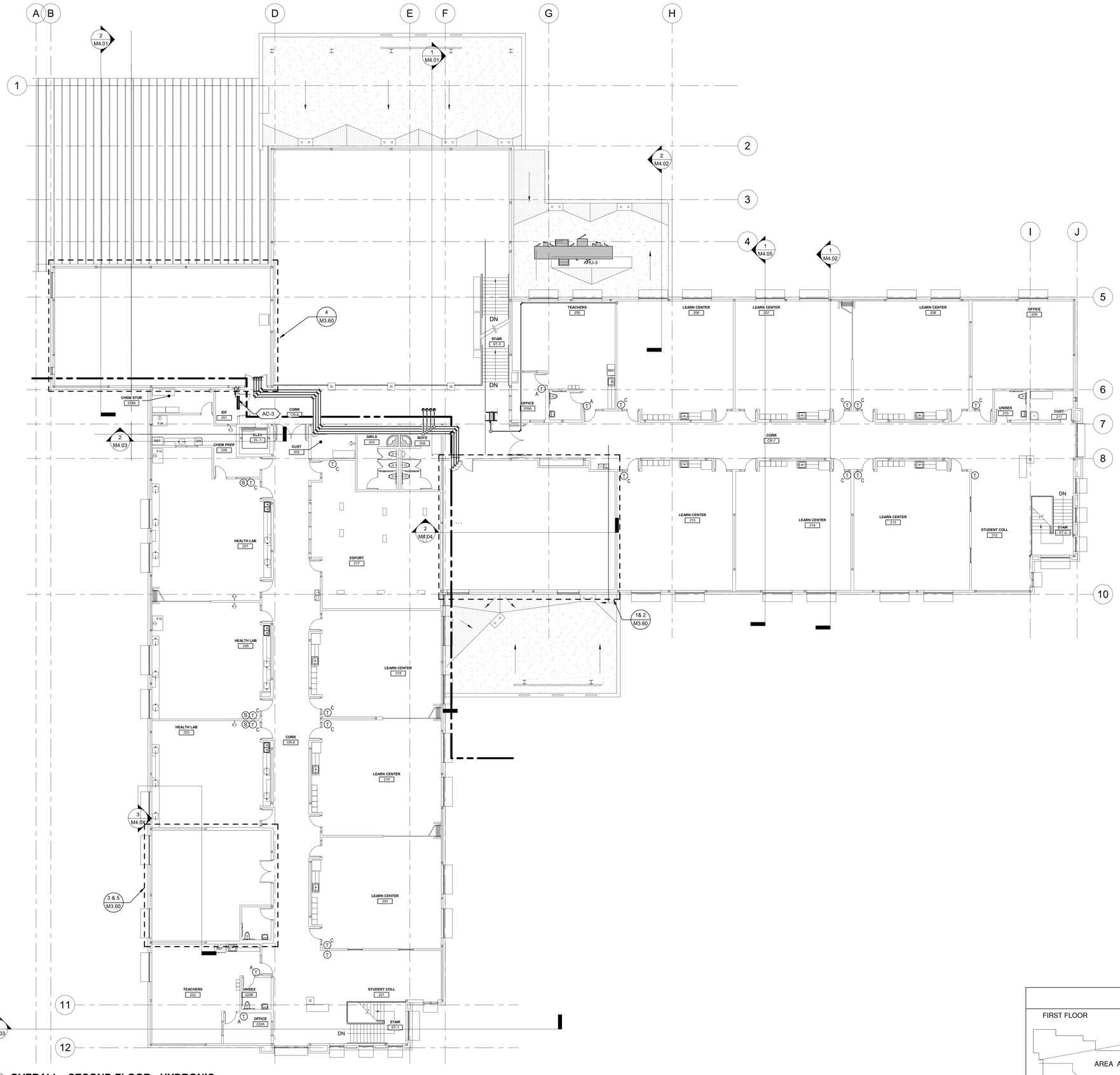
DATE
12/18/23

SHEET NAME
AREA B - FIRST FLOOR - HYDRONICS

SHEET
M3.32

12/18/2023 5:07:24 PM



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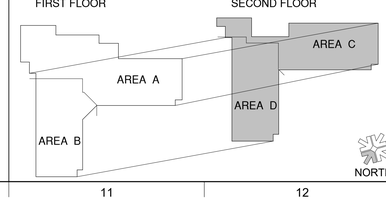
KEYPLAN



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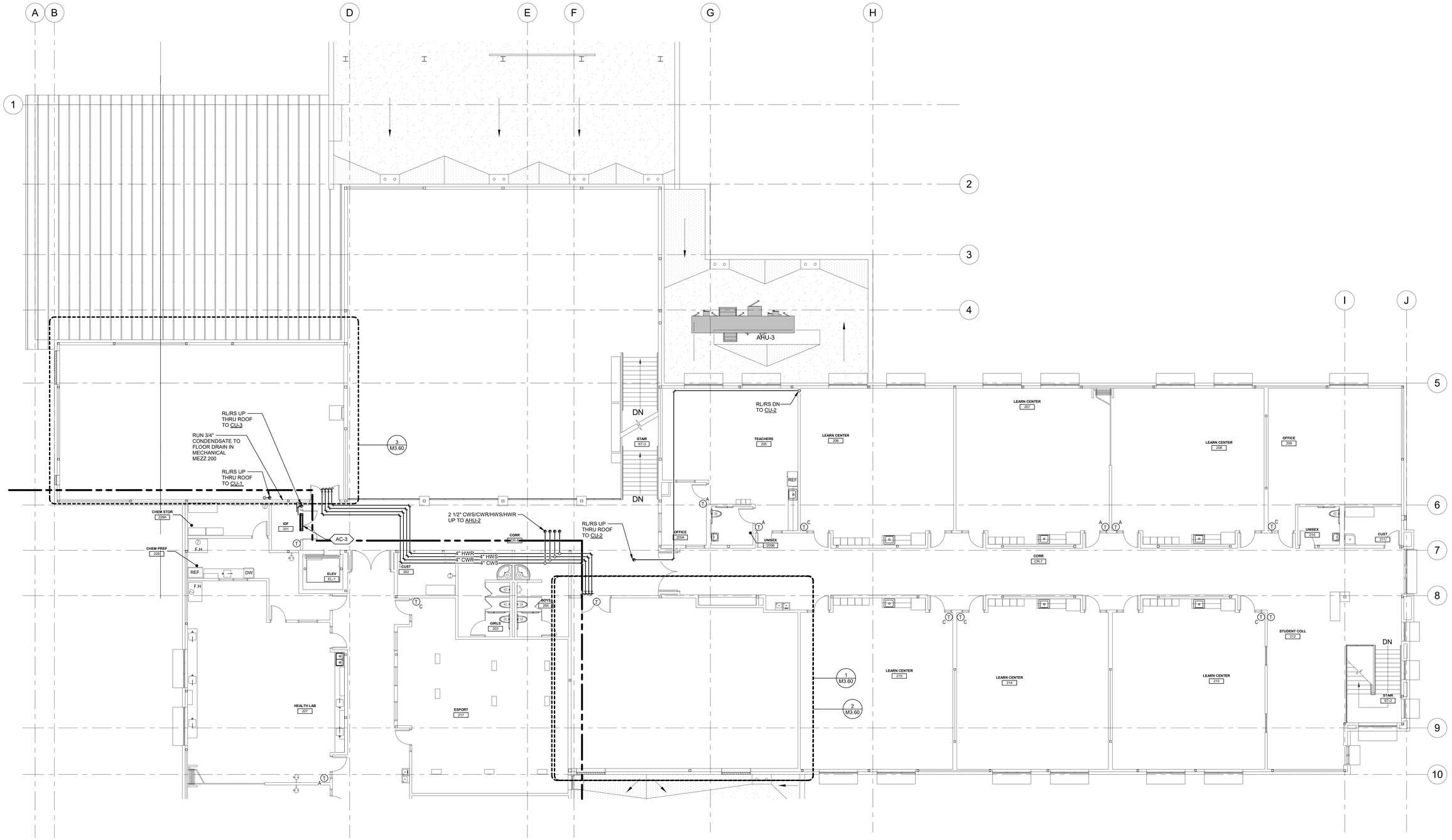
ORION HIGH SCHOOL
1815 E. SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/23

SHEET NAME
OVERALL PLAN - SECOND FLOOR - HYDRONICS

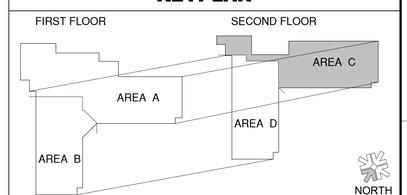
SHEET
M3.40

12/18/2023 5:07:36 PM



N 1 **AREA C - SECOND FLOOR - HYDRONIC**
SCALE: 1/8" = 1'-0"

KEYPLAN



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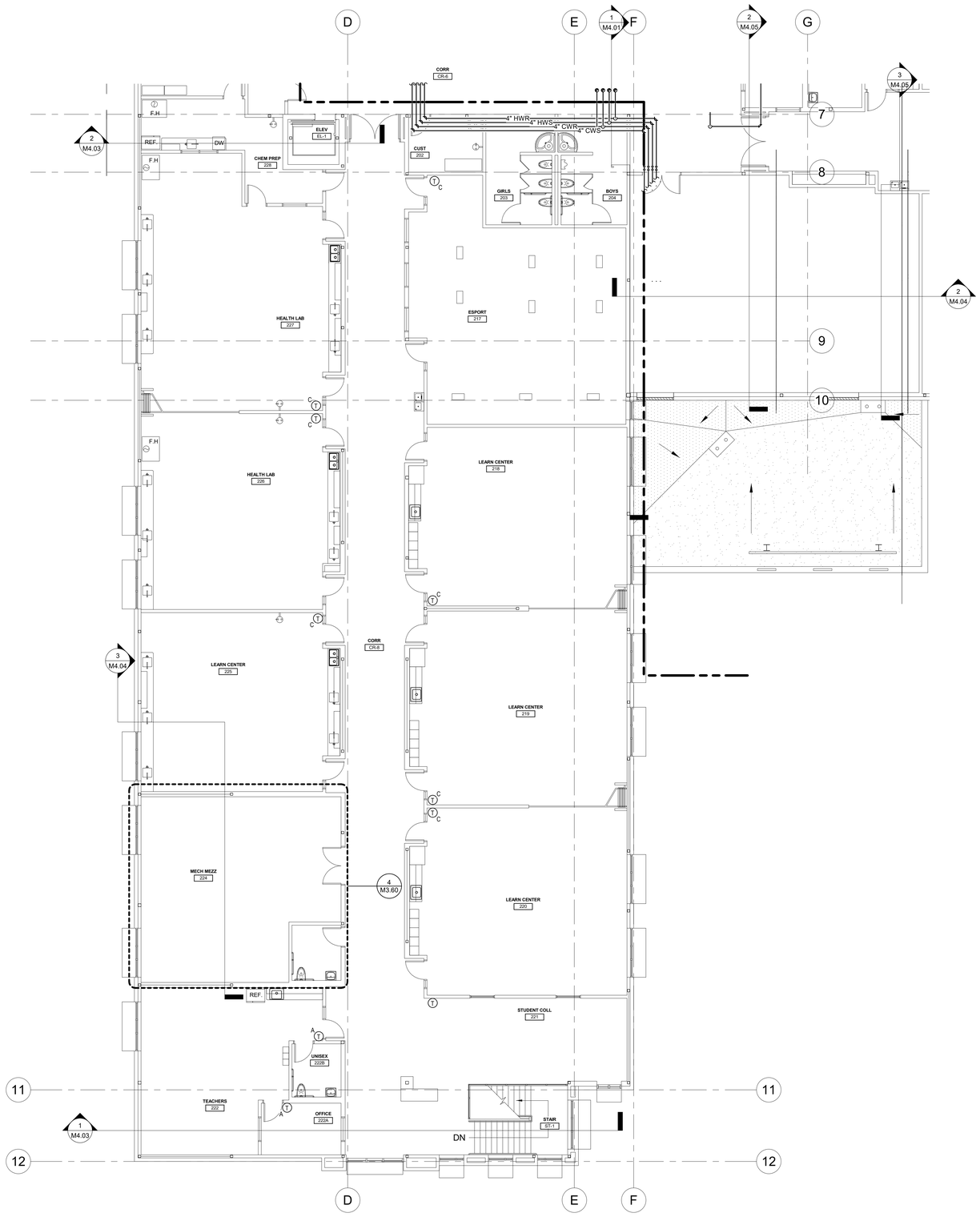
DATE
12/18/23

SHEET NAME
AREA C - SECOND FLOOR - HYDRONICS

SHEET
M3.41

12/18/2023 5:07:42 PM



N 1 **AREA D - SECOND FLOOR - HYDRONIC**
SCALE: 1/8" = 1'-0"

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DATE
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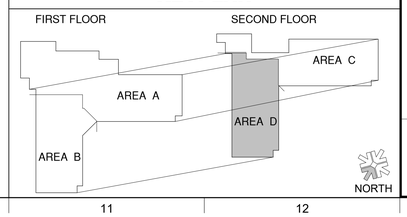
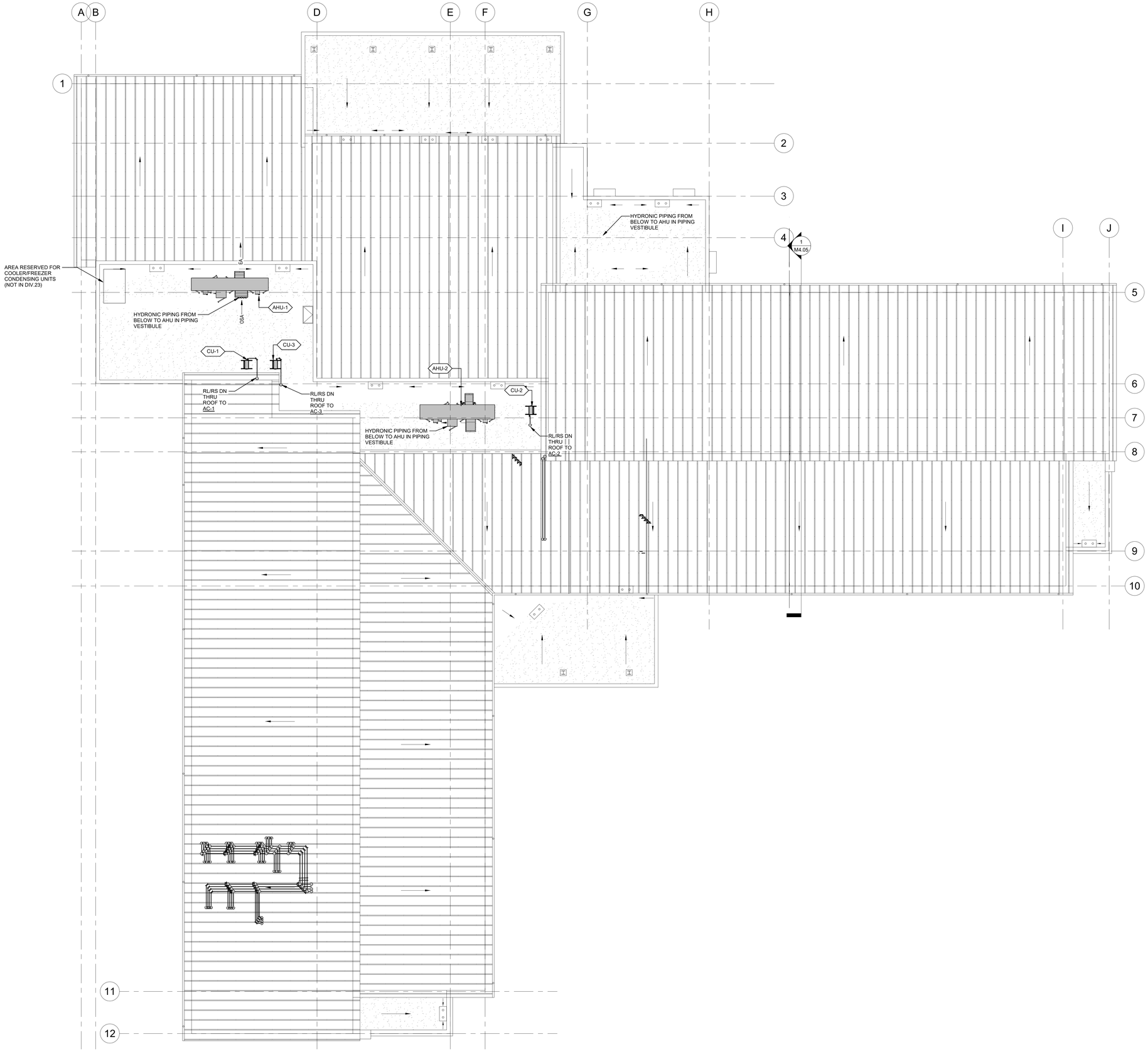
KEYPLAN



SHEET NAME
AREA D - SECOND FLOOR - HYDRONICS

SHEET
M3.42

12/18/2023 5:07:49 PM



1 ROOF PLAN - HYDRONICS
3/32" = 1'-0"

12/18/2023 5:07:01 PM

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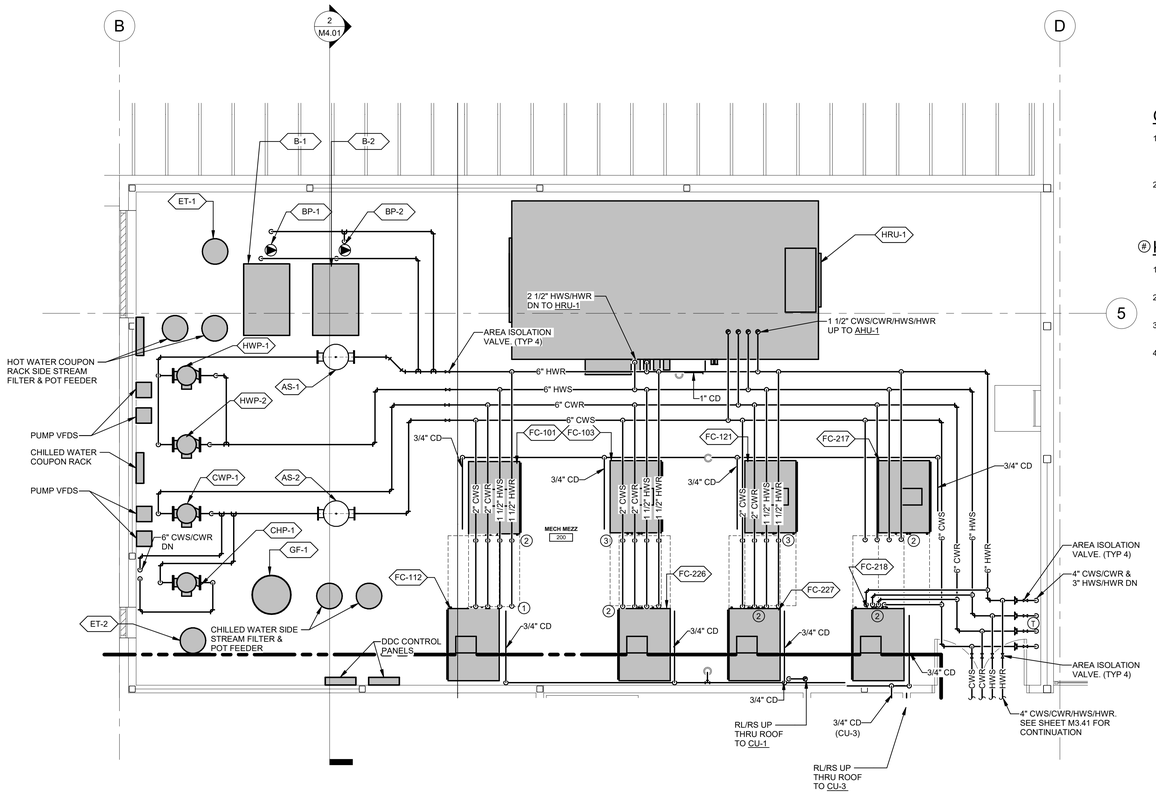
DATE
12/18/23

SHEET NAME
ROOF PLAN - HYDRONICS

SHEET
M3.50



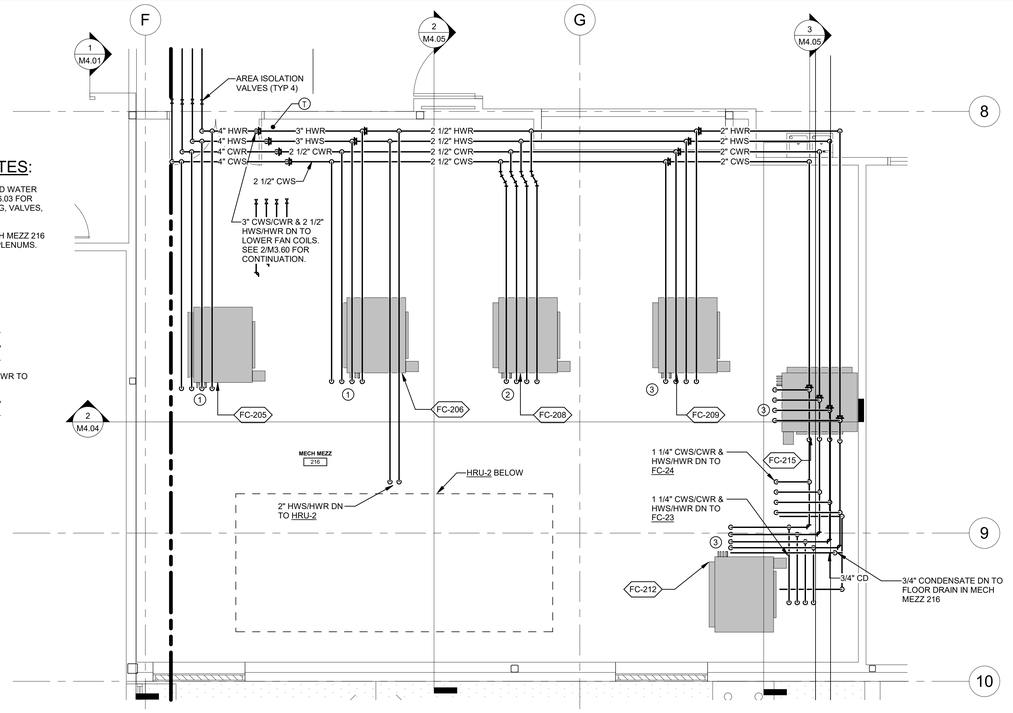
3 AREA C - SECOND FLOOR - MECHANICAL MEZZANINE 200 - HYDRONICS
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. SEE HEATING & CHILLED WATER DIAGRAM ON SHEET M6.03 FOR ADDITIONAL PIPE SIZING, VALVES, COMPONENTS, ETC.
2. MECH MEZZ 200 & MECH MEZZ 216 SERVE AS RELIEF AIR PLENUMS.

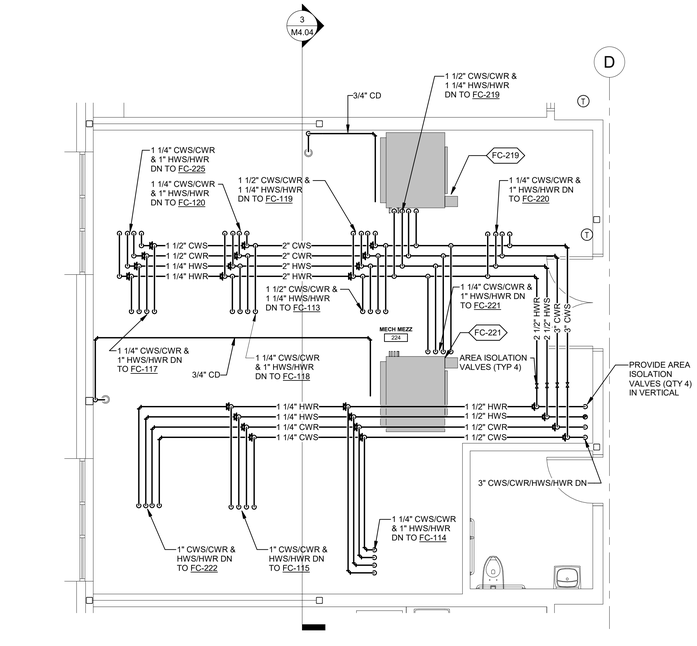
KEY NOTES:

1. 1 1/4" CWS/CWR & 1" HWS/HWR TO FAN COIL
2. 1 1/2" CWS/CWR & 1 1/4" HWS/HWR TO FAN COIL
3. 1 1/4" CWS/CWR/HWS/HWR TO FAN COIL
4. 1 1/2" CWS/CWR & 1 1/4" HWS/HWR TO FAN COIL

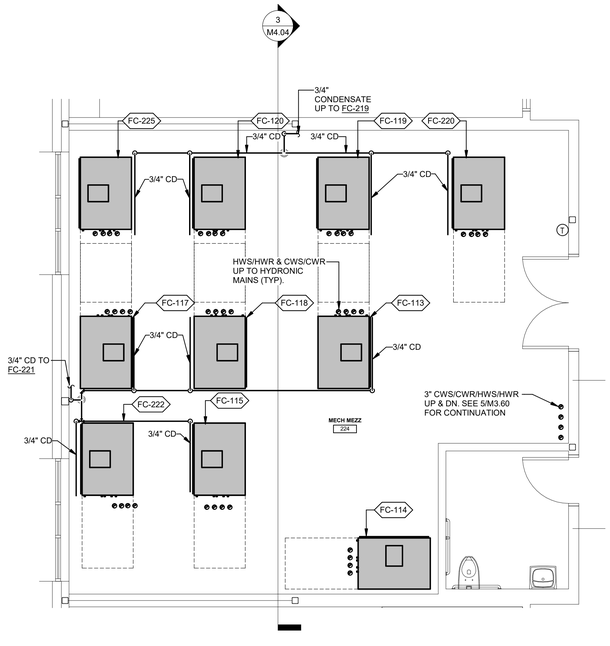


1 AREA C - SECOND FLOOR - MECHANICAL MEZZANINE 216 - UPPER EQUIPMENT - HYDRONIC
SCALE: 1/4" = 1'-0"

2 AREA C - SECOND FLOOR - MECHANICAL MEZZANINE - LOWER EQUIPMENT - HYDRONIC
SCALE: 1/4" = 1'-0"

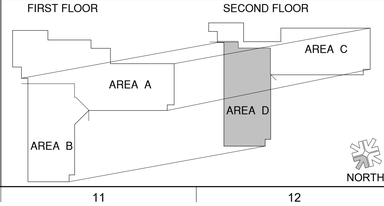


5 AREA D - SECOND FLOOR - MECHANICAL MEZZANINE - UPPER EQUIPMENT
SCALE: 1/4" = 1'-0"



4 AREA D - SECOND FLOOR - MECHANICAL MEZZANINE - LOWER EQUIPMENT
SCALE: 1/4" = 1'-0"

KEYPLAN



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DATE 12/18/23

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SHEET M3.60

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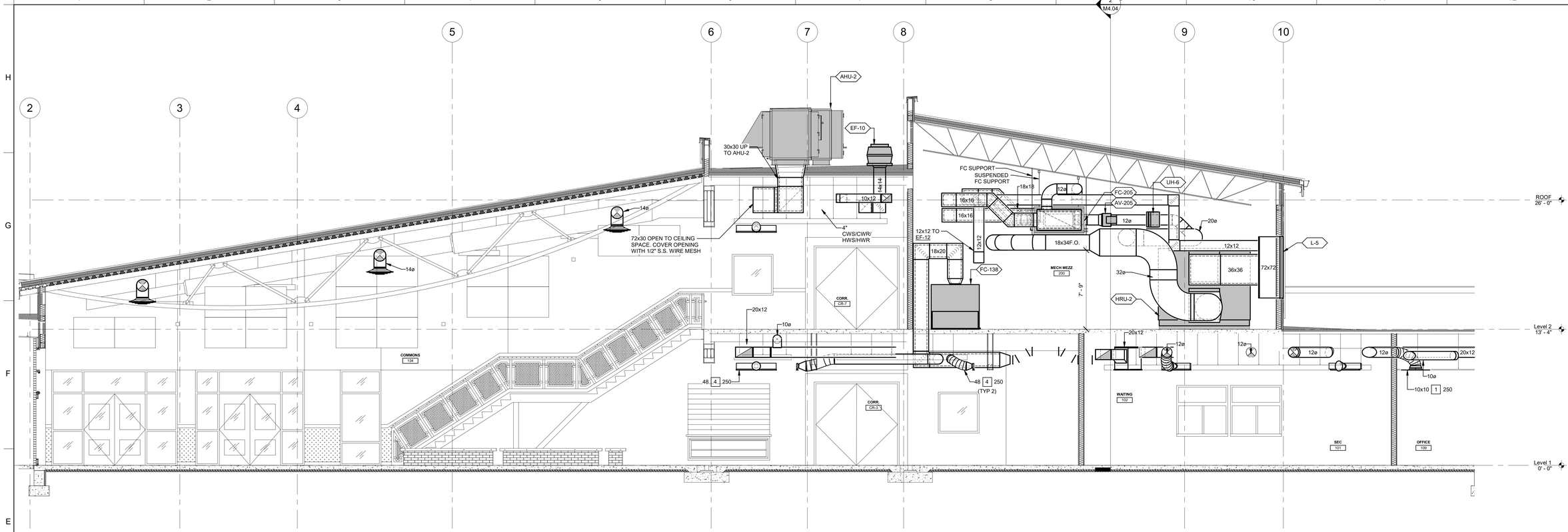

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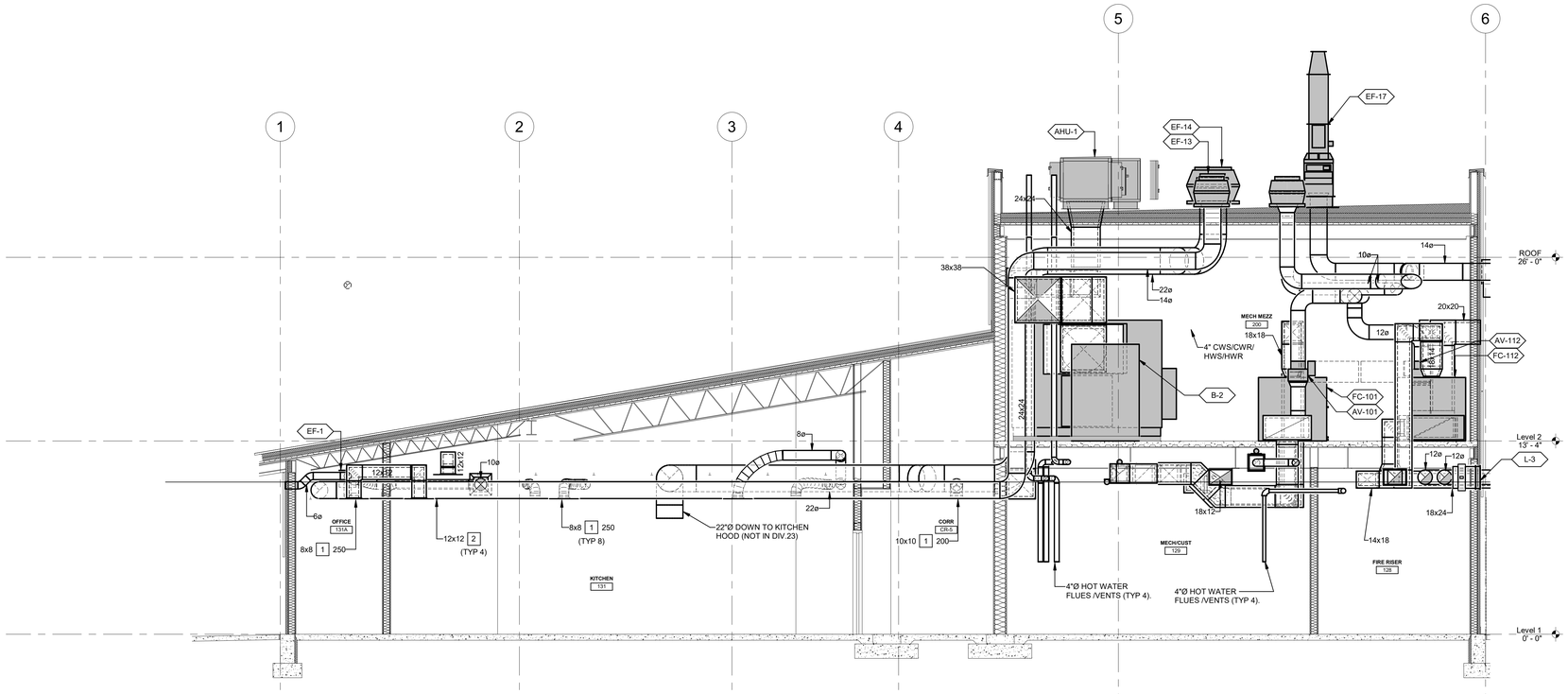

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SHEET NAME
MECHANICAL SECTIONS

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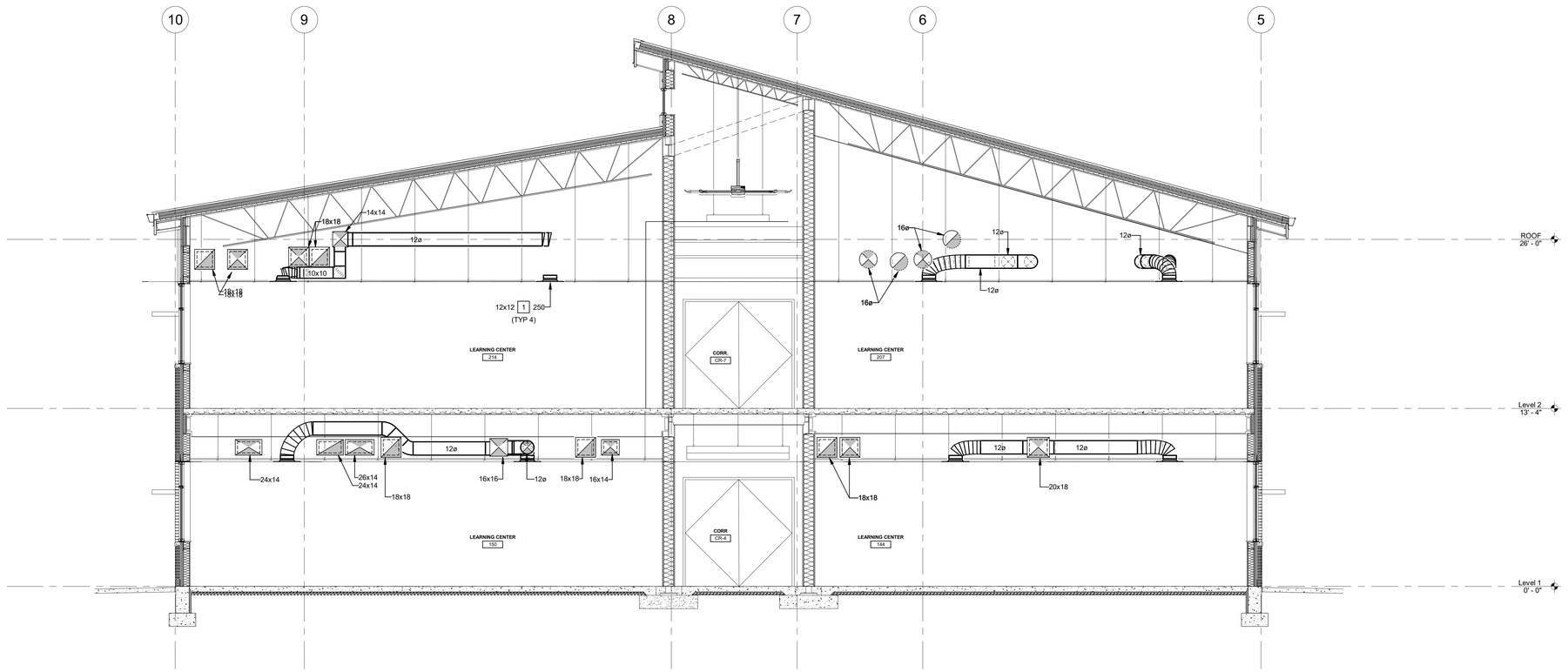

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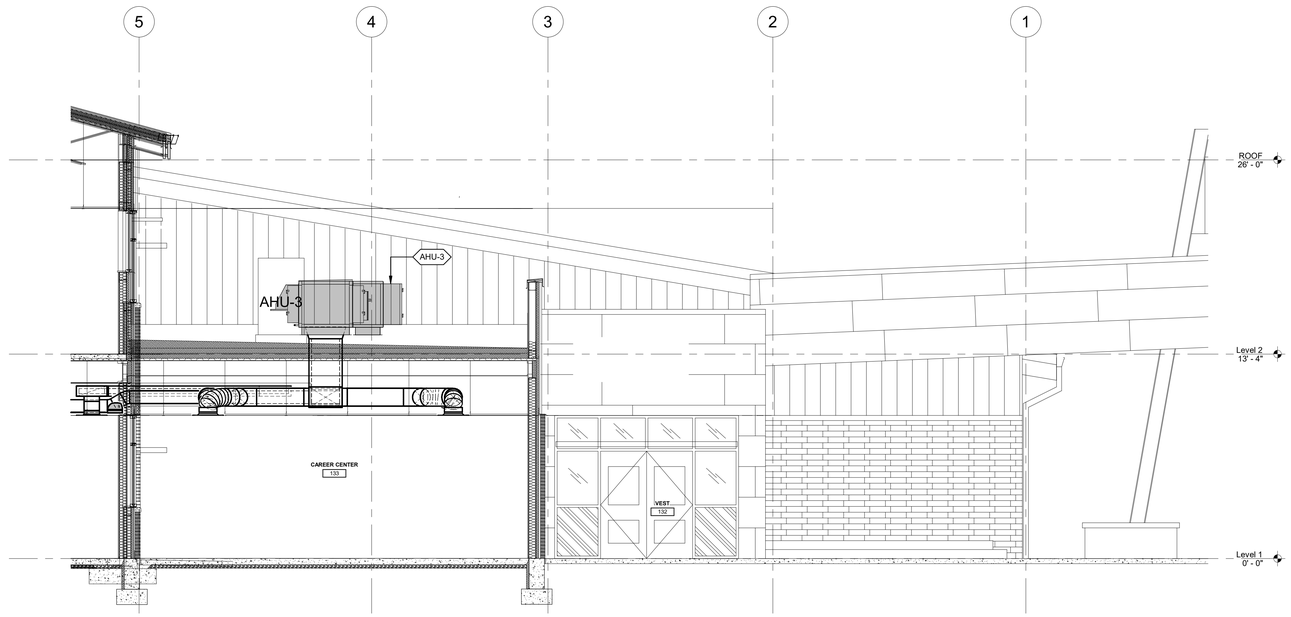

2 MECHANICAL SECTION 4
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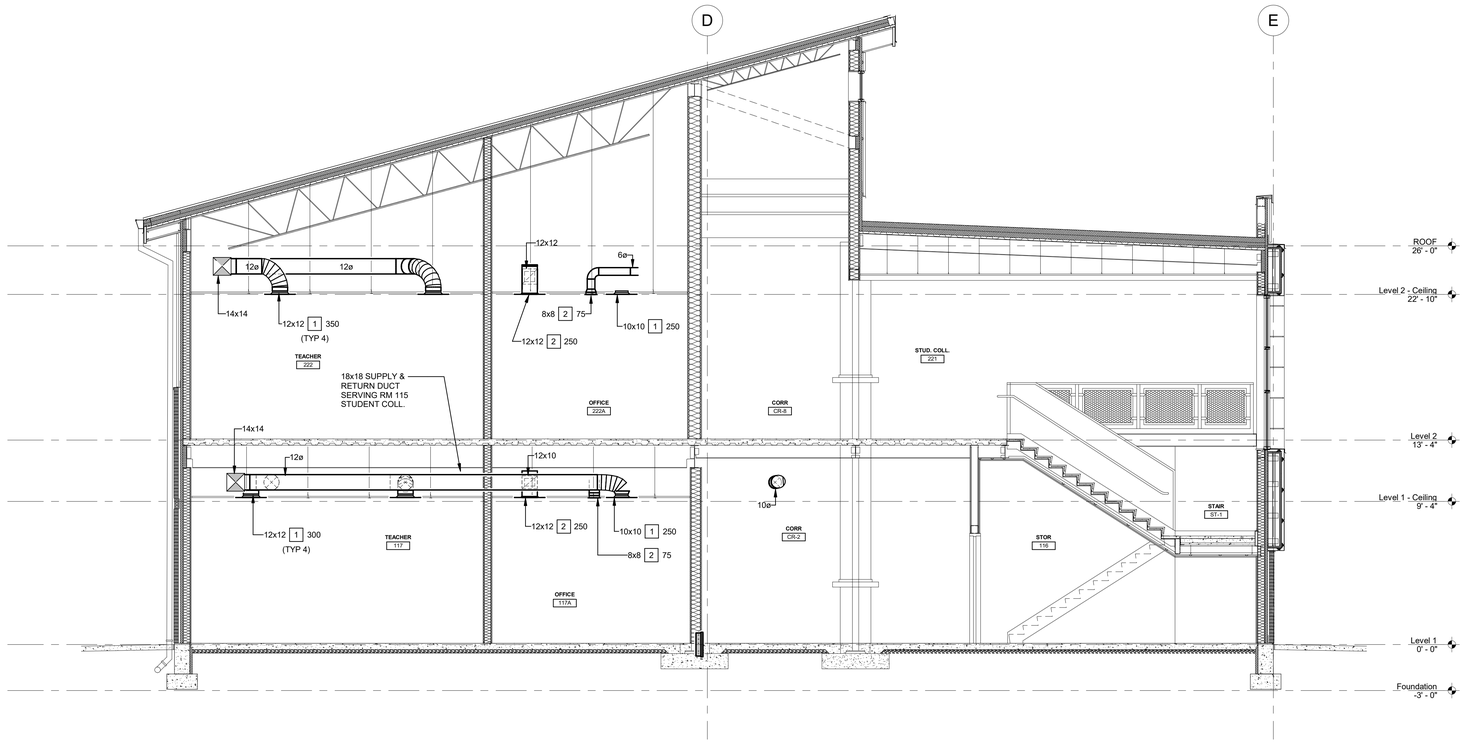
SHEET
M4.02



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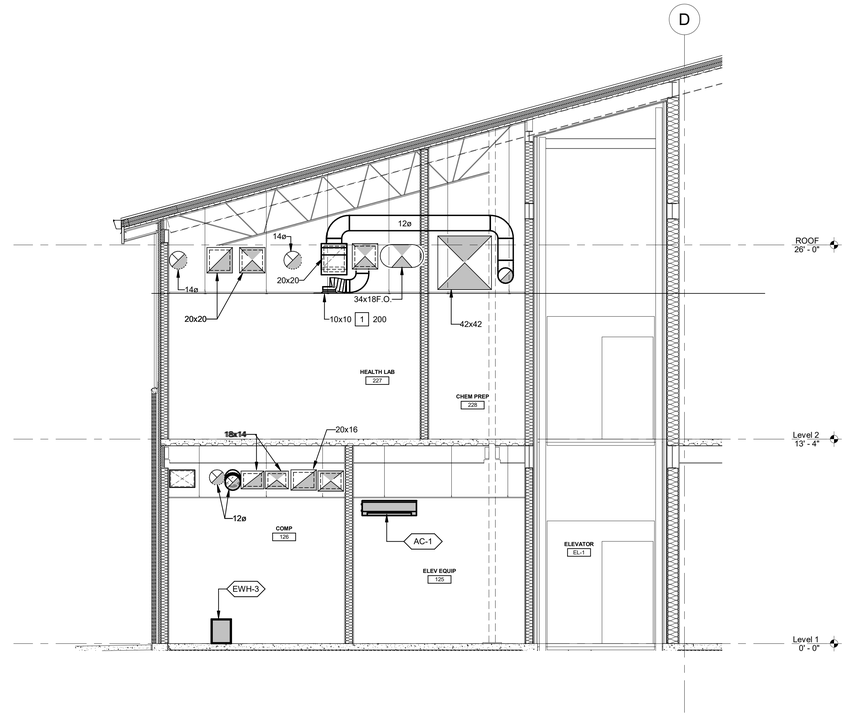

2 MECHANICAL SECTION 6
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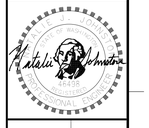

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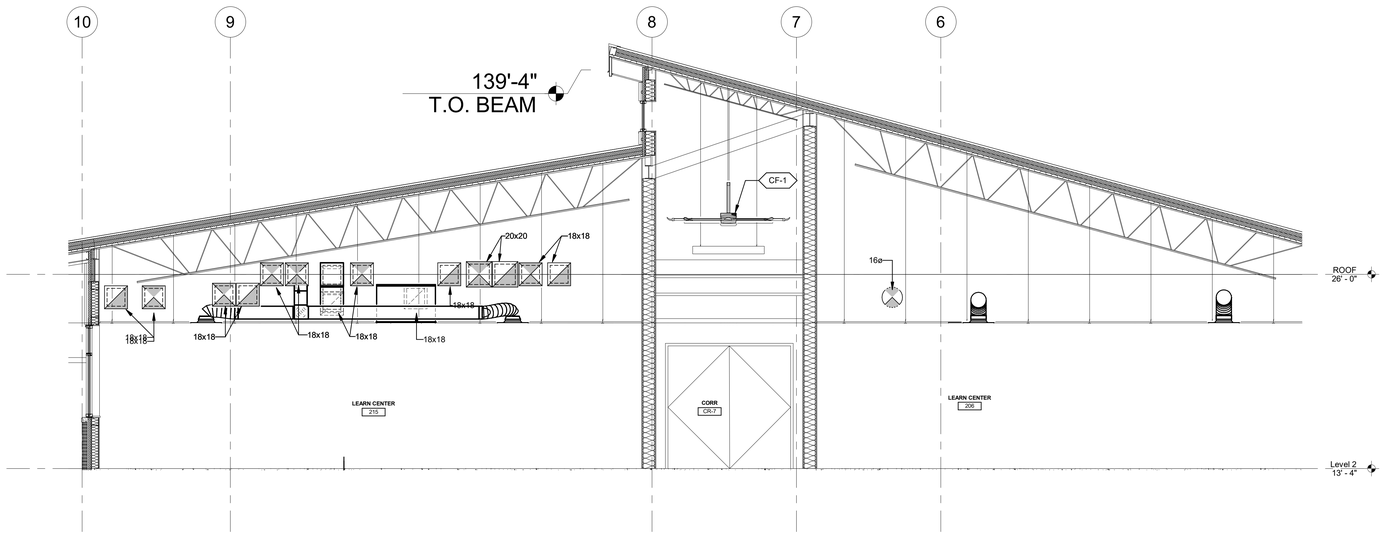
SHEET
M4.03



1 LEVEL 2 - LEARNING CENTER 215 LOOKING WEST
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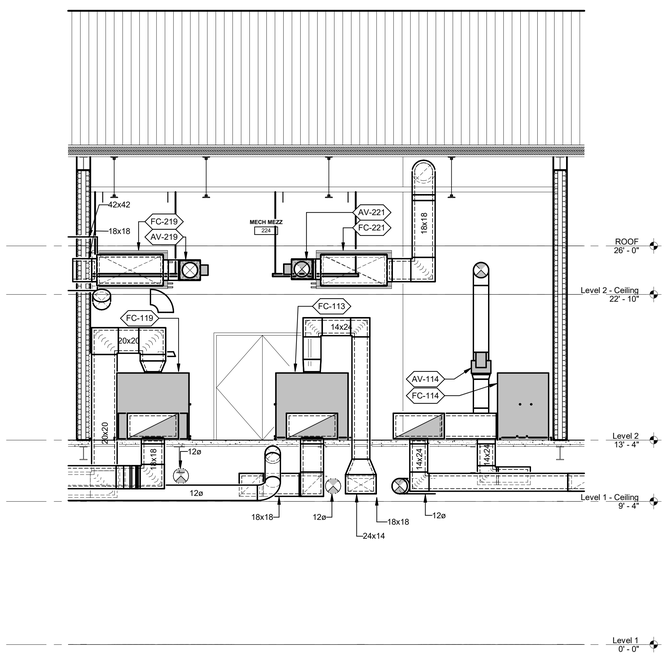

3 AREA D - SECOND FLOOR MEZZ 224
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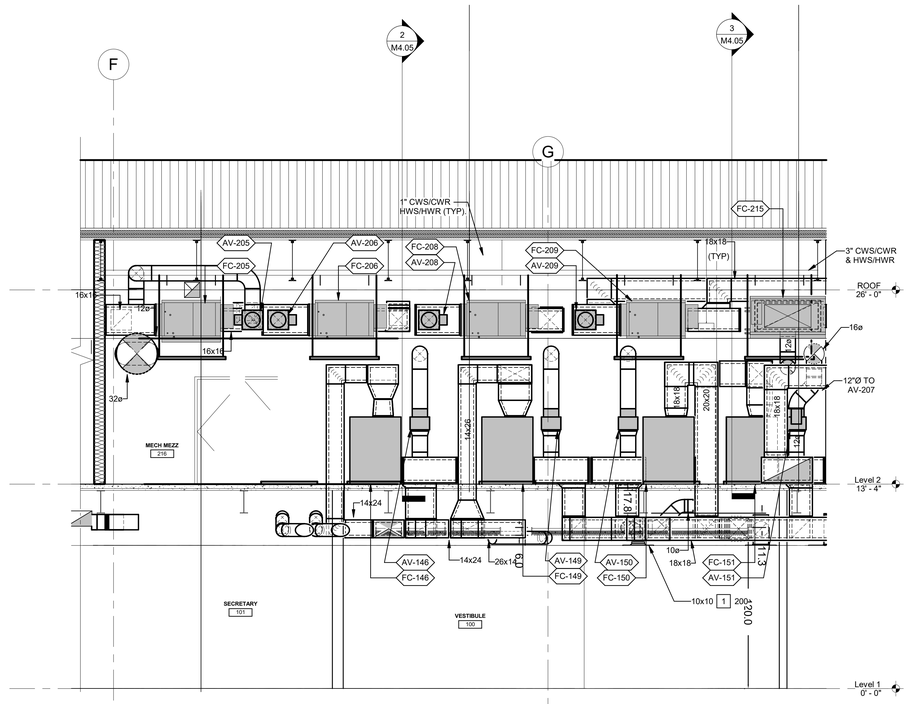

2 AREA D - SECOND FLOOR MEZZ 216
SCALE: 1/4" = 1'-0"

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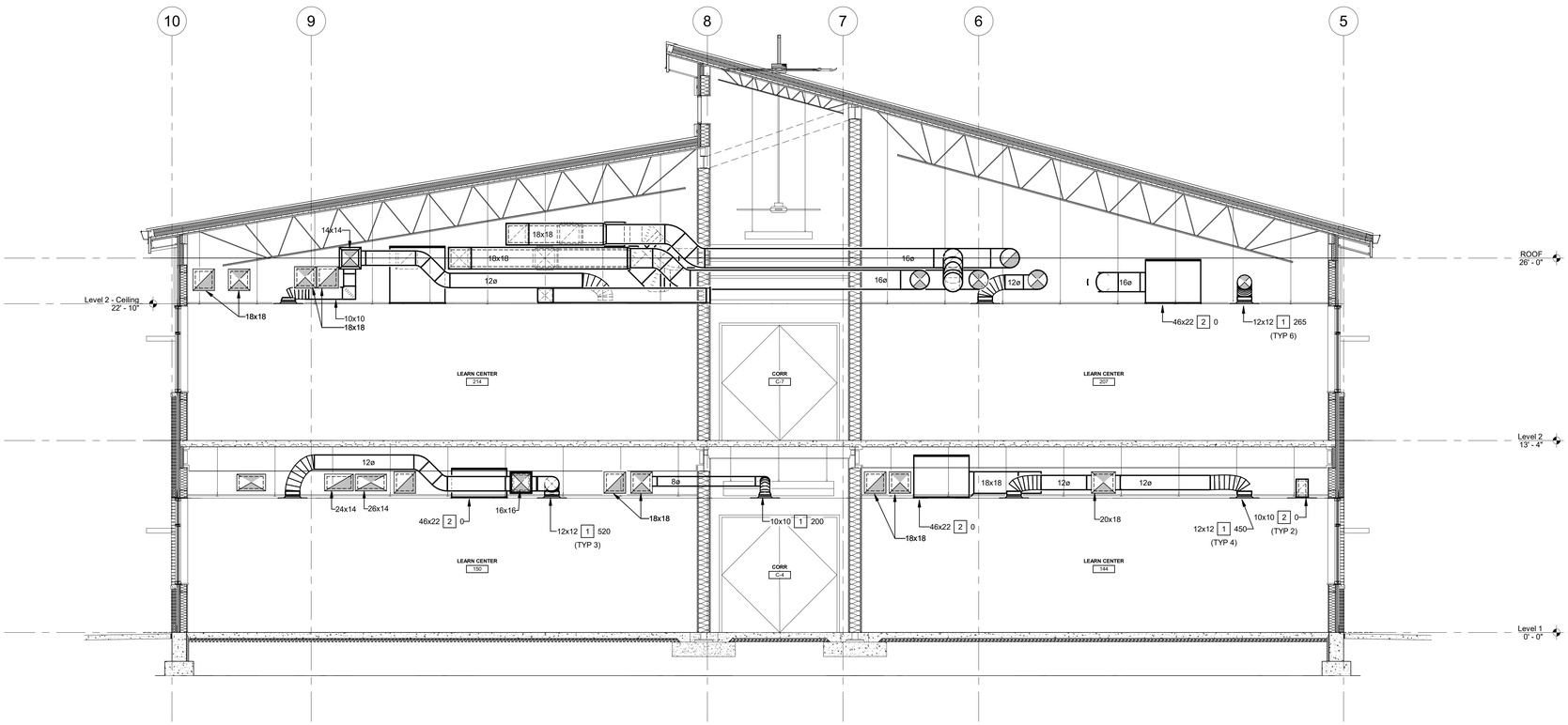

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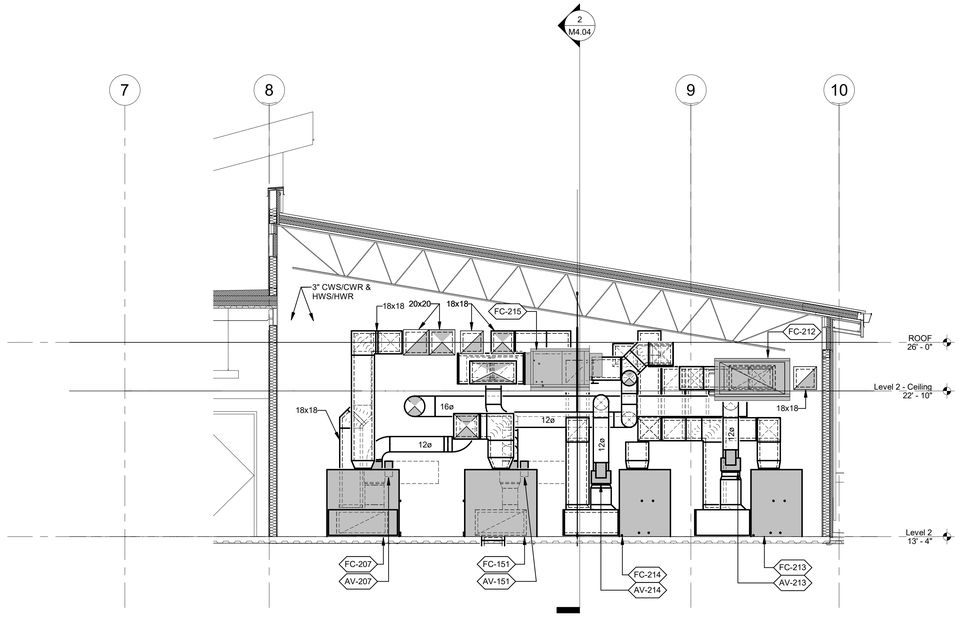

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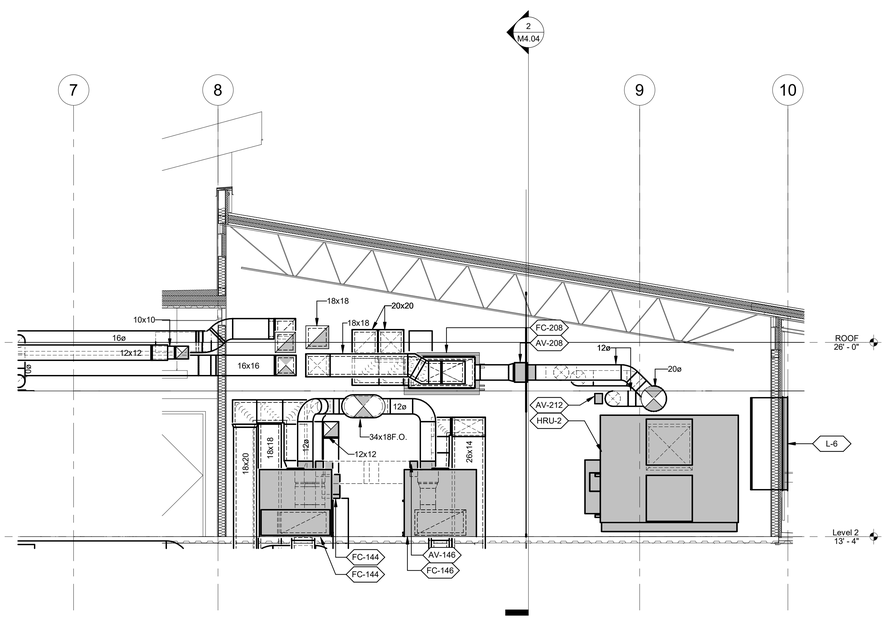

2 **MECHANICAL SECTION 11**
SCALE: 1/4" = 1'-0"

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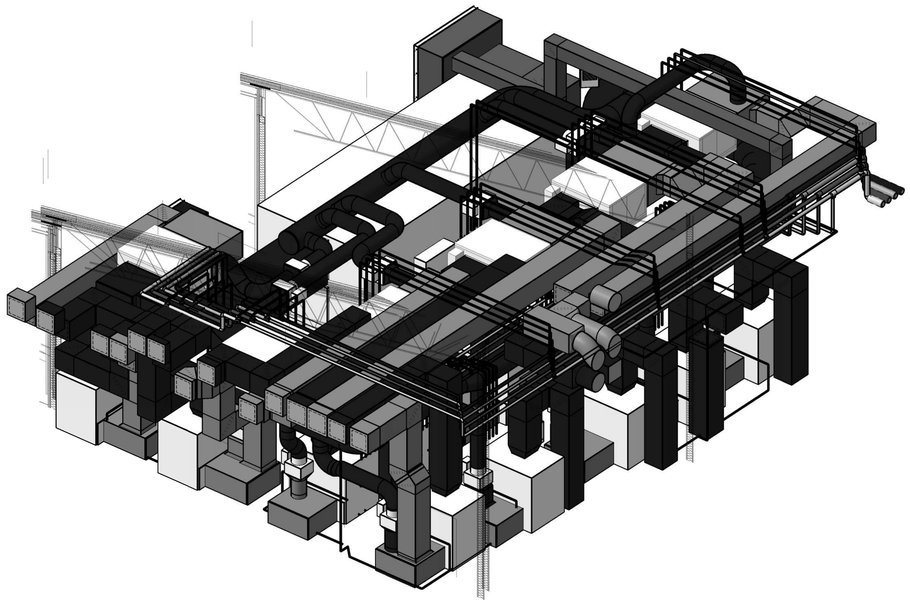
MECHANICAL SECTIONS

SHEET
M4.05



3 **AREA C - SECOND FLOOR MECHANICAL - SOUTH WEST**
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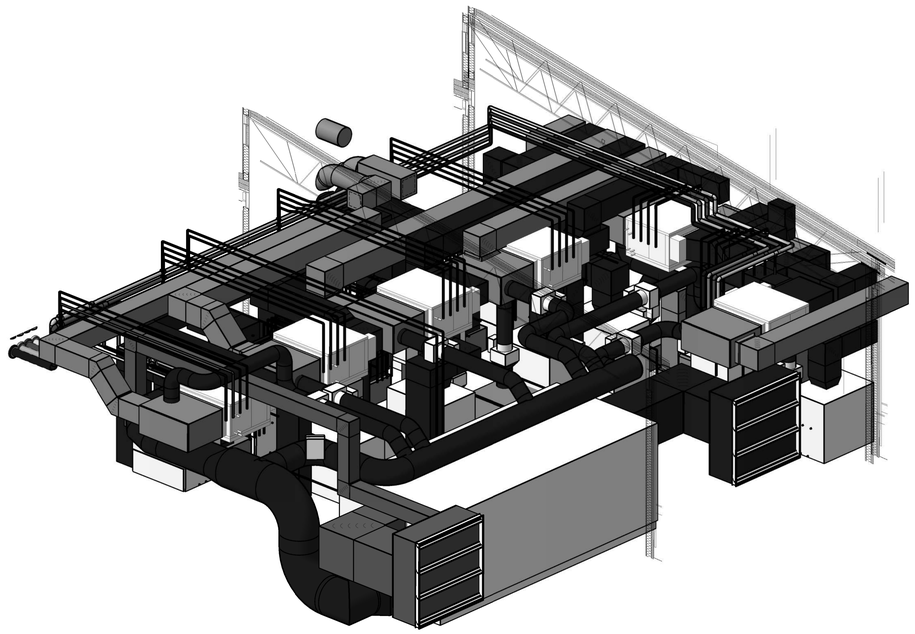

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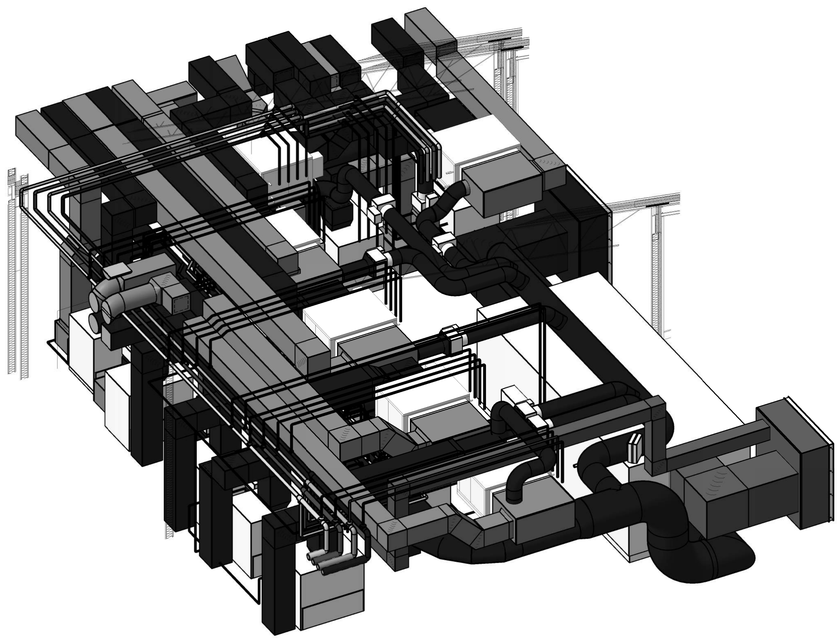

4 **AREA C - SECOND FLOOR MECHANICAL - SOUTH EAST**
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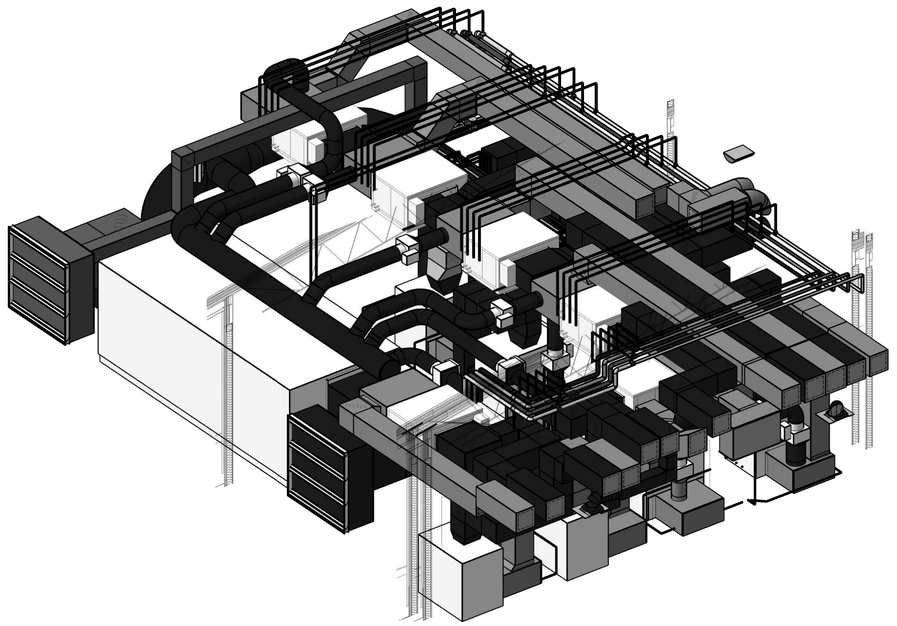

2 **AREA C - SECOND FLOOR MECHANICAL - NORTH WEST**
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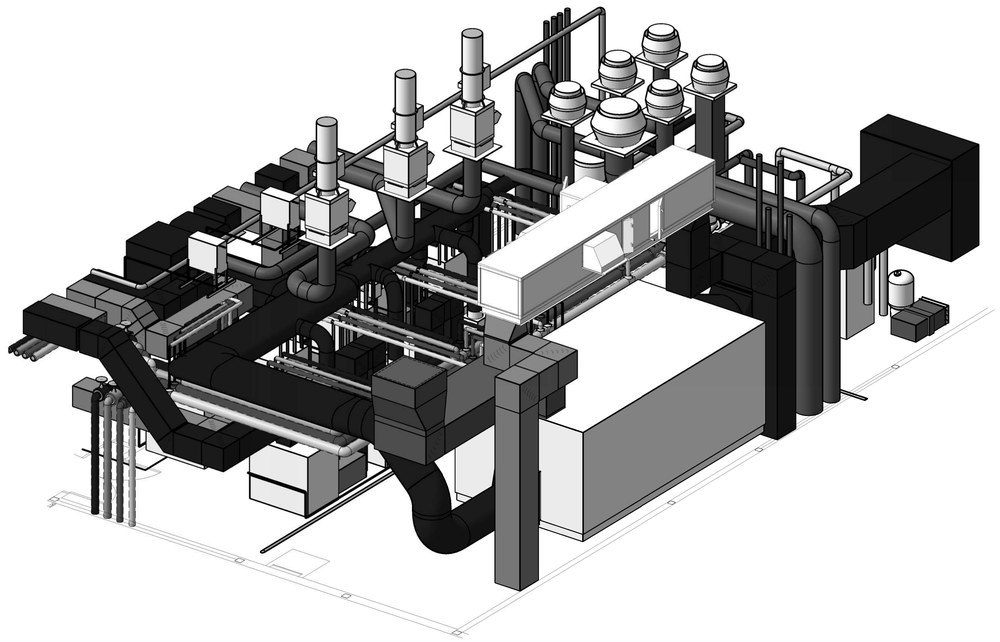

3 **AREA C - SECOND FLOOR MECHANICAL MEZZ 200 - SOUTH WEST**
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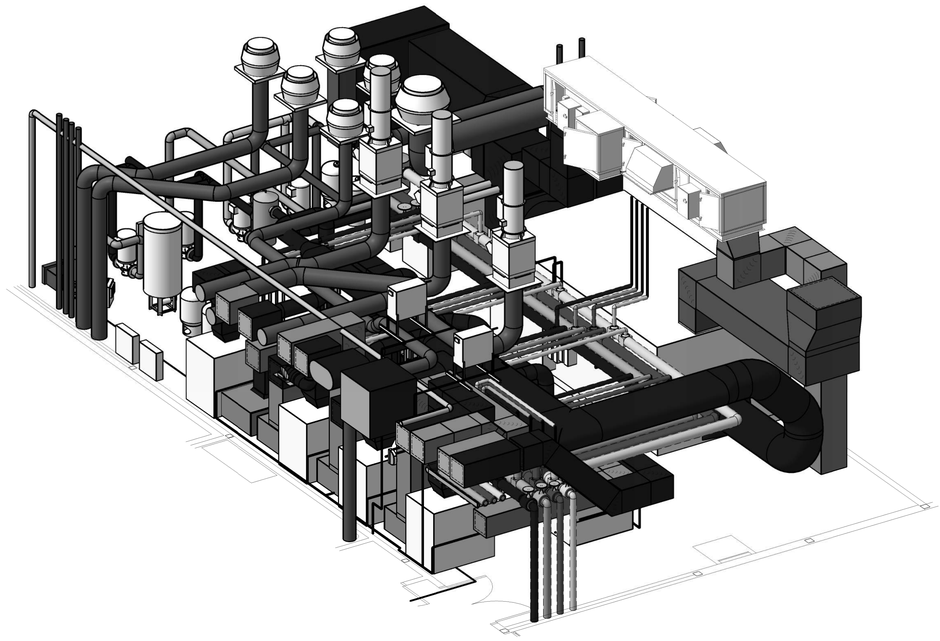

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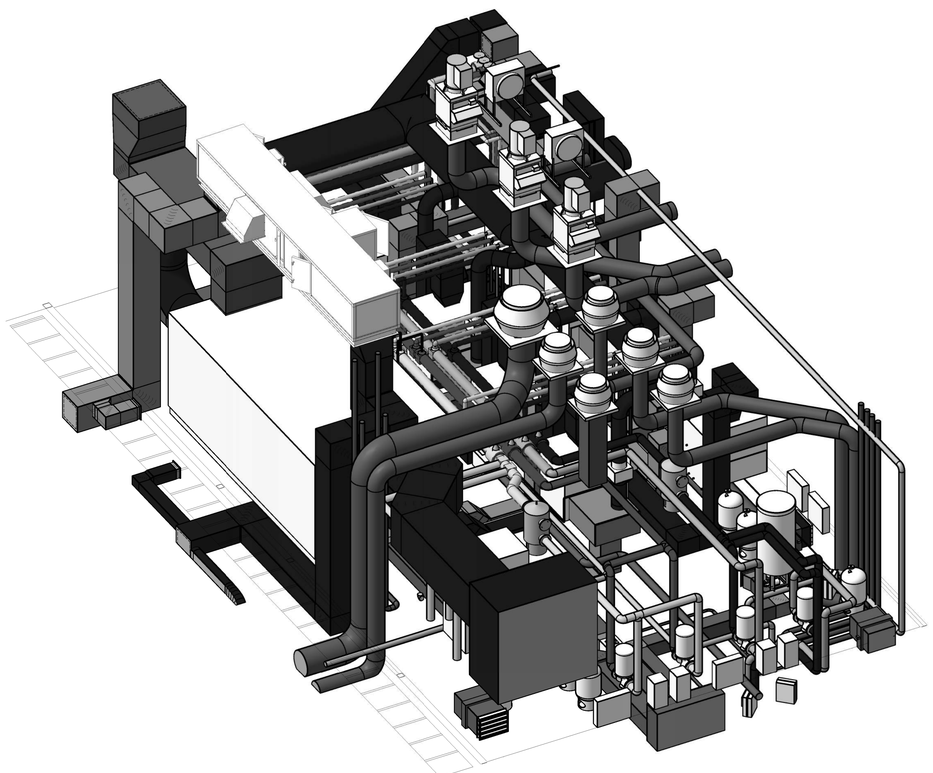

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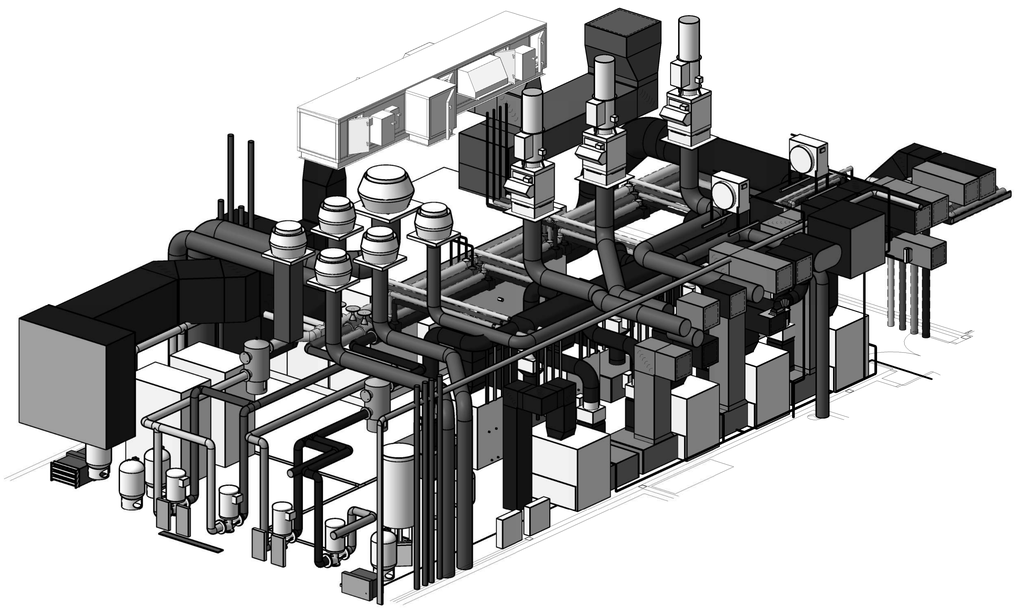

2 **AREA C - SECOND FLOOR MECHANICAL MEZZ 200 - NORTH EAST**
SCALE:

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SHEET NAME
MECHANICAL SECTIONS - 3D

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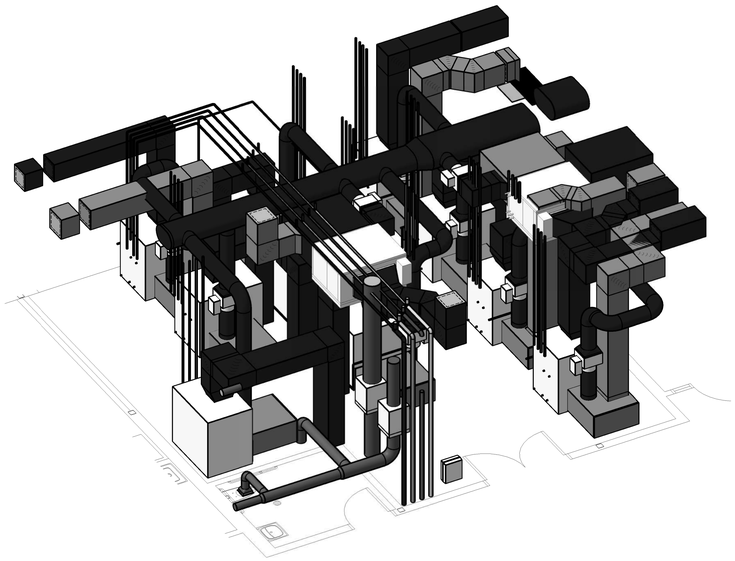

3 **AREA D - SECOND FLOOR - MECHANICAL MEZZ 224 - SOUTH WEST**
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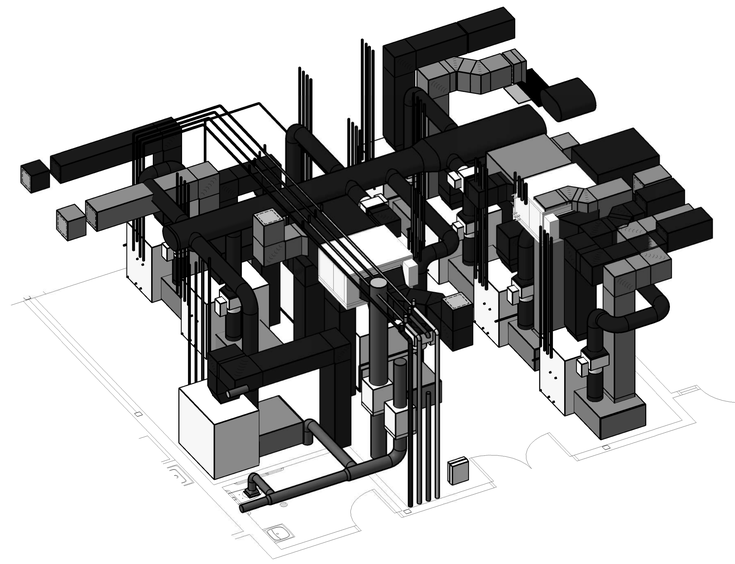

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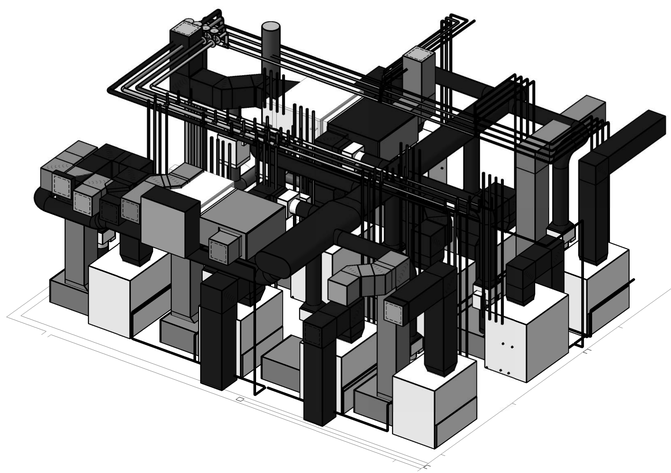

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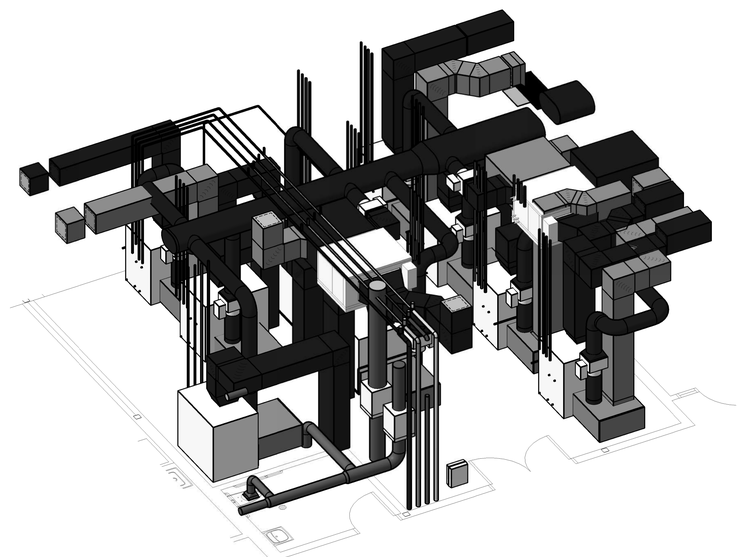

2 **AREA D - SECOND FLOOR - MECHANICAL MEZZ 224 - NORTH EAST**
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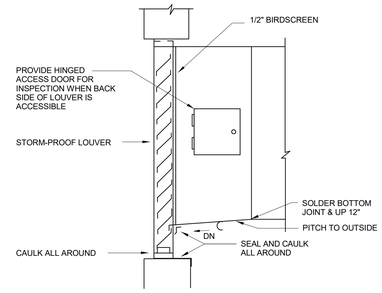

12 LOUVER DETAIL

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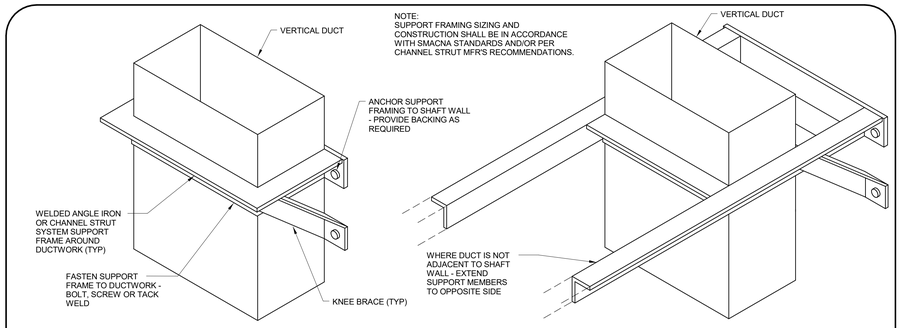
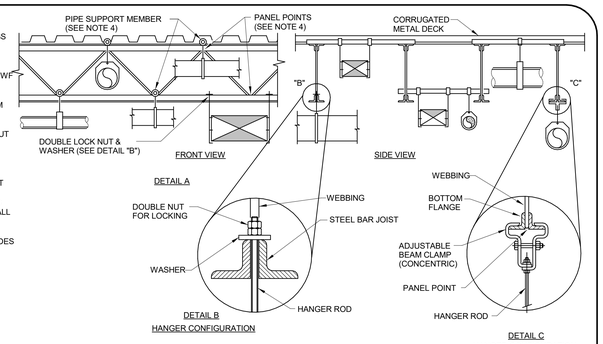


7 RECTANGULAR DUCT VERTICAL SHAFT SUPPORT DETAIL

Scale: NOT TO SCALE

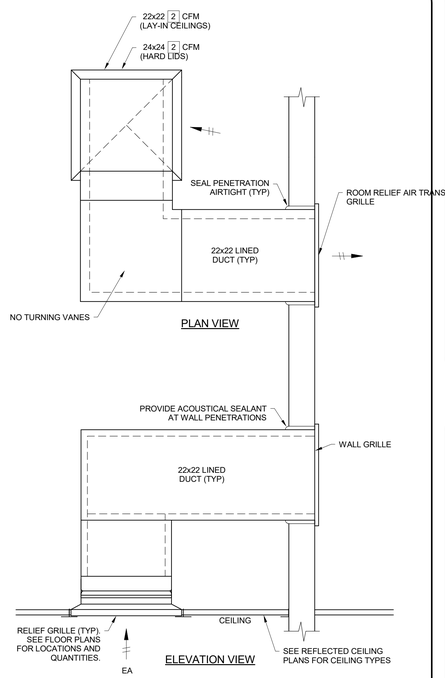
NOTES:

1. ALL DETAILS SHOWN SHALL BE SUBMITTED AS SHOP DRAWINGS AND SHALL BE REVIEWED BY THE REGISTERED STRUCTURAL ENGINEER.
2. WHERE POSSIBLE ALL HANGERS SHALL BE SUSPENDED FROM WF BEAMS IN LIEU OF FROM JOIST.
3. EQUIPMENT SHALL NOT BE HUNG FROM STEEL DECK OR FROM BRIDGING ANGLES.
4. HANGERS & SUPPORTING MEMBERS SUCH AS PIPES & UNISTRUT SHALL BE LOCATED AT PANEL POINTS OF JOIST & SHALL BE SUPPORTED BY BAR JOISTS & NOT DIRECTLY BY WEBBING; COORDINATE WITH STRUCTURAL ENGINEER.
5. THE SUM OF ALL BUILDING TRADES HANGER LOADS SHALL NOT EXCEED ALLOWABLE JOIST LOAD CAPACITY. REFER TO STRUCTURAL PLANS FOR JOIST DATA. WHEN THIS MAXIMUM IS EXCEEDED A DETAIL OF PROPOSED METHOD OF HANGING SHALL BE SUBMITTED FOR APPROVAL.
6. THIS CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES CONCERNED.
7. PROVIDE APPROVED TYPE PIPE OR CHANNEL MEMBERS TO SUPPORT DUCTWORK, PIPING AND OTHER EQUIPMENT LOADS.
8. ECCENTRIC BEAM CLAMPS WILL NOT BE ALLOWED.
9. SEE STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND CRITERIA.



1 OPEN WEB JOIST DUCT, PIPE & EQUIPMENT SUPPORT DETAIL

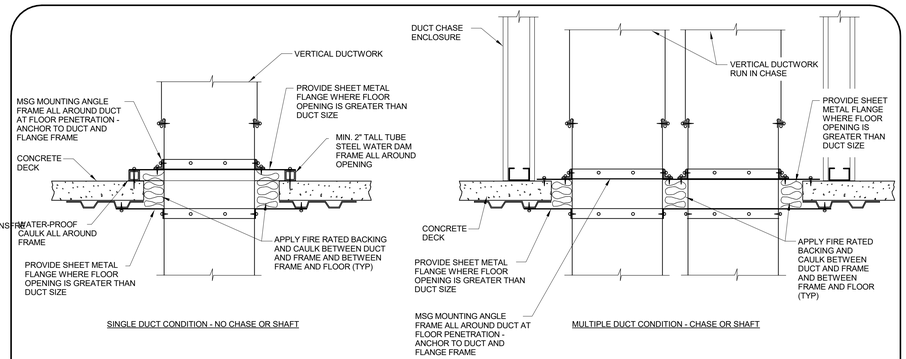
Scale: NOT TO SCALE



(RETURN GRILLE TO FAN COIL UNIT SIMILAR)

13 TYPICAL TRANSFER DUCT DETAIL

Scale: NOT TO SCALE

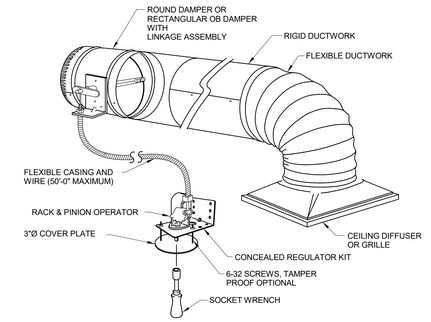


8 DUCT FLOOR PENETRATION DETAIL

Scale: NOT TO SCALE

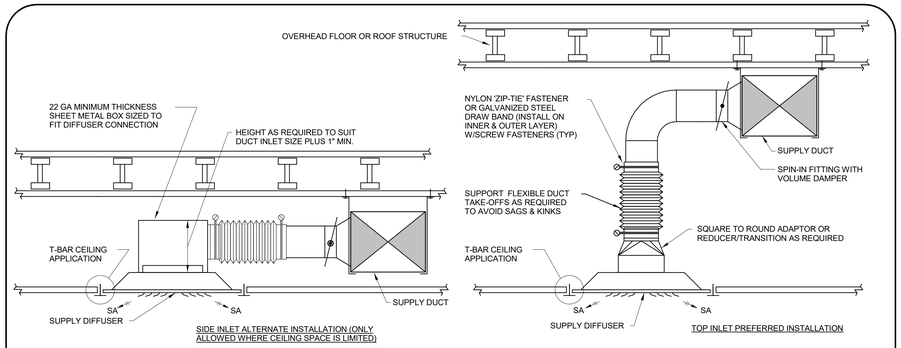
NOTES:

1. COORDINATE EXACT LOCATION OF CEILING MOUNTED CONCEALED REGULATOR WITH ARCHITECT PRIOR TO INSTALLATION.
2. THE 270-301EZ BOWDEN CABLE CONTROL SYSTEM IS DESIGNED TO BE IMBEDDED IN THE CEILING FLUSH WITH THE FINISHED SURFACE. DAMPER POSITION INDICATOR VISIBLE UNDER COVER PLATE. CABLE SHALL CONSIST OF BOWDEN CABLE 0.054" STAINLESS STEEL CONTROL WIRE.
3. ENCAPSULATED IN 1/16" FLEXIBLE GALVANIZED SPIRAL WIRE SHEATH.
4. LOCKING RACK AND PINION GEAR DRIVE SHALL BE CONSTRUCTED OF 14 GAUGE STEEL AND SHALL BE USED TO CONVERT ROTARY MOTION INTO PUSH-PULL MOTION.
5. CONTROL SHAFT SHALL BE "D"-STYLE FLATTENED 1/4" DIAMETER WITH 265° ROTATION PROVIDING 1-1/2" LINEAR TRAVEL CAPABILITY.



2 TYPICAL REMOTE VOLUME DAMPER REGULATOR ASSEMBLY

Scale: NOT TO SCALE



9 TYPICAL CONCEALED CEILING SUPPLY DIFFUSER DETAIL

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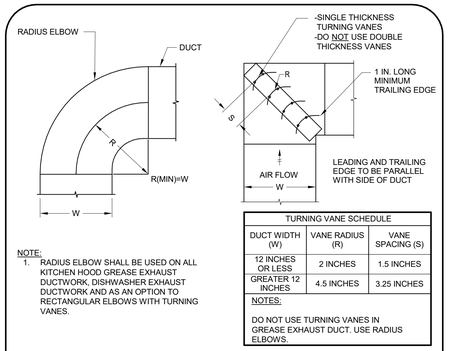


NOTE:

1. RADIUS ELBOW SHALL BE USED ON ALL KITCHEN HOOD GREASE EXHAUST DUCTWORK, DISHWASHER EXHAUST DUCTWORK AND AS AN OPTION TO RECTANGULAR ELBOWS WITH TURNING VANES.

TURNING VANE SCHEDULE

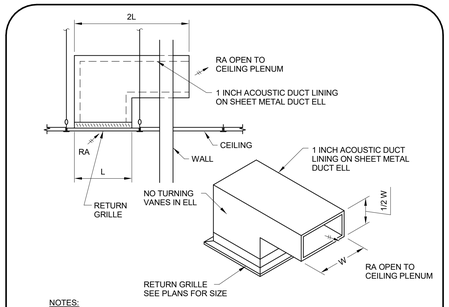
DUCT WIDTH (W)	VANE RADIUS (R)	VANE SPACING (S)
12 INCHES OR LESS	2 INCHES	1.5 INCHES
GREATER 12 INCHES	4.5 INCHES	3.25 INCHES

NOTES:

DO NOT USE TURNING VANES IN GREASE EXHAUST DUCT. USE RADIUS ELBOWS.

5 TYPICAL DUCT EBLOW DETAILS

Scale: NOT TO SCALE

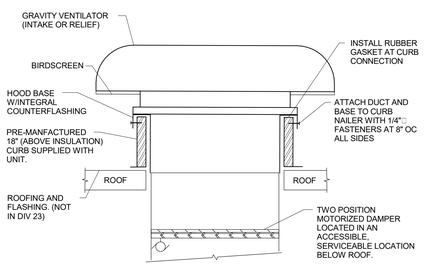


NOTES:

1. PROVIDE ACOUSTICALLY LINED SOUND TRAP ASSEMBLIES ON ALL RETURN AIR GRILLES THAT ARE OPEN DIRECTLY TO THE CEILING PLENUM.

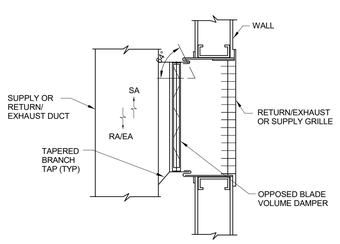
3 RETURN AIR GRILLE SOUND TRAP

Scale: NOT TO SCALE



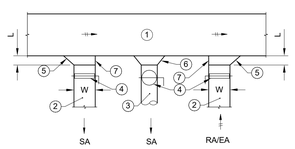
14 TYPICAL ROOF HOOD DETAIL

Scale: NOT TO SCALE



11 TYPICAL SIDEWALL GRILLE

Scale: NOT TO SCALE



KEYNOTES:

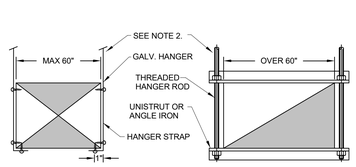
1. SUPPLY, RETURN OR EXHAUST DUCT.
2. RECTANGUALR BRACH TAKE-OFF DUCT.
3. ROUND BRANCH TAKE-OFF DUCT (TYP.)
4. VOLUME DAMPER WITH LOCKING QUADRANT (PROVIDE WITH REMOTE OPERATOR ABOVE HARD CEILINGS).
5. 45 DEGREE ENTRY FITTING.
6. CONICAL DUCT TAKE-OFF FITTING.
7. L = (1/4) x (W); 4 INCHES MINIMUM DISTANCE.

NOTES:

1. SPIN-IN DUCT TAKE-OFF FITTINGS MAY BE USED IN LIEU OF CONICAL OR BELLMOUTH FITTINGS ONLY WHERE MAIN DUCT DIMENSIONS ARE NOT SUFFICIENT TO ALLOW THE USE OF A CONICAL OR BELLMOUTH. SEAL ALL TAKE-OFF AND OTHER DUCT FITTINGS AIR.
2. TIGHT AS PER SPEC. FABRICATE BRANCH DUCT TAKE-OFF FITTINGS PER LATEST.
3. EDITION OF SMACNA DUCT CONSTRUCTION MANUAL, AS INDICATED ON PLANS, OR AS DESCRIBED IN SPECIFICATION.

10 BRANCH TAKE-OFF FITTINGS

Scale: NOT TO SCALE

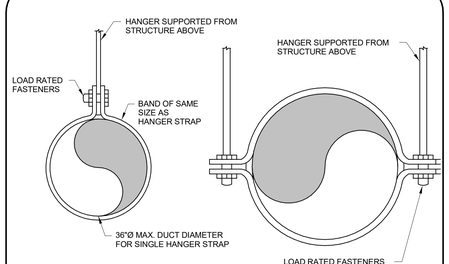


NOTES:

1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

6 RECTANGULAR DUCT HANGER DETAIL

Scale: NOT TO SCALE



NOTES:

1. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

4 ROUND DUCT HORIZONTAL HANGER DETAIL

Scale: NOT TO SCALE

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SHEET NAME HVAC DETAILS

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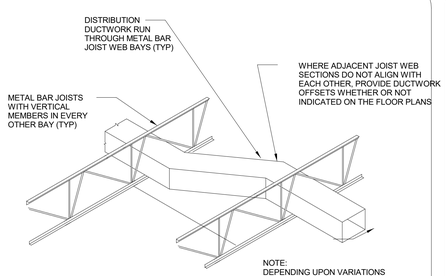
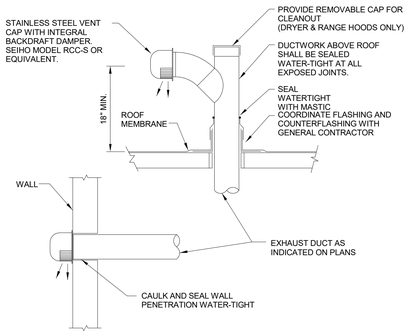
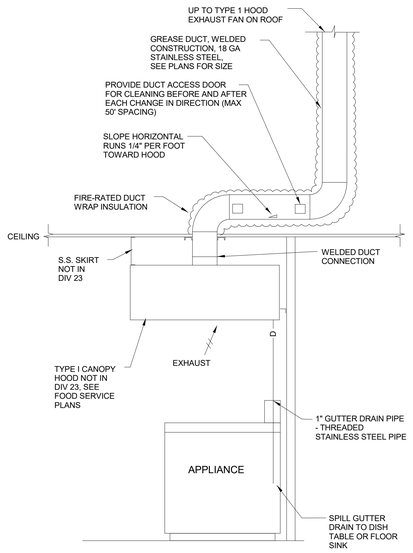


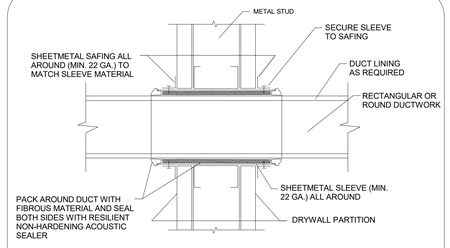
15 DUCTWORK ROUTING DETAIL THRU METAL BAR JOISTS
Scale: NOT TO SCALE



11 ROOF/WALL VENT TERMINATION DETAIL
Scale: NOT TO SCALE



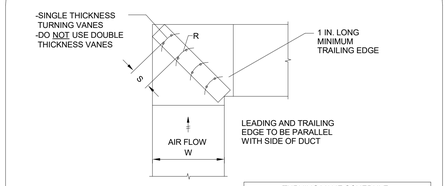
9 TYPE 1 KITCHEN HOOD
Scale: NOT TO SCALE



NOTE:

PROVIDE ACOUSTIC SLEEVE ASSEMBLY AT ALL DUCT PENETRATIONS BETWEEN MECHANICAL EQUIPMENT SPACES AND ADJACENT AREAS.

5 NOISE CONTROL TREATMENT AT DUCT PENETRATION DETAIL
Scale: NOT TO SCALE

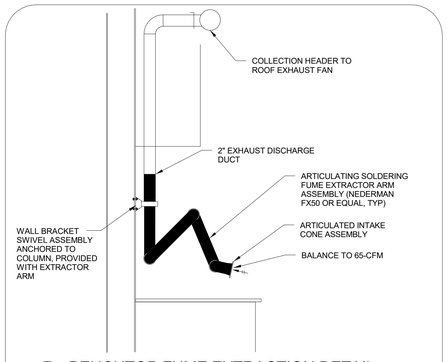


TURNING VANE SCHEDULE		
DUCT WIDTH (W)	VANE RADIUS (R)	VANE SPACING (S)
12 INCHES OR LESS	2 INCHES	1.5 INCHES
GREATER 12 INCHES	4.5 INCHES	3.25 INCHES

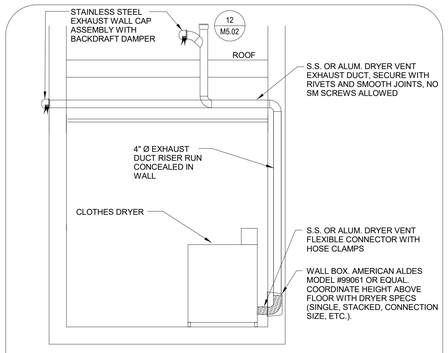
NOTES:

DO NOT USE TURNING VANES IN GREASE EXHAUST DUCT. USE RADIUS ELBOWS.

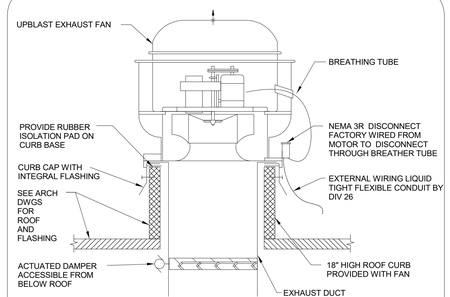
1 TYPICAL DUCT ELBOW DETAILS
Scale: NOT TO SCALE



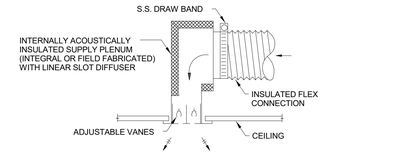
16 BENCHTOP FUME EXTRACTION DETAIL
Scale: NOT TO SCALE



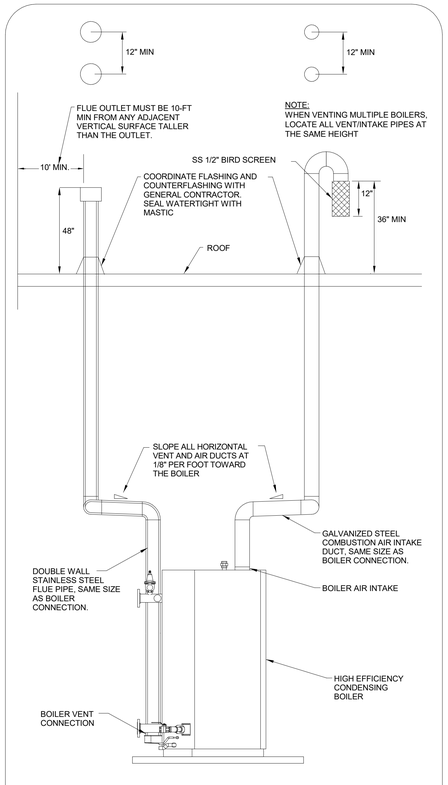
12 CLOTHES DRYER VENTING SCHEMATIC
Scale: NOT TO SCALE



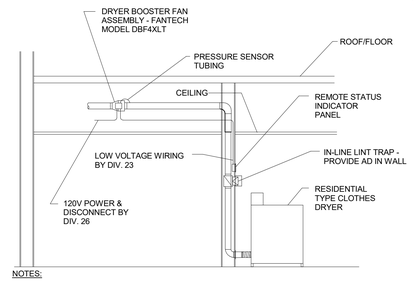
6 EXHAUST FAN DETAIL
Scale: NOT TO SCALE



2 PLENUM SLOT DIFFUSER DETAIL
Scale: NOT TO SCALE



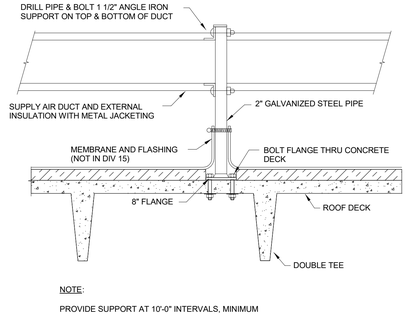
17 TYPICAL BOILER VENTING DETAIL
Scale: NOT TO SCALE



NOTES:

1. PROVIDE BOOSTER FAN ON ALL RESIDENTIAL DRYER VENTS WHERE THE DEVELOPED EXHAUST DUCT LENGTH EXCEEDS 35 FT, OR THE DRY MFR'S MAXIMUM LENGTH LIMITS.

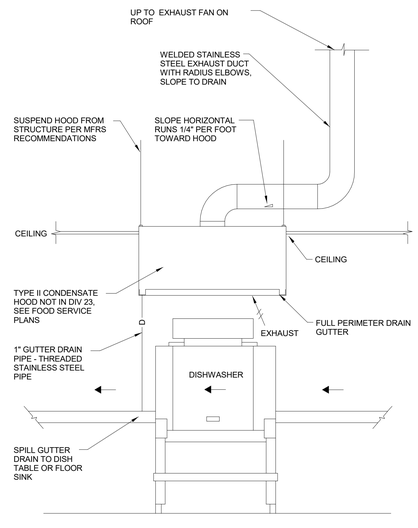
13 BOOSTER FAN FOR RESIDENTIAL TYPE CLOTHES DRYER VENTING DETAIL
Scale: NOT TO SCALE



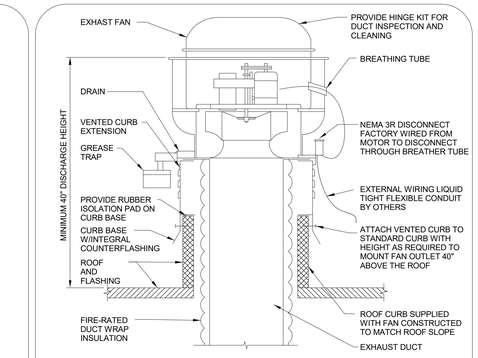
NOTE:

PROVIDE SUPPORT AT 10'-0" INTERVALS, MINIMUM

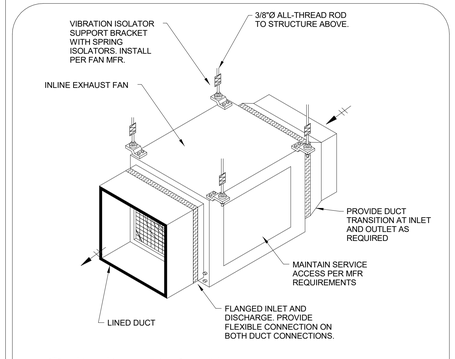
14 DUCT ROOF SUPPORT ASSEMBLY
Scale: NOT TO SCALE



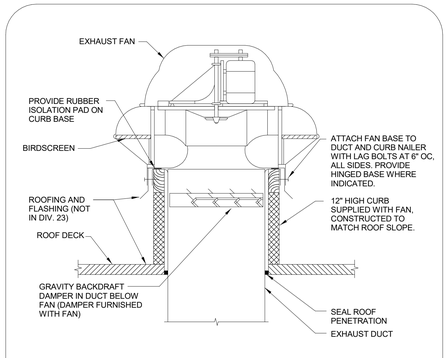
10 TYPE II KITCHEN HOOD
Scale: NOT TO SCALE



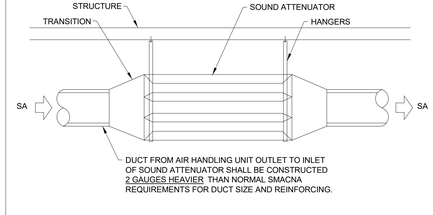
7 TYPE I HOOD EXHAUST FAN DETAIL
Scale: NOT TO SCALE



8 IN-LINE FAN DETAIL
Scale: NOT TO SCALE



3 DOWNBLAST ROOF EXHAUST FAN DETAIL
Scale: NOT TO SCALE



4 DUCT MOUNTED SOUND ATTENUATOR DETAIL
Scale: NOT TO SCALE

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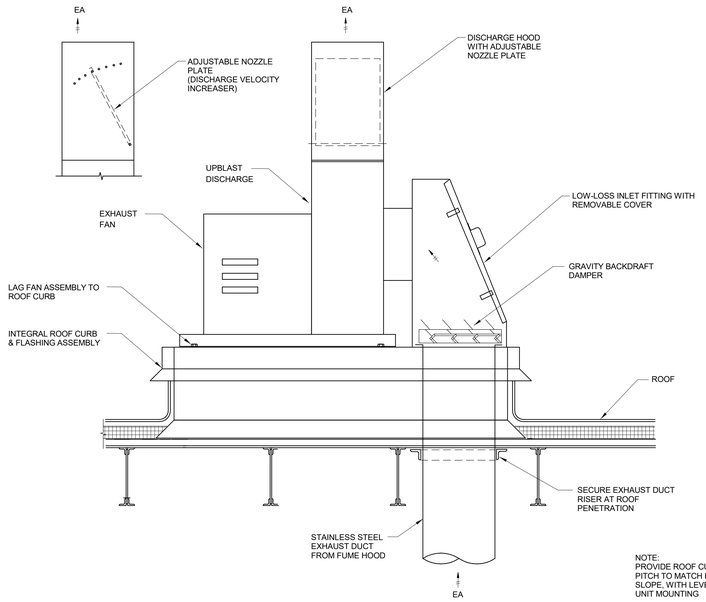
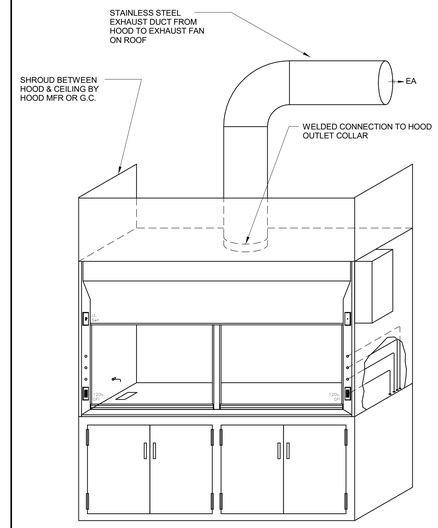


7 UTILITY SET TYPE UPBLAST FUME HOOD EXHAUST FAN DETAIL
Scale: NOT TO SCALE

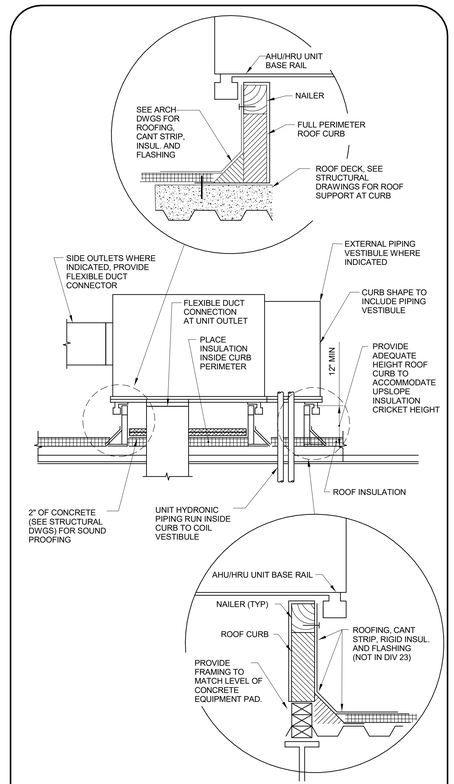


NOTE:

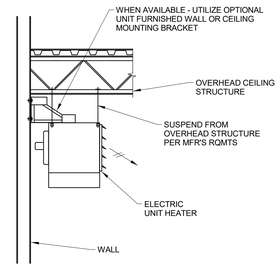
1. EXHAUST DUCT SHALL BE WELDED STAINLESS STEEL UNLESS NOTED OTHERWISE.

2. PROVIDE WITH NATURAL GAS AND COLD WATER SERVICE FIXTURES AT BOTH LEFT AND RIGHT SIDES, AND FRONT AND BACK OF PASS THROUGH HOODS. PROVIDE A DUPLEX OUTLET, LIGHT SWITCH, AND BLOWER SWITCH ON ONE SIDE. SEE SPECS. COORDINATE THE PRE-PLUMBED AND PRE-WIRED SERVICES WITH PLUMBING AND ELECTRICAL PLANS WITH REGARD TO WHETHER IT SHOULD BE PRE-PLUMBED OR PRE-WIRED TO THE LEFT OR RIGHT SIDE AS ONE SIDE MAY NOT BE FEASIBLE.

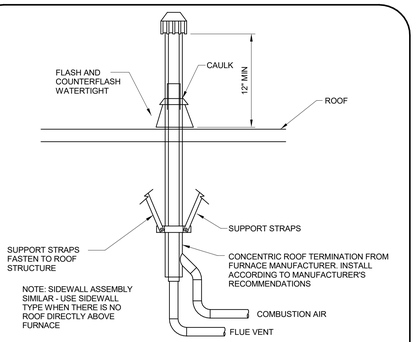
5 SCIENCE FUME HOOD DETAIL
Scale: NOT TO SCALE



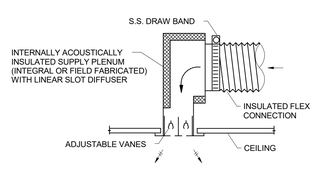
4 AIR HANDLER ROOF CURB DETAIL
Scale: NOT TO SCALE



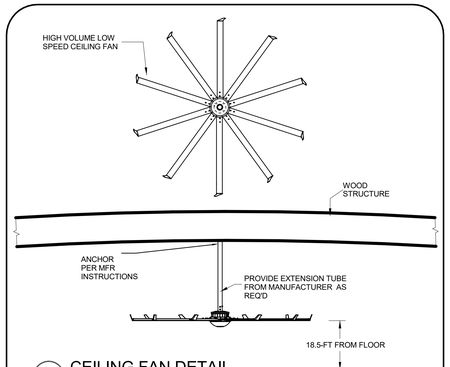
1 ELECTRIC UNIT HEATER DETAIL
Scale: NOT TO SCALE Detail #



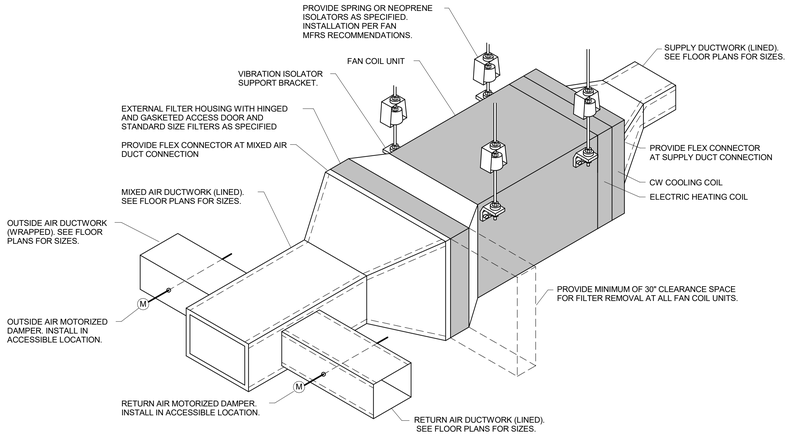
2 WATER HEATER CONCENTRIC VENTING
Scale: NOT TO SCALE



PLENUM SLOT DIFFUSER DETAIL
Scale: NOT TO SCALE



10 CEILING FAN DETAIL
Scale: NOT TO SCALE



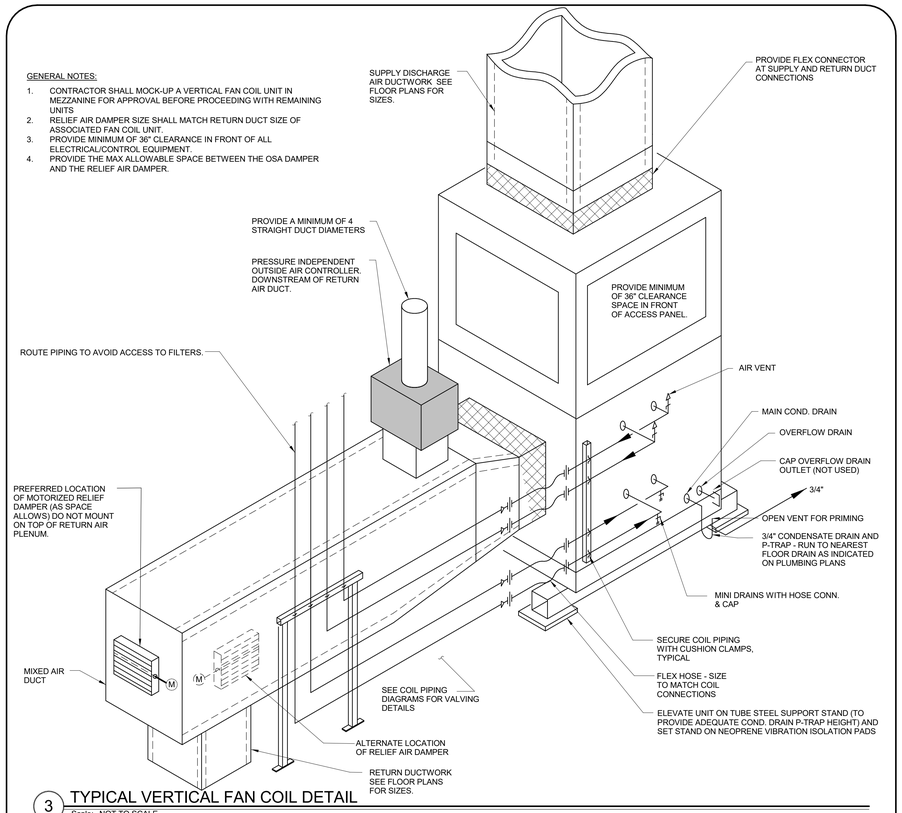
NOTES:

1. PROVIDE MINIMUM OF 36" CLEARANCE IN FRONT OF ALL ELECTRICAL/CONTROL EQUIPMENT.
2. PROVIDE MINIMUM OF 20" CLEARANCE BELOW DIRECT DRIVE FAN COIL UNITS TO FACILITATE FAN REMOVAL.
3. PROVIDE MINIMUM OF 30" CLEARANCE SPACE NEXT TO BELT DRIVE FAN COIL UNITS TO FACILITATE FAN REMOVAL.
4. COORDINATE MOTORIZED DAMPERS WITH CONTROL CONTRACTOR.

6 TYPICAL HORIZONTAL FAN COIL UNIT DETAIL
Scale: NOT TO SCALE

GENERAL NOTES:

1. CONTRACTOR SHALL MOCK-UP A VERTICAL FAN COIL UNIT IN MEZZANINE FOR APPROVAL BEFORE PROCEEDING WITH REMAINING UNITS
2. RELIEF AIR DAMPER SIZE SHALL MATCH RETURN DUCT SIZE OF ASSOCIATED FAN COIL UNIT.
3. PROVIDE MINIMUM OF 36" CLEARANCE IN FRONT OF ALL ELECTRICAL/CONTROL EQUIPMENT.
4. PROVIDE THE MAX ALLOWABLE SPACE BETWEEN THE OSA DAMPER AND THE RELIEF AIR DAMPER.



3 TYPICAL VERTICAL FAN COIL DETAIL
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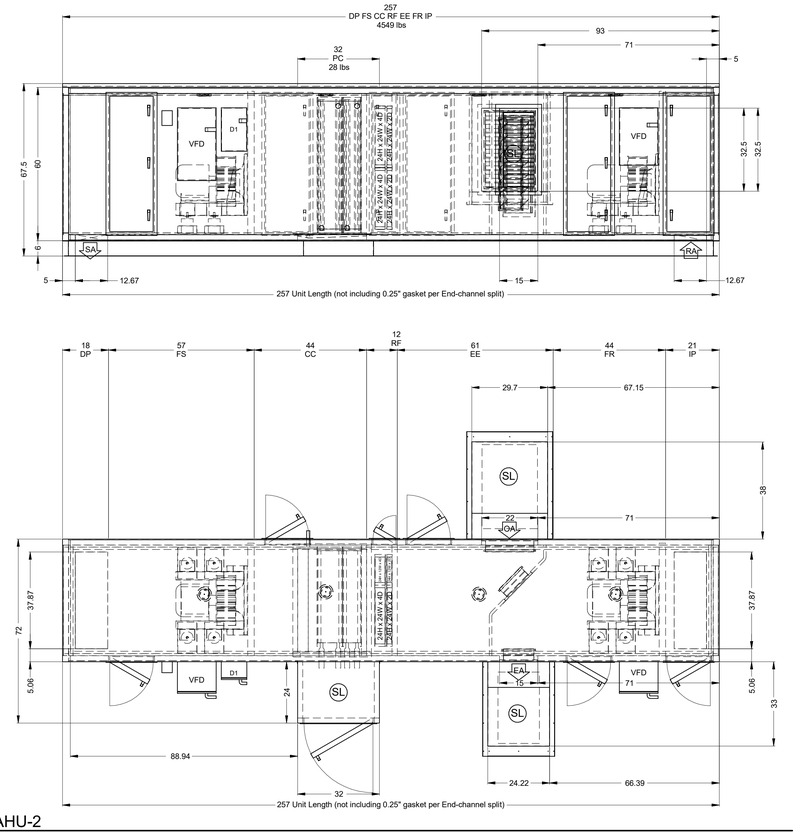

2 AHU-2

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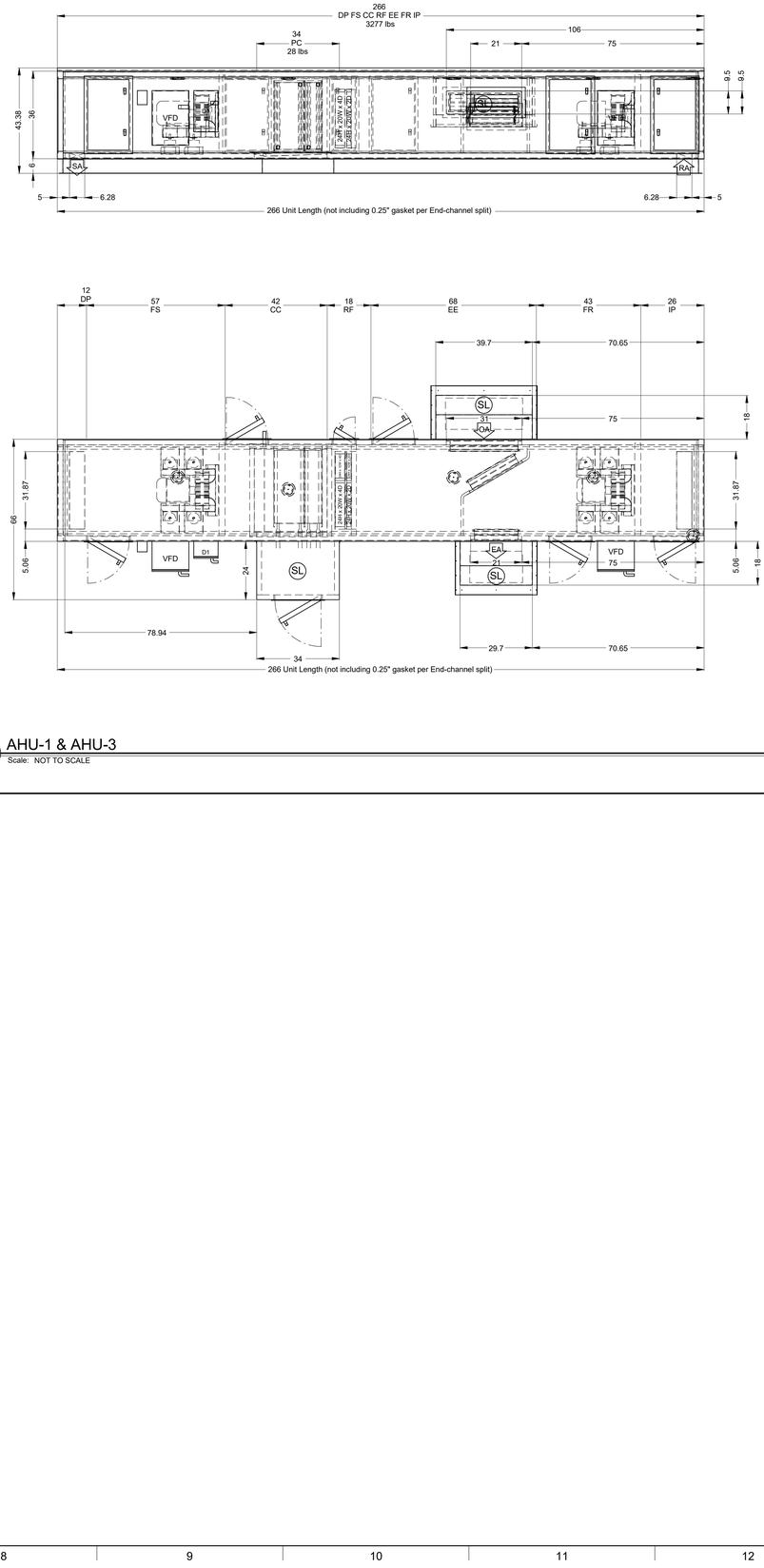

1 AHU-1 & AHU-3

Scale: NOT TO SCALE

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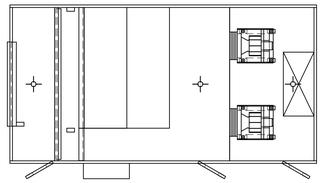
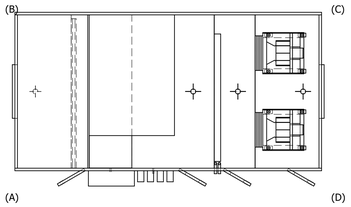
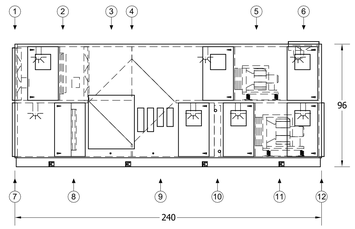


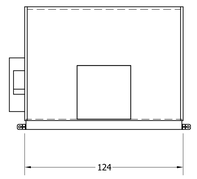
PLAN VIEW (UPPER)



PLAN VIEW (LOWER)



ELEVATION VIEW



RIGHT END VIEW

COMPONENTS:

1) OUTSIDE AIR INLET W/ DAMPER (41.00" X 66.00")
2) 2" MERV 8 AND 4" MERV 14 FILTERS
3) ELECTRICAL ENCLOSURE
4) PLATE HEAT EXCHANGER (1.00" MPT DRAIN)
5) EXHAUST FAN, TYP. OF 2
6) EXHAUST AIR OUTLET W/ DAMPER (24.00" X 50.00")
7) RETURN AIR INLET (42.00" X 42.00")
8) 2" MERV 8 FILTERS
9) VARIABLE FREQUENCY DRIVES
10) HOT WATER COIL
11) SUPPLY FAN, TYP. OF 2
12) SUPPLY AIR OUTLET (42.00" X 42.00")

WEIGHT: 10600 LBS.

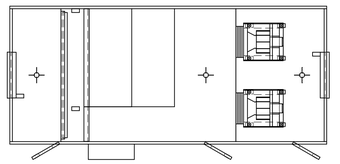
CENTER OF GRAVITY:
CGx: 123"
CGy: 62"

PLAN VIEW

CORNER WEIGHTS:
A: 2576 LBS.
B: 2576 LBS.
C: 2724 LBS.
D: 2724 LBS.

2 HRU-2

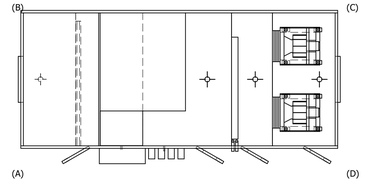
Scale: NOT TO SCALE



PLAN VIEW (UPPER)

COMPONENTS:

1) OUTSIDE AIR INLET W/ DAMPER (36.00" X 36.00")
2) 2" MERV 8 AND 4" MERV 14 FILTERS
3) ELECTRICAL ENCLOSURE
4) PLATE HEAT EXCHANGER (1.00" MPT DRAIN)
5) EXHAUST FAN, TYP. OF 2
6) EXHAUST AIR OUTLET W/ DAMPER (36.00" X 36.00")
7) RETURN AIR INLET (36.00" X 36.00")
8) 2" MERV 8 FILTERS
9) VARIABLE FREQUENCY DRIVES
10) HOT WATER COIL
11) SUPPLY FAN, TYP. OF 2
12) SUPPLY AIR OUTLET (36.00" X 36.00")



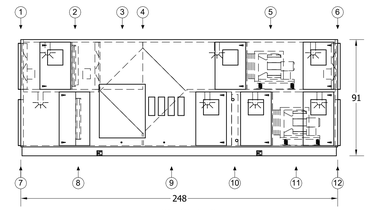
PLAN VIEW (LOWER)

WEIGHT (SHIPPING): 9400 LBS.
WEIGHT (OPERATING): 9500 LBS.

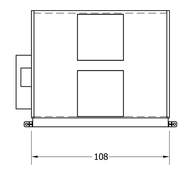
CENTER OF GRAVITY:
CGx: 129"
CGy: 54"

PLAN VIEW

CORNER WEIGHTS:
A: 2287 LBS.
B: 2287 LBS.
C: 2463 LBS.
D: 2463 LBS.



ELEVATION VIEW



RIGHT END VIEW

1 HRU-1

Scale: NOT TO SCALE

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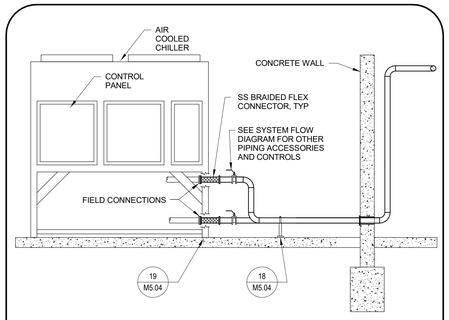
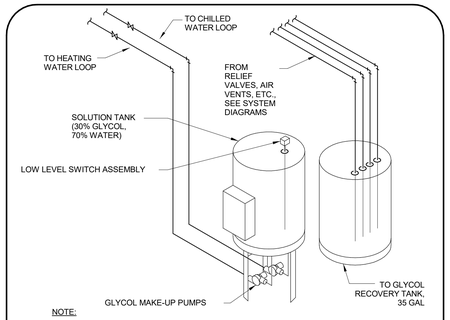


17 CHILLER PIPING DETAIL

Scale: NOT TO SCALE

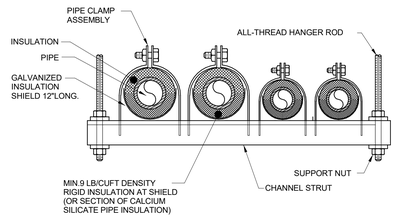


NOTE:

1. GLYCOL FEEDER SHALL BE J.L. WINGERT MODEL GL50-2E, WITH 50 GAL. POLY TANK, OR NEPTUNE MODEL G-50-2A, OR EQUAL.

13 GLYCOL FEEDER DETAIL

Scale: NOT TO SCALE

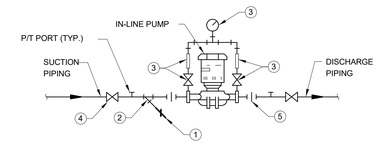


NOTES:

1. PROVIDE CONTINUOUS VAPOR BARRIER ON INSULATION JACKET THROUGH HANGER ASSEMBLY.

9 TYPICAL TRAPEZE PIPE SUPPORT DETAIL

Scale: NOT TO SCALE

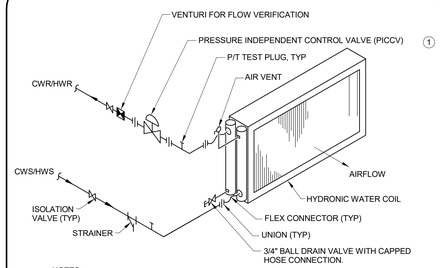


KEY NOTES:

1. DRAIN VALVE WITH 3/4" THREADED HOSE CONNECTION
2. STRAINER (NOT REQUIRED IF SYSTEM INCLUDES STAINER IN AIR SEPARATOR).
3. PRESSURE GAUGE, PRESSURE SNUBBERS & STOP COCK VALVES.
4. 2" AND SMALLER - BALL VALVE; 2 1/2" AND LARGER - BUTTERFLY VALVE.
5. PROVIDE UNION ON EACH SIDE OF PUMP IF PUMP BODY NOT FLANGED STYLE PIPE CONNECTIONS.

5 INLINE PUMP DETAIL

Scale: NOT TO SCALE

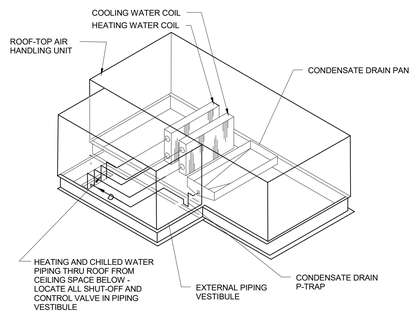


NOTES:

1. CONTROL VALVE SHALL BE NORMALLY CLOSED FOR COOLING APPLICATION, NORMALLY OPEN FOR HEATING APPLICATION.

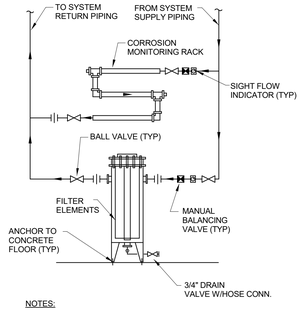
1 2-WAY HEATING AND CHILLED WATER COIL PIPING DIAGRAM

Scale: NOT TO SCALE



18 ROOF-TOP AIR HANDLING UNIT PIPING DETAIL - WITH INTERNAL PIPING

Scale: NOT TO SCALE

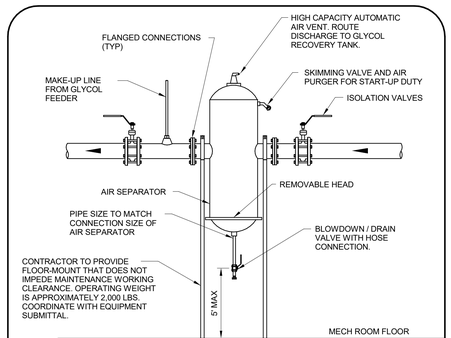


NOTES:

1. TYPICAL FOR HEATING AND COOLING SYSTEM FILTERS

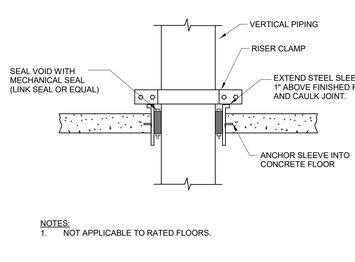
14 SIDE-STREAM FILTER DETAIL

Scale: NOT TO SCALE



10 AIR SEPARATOR DETAIL

Scale: NOT TO SCALE

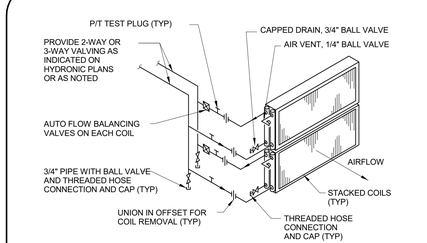


NOTES:

1. NOT APPLICABLE TO RATED FLOORS.

6 PIPE FLOOR PENETRATION DETAIL

Scale: NOT TO SCALE

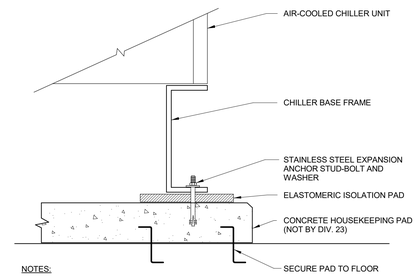


NOTES:

1. PROVIDE STACKED COIL PIPING ARRANGEMENTS ON UNITS WHERE MULTIPLE COILS ARE PROVIDED, WHETHER OR NOT INDICATED ON THE EQUIPMENT SCHEDULES.
2. PIPE SIZE RUN-OUTS TO INDIVIDUAL COILS SHALL BE EQUAL TO THE COIL CONNECTION SIZE, UNLESS NOTED OTHERWISE.

2 STACKED WATER COIL PIPING DETAIL

Scale: NOT TO SCALE

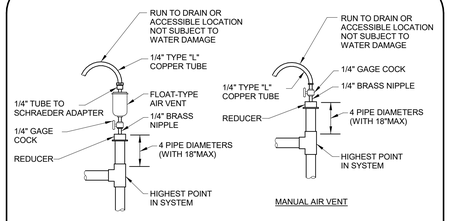


NOTES:

1. PROVIDE ANCHORS AT UNIT PERIMETER SUPPORT RAIL AT SPACING INTERVAL AS RECOMMENDED BY UNIT MANUFACTURER. MINIMUM OF SIX (6) ANCHOR POINTS (3 PER SIDE).

19 CHILLER MOUNTING DETAIL

Scale: NOT TO SCALE



UTILIZE AUTO AIR VENTS ON ALL PIPING SYSTEM HIGH POINTS.

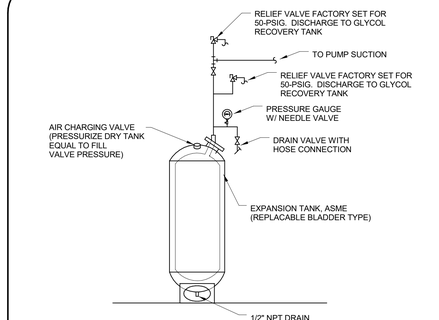
NOTE:

USE TFE TAPE ON ALL THREADED JOINTS.

UTILIZE MANUAL AIR VENTS ON COILS AND EQUIPMENT UNLESS NOTED OTHERWISE.

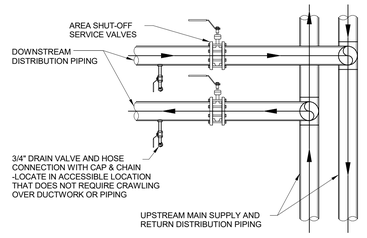
15 AIR VENT DETAILS

Scale: NOT TO SCALE



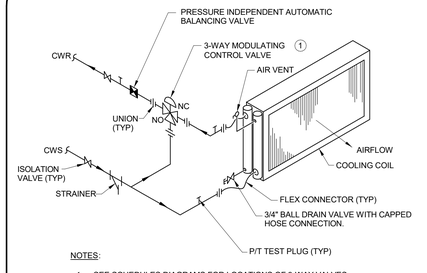
11 EXPANSION TANK DETAIL

Scale: NOT TO SCALE



7 HYDRONIC BRANCH ISOLATION DETAIL

Scale: NOT TO SCALE

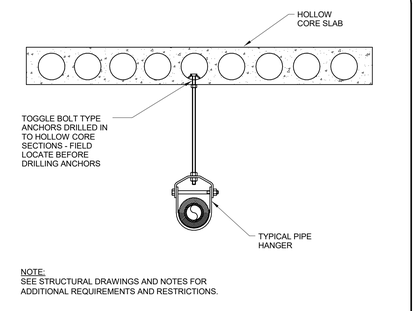


NOTES:

1. SEE SCHEDULES DIAGRAMS FOR LOCATIONS OF 3-WAY VALVES.
2. BYPASS TO BE LINE SIZE (SAME SIZE AS COIL RUNOUTS).

3 3-WAY CHILLED WATER COIL PIPING DIAGRAM

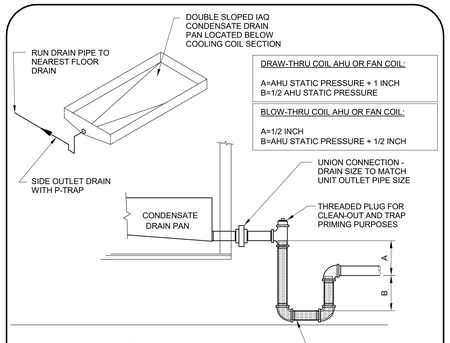
Scale: NOT TO SCALE



NOTE:
SEE STRUCTURAL DRAWINGS AND NOTES FOR ADDITIONAL REQUIREMENTS AND RESTRICTIONS.

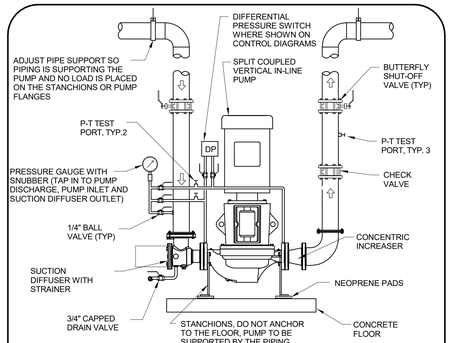
20 CONCRETE SLAB PIPE SUPPORT DETAIL

Scale: NOT TO SCALE



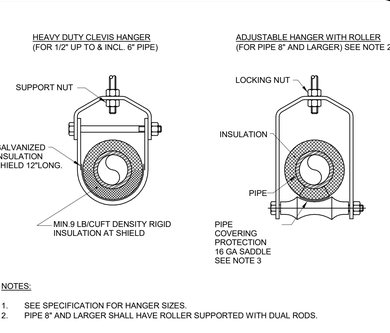
16 AHU AND FAN COIL CONDENSATE DRAIN TRAP DETAIL

Scale: NOT TO SCALE



12 VERTICAL IN-LINE PUMP DETAIL

Scale: NOT TO SCALE

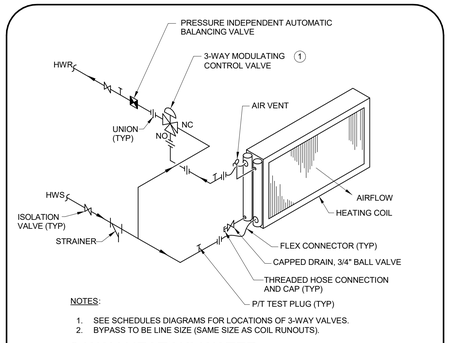


NOTES:

1. SEE SPECIFICATION FOR HANGER SIZES.
2. PIPE 8" AND LARGER SHALL HAVE ROLLER SUPPORTED WITH DUAL RODS.

8 PIPE HANGER DETAIL

Scale: NOT TO SCALE



NOTES:

1. SEE SCHEDULES DIAGRAMS FOR LOCATIONS OF 3-WAY VALVES.
2. BYPASS TO BE LINE SIZE (SAME SIZE AS COIL RUNOUTS).

4 3-WAY HEATING WATER COIL PIPING DIAGRAM

Scale: NOT TO SCALE

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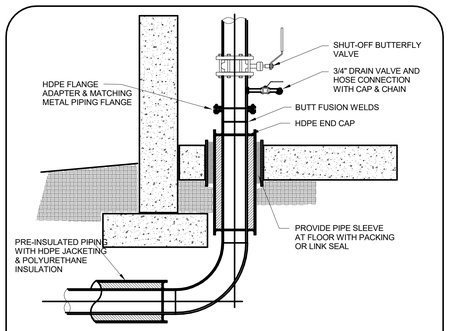
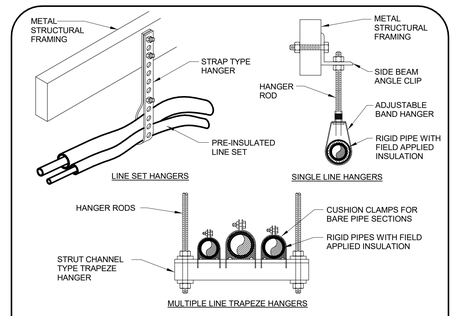


8 DIRECT BURIED PRE-INSULATED PIPING RISER & CONNECTION DETAIL

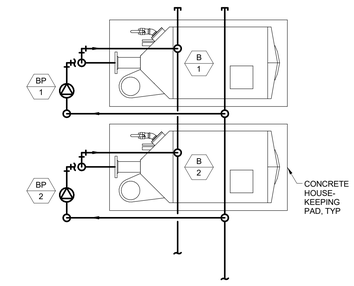
Scale: NOT TO SCALE

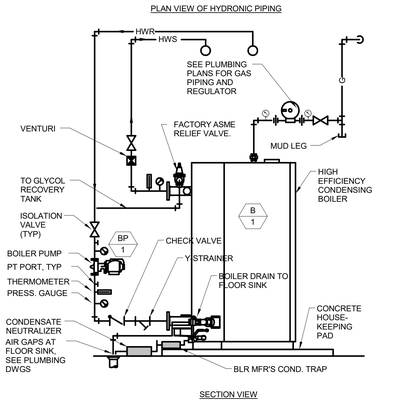


NOTES:
1. HANGER SPACING SHALL BE AS SPECIFIED OR AS REQUIRED BY CODE AND/OR MFR'S RECOMMENDATIONS.

4 TYPICAL REFRIGERANT PIPING HANGERS

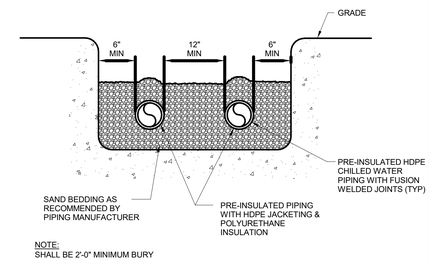
Scale: NOT TO SCALE





1 BOILER PIPING DETAIL

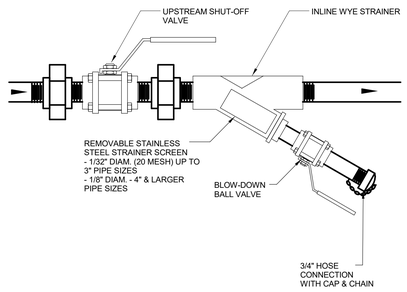
Scale: NOT TO SCALE



NOTE:
SHALL BE 2'-0" MINIMUM BURY

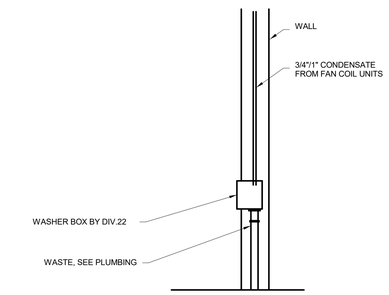
9 DIRECT BURIED PRE-INSULATED CHILLED WATER PIPING TRENCH DETAIL

Scale: NOT TO SCALE



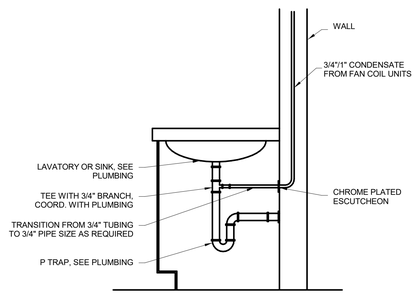
5 TYPICAL STRAINER PIPING DIAGRAM

Scale: NOT TO SCALE



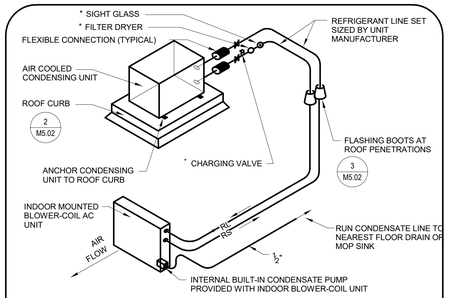
10 CONDENSATE TO WASHER BOX DRAIN CONNECTION DETAIL

Scale: NOT TO SCALE



6 CONDENSATE TO SINK TRAP CONNECTION DETAIL

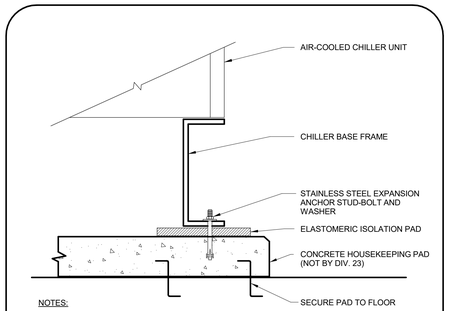
Scale: NOT TO SCALE



* - INDICATES DEVICES TYPICALLY PROVIDED WITH CONDENSING UNIT AND PRE-INSTALLED INSIDE HOUSING - IF NOT FURNISHED WITH UNIT, INSTALLING CONTRACTOR SHALL PROVIDE AND INSTALL

2 DUCTLESS SPLIT AC DIAGRAM

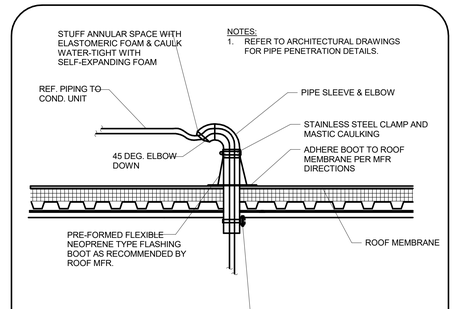
Scale: NOT TO SCALE



NOTES:
1. PROVIDE ANCHORS AT UNIT PERIMETER SUPPORT RAIL AT SPACING INTERVAL AS RECOMMENDED BY UNIT MANUFACTURER. MINIMUM OF SIX (6) ANCHOR POINTS (3 PER SIDE).

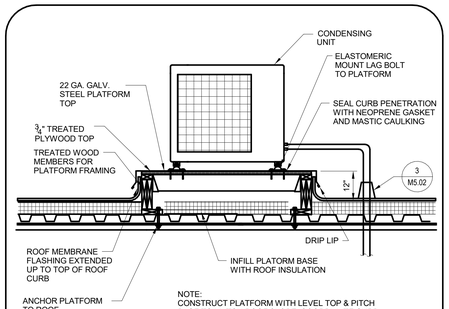
11 CHILLER MOUNTING DETAIL

Scale: NOT TO SCALE



7 REFRIGERANT PIPING ROOF PENETRATION DETAIL

Scale: NOT TO SCALE



3 ROOF MOUNTED CONDENSING UNIT

Scale: NOT TO SCALE

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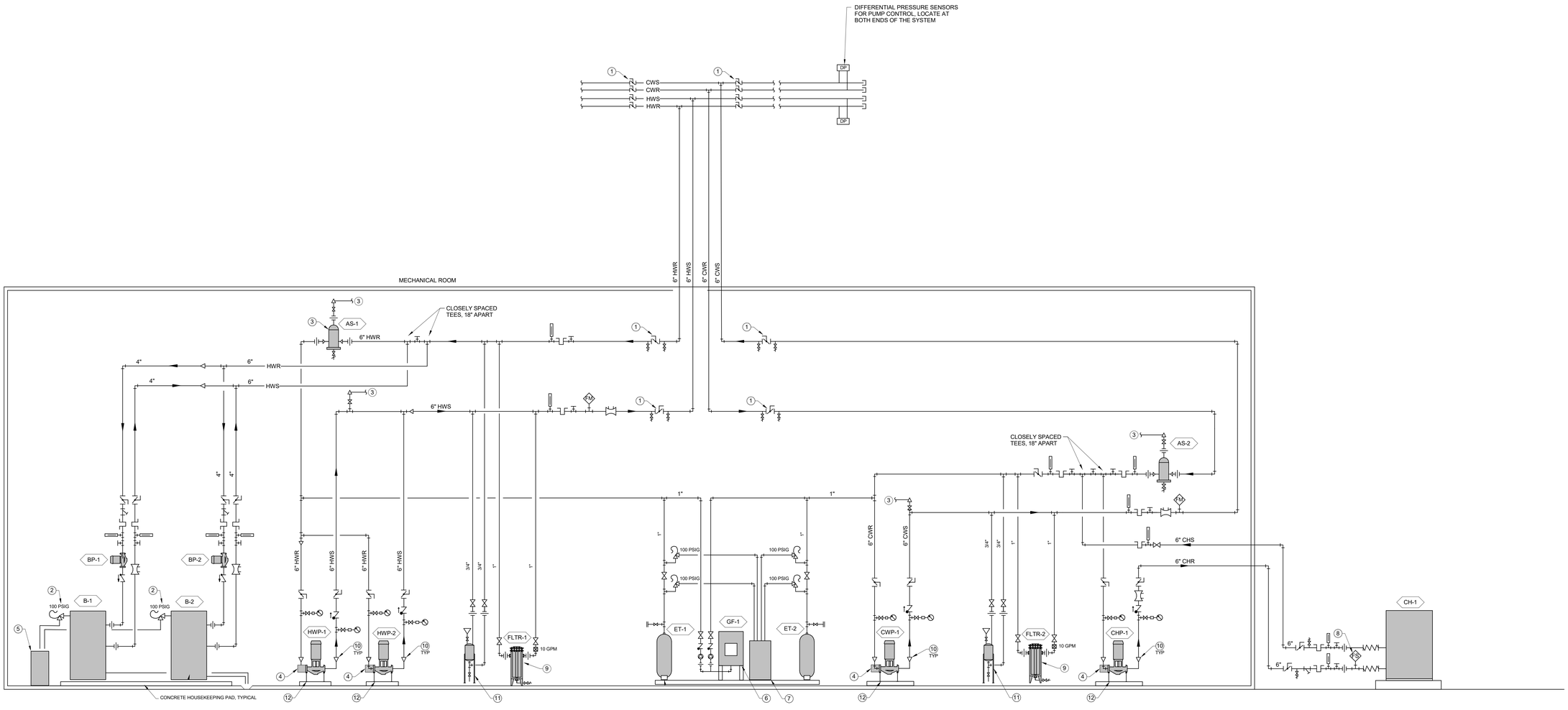

GENERAL NOTES

1. SEE TEMPERATURE CONTROL DIAGRAMS FOR LOCATIONS AND QUANTITIES OF TEMPERATURE SENSORS, PRESSURE SENSORS FLOW DEVICES, ETC.
2. PROVIDE ALL ADDITIONAL DRAINS & CONNECTIONS AS REQUIRED FOR SYSTEM FLUSHING, CLEANING AND FILLING.
3. LINE SIZE DISCREPANCIES BETWEEN THIS DIAGRAM AND THE PLANS SHALL DEFER TO LINE SIZES SHOWN ON THE PLANS

KEYNOTES

1. AREA ISOLATION VALVES AND DRAIN VALVES WITH HOSE CONNECTION. SEE PLANS FOR QUANTITIES AND LOCATIONS.
2. TEMPERATURE & PRESSURE RELIEF VALVE PROVIDED BY BOILER MFR.
3. PIPE DISCHARGE TO GLYCOL RECOVERY TANK.
4. SUCTION DIFFUSER W/ STRAINER, DRAIN VALVE, HOSE CONN., TYP.
5. BOILER RELIEF / RECOVERY TANK (30 GAL)
6. 50 GAL GLYCOL FEEDER ASSEMBLY WITH DUAL PUMP AND LOW LEVEL SWITCH. ONE ASSEMBLY FEEDS BOTH HEATING AND CHILLED WATER SYSTEMS.
7. GLYCOL RECOVERY TANK (30 GAL).
8. FACTORY FLOW SWITCH.
9. SIDESTREAM CARTRIDGE FILTER.
10. CONCENTRIC REDUCER/INCREASER AT PUMP CONNECTIONS AS REQUIRED.
11. BYPASS POT FEEDER.
12. PUMP SUPPORT STAND SET ON HOUSEKEEPING PAD WITH NEOPRENE PADS.

LEGEND

- FM — INSERTION TYPE FLOW METER FOR INPUT TO EMCS.
- VENTURI
- THERMOMETER (TYP), MOUNT WHERE VISIBLE
- P/T PORTS, TYPICAL.
- VALVE, BUTTERFLY TYPE
- MANUAL VALVE, SEE SPECS FOR VALVE TYPE
- PRESSURE GAUGE WITH STOP COCK AND SNUBBER
- UNION
- MANUAL BALANCING VALVE
- PRESSURE INDEPENDENT AUTO BALANCING VALVE
- ASME RELIEF VALVE, RELIEF PRESSURE INDICATED.
- AUTOMATIC AIR VENTS AT TRAPPED HIGH POINTS. ROUTE TO RECOVERY TANK.
- THERMOMETER WELL, COORDINATE LOCATION WITH CONTROLS CONTRACTOR
- CHECK VALVE
- FLEX CONNECTOR

1 HOT & CHILLED WATER PIPING DIAGRAM
Scale: NOT TO SCALE

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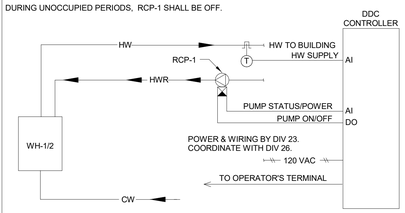
SEQUENCE OF OPERATION - DOMESTIC HOT WATER SYSTEM

DURING THE OCCUPIED PERIODS THE HOT WATER RECIRCULATION PUMP, RCP-1, SHALL RUN CONTINUOUSLY.

SYSTEM SHALL MONITOR PUMP STATUS.

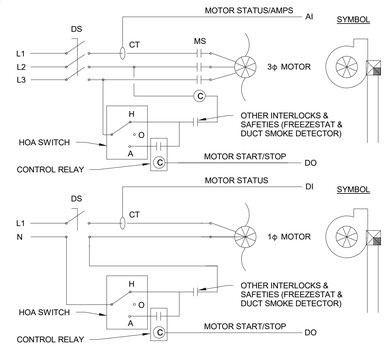
PROVIDE ALARM ANNUNCIATION TO THE OPERATORS TERMINAL FOR PUMP FAILURE.

DURING UNOCCUPIED PERIODS, RCP-1 SHALL BE OFF.



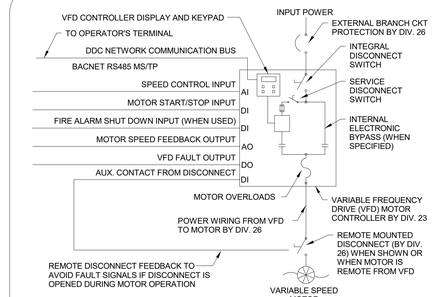
12 DOMESTIC HOT WATER PUMP CONTROL DIAGRAM (RCP-1)

Scale: NOT TO SCALE



8 TYPICAL MOTOR STARTER WIRING DIAGRAM

Scale: NOT TO SCALE Detail #



4 TYPICAL VARIABLE FREQUENCY DRIVE (VFD) WIRING DIAGRAM

Scale: NOT TO SCALE

DM-#	DAMPER ACTUATOR	AI	ANALOG INPUT
DPS-#	DIFFERENTIAL PRESSURE SENSOR	AO	ANALOG OUTPUT
SP-#	STATIC PRESSURE SENSOR	C	COMMON
V-#	MODULATING VALVE ACTUATOR	CIRC	CIRCULATION
	MOTOR STARTER	CWR	CHILLED WATER RETURN
	MOTOR STARTER W/ CT	CWS	CHILLED WATER SUPPLY
# (T)	TEMPERATURE SENSOR	DDC	DIRECT DIGITAL CONTROL
# (T)	TEMPERATURE SENSOR W/SUN SHIELD	DI	DIGITAL INPUT
PS	PRESSURE SENSOR	DO	DIGITAL OUTPUT
A	AIRFLOW PROVING SWITCH	EA	EXHAUST AIR
H	ELECTRONIC HUMIDISTAT	EMCS	ENERGY MANAGEMENT & CONTROL SYSTEM
		EA	EXHAUST
		HWR	HOT WATER RETURN
		HWS	WATER SUPPLY
		NC	NORMALLY CLOSED
		NO	NORMALLY OPEN
		OSA	OUTSIDE AIR
		RA	RETURN AIR
		SA	SUPPLY AIR

NOTES:

COORDINATE AND VERIFY OCCUPIED/UNOCCUPIED SCHEDULE FOR EACH UNIT OR SYSTEM WITH THE OWNER PRIOR TO PROGRAMMING.

1 TEMPERATURE CONTROL LEGEND

Scale: NOT TO SCALE

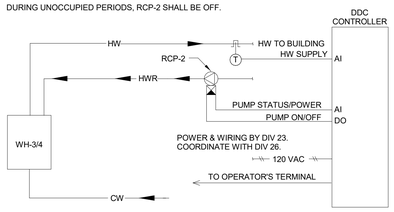
SEQUENCE OF OPERATION - DOMESTIC HOT WATER SYSTEM

DURING THE OCCUPIED PERIODS THE HOT WATER RECIRCULATION PUMP, RCP-2, SHALL RUN CONTINUOUSLY.

SYSTEM SHALL MONITOR PUMP STATUS.

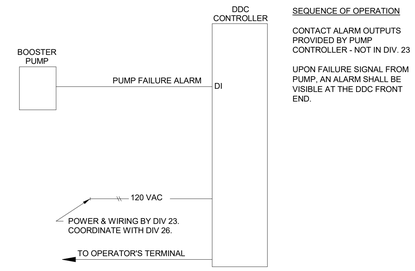
PROVIDE ALARM ANNUNCIATION TO THE OPERATORS TERMINAL FOR PUMP FAILURE.

DURING UNOCCUPIED PERIODS, RCP-2 SHALL BE OFF.



13 DOMESTIC HOT WATER PUMP CONTROL DIAGRAM (RCP-2)

Scale: NOT TO SCALE



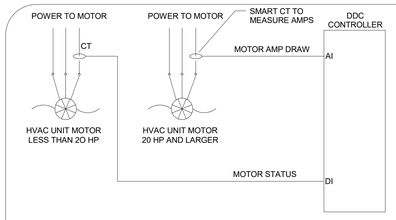
SEQUENCE OF OPERATION

CONTACT ALARM OUTPUTS PROVIDED BY PUMP CONTROLLER - NOT IN DIV. 23

UPON FAILURE SIGNAL FROM PUMP, AN ALARM SHALL BE VISIBLE AT THE DDC FRONT END.

9 DOMESTIC WATER BOOSTER PUMP ALARM

Scale: NOT TO SCALE



SEQUENCE OF OPERATION

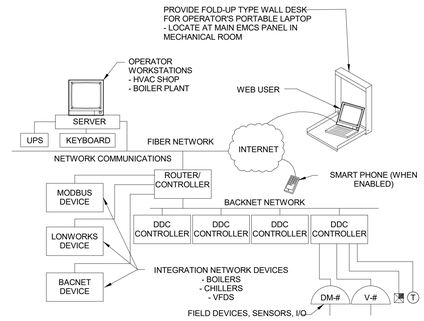
ALL HVAC MOTORS SHALL BE MONITORED TO DETERMINE OPERATIONAL STATUS ON-OFF FEEDBACK AND/OR TO MEASURE ACTUAL AMP DRAW TO MOTOR. AMP DRAW MEASURING FOR ALL MOTORS AS REQUIRED UNDER THE 2012 WASHINGTON STATE ENERGY CODE (SEE CHAPTER C409.3.1).

POWER CONSUMPTION CALCULATION:

USING MEASURED MOTOR AMP DRAW AND RUN-TIME HISTORY, THE CONTROL SYSTEM SHALL LOG ACTUAL POWER CONSUMPTION FOR EACH MOTOR.

5 TYPICAL MOTOR CURRENT TRANSFORMER (CT) WIRING DIAGRAM

Scale: NOT TO SCALE Detail #



GENERAL NOTE:

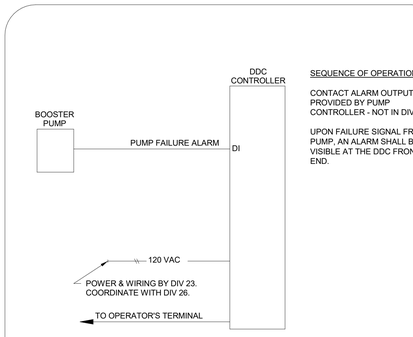
SEVERAL OF THE CONTROL DIAGRAMS INDICATE A DDC CONTROLLER. THESE DIAGRAMS DO NOT ATTEMPT TO INDICATE THE QUANTITY, SIZE/TYPE OF DDC CONTROLLERS REQUIRED. DEPENDING ON CAPACITY IT MAY BE POSSIBLE TO SERVE SEVERAL SYSTEMS WITH A COMMON DDC CONTROLLER OR SOME SEQUENCES MAY REQUIRE MORE THAN ONE DDC CONTROLLER.

NOTES:

1. NETWORK: UNLESS NOTED OTHERWISE ON THE ELECTRICAL SYSTEM DRAWINGS, PROVIDE A DEDICATED EMCS COMMUNICATION NETWORK, INCLUDING ALL NECESSARY CABLING, OUTLETS, ROUTERS AND SWITCHES. DO NOT USE THE GENERAL BUILDING-WIDE NETWORK UNLESS SPECIFICALLY NOTED.
2. COORDINATE AND VERIFY OCCUPIED/UNOCCUPIED SCHEDULE FOR EACH UNIT OR SYSTEM WITH THE OWNER PRIOR TO PROGRAMMING.
3. ADJUST THERMOSTAT SETPOINT RANGES (LIMITS) AS DIRECTED BY THE OWNER.
4. WORK WITH THE OWNER TO DETERMINE ALARM REQUIREMENTS, RANGES AND SETPOINTS ON ALL SYSTEMS AND CONTROLS.
5. PROVIDE AUTOMATIC STAGGERED RESTART PROGRAMMING ON ALL EQUIPMENT AFTER POWER FAILURE.
6. ADJUST VFD RAMP SPEEDS TO PROVIDE STABLE START-UP AND DYNAMIC OPERATION.
7. COORDINATE LOCATION OF ALL FIELD MOUNTED CONTROL ENCLOSURES, PANELS, AND OPERATOR INTERFACE DEVICES WITH THE ELECTRICAL CONTRACTOR, THE OWNER AND THE ENGINEER. PROVIDE PROPOSED LAYOUT OF PANEL LOCATIONS IN SHOP DRAWINGS FOR REVIEW AND APPROVAL. CONTROL PANELS MAY BE LOCATED IN ELECTRICAL ROOMS, DATA ROOMS, CUSTODIAN ROOMS OR OTHER PRE-APPROVED AREAS.
8. PROVIDE A MINIMUM OF 2 DATA DROPS FOR DDC SYSTEM INTEGRATION IN EACH MAIN MECHANICAL ROOM, AND 1 DATA DROP IN SMALL MECHANICAL SPACES.
9. PROVIDE ALL TRANSLATORS REQUIRED FOR CONTROL INTERFACING WITH EQUIPMENT.

2 DIRECT DIGITAL CONTROL NETWORK SYSTEM SCHEMATIC

Scale: NOT TO SCALE



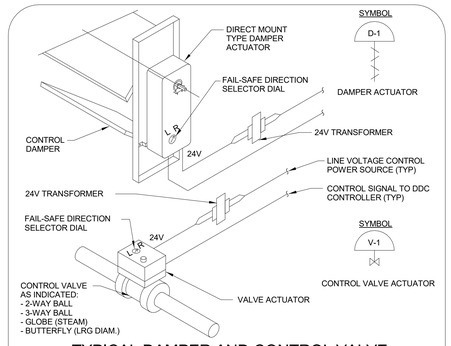
SEQUENCE OF OPERATION

CONTACT ALARM OUTPUTS PROVIDED BY PUMP CONTROLLER - NOT IN DIV. 23

UPON FAILURE SIGNAL FROM PUMP, AN ALARM SHALL BE VISIBLE AT THE DDC FRONT END.

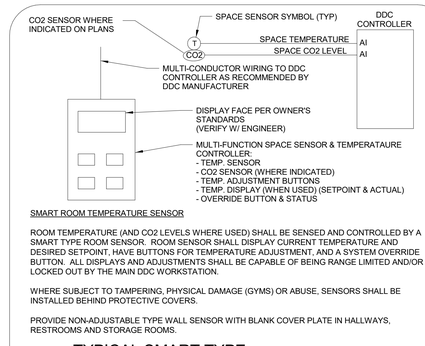
14 DOMESTIC WATER BOOSTER PUMP ALARM

Scale: NOT TO SCALE



10 TYPICAL DAMPER AND CONTROL VALVE ACTUATOR MOUNTING DIAGRAM

Scale: NOT TO SCALE



SMART ROOM TEMPERATURE SENSOR

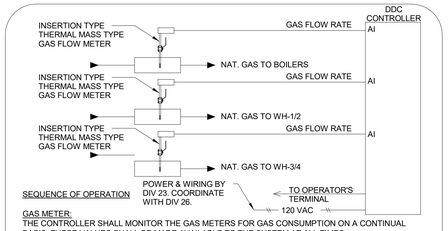
ROOM TEMPERATURE (AND CO2 LEVELS WHERE USED) SHALL BE SENSED AND CONTROLLED BY A SMART TYPE ROOM SENSOR. ROOM SENSOR SHALL DISPLAY CURRENT TEMPERATURE AND DESIRED SETPOINT, HAVE BUTTONS FOR TEMPERATURE ADJUSTMENT, AND A SYSTEM OVERRIDE BUTTON. ALL DISPLAYS AND ADJUSTMENTS SHALL BE CAPABLE OF BEING RANGE LIMITED AND/OR LOCKED OUT BY THE MAIN DDC WORKSTATION.

WHERE SUBJECT TO TAMPERING, PHYSICAL DAMAGE (GYMS) OR ABUSE, SENSORS SHALL BE INSTALLED BEHIND PROTECTIVE COVERS.

PROVIDE NON-ADJUSTABLE TYPE WALL SENSOR WITH BLANK COVER PLATE IN HALLWAYS, RESTROOMS AND STORAGE ROOMS.

6 TYPICAL SMART TYPE ROOM SENSOR

Scale: NOT TO SCALE Detail #



SEQUENCE OF OPERATION

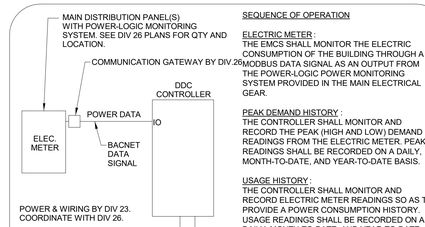
GAS METER:
THE CONTROLLER SHALL MONITOR THE GAS METERS FOR GAS CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

PEAK DEMAND HISTORY:
THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE GAS METER. PEAK READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

USAGE HISTORY:
THE CONTROLLER SHALL MONITOR AND RECORD GAS METER READINGS SO AS TO PROVIDE A GAS CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

11 NATURAL GAS METER MONITORING CONTROL DIAGRAM

Scale: NOT TO SCALE



SEQUENCE OF OPERATION

ELECTRIC METER :
THE EMCS SHALL MONITOR THE ELECTRIC CONSUMPTION OF THE BUILDING THROUGH A MODBUS DATA SIGNAL AS AN OUTPUT FROM THE POWER-LOGIC POWER MONITORING SYSTEM PROVIDED IN THE MAIN ELECTRICAL GEAR.

PEAK DEMAND HISTORY :
THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE ELECTRIC METER. PEAK READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

USAGE HISTORY :
THE CONTROLLER SHALL MONITOR AND RECORD ELECTRIC METER READINGS SO AS TO PROVIDE A POWER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

MINIMUM METERING POINTS :
MAIN SERVICE (2)
HVAC (6)
LIGHTING (6)
PLUG LOADS (3)
PROCESS LOAD (3)
EV CHARGING (1)

NOTES:

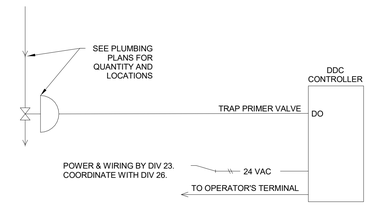
THIS PROJECT HAS DEMAND LIMITING REQUIREMENTS. SEE SPECIFICATION SECTION 230923

7 ELECTRIC METER MONITORING CONTROL DIAGRAM

Scale: NOT TO SCALE

SEQUENCE OF OPERATION:

TRAP PRIMER VALVE SHALL OPEN FOR 10-SECONDS (ADJ) EVERY 48-HOURS (ADJ) ON THE SWITCH BETWEEN OCCUPPIED TO UNNOCCUPIED MODES.



3 TRAP PRIMER CONTROL DIAGRAM

Scale: NOT TO SCALE

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• KENNEWICK, WASHINGTON • BOISE, IDAHO •
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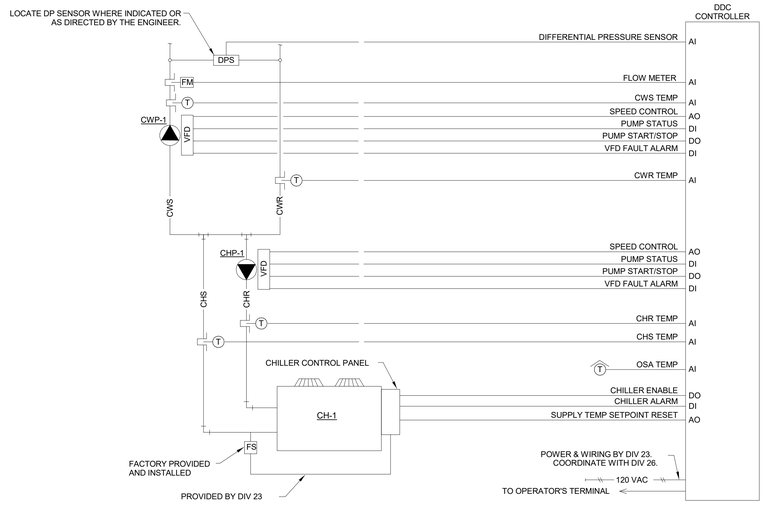


SEQUENCE OF OPERATION

WHEN OUTSIDE AIR TEMPERATURE RISES ABOVE 45°F (ADJ) AND THERE'S A DEMAND FOR COOLING FROM A SET NUMBER OF CONTROL VALVES (ADJ, INITIALLY SET AT 3), THE BUILDING CIRC PUMP (CWP-1) AND CHILLER CIRC PUMP (CHP-1) SHALL BE ENERGIZED. THE BUILDING CIRC PUMP VFD SHALL MODULATE THE PUMP SPEED TO MAINTAIN THE REMOTE SYSTEM DIFFERENTIAL PRESSURE INITIALLY SET AT 10 PSI BUT ADJUSTED AS REQUIRED DURING T.A.B.. THE CHILLER CIRC PUMP VFD SHALL ONLY BE USED FOR SOFT-START AND MANUAL SPEED ADJUSTMENT DURING T.A.B.. AFTER THE PUMPS HAVE PROVEN ON FOR 1-MINUTE (ADJ), THE CHILLER SHALL BE ENABLED. ON-BOARD CHILLER CONTROLS SHALL THEN OPERATE TO MAINTAIN CHILLED WATER SUPPLY TEMPERATURE AT SETPOINT WHICH SHALL BE INPUT FROM THE BAS PER THE FOLLOWING RESET SCHEDULE:

OUTSIDE TEMP	SUPPLY WATER TEMP
50 - 65°F	54°F
65 - 80°F	PROPORTIONALLY RESET FROM 54°F TO 44°F AS TEMPERATURE RISES IN THIS RANGE
>80	44°F

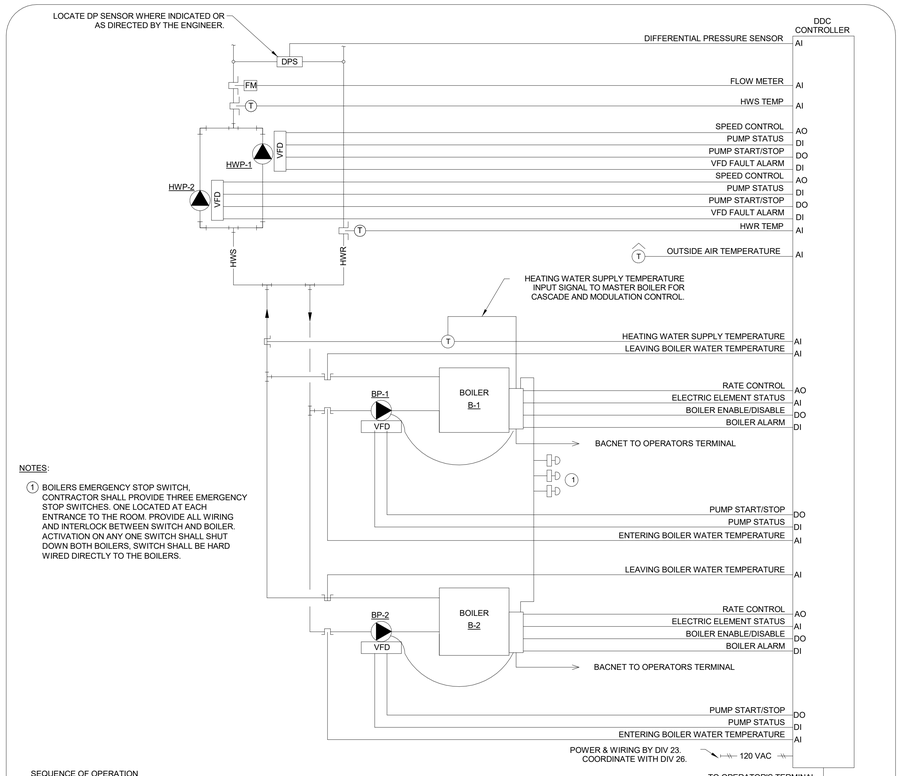
UPON SYSTEM DISABLE, THE BUILDING CIRC PUMP CWP-1 AND THE CHILLER SHALL BE DISABLED. THE CHILLER CIRC PUMP CHP-1 SHALL OPERATE FOR 1 MINUTE (ADJ) AFTER CHILLER IS DISABLED BEFORE BEING DISABLED.

CONTROLS INTEGRATION
ALL CHILLER INTERNAL CONTROL POINTS SHALL BE AVAILABLE VIA THE NETWORK AND DISPLAYED AT THE OPERATORS TERMINAL.

FREEZE PROTECTION
WHEN OUTSIDE AIR TEMPERATURE IS BELOW 10°F (ADJ) CHILLER CIRC PUMP (CHP-1) AND BUILDING CIRC PUMP (CWP-1) SHALL BE ENABLED AND CIRCULATE FLOW TO PREVENT FREEZING OF CHILLED WATER. ALL CHILLED WATER CONTROL VALVES AT COOLING COILS SHALL BE CLOSED TO PREVENT FLOW THRU CHILLED WATER COILS.

3 CHILLED WATER SYSTEM CONTROL DIAGRAM

Scale: NOT TO SCALE



NOTES:

1. BOILERS EMERGENCY STOP SWITCH. CONTRACTOR SHALL PROVIDE THREE EMERGENCY STOP SWITCHES. ONE LOCATED AT EACH ENTRANCE TO THE ROOM. PROVIDE ALL WIRING AND INTERLOCK BETWEEN SWITCH AND BOILER. ACTIVATION ON ANY ONE SWITCH SHALL SHUT DOWN BOTH BOILERS, SWITCH SHALL BE HARD WIRED DIRECTLY TO THE BOILERS.

SEQUENCE OF OPERATION

SYSTEM STAGING:
WHEN OUTSIDE AIR TEMP DROPS BELOW 60°F (ADJ) CONCURRENT WITH A CALL FOR HEATING FROM A SET NUMBER OF HEATING WATER CONTROL VALVES (ADJ, INITIALLY SET AT 3), THE DESIGNATED LEAD BUILDING CIRC PUMP (HWP-1 OR HWP-2) AND BOILER CIRC PUMP ASSOCIATED WITH THE LEAD BOILER (BP-1 OR BP-2) SHALL BE ENERGIZED. THE BUILDING CIRC PUMP SPEED SHALL BE CONTROLLED THROUGH THE VFD TO SATISFY THE REMOTE DIFFERENTIAL PRESSURE SENSOR SETPOINT, INITIALLY SET AT 10 PSIG BUT ADJUSTED AS REQUIRED DURING T.A.B.. THE BOILER CIRC PUMP VFD SHALL ONLY BE USED FOR SOFT START WITH MANUAL SPEED ADJUSTMENT DETERMINED DURING T.A.B. UPON FAILURE OF THE BUILDING CIRC PUMP, THE LAG PUMP SHALL BE STARTED AND AN ALARM SENT TO THE OPERATOR'S WORKSTATION. FAILURE OF THE BOILER CIRC PUMP SHALL INITIATE THE LAG BOILER AND BOILER CIRC PUMP START SEQUENCE.

BOILER CONTROLS:
WHEN THE LEAD HEATING WATER AND BOILER CIRC PUMPS HAVE PROVEN ON FOR 1-MINUTE (ADJ), THE LEAD BOILER SHALL BE ENABLED AND FIRING RATE SHALL MODULATE (CONTROLLED BY THE BAS) TO MAINTAIN HEATING WATER SUPPLY TEMPERATURE IN ACCORDANCE WITH FOLLOWING ADJUSTABLE RESET SCHEDULE:

OUTSIDE TEMP	SUPPLY WATER TEMP
<10°F	140°F
10°F - 45°F	PROPORTIONALLY RESET FROM 120°F TO 140°F AS TEMPERATURE FALLS IN THIS RANGE
45°F - 60°F	120°F

ALL BOILER STAGING, MODULATING AND OPTIMIZATION SHALL BE PROVIDED BY THE ON-BOARD BOILER CONTROLLERS PROVIDED WITH EACH BOILER. BAS CONTRACTOR SHALL PROVIDE ALL INTERFACE WIRING AND COMMUNICATIONS AND SHALL WORK WITH THE BOILER VENDOR TO SET UP PROGRAM AND SEQUENCING.

BOILERS B-1 AND B-2 AND HOT WATER PUMPS HWP-1 AND HWP-2 SHALL OPERATE ON A ADJUSTABLE LEAD/LAG SCHEDULE.

ALL BOILER CONTROL AND SENSING POINTS SHALL BE AVAILABLE VIA THE NETWORK AND SHALL BE DISPLAYED AT THE OPERATORS TERMINAL. PROVIDE A BACNET INTERFACE WITH THE BOILERS FOR INFORMATION FROM THE BOILER CONTROLS.

THE CONTROL CONTRACTOR SHALL PROVIDE WIRING BETWEEN THE BOILERS AND BOILER PUMPS AS REQUIRED TO OPERATE THE PUMPS PER THE SEQUENCE OF OPERATIONS.

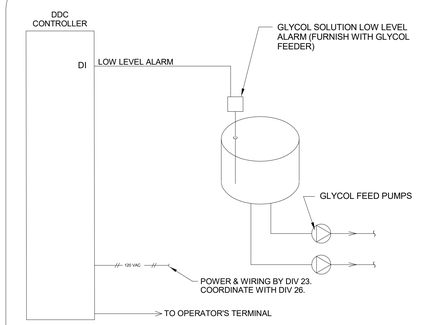
UPON SYSTEM DISABLE, THE BUILDING CIRC PUMP HWP-1 AND BOILER SHALL BE DISABLED. THE BOILER CIRC PUMP SHALL CONTINUE TO OPERATE FOR 1 MINUTES (ADJ) BEFORE BEING DISABLED.

IN THE EVENT THE DDC CONTROL SYSTEM FAILS, THE DDC PANEL SHALL CONTAIN TWO RELAYS. UPON FAILURE THE RELAYS SHALL DE-ENERGIZE. IN THE DE-ENERGIZED MODE, (1) RELAY WILL BYPASS THE DDC ENABLE/DISABLE SIGNAL. (1) RELAY SHALL TRANSFER 0-10V SIGNAL FROM THE DDC TO THE EXISTING BOILER'S MOUNTED CONTROLS. THESE RELAYS SHALL BE PROVIDED AND INSTALLED BY CONTROL CONTRACTOR.

FREEZE PROTECTION
WHEN OUTSIDE AIR TEMPERATURE IS BELOW 10°F (ADJ) AND THERE IS NO CALL FOR HEAT FROM THE HEATING WATER CONTROL VALVES, LEAD HEATING WATER CIRC PUMP (HWP-1/2) SHALL BE ENABLED AND CIRCULATE FLOW TO PREVENT FREEZING OF HEATING WATER. ALL HEATING WATER CONTROL VALVES AT FAN COILS SHALL AND HEAT RECOVERY UNITS SHALL BE CLOSED AND HEATING WATER CONTROL VALVES AT AIR HANDLING UNITS (AHU-1/2/3) SHALL BE OPENED TO 10%. BOILERS AND ASSOCIATED PUMPS SHALL BE ENABLED AS REQUIRED TO MAINTAIN HEATING WATER LOOP TEMPERATURE AT 100F (ADJ). THIS SEQUENCE SHALL OCCUR FOR 30 MINUTES EVERY 4 HOURS UNTIL AIR TEMPERATURE RISES OR THERE IS A CALL FOR HEAT FROM THE BUILDING.

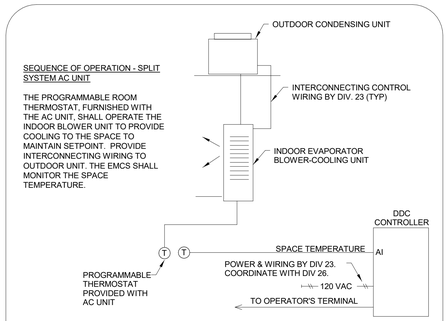
1 HEATING WATER SYSTEM CONTROL DIAGRAM

Scale: NOT TO SCALE



4 GLYCOL FEEDER ALARMS

Scale: NOT TO SCALE Detail #

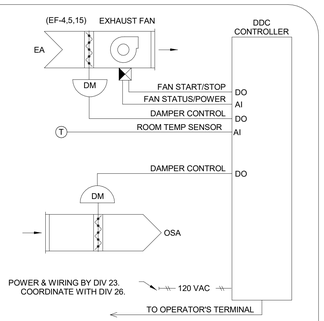


SEQUENCE OF OPERATION - SPLIT SYSTEM AC UNIT

THE PROGRAMMABLE ROOM THERMOSTAT, FURNISHED WITH THE AC UNIT, SHALL OPERATE THE INDOOR BLOWER UNIT TO PROVIDE COOLING TO THE SPACE TO MAINTAIN SETPOINT. PROVIDE INTERCONNECTING WIRING TO OUTDOOR UNIT. THE EMCS SHALL MONITOR THE SPACE TEMPERATURE.

5 SPLIT SYSTEM AIR CONDITIONER CONTROL DIAGRAM

Scale: NOT TO SCALE



SEQUENCE OF OPERATION:

UPON A CALL FOR COOLING (85F OR AS SET) AT ROOM THERMOSTAT OUTSIDE AIR INTAKE DAMPER SHALL OPEN, EXHAUST AIR DAMPER SHALL OPEN, EXHAUST FAN SHALL BE ENERGIZED. THE REVERSE SHALL OCCUR WITH A DECREASE IN CALL FOR COOLING.

NOTE: CONDITION EXISTS BOTH AT THE ELECTRICAL ROOM AND MECHANICAL ROOM. CONTROLS ARE TO BE PROVIDED FOR BOTH INSTANCES.

2 ELECTRICAL AND BOILER ROOM VENTILATION CONTROL DIAGRAM

Scale: NOT TO SCALE

DESIGN WEST ARCHITECTS, P.A.
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• KENNEWICK, WASHINGTON • RENO, NEVADA •
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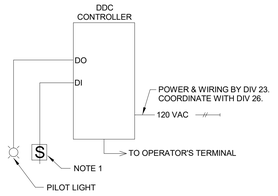
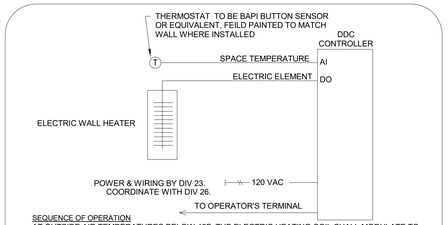


NOTES
1. WALL MOUNTED SWITCH AND PILOT LIGHT LOCATED IN PRINCIPAL'S OFFICE (COORDINATE EXACT LOCATION WITH OWNER) SHALL INITIATE THE EMERGENCY SHELTER-IN-PLACE VENTILATION CUT-OFF MODE.

   UNDER THIS MODE, ALL AIR HANDLING EQUIPMENT SHALL BE SIGNALED TO CLOSE OUTSIDE AIR INTAKE DAMPERS/VALVES AND TO OPERATE IN FULL RECIRCULATION MODE.

6 SHELTER-IN-PLACE VENTILATION CUT-OFF CONTROL DIAGRAM

Scale: NOT TO SCALE



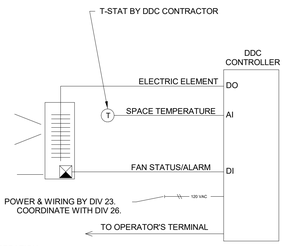
SEQUENCE OF OPERATION
AT OUTSIDE AIR TEMPERATURES BELOW 45F, THE ELECTRIC HEATING COIL SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE OF 45°F (ADJUSTABLE) VIA FACTORY PROVIDED INTEGRAL THERMOSTAT.

THE DDC SYSTEM SHALL MONITOR THE SPACE TEMPERATURE AND ALARM IF SPACE TEMPERATURE DROPS BELOW 40F (ADJ).

NOTE: BASEBOARD TO BE DISABLED AT OUTSIDE AIR TEMPERATURES ABOVE 45F.

2 ELECTRIC WALL HEATER HEATER CONTROL DIAGRAM (EWH)

Scale: NOT TO SCALE



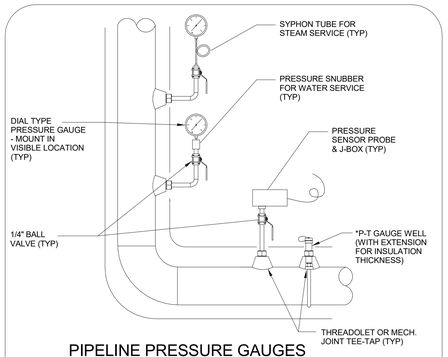
SEQUENCE OF OPERATION

WHEN THE SPACE TEMPERATURE DROPS BELOW 55°F (OR AS SET) UNIT HEATER FAN AND ELECTRICAL ELEMENT SHALL ENERGIZE TO MAINTAIN TEMPERATURE. WHEN SPACE TEMPERATURE IS SATISFIED, THE REVERSE SHALL OCCUR.

THE DDC SYSTEM SHALL MONITOR THE SPACE TEMPERATURE AND ALARM IF SPACE TEMPERATURE DROPS BELOW 45F (ADJ).

3 ELECTRIC UNIT HEATER CONTROL DIAGRAM (UH)

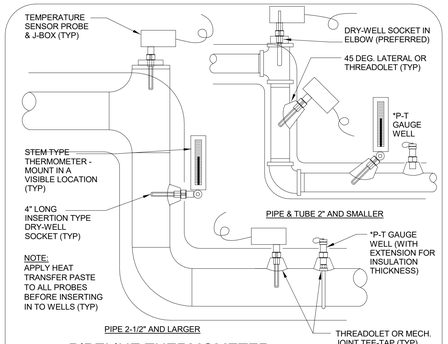
Scale: NOT TO SCALE



4 PIPELINE PRESSURE GAUGES AND PRESSURE SENSOR DETAILS

Scale: NOT TO SCALE

*NOTE: PROVIDE P-T GAUGE WELLS ADJACENT TO ALL BAS PRESSURE SENSORS



5 PIPELINE THERMOMETER AND TEMPERATURE SENSOR DETAILS

Scale: NOT TO SCALE

*NOTE: PROVIDE P-T GAUGE WELLS ADJACENT TO ALL BAS TEMPERATURE SENSORS

SEQUENCE OF OPERATION - DOAS VENTILATION HEAT RECOVERY UNITS: HRU-1, 2 & 3

GENERAL

THE EMCS SHALL INITIATE THE UNOCCUPIED AND OCCUPIED CYCLES OF THE SYSTEM.

THE HEAT RECOVERY VENTILATION UNIT SHALL PROVIDE CONDITIONED OUTDOOR VENTILATION AIR TO THE SPACES USING ENERGY FROM THE BUILDING EXHAUST AIR STREAMS.

OCCUPIED MODE

DURING THE OCCUPIED PERIODS THE SUPPLY AND EXHAUST AIR FANS SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR INTAKE AND EXHAUST AIR DAMPERS SHALL BE OPEN.

A DUCT MOUNTED STATIC PRESSURE SENSOR LOCATED 2/3 THE DISTANCE DOWN THE LENGTH OF THE SUPPLY DUCT (COORDINATE EXACT LOCATION WITH BALANCER AND ENGINEER) SHALL BE USED TO SIGNAL THE SUPPLY AIR FAN SPEED, THROUGH THE VFD, TO MAINTAIN A DUCT STATIC PRESSURE OF 0.75"W.G. (ADJUSTABLE, FINAL SETPOINT TO BE APPROVED BY ENGINEER DURING BALANCING) IN RESPONSE TO VARIATIONS IN AIR FLOW DEMAND FROM THE OSA VENTILATION DAMPERS. THE EXHAUST FAN SPEED SHALL BE ADJUSTED THROUGH ITS OWN VFD TO TRACK THE SUPPLY AIR FLOW CFM WITH AN ADJUSTABLE DIFFERENTIAL OFFSET (LESS AIR FLOW THAN SUPPLY TO PROVIDE POSITIVE BUILDING PRESSURIZATION & ALLOW FOR TOILET ROOM EXHAUST).

IF THE SUPPLY AIR TEMPERATURE FALLS BELOW 40°F A LOW TEMPERATURE ALARM SHALL BE INDICATED AT THE CENTRAL MONITORING LOCATION.

IF THE SUPPLY AIR TEMPERATURE FALLS BELOW 30F, AND ADDITIONAL ALARM SHALL BE INDICATED AT THE CENTRAL MONITORING LOCATION AND THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND HOW WATER VALVE SHALL OPEN TO 20% (OCCUPIED AND UNOCCUPIED MODES).

HEAT RECOVERY OPERATION

DURING THE OCCUPIED MODE THE HEAT RECOVERY CORE SHALL OPERATE TO TEMPER THE INCOMING OUTSIDE AIR TEMPERATURE AS FOLLOWS;

OUTSIDE AIR TEMP. BETWEEN 70 & 75 DEG. F.- THE HR CORE FACE & BYPASS DAMPERS SHALL RE-POSITION TO BYPASS OUTSIDE AIR AROUND THE HR CORE IN ORDER TO AVOID RECOVERING EXHAUST AIR HEAT AND THE UNIT SHALL PROVIDE NEUTRAL "ECONOMIZER" AIR.

OUTSIDE AIR TEMP. BELOW 70 DEG. F - THE HR CORE FACE & BYPASS DAMPERS SHALL MODULATE TO DIRECT OUTSIDE AIR THROUGH THE HR CORE IN ORDER TO RECOVER EXHAUST AIR ENERGY (HEAT) SO AS TO PRE-HEAT AND TEMPER THE INCOMING OUTSIDE AIR. THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 70 DEG. F. (ADJ).

OUTSIDE AIR TEMP. ABOVE 75 DEG. F - THE HR CORE FACE & BYPASS DAMPERS SHALL RE-POSITION TO DIRECT OUTSIDE AIR THROUGH THE HR CORE IN ORDER TO RECOVER EXHAUST AIR ENERGY (COOLING) SO AS TO PRE-COOL AND TEMPER THE INCOMING OUTSIDE AIR. THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 75 DEG. F. (ADJ).

HEATING MODE:

WHENEVER THE HR CORE OUTSIDE AIR DISCHARGE TEMPERATURE FALLS BELOW 70 (ADJ) DEG. F. THE HOT WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN THE LAT INDICATED ABOVE.

PRE-COOLING MODE:

SEE FAN COIL SEQUENCE FOR PRE-COOLING OPERATION. DISCHARGE AIR TEMPERATURE FROM HRU SHALL BE LIMITED TO NO LESS THAN 50 F (ADJ).

DEFROST MODE:

WHENEVER THE HR CORE EXHAUST DISCHARGE AIR TEMPERATURE FALLS BELOW 32 DEG. F. FROSTING MAY BE OCCURRING ON THE HUMID, EXHAUST AIR PART OF THE HR CORE SURFACES, DUE TO THE TRANSFER OF COLD ENERGY FROM THE INCOMING OUTSIDE AIR STREAM. TO PREVENT FROST BUILDUP, THE HR WHEEL CORE OUTSIDE AIR FACE & BYPASS DAMPERS SHALL MODULATE TO BYPASS A PORTION OF THE OUTSIDE AIR AROUND THE CORE, REDUCING HEAT TRANSFER AFFECT, IN ORDER TO LIMIT THE EXHAUST AIR DISCHARGE AIR TEMPERATURE TO NO LOWER THAN 32 DEG. F.

UNOCCUPIED MODE:

DURING THE UNOCCUPIED PERIODS, BOTH THE SUPPLY AND EXHAUST AIR FANS SHALL BE OFF AND THE OUTSIDE AIR AND EXHAUST AIR SHUT-OFF DAMPERS CLOSED.

UPON A SIGNAL FROM A CERTAIN NUMBER OF FAN COILS (INITIALLY SET AT FOUR UNITS) THAT THE SPACE IS OCCUPIED (AS DETERMINED BY A CALL FOR OSA FROM THE CO2 SENSOR SERVING THE SPACE OR VIA MANUAL OVERRIDE IN SPACES WITHOUT CO2 CONTROL), THE HRU SYSTEM SHALL BE TEMPORARILY REACTIVATED AND RUN IN THE OCCUPIED MODE UNTIL SUCH TIME AS THERE IS NO LONGER A CALL FROM THE CO2 SENSORS OR THE ROOM FAN COIL OVERRIDE TIMERS HAVE EXPIRED (INITIALLY SET AT 2 HOURS), AT WHICH POINT THE SYSTEM WILL RETURN TO THE UNOCCUPIED MODE. IF THE QUANTITY OF UNITS REQUIRED TO TRIGGER AN OVERRIDE OF THE UNOCCUPIED MODE IS SET TO LESS THAN FOUR UNITS, WHEN A CALL FOR VENTILATION AIR IS INITIATED A MINIMUM OF 4 FAN COIL OUTSIDE AIR VALVES SHALL OPEN TO MAX CFM SCHEDULED TO MAINTAIN THE FAN MINIMUM AIRFLOW,

SHELTER IN PLACE :
WHEN THE SHELTER IN PLACE SWITCH IS TRIGGERED, THE HRU SHALL DISABLE THE SUPPLY AND EXHAUST FANS AND CLOSE THE OUTSIDE AIR AND EXHAUST DAMPERS.

GENERAL NOTES:

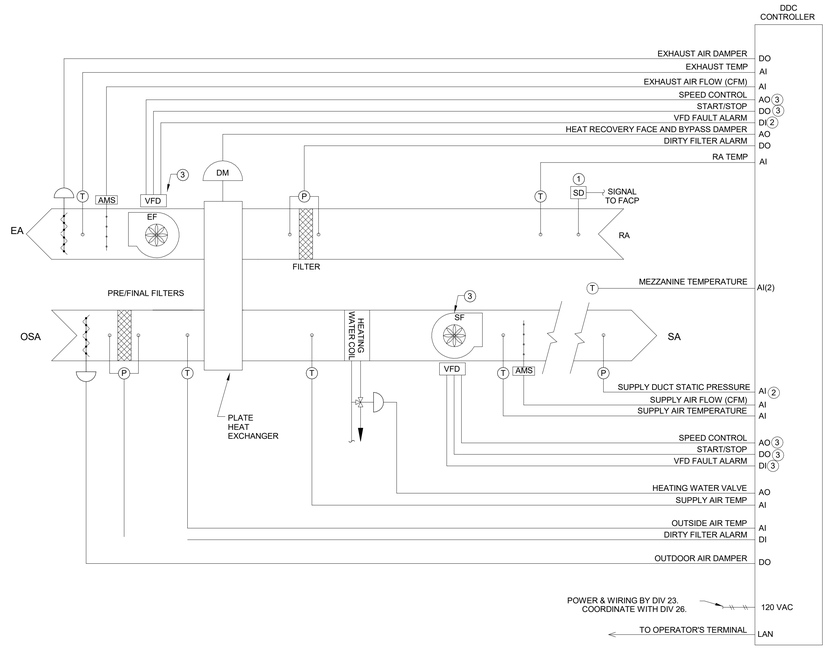
1. DAMPERS PROVIDED AND INSTALLED BY AIR HANDLING UNIT MANUFACTURER. BAS CONTRACTOR TO COORDINATE QUANTITY OF ACTUATORS REQUIRED WITH EQUIPMENT SUBMITTALS.
2. DAMPER ACTUATORS TO BE INSTALLED IN ACCESSIBLE LOCATIONS.
3. VFDS SHALL BE FURNISHED UNDER THE REQUIREMENTS OF SECTION 23 09 26.
4. PROVIDE DUCT STATIC PRESSURE RESET PER THE WASHINGTON STATE ENERGY CODE.

KEY NOTES:

(1) DUCT MOUNTED SMOKE DETECTOR FOR FAN SHUT-DOWN ON DETECTION OF SMOKE. DETECTOR PROVIDED AND INSTALLED BY DIV. 26/28. COORDINATE FAN SHUT-DOWN WIRING WITH DIV. 26/28.

(2) PROVIDE HIGH STATIC LIMIT SAFETY WITH AIR HANDLING UNIT.

(3) SEE SCHEDULES FOR FAN QUANTITIES. PROVIDE A VFD FOR EACH FAN.



1 HRU SYSTEM CONTROL DIAGRAM (HRU-1/2)

Scale: NOT TO SCALE

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SHEET NAME
MECHANICAL CONTROLS

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SEQUENCE OF OPERATION

THE EMCS SHALL INITIATE THE UNOCCUPIED AND OCCUPIED CYCLES FOR THE SYSTEM.

VENTILATION/RELIEF DAMPER CONTROL :
UNITS WITH CO2 SENSORS - THE VENTILATION AIR DAMPER (DM-1) SHALL BE INTERLOCKED WITH THE CO2 SENSOR SERVING SAME SPACE. THE CO2 SENSOR SHALL MODULATE THE VENTILATION AIR DAMPER BETWEEN THE MIN OSA (AS SCHEDULED) AND THE MAX OSA SCHEDULED ON THE DRAWINGS TO MAINTAIN A MAXIMUM CO2 LEVEL OF 1000 PPM (OR AS SET) BY MEANS OF A PID LOOP. WHEN CO2 LEVEL IS GREATER THAN 10% OVER DESIGN LIMIT (1100 OR AS SET), AN ALARM SHALL BE INITIATED AT THE OPERATOR TERMINAL.

UNITS WITHOUT CO2 SENSORS - DURING OCCUPIED HOURS (AS DETERMINED BY THE EMCS) THE VENTILATION AIR DAMPER (DM-1) SHALL OPEN TO THE MINIMUM OUTSIDE AIR CFM SCHEDULED ON THE DRAWINGS. DURING UNOCCUPIED TIMES, DAMPER SHALL BE CLOSED.

THE RELIEF DAMPER SHALL OPEN WHENEVER THE OSA VALVE MODULATES TO AN OPEN POSTITION AS DESCRIBED ABOVE.

OCCUPIED MODE:
FAN SPEED CONTROL:
WHEN THE SPACE IS SATISFIED (70F HEATING, 75F COOLING, WITH DEADBAND, ADJ.) THE FAN COIL FAN SPEED SHALL BE SET TO MINIMUM (1-VOLT SIGNAL TO THE EC MOTOR TO COMPLY WITH WSEC 403.6.2). WHEN A CALL FOR HEATING OR COOLING IS DETERMINED AND STAGE 1 COOLING IS NOT AVAILABLE OR IS UNABLE TO MAINTAIN SPACE SETPOINT, THE SUPPLY FAN SHALL INCREASE ITS SPEED TO 100% (DETERMINED AT BALANCING TO MATCH SUPPLY AIRFLOWS INDICATED ON THE DRAWINGS). SELECT FAN COILS THAT SERVE MULTIPLE SPACES AND HAVE AVERAGING T-STATS SHALL HAVE THE ABILITY TO CONTROL TO ANY STAT (TRIGGER HIGH FAN SPEED FROM A CALL FOR HEATING OR COOLING AT ANY STAT) AND DISABLE REDUCED FAN SPEED DURING SATISFIED TIMES.

STAGE 1 COOLING (PARTIAL ECONOMIZER CONTROL): UPON A CALL FOR COOLING AT T1, WHEN THE DOAS HRU AIR HANDLING UNIT PROVIDING THE VENTILATION AIR IS NOT IN A MECHANICAL COOLING MODE, THE VENTILATION AIR DAMPER (DM-1) SHALL MODULATE OPEN TO THE MAX CFM POSITION (AS INDICATED ON THE AIR VALVE SCHEDULE) IN ORDER TO PROVIDE ECONOMIZER COOLING TO THE SPACE SERVED. ON A FURTHER CALL FOR COOLING, THE FAN COIL SUPPLY FAN SHALL CYCLE ON AND THE CHILLED WATER CONTROL VALVE (V-1) SHALL MODULATE OPEN. THE REVERSE SHALL OCCUR ON A DECREASE IN COOLING REQUIREMENT AT T1.

STAGE 2 COOLING: IF STAGE 1 COOLING IS NOT AVAILABLE, OR DOES NOT ADEQUATELY COOL THE SPACE AT T1, THE CHILLED WATER CONTROL VALVE (V-1) SHALL MODULATE OPEN TO MAINTAIN TEMPERATURE SETPOINT AT T1.

UPON A CALL FOR HEATING AT T1, THE HEATING WATER CONTROL VALVE (V-2) SHALL MODULATE OPEN TO MAINTAIN SETPOINT AT T1.

UNOCCUPIED MODE:
THE SUPPLY FAN SHALL BE OFF AND CHILLED WATER CONTROL VALVE (V-1) SHALL BE CLOSED TO COIL. THE OUTSIDE AIR DAMPER (DM-1) AND RELIEF AIR DAMPER (DM-2) SHALL BE CLOSED.

THE SUPPLY FAN SHALL CYCLE AND THE HEATING CONTROL VALVE (V-2) SHALL MODULATE TO MAINTAIN SPACE SETBACK ROOM TEMPERATURE AT T1 (55° OR AS SET).

A PUSHBUTTON AT THE FAN COIL UNIT'S ROOM STAT (T1) SHALL ALLOW THE SYSTEM TO OVERRIDE THE UNOCCUPIED CYCLE AND PLACE THE FAN COIL UNIT IN THE OCCUPIED MODE FOR A PRE-SET TIME PERIOD OF 2 HOURS (OR AS SET). ALL OTHER FAN COIL UNITS SHALL REMAIN IN UNOCCUPIED MODE UNLESS THEIR RESPECTIVE OVERRIDE BUTTON IS PUSHED. HRU SERVING OVERRIDDEN FAN COIL SHALL REMAIN OFF UNTIL A CALL FOR VENTILATION FROM THE CO2 SENSOR INDICATES A NEED FOR VENTILATION. AT THIS POINT, THE HRU UNIT SERVING THE FAN COIL SHALL BE ENERGIZED. FOR SPACES WITHOUT CO2 SENSORS, THE HRU SHALL REMAIN OFF UNTIL A MINIMUM OF 3 FAN COIL UNITS ARE PLACED IN OVERRIDE.

OPTIMUM STOP-START
HEATING: THE CONTROL SYSTEM SHALL SENSE THE SPACE TEMPERATURE AND OUTSIDE AIR TEMPERATURE TO OPTIMIZE FAN START TIME SO THAT PROPER SPACE TEMPERATURE IS REACHED AT THE START OF SCHEDULED OCCUPIED MODE. OUTSIDE AIR DAMPER SHALL BE FULLY CLOSED (HRU-1/2/3 OFF) DURING WARM UP PERIOD. UPON START OF OCCUPIED MODE THE OUTSIDE AIR DAMPER SHALL MODULATE PER THE SEQUENCE OF OPERATIONS LISTED ABOVE.

COOLING: THE CONTROL SYSTEM SHALL SENSE SPACE TEMPERATURE AND OUTSIDE AIR TEMPERATURE TO OPTIMIZE FAN START TIME SO THAT PROPER SPACE TEMPERATURE IS REACHED AT START OF SCHEDULED OCCUPIED MODE. OUTSIDE AIR DAMPER SHALL FULLY CLOSE DURING PRE-COOL PERIOD WHEN OUTSIDE AIR TEMPERATURE IS GREATER THAN SPACE SETPOINT. WHEN OUTSIDE AIR TEMPERATURE IS LESS THAN SPACE TEMPERATURE AND SPACE TEMPERATURE IS WARMER THAN OCCUPIED SETPOINT, AND 50% (ADJ) OF FAN COILS ARE CALLING FOR PRE-COOLING, OUTSIDE AIR DAMPER SHALL FULLY OPEN AND HRU-1/2/3 SHALL PROVIDE THE FIRST STAGE OF COOLING. UPON START OF OCCUPIED MODE, THE OUTSIDE AIR DAMPER SHALL MODULATE PER THE SEQUENCE ABOVE.

SHELTER IN PLACE :
WHEN THE SHELTER IN PLACE SWITCH IS TRIGGERED, VENTILATION DAMPER DM-1 SHALL CLOSE AND FAN COIL SHALL OPERATE IN FULL RECIRCULATION MODE.

GENERAL NOTES:

1. SEE HYDRONIC FLOOR PLANS FOR THERMOSTAT AND CO2 SENSOR LOCATIONS.

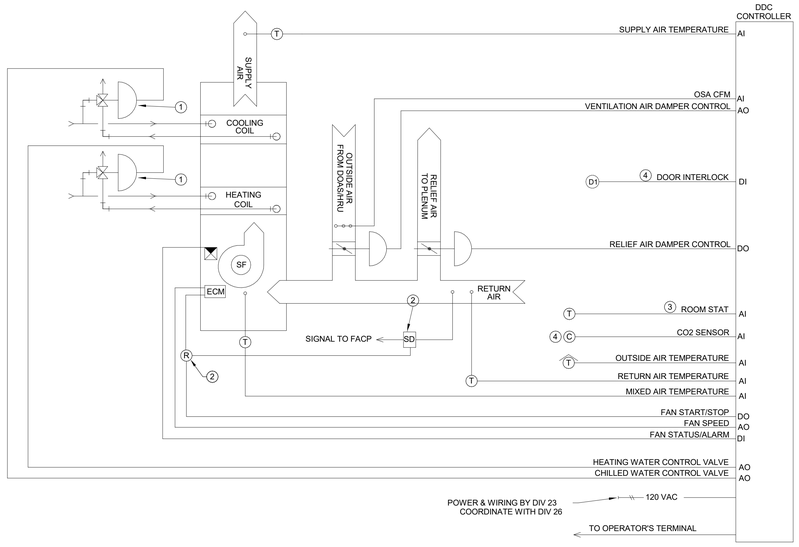
KEYNOTES:

(1) 2-WAY CONTROL VALVE UNLESS NOTED OTHERWISE ON FAN COIL SCHEDULE.

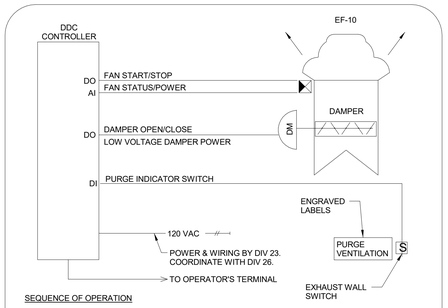
(2) DUCT MOUNTED SMOKE DETECTOR REQUIRED ON UNITS 2,000 CFM AND LARGER, FOR FAN SHUT-DOWN ON DETECTION OF SMOKE. DETECTOR PROVIDED AND INSTALLED BY DIV. 26. COORDINATE FAN SHUT-DOWN WIRING WITH DIV. 26. PROVIDE EITHER HARD WIRED SHUT-DOWN FROM DUCT DETECTOR OR INDIRECT WIRED FROM ADDRESSABLE RELAY VIA FACP.

(3) WHERE MULTIPLE THERMOSTATS SERVE A SINGLE FAN COIL (AVERAGING T-STATS), A SINGLE UNIT TEMPERATURE READING SHALL BE DETERMINED BY ZONE TEMPERATURE TOTALIZER LOGIC (AVERAGE TEMP, TEMP FURTHEST FROM SETPOINT, TEMP OVERRIDE, T-STAT EXCLUSION). AVERAGE TEMPERATURE SHALL NOT BE USED TO DETERMINE IF SPACE IS SATISFIED AND FAN SHOULD BE TURNED TO LOW SPEED. ALL T-STATS FOR A SINGLE FAN COILS SHALL BE SATISFIED BEFORE FAN IS TURNED TO LOW SPEED. ZONE TEMPERATURE OPTIONS SHALL BE AVAILABLE VIA TOGGLE AT THE DDC FRONT END.

(4) DOOR INTERLOCK TO BE PROVIDED ON ALL EXTERIOR DOORS W/O VESTIBULES. WHEN DOOR IS OPEN FOR MORE THAN 5 MINUTES, UNIT SERVING THE SPACE SHALL RESET THE SPACE SETPOINT TO 55F IN HEATING AND 85F IN COOLING. WHEN DOOR INTERLOCK INDICATES DOOR HAS BEEN CLOSED, SETPOINTS SHALL RETURN TO PREVIOUS VALUES. SEE FLOOR PLANS FOR LOCATIONS OF DOOR SWITCHES.



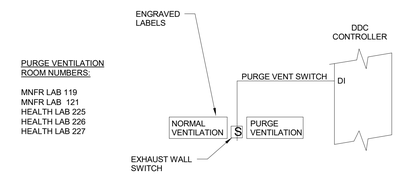
1 TYPICAL FAN COIL UNIT CONTROL DIAGRAM
Scale: NOT TO SCALE



SEQUENCE OF OPERATION

THE DAMPER SHALL BE OPEN AND THE FAN SHALL RUN AT LOW SPEED (300 CFM) DURING OCCUPIED HOURS, AS DETERMINED BY THE DDC.
WHEN INDICATED BY THE USER OPERATED WALL SWITCH, THE FAN SHALL RUN AT HIGH SPEED (600 CFM). DURING UNOCCUPIED HOURS, THE FAN SHALL BE OFF AND THE DAMPER SHALL BE CLOSED.

7 2-SPEED EXHAUST FAN
Scale: NOT TO SCALE

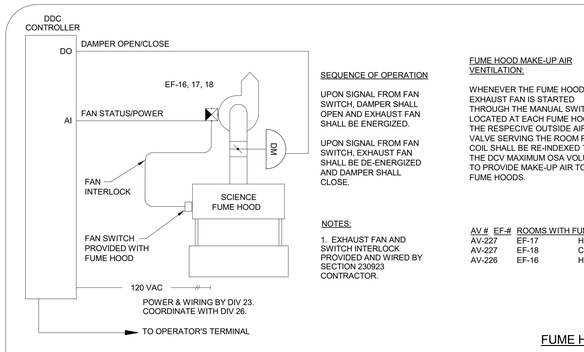


PURGE VENTILATION MODE:

WHEN PUSH BUTTON IS ACTIVATED BY THE INSTRUCTOR, THE FAN COIL VENTILATION OSA VALVE SERVING THAT SPACE SHALL OPEN TO MAX AIRFLOW AS SCHEDULED TO PROVIDE FRESH AIR DILUTION VENTILATION TO THE SPACE, IN ORDER TO HELP REMOVE COOKING ODORS OR OTHER OBJECTIONABLE FUMES, FOR A PERIOD OF ONE HOUR (ADJ) OR UNTIL THE BUTTON IS RE-PRESSED. SEE PURGE EXHAUST FAN CONTROL DIAGRAM.

PURGE VENTILATION MODE

5 FAN COIL UNIT PURGE CONTROLS
Scale: NOT TO SCALE



SEQUENCE OF OPERATION

UPON SIGNAL FROM FAN SWITCH, DAMPER SHALL OPEN AND EXHAUST FAN SHALL BE ENERGIZED.

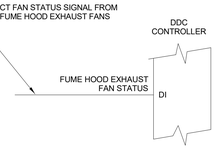
UPON SIGNAL FROM FAN SWITCH, EXHAUST FAN SHALL BE DE-ENERGIZED AND DAMPER SHALL CLOSE.

NOTES:

1. EXHAUST FAN AND SWITCH INTERLOCK PROVIDED AND WIRED BY SECTION 230923 CONTRACTOR.

FUME HOOD MAKE-UP AIR VENTILATION:

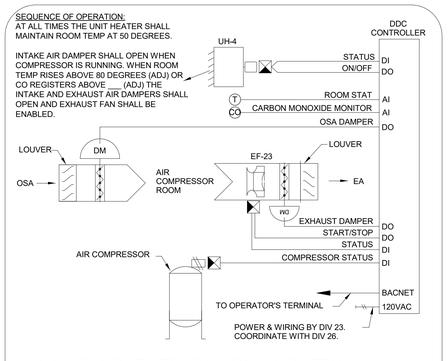
WHENEVER THE FUME HOOD EXHAUST FAN IS STARTED THROUGH THE MANUAL SWITCH LOCATED AT EACH FUME HOOD, THE RESPECIVE OUTSIDE AIR VALVE SERVING THE ROOM FAN COIL SHALL BE RE-INDEXED TO THE DCV MAXIMUM OSA VOLUME TO PROVIDE MAKE-UP AIR TO THE FUME HOODS.



AV #	EF-#	ROOMS WITH FUME HOODS
AV-227	EF-17	HEALTH LAB 227
AV-227	EF-18	CHEM PREP 228
AV-226	EF-16	HEALTH LAB 226

FUME HOOD MAKE-UP AIR VENTILATION

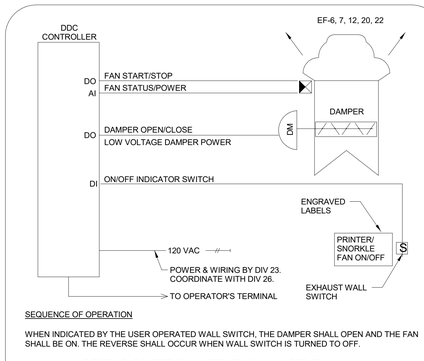
2 SCIENCE FUME HOOD FAN CONTROL DIAGRAM
Scale: NOT TO SCALE



SEQUENCE OF OPERATION:
AT ALL TIMES THE UNIT HEATER SHALL MAINTAIN ROOM TEMP AT 50 DEGREES.

INTAKE AIR DAMPER SHALL OPEN WHEN COMPRESSOR IS RUNNING. WHEN ROOM TEMP RISES ABOVE 80 DEGREES (ADJ) OR CO REGISTERS ABOVE ___(ADJ) THE INTAKE AND EXHAUST AIR DAMPERS SHALL OPEN AND EXHAUST FAN SHALL BE ENABLED.

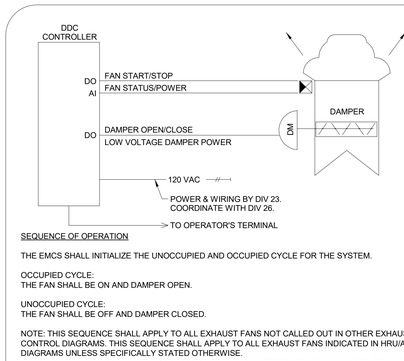
8 AIR COMPRESSOR ROOM CONTROL
Scale: NOT TO SCALE



SEQUENCE OF OPERATION

WHEN INDICATED BY THE USER OPERATED WALL SWITCH, THE DAMPER SHALL OPEN AND THE FAN SHALL BE ON. THE REVERSE SHALL OCCUR WHEN WALL SWITCH IS TURNED TO OFF.

6 USER CONTROLLED EXHAUST FAN
Scale: NOT TO SCALE



SEQUENCE OF OPERATION

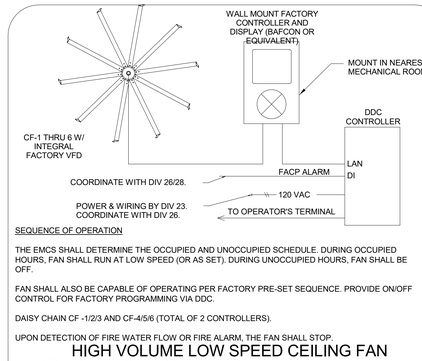
THE EMCS SHALL INITIALIZE THE UNOCCUPIED AND OCCUPIED CYCLE FOR THE SYSTEM.

OCCUPIED CYCLE:
THE FAN SHALL BE ON AND DAMPER OPEN.

UNOCCUPIED CYCLE:
THE FAN SHALL BE OFF AND DAMPER CLOSED.

NOTE: THIS SEQUENCE SHALL APPLY TO ALL EXHAUST FANS NOT CALLED OUT IN OTHER EXHAUST FAN CONTROL DIAGRAMS. THIS SEQUENCE SHALL APPLY TO ALL EXHAUST FANS INDICATED IN HRU/AHU DIAGRAMS UNLESS SPECIFICALLY STATED OTHERWISE.

4 TYPICAL DDC CONTROLLED EXHAUST FAN
Scale: NOT TO SCALE



SEQUENCE OF OPERATION

THE EMCS SHALL DETERMINE THE OCCUPIED AND UNOCCUPIED SCHEDULE. DURING OCCUPIED HOURS, FAN SHALL RUN AT LOW SPEED (OR AS SET). DURING UNOCCUPIED HOURS, FAN SHALL BE OFF.

FAN SHALL ALSO BE CAPABLE OF OPERATING PER FACTORY PRE-SET SEQUENCE. PROVIDE ON/OFF CONTROL FOR FACTORY PROGRAMMING VIA DDC.

DAISY CHAIN CF -1/2/3 AND CF-4/5/6 (TOTAL OF 2 CONTROLLERS).

UPON DETECTION OF FIRE WATER FLOW OR FIRE ALARM, THE FAN SHALL STOP.

3 HIGH VOLUME LOW SPEED CEILING FAN CONTROL SCHEMATIC
Scale: NOT TO SCALE

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SHEET NAME
MECHANICAL CONTROLS

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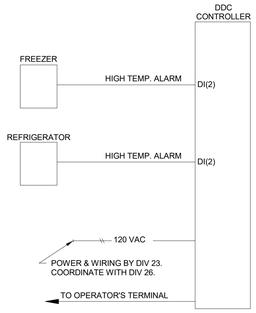


SEQUENCE OF OPERATION

DRY CONTACT ALARM OUTPUTS PROVIDED BY KITCHEN EQUIPMENT CONTRACTOR (KEC) - NOT IN DIV. 23

- HIGH TEMPERATURE ALARM - FREEZER

- HIGH TEMPERATURE ALARM - REFRIGERATOR

NOTES:

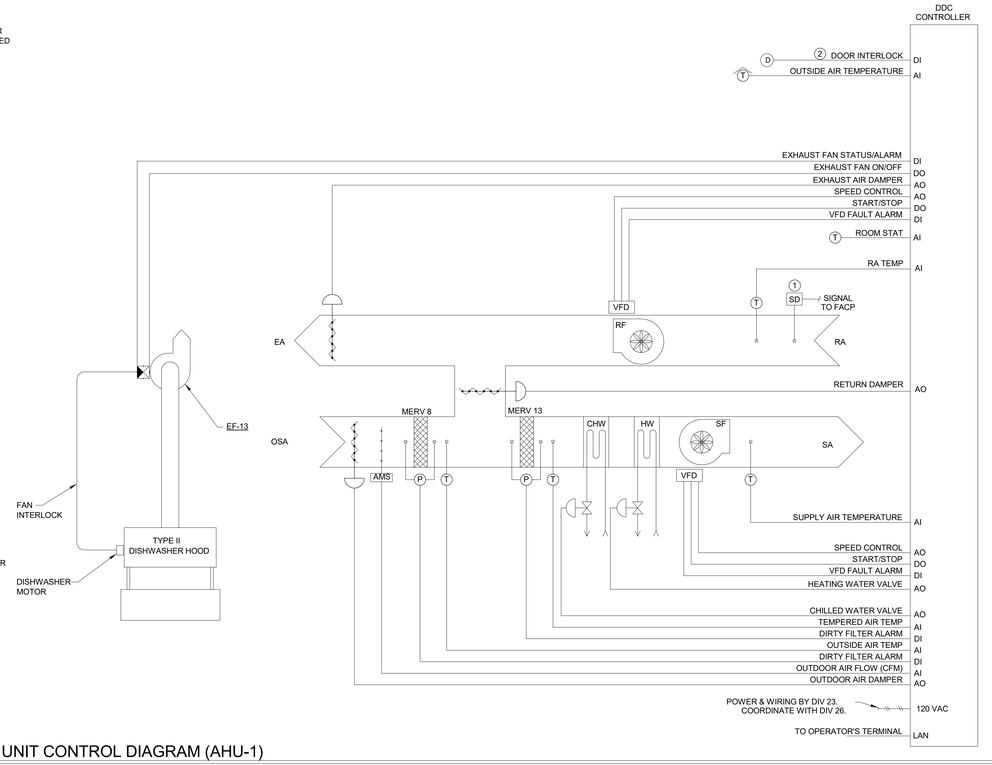
PROVIDE ONE ALARM FOR EACH FREEZER AND REFRIGERATOR IN THE MAIN KITCHEN AND CULINARY LAB. COORDINATE WITH KITCHEN EQUIPMENT PLANS.

3 KITCHEN EQUIPMENT ALARMS

Scale: NOT TO SCALE

GENERAL NOTES:

1. DAMPERS PROVIDED AND INSTALLED BY AIR HANDLING UNIT MANUFACTURER. BAS CONTRACTOR TO COORDINATE QUANTITY OF ACTUATORS REQUIRED WITH EQUIPMENT SUBMITTALS.
2. DAMPER ACTUATORS TO BE INSTALLED IN ACCESSIBLE LOCATIONS.
3. VFDS SHALL BE FURNISHED UNDER THE REQUIREMENTS OF SECTION 23 09 26.



KEY NOTES:

1. DUCT MOUNTED SMOKE DETECTOR FOR FAN SHUT-DOWN ON DETECTION OF SMOKE. DETECTOR PROVIDED AND INSTALLED BY DIV. 26/28. COORDINATE FAN SHUT-DOWN WIRING WITH DIV. 26/28.
2. DOOR INTERLOCK TO BE PROVIDED ON ALL EXTERIOR DOORS W/O VESTIBULES. WHEN DOOR IS OPEN FOR MORE THAN 5 MINUTES, UNIT SERVING THE SPACE SHALL RESET THE SPACE SETPOINT TO 55F IN HEATING AND 85F IN COOLING. WHEN DOOR INTERLOCK INDICATES DOOR HAS BEEN CLOSED, SETPOINTS SHALL RETURN TO PREVIOUS VALUES.

1 KITCHEN AIR HANDLING UNIT CONTROL DIAGRAM (AHU-1)

Scale: NOT TO SCALE

SEQUENCE OF OPERATION

THE EMCS SHALL INITIATE THE UNOCCUPIED AND OCCUPIED CYCLES FOR THE SYSTEM.

OCCUPIED MODE:
THE UNIT SUPPLY AND RETURN AIR FAN SHALL OPERATE CONTINUOUSLY. MIXED AIR DAMPER AND OSA DAMPER SHALL MODULATE TO MAINTAIN THE MINIMUM OUTSIDE AIR CFM SCHEDULED ON THE DRAWINGS.

UPON ACTIVATION OF THE DISHWASHER MOTOR, THE DISHWASHER HOOD EXHAUST FAN (EF-13) SHALL ENERGIZE VIA INTERLOCK. AHU-1 SHALL CONTINUE NORMAL OPERATION.

ECONOMIZER COOLING:
UPON A CALL FOR COOLING FROM THE SPACE WHEN OUTSIDE AIR TEMPERATURE IS BELOW THE RETURN AIR TEMPERATURE THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL MODULATE OPEN WHILE THE RETURN AIR DAMPER MODULATES CLOSED. ON A FURTHER CALL FOR COOLING, THE CHILLED WATER VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE AT SETPOINT. THE REVERSE SHALL OCCUR ON A DECREASE IN COOLING DEMAND.

COOLING:
UPON A CALL FOR COOLING FROM THE SPACE WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE THE RETURN AIR TEMPERATURE THE RELIEF, RETURN AND OUTSIDE AIR DAMPERS SHALL MODULATE TO MINIMUM OSA POSITION AS CONTROLLED BY THE CO2 SENSOR. THE CHILLED WATER VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE AT SETPOINT.

HEATING:
ON A CALL FOR HEAT FROM THE SPACE THE RELIEF, RETURN AND OUTSIDE AIR DAMPERS SHALL MODULATE TO MINIMUM OSA POSITION AS DETERMINED BY THE CO2 SENSOR AND THE HEATING WATER VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE AT SETPOINT.

IF THE MIXED AIR TEMPERATURE FALLS BELOW 40°F A LOW TEMPERATURE ALARM SHALL BE INDICATED AT THE CENTRAL MONITORING LOCATION.

IF THE MIXED AIR TEMPERATURE FALLS BELOW 30F, AND ADDITIONAL ALARM SHALL BE INDICATED AT THE CENTRAL MONITORING LOCATION AND THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND HOW WATER VALVE SHALL OPEN TO 20% (OCCUPIED AND UNOCCUPIED MODES).

VARIABLE SPEED FAN CONTROL: WHEN THE SPACE TEMPERATURE IS SATISFIED, THE SUPPLY AND RETURN FAN SHALL DECREASE THEIR SPEED TO 50% OF THE SCHEDULED CFM. ON A CALL FOR HEATING OR COOLING, THE FAN SHALL INCREASE ITS SPEED TO 75% OF THE SCHEDULED CFM. IF THE SPACE TEMPERATURE IS STILL NOT SATISFIED, THE FAN SHALL INCREASE IT'S SPEED TO 100% OF THE SCHEDULED CFM. THE REVERSE SHALL OCCUR WHEN SPACE SETPOINT IS REACHED.

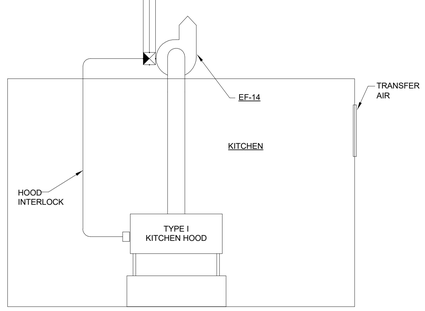
UNOCCUPIED MODE:
THE CHILLED WATER VALVE SHALL BE CLOSED. THE SUPPLY FAN SHALL CYCLE ON AND HEATING VALVE SHALL MODULATE TO MAINTAIN SPACE ROOM TEMPERATURE AT THE SETBACK SETPOINT (55°, ADJ). THE DAMPERS SHALL BE POSITIONED FOR FULL RECIRC MODE (0% OSA).

A PUSH-BUTTON AT THE ROOM SENSOR SHALL PUT THE SYSTEM INTO OVERRIDE MODE AND THE UNIT SHALL FOLLOW THE OCCUPIED MODE FOR 2 HOURS (ADJ).

OPTIMUM STOP-START
HEATING: THE CONTROL SYSTEM SHALL SENSE SPACE TEMPERATURE AND OUTSIDE AIR TEMPERATURE TO OPTIMIZE FAN START TIME SO THAT PROPER SPACE TEMPERATURE IS REACHED AT START OF SCHEDULED OCCUPIED MODE. OUTSIDE AND RELIEF AIR DAMPERS SHALL FULLY CLOSE AND RETURN AIR DAMPER SHALL FULLY OPEN DURING WARM-UP PERIOD. UPON START OF OCCUPIED MODE, OUTSIDE, RELIEF AND RETURN AIR DAMPERS SHALL MODULATE PER THE SEQUENCE OF CONTROLS LISTED ABOVE.

COOLING: THE CONTROL SYSTEM SHALL SENSE SPACE TEMPERATURE AND OUTSIDE AIR TEMPERATURE TO OPTIMIZE FAN START TIME SO THAT PROPER SPACE TEMPERATURE IS REACHED AT START OF SCHEDULED OCCUPIED MODE. OUTSIDE AND RELIEF AIR DAMPERS SHALL FULLY OPEN AND RETURN AIR DAMPER SHALL FULLY CLOSE DURING PRE-COOL PERIOD, WHEN OUTSIDE AIR TEMPERATURE IS LOWER THAN SPACE TEMPERATURE AND SPACE TEMPERATURE IS WARMER THAN OCCUPIED SETPOINT OF T1. UPON START OF OCCUPIED MODE, OUTSIDE, RELIEF AND RETURN AIR DAMPERS SHALL MODULATE PER THE SEQUENCE OF OPERATIONS LISTED ABOVE.

SHELTER-IN-PLACE
WHEN THE SHELTER IN PLACE MODE IS INITIATED AT THE DDC SYSTEM, OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND RTU SHALL OPERATE IN FULL RECIRCULATION MODE UNTIL SHELTER IN PLACE MODE IS DISABLED.

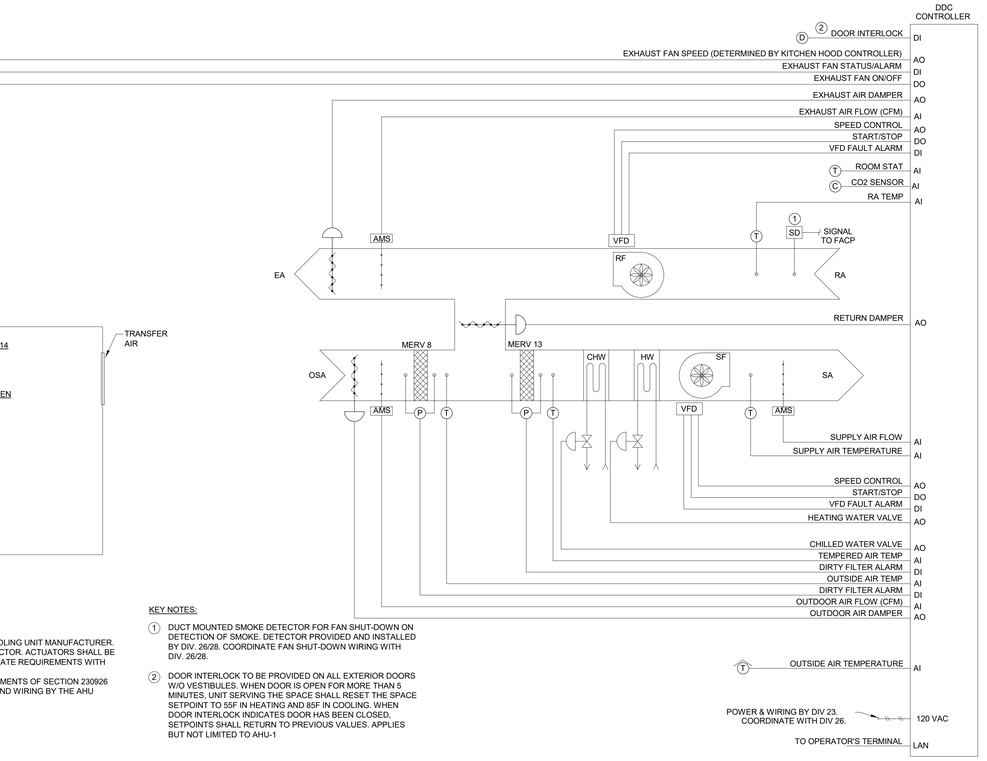


GENERAL NOTES:

1. DAMPERS PROVIDED AND INSTALLED BY AIR HANDLING UNIT MANUFACTURER.
2. DAMPER ACTUATORS PROVIDED BY BAS CONTRACTOR. ACTUATORS SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. COORDINATE REQUIREMENTS WITH BAS CONTRACTOR AND SECTION 230926.
3. VFDS SHALL BE FURNISHED UNDER THE REQUIREMENTS OF SECTION 230926 AND SHIPPED TO THE FACTORY FOR MOUNTING AND WIRING BY THE AHU MANUFACTURER.

KEY NOTES:

1. DUCT MOUNTED SMOKE DETECTOR FOR FAN SHUT-DOWN ON DETECTION OF SMOKE. DETECTOR PROVIDED AND INSTALLED BY DIV. 26/28. COORDINATE FAN SHUT-DOWN WIRING WITH DIV. 26/28.
2. DOOR INTERLOCK TO BE PROVIDED ON ALL EXTERIOR DOORS W/O VESTIBULES. WHEN DOOR IS OPEN FOR MORE THAN 5 MINUTES, UNIT SERVING THE SPACE SHALL RESET THE SPACE SETPOINT TO 55F IN HEATING AND 85F IN COOLING. WHEN DOOR INTERLOCK INDICATES DOOR HAS BEEN CLOSED, SETPOINTS SHALL RETURN TO PREVIOUS VALUES. APPLIES BUT NOT LIMITED TO AHU-1



2 COMMONS AND CAREER CENTER AIR HANDLING UNIT CONTROL DIAGRAM (AHU-2&3)

Scale: NOT TO SCALE

SEQUENCE OF OPERATION

THE EMCS SHALL INITIATE THE UNOCCUPIED AND OCCUPIED CYCLES FOR THE SYSTEM.

OCCUPIED MODE:
FAN CONTROL:THE SUPPLY AND RETURN FAN SHALL OPERATE CONTINUOUSLY. WHEN THE SPACE TEMPERATURE IS SATISFIED, THE SUPPLY AND RETURN FAN SHALL DECREASE THEIR SPEED TO 50% OF THE SCHEDULED CFM. ON A CALL FOR HEATING OR COOLING, THE FAN SHALL INCREASE ITS SPEED TO 100% OF THE SCHEDULED CFM. THE REVERSE SHALL OCCUR WHEN SPACE SETPOINT IS REACHED.
THE CO2 SENSOR SHALL MODULATE THE OUTSIDE AIR DAMPER BETWEEN 25% AND 100% OF THE SCHEDULED OUTSIDE AIR CFM PROPORTIONAL TO THE CO2 LEVEL BETWEEN 400 AND 1000 PPM (ADJ). DURING ECONOMIZER COOLING OPERATION THE CO2 SENSOR WILL BE DISABLED AND THE OUTSIDE AIR DAMPER SHALL BE CAPABLE OF MODULATING FULLY OPEN.

AHU-2 ONLY: UPON ACTIVATION OF KITCHEN HOOD FAN EF-14, IF THE VENTILATION AIR IS BELOW 2200 CFM, THE CO2 SENSOR SHALL BE OVERRIDDEN AND THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN A MINIMUM OF 2200 CFM OSA. THE EXHAUST AIR DAMPER SHALL MODULATE PARTIALLY CLOSED IN ORDER TO MAINTAIN AN AIRFLOW THAT IS APPROXIMATELY THE DIFFERENCE BETWEEN THE CURRENT OSA AIRFLOW AND THE SCHEDULED EF-14 EXHAUST AIRFLOW WITH AN OFFSET AS DETERMINED DURING TAB.

UPON A CALL FOR COOLING FROM THE SPACE WHEN OUTSIDE AIR TEMPERATURE IS BELOW THE RETURN AIR TEMPERATURE THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL MODULATE OPEN WHILE THE RETURN AIR DAMPER MODULATES CLOSED. ON A FURTHER CALL FOR COOLING, THE CHILLED WATER VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE AT SETPOINT. THE REVERSE SHALL OCCUR ON A DECREASE IN COOLING DEMAND.

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THE MIXED AIR TEMPERATURE SHALL OVERRIDE THE CO2 SENSOR TO MAINTAIN A MINIMUM MIXED AIR TEMPERATURE OF 40°F.

IF THE MIXED AIR TEMPERATURE FALLS BELOW 40°F A LOW TEMPERATURE ALARM SHALL BE INDICATED AT THE CENTRAL MONITORING LOCATION.

IF THE MIXED AIR TEMPERATURE FALLS BELOW 30F, AN ADDITIONAL ALARM SHALL BE INDICATED AT THE CENTRAL MONITORING LOCATION AND THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE HOT WATER VALVE SHALL OPEN TO 20% (OCCUPIED AND UNOCCUPIED MODES).

UNOCCUPIED MODE:
THE CHILLED WATER VALVE SHALL BE CLOSED. THE SUPPLY AND RETURN FANS SHALL CYCLE AND HEATING VALVE SHALL MODULATE TO MAINTAIN SPACE ROOM TEMPERATURE AT THE SETBACK SETPOINT (55°, ADJ).

A PUSH-BUTTON AT THE ROOM SENSOR SHALL PUT THE SYSTEM INTO OVERRIDE MODE AND THE UNIT SHALL FOLLOW THE OCCUPIED MODE FOR 2 HOURS (ADJ).

OPTIMUM STOP-START
HEATING: THE CONTROL SYSTEM SHALL SENSE SPACE TEMPERATURE AND OUTSIDE AIR TEMPERATURE TO OPTIMIZE FAN START TIME SO THAT PROPER SPACE TEMPERATURE IS REACHED AT START OF SCHEDULED OCCUPIED MODE. OUTSIDE AND RELIEF AIR DAMPERS SHALL FULLY CLOSE AND RETURN AIR DAMPER SHALL FULLY OPEN DURING WARM-UP PERIOD. UPON START OF OCCUPIED MODE, OUTSIDE, RELIEF AND RETURN AIR DAMPERS SHALL MODULATE PER THE SEQUENCE OF CONTROLS LISTED ABOVE.

COOLING: THE CONTROL SYSTEM SHALL SENSE SPACE TEMPERATURE AND OUTSIDE AIR TEMPERATURE TO OPTIMIZE FAN START TIME SO THAT PROPER SPACE TEMPERATURE IS REACHED AT START OF SCHEDULED OCCUPIED MODE. OUTSIDE AND RELIEF AIR DAMPERS SHALL FULLY OPEN AND RETURN AIR DAMPER SHALL FULLY CLOSE DURING PRE-COOL PERIOD, WHEN OUTSIDE AIR TEMPERATURE IS LOWER THAN SPACE TEMPERATURE AND SPACE TEMPERATURE IS WARMER THAN OCCUPIED SETPOINT OF T1. UPON START OF OCCUPIED MODE, OUTSIDE, RELIEF AND RETURN AIR DAMPERS SHALL MODULATE PER THE SEQUENCE OF OPERATIONS LISTED ABOVE.

SHELTER-IN-PLACE
WHEN THE SHELTER IN PLACE MODE IS INITIATED AT THE DDC SYSTEM, OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE AND RTU SHALL OPERATE IN FULL RECIRCULATION MODE UNTIL SHELTER IN PLACE MODE IS DISABLED.

DESIGN WEST ARCHITECTS, P.A.
• MERIDIAN, IDAHO • PULLMAN, WASHINGTON •
• KENNEWICK, WASHINGTON • BOISE, IDAHO •
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JOB NUMBER 23053

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1815 E. SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE 12/18/23

SHEET NAME
MECHANICAL CONTROLS

SHEET M7.05

12/18/2023 5:09:14 PM

GENERAL NOTES:

1. THIS DRAWING IS INTENDED TO SHOW GENERAL INFORMATION FOR THE FIRE PROTECTION SYSTEMS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL FINAL AUTHORITY HAVING JURISDICTION (AHJ) APPROVED SHOP DRAWINGS, SPRINKLERS, PIPES, FITTINGS, OFFSETS, HANGERS, EARTH QUAKE BRACING, FIRE PROTECTION DEVICES AND APPURTENANCES FOR A COMPLETE SYSTEM AS COORDINATED WITH ALL TRADES AND AS APPROVED BY THE AHJ.

2. ALL PIPING CONCEALED ABOVE CEILING WHERE CEILINGS OCCUR.

3. PIPING SHOWN ON THIS DRAWING IS DIAGRAMMATIC. ALL PIPING SHALL BE COORDINATED WITH ALL OTHER BUILDING ELEMENTS.

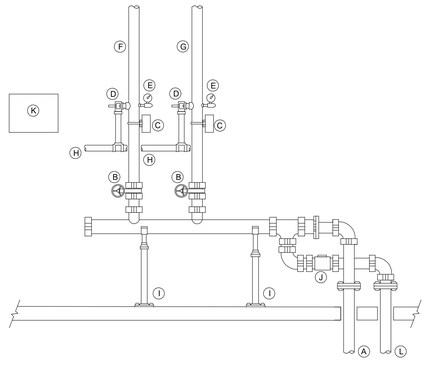
4. BRANCH LINES AND SPRINKLER LEADS SHOW AREAS OF FOCUS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION COORDINATION PURPOSES ONLY.

5. ALL WORK TO BE PERFORMED IN COMPLETE CONFORMANCE WITH NFPA 13 INCLUDING ALL STATE AND LOCAL CODE REQUIREMENTS.

6. SEE ARCHITECTURAL PLANS FOR CEILING TYPES, ELEVATIONS AND SECTIONS WITHIN THE BUILDING.

KEY NOTES:

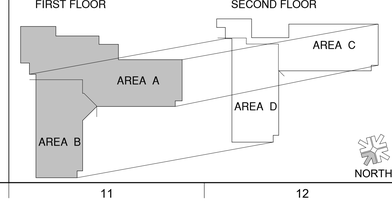
1. 4" FIRE DEPARTMENT CONNECTION DN TO BELOW GRADE.
2. 4" FIRE DEPARTMENT CONNECTION TO 5'-0" OUTSIDE OF BLDG.
3. 6" FIRE PROTECTION DN TO BELOW GRADE.
4. 6" FIRE PROTECTION TO 5'-0" OUTSIDE OF BLDG.
5. FIRE PROTECTION MAIN DN.
6. FIRE PROTECTION MAIN UP.
7. 6" FIRE PROTECTION HEADER.
8. FIRE PROTECTION DN TO ELEVATOR SHAFT.
9. SOLENOID VALVE (CONNECT TO ELEVATOR FIRE ALARM RELAY).
10. NON-COMBUSTIBLE FACIA ON CEILING OF COVERED AREA.
11. NO CEILING (OPEN TO ABOVE).
12. SPRINKLE STAIRWELL PER NFPA 13.
13. WET PIPE SPRINKLER SYSTEM MAIN.
14. CAP 4" FIRE PROTECTION FOR FUTURE EXPANSION.
15. STORAGE ROOM UNDER STAIRWELL.
16. ELECTRIC ALARM BELL.
17. COORDINATE LAYOUT WITH CEILING EQUIPMENT AND ARCHITECT.



1 FIRE PROTECTION RISER DETAIL
Scale: NOT TO SCALE

1 OVERALL - FIRST FLOOR - FIRE PROTECTION
SCALE: 3/32" = 1'-0"

KEYPLAN



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1815 E. SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/23

SHEET NAME
OVERALL PLAN - 1ST FLOOR - FIRE PROTECTION

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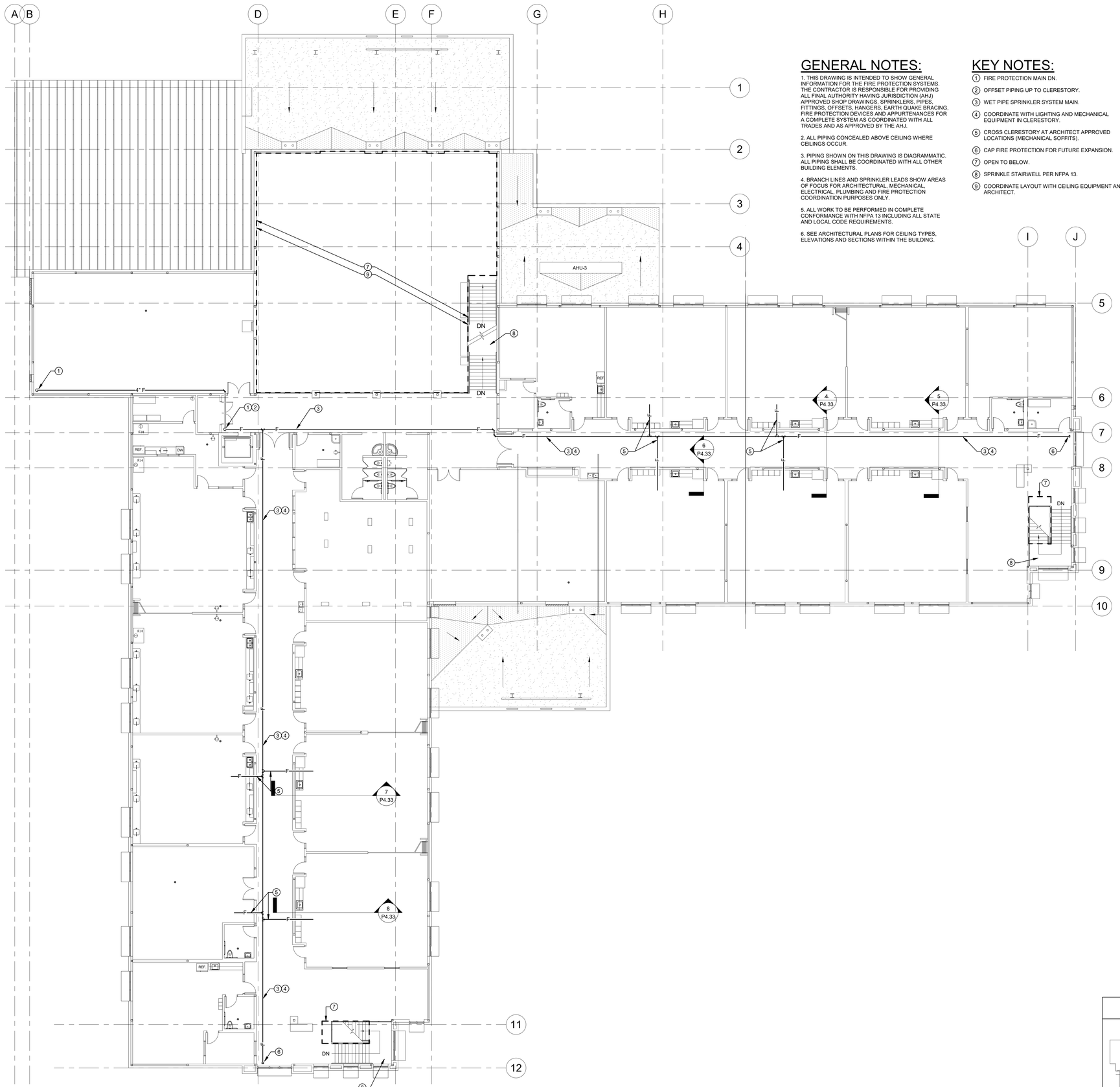


GENERAL NOTES:

1. THIS DRAWING IS INTENDED TO SHOW GENERAL INFORMATION FOR THE FIRE PROTECTION SYSTEMS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL FINAL AUTHORITY HAVING JURISDICTION (AHJ) APPROVED SHOP DRAWINGS, SPRINKLERS, PIPES, FITTINGS, OFFSETS, HANGERS, EARTH QUAKE BRACING, FIRE PROTECTION DEVICES AND APPURTENANCES FOR A COMPLETE SYSTEM AS COORDINATED WITH ALL TRADES AND AS APPROVED BY THE AHJ.

2. ALL PIPING CONCEALED ABOVE CEILING WHERE CEILINGS OCCUR.

3. PIPING SHOWN ON THIS DRAWING IS DIAGRAMMATIC. ALL PIPING SHALL BE COORDINATED WITH ALL OTHER BUILDING ELEMENTS.

4. BRANCH LINES AND SPRINKLER LEADS SHOW AREAS OF FOCUS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION COORDINATION PURPOSES ONLY.

5. ALL WORK TO BE PERFORMED IN COMPLETE CONFORMANCE WITH NFPA 13 INCLUDING ALL STATE AND LOCAL CODE REQUIREMENTS.

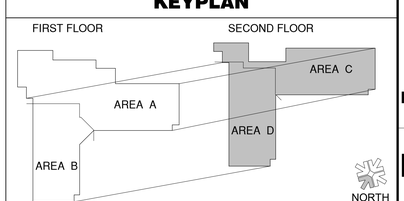
6. SEE ARCHITECTURAL PLANS FOR CEILING TYPES, ELEVATIONS AND SECTIONS WITHIN THE BUILDING.

KEY NOTES:

1. FIRE PROTECTION MAIN DN.
2. OFFSET PIPING UP TO CLERESTORY.
3. WET PIPE SPRINKLER SYSTEM MAIN.
4. COORDINATE WITH LIGHTING AND MECHANICAL EQUIPMENT IN CLERESTORY.
5. CROSS CLERESTORY AT ARCHITECT APPROVED LOCATIONS (MECHANICAL SOFFITS).
6. CAP FIRE PROTECTION FOR FUTURE EXPANSION.
7. OPEN TO BELOW.
8. SPRINKLE STAIRWELL PER NFPA 13.
9. COORDINATE LAYOUT WITH CEILING EQUIPMENT AND ARCHITECT.

N 1 **OVERALL - SECOND FLOOR - FIRE PROTECTION**
SCALE: 3/32" = 1'-0"

KEYPLAN



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DATE
12/18/23

SHEET NAME
OVERALL PLAN - 2ND FLOOR - FIRE PROTECTION

SHEET
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RECEPTACLE SCHEDULE

SYMBOL	DESCRIPTION	NOTE
	DUPLEX RECEPTACLE - WALL MOUNTED	
G	DUPLEX RECEPTACLE - WALL MOUNTED - GFCI	
	DUPLEX RECEPTACLE - WALL MOUNTED - SWITCHED	
G	DUPLEX RECEPTACLE - WALL MOUNTED - SWITCHED - GFCI	
	DOUBLE DUPLEX RECEPTACLE - WALL MOUNTED	
G	DOUBLE DUPLEX RECEPTACLE - WALL MOUNTED - GFCI	
USB	TRIPLE DUPLEX RECEPTACLE - WALL MOUNTED - USB A/C PORTS	SEE DETAIL 'I' SHEET E6.03.
	DUPLEX RECEPTACLE - CEILING OR FLOOR MOUNTED	
	SPECIAL PURPOSE RECEPTACLE - WALL MOUNTED	
CR	CORD REEL	
J	J-BOX - 120V	
J	J-BOX - 208V	

SUBSCRIPT DENOTES:
A - ABOVE COUNTER, REFER TO ARCHITECTURAL
G - GROUND FAULT CIRCUIT INTERRUPT
IG - ISOLATED GROUND
USB - RECEPTACLE & TYPE A & C USB PORTS
WP - WEATHERPROOF

WALL BOXES SCHEDULE

SYMBOL	MANUFACTURER	WALL BOX DEVICES	NOTE
WB1	FSR #PWB-100	(1) DUPLEX REC, (1) T2 DATA, (1) CATV JACK, (1) HDMI CABLE JACK	(1) 3/4"C, POWER, (1) 1-1/4"C SYSTEMS

AUXILIARY SCHEDULE

SYMBOL	DESCRIPTION	NOTE
PB	PAGING BELL	
T1	DIGITAL CLOCK/SPEAKER - CEILING-MOUNTED, DOUBLE-FACED	
T1	DIGITAL CLOCK AND SPEAKER COMBINATION	PROVIDE (1) CAT 6 DATA CABLE FROM DATA RACK PATCH PANEL TO CLOCK/SPEAKER COMBO.
IC	INTERCOM CALL BUTTON	
S	INTERCOM SPEAKER - CEILING MOUNTED	PROVIDE (1) CAT6 DATA CABLE FROM PATCHC PANEL TO SPEAKER.

SUBSCRIPT DENOTES:
"D" DENOTES DOUBLE SIDED DIGITAL CLOCK/SPEAKER, CEILING MOUNTED.
"LD" LARGE DISPLAY CLOCK/SPEAKER. AND #IPSIGNAL-RWB - LARGE DISPLAY SPEAKER.
"S" SURFACE MOUNT BACK BOX REQUIRED
"WP" WEATHERPROOF
"WG" WIREGUARD

TELECOMMUNICATIONS SCHEDULE

SYMBOL	DESCRIPTION	NOTE
T1	DATA OUTLET	4 PORT FACEPLATE, # INDICATES NUMBER OF ACTIVE PORTS
T2	DATA OUTLET	4 PORT FACEPLATE, # INDICATES NUMBER OF ACTIVE PORTS
T3	DATA OUTLET	4 PORT FACEPLATE, # INDICATES NUMBER OF ACTIVE PORTS
T4	DATA OUTLET	4 PORT FACEPLATE, # INDICATES NUMBER OF ACTIVE PORTS
	WIRELESS ACCESS POINT	# INDICATES NUMBER OF ACTIVE PORTS

SUBSCRIPT DENOTES:
AC - ABOVE CEILING
C - CEILING MOUNT

SECURITY SCHEDULE

SYMBOL	DESCRIPTION	NOTE
	OFOI IP CAMERA - 180	MOUNT AT +12' AFF ON WALL OR ON CEILING T-BAR UNLESS OTHERWISE NOTED. PROVIDE (1) CAT 6 DATA CABLE WITH 15' SERVICE LOOP AND BISCUIT
	OFOI IP CAMERA - 360	MOUNT AT +12' AFF ON WALL OR ON CEILING T-BAR UNLESS OTHERWISE NOTED, PROVIDE (1) CAT 6 DATA CABLE WITH 15' SERVICE LOOP AND BISCUIT
	OFOI IP CAMERA	MOUNT AT +12' AFF ON WALL OR ON CEILING T-BAR UNLESS OTHERWISE NOTED. PROVIDE (1) CAT 6 DATA CABLE WITH 15' SERVICE LOOP AND BISCUIT JACK.
CR	CARD ACCESS, PROXIMITY READER	MOUNT AT +44" AFF
	DOOR POSITION INDICATOR SWITCH (DPIS)	
	ELECTRIC DOOR HARDWARE CONNECTION	
K	INTRUSION ALARM KEYPAD	+44" A.F.F. TO BOTTOM OF BOX
MD	MOTION DETECTOR, CEILING MOUNTED	
P	POWER SUPPLY FOR DOOR ELECTRONIC HARDWARE	'DA' DENOTES DOOR ASSIST, 'DL' DENOTES DOOR LOCK
	BUZZ IN PUSH BUTTON UNDER RECEPTION DESK TOP	
	POWER DOOR PUSH PLATE	

1. SEE ROUGH-IN DETAILS SHEET E6.03 'A', 'B' & 'C'.

SOUND DEVICES SCHEDULE

SYMBOL	DESCRIPTION	NOTE
HX	HEARING ASSIST ANTENNA	///EDIT/// SEE DETAIL C/E7.07 AND SPECIFICATION 27 5100
MA	MICROPHONE/AUXILLARY INPUT	///EDIT/// +16" TO BOTTOM OF BOX. SEE SPECIFICATION 27 5100
RTC	REMOTE TOUCH SCREEN CONTROL.	///EDIT/// +44" TO BOTTOM OF BOX. PROVIDE (1) AUXILLARY INPUT TO APPEAR IN THE MPR AUTO MIX MODE. SEE SPECIFICATION 27 5100
SP	SOUND SYSTEM SPEAKER	///EDIT/// PROVIDE CUSTOM MOUNTING HARDWARE, VERIFY R.I. LOCATIONS WITH SYSTEM PROVIDER. SEE SPECIFICATION 27 5100
SSR	SOUND SYSTEM RACK	///EDIT/// SEE SPECIFICATION 27 5100
WX	WIRELESS MIC ANTENNA	///EDIT/// SEE DETAIL C/E7.07 AND SPECIFICATION 27 5100

FIRE ALARM SCHEDULE

SYMBOL	DESCRIPTION	NOTE
	HORN/STROBE - WALL MOUNTED	
F	MANUAL FIRE ALARM BOX/PULL STATION	
	ADDRESSABLE SMOKE DETECTOR	
	SPEAKER/STROBE - CEILING MOUNTED	
	SPEAKER/STROBE - WALL MOUNTED	
S	SPEAKER - WALL	
TS	TAMPER SWITCH	
WF	WATERFLOW SWITCH	

AUDIO/VIDEO SCHEDULE

SYMBOL	DESCRIPTION	NOTE
AVI	AUDIO/VISUAL INTERFACE BOX - HDMI INPUT	2-GANG ROUGH-IN AND PLATE WITH 1"C UP TO DISPLAY WALL BOX
AVP	AUDIO/VISUAL PROJECTOR & MOUNTING BRACKET	PROVIDE (2) CAT 6 TO DATA RACK PATCHPANEL
HDMI	AUDIO/VISUAL HDMI	

EQUIPMENT SCHEDULE

CALLOUT	EQUIP ID	EQUIPMENT DESCRIPTION	VOLTS	PHASE	KVA	CIRCUIT ID	CONDUIT & WIRE	DISCONNECT DESCRIPTION	EQUIPMENT CONNECTION	DISCONNECT PROVIDED BY	NOTES
CF-1	CF-1	CEILING FAN	120	1	1.18	ML3-3	3/4"C,2#10,#10G	BUSSMAN #SSW	HARDWIRED	DIV. 26	
CF-2	CF-2	CEILING FAN	120	1	1.18	ML3-5	3/4"C,2#10,#10G	BUSSMAN #SSW	HARDWIRED	DIV. 26	
CF-3	CF-3	CEILING FAN	120	1	1.18	ML3-7	3/4"C,2#10,#10G	BUSSMAN #SSW	HARDWIRED	DIV. 26	
CF-4	CF-4	CEILING FAN	120	1	1.18	ML4-5	3/4"C,2#10,#10G	BUSSMAN #SSW	HARDWIRED	DIV. 26	
CF-5	CF-5	CEILING FAN	120	1	1.18	ML4-7	3/4"C,2#12,#12G	BUSSMAN #SSW	HARDWIRED	DIV. 26	
CF-6	CF-6	CEILING FAN	120	1	1.18	ML4-9	3/4"C,2#12,#12G	BUSSMAN #SSW	HARDWIRED	DIV. 26	
CWD-1	CWD-1	COMBO WASHER/DRYER	208/120	2	3.74	ML1-5,7	3/4"C,3#10,#10G	NEMA L15-40R	RECEPTACLE	DIV. 26	
DW	DW	DISHWASHER	120	1	1.5	PF2-36	3/4"C,2#12,#12G	NEMA 5-20R	RECEPTACLE	DIV. 26	PROVIDE GFCI CIRCUIT BREAKER
ELEV	ELEV	ELEVATOR POWER MODULE	208	3	22.45	SDP-17	2"C,4#2/0(AL),#6G	ELEVATOR POWER MODULE	HARDWIRED	DIV. 26	ELEVATOR POWER MODULE 0 SEE 262816 BUSSMAN #PS1-T48-R1-K-G-N1-B-F3-T
ICE	ICE	ICE MACHINE	120	1	1.5	PC2-33	3/4"C,2#12,#12G	NEMA 5-20R	RECEPTACLE	DIV. 26	PROVIDE GFCI CIRCUIT BREAKER
IRR-1	IRR-1	IRRIGATION PUMP	480	3	6.32	MDS-10	3/4"C,4#8,#12G	3P60A/35AF	HARDWIRED	DIV. 26	
OHD-4A	OHD-4A	OVERHEAD DOOR	120	1	1.18	SB2-2	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHD-4B	OHD-4B	OVERHEAD DOOR	120	1	1.18	SB2-4	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHD-5A	OHD-5A	OVERHEAD DOOR	120	1	1.18	SB1-2	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHD-5B	OHD-5B	OVERHEAD DOOR	120	1	1.18	SB1-4	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHD-1	OHD-1	OVERHEAD DOOR	120	1	1.18	ML1-40	3/4"C,2#10,#10G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHD-2	OHD-2	OVERHEAD DOOR	120	1	1.18	ML1-42	3/4"C,2#10,#10G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHD-3	OHD-3	OVERHEAD DOOR	120	1	1.18	PA1-15	3/4"C,2#10,#10G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHG-1	OHG-1	OVERHEAD GRILLE	120	1	1.18	K2-30	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHG-2	OHG-2	OVERHEAD GRILLE	120	1	1.18	K2-32	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHG-3	OHG-3	OVERHEAD GRILLE	120	1	1.18	K2-34	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
OHG-4	OHG-4	OVERHEAD GRILLE	120	1	1.18	PC2-21	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION
RCD-1	RCD-1	ROLLING COUNTER DOOR	120	1	1.18	PC2-25	3/4"C,2#12,#12G	1P30A/20AF	HARDWIRED	DIV. 26	MAKE ALL REQUIRED CONNECTIONS TO CONTROL STATION

ABBREVIATIONS:

A	AMPERE
AC	ABOVE CEILING
AFF	ABOVE FINISH FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ARCH	ARCHITECT(URAL)
BFP	BACKFLOW PREVENTOR
BKBD	BACKBOARD
CAB	CABINET
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CGB	COMMUNICATIONS GROUND BUSBAR
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CONC	CONCRETE
COND	CONDUCTOR
C	CONDUIT
CO	CONDUIT ONLY
CONN	CONNECTION
CONTR	CONTRACTOR
COORD	COORDINATE
CU	COPPER OR CONDENSING UNIT
CUH	CABINET UNIT HEATER
DDC	DIRECT DIGITAL CONTROL SYSTEM
DEMARC	DEMARCATION
DISC	DISCONNECT SWITCH
DPLX	DUPLEX
ELEC	ELECTRIC(AL)
EWC	ELECTRIC WATER COOLER
EF	EXHAUST FAN
EXP	EXPLOSION PROOF
EXT	EXTERIOR
FA	FIRE ALARM
FC	FAN COIL
FLR	FLOOR
F/SD	FIRE/SMOKE DAMPER
FUOC	FURNISHED UNDER OTHER CONTRACT
FUT	FUTURE
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
HOA	HAND-OFF-AUTO
HP	HORSEPOWER OR HEAT PUMP
HWH	HOT WATER HEATER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
JB	JUNCTION BOX
KW	KILOWATT(S)
KVA	KILOVOLT-AMPERE(S)
LOCN	LOCATION
LT(S)	LIGHT(S)
LV	LOW VOLTAGE
MDF	MAIN DISTRIBUTION FRAME
MDS	MAIN DISTRIBUTION SWITCHBOARD
MFR	MANUFACTURER
MC	MOMENTARY CONTACT
MOA	MULTIPLE OUTLET ASSEMBLY
MS	MANUAL STARTER
MSGB	MAIN SERVICE GROUND BUSBAR
MTGB	MAIN TELECOM GROUND BUSBAR
MT(D)	MOUNT(IED)
MTR	MOTOR
NEC	NATIONAL ELECTRIC CODE NFPA 70
NL	NIGHT LIGHT (DUSK TO DAWN OPERATION)
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
OC	ON CENTER(S)
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OH	OVERHEAD
PDU	POWER DISTRIBUTION UNIT
PB	PUSHBUTTON
PIV	POST INDICATOR VALVE
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
PC	PHOTOCELL
SM	SINGLE MODE FIBER OPTICAL CABLE
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
SO	STUB OUT
SU	STUB UP
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD
TEL	TELEPHONE
TGB	TELECOM GROUND BUSBAR
TS	TIME SWITCH
UBC	UNIFORM BUILDING CODE (LATEST EDITION)
UG	UNDERGROUND
UH	UNIT HEATER
V	VOLT(S)
WG	WIRE GUARD
WP	WEATHERPROOF
WSEC	WASHINGTON STATE ENERGY CODE
W	WATTS
XFMR	TRANSFORMER

CONDUIT AND WIRING SYMBOLS

- CIRCUIT HOMERUN
- CONCEALED CONDUIT
- LOW VOLTAGE CABLE
- CONDUIT SLEEVE THRU WALL ABOVE CEILING, QUANTITY AND SIZE AS NOTED
- CONDUIT STUBOUT OR STUBUP INTO ACCESSIBLE CEILING SPACE
- CONDUIT STUBOUT WITH ENDCAP
- STUB-UP LOCATION
- UG — UNDERGROUND COMMUNICATIONS CONDUIT

REFERENCE SYMBOLS

- 1 — KEYED NOTE IDENTIFIER, SEE KEYED NOTES
- XX01 — EQUIPMENT IDENTIFIER, SEE EQUIPMENT SCHEDULES
- 100A — DOOR IDENTIFICATION SYMBOL
- K67/2A — DETAIL REFERENCE
- CP01 — CAMERA (INTERIOR) CALLOUT
- CM01 — CAMERA (EXTERIOR) CALLOUT

GENERAL ELECTRICAL SYMBOLS

- LIGHTING FIXTURE ON EMERGENCY POWER CIRCUIT
- LIGHTING FIXTURE ON EMERGENCY POWER CIRCUIT
- MAIN SERVICE AND DISTRIBUTION EQUIPMENT
- BRANCH CIRCUIT PANEL
- TRANSFORMER
- GROUND BUS, COPPER
- GROUND
- EQUIPMENT CONNECTION
- JUNCTION BOX
- MOTOR
- SAFETY SWITCH
- EPO — EMERGENCY POWER OFF PUSH BUTTON
- CONTROL DEVICE:
  -'EPS' DENOTES ELECTRIC PROJECTION SCREEN
  -'MS' DENOTES MOTORIZED SHADE
  -'BS' DENOTES BACKSTOP
- P — PULL BOX
- SPD — SURGE PROTECTION DEVICE
- SOLENOID
  -'G' DENOTES GAS
  -'W' DENOTES WATER
- MAGNETIC DOOR HOLD, RELEASE ON LOCKDOWN ACTIVATION
- INTERFACE CONTROL RELAY
- CONTACTOR
- DAYLIGHT ZONE BORDER
  - 'DZ1' DENOTES THE PRIMARY DAYLIGHT ZONE
  -'DZ2' DENOTES THE SECONDARY DAYLIGHT ZONE
- COMMUNICATIONS BACKBOARD
- G — GAS SOLENOID
- EVC — ELECTRIC VEHICLE CHARGING STATION - DUAL PORT

BID ALTERNATE #2: DISTRIBUTED ANTENNA SYSTEM. ADD ALL MATERIALS AND LABOR REQUIRED TO PROVIDE THE WORK SHOWN ON DRAWINGS AND ASSOCIATED SPECIFICATIONS, AS IDENTIFIED IN THE CONTRACT DOCUMENTS.

- BASE BID: PROVIDE TESTING OF THE RADIO FREQUENCY SIGNAL STRENGTH WITHIN THE BUILDING ONCE THE BUILDING IS TOTALLY ENCLOSED INCLUDING ROOF, EXTERIOR WALLS AND EXTERIOR WALL GLAZING INSTALLED, TO DETERMINE IF THE DISTRIBUTED ANTENNA SYSTEM IS NECESSARY.
- BID ALTERNATE #2: PROVIDE COMPLETE DISTRIBUTED ANTENNA SYSTEM IN THE BUILDING INCLUDING ANTENNAS, COAXIAL CABLE, CONNECTORS, AMPLIFIERS, ENCLOSURES, CONDUIT AND WIRING AS DESCRIBED IN SECTION 28 31 73.

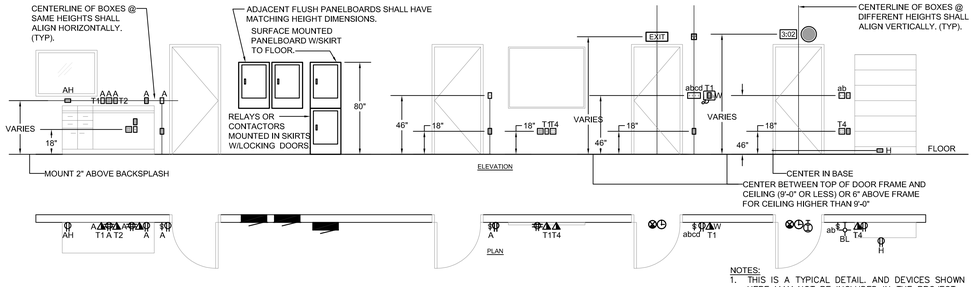
OWNER RESERVES THE RIGHT TO SELECT THIS ALTERNATE UNTIL 45 DAYS FOLLOWING THE TEST TO DETERMINE IF THE ALTERNATE IS NEEDED.

SHEET INDEX

E0.01	GENERAL NOTES, SYMBOLS & ABBREVIATIONS
E0.02	SCHEDULES
E0.03	SCHEDULES
E1.01	SITE PLAN - ELECTRICAL
E1.02	ELECTRICAL SITE PLAN DETAILS
E1.03	ROOF PLAN - ELECTRICAL
E2.01	FIRST FLOOR PLAN - LIGHTING - AREA A
E2.02	FIRST FLOOR PLAN - LIGHTING - AREA B
E2.03	SECOND FLOOR PLAN - LIGHTING - AREA C
E2.04	SECOND FLOOR PLAN - LIGHTING - AREA D
E3.01	FIRST FLOOR PLAN - POWER/SYSTEMS - AREA A
E3.02	FIRST FLOOR PLAN - POWER/SYSTEMS- AREA B
E3.03	SECOND FLOOR PLAN - POWER/SYSTEMS- AREA C
E3.04	SECOND FLOOR PLAN - POWER/SYSTEMS- AREA D
E3.05	ENLARGED KITCHEN PLAN - ELECTRICAL
E4.01	ONE-LINE DIAGRAM
E4.02	TELECOMMUNICATIONS DETAILS
E5.01	PANEL SCHEDULES
E5.02	PANEL SCHEDULES
E5.03	PANEL SCHEDULES
E6.01	ELECTRICAL DETAILS
E6.02	ELECTRICAL DETAILS
E6.03	ELECTRICAL DETAILS

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, DEVICE MOUNTING HEIGHTS SHALL BE AS INDICATED IN DETAIL 'A'. 'A' DENOTES ABOVE COUNTER. COORDINATE HEIGHTS WITH CASEWORK AND GENERAL CONTRACTOR.
2. ALL BRANCH CIRCUITS SHALL INCLUDE A DEDICATED NEUTRAL AND A GREEN INSULATED EQUIPMENT GROUND CONDUCTOR, MINIMUM WIRE SIZE #12 AWG.
3. MINIMUM WIRE SIZE TO BE #12 AWG UNLESS OTHERWISE NOTED.
4. UNLESS OTHERWISE NOTED, REFERENCE 260519 FOR BRANCH CIRCUIT WIRING AND VOLTAGE DROP COMPENSATION REQUIREMENTS.
5. MC CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING AS SPECIFIED IN SECTION 260519.
6. PROVIDE THE QUANTITY OF CONDUCTORS REQUIRED TO PROVIDE POWER AND CONTROL OF LIGHTING FIXTURES, BATTERY CHARGING, AND OTHER APPLICATIONS TO MEET THE INTENT OF THE DESIGN. SWITCH LEGS, TRAVELERS, ADDITIONAL UNSWITCHED CONDUCTORS, MULTIPLE NEUTRALS, GROUNDS, ETC., ARE NOT INDICATED. SWITCHING INTENT IS INDICATED BY LOWER CASE LETTER DESIGNATION, NOTE OR SYMBOL.
7. LIGHTING CONTROL COMMISSIONING REQUIREMENTS:IN ACCORDANCE WITH THE WSEC; FOR LIGHTING CONTROLS WHICH INCLUDE DAYLIGHT OR OCCUPANT SENSING AUTOMATIC CONTROLS, AUTOMATIC SHUT-OFF CONTROLS, OCCUPANCY SENSORS, OR AUTOMATIC TIME SWITCHES, THE LIGHTING CONTROLS SHALL BE TESTED TO ENSURE THAT CONTROL DEVICES, COMPONENTS, EQUIPMENT AND SYSTEMS ARE CALIBRATED, ADJUSTED AND OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. SEQUENCES OF OPERATIONS SHALL BE FUNCTIONALLY TESTED TO ENSURE THEY OPERATED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. A COMPLETE REPORT OF TEST PROCEDURES AND RESULTS SHALL BE PREPARED AND FILED WITH THE OWNER. DRAWING NOTES SHALL REQUIRED COMMISSIONING IN ACCORDANCE WITH THIS PARAGRAPH.
8. DIVISION 26 TO PROVIDE CONDUIT AND BOX ROUGH-IN FOR THERMOSTATS. FOR ROUGH-IN LOCATIONS REFER TO MECHANICAL HVAC DRAWINGS. ROUGH-IN SHALL CONSIST OF A 4" SQUARE BOX, SINGLE GANG PLASTER RING AND A 1/2"C STUB UP INTO THE NEAREST ACCESSIBLE CEILING SPACE.
9. REFERENCE ARCHITECTURAL DRAWING DETAILS FOR ROOF AND UTILITY PENETRATION REQUIREMENTS.



A TYPICAL OUTLET MOUNTING DETAIL
1/2"=1'-0"

NOTES:
1. THIS IS A TYPICAL DETAIL. AND DEVICES SHOWN HERE MAY NOT BE INCLUDED IN THE PROJECT.
2. A = 4" TO CENTERLINE, ABOVE COUNTER OR BACKSPLASH.
3. MOUNTING HEIGHTS ON DRAWINGS ARE TO BOTTOM OF BOX.

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DATE
12/18/2023

SHEET NAME
GENERAL NOTES AND SYMBOLS

SHEET
E0.01

SWITCH SCHEDULE

SYMBOL	DESCRIPTION	NOTE
(1)DM	CONTROLLED RECEPTACLE MODULE	NUMBERS DENOTES (1) CONTROL RELAY
(2)DM	CONTROLLED RECEPTACLE MODULE	NUMBERS DENOTES (2) CONTROL RELAYS
IO	INTERIOR DAYLIGHT SENSOR	
LCM1	LIGHTING CONTROL MODULE	NUMBER DENOTES (1) CONTROL RELAY. CONNECT LIGHTING CONTROL MODULE TO LOCAL DISTIBUTED NETWORK AS INDICATED ON DRAWINGS. DISTRIBUTED NETWORK SHALL BE STAND ALONE SYSTEM.
LCM3	LIGHTING CONTROL RELAY	NUMBER DENOTES (3) CONTROL RELAYS. CONNECT LIGHTING CONTROL MODULE TO LOCAL DISTIBUTED NETWORK AS INDICATED ON DRAWINGS. DISTRIBUTED NETWORK SHALL BE STAND ALONE SYSTEM.
LCM4	LIGHTING CONTROL MODULE	NUMBER DENOTES (4) CONTROL RELAYS. CONNECT LIGHTING CONTROL MODULE TO LOCAL DISTIBUTED NETWORK AS INDICATED ON DRAWINGS. DISTRIBUTED NETWORK SHALL BE STAND ALONE SYSTEM.
LDM1	LIGHTING DIMMING MODULE	NUMBER DENOTES (1) CONTROL RELAY AND (1) 0-10V DIMMING RELAY. CONNECT LIGHTING CONTROL MODULE TO LOCAL DISTIBUTED NETWORK AS INDICATED ON DRAWINGS. DISTRIBUTED NETWORK SHALL BE STAND ALONE SYSTEM.
LDM2	LIGHTING DIMMING MODULE	NUMBER DENOTES (2) CONTROL RELAYS AND (2) 0-10V DIMMING RELAYS. CONNECT LIGHTING CONTROL MODULE TO LOCAL DISTIBUTED NETWORK AS INDICATED ON DRAWINGS. DISTRIBUTED NETWORK SHALL BE STAND ALONE SYSTEM.
LDM3	LIGHTING DIMMING MODULE	NUMBER DENOTES (3) CONTROL RELAYS AND (3) 0-10V DIMMING RELAYS. CONNECT LIGHTING CONTROL MODULE TO LOCAL DISTIBUTED NETWORK AS INDICATED ON DRAWINGS. DISTRIBUTED NETWORK SHALL BE STAND ALONE SYSTEM.
LDM4	LIGHTING DIMMING MODULE	NUMBER DENOTES (4) CONTROL RELAYS AND (4) 0-10V DIMMING RELAYS. CONNECT LIGHTING CONTROL MODULE TO LOCAL DISTIBUTED NETWORK AS INDICATED ON DRAWINGS. DISTRIBUTED NETWORK SHALL BE STAND ALONE SYSTEM.
◊	LV LIGHTING CONTROL STATION	SINGLE ZONE CONTROL STATION, ON/OFF IN A SINGLE GANG DEVICE - LOWER CASE LETTER DENOTES CONTROL ZONES TO BE CONTROLLED AS INDICATED ON DRAWINGS.
◊	LV LIGHTING CONTROL STATION	(2) ZONE CONTROL STATION, ON/OFF, RAISE/LOWER IN A MAXIMUM 2-GANG DEVICE - LOWER CASE LETTER DENOTES ZONES TO BE CONTROLLED OR DIMMED AS INDICATED ON DRAWINGS.
◊	LV LIGHTING CONTROL STATION	(2) ZONES CONTROL STATION, ON/OFF IN A MAXIMUM 2-GANG DEVICE - LOWER CASE LETTER DENOTES ZONES TO BE CONTROLLED AS INDICATED ON DRAWINGS.
◊	LV LIGHTING CONTROL STATION	(2) ZONES CONTROL STATION, ON/OFF, RAISE/LOWER IN A MAXIMUM 2-GANG DEVICE - LOWER CASE LETTER DENOTES ZONES TO BE CONTROLLED OR DIMMED AS INDICATED ON DRAWINGS.
◊	LV LIGHTING CONTROL STATION	(3) ZONES CONTROL STATION, ON/OFF IN A MAXIMUM 2-GANG DEVICE - LOWER CASE LETTER DENOTES ZONES TO BE CONTROLLED AS INDICATED ON DRAWINGS.
◊	LV LIGHTING CONTROL STATION	(3) ZONES CONTROL STATION, ON/OFF, RAISE/LOWER IN A MAXIMUM 2-GANG DEVICE - LOWER CASE LETTER DENOTES ZONES TO BE CONTROLLED OR DIMMED AS INDICATED ON DRAWINGS.
◊	TOUCH SCREEN LV LIGHTING CONTROL STATION	MULTIPLE ZONE/SCREEN CONTROL, ON/OFF, DIMMING IN A MAXIMUM 2-GANG DEVICE - LOWER CASE LETTER DENOTES ZONES TO BE CONTROLLED OR DIMMED
NTWK	NETWORK CONTROLLER	NETWORK LIGHTING CONTROLLER, PROVIDE 120V RECEPTACLE AT NETWORK CONTROLLER LOCATION.
OS	OCCUPANCY SENSOR - CEILING MOUNTED	DUAL TECHNOLOGY. LOCATE PER MANUFACFTURER'S RECOMMENDATIONS AND SHOP DRAWINGS.
OS	OCCUPANCY SENSOR - WALL MOUNTED	
$	WALL SWITCH, SINGLE POLE, LINE VOLTAGE	EACH LOWER CASE LETTER DENOTES (1) SWITCH & ORDER OF SW'S
$3	WALL SWITCH, THREE WAY, LINE VOLTAGE	
	WALL SWITCH OCCUPANCY SENSOR	

EXTERIOR LIGHTING CONTROL ZONES:

a - BUILDING PERIMETER LIGHTING AT EGRESS
b - BUILDING PERIMETER LIGHTING
c - NORTH PATIO COVER LIGHTING
d - BUILDING SIGN LIGHTING
e - SOUTH PARKING LOT LIGHTING
f - NORTH PARKING/EAST DRIVE LIGHTING
g - NORTH PATIO FENCE STEP LIGHTS
h - FLAG POLE LIGHTING

LUMINAIRE SCHEDULE - INTERIOR

TYPE	SYMBOL	MODEL	VA	LED	LUMENS	VOLTS	NOTES
E.A1		SURE-LITE #CX71WH	3	GREEN LED	0	277V 1P 2W	SINGLE FACE DIECAST ALUMINUM GREEN LED. PROVIDE WITH EMERGENCY BATTERY PACK.
E.A2		SURE-LITE #CX72WH	3	GREEN LED	0	277V 1P 2W	DOUBLE FACE DIECAST ALUMINUM GREEN LED. PROVIDE WITH EMERGENCY BATTERY PACK.
H.A1		METALUX #4SNLED-LD5-41SL-LW-UNV-L840-CD1AYC-CHAIN/SET	35	80 CRI 4000K	4214	277V 1P 2W	1'x4' LED LENSED STRIP LIGHT
H.A2		METALUX #4SNLED-LD5-56SL-LW-UNV-L840-CD1AYC-CHAIN/SET	52	80 CRI 4000K	5678	120V 1P 2W 277V 1P 2W	1'x4' LED LENSED STRIP LIGHT
H.D1		BETA-CALCO #BLQP2P02-LPF040-LPG020-CR80-CTA40-CTB40DD2-UD1-UB00-V1-DA01-H1-HLA09-*-*-CS2	75	80 CRI 4000K	11198	277V 1P 2W	56" SQUARE DIRECT/INDIRECT SUSPENDED LED W/OPAL ACRYLIC LENS. VERIFY FINISH WITH ARCHITECT.
H.D1E		BETA-CALCO #BLQP2P02-LPF040-LPG020-CR80-CTA40-CTB40DD2-UD1-UB00-V1-DA01-H1-HLA09-*-*-CS2	75	80 CRI 4000K	11198	277V 1P 2W	56" SQUARE DIRECT/INDIRECT SUSPENDED LED W/OPAL ACRYLIC LENS. VERIFY FINISH WITH ARCHITECT, PROVIDE WITH EMERGENCY BATTERY PACK.
H.D2		BETA-CALCO #BLQP2P02-LPF060-LPG020-CR80-CTA40-CTB40DD2-UD1-UB00-V1-DA01-H1-HLA09-*-*-CS2	112	80 CRI 4000K	14931	277V 1P 2W	56" SQUARE DIRECT/INDIRECT SUSPENDED LED W/OPAL ACRYLIC LENS. VERIFY FINISH WITH ARCHITECT.
H.D2E		BETA-CALCO #BLQP2P02-LPF060-LPG020-CR80-CTA40-CTB40DD2-UD1-UB00-V1-DA01-H1-HLA09-*-*-CS2	112	80 CRI 4000K	14931	277V 1P 2W	56" SQUARE DIRECT/INDIRECT SUSPENDED LED W/OPAL ACRYLIC LENS. VERIFY FINISH WITH ARCHITECT, PROVIDE WITH EMERGENCY BATTERY PACK.
H.F1		METALUX #8ILED-LD5-14-W-TBW-UNV-L840-CD2-TOGGLE	92	80 CRI 4000K	13993	277V 1P 2W	1'x8' SUSPENDED INDUSTRIAL LINEAR BAY. PROVIDE WITH SUSPENSION CABLES.
H.F1E		METALUX #8ILED-LD5-14-W-TBW-UNV-L840-EL14W-CD2-TOGGLE	92	80 CRI 4000K	13993	277V 1P 2W	1'x8' SUSPENDED INDUSTRIAL LINEAR BAY. PROVIDE WITH SUSPENSION CABLES. PROVIDE WITH EMERGENCY BATTERY PACK.
H.J1		OXYGEN LIGHTING #3-677-40224	8	80 CRI 4000K	216	277V 1P 2W	3" DECORATIVE MATT WHITE ACRYLIC CYLINDER PENDANT, MOUNT BOTTOM TO 6'-8"AFF.
R.A1		METALUX #24GR-LD5-42-FGW080-UNV-L840-CD1	35	80 CRI 4000K	4294	277V 1P 2W	2'x4' RECESSED LED LENSED TROFFER.
R.A1E		METALUX #24GR-LD5-42-FGW080-EL14W-UNV-L840-CD1	35	80 CRI 4000K	4294	277V 1P 2W	2'x4' RECESSED LED LENSED TROFFER. PROVIDE WITH EMERGENCY BATTERY PACK.
R.A2		METALUX #24GR-LD5-64-FGW080-UNV-L840-CD1	48	80 CRI 4000K	6462	277V 1P 2W	2'x4' RECESSED LED LENSED TROFFER.
R.B1		METALUX #14GR-LD5-32-FGW080-UNV-L840-CD1	30	80 CRI 4000K	3257	277V 1P 2W	1'x4' RECESSED LED LENSED TROFFER.
R.B1E		METALUX #14GR-LD5-32-FGW080-UNV-EL14W-L840-CD1	30	80 CRI 4000K	3257	277V 1P 2W	1'x4' RECESSED LED LENSED TROFFER. PROVIDE WITH EMERGENCY BATTERY PACK.
R.B1F		METALUX #14GR-LD5-32-FGW080-UNV-L840-CD1-DF-W14-U	30	80 CRI 4000K	3257	277V 1P 2W	1'x4' RECESSED LED LENSED TROFFER W/DRYWALL FLANGE KIT.
R.B1FE		METALUX #14GR-LD5-32-FGW080-UNV-EL14W-L840-CD1-DF-W14-U	30	80 CRI 4000K	3257	277V 1P 2W	1'x4' RECESSED LED LENSED TROFFER W/DRYWALL FLANGE KIT, PROVIDE WITH EMERGENCY BATTERY PACK.
R.C1		METALUX #22GR-LD5-36-FGW080-UNV-L840-CD1	35	80 CRI 4000K	3642	277V 1P 2W	2'x2' RECESSED LED LENSED TROFFER.
R.D1		GOTHAM #EVO6-40/15-AR-LSS-WD-MVOLT-GZ10	15	80 CRI 4000K	1471	277V 1P 2W	6" ROUND LED OPEN DOWNLIGHT.
R.D1E		GOTHAM #EVO6-40/15-AR-LSS-WD-MVOLT-GZ10-EL	15	80 CRI 4000K	1471	277V 1P 2W	6" ROUND LED OPEN DOWNLIGHT. PROVIDE WITH EMERGENCY BATTERY PACK.
R.F1		METALUX #24RLN-LD5-45-UNV-L840-CD1	34	80 CRI 4000K	4547	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER.
R.F1E		METALUX #24RLN-LD5-45-UNV-EL14W-L840-CD1	34	80 CRI 4000K	4547	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER. PROVIDE WITH EMERGENCY BATTERY PACK.
R.F2		METALUX #24RLN-LD5-42-UNV-L840-CD1	31	80 CRI 4000K	4208	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER.
R.F2E		METALUX #24RLN-LD5-42-UNV-EL14W-L840-CD1	31	80 CRI 4000K	4208	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER, PROVIDE WITH EMERGENCY BATTERY PACK.
R.F3		METALUX #24RLN-LD5-36-UNV-L840-CD1	27	80 CRI 4000K	3651	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER.
R.F3E		METALUX #24RLN-LD5-36-UNV-EL14W-L840-CD1	27	80 CRI 4000K	3651	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER.PROVIDE WITH EMERGENCY BATTERY PACK.
R.F4		METALUX #24RLN-LD5-55-UNV-L840-CD1	43	80 CRI 4000K	5554	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER.
R.F4E		METALUX #24RLN-LD5-55-UNV-EL14W-L840-CD1	43	80 CRI 4000K	5554	277V 1P 2W	2'x4' RECESSED LED LENSED ARCHITECTURAL TROFFER. PROVIDE EMERGENCY BATTRY PACK.
R.G1		METALUX #22GR-LD5-43-FGW080-UNV-L840-CD1	40	80 CRI 4000K	4929	277V 1P 2W	2'x2' RECESSED LED LENSED TROFFER.
R.H1		PINNACLE #EV6-A-840HO-4'-G1G-U-OL2-1-W	35	80 CRI 4000K	3152	277V 1P 2W	6"x4' RECESSED LED W/SATIN LENS
R.H1E		PINNACLE #EV6-A-840HO-4'-G1G-U-OL2-1E-W	35	80 CRI 4000K	3152	277V 1P 2W	6"x4' RECESSED LED W/SATIN LENS. PROVIDE WITH EMERGENCY BATTERY PACK.
R.J1		AXIS #SL1-4-SO-400-80-40-BLK-UNV-DP-1	16	80 CRI 4000K	1600	277V 1P 2W	1'x4' RECESSED LED W/SATIN LENS. VERIFY MOUNTING REQUIREMENT FOR PRE-FORMED CEILING.
R.J1E		AXIS #SL1-4-SO-400-80-40-BLK-UNV-DP-1E-UWB	18	80 CRI 4000K	1460	277V 1P 2W	1'x4' RECESSED LED W/SATIN LENS. VERIFY MOUNTING REQUIREMENT FOR PRE-FORMED CEILING. PROVIDE WITH EMERGENCY BATTERY PACK.
R.J2		AXIS #SL1-6-SO-400-80-40-BLK-UNV-DP-1	25	80 CRI 4000K	2400	277V 1P 2W	1'x6' RECESSED LED W/SATIN LENS. VERIFY MOUNTING REQUIREMENT FOR PRE-FORMED CEILING.
R.J2E		AXIS #SL1-6-SO-400-80-40-BLK-UNV-DP-1E	25	80 CRI 4000K	2400	277V 1P 2W	1'x6' RECESSED LED W/SATIN LENS. VERIFY MOUNTING REQUIREMENT FOR PRE-FORMED CEILING. PROVIDE WITH EMERGENCY BATTERY PACK.
R.J3		AXIS #SL1-8-SO-400-80-40-BLK-UNV-DP-1	33	80 CRI 4000K	3200	277V 1P 2W	1'x8' RECESSED LED W/SATIN LENS. VERIFY MOUNTING REQUIREMENT FOR PRE-FORMED CEILING.
R.J3E		AXIS #SL1-8-SO-400-80-40-BLK-UNV-DP-1E	33	80 CRI 4000K	3200	277V 1P 2W	1'x8' RECESSED LED W/SATIN LENS. VERIFY MOUNTING REQUIREMENT FOR PRE-FORMED CEILING.PROVIDE WITH EMERGENCY BATTERY PACK.
R.L1		METALUX #22RLN-LD5-31-UNV-L840-CD1	27	80 CRI 4000K	3155	277V 1P 2W	2'x2' RECESSED LED LENSED ARCHITECTURAL TROFFER.
S.A1		METALUX #4SNLED-LD5-41SL-LW-UNV-L840-CD1AYC-CHAIN/SET	35	80 CRI 4000K	4214	277V 1P 2W	1'x4' LED LENSED STRIP LIGHT
S.B1		LUMINII #K45M-60"-72HO-41K-F-CB-SA-VERIFY-1	22	80 CRI 4000K	1805	277V 1P 2W	DISPLAY LIGHT. MOUNT VERTICALLY AT WINDOW FRAME. PROVIDE ALL NECESSARY HARDWARE, POWER SUPPLY FOR A COMPLETE AND OPERATIONAL SYSTEM.
W.A1		MODERN-FORM #WS-47924-AL	22	80 CRI 3000K	1375	277V 1P 2W	1'x2' LED VANITY LUMINAIRE
W.B1		METALUX #2VT3-LD5-4-W-UNV-L840-CD1	34	80 CRI 4000K	4700	120V 1P 2W	LED VAPOR TIGHT. MOUNT VERTICAL IN ELEVATOR PIT +3'-0" ABOVE PIT FLOOR.
W.C1		DESIGN PLAN #175596	3	80 CRI 4000K	188	277V 1P 2W	LED WALL MOUNTED SCONCE.REFER TO ARCHITECTURAL INTERIOR ELEVATION FOR LOCATION. PROVIDE WITH REMOTED DRIVER ELDDOLED #PPLT00308.PROVIDE NUMBER OF DRIVERS REQUIRED AND ALL REQUIRED HARDWARE FOR A COMPLETE AND OPERATIONAL SYSTEM.
W.C2		DESIGN PLAN #175496	3	80 CRI 4000K	188	277V 1P 2W	LED WALL MOUNTED SCONCE. MOUNT AT +9'-0" AFF TO CENTER OF LUMINAIRE. PROVIDE WITH REMOTED DRIVER ELDDOLED #PPLT00308.PROVIDE NUMBER OF DRIVERS REQUIRED AND ALL REQUIRED HARDWARE FOR A COMPLETE AND OPERATIONAL SYSTEM.
W.D1		LUMINII LIGHTING #RUNW-48"-HE48HO-41K-F-6-SA/ PS010V-96-24-LIN	14	80 CRI 4000K	2040	277V 1P 2W	1'x4' LED SIGN LIGHTER. PROVIDE ALL NECCESSARY HARDWARE FOR A COMPLETE AND OPERATIONAL S

LUMINAIRE SCHEDULE - EXTERIOR

TYPE	SYMBOL	MODEL	VA	LED	LUMENS	VOLTS	NOTES
Z.A1		MCGRAW-EDISON #GLEON-SA2-C-740-U-T3	113	80 CRI 4000K	14475	277V 1P 2W	TYPE III LED AREA LIGHT. MOUNT ON SQUARE POLE.
Z.B1		MCGRAW-EDISON #GLEON-SA2-C-740-U-TMQ	113	80 CRI 4000K	15203	277V 1P 2W	TYPE V LED AREA LIGHT. MOUNT ON SQUARE POLE.
Z.D1		NULITE #RXT-F-D-05-L40-UNV-D-11-FRF-*-4'	21	80 CRI 4000K	2016	277V 1P 2W	3"x4' RECESSED LED W/ FLUSH SATIN LENS. WET LISTED.
Z.D1E		NULITE #RXT-F-D-05-L40-UNV-D-11-B15-FRF-*-4'	21	80 CRI 4000K	2016	277V 1P 2W	3"x4' RECESSED LED W/ FLUSH SATIN LENS. WET LISTED, PROVIDE WITH BATTERY PACK.
Z.G1E		LIGMAN #UMT-31416-14/14W-M-W40-01-120/277V-4J	28	80 CRI 4000K	2256	277V 1P 2W	LED ARCHITECTURAL WALL SCONCE. SEE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT. CIRCUIT VIA MICRO INVERTER.
Z.G2		LIGMAN #UMT-31416-14W-M-W40-01-120/277V-4J	14	80 CRI 4000K	1128	277V 1P 2W	LED ARCHITECTURAL WALL SCONCE. SEE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT.
Z.G2E		LIGMAN #UMT-31416-14W-M-W40-01-120/277V-4J	14	80 CRI 4000K	1128	277V 1P 2W	LED ARCHITECTURAL WALL SCONCE. SEE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT. CIRCUIT VIA MICRO INVERTER.
Z.H1		FC LIGHTING #FCSL101-UNV-4K-CRI85-4L-*-	10	80 CRI 4000K	452	277V 1P 2W	LED STEP LIGHT. MOUNT +24" TO CENTER OF FIXTURE.
Z.J1		WE-EF #185-2447	21	(1) 80 CRI 4000K	2395	277V 1P 2W	10" IN-GRADE ADJUSTABLE LED. VERIFY AIMING WITH ARCHITECT.
Z.K1		ECOSENSE #L60-E-48-10-40-80-MULT-55X60-K	40	(1) 80 CRI 4000K	3706	277V 1P 2W	LED LINEAR SIGN LIGHT. MOUNT TO TOP OF ROOF PARAPET. AIM TO PROVIDE EVEN ILLUMINATION ON SIGN.

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DATE
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MECHANICAL EQUIPMENT SCHEDULE

EQUIP. ID	DESCRIPTION	CIRCUIT ID	CONDUIT & WIRE	VOLTS/PHASE	LOAD TYPE	HP	KVA	FLA/ BCSC	MCA	MOCP	CONNECTION TYPE	DISCONNECT DESCRIPTION	DISC NEMA RATING	DISC BY	STARTER DESCRIPTION	STARTER PROVIDED BY	NOTES
AC-1	DUCTLESS SPLIT SYSTEM			208/120V 2P 3W	COOLING: 0 KVA		0				HARDWIRED			DIV. 26			SPLIT SYSTEM INDOOR UNIT INTERWIRED FROM OUTDOOR UNIT. SEE DETAIL I/E6.02
AC-2	DUCTLESS SPLIT SYSTEM			208/120V 2P 3W	COOLING: 0 KVA		0				HARDWIRED			DIV. 26			SPLIT SYSTEM INDOOR UNIT INTERWIRED FROM OUTDOOR UNIT. SEE DETAIL I/E6.02
AC-3	DUCTLESS SPLIT SYSTEM			208/120V 2P 3W	COOLING: 0 KVA		0				HARDWIRED			DIV. 26			SPLIT SYSTEM INDOOR UNIT INTERWIRED FROM OUTDOOR UNIT. SEE DETAIL I/E6.02
AHU-1	AIR HANDLING UNIT	MDS-8	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 8.31 KVA		8.31	13.78		20	HARDWIRED	3P30A/15AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION. PROVIDE FA DUCT SMOKE DETECTOR.
AHU-2	AIR HANDLING UNIT	MDS-9	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 8.31 KVA		8.31	22.2		30	HARDWIRED	3P30A/30AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION. PROVIDE FA DUCT SMOKE DETECTOR.
AHU-3	AIR HANDLING UNIT	MDS-11	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 8.31 KVA		8.31	13.78		20	HARDWIRED	3P30A/15AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION. PROVIDE FA DUCT SMOKE DETECTOR.
AIR-1	AIR COMPRESSOR	MA1-2,4,6	1-1/4"C,4#4,#8G	480V 3P 4W	MOTOR: 20 HP	20 HP	22.45	27		60	HARDWIRED	3P-60A/35AF		DIV. 26			
B-1	BOILER	ML2-25	3/4"C,2#10,#10G	120V 1P 2W	NONCONTINUOUS: 1.68 KVA		1.68	14		20	HARDWIRED	C.B. LOCKOUT		DIV. 26			
B-2	BOILER	ML2-27	3/4"C,2#10,#10G	120V 1P 2W	NONCONTINUOUS: 1.68 KVA		1.68	14		20	HARDWIRED	C.B. LOCKOUT		DIV. 26			
BP-1	BOILER PUMP	MB2-2,4,6	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/3AF		DIV. 26	VFD INTEGRAL WITH UNIT	DIV. 23	
BP-2	BOILER PUMP	MB2-8,10,12	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/3AF		DIV. 26	VFD INTEGRAL WITH UNIT	DIV. 23	
CH-1	CHILLER	MDS-7	(2)2-1/2"C,4#250KCMIL(AL)#3G	480V 3P 4W	MOTOR: 249.75 KVA		249.75		369	400	HARDWIRED	3P500A/400AF		DIV. 26	INTEGRAL WITH UNIT	DIV. 23	SINGLE POINT CONNECTION
CHP-1	CHILLER CIRC-PUMP	MB1-14,16,18	1"C,4#6,#10G	480V 3P 4W	MOTOR: 15 HP	15 HP	17.46	21		30	HARDWIRED	3P30A/30AF		DIV. 26	VFD INTEGRAL WITH UNIT	DIV. 23	
CU-1	DUCTLESS SPLIT SYSTEM	EL-3,5	3/4"C,3#12,#12G	208/120V 2P 3W	COOLING: 3.25 KVA		3.25		19.5	20	HARDWIRED	2P30A/20AF		DIV. 26	INTEGRAL WITH UNIT	DIV. 23	PROVIDE POWER TO INDOOR UNIT. SEE DETAIL I/E6.02
CU-2	DUCTLESS SPLIT SYSTEM	ML3-2,4	3/4"C,3#12,#12G	208/120V 2P 3W	COOLING: 3.25 KVA		3.25		19.5	20	HARDWIRED	2P30A/20AF		DIV. 26	INTEGRAL WITH UNIT	DIV. 23	PROVIDE POWER TO INDOOR UNIT. SEE DETAIL I/E6.02
CU-3	DUCTLESS SPLIT SYSTEM	ML2-7,9	3/4"C,3#12,#12G	208/120V 2P 3W	COOLING: 3.25 KVA		3.25		19.5	20	HARDWIRED	2P30A/20AF		DIV. 26	INTEGRAL WITH UNIT	DIV. 23	PROVIDE POWER TO INDOOR UNIT. SEE DETAIL I/E6.02
CWP-1	CHILLED PUMP	MB1-8,10,12	1-1/4"C,4#4,#8G	480V 3P 4W	MOTOR: 20 HP	20 HP	22.45	27		35	HARDWIRED	3P60A/35AF		DIV. 26	VFD INTEGRAL WITH UNIT	DIV. 23	
DBP-1	DUPLEX BOOSTER PUMP	MA1-1,3,5	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 5 HP	5 HP	6.32	7.6		20	HARDWIRED	3P30A/8AF		DIV. 26	VFD INTEGRAL WITH UNIT	DIV. 23	SINGLE POINT CONNECTION
EWH-1	ELECTRIC WALL HEATER	ML1-24,26	3/4"C,3#12,#12G	208/120V 2P 3W	HEATING: 1 KVA		1	4.9		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
EWH-2	ELECTRIC WALL HEATER	PA1-28,30	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 1 KVA		1	4.9		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
EWH-3	ELECTRIC WALL HEATER	PA1-24,26	3/4"C,3#12,#12G	208/120V 2P 3W	HEATING: 1 KVA		1	4.9		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
EWH-4	ELECTRIC WALL HEATER	PC2-10,12	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 1 KVA		1	4.9		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
EWH-5	ELECTRIC WALL HEATER	PC2-4,6	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 1 KVA		1	4.8		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
EWH-6	ELECTRIC WALL HEATER	PC2-14,16	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 1 KVA		1	4.8		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
EWH-7	ELECTRIC WALL HEATER	PB1-32,34	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 1 KVA		1	4.8		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
EWH-8	ELECTRIC WALL HEATER	PB1-36,38	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 1 KVA		1	4.8		20	HARDWIRED	C.B. LOCKOUT		DIV. 26		DIV. 23	
GF-1	GLYCOL FEEDER	ML1-2,4	3/4"C,3#12,#12G	208/120V 2P 3W	MOTOR: 3.14 KVA		3.14	15.1		20	HARDWIRED	2P30A/20AF		DIV. 26			
HRU-1	HEAT RECOVERY UNIT	MC2-2,4,6	3/4"C,4#8,#10G	480V 3P 4W	MOTOR: 29.1 KVA		29.1	35		40	HARDWIRED	3P60A/40AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION.
HRU-2	HEAT RECOVERY UNIT	MB1-20,22,24	3/4"C,4#8,#10G	480V 3P 4W	MOTOR: 29.1 KVA		29.1	35		40	HARDWIRED	3P60A/40AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION.
HWP-1	PUMP	MB2-1,3,5	1-1/4"C,4#4,#8G	480V 3P 4W	MOTOR: 20 HP	20 HP	22.45	27		35	HARDWIRED	3P60A/35AF		DIV. 26	VFD INTEGRAL WITH UNIT	DIV. 23	
HWP-2	PUMP	MB2-7,9,11	1-1/4"C,4#4,#8G	480V 3P 4W	MOTOR: 20 HP	20 HP	22.45	27		35	HARDWIRED	3P60A/35AF		DIV. 26	VFD INTEGRAL WITH UNIT	DIV. 23	
RCP-1	RECIRCULATION PUMP	ML1-21,23,25	3/4"C,4#12,#12G	208V 3P 4W	MOTOR: 2 HP	2 HP	2.83	7.8		20	HARDWIRED	3P30A/10AF		DIV. 26	NEMA 1 STARTER	DIV. 26	
RCP-2	RECIRCULATION PUMP	ML1-35,37	3/4"C,3#12,#12G	208/120V 2P 3W	MOTOR: 1/2 HP	1/2 HP	1.18	5.6		20	HARDWIRED	2P30A/6AF		DIV. 26	NEMA 1 STARTER	DIV. 26	
RCP-3	RECIRCULATION PUMP	ML1-39	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/10 HP	1/10 HP	0.42	3.5		20	HARDWIRED	1P30A/4AF		DIV. 26	NEMA 1 STARTER	DIV. 26	
SP-1	SUMP PUMP	EL-1	2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	C.B. LOCKOUT		DIV. 26			PROVIDE ZOLLER OIL SMART ALARM PANEL FOR ELEVATOR SUBMERSIBLE PUMP
UH-1	UNIT HEATER	ML1-9,11	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 5 KVA		5	24		30	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-2	UNIT HEATER	ML1-13,15	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 5 KVA		5	24		30	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-3	UNIT HEATER	ML1-17,19	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 5 KVA		5	24		30	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-4	UNIT HEATER	ML1-28,30	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 5 KVA		5	24		30	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-5	UNIT HEATER	ML2-3,5	3/4"C,3#10,#10G	208/120V 2P 3W	HEATING: 5 KVA		5	24		30	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-6	UNIT HEATER	ML3-15,17,19	3/4"C,4#12,#12G	208V 3P 4W	HEATING: 4.25 KVA		4.25	11.8		20	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-7	UNIT HEATER	ML4-13,15,17	3/4"C,4#12,#12G	208V 3P 4W	HEATING: 4.25 KVA		4.25	11.8		20	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-8	UNIT HEATER	SB1-7,9,11	3/4"C,4#12,#12G	208V 3P 4W	HEATING: 4.25 KVA		4.25	11.8		20	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
UH-9	UNIT HEATER	SB2-7,9,11	3/4"C,4#12,#12G	208V 3P 4W	HEATING: 4.25 KVA		4.25	11.8		20	HARDWIRED	INTEGRAL DISC SW		DIV. 26		DIV. 23	MAKE CONNECTION TO INTEGRAL DISCONNECT
WH-1	WATER HEATER	ML1-27	3/4"C,2#12,#12G	120V 1P 2W	NONCONTINUOUS: 0.6 KVA		0.6	5		20	HARDWIRED	C.B. LOCKOUT		DIV. 26			
WH-2	WATER HEATER	ML1-29	3/4"C,2#12,#12G	120V 1P 2W	NONCONTINUOUS: 0.6 KVA		0.6	5		20	HARDWIRED	C.B. LOCKOUT		DIV. 26			
WH-3	WATER HEATER	ML1-31	3/4"C,2#12,#12G	120V 1P 2W	NONCONTINUOUS: 0.6 KVA		0.6	5		20	HARDWIRED	C.B. LOCKOUT		DIV. 26			
WH-4	WATER HEATER	ML1-33	3/4"C,2#12,#12G	120V 1P 2W	NONCONTINUOUS: 0.6 KVA		0.6	5		20	HARDWIRED	C.B. LOCKOUT		DIV. 26			
WS-1	WATER SOFTENER	ML1-41	3/4"C,2#12,#12G	120V 1P 2W	RECEPTACLE: 0.4 KVA		0.4			20	HARDWIRED	C.B. LOCKOUT		DIV. 26			

MECHANICAL EQUIPMENT SCHEDULE

EQUIP. ID	DESCRIPTION	CIRCUIT ID	CONDUIT & WIRE	VOLTS/PHASE	LOAD TYPE	HP	KVA	FLA/ BCSC	MCA	MOCP	CONNECTION TYPE	DISCONNECT DESCRIPTION	DISC NEMA RATING	DISC BY	STARTER DESCRIPTION	STARTER PROVIDED BY	NOTES
EF-1	EXHAUST FAN	K2-28	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-2	EXHAUST FAN	ML1-18	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-3	EXHAUST FAN	ML1-14	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-4	EXHAUST FAN	ML1-16	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-5	EXHAUST FAN	ML1-12	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-6	EXHAUST FAN	ML2-33	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-7	EXHAUST FAN	ML2-35	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-8	EXHAUST FAN	PC1-41	3/4"C,2#10,#10G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-9	EXHAUST FAN	ML3-13	3/4"C,2#10,#10G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-10	EXHAUST FAN	ML3-6	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-11	EXHAUST FAN	ML3-8	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-12	EXHAUST FAN	ML3-11	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-13	EXHAUST FAN	ML2-11	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-14	EXHAUST FAN	ML2-13	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-15	EXHAUST FAN	ML2-15	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-16	EXHAUST FAN	ML2-17	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-17	EXHAUST FAN	ML2-19	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-18	EXHAUST FAN	ML2-21	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-19	EXHAUST FAN	ML2-23	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-20	EXHAUST FAN	ML4-1	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-21	EXHAUST FAN	ML4-3	3/4"C,2#12,#12G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-22	EXHAUST FAN	ML4-11	3/4"C,2#10,#10G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
EF-23	EXHAUST FAN	ML1-32	3/4"C,2#10,#10G	120V 1P 2W	MOTOR: 1/2 HP	1/2 HP	1.18	9.8		20	HARDWIRED	BUSSMAN #SSW	NEMA 3R	DIV. 26	NEMA 1 STARTER	DIV 26	
FC-101	FAN COIL UNIT	MB1-1,3,5	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-103	FAN COIL UNIT	MB1-7,9,11	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-112	FAN COIL UNIT	MB1-25,27,29	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-113	FAN COIL UNIT	MD1-37,39,41	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-114	FAN COIL UNIT	MD1-14,16,18	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-115	FAN COIL UNIT	MD1-8,10,12	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-117	FAN COIL UNIT	MD1-25,27,29	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-118	FAN COIL UNIT	MD1-31,33,35	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-119	FAN COIL UNIT	MD1-13,15,17	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-120	FAN COIL UNIT	MD1-7,9,11	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-121	FAN COIL UNIT	MB1-13,15,17	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-138	FAN COIL UNIT	MC1-1,3,5	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-144	FAN COIL UNIT	MC1-7,9,11	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-145	FAN COIL UNIT	MC1-13,15,17	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-146	FAN COIL UNIT	MC1-31,33,35	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-148	FAN COIL UNIT	MC1-19,21,23	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-149	FAN COIL UNIT	MC1-2,4,6	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-150	FAN COIL UNIT	MC1-8,10,12	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-151	FAN COIL UNIT	MC1-14,16,18	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-205	FAN COIL UNIT	MC2-1,3,5	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-206	FAN COIL UNIT	MC2-7,9,11	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-207	FAN COIL UNIT	MC1-25,27,29	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-208	FAN COIL UNIT	MC2-13,15,17	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-209	FAN COIL UNIT	MC2-19,21,23	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-212	FAN COIL UNIT	MC2-31,33,35	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-213	FAN COIL UNIT	MC1-26,28,30	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-214	FAN COIL UNIT	MC1-20,22,24	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-215	FAN COIL UNIT	MC2-25,27,29	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-217	FAN COIL UNIT	MB1-19,21,23	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-218	FAN COIL UNIT	MB1-2,4,6	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-219	FAN COIL UNIT	MD1-20,22,24	3/4"C,4#10,#10G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-220	FAN COIL UNIT	MD1-19,21,23	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-221	FAN COIL UNIT	MD1-26,28,30	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-222	FAN COIL UNIT	MD1-2,4,6	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-225	FAN COIL UNIT	MD1-1,3,5	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-226	FAN COIL UNIT	MB1-31,33,35	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION
FC-227	FAN COIL UNIT	MB1-37,39,41	3/4"C,4#12,#12G	480V 3P 4W	MOTOR: 1 HP	1 HP	1.75	2.1		20	HARDWIRED	3P30A/2.25AF		DIV. 26	INTERGRAL VFD	DIV 23	SINGLE POINT CONNECTION

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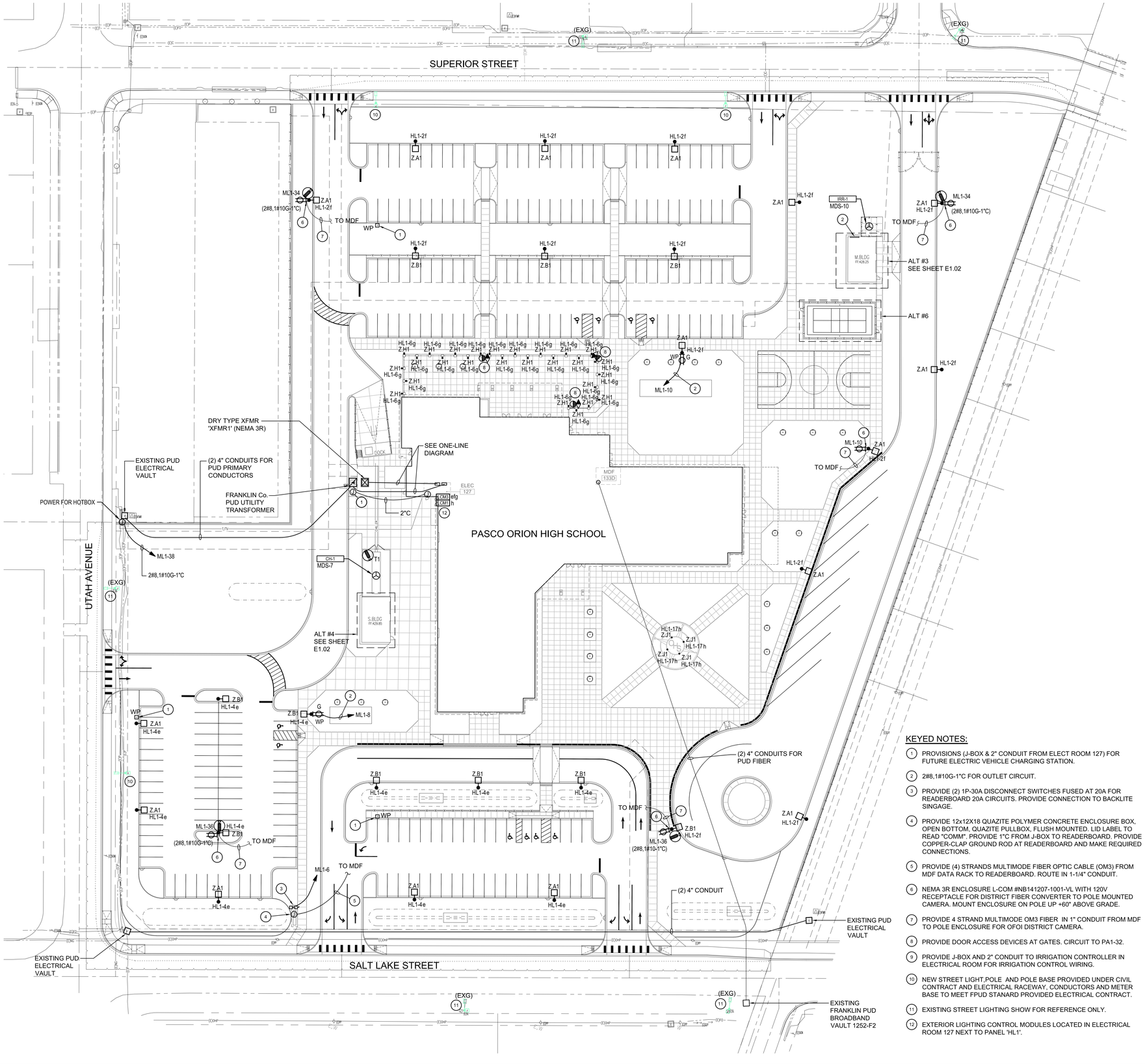
ORION HIGH SCHOOL

1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
SCHEDULES

SHEET
E0.03



KEYED NOTES:

1. PROVISIONS (J-BOX & 2" CONDUIT FROM ELECT ROOM 127) FOR FUTURE ELECTRIC VEHICLE CHARGING STATION.
2. 2#8,1#10G-1"C FOR OUTLET CIRCUIT.
3. PROVIDE (2) 1P-30A DISCONNECT SWITCHES FUSED AT 20A FOR READERBOARD 20A CIRCUITS. PROVIDE CONNECTION TO BACKLITE SINGAGE.
4. PROVIDE 12x12X18 QUAZITE POLYMER CONCRETE ENCLOSURE BOX, OPEN BOTTOM, QUAZITE PULLBOX, FLUSH MOUNTED. LID LABEL TO READ "COMM". PROVIDE 1"C FROM J-BOX TO READERBOARD. PROVIDE COPPER-CLAP GROUND ROD AT READERBOARD AND MAKE REQUIRED CONNECTIONS.
5. PROVIDE (4) STRANDS MULTIMODE FIBER OPTIC CABLE (OM3) FROM MDF DATA RACK TO READERBOARD. ROUTE IN 1-1/4" CONDUIT.
6. NEMA 3R ENCLOSURE L-COM #NB141207-1001-VL WITH 120V RECEPTACLE FOR DISTRICT FIBER CONVERTER TO POLE MOUNTED CAMERA. MOUNT ENCLOSURE ON POLE UP +60" ABOVE GRADE.
7. PROVIDE 4 STRAND MULTIMODE OM3 FIBER IN 1" CONDUIT FROM MDF TO POLE ENCLOSURE FOR OFOI DISTRICT CAMERA.
8. PROVIDE DOOR ACCESS DEVICES AT GATES. CIRCUIT TO PA1-32.
9. PROVIDE J-BOX AND 2" CONDUIT TO IRRIGATION CONTROLLER IN ELECTRICAL ROOM FOR IRRIGATION CONTROL WIRING.
10. NEW STREET LIGHT,POLE AND POLE BASE PROVIDED UNDER CIVIL CONTRACT AND ELECTRICAL RACEWAY, CONDUCTORS AND METER BASE TO MEET FPUD STANARD PROVIDED ELECTRICAL CONTRACT.
11. EXISTING STREET LIGHTING SHOW FOR REFERENCE ONLY.
12. EXTERIOR LIGHTING CONTROL MODULES LOCATED IN ELECTRICAL ROOM 127 NEXT TO PANEL 'HL1'.

A1 **SITE PLAN - ELECTRICAL**

1" = 40'

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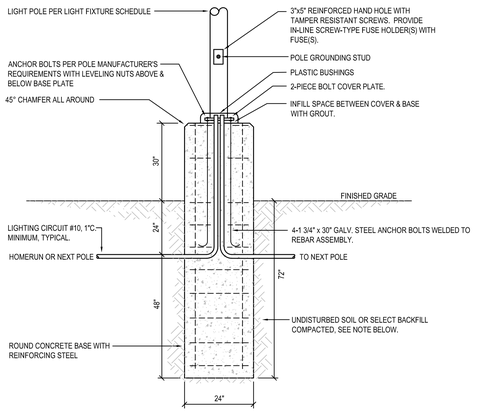
PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL

1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
SITE PLAN ELECTRICAL

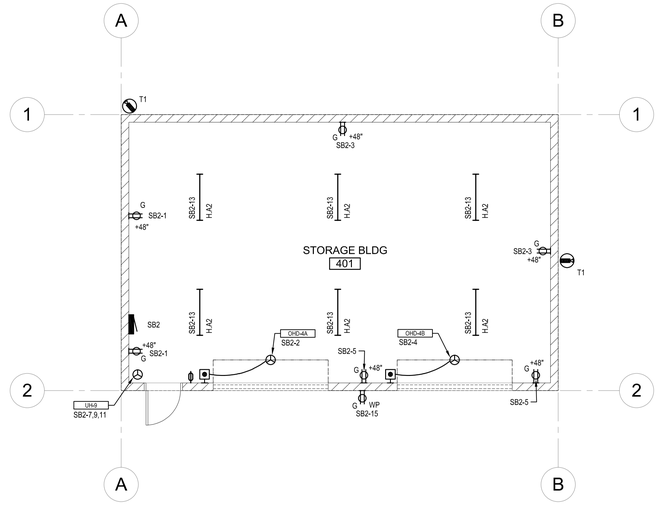
SHEET
E1.01



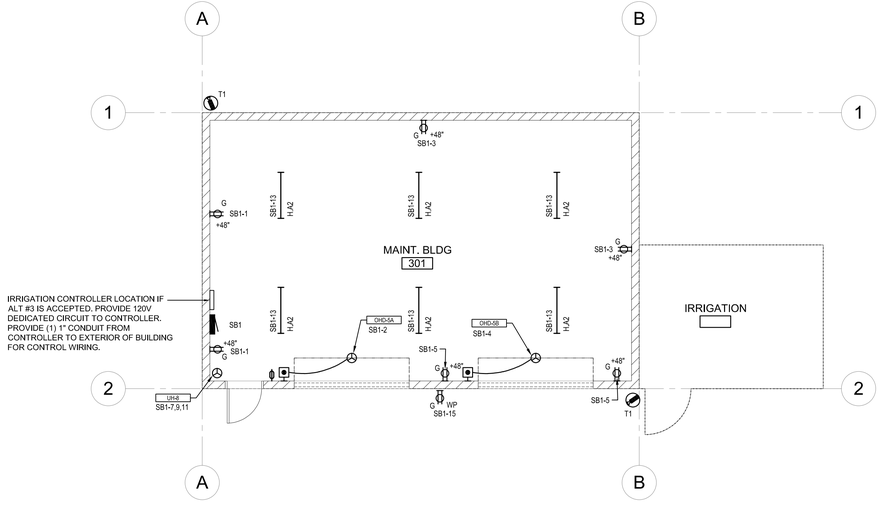
GENERAL NOTES:

1. CONCRETE TO MEET DIVISION 3 SPECIFICATIONS (033000). BASE SHALL BE FINISHED SMOOTH ABOVE GRADE.
2. AT CONTRACTORS OPTION A PRE-CASE BASE MEETING OR EXCEEDING THIS SPECIFICATIONS MAY BE PROVIDED.

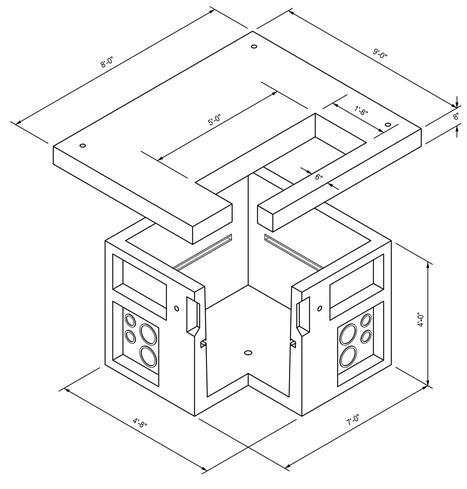
C EXPOSED POLE BASE DETAIL
N.T.S.



B MAINTENANCE BLDG PLAN - ALT #3
3/16" = 1'-0"



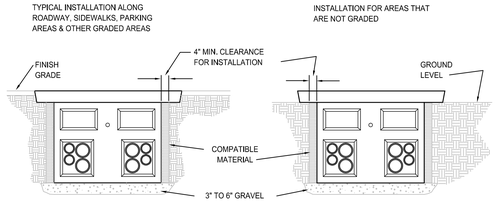
A STORAGE BLDG PLAN - ALT #4
3/16" = 1'-0"



GENERAL NOTES

1. ALL CONDUITS AND VAULTS ARE TO BE INSTALLED WITHIN PLATTED UTILITY EASEMENTS.
2. PROPERTY PINS ARE TO BE CLEARLY VISIBLE DURING THE INSTALLATION OF PUD CONDUIT AND VAULT SYSTEM.
3. CONDUIT IS TO BE GRAY SCHEDULE 40 PVC. SWEEPS ARE TO BE 36" RADIUS.
4. CURBS AND/OR FINAL GRADE STAKES NEED TO BE IN PLACE DURING VAULT AND CONDUIT INSTALLATION.
5. ALL PRIMARY VAULTS ARE TO HAVE INTERNAL GROUNDING AND "RAPID LIFT" LID INSERTS. GROUNDING LUGS SHOULD BE PARALLEL WITH THE ROADWAY.
6. FOREIGN UTILITIES TO BE PLACED WITH 1 FOOT SEPARATION BETWEEN FOREIGN UTILITY AND THE PUD. ALL NON-PUD CONDUITS SHALL PASS AROUND ELECTRICAL VAULTS (NOT UNDER THEM.)
7. VAULTS ARE TO BE SET ONE TENTH ABOVE TOP OF CURB. (TOLERANCE IS ONE TENTH HIGH, ZERO LOW)

E VAULT, TRANSFORMER 3-PHASE PAD-MOUNT DETAIL
NOT TO SCALE



VAULT INSTALLATION NOTES:

EXCAVATION AND BEDDING: EXCAVATE TO ALLOW FOR OVERALL ASSEMBLED HEIGHT OF THE VAULT, PLUS ADDED HEIGHT OF RISERS AND BEDDING MATERIALS. GRADE BEDDING MATERIAL LEVEL. BEDDING MATERIAL SHOULD BE 3" TO 6" OF 3/4" MINUS GRAVEL.

BACKFILLING: BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF GOOD COMPATIBLE MATERIAL SUCH AS PEA GRAVEL, SAND OR CLEAN EARTH FILL. COMPACT, LEAVING NO VOIDS BETWEEN THE VAULT WALLS AND NATIVE SOIL OF EXCAVATION. BACKFILL ONLY AFTER VAULT IS COMPLETELY ASSEMBLED, MAKING CERTAIN TO COMPACT THE BACKFILL PROGRESSIVELY IN 6" LIFTS FROM THE BOTTOM TO THE TOP SURFACE.

GROUTING: WE RECOMMEND A CEMENT GROUT CONSISTING OF TWO PARTS SAND AND ONE PART CEMENT AND SUFFICIENT WATER TO FORM A PLASTIC SLURRY. APPLY GROUT TO FILL ALL VOIDS IN THE JOINT BEING SEALED. ALL DUCT ENTRY HOLES ARE TO BE GROUTED AFTER DUCT INSTALLATION.

KNOCKOUTS: FROM INSIDE THE VAULT, REMOVE THE KNOCKOUT BY STRIKING ITS CENTER WITH A HAMMER. THIS METHOD ALLOWS FOR EASY REMOVAL WITHOUT EXCESS CHIPPING OR DAMAGE TO THE VAULT. COMPLETELY REMOVE CENTER KNOCKOUT IN BOTTOM OF VAULT PRIOR TO INSTALLATION TO ALLOW VAULT TO DRAIN.

PAVING AROUND VAULT: PRIOR TO PAVING OR POURING SIDEWALKS AROUND THE VAULT, AND BEFORE INSTALLATION OF THE PUD'S TRANSFORMERS, CALL OUR ENGINEERING DEPARTMENT SO WE MAY HAVE GROUNDING CONDUCTORS INSTALLED.

CONDUIT INSTALLATION: TO INSURE PROPER SEPARATION BETWEEN HIGH VOLTAGE AND LOW VOLTAGE CONDUCTORS, REVIEW CONDUIT INSTALLATION WITH OUR ENGINEER BEFORE EXTENDING CONDUITS INTO THE VAULT.

D VAULT INSTALLATION GUIDELINES
NOT TO SCALE

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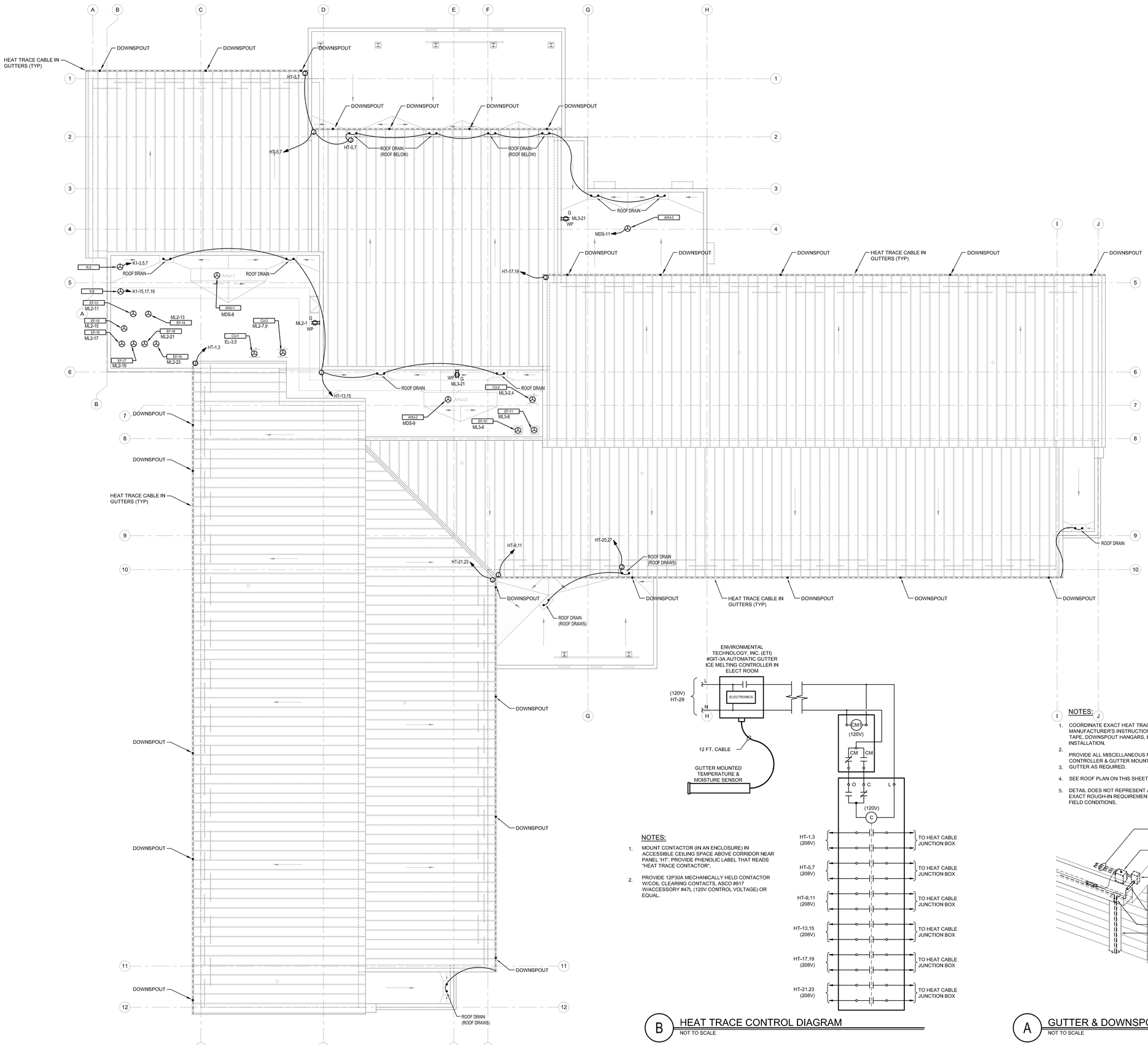
1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
ELECTRICAL SITE PLAN DETAILS

SHEET
E1.02



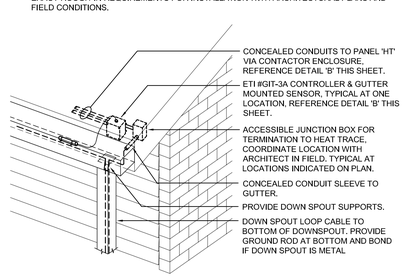
NOTES:

1. MOUNT CONTACTOR (IN AN ENCLOSURE) IN ACCESSIBLE CEILING SPACE ABOVE CORRIDOR NEAR PANEL 'HT'. PROVIDE PHENOLIC LABEL THAT READS "HEAT TRACE CONTACTOR".
2. PROVIDE 12P30A MECHANICALLY HELD CONTACTOR W/COIL CLEARING CONTACTS, ASCO #917 W/ACCESSORY #47L (120V CONTROL VOLTAGE) OR EQUAL.

B HEAT TRACE CONTROL DIAGRAM
NOT TO SCALE

NOTES:

1. COORDINATE EXACT HEAT TRACE & CONTROL INSTALLATION REQUIREMENTS WITH MANUFACTURER'S INSTRUCTIONS. INCLUDE POWER CONNECTION KIT, ALUMINUM FOIL TAPE, DOWNSPOUT HANGARS, END TERMINATION CABLE SEALS, ETC. FOR A COMPLETE INSTALLATION.
2. PROVIDE ALL MISCELLANEOUS MATERIALS AND LABOR TO INSTALL ETI #GIT-3A CONTROLLER & GUTTER MOUNTED SENSOR TO INCLUDE CLIPS TO SECURE SENSOR IN GUTTER AS REQUIRED.
3. SEE ROOF PLAN ON THIS SHEET FOR HEAT TRACE LOCATIONS.
4. DETAIL DOES NOT REPRESENT ACTUAL BUILDING & ROOF CONSTRUCTION. COORDINATE EXACT ROUGH-IN REQUIREMENTS FOR INSTALLATION WITH ARCHITECTURAL PLANS AND FIELD CONDITIONS.



A GUTTER & DOWNSPOUT CABLE DETAIL
NOT TO SCALE

A1 **ROOF PLAN - ELECTRICAL**
3/32" = 1'-0"

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PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
ROOF PLAN ELECTRICAL

SHEET
E1.03

KEYED NOTES:

1. NETWORK BRIDGE LOCATION AND LIGHTING CONTROL MODULES FOR EXTERIOR BUILDING LIGHTING. LOWER CASE LETTER DENOTE LIGHTING ZONE.
2. WIRE LINE–VOLTAGE SWITCH IN SERIES OF LIGHTING CONTROL MODULE. DISPLAY CASE IS TO BE CONTROLLED WITH CORRIDOR LIGHTING.

A1 **FIRST FLOOR PLAN - LIGHTING - AREA A**

1/8" = 1'-0"

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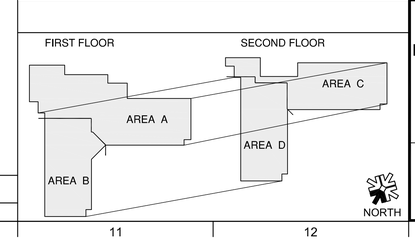
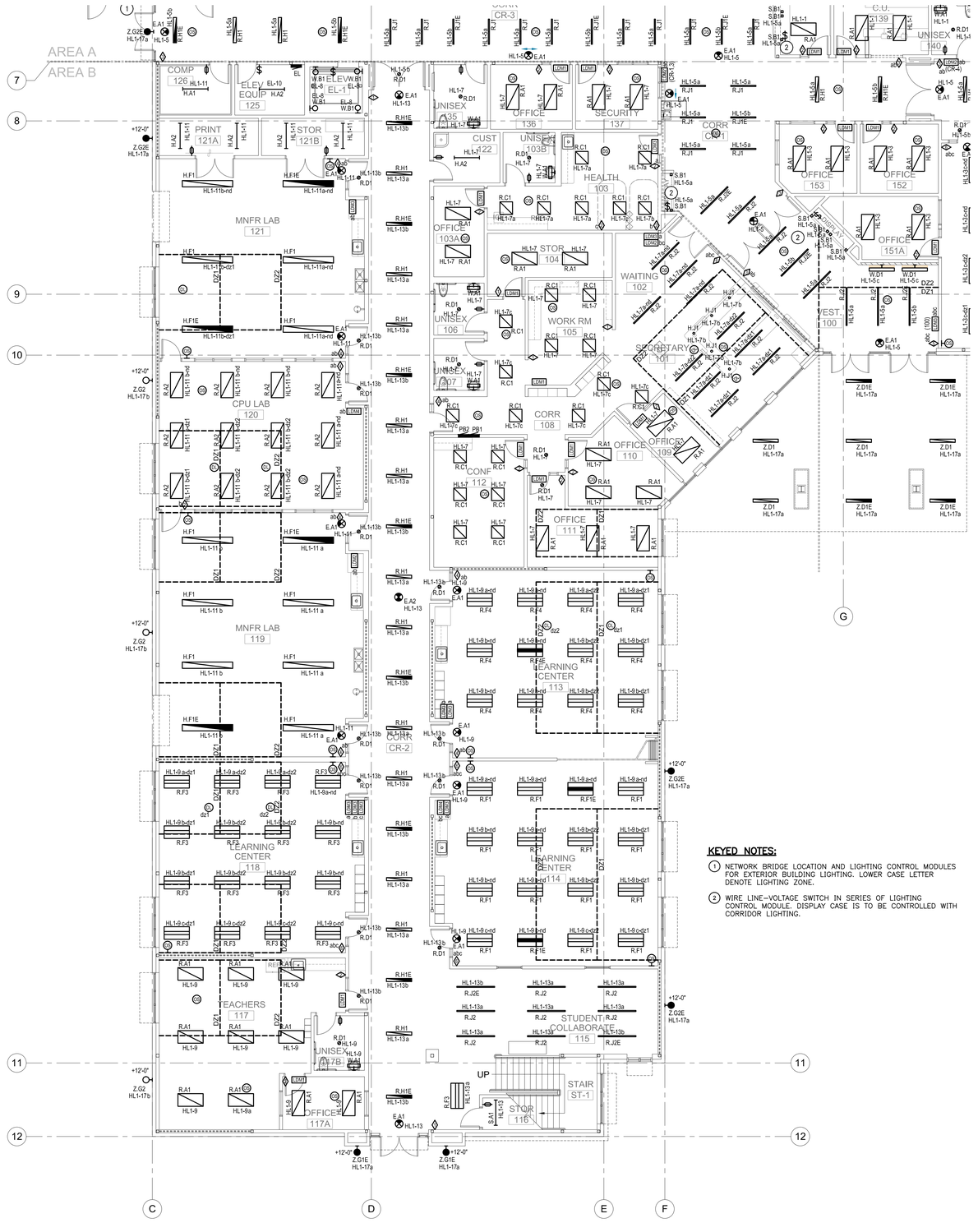
DATE
12/18/2023

SHEET NAME
FIRST FLOOR PLAN LIGHTING AREA 'A'

SHEET
E2.01





KEYED NOTES:

1. NETWORK BRIDGE LOCATION AND LIGHTING CONTROL MODULES FOR EXTERIOR BUILDING LIGHTING. LOWER CASE LETTER DENOTE LIGHTING ZONE.
2. WIRE LINE–VOLTAGE SWITCH IN SERIES OF LIGHTING CONTROL MODULE. DISPLAY CASE IS TO BE CONTROLLED WITH CORRIDOR LIGHTING.

A1 **FIRST FLOOR PLAN - LIGHTING - AREA B**

1/8" = 1'-0"

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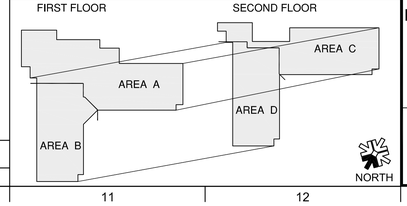
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
FIRST FLOOR PLAN LIGHTING AREA 'B'

SHEET
E2.02



KEYED NOTES:

1. WIRE LINE-VOLTAGE SWITCH IN SERIES OF LIGHTING CONTROL MODULE. DISPLAY CASE IS TO BE CONTROLLED WITH CORRIDOR LIGHTING.
2. LOCATE LUMINAIRE IN TOP OF ELEVATOR SHAFT.
3. MOUNT LUMINAIRE ON TOP OF ROOF PARAPET. CONCEAL RACEWAY AND SEAL ANY PENETRATIONS.

AREA C

AREA D

Open Below

MECH MEZZ 200

TEACHERS 205

LEARNING CENTER 206

LEARNING CENTER 207

LEARNING CENTER 208

MECH MEZZ 209

UNISEX 210

CUST 211

STUDENT COLLABORATE 212

LEARNING CENTER 213

LEARNING CENTER 214

LEARNING CENTER 215

MECH MEZZ 216

ESPORT 217

FC 218

CHEM STOR 228A

IDF 218

CHEM PREP 228

HEALTH LAB 227

HEALTH 226

OFFICE 205A

UNISEX 206B

CORR CR-6

CORR CR-7

SIRLS 203

BOYS 204

CUST 202

STAIR S1-3

STAIR S2

DN

UP

ELEV EL-8

LEARNING CENTER

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DATE
12/18/2023

SHEET NAME
SECOND FLOOR PLAN LIGHTING AREA 'C'

SHEET
E2.03

FIRST FLOOR

SECOND FLOOR

AREA A

AREA B

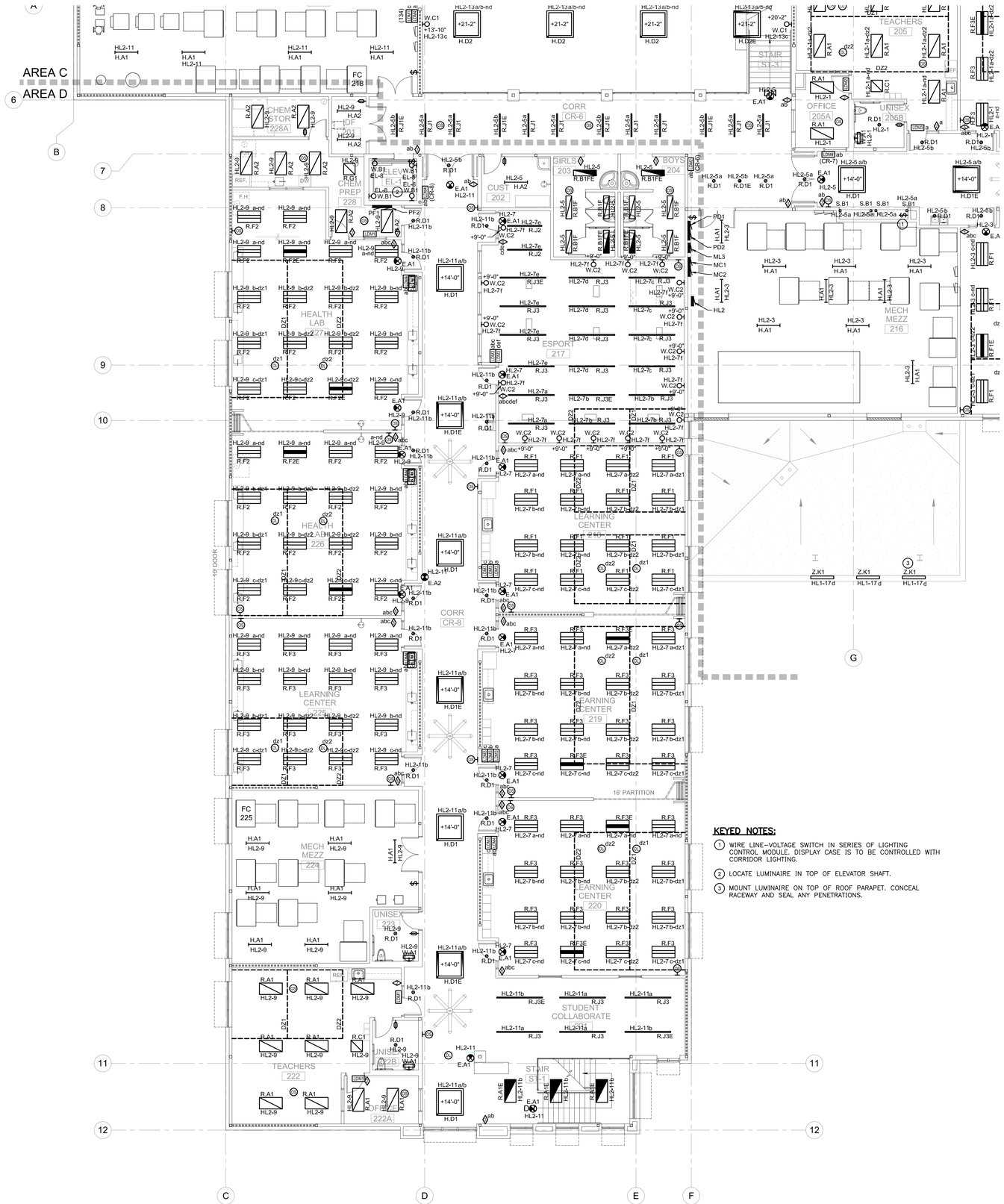
AREA C

AREA D

NORTH

A1 **SECOND FLOOR PLAN - LIGHTING - AREA C**

1/8" = 1'-0"



KEYED NOTES:

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2. LOCATE LUMINAIRE IN TOP OF ELEVATOR SHAFT.
3. MOUNT LUMINAIRE ON TOP OF ROOF PARAPET. CONCEAL RACEWAY AND SEAL ANY PENETRATIONS.

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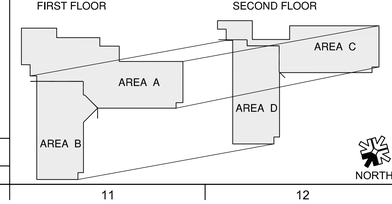
DATE
12/18/2023

SHEET NAME
SECOND FLOOR PLAN LIGHTING AREA 'D'

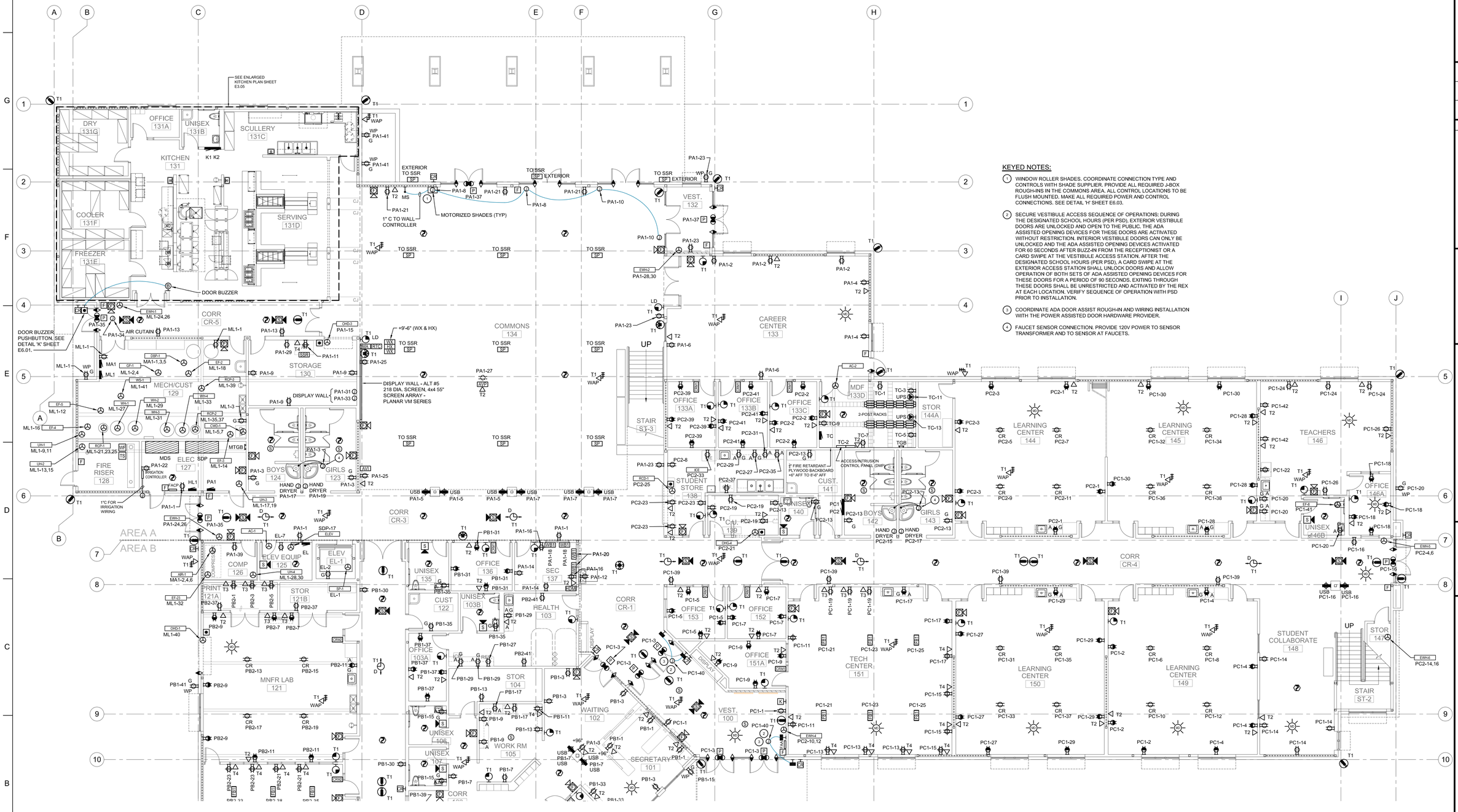
SHEET
E2.04

FIRST FLOOR | SECOND FLOOR



A1 SECOND FLOOR PLAN - LIGHTING - AREA D

1/8" = 1'-0"



KEYED NOTES:

1. WINDOW ROLLER SHADES. COORDINATE CONNECTION TYPE AND CONTROLS WITH SHADE SUPPLIER. PROVIDE ALL REQUIRED J-BOX ROUGH-INS IN THE COMMONS AREA. ALL CONTROL LOCATIONS TO BE FLUSH MOUNTED. MAKE ALL REQUIRED POWER AND CONTROL CONNECTIONS. SEE DETAIL 'H' SHEET E6.03.
2. SECURE VESTIBULE ACCESS SEQUENCE OF OPERATIONS: DURING THE DESIGNATED SCHOOL HOURS (PER PSD), EXTERIOR VESTIBULE DOORS ARE UNLOCKED AND OPEN TO THE PUBLIC. THE ADA ASSISTED OPENING DEVICES FOR THESE DOORS ARE ACTIVATED WITHOUT RESTRICTION. INTERIOR VESTIBULE DOORS CAN ONLY BE UNLOCKED AND THE ADA ASSISTED OPENING DEVICES ACTIVATED FOR 60 SECONDS AFTER BUZZ-IN FROM THE RECEPTIONIST OR A CARD SWIPE AT THE VESTIBULE ACCESS STATION. AFTER THE DESIGNATED SCHOOL HOURS (PER PSD), A CARD SWIPE AT THE EXTERIOR ACCESS STATION SHALL UNLOCK DOORS AND ALLOW OPERATION OF BOTH SETS OF ADA ASSISTED OPENING DEVICES FOR THESE DOORS FOR A PERIOD OF 90 SECONDS. EXITING THROUGH THESE DOORS SHALL BE UNRESTRICTED AND ACTIVATED BY THE REX AT EACH LOCATION. VERIFY SEQUENCE OF OPERATION WITH PSD PRIOR TO INSTALLATION.
3. COORDINATE ADA DOOR ASSIST ROUGH-IN AND WIRING INSTALLATION WITH THE POWER ASSISTED DOOR HARDWARE PROVIDER.
4. FAUCET SENSOR CONNECTION. PROVIDE 120V POWER TO SENSOR TRANSFORMER AND TO SENSOR AT FAUCETS.

A1 **FIRST FLOOR PLAN - ELECTRICAL - AREA A**

1/8" = 1'-0"

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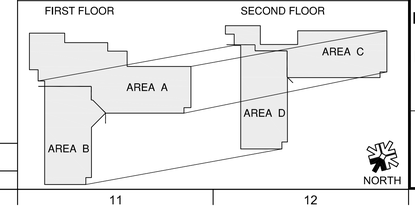
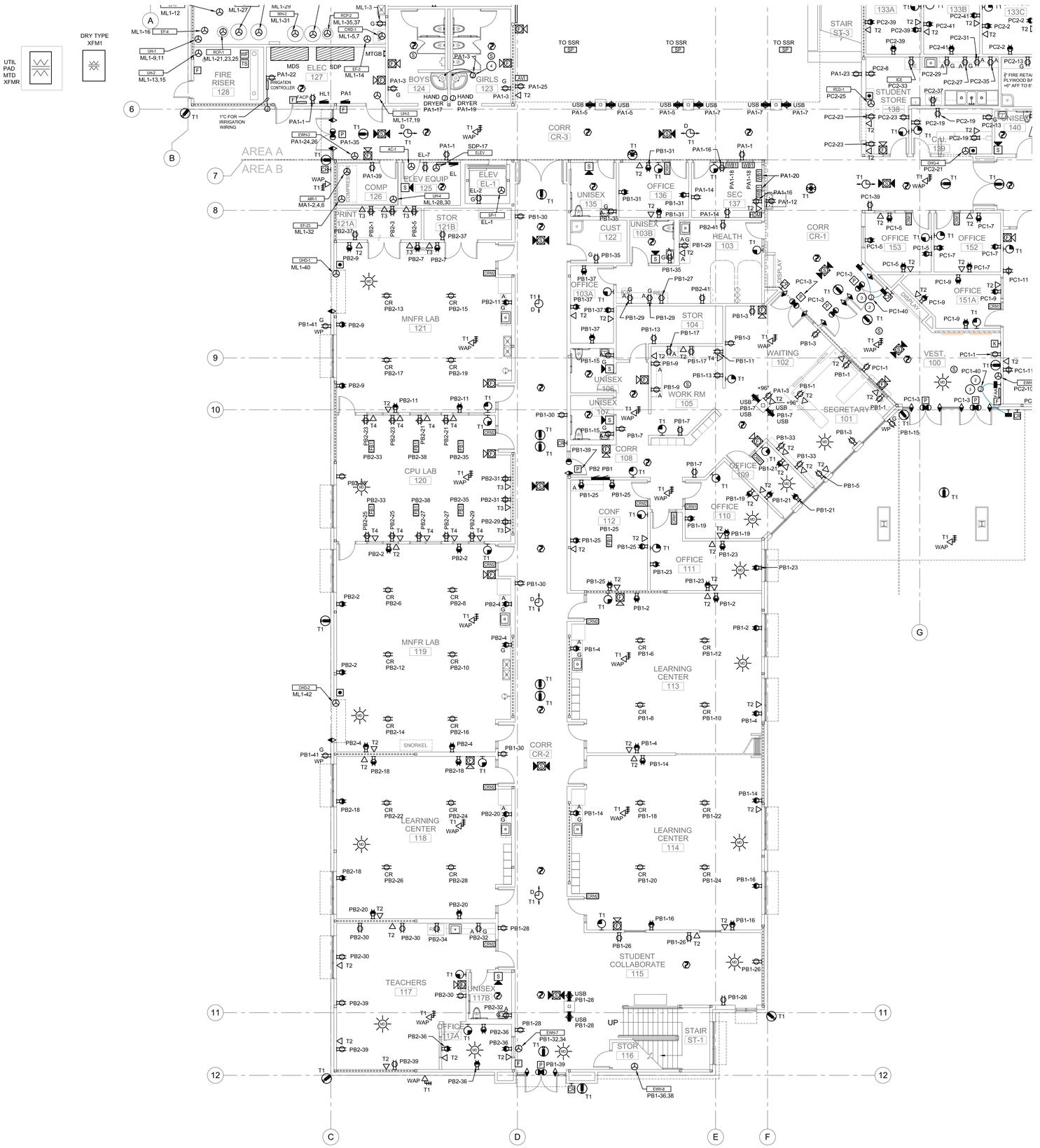
DATE
12/18/2023

SHEET NAME
FIRST FLOOR PLAN ELECTRICAL AREA 'A'

SHEET
E3.01





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PASCO, WASHINGTON 99301

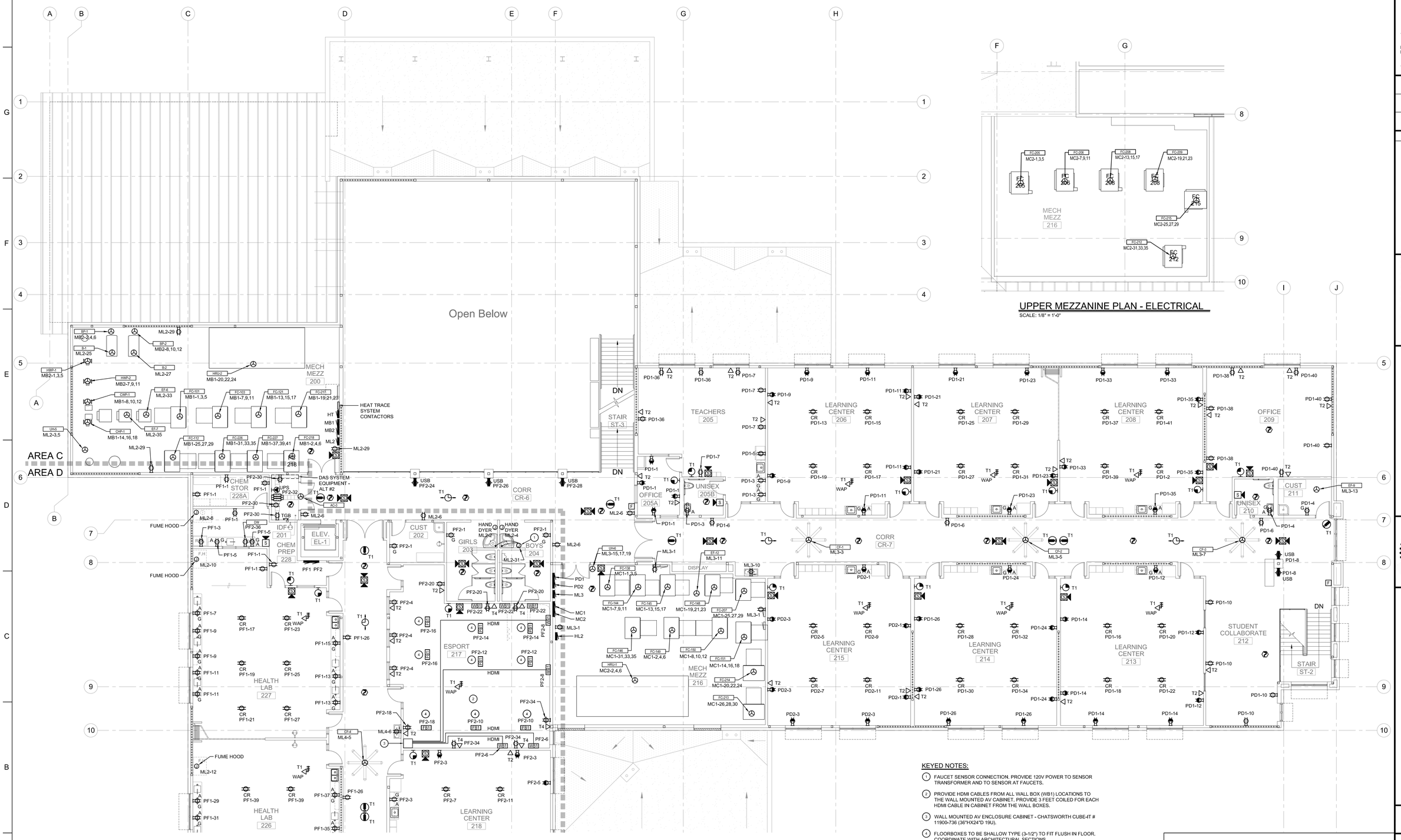
DATE
12/18/2023

SHEET NAME
FIRST FLOOR PLAN ELECTRICAL AREA 'B'

SHEET
E3.02

FIRST FLOOR
SECOND FLOOR
AREA A
AREA B
AREA C
AREA D
NORTH

A1 **FIRST FLOOR PLAN - ELECTRICAL - AREA B**
1/8" = 1'-0"

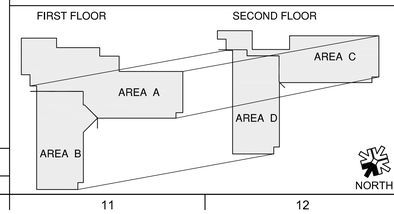


UPPER MEZZANINE PLAN - ELECTRICAL

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

KEYED NOTES:

1. FAUCET SENSOR CONNECTION. PROVIDE 120V POWER TO SENSOR TRANSFORMER AND TO SENSOR AT FAUCETS.
2. PROVIDE HDMI CABLES FROM ALL WALL BOX (WB1) LOCATIONS TO THE WALL MOUNTED AV CABINET. PROVIDE 3 FEET COILED FOR EACH HDMI CABLE IN CABINET FROM THE WALL BOXES.
3. WALL MOUNTED AV ENCLOSURE CABINET - CHATSWORTH CUBE-IT # 11900-736 (36"HX24"D 19U).
4. FLOORBOXES TO BE SHALLOW TYPE (3-1/2") TO FIT FLUSH IN FLOOR. COORDINATE WITH ARCHITECTURAL SECTIONS.



A1 **SECOND FLOOR PLAN - ELECTRICAL - AREA C**

1/8" = 1'-0"

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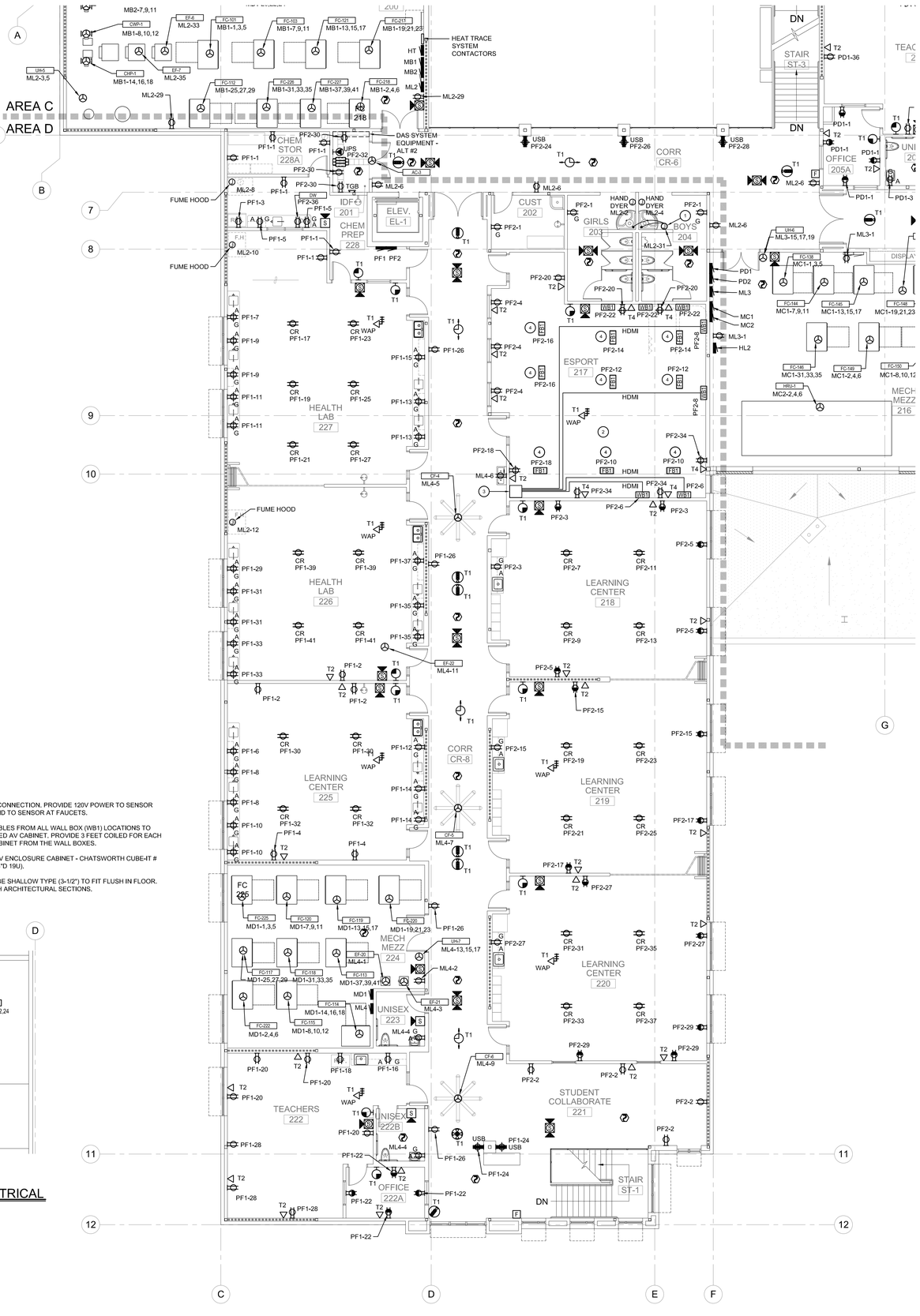
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
SECOND FLOOR PLAN ELECTRICAL AREA 'C'

SHEET
E3.03



KEYED NOTES:

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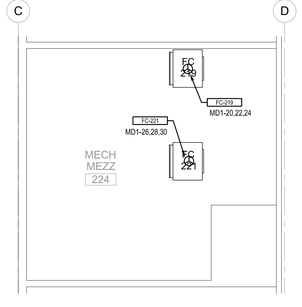

UPPER MEZZANINE PLAN - ELECTRICAL

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

A1 **SECOND FLOOR PLAN - ELECTRICAL - AREA D**

1/8" = 1'-0"

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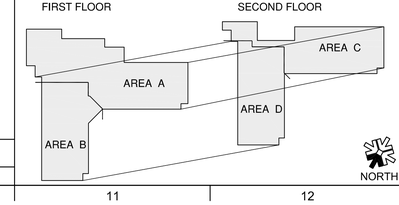
DATE
12/18/2023

SHEET NAME
SECOND FLOOR PLAN ELECTRICAL AREA 'D'

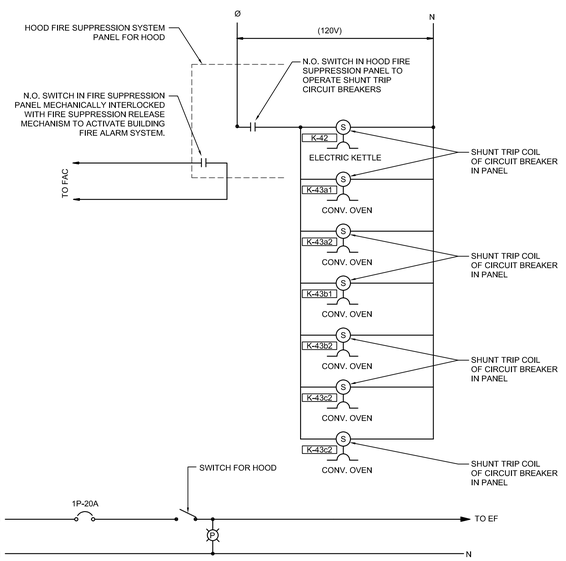
SHEET
E3.04



KITCHEN EQUIPMENT SCHEDULE

EQUIP ID	DESCRIPTION	CIRCUIT ID	CONDUIT & WIRE	VOLTS/PHASE	AMPS	HP	KVA	CONNECTION TYPE	DISCONNECT DESCRIPTION	DISC NEMA RATING	DISC. BY	NOTES
K-1	WALK-IN FREEZER LTS	K1-1	3/4"C,2#12,#12G	120V 1P 2W	2		0.24	HARDWIRED	C.B. LOCKOUT		DIV. 26	+108" AFF
K-2	FREEZER REFRIGRATION SYSTEM	K1-3,5,7	3/4"C,4#10,#10G	208Y 3P 4W	11.08	3 HP	3.99	HARDWIRED	3P30A/12AF	NEMA 3R	DIV. 26	
K-2.1	FREEZER EVAP COIL	K1-9,11	3/4"C,3#12,#12G	208/120V 2P 3W	10		2.08	HARDWIRED	2P30A/15AF		DIV. 26	+108" AFF
K-4	WALK-IN COOLER LTS	K1-13	3/4"C,2#12,#12G	120V 1P 2W	2		0.24	HARDWIRED	C.B. LOCKOUT		DIV. 26	+108" AFF
K-5	COOLER REFRIGRATION SYSTEM	K1-15,17,19	3/4"C,4#10,#10G	208Y 3P 4W	15		5.4	HARDWIRED	3P30A/15AF	NEMA 3R	DIV. 26	
K-5.1	COOLER EVAP COIL	K1-21	3/4"C,2#12,#12G	120V 1P 2W	1.82		0.22	HARDWIRED	1P30A/2AF		DIV. 26	+108" AFF
K-15a	FOOD PROCESSOR	K1-23	3/4"C,2#12,#12G	120V 1P 2W	9.8	1/2 HP	1.18	RECEPTACLE	NEMA 5-20R		DIV. 26	+48" AFF
K-15b	FOOD PROCESSOR	K1-25	3/4"C,2#12,#12G	120V 1P 2W	9.8	1/2 HP	1.18	RECEPTACLE	NEMA 5-20R		DIV. 26	+48" AFF
K-17	DISPOSAL	K1-27,29,31	3/4"C,4#12,#12G	208Y 3P 4W	7.85	2 HP	2.83	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15" AFF. MAKE CONNECTION TO CONTROL PANEL & OTHER ASSOCIATED DEVICES
K-29	CONDENSATE HOOD	K1-24	3/4"C,2#12,#12G	120V 1P 2W	5		0.6	HARDWIRED	J-BOX		DIV. 26	FEED FROM ABOVE
K-30a	DISHWASHER	K1-32,34,36	1-1/4"C,4#4,#6G	208V 3P 4W	41.64		15	HARDWIRED	C.B. LOCKOUT		DIV. 26	+64" AFF. INTERCONNECT LIMIT SWITCHES AS SHOWN ON SHEET FS4.1
K-30b	DISHWASHER BOOSTER	K1-26,28,30	1-1/2"C,4#1(AL),#8G	208V 3P 4W	83.27		30	HARDWIRED	C.B. LOCKOUT		DIV. 26	+64"
K-34	DISPOSAL	K1-38,40,42	3/4"C,4#12,#12G	208V 3P 4W	11.08	3 HP	3.99	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15" AFF. MAKE CONNECTION TO CONTROL PANEL & OTHER ASSOCIATED DEVICES
K-39	CONDENSATE HOOD	K2-41	3/4"C,2#12,#12G	120V 1P 2W	5		0.6	HARDWIRED	J-BOX		DIV. 26	FEED FROM ABOVE
K-42	ELECTRIC KETTLE	K2-1,3,5	1"C,4#6,#10G	208V 3P 4W	40.8		14.7	HARDWORED	C.B. LOCKOUT		DIV. 26	+15"
K-43a1	CONVECTION OVEN	K2-10,12,14	1"C,4#6,#10G	208V 3P 4W	35.85	1/2 HP	12.91	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15"
K-43a2	CONVECTION OVEN	K2-2,4,6	1"C,4#6,#10G	208V 3P 4W	35.85	1/2 HP	12.91	HARDWIRED	C.B. LOCKOUT		DIV. 26	+36"
K-43b1	CONVECTION OVEN	K2-33,35,37	1"C,4#6,#10G	208V 3P 4W	35.85	1/2 HP	12.91	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15"
K-43b2	CONVECTION OVEN	K2-25,27,29	1"C,4#6,#10G	208V 3P 4W	35.85	1/2 HP	12.91	HARDWIRED	C.B. LOCKOUT		DIV. 26	+36"
K-43c1	CONVECTION OVEN	K2-17,19,21	1"C,4#6,#10G	208V 3P 4W	35.85	1/2 HP	12.91	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15"
K-43c2	CONVECTION OVEN	K2-9,11,13	1"C,4#6,#10G	208V 3P 4W	35.85	1/2 HP	12.91	HARDWIRED	C.B. LOCKOUT		DIV. 26	+36"
K-45a	HEATED CABINET	K1-33,35	3/4"C,3#12,#12G	208/120V 2P 3W	6		1.25	RECEPTACLE	NEMA 6-20R		DIV. 26	FEED FROM ABOVE
K-45b	HEATED CABINET	K2-22,24	3/4"C,3#12,#12G	208/120V 2P 3W	6		1.25	RECEPTACLE	NEMA 6-20R		DIV. 26	FEED FROM ABOVE
K-48	MICROWAVE	K2-18,20	3/4"C,3#12,#12G	208/120V 2P 3W	8.17		1.7	RECEPTACLE	NEMA 6-20R		DIV. 26	FEED FROM ABOVE
K-49	REACH-IN REFRIDGERATOR	K1-37,39	3/4"C,3#12,#12G	208/120V 2P 3W	4.2		0.87	RECEPTACLE	NEMA 5-20R		DIV. 26	FEED FROM ABOVE
K-53	HOT FOOD WELL UNIT	K1-6,8	3/4"C,3#12,#12G	208/120V 2P 3W	16		3.33	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15" AFF
K-54	FOOD SHIELD	K1-4	3/4"C,2#12,#12G	120V 1P 2W	5		0.6	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15" AFF
K-58a	SNEEZE GUARD	K1-41	3/4"C,2#12,#12G	120V 1P 2W	5		0.6	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15" AFF
K-58b	SNEEZE GUARD	K1-10	3/4"C,2#12,#12G	120V 1P 2W	5		0.6	HARDWIRED	C.B. LOCKOUT		DIV. 26	+15" AFF
K-59a	MILK COOLER	K1-2	3/4"C,2#12,#12G	120V 1P 2W	7.2	1/3 HP	0.86	RECEPTACLE	NEMA 5-20R		DIV. 26	
K-59b	MILK COOLER	K1-12	3/4"C,2#12,#12G	120V 1P 2W	7.2	1/3 HP	0.86	RECEPTACLE	NEMA 5-20R		DIV. 26	

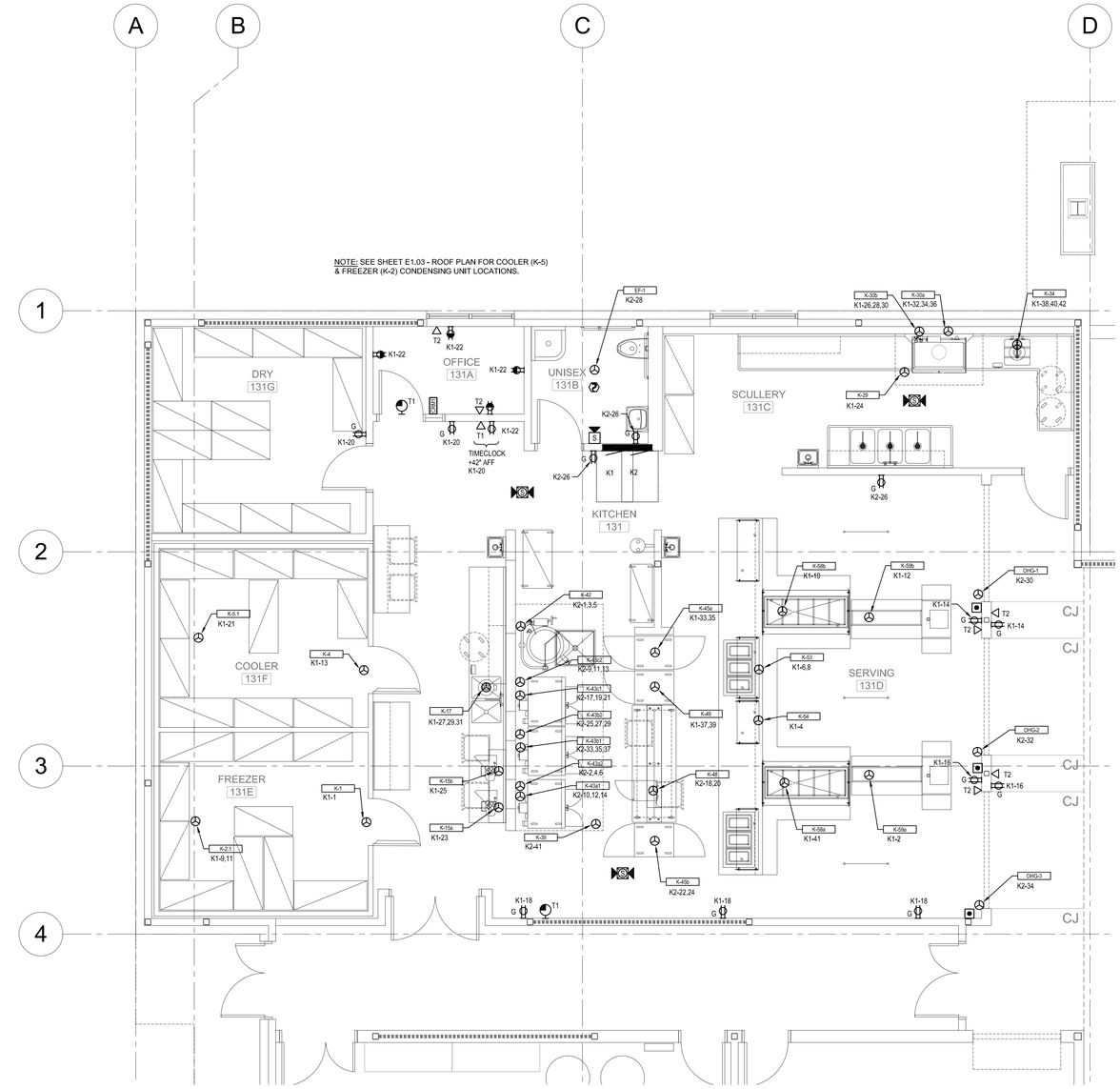
1. REFERENCE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION. CONFIRM ELECTRICAL REQUIREMENTS WITH FOOD SERVICE EQUIPMENT APPROVED SUBMITTALS PRIOR TO RI. COORDINATE ROUGH-IN WITH KEC.
2. UTILIZE LIQUID TIGHT FLEX FOR HARDWIRED CONNECTIONS BETWEEN FLOOR COUPLING OR JUNCTION BOX AND EQUIPMENT.
3. COORDINATE RECEPTACLE HEIGHTS & LOCATION WITH KEC.
4. DO NOT ROUTE UNDERFLOOR CIRCUITS BELOW OVENS OR OTHER HEAT PRODUCING APPLIANCES.
5. ALL 120 VOLT CIRCUITS TO BE GFCI BREAKERS.



EQUIPMENT SHUTDOWN WIRING DIAGRAM - HOOD K-39

NTS

NOTE: SEE SHEET E1.03 - ROOF PLAN FOR COOLER (K-5) & FREEZER (K-2) CONDENSING UNIT LOCATIONS.



COFFMAN ENGINEERS

PANEL: K1 — BUS AMPS: 400 — VOLTS: 208Y/120V 3P 4W
FED FROM: SDP — MAIN OCPD: MLO — NEUTRAL: 100% — MOUNTING: FLUSH — LUGS: FEED THRU
LOCATION: KITCHEN 131 — AIC: 22,000

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	WALK-IN FREEZER, K-1	0.24	20/1	A	20/1	0.86	MILK COOLER, K-59a	2
3	FREEZER REF SYSTEM, K-2	1.33	20/3	B	20/1	0.60	FOOD SHIELD, K-54	4
5		1.33	|	C	20/2	1.66	HOT FOOD WELL, K-53	6
7		1.33	|	A	|	1.66		8
9	FREEZER EVAP COIL, K-2.1	1.04	20/2	B	20/1	0.60	SNEEZE GUARD, K-58b	10
11		1.04	|	C	20/1	0.86	MILK COOLER, K-59b	12
13	WALK-IN COOLER, K-4	0.24	20/1	A	20/1	0.36	RECEPTACLE	14
15	COOLER REF SYSTEM, K-5	1.80	20/3	B	20/1	0.36	RECEPTACLE	16
17		1.80	|	C	20/1	0.54	RECEPTACLE	18
19		1.80	|	A	20/1	0.54	RECEPTACLE	20
21	FREEZER EVAP COIL, K-5.1	0.22	20/1	B	20/1	0.72	RECEPTACLE	22
23	FOOD PROCESSOR, K-15a	1.18	20/1	C	20/1	0.60	CONDENSATE HOOD, K-29	24
25	FOOD PROCESSOR, K-15b	1.18	20/1	A	100/3	10.00	DISHWHER BOOSTER, K-30b	26
27	DISPOSAL, K-17	0.94	20/3	B	|	10.00		28
29		0.94	|	C	|	10.00		30
31		0.94	|	A	70/3	5.00	DISWAHER, K-30a	32
33	HEATE CABINET, K-45a	0.62	20/2	B	|	5.00		34
35		0.62	|	C	|	5.00		36
37	RECHIN REFRIDGERATOR, K-49	0.44	20/2	A	20/3	1.33	DISPOSAL, K-34	38
39		0.44	|	B	|	1.33		40
41	SNEEZE GUARD, K-58a	0.60	20/1	C	|	1.33		42

NOTES:
1.
2.

TOTAL CONNECTED LOAD

A	25.92	KVA
B	25.00	KVA
C	27.01	KVA
A	215.98	AMP
B	208.30	AMP
C	229.12	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.48	0.60	(125%)
RECEPTACLES	2.52	2.52	(50%+10)
LARGEST MOTOR	30.00	37.50	(125%)
OTHER MOTORS	44.19	44.19	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	1.25	1.25	(100%)
NONCOINDIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	78.44	86.06	
TOTAL CALCULATED AMPS		238.88	

COFFMAN ENGINEERS

PANEL: K2 — BUS AMPS: 400 — VOLTS: 208Y/120V 3P 4W
FED FROM: SDP — MAIN OCPD: MLO — NEUTRAL: 100% — MOUNTING: FLUSH — LUGS: STANDARD
LOCATION: KITCHEN 131 — AIC: 22,000

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	ELECTRIC KETTLE, K-42	4.90	50/3	A	50/3	4.30	ELECTRIC CONVECTION OVEN, K-43a2	2
3		4.90	|	B	|	4.30		4
5		4.90	|	C	|	4.30		6
7	SHUNT TRIP BREAKER	0.00	20/1	A	20/1	0.00	SHUNT TRIP BREAKER	8
9	ELECTRIC CONVECTION OVEN, K-43c2	4.30	50/3	B	50/3	4.30	ELECTRIC CONVECTION OVEN, K-43a1	10
11		4.30	|	C	|	4.30		12
13		4.30	|	A	|	4.30		14
15	SHUNT TRIP BREAKER	0.00	20/1	B	20/1	0.00	SHUNT TRIP BREAKER	16
17	ELECTRIC CONVECTION OVEN, K-43c1	4.30	50/3	C	20/2	0.85	MICROWAVE, K-48	18
19		4.30	|	A	|	0.85		20
21		4.30	|	B	20/2	0.62	HEATE CABINET, K-45b	22
23	SHUNT TRIP BREAKER	0.00	20/1	C	|	0.62		24
25	ELECTRIC CONVECTION OVEN, K-43b2	4.30	50/3	A	20/1	0.54	RECEPTACLE	26
27		4.30	|	B	20/1	1.18	EXHAUST FAN, EF-1	28
29		4.30	|	C	20/1	1.18	OVERHEAD GRILLE, OHG-1	30
31	SHUNT TRIP BREAKER	0.00	20/1	A	20/1	1.18	OVERHEAD GRILLE, OHG-2	32
33	ELECTRIC CONVECTION OVEN, K-43b1	4.30	50/3	B	20/1	1.18	OVERHEAD GRILLE, OHG-3	34
35		4.30	|	C	20/1	0.00	SPARE	36
37		4.30	|	A	20/1	0.00	SPARE	38
39	SHUNT TRIP BREAKER	0.00	20/1	B	20/1	0.00	SPARE	40
41	CONDENSATE HOOD, K-39	0.60	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD

A	33.50	KVA
B	33.71	KVA
C	33.98	KVA
A	277.29	AMP
B	280.70	AMP
C	282.96	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	0.54	0.54	(50%+10)
LARGEST MOTOR	1.18	1.47	(125%)
OTHER MOTORS	9.62	9.62	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	89.65	89.65	(100%)
NONCOINDIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	100.98	101.27	
TOTAL CALCULATED AMPS		281.11	

A1 ENLARGED KITCHEN PLAN - ELECTRICAL

1/4" = 1'-0"

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REVISIONS

PASCO SCHOOL DISTRICT #1

COFFMAN ENGINEERS
110 N. Post St. Ste 500
Spokane, WA 99201
509.326.2994
www.coffman.com
CEI PROJECT # 231562

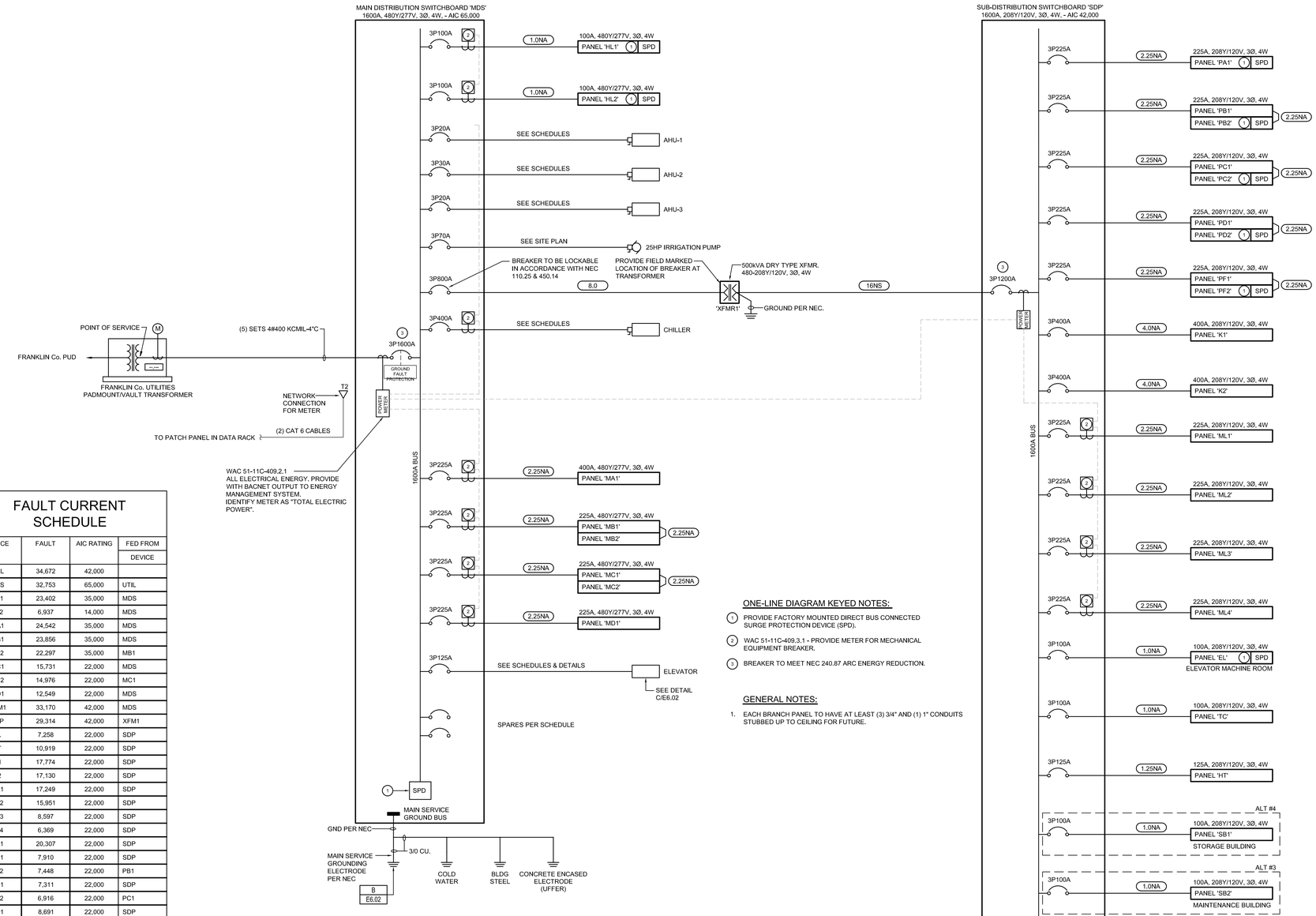
STEPHEN H. HEARN — STATE OF WASHINGTON — 67534 — REGISTERED PROFESSIONAL ENGINEER

PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
SECOND FLOOR PLAN ELECTRICAL AREA 'D'

SHEET
E3.05



FAULT CURRENT SCHEDULE

DEVICE	FAULT	AIC RATING	FED FROM DEVICE
UTIL	34,672	42,000	
MDS	32,753	65,000	UTIL
HL1	23,402	35,000	MDS
HL2	6,937	14,000	MDS
MA1	24,542	35,000	MDS
MB1	23,856	35,000	MDS
MB2	22,297	35,000	MB1
MC1	15,731	22,000	MDS
MC2	14,976	22,000	MC1
MD1	12,549	22,000	MDS
XFM1	33,170	42,000	MDS
SDP	29,314	42,000	XFM1
EL	7,258	22,000	SDP
HT	10,919	22,000	SDP
K1	17,774	22,000	SDP
K2	17,130	22,000	SDP
ML1	17,249	22,000	SDP
ML2	15,951	22,000	SDP
ML3	8,597	22,000	SDP
ML4	6,369	22,000	SDP
PA1	20,307	22,000	SDP
PB1	7,910	22,000	SDP
PB2	7,448	22,000	PB1
PC1	7,311	22,000	SDP
PC2	6,916	22,000	PC1
PD1	8,691	22,000	SDP
PD2	8,137	22,000	PD1
PF1	13,238	22,000	SDP
PF2	12,020	22,000	PF1
SB1	1,753	22,000	SDP
SB2	2,281	22,000	SDP
TC	3,079	22,000	SDP

ONE-LINE DIAGRAM KEYED NOTES:

1. PROVIDE FACTORY MOUNTED DIRECT BUS CONNECTED SURGE PROTECTION DEVICE (SPD).
2. WAC 51-11C-409.3.1 - PROVIDE METER FOR MECHANICAL EQUIPMENT BREAKER.
3. BREAKER TO MEET NEC 240.87 ARC ENERGY REDUCTION.

GENERAL NOTES:

1. EACH BRANCH PANEL TO HAVE AT LEAST (3) 3/4" AND (1) 1" CONDUITS STUBBED UP TO CEILING FOR FUTURE.

BRANCH CIRCUIT & FEEDER SCHEDULE - ALUMINUM

AMPACITY (AMPS)	SYM. ID.	COMPACT STRANDED ALUMINUM AA-8000 ALLOY CONDUCTORS WITH NEUTRAL. GROUND WIRES ALUMINUM.	TYPE	CONDUIT	SYM. ID.	COMPACT STRANDED ALUMINUM AA-8000 ALLOY CONDUCTORS WITHOUT NEUTRAL. GROUND WIRES ALUMINUM.	TYPE	CONDUIT
100	1.0NA	4#1, 1#6G	XHHW-2	1 1/2"	1.0A	3#1, 1#6G	XHHW-2	1 1/2"
125	1.25NA	4#2/0, 1#4G	XHHW-2	2"	1.25A	3#2/0, 1#4G	XHHW-2	1 1/2"
150	1.5NA	4#3/0, 1#4G	XHHW-2	2"	1.5A	3#3/0, 1#4G	XHHW-2	1 1/2"
175	1.75NA	4#4/0, 1#4G	XHHW-2	2"	1.75A	3#4/0, 1#4G	XHHW-2	2"
200	2.0NA	4#250 KCMIL, 1#4G	XHHW-2	2 1/2"	2.0A	3#250 KCMIL, 1#4G	XHHW-2	2"
225	2.25NA	4#300 KCMIL, 1#2G	XHHW-2	2 1/2"	2.25A	3#300 KCMIL, 1#2G	XHHW-2	2"
250	2.5NA	4#350 KCMIL, 1#2G	XHHW-2	3"	2.5A	3#350 KCMIL, 1#2G	XHHW-2	2 1/2"
300	3.0NA	4#500 KCMIL, 1#2G	XHHW-2	3"	3.0A	3#500 KCMIL, 1#2G	XHHW-2	3"
350	3.5NA	4#700 KCMIL, 1#1G	XHHW-2	4"	3.5A	3#700 KCMIL, 1#1G	XHHW-2	3"
400	4.0NA	(2) SETS 4#250 KCMIL, 1#1G	XHHW-2	2-2 1/2"	4.0A	(2) SETS 3#250 KCMIL, 1#1G	XHHW-2	2-2"
450	4.5NA	(2) SETS 4#300 KCMIL, 1#1/0G	XHHW-2	2-2 1/2"	4.5A	(2) SETS 3#300 KCMIL, 1#1/0G	XHHW-2	2-2 1/2"
500	5.0NA	(2) SETS 4#350 KCMIL, 1#1/0G	XHHW-2	2-3"	5.0A	(2) SETS 3#350 KCMIL, 1#1/0G	XHHW-2	2-2 1/2"
600	6.0NA	(2) SETS 4#500 KCMIL, 1#2/0G	XHHW-2	2-3"	6.0A	(2) SETS 3#500 KCMIL, 1#2/0G	XHHW-2	2-3"
700	7.0NA	(3) SETS 4#350 KCMIL, 1#3/0G	XHHW-2	3-3"	7.0A	(3) SETS 3#350 KCMIL, 1#3/0G	XHHW-2	3-2 1/2"
800	8.0NA	(3) SETS 4#400 KCMIL, 1#3/0G	XHHW-2	3-3"	8.0A	(3) SETS 3#400 KCMIL, 1#3/0G	XHHW-2	3-3"
1000	10NA	(3) SETS 4#500 KCMIL, 1#4/0G	XHHW-2	3-3 1/2"	10A	(3) SETS 3#500 KCMIL, 1#4/0G	XHHW-2	3-3"
1200	12NA	(4) SETS 4#500 KCMIL, 1#250 KCMIL G	XHHW-2	4-3"	12A	(4) SETS 3#500 KCMIL, 1#250 KCMIL G	XHHW-2	4-3"
1600	16NA	(5) SETS 4#600 KCMIL, 1#350 KCMIL G	XHHW-2	5-3 1/2"	16A	(5) SETS 3#600 KCMIL, 1#350 KCMIL G	XHHW-2	5-3"
2000	20NA	(6) SETS 4#600 KCMIL, 1#400 KCMIL G	XHHW-2	6-3 1/2"	20AL	(6) SETS 3#600 KCMIL, 1#400 KCMIL G	XHHW-2	6-3"
2500	25NA	(7) SETS 4#700 KCMIL, 1#500 KCMIL G	XHHW-2	7-4"	25A	(7) SETS 3#700 KCMIL, 1#500 KCMIL G	XHHW-2	7-3 1/2"
3000	30NA	(9) SETS 4#600 KCMIL, 1#600 KCMIL G	XHHW-2	9-3 1/2"	30AL	(9) SETS 3#600 KCMIL, 1#600 KCMIL G	XHHW-2	9-3 1/2"
4000	40NA	(12) SETS 4#600 KCMIL, 1#600 KCMIL G	XHHW-2	12-3 1/2"	40AL	(12) SETS 3#600 KCMIL, 1#600 KCMIL G	XHHW-2	12-3 1/2"

SERVICES & SEPARATELY DERIVED SERVICES - ALUMINUM

AMPACITY (AMPS)	SYM. ID.	COMPACT STRANDED ALUMINUM AA-8000 ALLOY CONDUCTORS WITH NEUTRAL. GROUND WIRES SHALL BE COPPER.	TYPE	CONDUIT	AMPACITY (AMPS)	SYM. ID.	COMPACT STRANDED ALUMINUM AA-8000 ALLOY CONDUCTORS WITH NEUTRAL. (CONTINUED)	TYPE	CONDUIT
100	1.0NAS	4#1, 1#6G	XHHW-2	1 1/4"	600	6.0NAS	(2) SETS 4#500 KCMIL, 1#2/0G	XHHW-2	2-3"
125	1.25NAS	4#2/0, 1#6G	XHHW-2	2"	700	7.0NAS	(3) SETS 4#350 KCMIL, 1#2/0G	XHHW-2	3-3"
150	1.5NAS	4#3/0, 1#6G	XHHW-2	2"	800	8.0NAS	(3) SETS 4#400 KCMIL, 1#3/0G	XHHW-2	3-3"
175	1.75NAS	4#4/0, 1#4G	XHHW-2	2"	1000	10NAS	(3) SETS 4#500 KCMIL, 1#3/0G	XHHW-2	3-3 1/2"
200	2.0NAS	4#250 KCMIL, 1#4G	XHHW-2	2 1/2"	1200	12NAS	(4) SETS 4#500 KCMIL, 1#3/0G	XHHW-2	4-3"
225	2.25NAS	4#300 KCMIL, 1#2G	XHHW-2	2 1/2"	1600	16NAS	(5) SETS 4#600 KCMIL, 1#3/0G	XHHW-2	5-3 1/2"
250	2.5NAS	4#350 KCMIL, 1#2G	XHHW-2	2 1/2"	2000	20NAS	(6) SETS 4#600 KCMIL, 1#3/0G	XHHW-2	6-3 1/2"
300	3.0NAS	4#500 KCMIL, 1#2G	XHHW-2	3"	2500	25NAS	(7) SETS 4#700 KCMIL, 1#3/0G	XHHW-2	7-4"
350	3.5NAS	4#700 KCMIL, 1#2/0G	XHHW-2	4"	3000	30NAS	(9) SETS 4#600 KCMIL, 1#3/0G	XHHW-2	9-3 1/2"
400	4.0NAS	(2) SETS 4#250 KCMIL, 1#2G	XHHW-2	2-2 1/2"	4000	40NAS	(12) SETS 4#600 KCMIL, 1#3/0G	XHHW-2	12-3 1/2"
450	4.5NAS	(2) SETS 4#300 KCMIL, 1#1/0G	XHHW-2	2-2 1/2"					
500	5.0NAS	(2) SETS 4#350 KCMIL, 1#1/0G	XHHW-2	2-2 1/2"					

NOTE: 1. ALL ALUMINUM WIRE SHALL BE AA-8000 ALLOY & COMPACT STRANDED. GROUND WIRES SHALL BE COPPER FOR SERVICES & SEPARATELY DERIVED SERVICES.
2. CONDUIT INDICATED ABOVE IS SIZED ONLY FOR EMT, RIGID METAL CONDUIT, IMC, AND SCHEDULE 40 PVC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INCREASE CONDUIT SIZE AS NECESSARY WHEN SCHEDULE 80 PVC, FLEXIBLE METAL CONDUIT, LIQUID TIGHT FLEXIBLE METAL CONDUIT, ETC. ARE UTILIZED.

EXAMPLE OF TYPICAL SYMBOL: (2.25NA)

A1 ONE-LINE DIAGRAM

NTS

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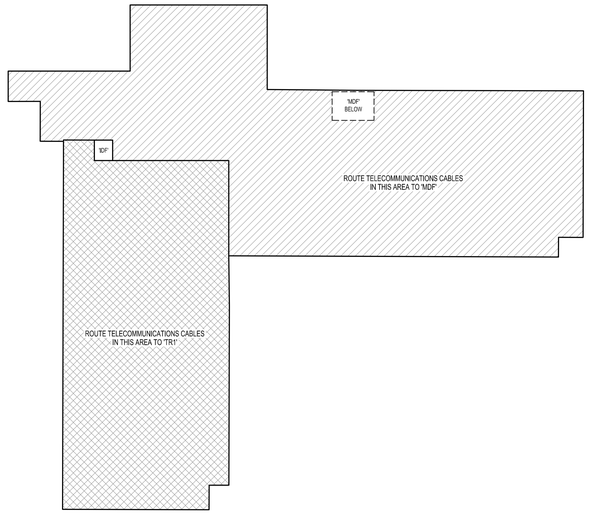
ORION HIGH SCHOOL

1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

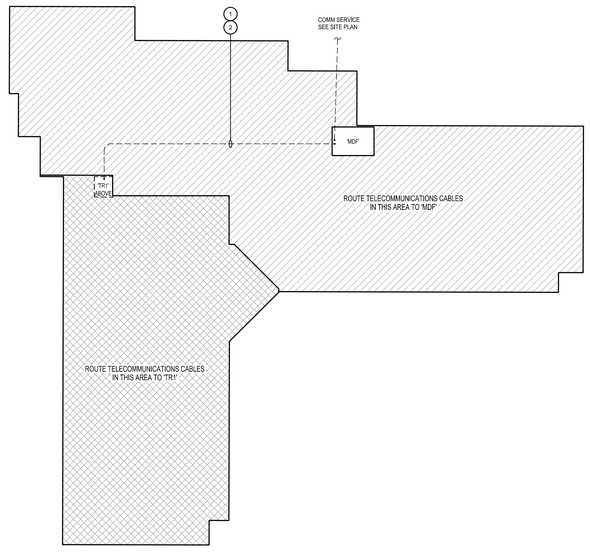
DATE
12/18/2023

SHEET NAME
ONE-LINE DIAGRAM

SHEET
E4.01



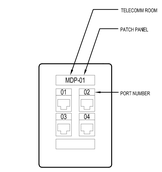
UPPER FLOOR PLAN - DATA CABLING ROUTING AND BACKBONE
NTS



MAIN FLOOR PLAN - DATA CABLING ROUTING AND BACKBONE
SCALE: 1" = 30'-0"

COMMUNICATIONS SYMBOLS

▽T4	DATA WALL OUTLET. SEE TELECOMMUNICATION SCHEDULE FOR THE NUMBER OF ACTIVE PORTS. SEE BID DRAWING FOR DATA OUTLET LOCATIONS AND NUMBER OF ACTIVE PORTS PER OUTLET.
	2-POST DATA. SEE TELECOMMUNICATION DETAILS THIS SHEET AND FLOOR PLAN LAYOUTS FOR RACK LOCATIONS AND DETAILS.



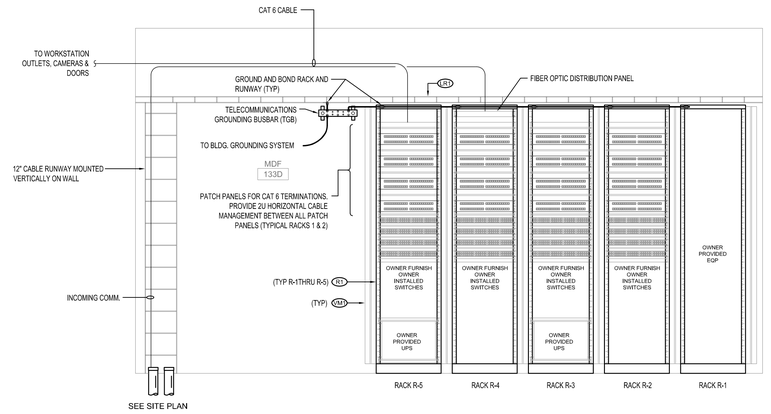
DATA OUTLET LABELING

TELECOMMUNICATIONS OUTLET (TO) SCHEDULE

KEY #	TOTAL # OF PORTS	# OF ACTIVE PORTS	# OF BLANK PORTS	# OF CAT. 6 CABLES	NOTES
▽ T1	1	1	0	1	ROUTE CABLE TO TELECOMMUNICATIONS RACK TERMINATE ALL 4 PAIRS & LABEL BOTH ENDS
▽ T2	4	2	2	2	ROUTE CABLE TO TELECOMMUNICATIONS RACK TERMINATE ALL 4 PAIRS & LABEL BOTH ENDS
▽ T3	4	3	1	3	ROUTE CABLE TO TELECOMMUNICATIONS RACK TERMINATE ALL 4 PAIRS & LABEL BOTH ENDS
▽ T4	4	4	0	4	ROUTE CABLE TO TELECOMMUNICATIONS RACK TERMINATE ALL 4 PAIRS & LABEL BOTH ENDS
▼ T5	6	5	1	5	ROUTE CABLE TO TELECOMMUNICATIONS RACK TERMINATE ALL 4 PAIRS & LABEL BOTH ENDS
▽ T6	6	6	0	6	ROUTE CABLE TO TELECOMMUNICATIONS RACK TERMINATE ALL 4 PAIRS & LABEL BOTH ENDS

'W' DENOTED WALL MOUNTED PHONE FACEPLATE TYPE.
'T1' AT (PV) SYMBOLS DENOTED (1) CAT 6 CABLE TO PLENUM-VAULT WITH RJ45 CONNECTOR.
'T1' AT (R) SYMBOLS DENOTED (1) CAT 6 CABLE TO READER INTERFACE WITH RJ45 CONNECTOR. PROVIDE 15' EXTRA CAT 6 COILED AT INTERFACE LOCATION.
'T1' AT (C) OR (C) SYMBOLS DENOTED (1) CAT 6 CABLE TO CAMERA LOCATION FROM DATA RACK. PROVIDE 20' EXTRA CAT 6 CABLE COILED AT CAMERA LOCATION.

NOTE: WHERE THE CABLE DROP QUANTITY IS NOT INDICATED AT A VOICE/DATA OUTLET SYMBOLS ON THE PLANS, PROVIDE (2) CAT 6 CABLES TO THE TELECOMMUNICATION RACK.



TELECOMMUNICATION ELEVATION - 'MDF'
NTS

KEYED NOTES:
1. TELECOMMUNICATIONS BACKBONE: PROVIDE (2) 2"C (EACH) FROM 'MDF' TO TELECOMMUNICATIONS ROOM "TR1" & "TR2" .
2. 6-STRAND 50UM MULTI-MODE FIBER OPTIC CABLES. TERMINATE BOTH ENDS WITH 'LC' CONNECTORS.

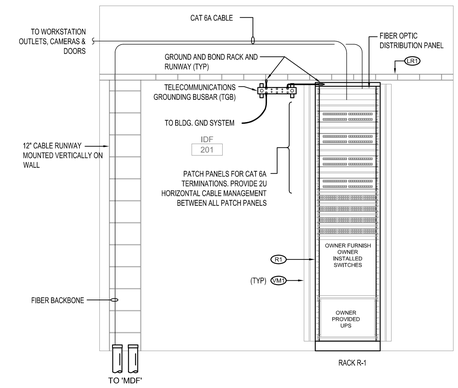
BACKBONE GENERAL NOTES:
1. ROUTE ALL FIBER OPTIC BACKBONE CABLE IN 1" INNERDUCT.
2. TERMINATE ALL FIBER STRANDS WITH 'LC' CONNECTIONS AT FIBER PATCH PANELS IN TELECOMMUNICATIONS RACKS.
3. ALL FIBER OPTIC CABLE TO BE MULTIMODE 50um.

CABLING ROUTING GENERAL NOTES:
1. CAT 6 CABLE TO BE ROUTED FROM TELECOMMUNICATIONS OUTLETS AND TERMINATED AT PATCH PANELS IN TELECOMMUNICATIONS RACKS.
2. TERMINATE ALL 8 CONDUCTORS AT EACH END.
3. PROVIDE LABELING AT EACH END OF EACH CABLE.

PATCH CORDS:
PROVIDE (2) PATCH CABLES PER DROP (3', 7' & 14' LONG). VERIFY WITH OWNER.

PATCH PANELS:
PROVIDE PATCH PANELS TO ACCOMMODATE REQUIRED CABLE TERMINATION PLUS 10% SPARE FOR FUTURE USE AT EACH TELECOMMUNICATIONS ROOM.

MATERIAL KEYED NOTES:
(R1) 19" FREE STANDING 2-POST RACK. BOLT TO FLOOR.
(VM) VERTICAL CABLE MANAGEMENT (CPI FLIP-UP STYLE WITH DOUBLE ON WALL SIDE)
(HM) HORIZONTAL CABLE MANAGEMENT
(CR) CABLE RUNWAY 12" WIDE. MOUNTED AT TOP OF RACKS. PROVIDE GROUND BOND TO GROUNDING BUSBAR.



TELECOMMUNICATION ELEVATION - 'TR1'
NTS

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ORION HIGH SCHOOL

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PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
TELECOM DETAILS

SHEET
E4.02

COFFMAN ENGINEERS

PANEL: **MDS**

SPD: ELEC 127 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | BUS AMPS: 1600 | MAIN OCPD: 1600 | MOUNTING: FLOOR | AIC: 65,000

CCT NO.	CIRCUIT DESCRIPTION	BREAKER	KVA LOAD A	KVA LOAD B	KVA LOAD C
1	PANEL HL1, ELEC 127	100/3	7.70	7.44	5.45
2	PANEL HL2, MECH MEZZ 216	100/3	6.07	4.65	3.18
3	PANEL MA1, MECH/CUST 129	225/3	9.59	9.59	9.59
4	PANEL MB1, MECH MEZZ 200	225/3	43.79	43.79	43.79
5	PANEL MC1, MECH MEZZ 216	225/3	19.59	19.59	19.59
6	PANEL MD1, MECH MEZZ 224	225/3	6.98	6.98	6.98
7	CHILLER, CH-1	400/3	83.25	83.25	83.25
8	AIR HANDLING UNIT, AHU-1	20/3	2.77	2.77	2.77
9	AIR HANDLING UNIT, AHU-2	30/3	2.77	2.77	2.77
10	IRRIGATION PUMP, IRR-1	20/3	2.11	2.11	2.11
11	AIR HANDLING UNIT, AHU-3	20/3	2.77	2.77	2.77
12	'SDP' VIA XFM1	800/3	167.47	164.85	160.22
13	SPACE	-/3	0.00	0.00	0.00
14	SPACE	-/3	0.00	0.00	0.00
15	SPACE	-/3	0.00	0.00	0.00
16	SPACE	-/3	0.00	0.00	0.00
17	SPACE	-/3	0.00	0.00	0.00
18	SPACE	-/3	0.00	0.00	0.00
19	SPACE	-/3	0.00	0.00	0.00
20	SPACE	-/3	0.00	0.00	0.00

NOTES:
1.
2.

	CONN KVA	CALC KVA	
LIGHTING	36.13	45.16	(125%)
LARGEST MOTOR	249.75	62.44	(25%)
MOTORS	687.97	687.97	(100%)
RECEPTACLES	137.27	73.63	(50%>10)
CONTINUOUS	7.92	9.90	(125%)
NONCONTINUOUS	5.86	5.86	(100%)
HEATING	163.00	163.00	(100%)
COOLING	9.75	0.00	(0%)
TOTAL LOAD		1,047.95	
BALANCED 3-PHASE LOAD		1,260.49 A	

COFFMAN ENGINEERS

PANEL: **HL1**

FED FROM: MDS | LOCATION: ELEC 127 | BUS AMPS: 100 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 35,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	LIGHTING	2.91	20/1	A	20/1	1.70	SITE LIGHTING	2
3	LIGHTING	1.90	20/1	B	20/1	1.24	SITE LIGHTING	4
5	LIGHTING	1.97	20/1	C	20/1	0.26	LIGHTING	6
7	LIGHTING	1.92	20/1	A	20/1	0.00	SPARE	8
9	LIGHTING	1.89	20/1	B	20/1	0.00	SPARE	10
11	LIGHTING	2.12	20/1	C	20/1	0.00	SPARE	12
13	LIGHTING	1.18	20/1	A	20/1	0.00	SPARE	14
15	LIGHTING	2.41	20/1	B	20/1	0.00	SPARE	16
17	LIGHTING	1.10	20/1	C	20/1	0.00	SPARE	18
19	SPARE	0.00	20/1	A	20/1	0.00	SPARE	20
21	SPARE	0.00	20/1	B	20/1	0.00	SPARE	22
23	SPARE	0.00	20/1	C	20/1	0.00	SPARE	24
25	SPARE	0.00	20/1	A	20/1	0.00	SPARE	26
27	SPARE	0.00	20/1	B	20/1	0.00	SPARE	28
29	SPARE	0.00	20/1	C	20/1	0.00	SPARE	30
31	SPARE	0.00	20/1	A	20/1	0.00	SPARE	32
33	SPARE	0.00	20/1	B	20/1	0.00	SPARE	34
35	SPARE	0.00	20/1	C	20/1	0.00	SPARE	36
37	SPARE	0.00	20/1	A	20/1	0.00	SPARE	38
39	SPARE	0.00	20/1	B	20/1	0.00	SPARE	40
41	SPARE	0.00	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	7.70	KVA
B	7.44	KVA
C	5.45	KVA
A	27.81	AMP
B	26.86	AMP
C	19.67	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	20.59	25.74	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	20.59	25.74	
TOTAL CALCULATED AMPS		30.96	

COFFMAN ENGINEERS

PANEL: **HL2**

FED FROM: MDS | LOCATION: MECH MEZZ 216 | BUS AMPS: 100 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 14,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	LIGHTING, LEARNING CENTER 206, LEARNING CENTER 207, LEARNING CENTER 208, MECH MEZZ 209, OFFICE 205A, UNISEX 205B, UNISEX 210	2.11	20/1	A	20/1	0.00	SPARE	2
3	LIGHTING	2.00	20/1	B	20/1	0.00	SPARE	4
5	LIGHTING, BOYS 204, CORR CR-6, CORR CR-7, CUST 202, GIRLS 203	1.81	20/1	C	20/1	0.00	SPARE	6
7	LIGHTING, LEARNING CENTER 218, LEARNING CENTER 219, LEARNING CENTER 220	2.13	20/1	A	20/1	0.00	SPARE	8
9	LIGHTING, CHEM PREP 228, CHEM STOR 228A, HEALTH LAB 227, IDF 201, LEARNING CENTER 225, MECH MEZZ 224, OFFICE 222A, TEACHERS 222, UNISEX 222B, UNISEX 223	2.65	20/1	B	20/1	0.00	SPARE	10
11	LIGHTING, CORR CR-8, MECH MEZZ 200, STAIR ST-1, STUDENT COLLABORATE 221	1.38	20/1	C	20/1	0.00	SPARE	12
13	LIGHTING, COMMONS 134 (2ND FLOOR)	1.84	20/1	A	20/1	0.00	SPARE	14
15	SPARE	0.00	20/1	B	20/1	0.00	SPARE	16
17	SPARE	0.00	20/1	C	20/1	0.00	SPARE	18
19	SPARE	0.00	20/1	A	20/1	0.00	SPARE	20
21	SPARE	0.00	20/1	B	20/1	0.00	SPARE	22
23	SPARE	0.00	20/1	C	20/1	0.00	SPARE	24
25	SPARE	0.00	20/1	A	20/1	0.00	SPARE	26
27	SPARE	0.00	20/1	B	20/1	0.00	SPARE	28
29	SPARE	0.00	20/1	C	20/1	0.00	SPARE	30
31	SPARE	0.00	20/1	A	20/1	0.00	SPARE	32
33	SPARE	0.00	20/1	B	20/1	0.00	SPARE	34
35	SPARE	0.00	20/1	C	20/1	0.00	SPARE	36
37	SPARE	0.00	20/1	A	20/1	0.00	SPARE	38
39	SPARE	0.00	20/1	B	20/1	0.00	SPARE	40
41	SPARE	0.00	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	6.07	KVA
B	4.65	KVA
C	3.18	KVA
A	21.92	AMP
B	16.78	AMP
C	11.50	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	13.91	17.38	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	13.91	17.38	
TOTAL CALCULATED AMPS		20.91	

COFFMAN ENGINEERS

PANEL: **MA1**

FED FROM: MDS | LOCATION: MECH/CUST 129 | BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 35,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	BOOSTER PUMP, DBP-1, MECH/CUST 129	2.11	20/3	A	60/3	7.48	AIR COMPRESSOR, AIR-1, COMP 126	2
3		2.11	|	B	|	7.48		4
5		2.11	|	C	|	7.48		6
7	SPACE	0.00	-/1	A	-/1	0.00	SPACE	8
9	SPACE	0.00	-/1	B	-/1	0.00	SPACE	10
11	SPACE	0.00	-/1	C	-/1	0.00	SPACE	12
13	SPACE	0.00	-/1	A	-/1	0.00	SPACE	14
15	SPACE	0.00	-/1	B	-/1	0.00	SPACE	16
17	SPACE	0.00	-/1	C	-/1	0.00	SPACE	18
19	SPACE	0.00	-/1	A	-/1	0.00	SPACE	20
21	SPACE	0.00	-/1	B	-/1	0.00	SPACE	22
23	SPACE	0.00	-/1	C	-/1	0.00	SPACE	24
25	SPACE	0.00	-/1	A	-/1	0.00	SPACE	26
27	SPACE	0.00	-/1	B	-/1	0.00	SPACE	28
29	SPACE	0.00	-/1	C	-/1	0.00	SPACE	30
31	SPACE	0.00	-/1	A	-/1	0.00	SPACE	32
33	SPACE	0.00	-/1	B	-/1	0.00	SPACE	34
35	SPACE	0.00	-/1	C	-/1	0.00	SPACE	36
37	SPACE	0.00	-/1	A	-/1	0.00	SPACE	38
39	SPACE	0.00	-/1	B	-/1	0.00	SPACE	40
41	SPACE	0.00	-/1	C	-/1	0.00	SPACE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	9.59	KVA
B	9.59	KVA
C	9.59	KVA
A	34.60	AMP
B	34.60	AMP
C	34.60	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	22.45	28.06	(125%)
OTHER MOTORS	6.32	6.32	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	28.77	34.38	
TOTAL CALCULATED AMPS		41.35	

COFFMAN ENGINEERS

PANEL: **MB1**

FED FROM: MDS | LOCATION: MECH MEZZ 200 | BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 35,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	FAN COIL UNIT, FC-101, MECH MEZZ 200	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-218, MECH MEZZ 200	2
3		0.58	|	B	|	0.58		4
5		0.58	|	C	|	0.58		6
7	FAN COIL UNIT, FC-103, MECH MEZZ 200	0.58	20/3	A	70/3	7.48	PUMP, CWP-1, MECH MEZZ 200	8
9		0.58	|	B	|	7.48		10
11		0.58	|	C	|	7.48		12
13	FAN COIL UNIT, FC-121, MECH MEZZ 200	0.58	20/3	A	45/3	5.82	PUMP, CHP-1, MECH MEZZ 200	14
15		0.58	|	B	|	5.82		16
17		0.58	|	C	|	5.82		18
19	FAN COIL UNIT, FC-217, MECH MEZZ 200	0.58	20/3	A	40/3	9.70	HEAT RECOVERY UNIT, HRU-2, MECH MEZZ 200	20
21		0.58	|	B	|	9.70		22
23		0.58	|	C	|	9.70		24
25	FAN COIL UNIT, FC-112, MECH MEZZ 200	0.58	20/3	A	-/1	0.00	SPACE	26
27		0.58	|	B	-/1	0.00	SPACE	28
29		0.58	|	C	-/1	0.00	SPACE	30
31	FAN COIL UNIT, FC-226, MECH MEZZ 200	0.58	20/3	A	-/1	0.00	SPACE	32
33		0.58	|	B	-/1	0.00	SPACE	34
35		0.58	|	C	-/1	0.00	SPACE	36
37	FAN COIL UNIT, FC-227, MECH MEZZ 200	0.58	20/3	A	-/1	0.00	SPACE	38
39		0.58	|	B	-/1	0.00	SPACE	40
41		0.58	|	C	-/1	0.00	SPACE	42

NOTES:
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2.

TOTAL CONNECTED LOAD		
A	43.79	KVA
B	43.79	KVA
C	43.79	KVA
A	158.00	AMP
B	158.00	AMP
C	158.00	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	29.10	36.37	(125%)
OTHER MOTORS	102.26	102.26	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	131.36	138.63	
TOTAL CALCULATED AMPS		166.75	

COFFMAN ENGINEERS

PANEL: **MB2**

FED FROM: MB1 | LOCATION: MECH MEZZ 200 | BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 35,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	PUMP, HWP-1, MECH MEZZ 200	7.48	70/3	A	20/3	0.58	PUMP, BP-1, MECH MEZZ 200	2
3		7.48	|	B	|	0.58		4
5		7.48	|	C	|	0.58		6
7	PUMP, HWP-2, MECH MEZZ 200	7.48	70/3	A	20/3	0.58	PUMP, BP-2, MECH MEZZ 200	8
9		7.48	|	B	|	0.58		10
11		7.48	|	C	|	0.58		12
13	SPACE	0.00	-/1	A	-/1	0.00	SPACE	14
15	SPACE	0.00	-/1	B	-/1	0.00	SPACE	16
17	SPACE	0.00	-/1	C	-/1	0.00	SPACE	18
19	SPACE	0.00	-/1	A	-/1	0.00	SPACE	20
21	SPACE	0.00	-/1	B	-/1	0.00	SPACE	22
23	SPACE	0.00	-/1	C	-/1	0.00	SPACE	24
25	SPACE	0.00	-/1	A	-/1	0.00	SPACE	26
27	SPACE	0.00	-/1	B	-/1	0.00	SPACE	28
29	SPACE	0.00	-/1	C	-/1	0.00	SPACE	30
31	SPACE	0.00	-/1	A	-/1	0.00	SPACE	32
33	SPACE	0.00	-/1	B	-/1	0.00	SPACE	34
35	SPACE	0.00	-/1	C	-/1	0.00	SPACE	36
37	SPACE	0.00	-/1	A	-/1	0.00	SPACE	38
39	SPACE	0.00	-/1	B	-/1	0.00	SPACE	40
41	SPACE	0.00	-/1	C	-/1	0.00	SPACE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	16.13	KVA
B	16.13	KVA
C	16.13	KVA
A	58.20	AMP
B	58.20	AMP
C	58.20	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	22.45	28.06	(125%)
OTHER MOTORS	25.94	25.94	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	48.39	54.00	
TOTAL CALCULATED AMPS		64.95	

COFFMAN ENGINEERS

PANEL: **MC1**

FED FROM: MDS | LOCATION: MECH MEZZ 216 | BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 22,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	FAN COIL UNIT, FC-138, MECH MEZZ 216	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-149, MECH MEZZ 216	2
3		0.58	|	B	|	0.58		4
5		0.58	|	C	|	0.58		6
7	FAN COIL UNIT, FC-144, MECH MEZZ 216	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-150, MECH MEZZ 216	8
9		0.58	|	B	|	0.58		10
11		0.58	|	C	|	0.58		12
13	FAN COIL UNIT, FC-145, MECH MEZZ 216	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-151, MECH MEZZ 216	14
15		0.58	|	B	|	0.58		16
17		0.58	|	C	|	0.58		18
19	FAN COIL UNIT, FC-148, MECH MEZZ 216	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-214, MECH MEZZ 216	20
21		0.58	|	B	|	0.58		22
23		0.58	|	C	|	0.58		24
25	FAN COIL UNIT, FC-207, MECH MEZZ 216	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-213, MECH MEZZ 216	26
27		0.58	|	B	|	0.58		28
29		0.58	|	C	|	0.58		30
31	FAN COIL UNIT, FC-146, MECH MEZZ 216	0.58	20/3	A	-/1	0.00	SPACE	32
33		0.58	|	B	-/1	0.00	SPACE	34
35		0.58	|	C	-/1	0.00	SPACE	36
37	SPACE	0.00	-/1	A	-/1	0.00	SPACE	38
39	SPACE	0.00	-/1	B	-/1	0.00	SPACE	40
41	SPACE	0.00	-/1	C	-/1	0.00	SPACE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	19.59	KVA
B	19.59	KVA
C	19.59	KVA
A	70.70	AMP
B	70.70	AMP
C	70.70	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	29.10	36.37	(125%)
OTHER MOTORS	29.68	29.68	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	58.78	66.05	
TOTAL CALCULATED AMPS		79.45	

COFFMAN ENGINEERS

PANEL: **MC2**

FED FROM: MC1 | LOCATION: MECH MEZZ 216 | BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 22,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	FAN COIL UNIT, FC-205	0.58	20/3	A	40/3	9.70	HEAT RECOVERY UNIT, HRU-1, MECH MEZZ 216	2
3		0.58	|	B	|	9.70		4
5		0.58	|	C	|	9.70		6
7	FAN COIL UNIT, FC-206	0.58	20/3	A	-/1	0.00	SPACE	8
9		0.58	|	B	-/1	0.00	SPACE	10
11		0.58	|	C	-/1	0.00	SPACE	12
13	FAN COIL UNIT, FC-208	0.58	20/3	A	-/1	0.00	SPACE	14
15		0.58	|	B	-/1	0.00	SPACE	16
17		0.58	|	C	-/1	0.00	SPACE	18
19	FAN COIL UNIT, FC-209	0.58	20/3	A	-/1	0.00	SPACE	20
21		0.58	|	B	-/1	0.00	SPACE	22
23		0.58	|	C	-/1	0.00	SPACE	24
25	FAN COIL UNIT, FC-215	0.58	20/3	A	-/1	0.00	SPACE	26
27		0.58	|	B	-/1	0.00	SPACE	28
29		0.58	|	C	-/1	0.00	SPACE	30
31	FAN COIL UNIT, FC-212	0.58	20/3	A	-/1	0.00	SPACE	32
33		0.58	|	B	-/1	0.00	SPACE	34
35		0.58	|	C	-/1	0.00	SPACE	36
37	SPACE	0.00	-/1	A	-/1	0.00	SPACE	38
39	SPACE	0.00	-/1	B	-/1	0.00	SPACE	40
41	SPACE	0.00	-/1	C	-/1	0.00	SPACE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	13.19	KVA
B	13.19	KVA
C	13.19	KVA
A	47.60	AMP
B	47.60	AMP
C	47.60	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	29.10	36.37	(125%)
OTHER MOTORS	10.48	10.48	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	39.57	46.85	
TOTAL CALCULATED AMPS		56.35	

COFFMAN ENGINEERS

PANEL: **MD1**

FED FROM: MDS | LOCATION: MECH MEZZ 224 | BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: SURFACE | AIC: 22,000 | VOLTS: 480Y/277V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	FAN COIL UNIT, FC-225, MECH MEZZ 224	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-222, MECH MEZZ 224	2
3		0.58	|	B	|	0.58		4
5		0.58	|	C	|	0.58		6
7	FAN COIL UNIT, FC-120, MECH MEZZ 224	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-115, MECH MEZZ 224	8
9		0.58	|	B	|	0.58		10
11		0.58	|	C	|	0.58		12
13	FAN COIL UNIT, FC-119, MECH MEZZ 224	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-114, MECH MEZZ 224	14
15		0.58	|	B	|	0.58		16
17		0.58	|	C	|	0.58		18
19	FAN COIL UNIT, FC-220, MECH MEZZ 224	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-219	20
21		0.58	|	B	|	0.58		22
23		0.58	|	C	|	0.58		24
25	FAN COIL UNIT, FC-117, MECH MEZZ 224	0.58	20/3	A	20/3	0.58	FAN COIL UNIT, FC-221	26
27		0.58	|	B	|	0.58		28
29		0.58	|	C	|	0.58		30
31	FAN COIL UNIT, FC-118, MECH MEZZ 224	0.58	20/3	A	-/1	0.00	SPACE	32
33		0.58	|	B	-/1	0.00	SPACE	34
35		0.58	|	C	-/1	0.00	SPACE	36
37	FAN COIL UNIT, FC-113, MECH MEZZ 224	0.58	20/3	A	-/1	0.00	SPACE	38
39		0.58	|	B	-/1	0.00	SPACE	40
41		0.58	|	C	-/1	0.00	SPACE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	6.98	KVA
B	6.98	KVA
C	6.98	KVA
A	25.20	AMP
B	25.20	AMP
C	25.20	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	0.00	0.00	(50%>10)
LARGEST MOTOR	1.75	2.18	(125%)
OTHER MOTORS	19.20	19.20	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	20.95	21.39	
TOTAL CALCULATED AMPS		25.72	

COFFMAN ENGINEERS

PANEL: **SDP**

SPD: ELEC 127 | VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | BUS AMPS: 1600 | MAIN OCPD: 1600 | MOUNTING: FLOOR | AIC: 42,000

CCT NO.	CIRCUIT DESCRIPTION	BREAKER	KVA LOAD A	KVA LOAD B	KVA LOAD C
1	PANEL PA1, ELEC 127	225/3	6.73	7.47	5.33
2	PANEL PB1, CORR 108	225/3	14.50	11.32	11.12
3	PANEL PC1, BOYS 142	225/3	11.81	13.79	11.17
4	PANEL PD1, MECH MEZZ 216	225/3	6.30	6.12	5.40
5	PANEL K1, KITCHEN 131	400/3	25.92	25.00	27.51
6	PANEL K2, KITCHEN 131	400/3	33.30	33.71	33.98
7	PANEL ML1, MECH/CUST 129	225/3	14.14	14.88	16.47
8	PANEL ML2, MECH MEZZ 200	225/3	6.82	10.26	8.86
9	PANEL ML3, MECH MEZZ 216	225/3	7.11	4.76	4.94
10	PANEL ML4, MECH MEZZ 224	225/3	3.95	4.13	3.95
11	PANEL TC, MDF 133D	100/3	0.74	0.36	0.36
12	PANEL HT, MECH MEZZ 200	125/3	8.45	6.45	7.50
13	PANEL PF1, CHEM PREP 228	225/3	11.88	10.98	10.86
14	PANEL SB1	100/3	3.26	3.13	1.78
15	PANEL SB2	100/3	3.26	3.13	1.78
16	PANEL EL, ELEV EQUIP 125	100/3	1.81	1.88	1.73
17	ELEVATOR, ELEV EQUIP 125	125/3	7.48	7.48	7.48
18	SPACE	-/3	0.00	0.00	0.00
19	SPACE	-/3	0.00	0.00	0.00
20	SPACE	-/3	0.00	0.00	0.00

NOTES:
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	CONN KVA	CALC KVA	
LIGHTING	1.63	2.04	(125%)
LARGEST MOTOR	30.00	7.50	(25%)
MOTORS	167.11	167.11	(100%)
RECEPTACLES	137.27	73.63	(50%>10)
CONTINUOUS	7.92	9.90	(125%)
NONCONTINUOUS	5.86	5.86	(100%)
HEATING	163.00	163.00	(100%)
COOLING	9.75	0.00	(0%)
TOTAL LOAD		429.03	
BALANCED 3-PHASE LOAD		1,190.87 A	

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PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
PANEL SCHEDULES

SHEET
E5.01

PANEL SCHEDULES

COFFMAN ENGINEERS

PANEL: **PA1**
FED FROM: SDP
LOCATION: ELEC 127
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, CORR CR-3, ELEC 127	0.54	20/1	A	20/1	0.54	RECEPTACLE, CAREER CENTER 133	2
3	FAUCET SENSOR, RECEPTACLE, BOYS 124, GIRLS 123, WAITING 102	0.59	20/1	B	20/1	0.36	RECEPTACLE, CAREER CENTER 133	4
5	RECEPTACLE/USB, CORR CR-3	1.08	20/1	C	20/1	0.36	RECEPTACLE, CAREER CENTER 133	6
7	RECEPTACLE/USB, CORR CR-3	1.08	20/1	A	20/1	1.00	ROLLER BLINDS, COMMONS 134 (FIRST FLOOR)	8
9	RECEPTACLE, STORAGE 130	0.54	20/1	B	20/1	1.00	ROLLER BLINDS, COMMONS 134 (FIRST FLOOR)	10
11	RECEPTACLE, STORAGE 130	0.36	20/1	C	20/1	0.18	(GFCI BREAKER) RECEPTACLE, COOR CR-1	12
13	RECEPTACLE, CORR CR-5	0.36	20/1	A	20/1	0.36	RECEPTACLE, SECURITY 137	14
15	OVERHEAD DOOR, OHD-3, STORAGE 130	1.18	20/1	B	20/1	0.72	RECEPTACLE, SECURITY 137	16
17	HAND DRYER, BOYS 124	0.53	20/1	C	20/1	0.36	RECEPTACLE, SECURITY 137	18
19	HAND DRYER, GIRLS 123	0.53	20/1	A	20/1	0.36	RECEPTACLE, SECURITY 137	20
21	RECEPTACLE, COMMONS 134 (FIRST FLOOR)	0.54	20/1	B	20/1	0.20	IRRIGATION CONTLR, ELEC 127	22
23	RECEPTACLE, COMMONS 134 (FIRST FLOOR), CORR CR-3, VEST 132	0.72	20/1	C	20/2	0.50	ELECTRIC WALL HEATER, EWH-3, CORR CR-3	24
25	RECEPTACLE, COMMONS 134 (FIRST FLOOR)	0.36	20/1	A	|	0.50		26
27	RECEPTACLE, COMMONS 134 (FIRST FLOOR)	0.18	20/1	B	20/2	0.50	ELECTRIC WALL HEATER, EWH-2, VEST 132	28
29	RECEPTACLE, STORAGE 130	0.18	20/1	C	|	0.50		30
31	DISPLAY WALL, STORAGE 130	0.80	20/1	A	20/1	0.10	DOOR ACCESS GATES	32
33	DISPLAY WALL, STORAGE 130	0.80	20/1	B	20/1	0.68	AIR CURTAIN, CORR CR-5	34
35	DOOR ACCESS POWER, CORR CR-3, CORR CR-5	0.20	20/1	C	20/1	0.00	SPARE	36
37	DOOR ACCESS POWER, COMMONS 134 (FIRST FLOOR), VEST 132	0.20	20/1	A	20/3	0.00	SPARE	38
39	RECEPTACLE, COMP 126	0.18	20/1	B	|	0.00		40
41	RECEPTACLE, EXTERIOR 134	0.36	20/1	C	|	0.00		42

NOTES:
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2.

TOTAL CONNECTED LOAD		
A	6.73	KVA
B	7.47	KVA
C	5.33	KVA
A	56.13	AMP
B	62.26	AMP
C	44.41	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	15.67	12.84	(50%>10)
LARGEST MOTOR	1.18	1.47	(125%)
OTHER MOTORS	0.68	0.68	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	2.00	2.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	19.53	16.99	
TOTAL CALCULATED AMPS		47.15	

COFFMAN ENGINEERS

PANEL: **PB1**
FED FROM: SDP
LOCATION: CORR 108
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, SECRETARY 101	0.54	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 113	2
3	RECEPTACLE, SECRETARY 101, WAITING 102	0.72	20/1	B	20/1	0.54	RECEPTACLE, LEARNING CENTER 113	4
5	RECEPTACLE, SECRETARY 101	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	6
7	RECEPTACLE, RECEPTACLE/USB, CORR 108, SECRETARY 101, WAITING 102, WORK ROOM 105	1.26	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	8
9	RECEPTACLE, WORK ROOM 105	0.36	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	10
11	RECEPTACLE, WORK ROOM 105	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	12
13	RECEPTACLE, STOR 104, WORK ROOM 105	0.36	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 114	14
15	RECEPTACLE, EXTERIOR 100, UNISEX 106, UNISEX 107	0.54	20/1	B	20/1	0.54	RECEPTACLE, LEARNING CENTER 114	16
17	RECEPTACLE, WORK ROOM 105	0.36	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	18
19	RECEPTACLE, OFFICE 110	0.54	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	20
21	RECEPTACLE, OFFICE 109	0.54	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	22
23	RECEPTACLE, OFFICE 111	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	24
25	REC, RECEPTACLE, CONF 112	1.26	20/1	A	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 115	26
27	RECEPTACLE, HEALTH 103	0.18	20/1	B	20/1	1.08	RECEPTACLE, RECEPTACLE/USB, COOR CR-2, STUDENT COLLABORATE 115	28
29	RECEPTACLE, HEALTH 103	0.54	20/1	C	20/1	0.72	RECEPTACLE, COOR CR-2	30
31	RECEPTACLE, OFFICE 136	0.72	20/1	A	20/2	0.50	ELECTRIC WALL HEATER, EWH-7, COOR CR-2	32
33	RECEPTACLE, SECRETARY 101	0.36	20/1	B	|	0.50		34
35	RECEPTACLE, CUST 122, UNISEX 103B, UNISEX 135	0.54	20/1	C	20/2	0.50	ELECTRIC WALL HEATER, EWH-8, STOR 116	36
37	RECEPTACLE, OFFICE 103A	0.72	20/1	A	|	0.50		38
39	DOOR ACCESS POWER, COOR CR-2, CORR 108	0.20	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE	0.36	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	14.50	KVA
B	11.32	KVA
C	11.12	KVA
A	120.83	AMP
B	94.36	AMP
C	92.69	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	32.42	21.21	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	2.52	3.15	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	2.00	2.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	36.94	26.36	
TOTAL CALCULATED AMPS		73.17	

COFFMAN ENGINEERS

PANEL: **PB2**
FED FROM: PB1
LOCATION: CORR 108
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, PRINT 121A	0.36	20/1	A	20/1	0.72	RECEPTACLE, MNFR LAB 119	2
3	RECEPTACLE, PRINT 121A	0.36	20/1	B	20/1	0.72	RECEPTACLE, MNFR LAB 119	4
5	RECEPTACLE, PRINT 121A	0.36	20/1	C	20/1	0.18	RECEPTACLE, MNFR LAB 119	6
7	RECEPTACLE, MNFR LAB 121	0.36	20/1	A	20/1	0.18	RECEPTACLE, MNFR LAB 119	8
9	RECEPTACLE, MNFR LAB 121	0.54	20/1	B	20/1	0.18	RECEPTACLE, MNFR LAB 119	10
11	RECEPTACLE, MNFR LAB 121	0.54	20/1	C	20/1	0.18	RECEPTACLE, MNFR LAB 119	12
13	RECEPTACLE, MNFR LAB 121	0.18	20/1	A	20/1	0.18	RECEPTACLE, MNFR LAB 119	14
15	RECEPTACLE, MNFR LAB 121	0.18	20/1	B	20/1	0.18	RECEPTACLE, MNFR LAB 119	16
17	RECEPTACLE, MNFR LAB 121	0.18	20/1	C	20/1	0.72	RECEPTACLE, LEARNING CENTER 118	18
19	RECEPTACLE, MNFR LAB 121	0.18	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 118	20
21	RECEPTACLE, CPU LAB 120	0.72	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	22
23	RECEPTACLE, CPU LAB 120	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	24
25	RECEPTACLE, CPU LAB 120	0.90	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	26
27	RECEPTACLE, CPU LAB 120	0.72	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	28
29	RECEPTACLE, CPU LAB 120	0.72	20/1	C	20/1	0.72	RECEPTACLE, TEACHERS 117	30
31	RECEPTACLE, CPU LAB 120	0.72	20/1	A	20/1	0.36	RECEPTACLE, TEACHERS 117, UNISEX 117B	32
33	REC, CPU LAB 120	0.72	20/1	B	20/1	0.18	RECEPTACLE, TEACHERS 117	34
35	REC, CPU LAB 120	0.72	20/1	C	20/1	0.72	RECEPTACLE, OFFICE 117A	36
37	RECEPTACLE, PRINT 121A, STOR 121B	0.36	20/1	A	20/1	0.72	REC, CPU LAB 120	38
39	RECEPTACLE, TEACHERS 117	0.54	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE, HEALTH 103	0.36	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	5.94	KVA
B	5.40	KVA
C	6.30	KVA
A	49.50	AMP
B	45.00	AMP
C	52.50	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	15.48	12.74	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	2.16	2.70	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	17.64	15.44	
TOTAL CALCULATED AMPS		42.86	

COFFMAN ENGINEERS

PANEL: **PC1**
FED FROM: SDP
LOCATION: BOYS 142
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, VEST 100	0.36	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 149	2
3	DOOR ACCESS POWER, COOR CR-1, VEST 100	0.50	20/1	B	20/1	0.72	RECEPTACLE, LEARNING CENTER 149	4
5	RECEPTACLE, OFFICE 153	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	6
7	RECEPTACLE, OFFICE 152	0.72	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	8
9	RECEPTACLE, OFFICE 151A	0.72	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	10
11	RECEPTACLE, TECH CENTER 151	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	12
13	RECEPTACLE, TECH CENTER 151	1.08	20/1	A	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 148	14
15	RECEPTACLE, TECH CENTER 151	1.08	20/1	B	20/1	1.00	DOOR ACCESS POWER, RECEPTACLE, RECEPTACLE/USB, CORR CR-4	16
17	RECEPTACLE, TECH CENTER 151	0.72	20/1	C	20/1	0.72	RECEPTACLE, OFFICE 146A	18
19	RECEPTACLE, TECH CENTER 151	0.54	20/1	A	20/1	0.72	RECEPTACLE, TEACHERS 146, UNISEX 146B	20
21	REC, TECH CENTER 151	0.72	20/1	B	20/1	0.18	RECEPTACLE, TEACHERS 146	22
23	REC, TECH CENTER 151	0.72	20/1	C	20/1	0.54	RECEPTACLE, TEACHERS 146	24
25	REC, TECH CENTER 151	0.72	20/1	A	20/1	0.36	RECEPTACLE, TEACHERS 146	26
27	RECEPTACLE, LEARNING CENTER 150	0.54	20/1	B	20/1	0.54	RECEPTACLE, LEARNING CENTER 145	28
29	RECEPTACLE, LEARNING CENTER 150	0.72	20/1	C	20/1	0.54	RECEPTACLE, LEARNING CENTER 145	30
31	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	32
33	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	34
35	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	36
37	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	38
39	RECEPTACLE, COOR CR-1, CORR CR-4	0.72	20/1	B	20/1	0.20	ADA DOOR, VEST 100	40
41	EXHAUST FAN, EF-8, UNISEX 146B	1.18	20/1	C	20/1	0.36	RECEPTACLE, TEACHERS 146	42

NOTES:
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TOTAL CONNECTED LOAD		
A	11.81	KVA
B	13.79	KVA
C	11.17	KVA
A	98.41	AMP
B	114.90	AMP
C	93.17	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	26.57	18.29	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	3.53	3.53	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	2.16	2.70	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	3.00	3.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	36.76	29.39	
TOTAL CALCULATED AMPS		81.57	

COFFMAN ENGINEERS

PANEL: **PC2**
FED FROM: PC1
LOCATION: BOYS 142
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, LEARNING CENTER 144	0.54	20/1	A	20/1	0.72	RECEPTACLE, OFFICE 133C	2
3	RECEPTACLE, LEARNING CENTER 144	0.54	20/1	B	20/2	0.50	ELECTRIC WALL HEATER, EWH-5, CORR CR-4	4
5	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	C	|	0.50		6
7	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	A	20/1	0.18	RECEPTACLE, STUDENT STORE 138	8
9	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	B	20/2	0.50	ELECTRIC WALL HEATER, EWH-4, VEST 100	10
11	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	C	|	0.50		12
13	FAUCET SENSOR, RECEPTACLE, BOYS 142, CUST 141, GIRLS 143, UNISEX 140	0.95	20/1	A	20/2	0.50	ELECTRIC WALL HEATER, EWH-6, STOR 147	14
15	HAND DRYER, BOYS 142	0.53	20/1	B	|	0.50		16
17	HAND DRYER, GIRLS 143	0.53	20/1	C	20/1	0.00	SPARE	18
19	RECEPTACLE, C.U. 139	0.54	20/1	A	20/1	0.00	SPARE	20
21	OVERHEAD GRILLE, OHG-4, C.U. 139	1.18	20/1	B	20/1	0.00	SPARE	22
23	RECEPTACLE, STUDENT STORE 138	0.54	20/1	C	20/1	0.00	SPARE	24
25	ROLLING COUNTER DOOR, RCD-1, STUDENT STORE 138	1.18	20/1	A	20/1	0.00	SPARE	26
27	RECEPTACLE, STUDENT STORE 138	0.18	20/1	B	20/1	0.00	SPARE	28
29	RECEPTACLE, STUDENT STORE 138	0.18	20/1	C	20/1	0.00	SPARE	30
31	RECEPTACLE, STUDENT STORE 138	0.18	20/1	A	20/1	0.00	SPARE	32
33	ICE MACHINE, ICE, STUDENT STORE 138	1.50	20/1	B	20/1	0.00	SPARE	34
35	RECEPTACLE, STUDENT STORE 138	0.18	20/1	C	20/1	0.00	SPARE	36
37	RECEPTACLE, STUDENT STORE 138	0.18	20/1	A	20/1	0.00	SPARE	38
39	RECEPTACLE, OFFICE 133A	0.72	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE, OFFICE 133B	0.72	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	5.15	KVA
B	6.33	KVA
C	3.51	KVA
A	42.95	AMP
B	52.76	AMP
C	29.64	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	8.13	8.13	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	2.35	2.35	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	3.00	3.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	14.98	15.36	
TOTAL CALCULATED AMPS		42.63	

COFFMAN ENGINEERS

PANEL: **PD1**
FED FROM: SDP
LOCATION: MECH MEZZ 216
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, OFFICE 205A	0.72	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 208	2
3	RECEPTACLE, TEACHERS 205, UNISEX 205B	0.54	20/1	B	20/1	0.36	RECEPTACLE, MECH MEZZ 209, UNISEX 210	4
5	RECEPTACLE, TEACHERS 205	0.18	20/1	C	20/1	0.54	RECEPTACLE, CORR CR-7	6
7	RECEPTACLE, TEACHERS 205	0.72	20/1	A	20/1	0.72	RECEPTACLE/USB, CORR CR-7	8
9	RECEPTACLE, LEARNING CENTER 206	0.54	20/1	B	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 212	10
11	RECEPTACLE, LEARNING CENTER 206	0.72	20/1	C	20/1	0.54	RECEPTACLE, LEARNING CENTER 213	12
13	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	A	20/1	0.72	RECEPTACLE, LEARNING CENTER 213	14
15	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	16
17	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	18
19	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	20
21	RECEPTACLE, LEARNING CENTER 207	0.54	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	22
23	RECEPTACLE, LEARNING CENTER 207	0.54	20/1	C	20/1	0.54	RECEPTACLE, LEARNING CENTER 214	24
25	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	A	20/1	0.72	RECEPTACLE, LEARNING CENTER 214	26
27	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	28
29	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	30
31	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	32
33	RECEPTACLE, LEARNING CENTER 208	0.54	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	34
35	RECEPTACLE, LEARNING CENTER 208	0.54	20/1	C	20/1	0.54	RECEPTACLE, TEACHERS 205	36
37	RECEPTACLE, LEARNING CENTER 208	0.18	20/1	A	20/1	0.54	RECEPTACLE, MECH MEZZ 209	38
39	RECEPTACLE, LEARNING CENTER 208	0.18	20/1	B	20/1	0.72	RECEPTACLE, MECH MEZZ 209	40
41	RECEPTACLE, LEARNING CENTER 208	0.18	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	6.30	KVA
B	6.12	KVA
C	5.40	KVA
A	52.50	AMP
B	51.00	AMP
C	45.00	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	17.82	13.91	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	17.82	13.91	
TOTAL CALCULATED AMPS		38.61	

COFFMAN ENGINEERS

PANEL: **PD2**
FED FROM: PD1
LOCATION: MECH MEZZ 216
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, LEARNING CENTER 215	0.54	20/1	A	20/1	0.00	SPARE	2
3	RECEPTACLE, LEARNING CENTER 215	0.72	20/1	B	20/1	0.00	SPARE	4
5	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	C	20/1	0.00	SPARE	6
7	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	A	20/1	0.00	SPARE	8
9	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	B	20/1	0.00	SPARE	10
11	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	C	20/1	0.00	SPARE	12
13	SPARE	0.00	20/1	A	20/1	0.00	SPARE	14
15	SPARE	0.00	20/1	B	20/1	0.00	SPARE	16
17	SPARE	0.00	20/1	C	20/1	0.00	SPARE	18
19	SPARE	0.00	20/1	A	20/1	0.00	SPARE	20
21	SPARE	0.00	20/1	B	20/1	0.00	SPARE	22
23	SPARE	0.00	20/1	C	20/1	0.00	SPARE	24
25	SPARE	0.00	20/1	A	20/1	0.00	SPARE	26
27	SPARE	0.00	20/1	B	20/1	0.00	SPARE	28
29	SPARE	0.00	20/1	C	20/1	0.00	SPARE	30
31	SPARE	0.00	20/1	A	20/1	0.00	SPARE	32
33	SPARE	0.00	20/1	B	20/1	0.00	SPARE	34
35	SPARE	0.00	20/1	C	20/1	0.00	SPARE	36
37	SPARE	0.00	20/1	A	20/1	0.00	SPARE	38
39	SPARE	0.00	20/1	B	20/1	0.00	SPARE	40
41	SPARE	0.00	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	0.72	KVA
B	0.90	KVA
C	0.36	KVA
A	6.00	AMP
B	7.50	AMP
C	3.00	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	1.98	1.98	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	1.98	1.98	
TOTAL CALCULATED AMPS		5.50	

COFFMAN ENGINEERS

PANEL: **PF1**
FED FROM: SDP
LOCATION: CHEM PREP 228
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, CHEM PREP 228, CHEM STOR 228A, HEALTH LAB 227	1.08	20/1	A	20/1	0.54	RECEPTACLE, HEALTH LAB 226, LEARNING CENTER 225	2
3	RECEPTACLE, CHEM PREP 228	0.18	20/1	B	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	4
5	RECEPTACLE, CHEM PREP 228	0.36	20/1	C	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	6
7	RECEPTACLE, HEALTH LAB 227	0.36	20/1	A	20/1	0.72	RECEPTACLE, LEARNING CENTER 225	8
9	RECEPTACLE, HEALTH LAB 227	0.72	20/1	B	20/1	0.72	RECEPTACLE, LEARNING CENTER 225	10
11	RECEPTACLE, HEALTH LAB 227	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 225	12
13	RECEPTACLE, HEALTH LAB 227	0.72	20/1	A	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	14
15	RECEPTACLE, HEALTH LAB 227	0.36	20/1	B	20/1	0.18	RECEPTACLE, TEACHERS 222	16
17	RECEPTACLE, HEALTH LAB 227	0.18	20/1	C	20/1	0.18	(GFCI BREAKER) RECEPTACLE, TEACHERS 222	18
19	RECEPTACLE, HEALTH LAB 227	0.18	20/1	A	20/1	0.72	RECEPTACLE, TEACHERS 222	20
21	RECEPTACLE, HEALTH LAB 227	0.18	20/1	B	20/1	0.72	RECEPTACLE, OFFICE 222A	22
23	RECEPTACLE, HEALTH LAB 227	0.18	20/1	C	20/1	0.72	RECEPTACLE/USB, CORR CR-8, STUDENT COLLABORATE 221	24
25	RECEPTACLE, HEALTH LAB 227	0.18	20/1	A	20/1	0.72	RECEPTACLE, CORR CR-8	26
27	RECEPTACLE, HEALTH LAB 227	0.18	20/1	B	20/1	0.54	RECEPTACLE, TEACHERS 222	28
29	RECEPTACLE, HEALTH LAB 226	0.36	20/1	C	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	30
31	RECEPTACLE, HEALTH LAB 226	0.72	20/1	A	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	32
33	RECEPTACLE, HEALTH LAB 226	0.72	20/1	B	20/1	0.00	SPARE	34
35	RECEPTACLE, HEALTH LAB 226	0.72	20/1	C	20/1	0.00	SPARE	36
37	RECEPTACLE, HEALTH LAB 226	0.36	20/1	A	20/1	0.00	SPARE	38
39	RECEPTACLE, HEALTH LAB 226	0.36	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE, HEALTH LAB 226	0.36	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	11.88	KVA
B	10.98	KVA
C	10.86	KVA
A	99.00	AMP
B	91.50	AMP
C	90.50	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	28.98	19.49	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	3.24	4.05	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	33.72	25.42	
TOTAL CALCULATED AMPS		70.54	

COFFMAN ENGINEERS

PANEL: **PF2**
FED FROM: PF1
LOCATION: CHEM PREP 228
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, BOYS 204, CUST 202, GIRLS 203	0.54	20/1	A	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 221	2
3	RECEPTACLE, LEARNING CENTER 218	0.54	20/1	B	20/1	0.54	RECEPTACLE, ESPORT 217	4
5	RECEPTACLE, LEARNING CENTER 218	0.54	20/1	C	20/1	0.36	RECEPTACLE, ESPORT 217	6
7	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	A	20/1	0.36	RECEPTACLE, ESPORT 217	8
9	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	B	20/1	0.72	REC, ESPORT 217	10
11	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	C	20/1	0.72	REC, ESPORT 217	12
13	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	A	20/1	0.72	REC, ESPORT 217	14
15	RECEPTACLE, LEARNING CENTER 219	0.54	20/1	B	20/1	0.72	REC, ESPORT 217	16
17	RECEPTACLE, LEARNING CENTER 219	0.36	20/1	C	20/1	0.72	REC, RECEPTACLE, ESPORT 217	18
19	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	A	20/1	0.90	RECEPTACLE, ESPORT 217	20
21	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	B	20/1	0.54	RECEPTACLE, ESPORT 217	22
23	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	C	20/1	0.36	RECEPTACLE/USB, CORR CR-6	24
25	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	A	20/1	0.36	RECEPTACLE/USB, CORR CR-6	26
27	RECEPTACLE, LEARNING CENTER 220	0.54	20/1	B	20/1	0.36	RECEPTACLE/USB, CORR CR-6	28
29	RECEPTACLE, LEARNING CENTER 220	0.54	20/1	C	20/1	0.54	RECEPTACLE, IDF 201	30
31	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	A	20/1	0.18	RECEPTACLE, IDF 201	32
33	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	B	20/1	0.72	RECEPTACLE, ESPORT 217	34
35	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	C	20/1	1.50	DISHWASHER, DW, CHEM PREP 228	36
37	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	A	20/1	0.00	SPARE	38
39	SPARE	0.00	20/1	B	20/1	0.00	SPARE	40
41	SPARE	0.00	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	4.86	KVA
B	5.76	KVA
C	6.18	KVA
A	40.50	AMP
B	48.00	AMP
C	51.50	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	12.06	11.03	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	3.24	4.05	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	16.80	16.96	
TOTAL CALCULATED AMPS		47.06	

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PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
PANEL SCHEDULES

SHEET
E5.02

PANEL SCHEDULES

COFFMAN ENGINEERS

PANEL: PA1

FED FROM: SDP
LOCATION: ELEC 127
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, CORR CR-3, ELEC 127	0.54	20/1	A	20/1	0.54	RECEPTACLE, CAREER CENTER 133	2
3	FAUCET SENSOR, RECEPTACLE, BOYS 124, GIRLS 123, WAITING 102	0.59	20/1	B	20/1	0.36	RECEPTACLE, CAREER CENTER 133	4
5	RECEPTACLE/USB, CORR CR-3	1.08	20/1	C	20/1	0.36	RECEPTACLE, CAREER CENTER 133	6
7	RECEPTACLE/USB, CORR CR-3	1.08	20/1	A	20/1	1.00	ROLLER BLINDS, COMMONS 134 (FIRST FLOOR)	8
9	RECEPTACLE, STORAGE 130	0.54	20/1	B	20/1	1.00	ROLLER BLINDS, COMMONS 134 (FIRST FLOOR)	10
11	RECEPTACLE, STORAGE 130	0.36	20/1	C	20/1	0.18	(GFCI BREAKER) RECEPTACLE, COOR CR-1	12
13	RECEPTACLE, CORR CR-5	0.36	20/1	A	20/1	0.36	RECEPTACLE, SECURITY 137	14
15	OVERHEAD DOOR, OHD-3, STORAGE 130	1.18	20/1	B	20/1	0.72	RECEPTACLE, SECURITY 137	16
17	HAND DRYER, BOYS 124	0.53	20/1	C	20/1	0.36	RECEPTACLE, SECURITY 137	18
19	HAND DRYER, GIRLS 123	0.53	20/1	A	20/1	0.36	RECEPTACLE, SECURITY 137	20
21	RECEPTACLE, COMMONS 134 (FIRST FLOOR)	0.54	20/1	B	20/1	0.20	IRRIGATION CONTLR, ELEC 127	22
23	RECEPTACLE, COMMONS 134 (FIRST FLOOR), CORR CR-3, VEST 132	0.72	20/1	C	20/2	0.50	ELECTRIC WALL HEATER, EWH-3, CORR CR-3	24
25	RECEPTACLE, COMMONS 134 (FIRST FLOOR)	0.36	20/1	A	|	0.50		26
27	RECEPTACLE, COMMONS 134 (FIRST FLOOR)	0.18	20/1	B	20/2	0.50	ELECTRIC WALL HEATER, EWH-2, VEST 132	28
29	RECEPTACLE, STORAGE 130	0.18	20/1	C	|	0.50		30
31	DISPLAY WALL, STORAGE 130	0.80	20/1	A	20/1	0.10	DOOR ACCESS GATES	32
33	DISPLAY WALL, STORAGE 130	0.80	20/1	B	20/1	0.68	AIR CURTAIN, CORR CR-5	34
35	DOOR ACCESS POWER, CORR CR-3, CORR CR-5	0.20	20/1	C	20/1	0.00	SPARE	36
37	DOOR ACCESS POWER, COMMONS 134 (FIRST FLOOR), VEST 132	0.20	20/1	A	20/3	0.00	SPARE	38
39	RECEPTACLE, COMP 126	0.18	20/1	B	|	0.00		40
41	RECEPTACLE, EXTERIOR 134	0.36	20/1	C	|	0.00		42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	6.73	KVA
B	7.47	KVA
C	5.33	KVA
A	56.13	AMP
B	62.26	AMP
C	44.41	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	15.67	12.84	(50%>10)
LARGEST MOTOR	1.18	1.47	(125%)
OTHER MOTORS	0.68	0.68	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	2.00	2.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	19.53	16.99	
TOTAL CALCULATED AMPS		47.15	

COFFMAN ENGINEERS

PANEL: PB1

FED FROM: SDP
LOCATION: CORR 108
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, SECRETARY 101	0.54	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 113	2
3	RECEPTACLE, SECRETARY 101, WAITING 102	0.72	20/1	B	20/1	0.54	RECEPTACLE, LEARNING CENTER 113	4
5	RECEPTACLE, SECRETARY 101	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	6
7	RECEPTACLE, RECEPTACLE/USB, CORR 108, SECRETARY 101, WAITING 102, WORK ROOM 105	1.26	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	8
9	RECEPTACLE, WORK ROOM 105	0.36	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	10
11	RECEPTACLE, WORK ROOM 105	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 113	12
13	RECEPTACLE, STOR 104, WORK ROOM 105	0.36	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 114	14
15	RECEPTACLE, EXTERIOR 100, UNISEX 106, UNISEX 107	0.54	20/1	B	20/1	0.54	RECEPTACLE, LEARNING CENTER 114	16
17	RECEPTACLE, WORK ROOM 105	0.36	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	18
19	RECEPTACLE, OFFICE 110	0.54	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	20
21	RECEPTACLE, OFFICE 109	0.54	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	22
23	RECEPTACLE, OFFICE 111	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 114	24
25	REC, RECEPTACLE, CONF 112	1.26	20/1	A	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 115	26
27	RECEPTACLE, HEALTH 103	0.18	20/1	B	20/1	1.08	RECEPTACLE, RECEPTACLE/USB, COOR CR-2, STUDENT COLLABORATE 115	28
29	RECEPTACLE, HEALTH 103	0.54	20/1	C	20/1	0.72	RECEPTACLE, COOR CR-2	30
31	RECEPTACLE, OFFICE 136	0.72	20/1	A	20/2	0.50	ELECTRIC WALL HEATER, EWH-7, COOR CR-2	32
33	RECEPTACLE, SECRETARY 101	0.36	20/1	B	|	0.50		34
35	RECEPTACLE, CUST 122, UNISEX 103B, UNISEX 135	0.54	20/1	C	20/2	0.50	ELECTRIC WALL HEATER, EWH-8, STOR 116	36
37	RECEPTACLE, OFFICE 103A	0.72	20/1	A	|	0.50		38
39	DOOR ACCESS POWER, COOR CR-2, CORR 108	0.20	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE	0.36	20/1	C	20/1	0.00	SPARE	42

NOTES:
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2.

TOTAL CONNECTED LOAD		
A	14.50	KVA
B	11.32	KVA
C	11.12	KVA
A	120.83	AMP
B	94.36	AMP
C	92.69	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	32.42	21.21	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	2.52	3.15	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	2.00	2.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	36.94	26.36	
TOTAL CALCULATED AMPS		73.17	

COFFMAN ENGINEERS

PANEL: PB2

FED FROM: PB1
LOCATION: CORR 108
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, PRINT 121A	0.36	20/1	A	20/1	0.72	RECEPTACLE, MNFR LAB 119	2
3	RECEPTACLE, PRINT 121A	0.36	20/1	B	20/1	0.72	RECEPTACLE, MNFR LAB 119	4
5	RECEPTACLE, PRINT 121A	0.36	20/1	C	20/1	0.18	RECEPTACLE, MNFR LAB 119	6
7	RECEPTACLE, MNFR LAB 121	0.36	20/1	A	20/1	0.18	RECEPTACLE, MNFR LAB 119	8
9	RECEPTACLE, MNFR LAB 121	0.54	20/1	B	20/1	0.18	RECEPTACLE, MNFR LAB 119	10
11	RECEPTACLE, MNFR LAB 121	0.54	20/1	C	20/1	0.18	RECEPTACLE, MNFR LAB 119	12
13	RECEPTACLE, MNFR LAB 121	0.18	20/1	A	20/1	0.18	RECEPTACLE, MNFR LAB 119	14
15	RECEPTACLE, MNFR LAB 121	0.18	20/1	B	20/1	0.18	RECEPTACLE, MNFR LAB 119	16
17	RECEPTACLE, MNFR LAB 121	0.18	20/1	C	20/1	0.72	RECEPTACLE, LEARNING CENTER 118	18
19	RECEPTACLE, MNFR LAB 121	0.18	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 118	20
21	RECEPTACLE, CPU LAB 120	0.72	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	22
23	RECEPTACLE, CPU LAB 120	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	24
25	RECEPTACLE, CPU LAB 120	0.90	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	26
27	RECEPTACLE, CPU LAB 120	0.72	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 118	28
29	RECEPTACLE, CPU LAB 120	0.72	20/1	C	20/1	0.72	RECEPTACLE, TEACHERS 117	30
31	RECEPTACLE, CPU LAB 120	0.72	20/1	A	20/1	0.36	RECEPTACLE, TEACHERS 117, UNISEX 117B	32
33	REC, CPU LAB 120	0.72	20/1	B	20/1	0.18	RECEPTACLE, TEACHERS 117	34
35	REC, CPU LAB 120	0.72	20/1	C	20/1	0.72	RECEPTACLE, OFFICE 117A	36
37	RECEPTACLE, PRINT 121A, STOR 121B	0.36	20/1	A	20/1	0.72	REC, CPU LAB 120	38
39	RECEPTACLE, TEACHERS 117	0.54	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE, HEALTH 103	0.36	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	5.94	KVA
B	5.40	KVA
C	6.30	KVA
A	49.50	AMP
B	45.00	AMP
C	52.50	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	15.48	12.74	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	2.16	2.70	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	17.64	15.44	
TOTAL CALCULATED AMPS		42.86	

COFFMAN ENGINEERS

PANEL: PC1

FED FROM: SDP
LOCATION: BOYS 142
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, VEST 100	0.36	20/1	A	20/1	0.54	RECEPTACLE, LEARNING CENTER 149	2
3	DOOR ACCESS POWER, COOR CR-1, VEST 100	0.50	20/1	B	20/1	0.72	RECEPTACLE, LEARNING CENTER 149	4
5	RECEPTACLE, OFFICE 153	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	6
7	RECEPTACLE, OFFICE 152	0.72	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	8
9	RECEPTACLE, OFFICE 151A	0.72	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	10
11	RECEPTACLE, TECH CENTER 151	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 149	12
13	RECEPTACLE, TECH CENTER 151	1.08	20/1	A	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 148	14
15	RECEPTACLE, TECH CENTER 151	1.08	20/1	B	20/1	1.00	DOOR ACCESS POWER, RECEPTACLE, RECEPTACLE/USB, CORR CR-4	16
17	RECEPTACLE, TECH CENTER 151	0.72	20/1	C	20/1	0.72	RECEPTACLE, OFFICE 146A	18
19	RECEPTACLE, TECH CENTER 151	0.54	20/1	A	20/1	0.72	RECEPTACLE, TEACHERS 146, UNISEX 146B	20
21	REC, TECH CENTER 151	0.72	20/1	B	20/1	0.18	RECEPTACLE, TEACHERS 146	22
23	REC, TECH CENTER 151	0.72	20/1	C	20/1	0.54	RECEPTACLE, TEACHERS 146	24
25	REC, TECH CENTER 151	0.72	20/1	A	20/1	0.36	RECEPTACLE, TEACHERS 146	26
27	RECEPTACLE, LEARNING CENTER 150	0.54	20/1	B	20/1	0.54	RECEPTACLE, LEARNING CENTER 145	28
29	RECEPTACLE, LEARNING CENTER 150	0.72	20/1	C	20/1	0.54	RECEPTACLE, LEARNING CENTER 145	30
31	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	32
33	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	34
35	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	36
37	RECEPTACLE, LEARNING CENTER 150	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 145	38
39	RECEPTACLE, COOR CR-1, CORR CR-4	0.72	20/1	B	20/1	0.20	ADA DOOR, VEST 100	40
41	EXHAUST FAN, EF-8, UNISEX 146B	1.18	20/1	C	20/1	0.36	RECEPTACLE, TEACHERS 146	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	11.81	KVA
B	13.79	KVA
C	11.17	KVA
A	98.41	AMP
B	114.90	AMP
C	93.17	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	26.57	18.29	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	3.53	3.53	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	2.16	2.70	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	3.00	3.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	36.76	29.39	
TOTAL CALCULATED AMPS		81.57	

COFFMAN ENGINEERS

PANEL: PC2

FED FROM: PC1
LOCATION: BOYS 142
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, LEARNING CENTER 144	0.54	20/1	A	20/1	0.72	RECEPTACLE, OFFICE 133C	2
3	RECEPTACLE, LEARNING CENTER 144	0.54	20/1	B	20/2	0.50	ELECTRIC WALL HEATER, EWH-5, CORR CR-4	4
5	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	C	|	0.50		6
7	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	A	20/1	0.18	RECEPTACLE, STUDENT STORE 138	8
9	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	B	20/2	0.50	ELECTRIC WALL HEATER, EWH-4, VEST 100	10
11	RECEPTACLE, LEARNING CENTER 144	0.18	20/1	C	|	0.50		12
13	FAUCET SENSOR, RECEPTACLE, BOYS 142, CUST 141, GIRLS 143, UNISEX 140	0.95	20/1	A	20/2	0.50	ELECTRIC WALL HEATER, EWH-6, STOR 147	14
15	HAND DRYER, BOYS 142	0.53	20/1	B	|	0.50		16
17	HAND DRYER, GIRLS 143	0.53	20/1	C	20/1	0.00	SPARE	18
19	RECEPTACLE, C.U. 139	0.54	20/1	A	20/1	0.00	SPARE	20
21	OVERHEAD GRILLE, OHG-4, C.U. 139	1.18	20/1	B	20/1	0.00	SPARE	22
23	RECEPTACLE, STUDENT STORE 138	0.54	20/1	C	20/1	0.00	SPARE	24
25	ROLLING COUNTER DOOR, RCD-1, STUDENT STORE 138	1.18	20/1	A	20/1	0.00	SPARE	26
27	RECEPTACLE, STUDENT STORE 138	0.18	20/1	B	20/1	0.00	SPARE	28
29	RECEPTACLE, STUDENT STORE 138	0.18	20/1	C	20/1	0.00	SPARE	30
31	RECEPTACLE, STUDENT STORE 138	0.18	20/1	A	20/1	0.00	SPARE	32
33	ICE MACHINE, ICE, STUDENT STORE 138	1.50	20/1	B	20/1	0.00	SPARE	34
35	RECEPTACLE, STUDENT STORE 138	0.18	20/1	C	20/1	0.00	SPARE	36
37	RECEPTACLE, STUDENT STORE 138	0.18	20/1	A	20/1	0.00	SPARE	38
39	RECEPTACLE, OFFICE 133A	0.72	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE, OFFICE 133B	0.72	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	5.15	KVA
B	6.33	KVA
C	3.51	KVA
A	42.95	AMP
B	52.76	AMP
C	29.64	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	8.13	8.13	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	2.35	2.35	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	3.00	3.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	14.98	15.36	
TOTAL CALCULATED AMPS		42.63	

COFFMAN ENGINEERS

PANEL: PD1

FED FROM: SDP
LOCATION: MECH MEZZ 216
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, OFFICE 205A	0.72	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 208	2
3	RECEPTACLE, TEACHERS 205, UNISEX 205B	0.54	20/1	B	20/1	0.36	RECEPTACLE, MECH MEZZ 209, UNISEX 210	4
5	RECEPTACLE, TEACHERS 205	0.18	20/1	C	20/1	0.54	RECEPTACLE, CORR CR-7	6
7	RECEPTACLE, TEACHERS 205	0.72	20/1	A	20/1	0.72	RECEPTACLE/USB, CORR CR-7	8
9	RECEPTACLE, LEARNING CENTER 206	0.54	20/1	B	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 212	10
11	RECEPTACLE, LEARNING CENTER 206	0.72	20/1	C	20/1	0.54	RECEPTACLE, LEARNING CENTER 213	12
13	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	A	20/1	0.72	RECEPTACLE, LEARNING CENTER 213	14
15	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	16
17	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	18
19	RECEPTACLE, LEARNING CENTER 206	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	20
21	RECEPTACLE, LEARNING CENTER 207	0.54	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 213	22
23	RECEPTACLE, LEARNING CENTER 207	0.54	20/1	C	20/1	0.54	RECEPTACLE, LEARNING CENTER 214	24
25	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	A	20/1	0.72	RECEPTACLE, LEARNING CENTER 214	26
27	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	28
29	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	30
31	RECEPTACLE, LEARNING CENTER 207	0.18	20/1	A	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	32
33	RECEPTACLE, LEARNING CENTER 208	0.54	20/1	B	20/1	0.18	RECEPTACLE, LEARNING CENTER 214	34
35	RECEPTACLE, LEARNING CENTER 208	0.54	20/1	C	20/1	0.54	RECEPTACLE, TEACHERS 205	36
37	RECEPTACLE, LEARNING CENTER 208	0.18	20/1	A	20/1	0.54	RECEPTACLE, MECH MEZZ 209	38
39	RECEPTACLE, LEARNING CENTER 208	0.18	20/1	B	20/1	0.72	RECEPTACLE, MECH MEZZ 209	40
41	RECEPTACLE, LEARNING CENTER 208	0.18	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	6.30	KVA
B	6.12	KVA
C	5.40	KVA
A	52.50	AMP
B	51.00	AMP
C	45.00	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	17.82	13.91	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	17.82	13.91	
TOTAL CALCULATED AMPS		38.61	

COFFMAN ENGINEERS

PANEL: PD2

FED FROM: PD1
LOCATION: MECH MEZZ 216
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, LEARNING CENTER 215	0.54	20/1	A	20/1	0.00	SPARE	2
3	RECEPTACLE, LEARNING CENTER 215	0.72	20/1	B	20/1	0.00	SPARE	4
5	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	C	20/1	0.00	SPARE	6
7	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	A	20/1	0.00	SPARE	8
9	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	B	20/1	0.00	SPARE	10
11	RECEPTACLE, LEARNING CENTER 215	0.18	20/1	C	20/1	0.00	SPARE	12
13	SPARE	0.00	20/1	A	20/1	0.00	SPARE	14
15	SPARE	0.00	20/1	B	20/1	0.00	SPARE	16
17	SPARE	0.00	20/1	C	20/1	0.00	SPARE	18
19	SPARE	0.00	20/1	A	20/1	0.00	SPARE	20
21	SPARE	0.00	20/1	B	20/1	0.00	SPARE	22
23	SPARE	0.00	20/1	C	20/1	0.00	SPARE	24
25	SPARE	0.00	20/1	A	20/1	0.00	SPARE	26
27	SPARE	0.00	20/1	B	20/1	0.00	SPARE	28
29	SPARE	0.00	20/1	C	20/1	0.00	SPARE	30
31	SPARE	0.00	20/1	A	20/1	0.00	SPARE	32
33	SPARE	0.00	20/1	B	20/1	0.00	SPARE	34
35	SPARE	0.00	20/1	C	20/1	0.00	SPARE	36
37	SPARE	0.00	20/1	A	20/1	0.00	SPARE	38
39	SPARE	0.00	20/1	B	20/1	0.00	SPARE	40
41	SPARE	0.00	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	0.72	KVA
B	0.90	KVA
C	0.36	KVA
A	6.00	AMP
B	7.50	AMP
C	3.00	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	1.98	1.98	(50%>10)
LARGEST MOTOR	0.00	0.00	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	0.00	0.00	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	1.98	1.98	
TOTAL CALCULATED AMPS		5.50	

COFFMAN ENGINEERS

PANEL: PF1

FED FROM: SDP
LOCATION: CHEM PREP 228
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: FEEDTHRU

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, CHEM PREP 228, CHEM STOR 228A, HEALTH LAB 227	1.08	20/1	A	20/1	0.54	RECEPTACLE, HEALTH LAB 226, LEARNING CENTER 225	2
3	RECEPTACLE, CHEM PREP 228	0.18	20/1	B	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	4
5	RECEPTACLE, CHEM PREP 228	0.36	20/1	C	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	6
7	RECEPTACLE, HEALTH LAB 227	0.36	20/1	A	20/1	0.72	RECEPTACLE, LEARNING CENTER 225	8
9	RECEPTACLE, HEALTH LAB 227	0.72	20/1	B	20/1	0.72	RECEPTACLE, LEARNING CENTER 225	10
11	RECEPTACLE, HEALTH LAB 227	0.72	20/1	C	20/1	0.18	RECEPTACLE, LEARNING CENTER 225	12
13	RECEPTACLE, HEALTH LAB 227	0.72	20/1	A	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	14
15	RECEPTACLE, HEALTH LAB 227	0.36	20/1	B	20/1	0.18	RECEPTACLE, TEACHERS 222	16
17	RECEPTACLE, HEALTH LAB 227	0.18	20/1	C	20/1	0.18	(GFCI BREAKER) RECEPTACLE, TEACHERS 222	18
19	RECEPTACLE, HEALTH LAB 227	0.18	20/1	A	20/1	0.72	RECEPTACLE, TEACHERS 222	20
21	RECEPTACLE, HEALTH LAB 227	0.18	20/1	B	20/1	0.72	RECEPTACLE, OFFICE 222A	22
23	RECEPTACLE, HEALTH LAB 227	0.18	20/1	C	20/1	0.72	RECEPTACLE/USB, CORR CR-8, STUDENT COLLABORATE 221	24
25	RECEPTACLE, HEALTH LAB 227	0.18	20/1	A	20/1	0.72	RECEPTACLE, CORR CR-8	26
27	RECEPTACLE, HEALTH LAB 227	0.18	20/1	B	20/1	0.54	RECEPTACLE, TEACHERS 222	28
29	RECEPTACLE, HEALTH LAB 226	0.36	20/1	C	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	30
31	RECEPTACLE, HEALTH LAB 226	0.72	20/1	A	20/1	0.36	RECEPTACLE, LEARNING CENTER 225	32
33	RECEPTACLE, HEALTH LAB 226	0.72	20/1	B	20/1	0.00	SPARE	34
35	RECEPTACLE, HEALTH LAB 226	0.72	20/1	C	20/1	0.00	SPARE	36
37	RECEPTACLE, HEALTH LAB 226	0.36	20/1	A	20/1	0.00	SPARE	38
39	RECEPTACLE, HEALTH LAB 226	0.36	20/1	B	20/1	0.00	SPARE	40
41	RECEPTACLE, HEALTH LAB 226	0.36	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	11.88	KVA
B	10.98	KVA
C	10.86	KVA
A	99.00	AMP
B	91.50	AMP
C	90.50	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	28.98	19.49	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	3.24	4.05	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	33.72	25.42	
TOTAL CALCULATED AMPS		70.54	

COFFMAN ENGINEERS

PANEL: PF2

FED FROM: PF1
LOCATION: CHEM PREP 228
BUS AMPS: 225 | MAIN OCPD: MLO | MOUNTING: FLUSH | AIC: 22,000
VOLTS: 208Y/120V 3P 4W | NEUTRAL: 100% | LUGS: STANDARD

CCT NO.	CIRCUIT DESCRIPTION	KVA LOAD	CCT OCPD		CCT OCPD	KVA LOAD	CIRCUIT DESCRIPTION	CCT NO.
1	RECEPTACLE, BOYS 204, CUST 202, GIRLS 203	0.54	20/1	A	20/1	0.72	RECEPTACLE, STUDENT COLLABORATE 221	2
3	RECEPTACLE, LEARNING CENTER 218	0.54	20/1	B	20/1	0.54	RECEPTACLE, ESPORT 217	4
5	RECEPTACLE, LEARNING CENTER 218	0.54	20/1	C	20/1	0.36	RECEPTACLE, ESPORT 217	6
7	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	A	20/1	0.36	RECEPTACLE, ESPORT 217	8
9	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	B	20/1	0.72	REC, ESPORT 217	10
11	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	C	20/1	0.72	REC, ESPORT 217	12
13	RECEPTACLE, LEARNING CENTER 218	0.18	20/1	A	20/1	0.72	REC, ESPORT 217	14
15	RECEPTACLE, LEARNING CENTER 219	0.54	20/1	B	20/1	0.72	REC, ESPORT 217	16
17	RECEPTACLE, LEARNING CENTER 219	0.36	20/1	C	20/1	0.72	REC, RECEPTACLE, ESPORT 217	18
19	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	A	20/1	0.90	RECEPTACLE, ESPORT 217	20
21	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	B	20/1	0.54	RECEPTACLE, ESPORT 217	22
23	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	C	20/1	0.36	RECEPTACLE/USB, CORR CR-6	24
25	RECEPTACLE, LEARNING CENTER 219	0.18	20/1	A	20/1	0.36	RECEPTACLE/USB, CORR CR-6	26
27	RECEPTACLE, LEARNING CENTER 220	0.54	20/1	B	20/1	0.36	RECEPTACLE/USB, CORR CR-6	28
29	RECEPTACLE, LEARNING CENTER 220	0.54	20/1	C	20/1	0.54	RECEPTACLE, IDF 201	30
31	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	A	20/1	0.18	RECEPTACLE, IDF 201	32
33	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	B	20/1	0.72	RECEPTACLE, ESPORT 217	34
35	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	C	20/1	1.50	DISHWASHER, DW, CHEM PREP 228	36
37	RECEPTACLE, LEARNING CENTER 220	0.18	20/1	A	20/1	0.00	SPARE	38
39	SPARE	0.00	20/1	B	20/1	0.00	SPARE	40
41	SPARE	0.00	20/1	C	20/1	0.00	SPARE	42

NOTES:
1.
2.

TOTAL CONNECTED LOAD		
A	4.86	KVA
B	5.76	KVA
C	6.18	KVA
A	40.50	AMP
B	48.00	AMP
C	51.50	AMP

	CONN. KVA	CALC. KVA	
LIGHTING	0.00	0.00	(125%)
RECEPTACLES	12.06	11.03	(50%>10)
LARGEST MOTOR	1.50	1.88	(125%)
OTHER MOTORS	0.00	0.00	(100%)
KITCHEN EQUIP	0.00	0.00	(N/A)
CONTINUOUS	3.24	4.05	(125%)
NONCONTINUOUS	0.00	0.00	(100%)
HEATING	0.00	0.00	(100%)
NONCOIN/DIVERSE	0.00	0.00	(N/A)
COMPUTER	0.00	0.00	(100%)
METERED DEMAND	0.00	0.00	(125%)
TOTAL KVA	16.80	16.96	
TOTAL CALCULATED AMPS		47.06	

DESIGN WEST
ARCHITECTS, P.A.
• MERIDIAN, IDAHO • PULLMAN, WASHINGTON •
• KENNEWICK, WASHINGTON • ONTARIO OREGON •
• SPOKANE, WASHINGTON
www.designwestpa.com

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ORION HIGH SCHOOL

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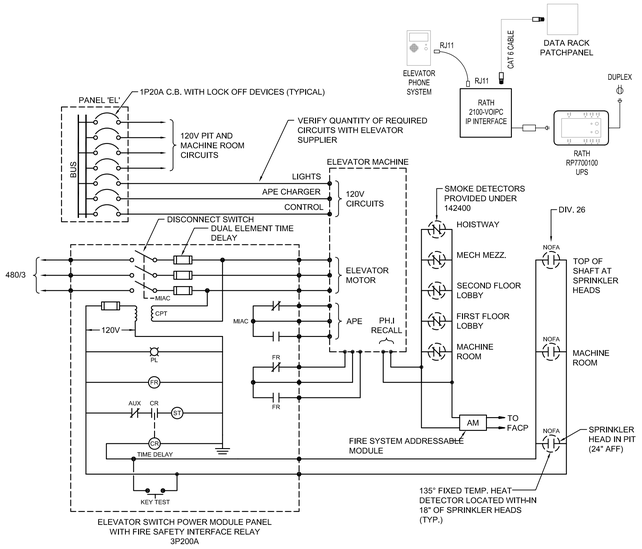
DATE
12/18/2023

SHEET NAME
PANEL SCHEDULES

SHEET
E5.03



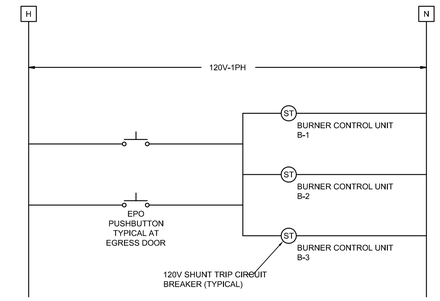
ELEVATOR NOTES:

1. MAINTAIN A 7'-0" CLEARANCE IN THE ELEVATOR MACHINE ROOM. CONDUIT MAY BE INSTALLED IN THE UPPER SPACE OF THE ELEVATOR MACHINE ROOM AS LONG AS THEY ARE INSTALLED ABOVE THE REQUIRED SEVEN-FOOT CLEARANCE AND THEY DO NOT INTERFERE WITH THE ELEVATOR EQUIPMENT WHICH ALSO MUST BE INSTALLED TO ALLOW A SEVEN-FOOT HEAD CLEARANCE.
2. PROVIDE ROUGH-IN BOXES AND CONDUIT FOR AN EMERGENCY 2-WAY COMMUNICATION SYSTEM BETWEEN THE ELEVATOR CAB AND A DESIGNATED POINT OUTSIDE OF THE HOISTWAY. THE ELECTRICAL CONTRACTOR SHALL VERIFY THESE REQUIREMENTS WITH THE ELEVATOR CONTRACTOR PRIOR TO ROUGH-IN.
3. PRIOR TO ROUGH-IN, THE ELECTRICAL CONTRACTOR SHALL OBTAIN COPIES OF THE APPROVED ELEVATOR SUBMITTALS FROM THE ARCHITECT TO VERIFY ALL ELECTRICAL REQUIREMENTS. IN THE EVENT OF DISCREPANCIES, IMMEDIATELY NOTIFY THE ARCHITECT AND/OR ENGINEER.
4. ALL DISCONNECTS, CIRCUIT BREAKERS, ETC. FOR ELEVATOR CIRCUITS ARE TO HAVE LOCKOUT DEVICES. COORDINATE EXACT LOCATION OF ELEVATOR MACHINE ROOM DISCONNECTS AND ELEVATOR SWITCH PANEL WITHIN THE MACHINE ROOM WITH THE ELEVATOR SUPPLIER.
5. PROVIDE DUAL ELEMENT, TIME DELAY FUSES FOR THE ELEVATOR DISCONNECT. VERIFY FUSE SIZE REQUIRED WITH THE ELEVATOR MANUFACTURE SHOP DRAWING SUBMITTALS.
6. BASIS OF DESIGN: BUSSMANN POWER MODULE SWITCH. CIRCUITING BASED ON SCHINDLER HYDRAULIC ELEVATOR.
7. SEE DIVISION 142400 SPECIFICATION FOR ADDITIONAL ELECTRICAL WORK INFORMATION.
8. SEE WAC 296-96-2566

LEGEND:

NOFA - NORMALLY OPEN FIRE ALARM CONTACTS SUPPLIED FROM THE DIVISION 14 SMOKE DETECTORS TO INITIATE THE SHUNT TRIP
ST - SOLENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE DIVISION 14 SMOKE DETECTORS CONTACTS OR KEY TEST SWITCH.
CR - CONTROL RELAY USED TO ISOLATE THE NOFA CONTACTS FROM THE DUTY OF THE SHUNT TRIP.
FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR PRESENCE OF VOLTAGE IN SWITCH FROM ELEVATOR CONTROL PANEL
PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.
CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.
AUX. - NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.
KEY TEST -KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. USED FOR TROUBLE-SHOOTING AND INSPECTION.
MAIC - MECHANICALLY INTERLOCKED AUXILIARY CONTACT USED TO DISCONNECT SECONDARY SOURCE OF POWER
APE - ANTI-PERSONEL ENTRAPMENT
PMS - POWER MODULE SWITCH

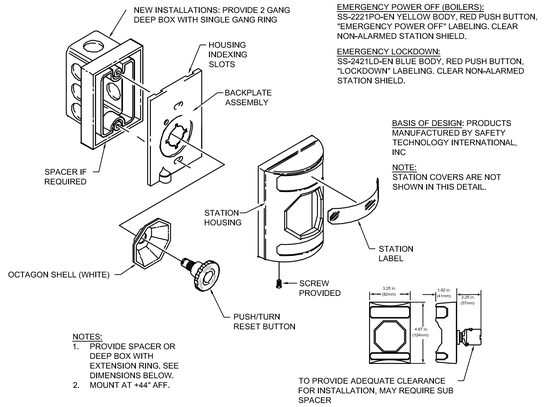
C ELEVATOR CONNECTION DIAGRAM
NOT TO SCALE



NOTES:

1. EMERGENCY POWER OFF (EPO) PUSHBUTTON: EQUAL TO; SAFETY TECHNOLOGY INTERNATIONAL (STI) MODEL SS-2222-PO.
2. PROVIDE RED PHENOLIC NAMEPLATE PERMANENTLY ATTACHED TO WALL ABOVE PUSHBUTTON WHICH READS "EMERGENCY BOILER SHUT OFF"
3. PUSHING THE EPO PUSHBUTTON WILL OPERATE SHUNT TRIP UNITS ON CIRCUIT BREAKER SERVING THE BURNER CONTROL POWER, FOR ALL BOILERS.

B EMERGENCY POWER OFF (EPO) DETAIL
NOT TO SCALE



EMERGENCY POWER OFF (BOILERS):
SS-2221PO-EN YELLOW BODY, RED PUSH BUTTON, "EMERGENCY POWER OFF" LABELING. CLEAR NON-ALARMED STATION SHIELD.

EMERGENCY LOCKDOWN:
SS-2421LD-EN BLUE BODY, RED PUSH BUTTON, "LOCKDOWN" LABELING. CLEAR NON-ALARMED STATION SHIELD.

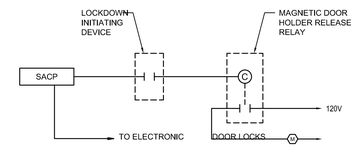
BASIS OF DESIGN: PRODUCTS MANUFACTURED BY SAFETY TECHNOLOGY INTERNATIONAL, INC

NOTE:
STATION COVERS ARE NOT SHOWN IN THIS DETAIL.

NOTES:

1. PROVIDE SPACER OR DEEP BOX WITH EXTENSION RING. SEE DIMENSIONS BELOW.
2. MOUNT AT +44" AFF.

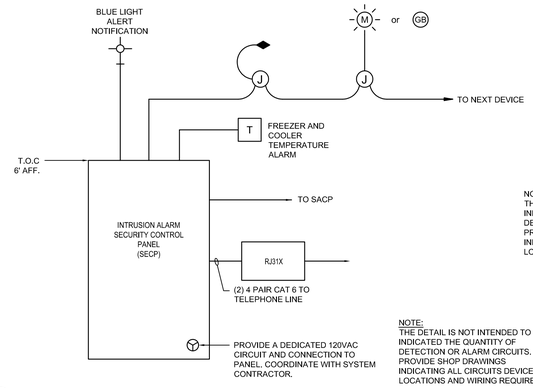
A EPO AND LOCKDOWN PUSHBUTTON DETAIL
NOT TO SCALE



NOTE:
PROVIDE ALL MATERIALS AND LABOR REQUIRED TO IMPLEMENT THE FOLLOWING ACTIONS WHEN LOOKDOWN IS INITIATED:

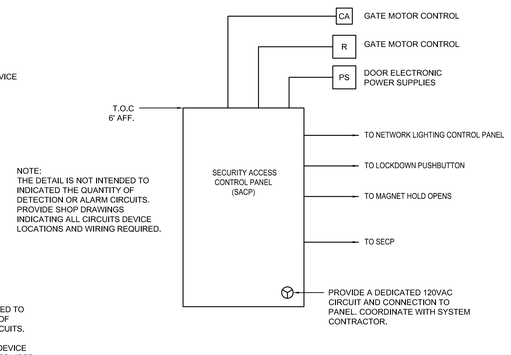
- ALL DOORS WITH ELECTRONIC HARDWARE LOCK
- ALL DOORS WITH MAGNETIC HOLD OPEN DEVICES RELEASE
- THE SECURITY MONITORING AGENCY IS NOTIFIED THAT AN EVENT HAS OCCURRED.

G LOCKDOWN DETAIL
NOT TO SCALE



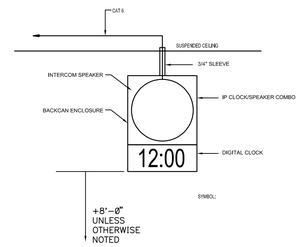
NOTE:
THE DETAIL IS NOT INTENDED TO INDICATED THE QUANTITY OF DETECTION OR ALARM CIRCUITS. PROVIDE SHOP DRAWINGS INDICATING ALL CIRCUITS DEVICE LOCATIONS AND WIRING REQUIRED.

F SECURITY SYSTEM (SECP) DIAGRAM
NOT TO SCALE

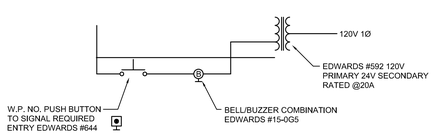


NOTE:
THE DETAIL IS NOT INTENDED TO INDICATED THE QUANTITY OF DETECTION OR ALARM CIRCUITS. PROVIDE SHOP DRAWINGS INDICATING ALL CIRCUITS DEVICE LOCATIONS AND WIRING REQUIRED.

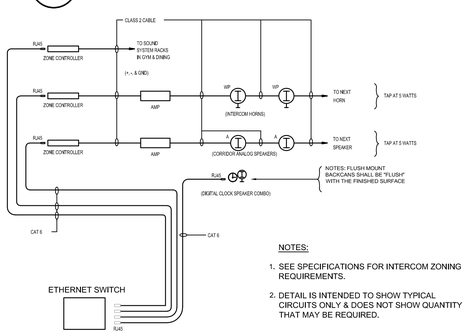
E ACCESS CONTROL SYSTEM (SACP) DIAGRAM
NOT TO SCALE



D TYPICAL IP CLOCK/SPEAKER DETAIL
NOT TO SCALE



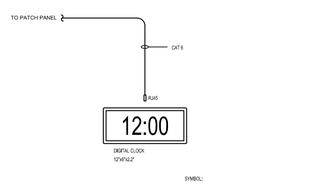
K DOOR BELL DETAIL - DELIVERY REQUEST
NOT TO SCALE



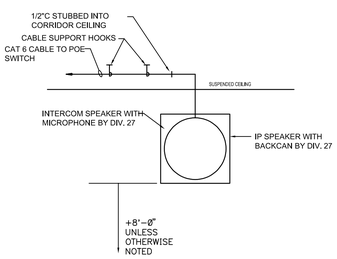
NOTES:

1. SEE SPECIFICATIONS FOR INTERCOM ZONING REQUIREMENTS.
2. DETAIL IS INTENDED TO SHOW TYPICAL CIRCUITS ONLY & DOES NOT SHOW QUANTITY THAT MAY BE REQUIRED.

J IP INTERCOM/CLOCK RISER DIAGRAM
NOT TO SCALE



I DIGITAL IP CLOCK WIRING DIAGRAM
NOT TO SCALE



H TYPICAL IP SPEAKER DETAIL
NOT TO SCALE

A1 **ELECTRICAL DETAILS**
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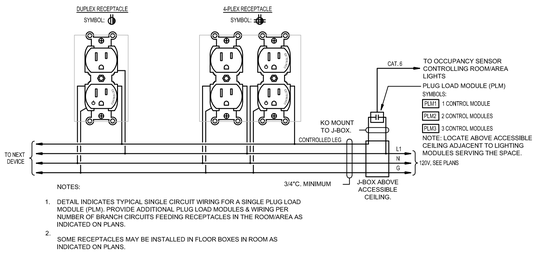
DATE
12/18/2023

SHEET NAME
ELECTRICAL DETAILS

SHEET
E6.01

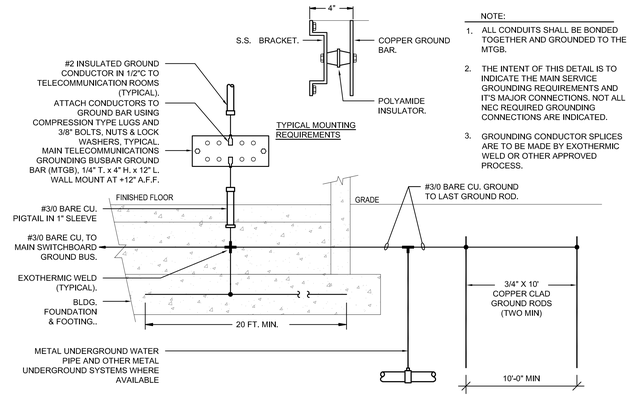


NOTES:

1. DETAIL INDICATES TYPICAL SINGLE CIRCUIT WIRING FOR A SINGLE PLUG LOAD MODULE (PLM). PROVIDE ADDITIONAL PLUG LOAD MODULES & WIRING PER NUMBER OF BRANCH CIRCUITS FEEDING RECEPTACLES IN THE ROOM/AREA AS INDICATED ON PLANS.
2. SOME RECEPTACLES MAY BE INSTALLED IN FLOOR BOXES IN ROOM AS INDICATED ON PLANS.

C CONTROLLED RECEPTACLE WIRING DIAGRAM

NOT TO SCALE

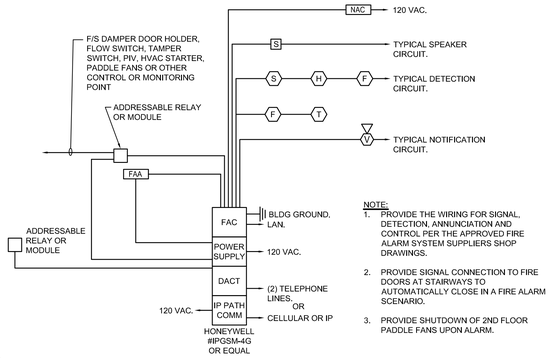


NOTE:

1. ALL CONDUITS SHALL BE BONDED TOGETHER AND GROUNDED TO THE MTGB.
2. THE INTENT OF THIS DETAIL IS TO INDICATE THE MAIN SERVICE GROUNDING REQUIREMENTS AND IT'S MAJOR CONNECTIONS. NOT ALL NEC REQUIRED GROUNDING CONNECTIONS ARE INDICATED.
3. GROUNDING CONDUCTOR SPLICES ARE TO BE MADE BY EXOTHERMIC WELD OR OTHER APPROVED PROCESS.

B MAIN SERVICE & COMM. GROUNDING DETAIL

NOT TO SCALE

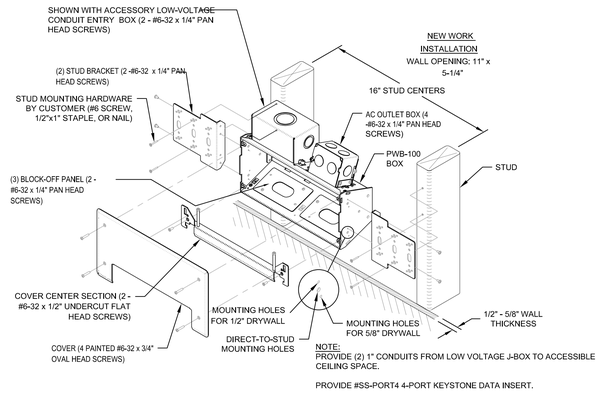


NOTE:

1. PROVIDE THE WIRING FOR SIGNAL, DETECTION, ANNUNCIATION AND CONTROL PER THE APPROVED FIRE ALARM SYSTEM SUPPLIERS SHOP DRAWINGS.
2. PROVIDE SIGNAL CONNECTION TO FIRE DOORS AT STAIRWAYS TO AUTOMATICALLY CLOSE IN A FIRE ALARM SCENARIO.
3. PROVIDE SHUTDOWN OF 2ND FLOOR PADDLE FANS UPON ALARM.

A FIRE ALARM ONE-LINE DIAGRAM

NOT TO SCALE

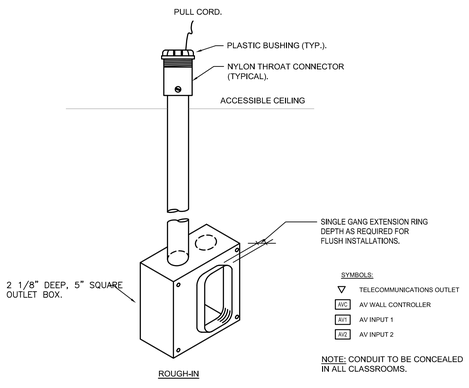


NOTE:
PROVIDE (2) 1" CONDUITS FROM LOW VOLTAGE J-BOX TO ACCESSIBLE CEILING SPACE.

PROVIDE #SS-PORT4 4-PORT KEYSTONE DATA INSERT.

F DISPLAY WALL BOX DETAIL - FSR#PWB-100

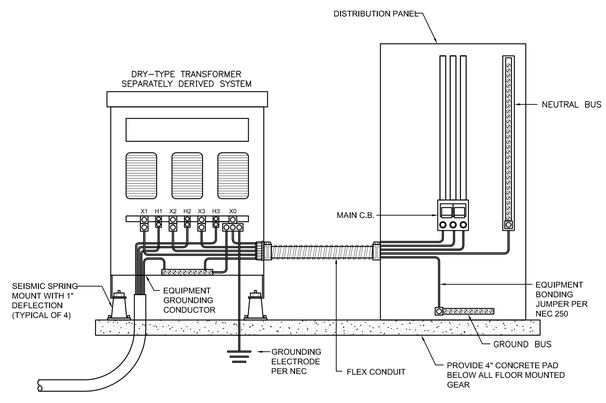
NOT TO SCALE



NOTE: CONDUIT TO BE CONCEALED IN ALL CLASSROOMS.

E TELECOMMUNICATIONS/AV ROUGH-IN DETAIL

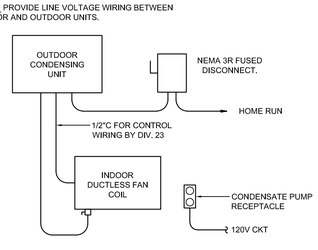
NOT TO SCALE



D DRY TYPE TRANSFORMER

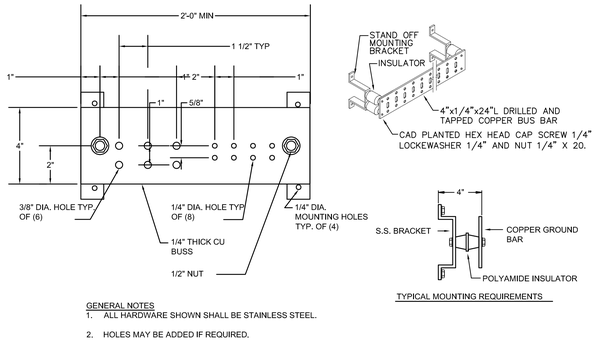
NOT TO SCALE

NOTE: PROVIDE LINE VOLTAGE WIRING BETWEEN INDOOR AND OUTDOOR UNITS.



I SPLIT AC SYSTEM DIAGRAM

NOT TO SCALE

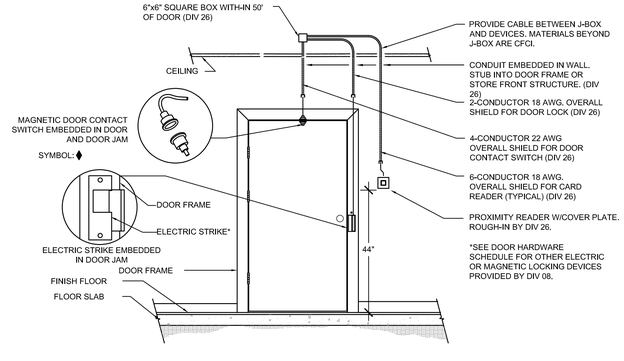


GENERAL NOTES

1. ALL HARDWARE SHOWN SHALL BE STAINLESS STEEL.
2. HOLES MAY BE ADDED IF REQUIRED.

H GROUND BUS DETAIL

NOT TO SCALE



G TYPICAL ACCESS DOOR DETAIL

NOT TO SCALE

A1 ELECTRICAL DETAILS

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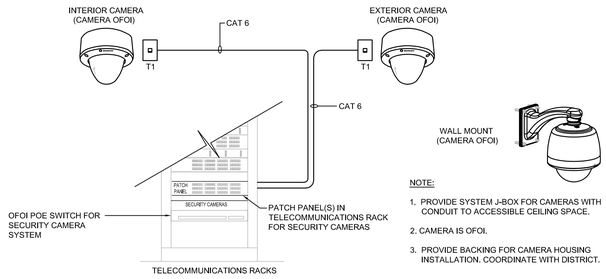
SHEET NAME
ELECTRICAL DETAILS

SHEET
E6.02

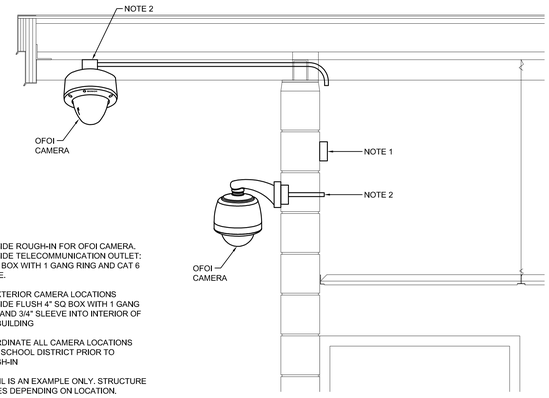


NOTE:

1. PROVIDE SYSTEM J-BOX FOR CAMERAS WITH CONDUIT TO ACCESSIBLE CEILING SPACE.
2. CAMERA IS OFOI.
3. PROVIDE BACKING FOR CAMERA HOUSING INSTALLATION. COORDINATE WITH DISTRICT.

C IP SECURITY CAMERA DIAGRAM

NOT TO SCALE



NOTES:

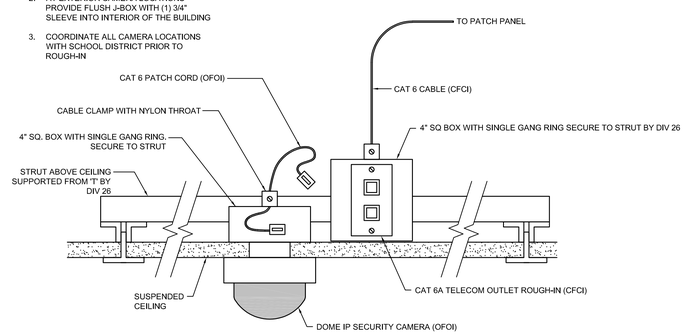
1. PROVIDE ROUGH-IN FOR OFOI CAMERA. PROVIDE TELECOMMUNICATION OUTLET: 4" SQ BOX WITH 1 GANG RING AND CAT 6 CABLE.
2. AT EXTERIOR CAMERA LOCATIONS PROVIDE FLUSH 4" SQ BOX WITH 1 GANG RING AND 3/4" SLEEVE INTO INTERIOR OF THE BUILDING
3. COORDINATE ALL CAMERA LOCATIONS WITH SCHOOL DISTRICT PRIOR TO ROUGH-IN
4. DETAIL IS AN EXAMPLE ONLY. STRUCTURE VARIES DEPENDING ON LOCATION.
5. ALL CAMERA PATCH CABLES AND CAMERAS ARE OFOI.

B EXTERIOR CAMERA ROUGH-IN DETAIL

NOT TO SCALE

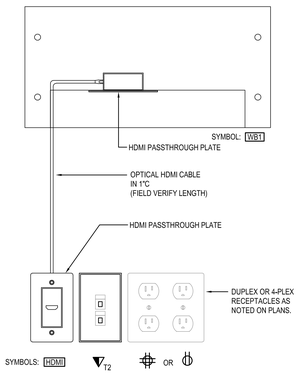
NOTES:

1. PROVIDE ROUGH-IN FOR OFOI SECURITY CAMERA
2. AT EXTERIOR CAMERA LOCATIONS PROVIDE FLUSH J-BOX WITH (1) 3/4" SLEEVE INTO INTERIOR OF THE BUILDING
3. COORDINATE ALL CAMERA LOCATIONS WITH SCHOOL DISTRICT PRIOR TO ROUGH-IN



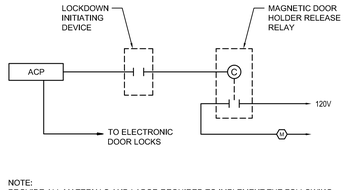
A CEILING MOUNTED SECURITY CAMERA DETAIL

NOT TO SCALE



F TYPICAL SINGLE INPUT A/V SYSTEM DETAIL

NOT TO SCALE

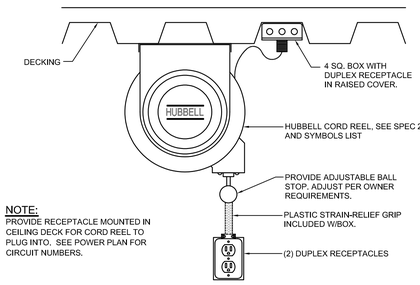


NOTE:
PROVIDE ALL MATERIALS AND LABOR REQUIRED TO IMPLEMENT THE FOLLOWING ACTIONS WHEN LOCKDOWN IS INITIATED:

- ALL DOORS WITH ELECTRONIC HARDWARE LOCK
- ALL DOORS WITH MAGNETIC HOLD OPEN DEVICES RELEASE
- THE SECURITY MONITORING AGENCY IS NOTIFIED THAT AN EVENT HAS OCCURRED.

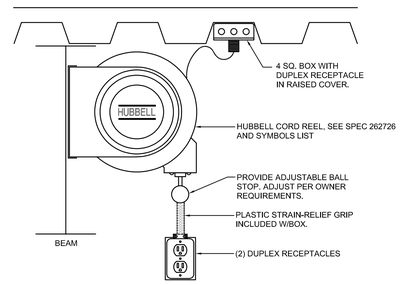
E LOCKDOWN DETAIL

NOT TO SCALE



NOTE:
PROVIDE RECEPTACLE MOUNTED IN CEILING DECK FOR CORD REEL TO PLUG INTO. SEE POWER PLAN FOR CIRCUIT NUMBERS.

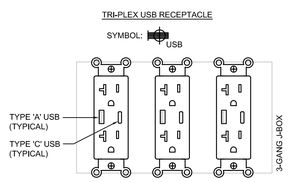
DECK MOUNTED



BEAM MOUNTED

D CORD REEL MOUNTING DETAIL

NOT TO SCALE

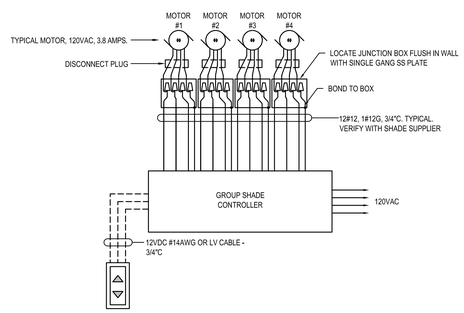


(3) 20A DUPLEX RECEPTACLES WITH TYPE A & C USB PORTS HUBBELL #USB20AC5WWR OR EQUAL

NOTE: MOUNTED FLUSH IN COLUMN ABOVE COUNTER. SEE ARCHITECTURAL DRAWINGS.

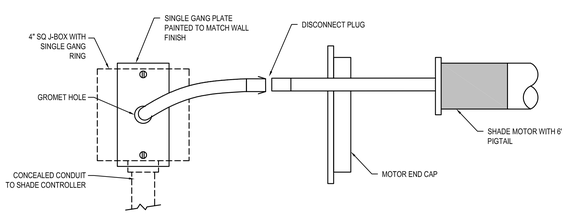
I USB CHARGING STATION DETAIL

NOT TO SCALE



H MOTORIZED SHADE WIRING DIAGRAMS

NOT TO SCALE



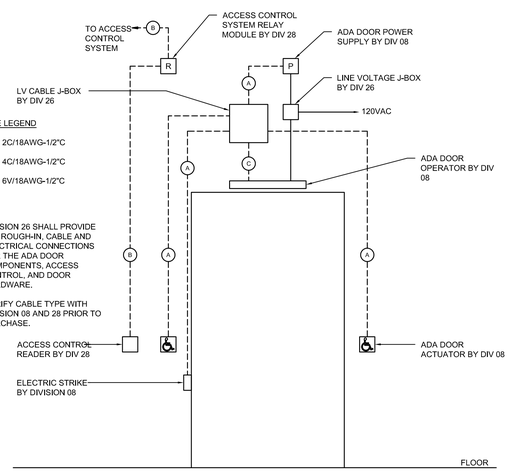
SHADE MOTOR CONNECTION

NOTES:

1. BASIS OF DESIGN: MECHO SHADE SYSTEMS, INC.; ELECTRO SHADE MLC. SEE SPEC 122413. OTHER MANUFACTURER WIRING REQUIREMENTS MAY VARY FROM BASIS OF DESIGN.
2. EACH MOTOR REQUIRES (3) DEDICATED CONDUCTORS (BLACK, RED, WHITE-NEUTRAL) TO THE GROUP SHADE CONTROLLER. THE MOTORS CAN SHARE A COMMON GROUND WIRE.
3. DIVISION 26 SHALL INSTALL THE GROUP CONTROLLER FURNISHED WITH THE SHADES. LOCATE AS INDICATED.
4. DIVISION 26 SHALL INSTALL THE LOW VOLTAGE UP/DOWN CONTROL SWITCH FURNISHED WITH THE SHADES. PROVIDE LV WIRING BETWEEN GROUP CONTROLLER AND SWITCH.
5. COORDINATE THE EXACT LOCATION OF ROUGH-IN AT EACH MOTORIZED SHADE LOCATION WITH THE GENERAL CONTRACTOR AND MATERIAL SUPPLIER. OBTAIN EXACT SHOP DRAWING ROUGH-IN LOCATIONS AND INITIATE A PRE-INSTALLATION MEETING WITH THE SHADE INSTALLER AND GENERAL CONTRACTOR TO ENSURE ROUGH-IN IS IN THE PROPER LOCATIONS. ROUGH-IN SHALL BE INSTALLED TO CONCEAL THE MOTOR LEADS FROM VIEW AS MUCH AS POSSIBLE

G ADA DOOR CONNECTION DIAGRAM

NOT TO SCALE



A1 ELECTRICAL DETAILS

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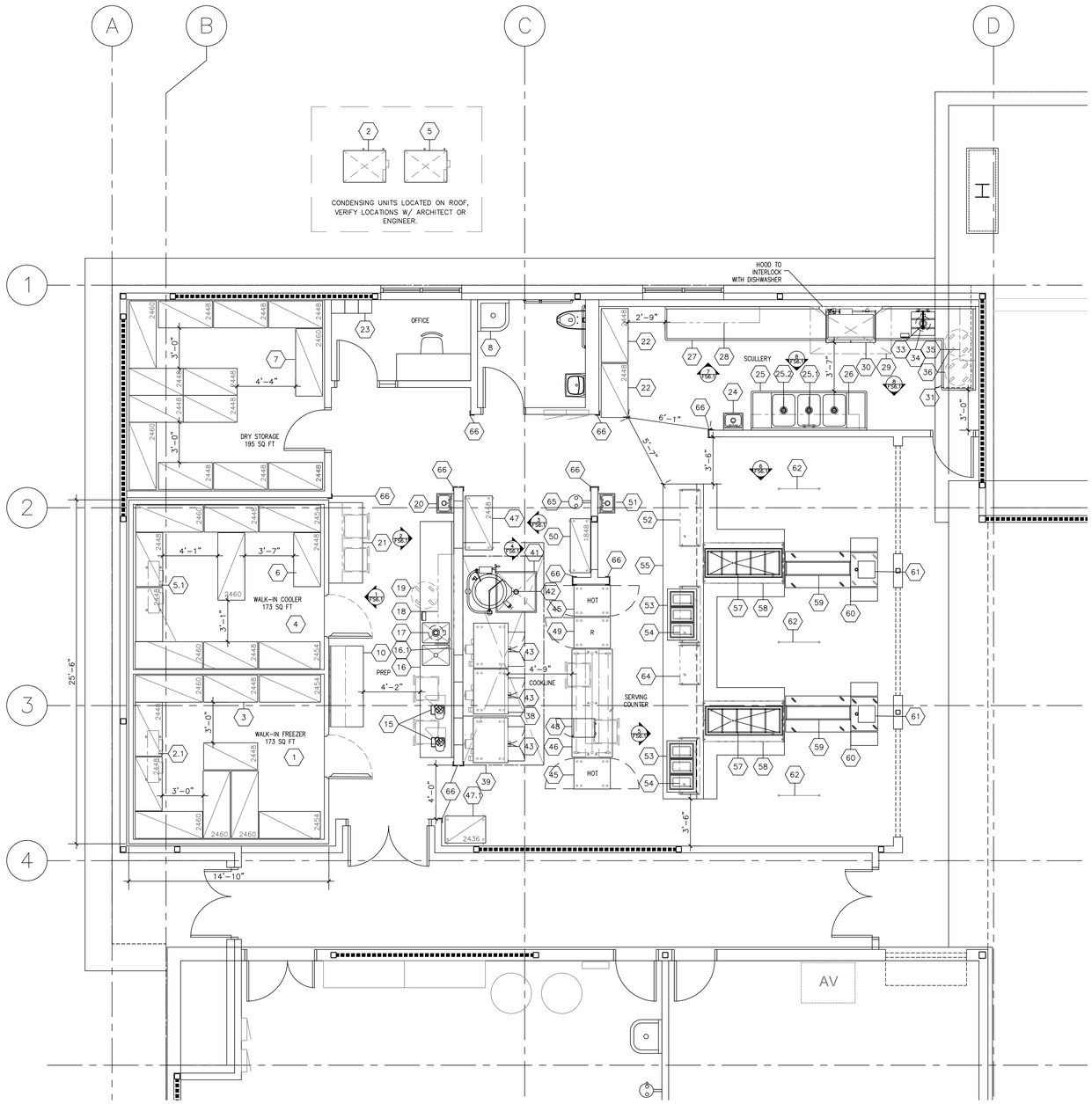
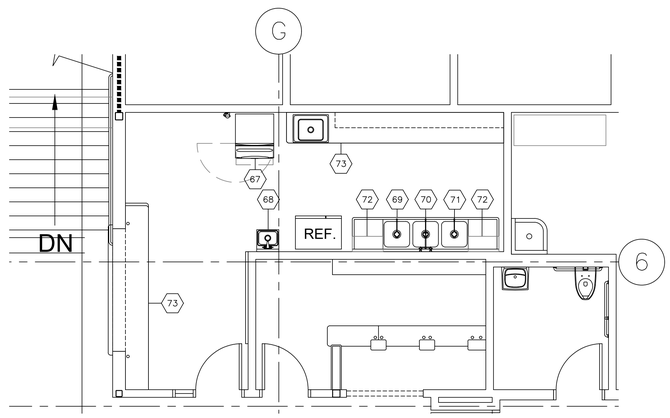


FOODSERVICE EQUIPMENT FLOOR PLAN

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



FOODSERVICE EQUIPMENT PLAN: STUDENT STORE

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

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PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL

1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
FOODSERVICE EQUIPMENT PLAN

SHEET
FS1.00

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UTILITY SCHEDULE

ITEMNO	QTY	CATEGORY	MFR	MODEL	EQUIPMENT REMARKS	ELECTRICAL								PLUMBING							
						AMPS	KW	HP	VOLTS	PHASE	CONNECTION TYPE	NEMA	ELECTRICAL AFF (IN)	COLD WATER SIZE (IN)	COLD WATER AFF (IN)	HOT WATER SIZE (IN)	HOT WATER AFF (IN)	DIRECT WASTE SIZE	DIRECT WASTE AFF (IN)	INDIRECT WASTE SIZE	PLUMBING REMARKS
1	1	WALK-IN FREEZER	IMPERIAL	CUSTOM	INDOOR UNIT W/ DIAMOND FLOORING & SLOPED ROOF MEMBRANE TEMPERATURE ALARM PART OF BUILDING CONTROLS	15.0			120	1	DIRECT		108"								
2	1	REFRIGERATION SYSTEM, REMOTE	IMPERIAL	CUSTOM	OUTDOOR UNIT W/ WEATHERHOOD	20.0		3.5	208-230	3	DIRECT		VFY.								
2.1	1	FREEZER EVAPORATOR COIL	IMPERIAL BROWN	CUSTOM		10.0			208-230	1	DIRECT		108"							1"	I.W. TO FS
3	10	FREEZER SHELVING	METRO	CHROME																	
4	1	WALK-IN COOLER	IMPERIAL	CUSTOM	INDOOR UNIT W/ DIAMOND FLOORING & SLOPED ROOF MEMBRANE TEMPERATURE ALARM, PART OF BUILDING CONTROLS	15.0			120	1	DIRECT		108"								
5	1	REFRIGERATION SYSTEM, REMOTE	IMPERIAL	CUSTOM	OUTDOOR UNIT W/ WEATHERHOOD	15.0		1	208-230	3	DIRECT		VFY.								
5.1	1	COOLER EVAPORATOR COIL	IMPERIAL	CUSTOM		1.8			115	1	DIRECT		108"							1"	I.W. TO FS
6	10	COOLER SHELVING	METRO	CHROME																	
7	13	DRY STORAGE SHELVING	METRO	CHROME																	
8	1	MOP SINK	BY OTHERS	BY OTHERS	VERIFY UTILITY REQUIREMENTS									1/2"	36"	1/2"	36"	2"	2"		
9		SPARE NUMBER																			
10	1	WORK TABLE, STAINLESS STEEL TOP	ADVANCE TABCO	TKMS-306																	
11		SPARE NUMBER																			
12		SPARE NUMBER																			
13		SPARE NUMBER																			
14		SPARE NUMBER																			
15	2	FOOD PROCESSOR, BENCHTOP / COUNTERTOP	ROBOT COUPE	R401		12		1-1/2	120	1	CORD & PLUG	5-15P	48"								
16	1	VEG. PREP WORK TABLE	KRUEGER	CUSTOM	W/ (2) DRAWERS / 30" X 210", (2) UNDERSHELF															(2)1-1/2"	I.W. TO FS
16.1	1	WALL / SPLASH MOUNT FAUCET	T&S BRASS	B-0231-EE										1/2"	18"	1/2"	18"				
17	1	DISPOSER	SALVAJOR	200-SA-3-MSS		6.6		2	208	3	DIRECT		15"	1/2"	FROM 16.1			2"	12"		
18	1	SHELVING, WALL MOUNTED	ADVANCE TABCO	WS-15-84																	
19	1	COMMERCIAL WASTE CONTAINER	RUBBERMAID	FG263200GRAY																	
20	1	HAND SINK	ADVANCE TABCO	7-PS-90										1/2"	18"	1/2"	18"	1-1/2"	20"		
21	1	ADJUSTABLE WORK TABLE	KRUEGER	CUSTOM																	
22	2	STORAGE SHELVING	METRO	CHROME																	
23	1	EMPLOYEE LOCKERS	BY OTHERS	BY OTHERS																	
24	1	HAND SINK	ADVANCE TABCO	7-PS-90										1/2"	18"	1/2"	18"	1-1/2"	20"		
25	1	THREE (3) COMPARTMENT SINK	ADVANCE TABCO	94-83-60-18RL																(3) 1-1/2"	I.W. TO FS
25.1	1	WALL / SPLASH MOUNT FAUCET	T&S BRASS	B-0290-01										3/4"	18"	3/4"	18"				
25.2	3	DRAIN, LEVER / TWIST WASTE	T&S BRASS	B-3972																	
26	1	SHELVING, WALL MOUNTED	ADVANCE TABCO	WS-15-96																	
27	1	CLEAN DISHTABLE	ADVANCE TABCO	DTC-S30-144L																	
28	1	SHELVING, WALL MOUNTED	ADVANCE TABCO	WS-15-84																	
29	1	CONDENSATE HOOD (INTERLOCKED WITH DISHWASHER)	CAPTIVE-AIRE	CUSTOM	SEE MANUFACTURER DRAWINGS FOR MORE DETAILS	5.0			120	1	DIRECT		FROM ABOVE								
30	1	DISHWASHER, CONVEYOR TYPE	HOBART	CL44EN-BAS+BUILDUP	RACK, PRESSURE REGULATOR, TABLE LIMIT SWITCH	55.0	15		208	3			64"			1/2"	18"			2"	I.W. TO FS
	1		HOBART	CL44EN-BASERH30K		83.9	30		208	3			64"								
31	1	SOILED DISHTABLE, L SHAPED	KRUEGER	CUSTOM	14 GA. S/S, W/ SINK BOWL COVER & RACK SLIDE															2"	I.W. TO FS
32		SPARE NUMBER																			
33	1	PRE-RINSE FAUCET ASSEMBLY	T&S BRASS	B-0133										1/2"	18"	1/2"	18"				
34	1	DISPOSER	SALVAJOR	300-SA-3-MRSS		8.8		3	208	3	DIRECT		15"	1/2"	FROM #33			2"	12"		
35	1	SHELVING, WALL MOUNTED	ADVANCE TABCO	WS-15-48																	
36	2	COMMERCIAL WASTE CONTAINER	RUBBERMAID	FG263200GRAY																	
37		SPARE NUMBER																			
38	1	S/S WALL FLASHING	KRUEGER	CUSTOM																	
39	1	EXHAUST CANOPY - TYPE II	CAPTIVE-AIRE	CUSTOM	SEE MANUFACTURER DRAWINGS FOR MORE DETAILS	5.0			120	1	DIRECT		FROM ABOVE								
40		SPARE NUMBER																			
41	1	DRAIN, FLOOR TROUGH, RECESSED	KRUEGER	CUSTOM	36" X 36", KRUEGER SHEET METAL													4"	0"		
42	1	KETTLE, ELECTRIC, TILTING	CLEVELAND	KEL60T		40.9	14.7		208	3	DIRECT		15"								
43	3	CONVECTION OVEN, ELECTRIC	VULCAN	VC44ED		35.0	12	1/2	208	3	DIRECT		15"								
	3		VULCAN			35.0	12	1/2	208	3	DIRECT		36"								
44	1	OFFICE FURNITURE	BY OTHERS	BY OTHERS																	
45	2	PASS-THRU HEATED CABINET	DELFIELD	GAHPT1-SH		6.0			208-240	1	CORD & PLUG	6-20P	FROM ABOVE								
46	1	WORK TABLE, STAINLESS STEEL TOP	ADVANCE TABCO	MS-368																	
47	1	CART, STEM CASTER	METRO	A556BC																	
47.1	1	CART, STEM CASTER	METRO	A536BC																	
48	1	MICROWAVE OVEN	PANASONIC	NE-17521		13.6	1.7		208	1	CORD & PLUG	6-20P	FROM ABOVE								
49	1	REACH-IN REFRIGERATOR	DELFIELD	GAR1P-S		4.2		0.22	115	1	CORD & PLUG	5-15P	FROM ABOVE								
50	1	CART, STEM CASTER	METRO	A356BC																	
51	1	HAND SINK	ADVANCE TABCO	7-PS-90										1/2"	18"	1/2"	18"	1-1/2"	20"		
52	1	FOOD SHIELD	ADVANCE TABCO	GSG-18-48																	
53	2	HOT FOOD WELL UNIT, DROP-IN, ELECTRIC	DELFIELD	N8745-D		15.0-16.0			208-230	1	DIRECT		15"	1/2"	18"					1/2"	I.W. TO FS
54	2	FOOD SHIELD	ADVANCE TABCO	GSG-18-48	W/ LED LIGHTS	5.0			120	1	DIRECT		15"								
55	1	CAFETERIA COUNTER	KRUEGER	CUSTOM																	
56		SPARE NUMBER																			
57	2	COLD FOOD WELL UNIT, DROP-IN, ICE-COOLED	DELFIELD	N8069																1"	I.W. TO FS
58	2	SNEEZE GUARD, STATIONARY	ADVANCE TABCO	GSGD-40-72	W/ LED LIGHTS	5.0			120	1	DIRECT		15"								
59	2	MILK COOLER	TRAULSEN	RMC58D4		7.2		1/3	115	1	CORD & PLUG	5-15P									
60	2	CASH REGISTER STAND	DELFIELD	SCS-30																	
61	2	POS MACHINE	BY OTHERS	BY OTHERS	VERIFY UTILITY REQUIREMENTS	15.0			120	1	CORD & PLUG	5-15P	15"								
62	1	TRAFFIC ROPES	BY OTHERS	BY OTHERS																	
63		SPARE NUMBER																			
64	1	FOOD SHIELD	ADVANCE TABCO	GSG-18-48																	
65	1	EYE WASH STATION	BY OTHERS	BY OTHERS	VERIFY UTILITY REQUIREMENTS									1/2"	18"	1/2"	18"	1-1/2"	20"		
66	15	CORNER GUARDS, VERTICAL TRIM, ENCLOSURES FOR WALK-INS AND EXHAUST HOODS	CUSTOM	CUSTOM	2" X 2" X 4' S/S																
67	1	ICE MAKER, CUBE STYLE W/BIN	MANITOWOC	IYP0320A / D320		15.0			200-230	1	DIRECT		60"	1/2"	66"					(2)3/4"	I.W. TO FS
68	1	HAND SINK	ADVANCE TABCO	7-PS-90										1/2"	18"	1/2"	18"	1-1/2"	20"		
69	1	THREE COMPARTMENT SINK	ADVANCE TABCO	93-23-60-24RL																(3) 1-1/2"	I.W. TO FS
70	1	PRE-RINSE FAUCET W/ADD ON FAUCET	T&S BRASS	B-0133-01										1/2"	18"	1/2"	18"				
71	3	DRAIN, LEVER / TWIST WASTE	T&S BRASS	B-3960																	
72	2	SHELVING, WALL MOUNTED	ADVANCE TABCO	WS-10-24																	
73	2	S/S COUNTER	KRUEGER	CUSTOM																	

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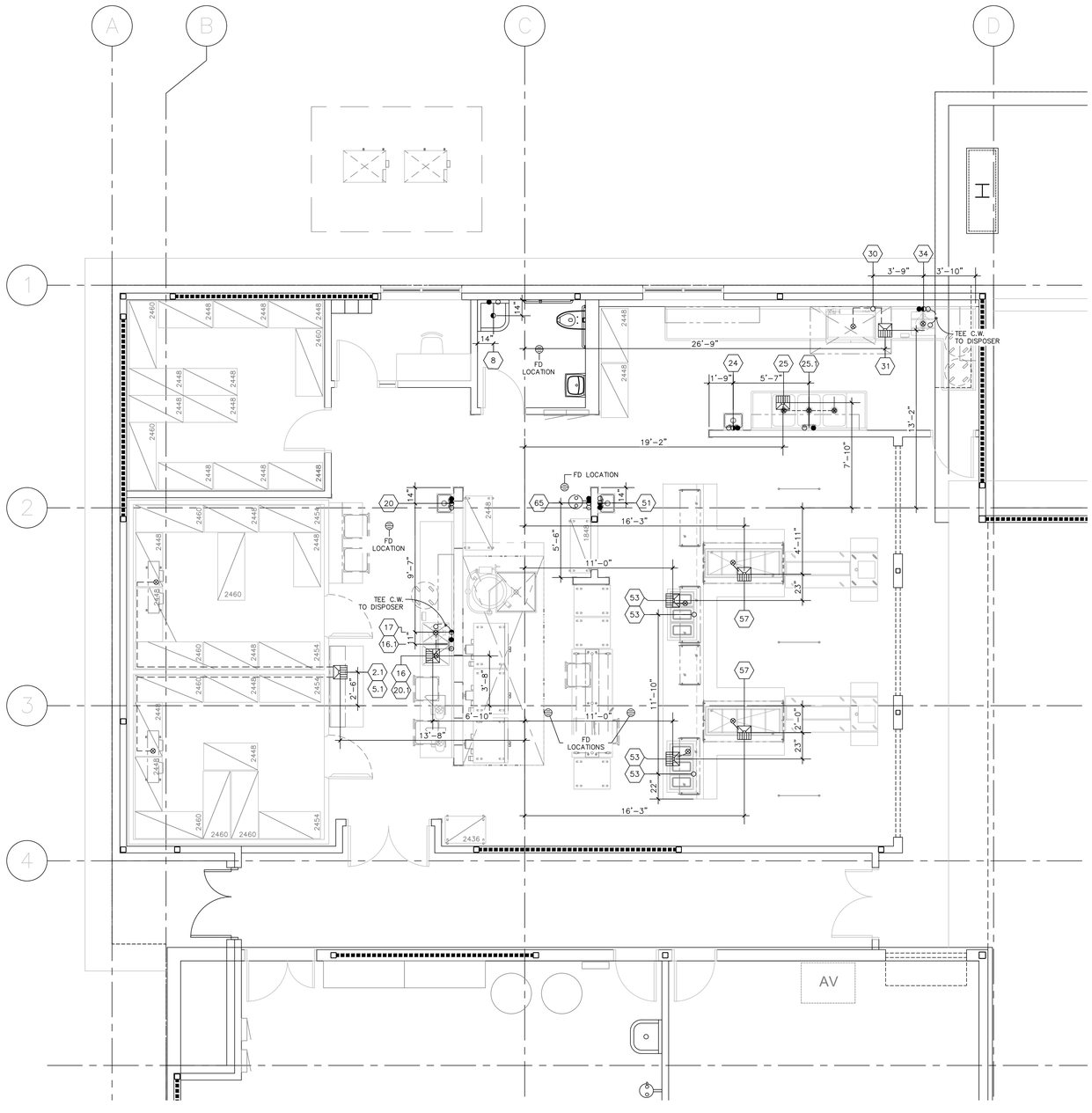
SHEET NAME
FOODSERVICE EQUIPMENT SCHEDULE

SHEET
FS2.1



FOODSERVICE PLUMBING ROUGH-IN PLAN

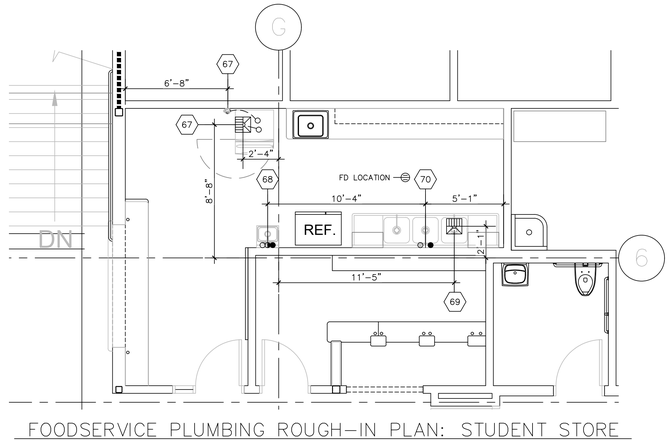
SCALE: 1/4"=1'-0"

PLUMBING REQUIREMENTS NOTES

1. Connection from rough-in to final water, steam, gas and drain connections on food service equipment by Plumbing Contractor.
2. All floor sinks indicated shall be flush with finished floor.
3. Plumber shall furnish and install check valves on hot and cold water lines where an open circuit is possible between hot and cold water systems, such as, but not limited to pre-rinse sprays, hose reels, pot fillers, kettle fillers and hose bib faucets.
4. Hot water supply to dishwashers to be (120° F).
5. This rough-in drawing is for equipment furnished by Kitchen Equipment Contractor only. Refer to architect's electrical and mechanical drawings for equipment other than that shown on these drawings.
6. All dimensions shown are from center lines of columns or finished wall surfaces.
7. All lines to come out of walls or floors at heights indicated by "+" inches. It shall be the responsibility of the mechanical contractor to insure that all utilities and connections shall conform to local and applicable codes.
8. All utility lines shall be concealed in walls and columns unless otherwise noted.
9. Plumber shall interconnect all component parts or sections of equipment not pre-plumbed by the manufacturer and all equipment delivered in sections to accomodate access.
10. For additional information regarding food service equipment and/or type of method of utility connection, refer to the manufacturer's specification sheet in the food service equipment brochure provided by the Kitchen Equipment Contractor.
11. Plumbing contractor shall provide pressure reducing valves as required for coffee makers, etc.
12. Drain lines from steamers require hard piping due to high temperatures.

SYMBOLS

- ○ COLD WATER LINE
- ● HOT WATER LINE
- ◒ WASTE LINE- DIRECT
- ⊗ WASTE LINE- INDIRECT
- FS ▨ FLUSH FLOOR SINK W/ HALF GRATE
- FS ⊠ FLUSH FLOOR SINK
- FD ◎ FLOOR DRAIN



FOODSERVICE PLUMBING ROUGH-IN PLAN: STUDENT STORE

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

REFER TO SHEET FS2.1 FOR UTILITY SCHEDULE

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FOODSERVICE PLUMBING ROUGH-IN PLAN

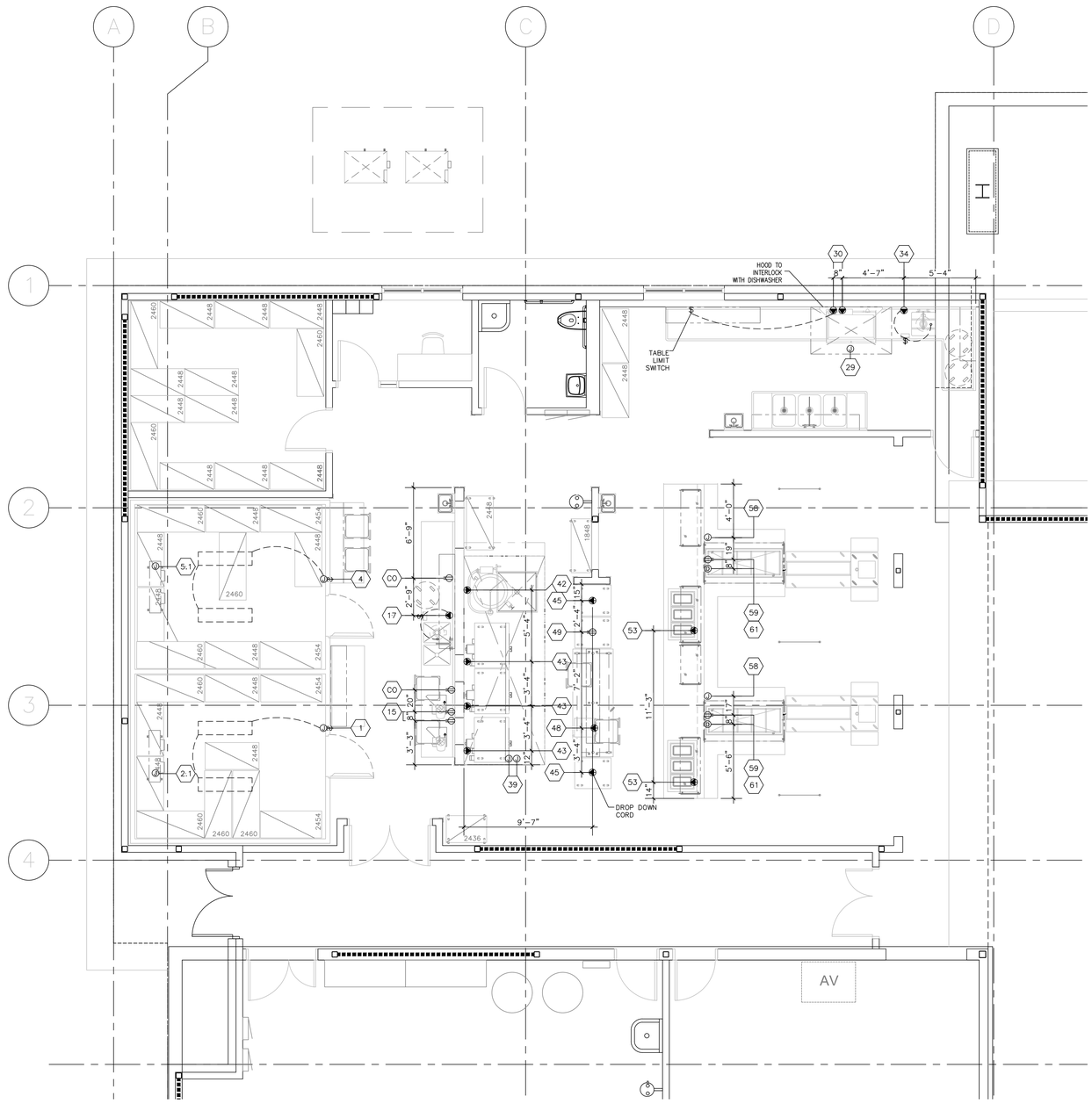
SHEET
FS3.1

ELECTRICAL REQUIREMENTS NOTES

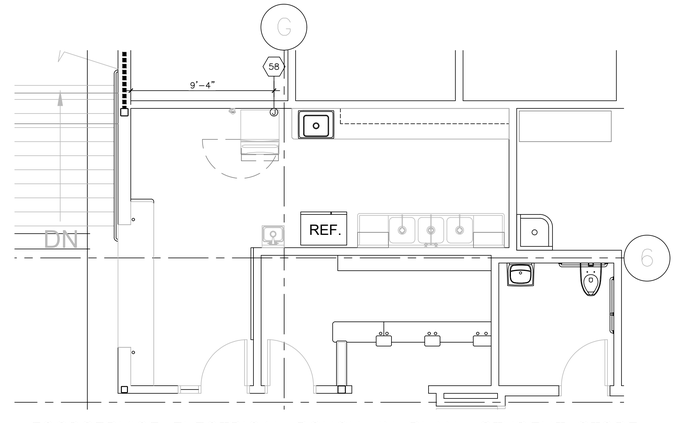
1. Final connection from rough-in to controls, receptacles, junctions boxes, breaker panels or switches, etc. by Electrical Contractor.
2. This rough-in drawing is for equipment furnished by kitchen equipment contractor only. Refer to architect's electrical and mechanical drawings for equipment other than those on these drawings.
3. All dimensions shown are from center lines of columns or finished wall surfaces.
4. For additional information regarding food service equipment and/or type of method of utility connection, refer to the manufacturer's specification sheet in the food service equipment brochure provided by the kitchen equipment contractor.
5. Unless otherwise specified, disconnect switches are not a part of the food service equipment, and will in no case be furnished with such equipment.
6. Fan switches furnished and installed by electrical contractor and wired to solenoids and fan motors.
7. All electrical receptacles shall be be vapor proof and provided with stainless steel faceplates mounted horizontally on fixtures and walls.
8. All pedestal and floor outlets shall be waterproof.
9. All integral equipment, heaters, lights, and other internal components (except walk-in coolers) shall be pre-piped conduit to junction boxes or breaker panels by the food service equipment fabricator, ready for final connection by electrician.
10. Provide installation switches, controls, and all interconnecting wiring to ventilator lights and ventilator fan on/off switches furnished under electrical Division 26.
11. Furnish and install interconnecting control wiring and conduit between fire protection panels, ventilators, and gas solenoid valve to shut down cooking equipment during fire system activation.
12. Furnish and install shunt trip circuit breakers to shut down power supply to all electrical cooking equipment during fire system activation.
13. Electrical contractor shall install and/or interconnect light fixtures, switches temperature alarm thermostats, room thermostats and solenoids furnished by the the walk-in cooler/freezer contractor or refrigeration contractor.
14. Furnish and install "EYS" and foam insulation to properly seal-off all penetrations of cold stage room panels.
15. Electrical contractor shall furnish and install conduit, cable, connectors and junction boxes for communications cable adjacent to clean circuit convenience outlets for the on-line-point-of-sale food & beverage control systems (cashier systems) as required by the system manufacturer.

SYMBOLS

- J 120 VOLT JUNCTION BOX
- 120 VOLT CONVENIENCE OUTLET
- HI VOLTAGE JUNCTION BOX
- HI VOLTAGE CONVENIENCE OUTLET
- A WALK-IN TEMPERATURE ALARM
- $ SWITCH



FOODSERVICE ELECTRICAL ROUGH-IN PLAN
SCALE: 1/4"=1'-0"



FOODSERVICE ELECTRICAL ROUGH-IN PLAN: STUDENT STORE
SCALE: 1/4"=1'-0"

REFER TO SHEET FS2.1 FOR UTILITY SCHEDULE

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FOODSERVICE ELECTRICAL ROUGH-IN PLAN

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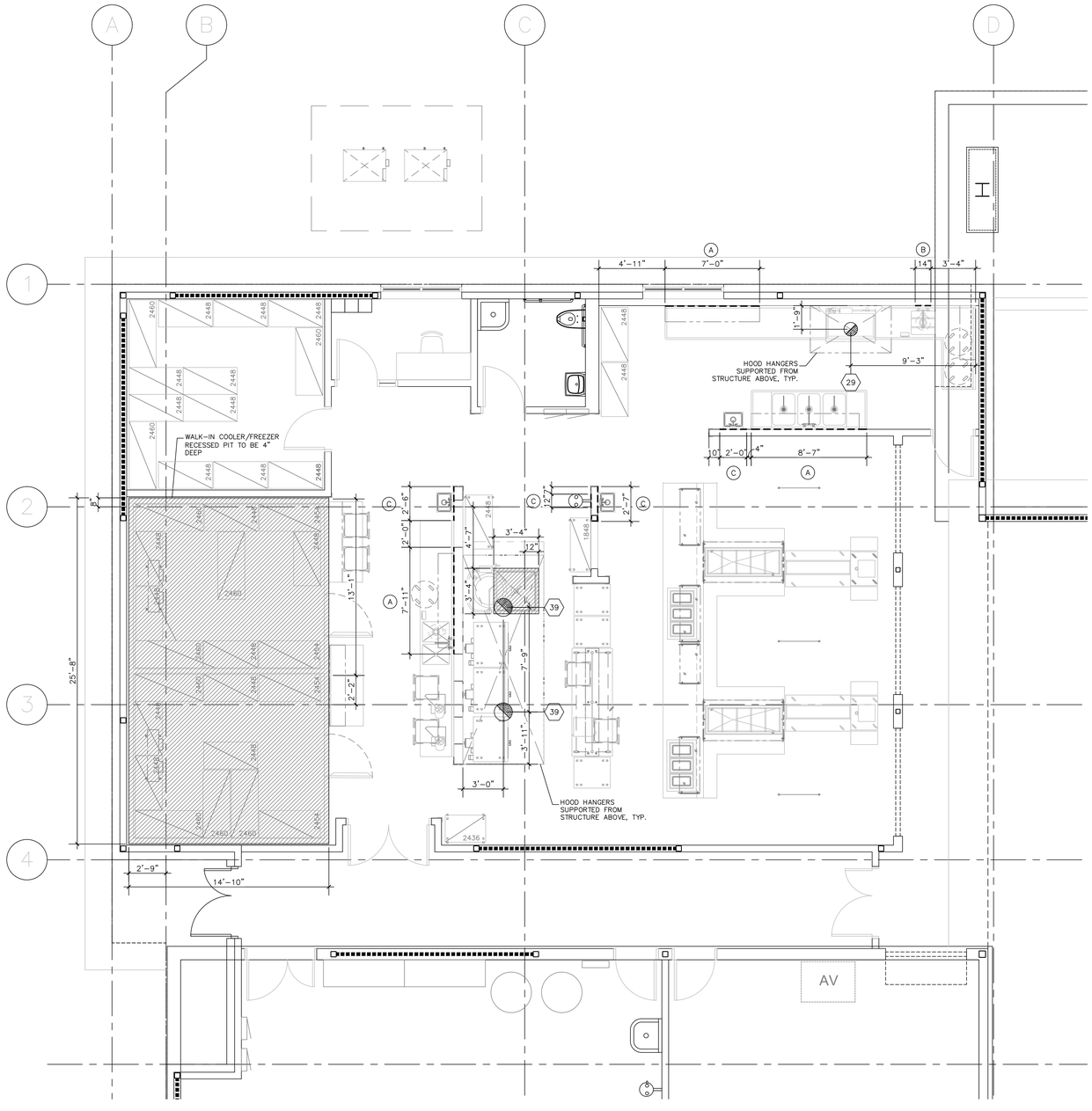


FOODSERVICE BUILDING CONDITIONS PLAN
SCALE: 1/4"=1'-0"

SYMBOLS

- WALL BACKING BY G.C.
- EXHAUST DUCT
- RECESSED PAD
- LOW WALL

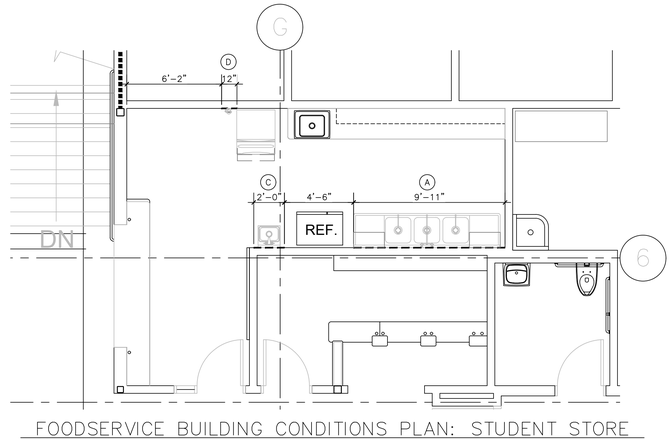
WALL BACKING SCHEDULE

TYPE	LOCATION	SIZE
A	WALL SHELVING	12" HIGH– TOP MOUNTED AT 64" AFF
B	PRE–RINSE FAUCET	12" HIGH– TOP MOUNTED AT 64" AFF
C	HAND SINK	12" HIGH– TOP MOUNTED AT 42" AFF
D	WATER FILTRATION SYSTEM	24" HIGH– TOP MOUNTED AT 54" AFF

14 GA GALV. STEEL WALL BACKING BY G.C.

VENTILATION SCHEDULE

ITEM NO.	EXHAUST CONNECTION SIZE	QTY.	EXHAUST CFM	SP AT COLLAR
29	12" DIA.	1	1050	–0.143"
39	16" DIA.	2	1550	–0.163"



FOODSERVICE BUILDING CONDITIONS PLAN: STUDENT STORE
SCALE: 1/4"=1'-0"

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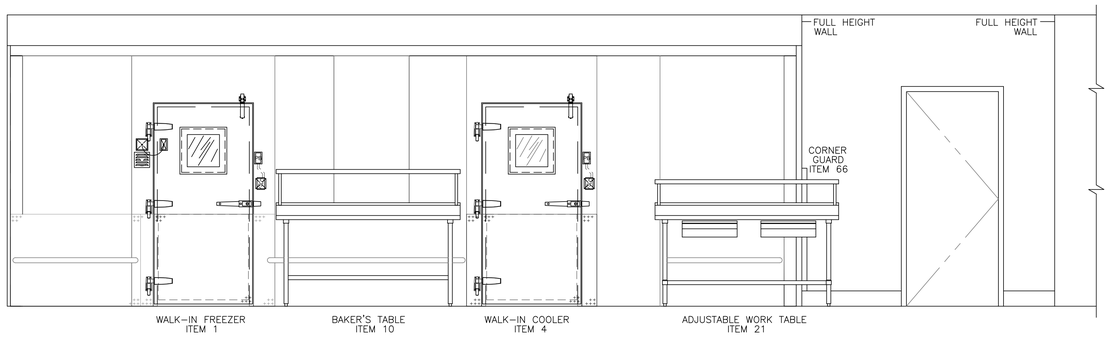
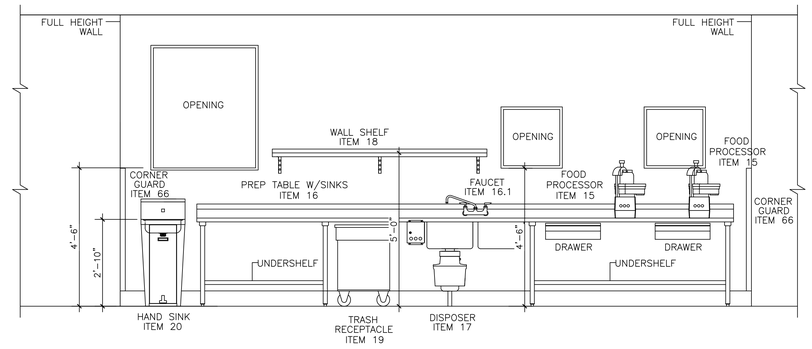


ELEVATION- WALK-INS/ PREP

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

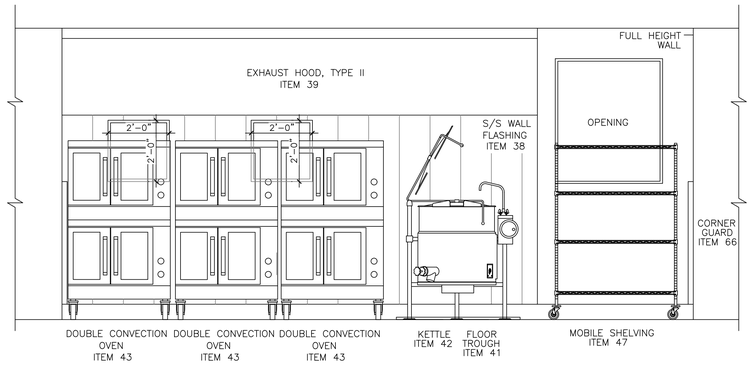
1 FS6.1



ELEVATION- PREP

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

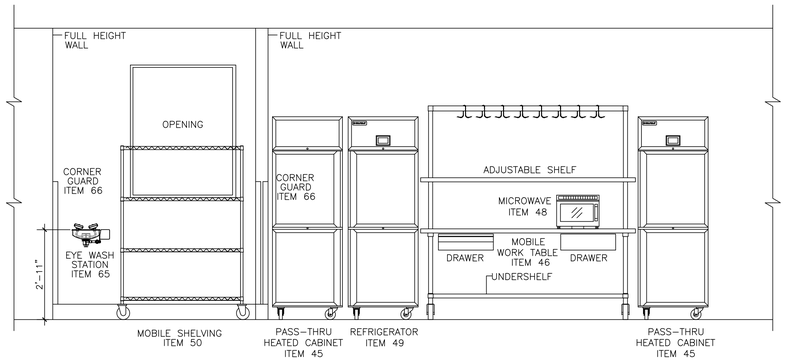
2 FS6.1



ELEVATION- COOKLINE

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

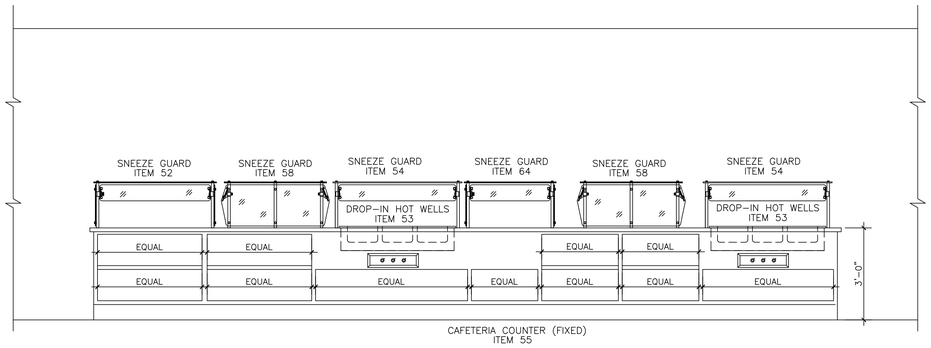
3 FS6.1



ELEVATION- COOKING SUPPORT

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

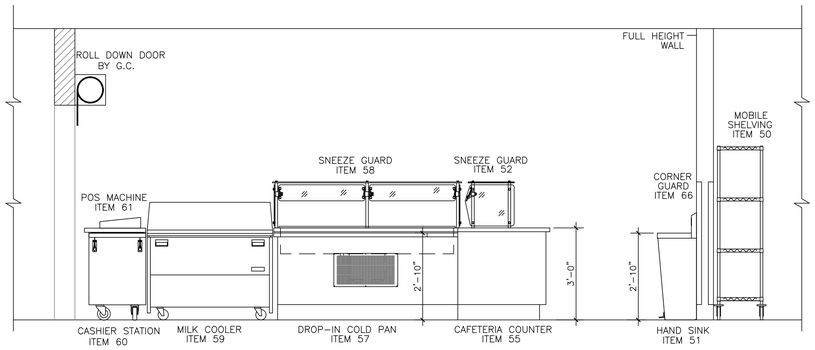
4 FS6.1



ELEVATION- SERVING COUNTER

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

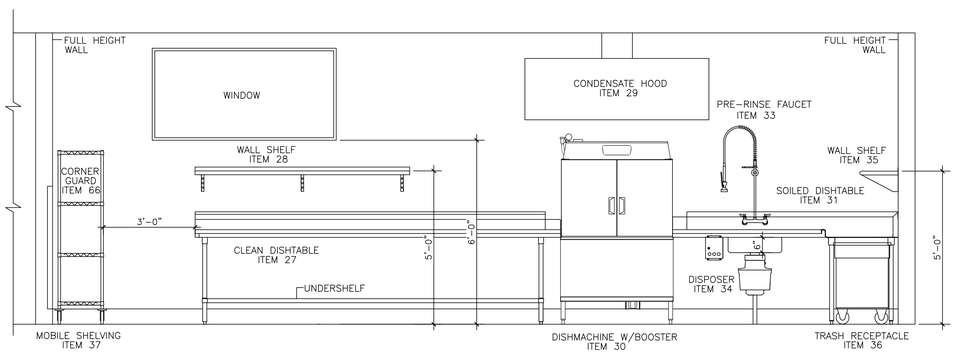
5 FS6.1



ELEVATION- SERVING COUNTER

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

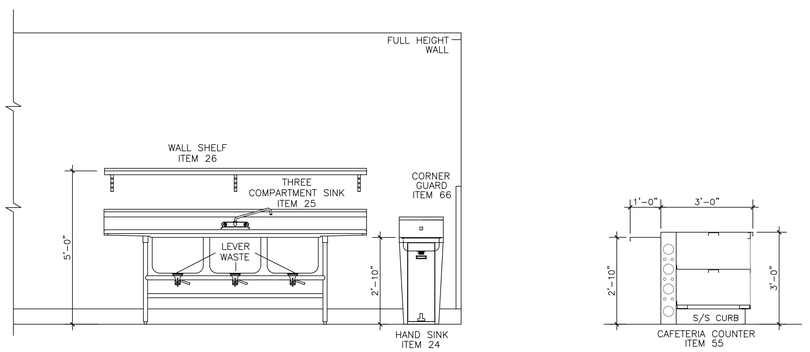
6 FS6.1



ELEVATION- SCULLERY

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

7 FS6.1



ELEVATION- THREE COMPARTMENT SINK

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

8 FS6.1

DETAIL

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

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JT

JOB NUMBER
23053

REVISIONS

PASCO SCHOOL DISTRICT #1

PERMIT SET

PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL

1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
FOODSERVICE ELEVATIONS

SHEET
FS6.1

Cadds 12/18/2023 3:39:29 PM

FOR QUESTIONS, CALL THE
Seattle Office
REGION 85
PHONE: (425) 212 - 5996
EMAIL: reg85@captiveaire.com

HOOD INFORMATION – JOB#6239538

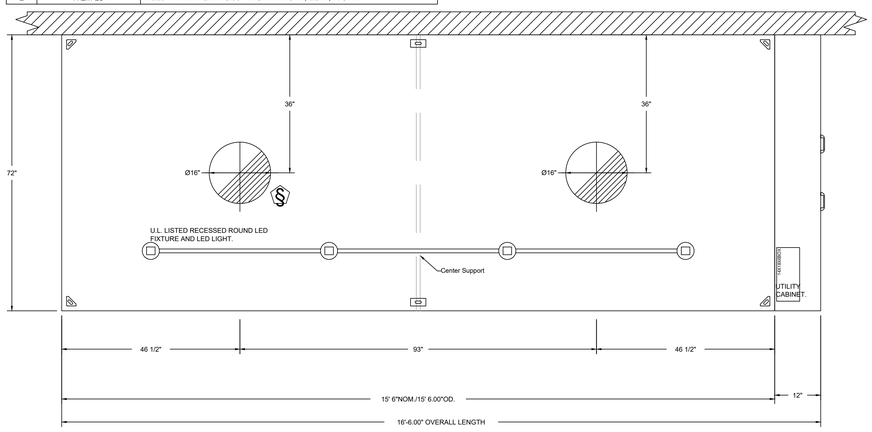
HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	ITEM 39 (TYPE II)	7230 VHB-G	CAPTIVEAIRE	15' 6"	700 DEG	II	N/A	200	3100			4"	16"	1550	1110	-0.163"	430 SS 100%	ALONE	FRONT
												4"	16"	1550	1110	-0.163"			
2	ITEM 29	4230 VHB-G	CAPTIVEAIRE	6' 0"	700 DEG	II	N/A	175	1050			4"	12"	1050	1337	-0.143"	430 SS 100%	ALONE	ALONE

HOOD INFORMATION

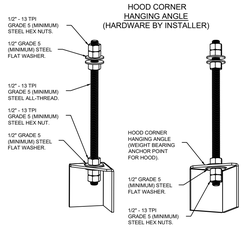
HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	ITEM 39 (TYPE II)						4	RECESSED ROUND	NO	RIGHT	12"x72"x30"			DCV-2111	1 LIGHT 1 FAN	NO	711 LBS
2	ITEM 29						0									NO	222 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	ITEM 39 (TYPE II)	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT.
		STRUCTURAL FRONT PANEL.
2	ITEM 29	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT.

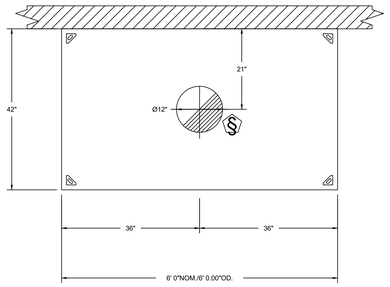


PLAN VIEW – HOOD #1 (ITEM 39 (TYPE II))
15' 6.00" LONG 7230VHB-G
NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.



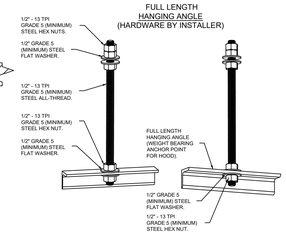
ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



PLAN VIEW – HOOD #2 (ITEM 29)
6' 0.00" LONG 4230VHB-G

FULL LENGTH HANGING ANGLE (HARDWARE BY INSTALLER)



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR FULL LENGTH HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

REVISIONS

	DESCRIPTION	DATE
1		
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3		
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Pasco # 4 High School - Pasco WA
Pasco, WA, 99301

DATE: 9/25/2023
DWG.#: 6239538
DRAWN BY: JDC-85
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 1

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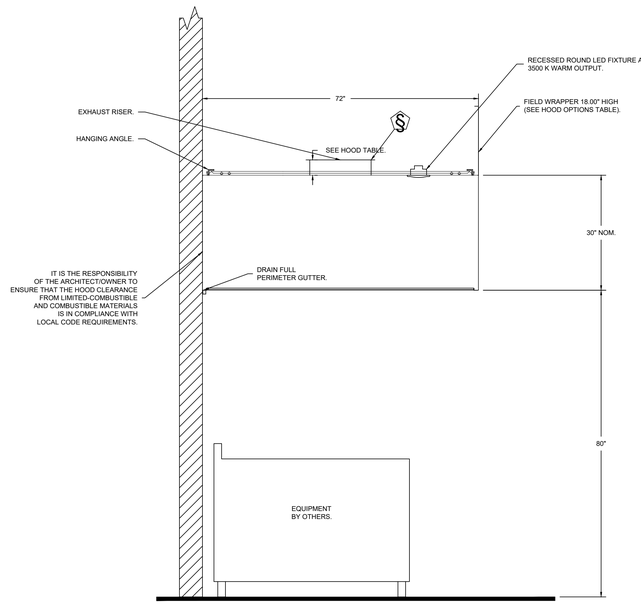
ORION HIGH SCHOOL
1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

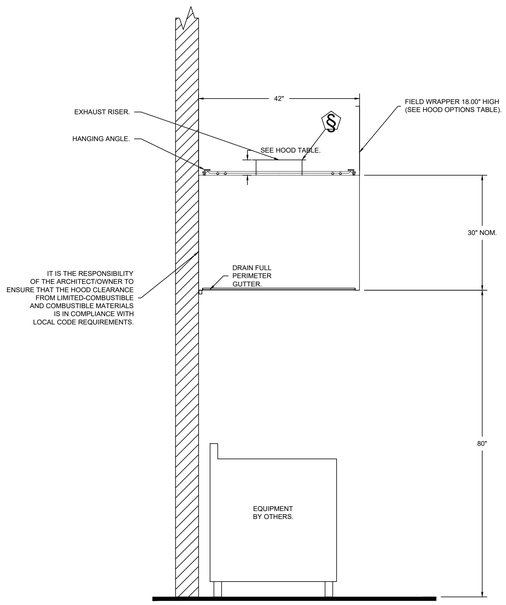
DATE **12/18/2023**

SHEET NAME
EXHAUST HOOD DETAILS

SHEET **FS7.1**



SECTION VIEW – MODEL 7230VHB-C
HOOD – #1 (ITEM 39 (TYPE II))



SECTION VIEW – MODEL 4230VHB-C
HOOD – #2 (ITEM 29)

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

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Pasco # 4 High School - Pasco WA
Pasco, WA, 99301

DATE: 9/25/2023
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ORION HIGH SCHOOL

1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023

SHEET NAME
EXHAUST HOOD DETAILS

SHEET
FS7.2

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ELECTRICAL PACKAGE – JOB#6239538

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	ϕ	HP	VOLT	FLA
1		DCV-2111	UTILITY CABINET RIGHT	SHIP LOOSE W/ PREWIRE	1 LIGHT 1 FAN	SMART CONTROLS DCV					

JOB NO 6239538 | MODEL NUMBER DCV-2111 | JOB NAME Pasco # 4 High School - Pasco... | DRAWN BY | DATE 9/25/2023 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-1

DESCRIPTION OF OPERATION:
Demand Control Ventilation, w/ control for 2 Exhaust Fans, 1 Supply Fan, Exhaust on in Fire, Lights out in Fire, Fans modulate based on duct temperature. INVERTER DUTY MOTOR REQUIRED FOR USE WITH VFD. Room temperature sensor shipped loose for field installation.Verify distance between VFD and Motor, additional cost could apply if distance exceeds 50 feet.

BREAKER PANEL TO PRIMARY CONTROL PANEL
Responsibility: Electrician
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED

BREAKER PANEL: BREAKER 1PH 120 V 15 A → CONTROL POWER. DO NOT WIRE TO GFCI OR SHUNT TRIP BREAKER. 1ST HOOD LIGHT BREAKER SHARED W/ CONTROL POWER. SWITCH #1 → PRIMARY CONTROL PANEL: H1, N1, GND (Red/Hot, Black/Neutral, Green/Gnd)

CONTROL PANEL TO FANS
Responsibility: Electrician

PRIMARY PANEL → FANS

- 0-10 VDC SPEED SIGNAL CONTROL: V1+ (RED), V1- (BLACK) → EXH-1 FAN: D1. OUTDOOR RATED SHIELDED TWISTED PAIR. NOTE: 0-10 VDC SIGNAL IS POLARITY SENSITIVE.
- 0-10 VDC SPEED SIGNAL CONTROL: V2+ (RED), V2- (BLACK) → EXH-2 FAN: D2. OUTDOOR RATED SHIELDED TWISTED PAIR. NOTE: 0-10 VDC SIGNAL IS POLARITY SENSITIVE.
- 0-10 VDC SPEED SIGNAL CONTROL: V3+ (RED), V3- (BLACK) → SUP-3 FAN: D3. OUTDOOR RATED SHIELDED TWISTED PAIR. NOTE: 0-10 VDC SIGNAL IS POLARITY SENSITIVE.
- CONTROL PANEL SF1 → SUPPLY FAN INTERLOCK: 120V HOT (RED), 120V NEUTRAL (WHITE), N1. MUST HAVE ITS OWN METAL CONDUIT. WIRE TO PROVIDED CONDUIT DROP. NOT REQUIRED FOR ALL UNITS. SEE MAKE-UP AIR SCHEMATIC.
- MAKE UP AIR DAMPER PROVING INTERLOCK: ON PCB I_1A, I_1B. REMOVE JUMPER. LOW VOLTAGE CONNECTION FOR DAMPER INTERLOCK. WIRE MULTIPLE SUPPLY ON THE SAME ZONE IN SERIES. SHOULD HAVE CONTINUITY WHEN DAMPER IS PROVEN OPEN. NOT REQUIRED FOR ALL UNITS. SEE MAKE-UP AIR SCHEMATIC. → MUA ZONE 1: D3, D7 (TERMINAL NAMES DO NOT APPLY IF MUA BY OTHERS)

VDC ANALOG OUTPUT EXTERNAL REFERENCE SIGNAL: VO+ (RED), VO- (BLACK) → ANALOG VOLTAGE 0-10 VDC REFERENCE. ANALOG OUTPUT REFERENCE VOLTAGE REFER TO DCV MANUAL FOR APPLICATION.

CONTROL PANEL TO ACCESSORY ITEMS
Responsibility: Electrician

- CONTROL PANEL TO FIRE SYSTEM MICROSWITCH: C1, AR1 → COMPONENT MICROSWITCH 1 (C, NO, NC). WIRE C1 TO COMMON(1) WIRE AR1 TO NORMALLY CLOSED (2). C1 TO AR1 SHOULD HAVE CONTINUITY WHEN ARMED. IF MORE THAN ONE FIRE SYSTEM, WIRE IN SERIES AS SHOWN
- CONTROL PANEL TO REMOTE MOUNTED SWITCHES: J4 → MS-1 (C, NO, NC), MS-2 (C, NO, NC). WIRE DIRECTLY TO CONTROL BOARD CAT-5 CONNECTION
- HMI: 1, 2. PLACE END OF LINE PLUG IN EMPTY JACK. PN: EOL120A
- CONTROL PANEL TO HOOD LIGHTS 1400 W MAX: B1, W1, GND (BLACK, WHITE, GREEN) → HOOD LIGHTS 1. WIRE TO J-BOX ON TOP OF HOOD
- CONTROL PANEL TO KITCHEN TEMP SENSOR: T1A, T1B → ROOM TEMP. WIRE TO CONTROL BOARD. INSTALL SENSOR IN ROOM AWAY FROM HEAT SOURCES. DO NOT INSTALL SENSOR ON THE CEILING GRID. SEE MANUAL
- CONTROL PANEL TO DUCT SENSOR: T2A, T2B → HOOD 1 RISER 1. FACTORY WIRED TEMPERATURE SENSOR. MOUNTED IN EXHAUST DUCT
- CONTROL PANEL TO DUCT SENSOR: T3A, T3B → HOOD 1 RISER 2. FACTORY WIRED TEMPERATURE SENSOR. MOUNTED IN EXHAUST DUCT

THE FOLLOWING CONNECTIONS MAY OR MAY NOT BE REQUIRED BASED ON JOBSITE SPECIFICATIONS

- CONTROL PANEL SIGNAL FOR EXTERNAL SHUNT TRIP: ST, N1 → SHUNT COIL. HOT TO SHUNT COIL; NEUTRAL FROM SHUNT COIL. ST TERMINAL IS ENERGIZED IN FIRE CONDITION.
- CONTROL PANEL SIGNAL FOR EXTERNAL CONTACTOR COIL: KS, N1 → CONTACTOR_COIL. HOT_TO_CONTACTOR_COIL; NEUTRAL_TO_CONTACTOR_COIL. KS TERMINAL IS DE-ENERGIZED IN FIRE CONDITION.
- CONTROL PANEL DRY CONTACT ON/OFF WITH SUPPLY FAN GROUP 1: SFX, SFO, SFC → COMMON, NORMALLY OPEN, NORMALLY OPEN. SPARE CONTACTS WILL MAKE COMMON TO NORMALLY OPEN WHEN SUPPLY FAN IS ON.
- CONTROL PANEL TO EXTERNAL SWITCH: H1, IO1 → BMS SWITCH. SIGNAL SWITCH THROUGH BMS WILL ACTIVATE ZONE1 FANS AND LIGHTS
- CONTROL PANEL DRY CONTACT ON/OFF WITH EXHAUST FAN GROUP 1: EFX, EFO, EFC → COMMON, NORMALLY OPEN, NORMALLY OPEN. SPARE CONTACTS WILL MAKE COMMON TO NORMALLY OPEN WHEN EXHAUST FAN IS ON.

UNLESS SPECIFIED OTHERWISE. ALL FACTORY AC WIRING 16 AWG. ALL FACTORY DC WIRING 18 AWG.

J9 120V: NT (1, WH), AR1 (2, BK), GAS (3, BK), KS (4, BK), ST (5, BK), PCU (7, BK), H1 (8, BK), PANEL LID (GR) → CONTROL INPUT 120V H1=LINE, N1=NEUTRAL, 15A BREAKER. DO NOT CONNECT TO SHUNT TRIP BREAKER. SEE INSTALLATION SCHEMATIC FOR ADDITIONAL REQ. TERMINAL GAS USED FOR 120V POWERED GAS VALVES ONLY

PS-01: 120V AC, 24V DC, GND, N1, H1

24V J8: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 → DC-, BL, DC+, RD1, PR, RO1

J7 120V: IO1 (1, BK), B1 (2, BK), EF1 (3, BK), SF1 (4, BK), OVI (5) → HOOD LIGHTS (BK 14AWG, RD-1 4.7 Ω, BK → H1; WH JUMPER → N1)

DC+ BL RD-1 7 PR RO1

AR1 BK 7 RA-1 8 WH → N1; SF1 BK 7 RA-2 8 WH; EF1 BK 7 RA-3 8 WH

MAKE UP AIR INTERLOCK. JUMPER JUMPER. J10 ECP#03, J10 ECP#03, J10 ECP#03

NOTE: IF VFD HAS 1PH 240V INPUT, USE L1 & L2 ONLY.
IF VFD HAS 1PH 120V INPUT, USE L1 & N ONLY.

80.0% 100.0% 80.0% 100.0% 80.0% 100.0%

V1- V1+ V2- V2+ V3- V3+ PWM0_10V DAUGHTERBOARD

PWM0_10V DAUGHTER BOARD PLACED ON P1A/B TO P4A/B PINS ON J10.

DRY CONTACTS (SHOWN DE-ENERGIZED)

- 14 AWG RA-1-1: C, NO, NC; ON/OFF WITH FIRE; YW
- 14 AWG RA-2-1: C, NO, NC; ON/OFF WITH SUP; YW
- 14 AWG RA-2-2: C, NO, NC; YW
- 14 AWG RA-3-1: C, NO, NC; ON/OFF WITH EXH; YW
- 14 AWG RA-3-2: C, NO, NC; YW

14 x 18 x 6 Box

FACTORY WIRING SCHEMATIC CIRCUIT BOARDS ECPM03

RA-1 120 VAC RELAY: NO 4 1, NC 2 1, COIL 8 5, COM 6 5.5
RA-2 24 VDC RELAY: NO 4 1, NC 2 1, COIL 8 5, COM 6 5.5

COMPONENT LIST

LABEL	DESCRIPTION
ST-x	Starter valve
OL-x	Overload valve
C-x	Contactor valve
PS-1	Power Sup. 24VDC MDP15-24A1C
RA-x	120V Relay DPDT 3A 11S18MJ
RO-x	24VDC Light Relay 5A 11D1M5
TS-x	Duct Thermostat ACPVX7-F-00FL

LEGEND

FIELD WIRING — FACTORY WIRING

BK-BLACK	YW-YELLOW
BL-BLUE	GY-GREY
BR-BROWN	PR-PURPLE
GN-GREEN	RD-RED
WH-WHITE	OR-ORANGE
ORBL-ORBL STRIPE	
BLRD-BLRD STRIPE	
RDGN-RDGN STRIPE	
WHBL-WHBL STRIPE	

JOB NAME: Pasco # 4 High S...
DRAWING TITLE: DCV-2111
DESCRIPTION OF OPERATION: Demand Control Ventilation, w/ control for 2 Exhaust Fans, 1 Supply Fan, Exhaust on in Fire, Lights out in Fire, Fans modulate based on duct temperature. INVERTER DUTY MOTOR REQUIRED FOR USE WITH VFD. Room temperature sensor shipped loose for field installation.Verify distance between VFD and Motor, additional cost could apply if distance exceeds 50 feet.

JOB NO 6239538 | DRAWN BY
TYPE FACTORY | DATE 9/25/2023
DWG NO ECP #1-2

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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Seattle Office
1309 Pacific Ave, Everett, WA. 98201 PHONE: (425) 212 - 5996 FAX: 425/2125998 EMAIL: reg86@captiveaire.com
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Pasco # 4 High School - Pasco WA
Pasco, WA, 99301

DATE: 9/25/2023
DWG.#: 6239538
DRAWN BY: JDC-85
SCALE: 3/4" = 1'–0"
MASTER DRAWING
SHEET NO. 3

PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE **12/18/2023**
SHEET NAME: EXHAUST HOOD DETAILS
SHEET **FS7.3**

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PASCO SCHOOL DISTRICT ORION HIGH SCHOOL 1815 EAST SALT LAKE STREET PASCO, WASHINGTON 99301	DATE 12/18/2023	SHEET NAME EXHAUST HOOD DETAILS	SHEET FS7.4

PERMIT SET

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JOB NUMBER 23053

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REVISIONS

DESCRIPTION	DATE

Pasco # 4 High School - Pasco WA

Pasco, WA, 99301

DATE: 9/25/2023

DWG.#: 6239538

DRAWN BY: JDC-85

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 4

MOTOR POWER CIRCUITS. SEE INSTALLATION DIAGRAM FOR FIELD WIRING REQUIREMENTS.

14 x 18 x 6 Box

FACTORY WIRING
SCHEMATIC
CIRCUIT BOARDS
23053
DCV Rev: Z.10.00 HMI Rev: Z.10.00

TB1	MV		24 VAC
			RELAY
	NO	1	1
	NC	2	2
	COM	3	3
	COM	4	4
	NO	5	5

COMPONENT LIST

REF	DESCRIPTION
ES1	Emergency Stop
C4	Contactor
	40 amp
SW4	Switch
	40 amp
L3LX	Line/Load Reactor
	varies

FIELD I/O WIRING
FACTORY WIRING

Bk-BLACK	YEL-YELLOW
BL-BLUE	GY-GRAY
BR-BROWN	PK-PURPLE
	ORG-ORANGE
WH-WHITE	GN-GREEN
RED-RED	TURQ-TURQUOISE
BLKS-BLACK STRIPE	
REDS-RED STRIPE	
WHS-WHITE STRIPE	

JOB Install
Panel # 4 of 4 panels
DRAWING TITLE
Sheet 3 of 3 sheets
DESCRIPTION OF OPERATION
Power is supplied to the Variable Frequency Drive and 24 Volt control circuit. The Variable Frequency Drive is controlled by a 4-20 milliamp signal from the Building Automation System. INDUSTRIUS DDC controller. Refer to the Sequence of Operation for detailed description of operation. Refer to the Installation and Operation manual for the Variable Frequency Drive for additional information. Refer to the Installation and Operation manual for the DDC panel for additional information.

JOB NO	DRAWN BY
CONTRACT	CHKD
FACTORY	DATE 12/6/2023
DWG NO	EDP # 1-3

Centre 12/18/2023 3:38:31 PM

DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).

- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.

- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.

- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURES SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.

- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.

- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.

- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.

- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.

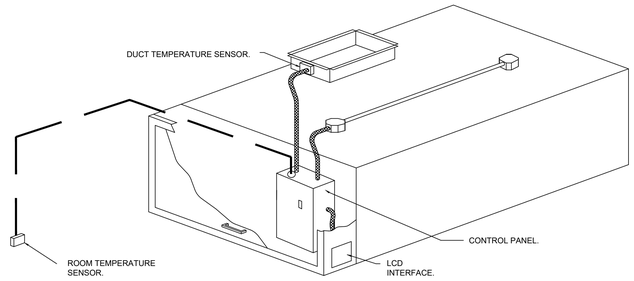
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.

- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.

- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.

- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).

- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
  - A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  - B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  - C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  - D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  - E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  - F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  - G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.



TYPICAL HOOD CONTROL PANEL INSTALLATION

SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).

- MANUAL:THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.

- SCHEDULE: A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.

- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).

- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

REVISIONS

	DESCRIPTION	DATE:
1		
2		
3		
4		

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www.captiveaire.com

Pasco # 4 High School - Pasco WA
Pasco, WA, 99301

DATE: 9/25/2023
DWG.#: 6239538
DRAWN BY: JDC-85
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 5

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CC
CHECKED BY
JT
JOB NUMBER
23053
REVISIONS

PASCO SCHOOL DISTRICT #1

PERMIT SET

PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL
1815 EAST SALT LAKE STREET
PASCO, WASHINGTON 99301

DATE
12/18/2023
SHEET NAME
EXHAUST HOOD DETAILS
SHEET
FS7.4

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SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

REVISIONS

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Pasco # 4 High School - Pasco WA

Pasco, WA, 99301

DATE: 9/25/2023

DWG.#: 6239538

DRAWN BY: JDC-85

SCALE: 3/4" = 1'-0"

MASTER DRAWING

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REVISIONS

PASCO SCHOOL DISTRICT #1

PERMIT SET

PASCO SCHOOL DISTRICT
ORION HIGH SCHOOL

1815 EAST SALT LAKE STREET
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12/18/2023

SHEET NAME
EXHAUST HOOD DETAILS

SHEET
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SPECIFICATIONS

Indoor combo (with floors)
Vinyl foam NSF gasket (1/16" joint thickness), Cam-lock layout #4

SPECIAL INSTRUCTIONS
Standard crating

WALL PANELS
Construction: 4" high density urethane
Exterior Finish: Stucco galvalume / Stucco white galvalume
Interior Finish: Stucco white galvalume
Ceiling connections: Camlock
Floor connections: Camlock

CEILING PANELS
Construction: 4" high density urethane
Exterior Finish: Metal
Interior Finish: Stucco white galvalume
Ceiling Type: Factory mounted
Live Load: 10 psf

FLOOR PANELS
Model: Hand-Truck Floor panels model #HTFN (NSF)
Construction: 3 1/2" high density urethane
w/ .100 aluminum diamond tread @ interior
over 1/2" plywood
w/ Metal @ exterior

DOORS
(A) 36" x 78" flush model G3 self-closing freezer door
*** ELECTRICAL COMPONENTS PRE-WIRED ***
*** LEAF WILL NOT BE RAISED UNLESS SPECIFIED OTHERWISE ***
Brand: Imperial Brown
Frame: 4" high density urethane, 3-sided
w/ Stucco white galvalume both sides
w/ 24 ga. stainless steel 430 (magnetic) liners
w/ 4-sided heat cable in frame [FL-4-114W]
(25'-0" x 5 ohms/ft.(127 total) @ 4.5 W/ft • Pepi - 120V, 1A)
w/ 3/4" stub-through concealed PVC conduit
Leaf: 4" thick, 3-side lap, standard height
w/ Stucco white galvalume both sides
w/ Magnetic gasket
w/ 2 1/4" black neoprene sweep
(3) Component Hardware #9/59 spring assisted adjustable hinge
(1) Kason #27C cylinder locking deadbolt handle
(1) Kason #27C twist-off knob inside release
(1) Kason 'PUSH' pad
(1) Kason #1094 hydraulic door closer (polished chrome)
(1) Modulaire 75LC multi-monitor temperature alarm w/ IP-1 illuminated push button
(2) Terminal J-Box @ int.
(1) Kason 1832 heated air vent, SS (23W, 120V, 2A)
(1) 14" x 14" heated (-20F) view window (50W, 120V, 0.42A)
(1), 12 ga. stainless steel 304 #2B threshold
36" high AFF. .100 aluminum diamond tread kickplate (frame, ext.)
36" high AFF. .100 aluminum diamond tread kickplates (leaf, ext. & int.)

(B) 36" x 78" flush model G3 self-closing cooler door
*** ELECTRICAL COMPONENTS PRE-WIRED ***
*** LEAF WILL NOT BE RAISED UNLESS SPECIFIED OTHERWISE ***
Brand: Imperial Brown
Frame: 4" high density urethane, 3-sided
w/ Stucco white galvalume both sides
w/ 24 ga. stainless steel 430 (magnetic) liners
w/ 3/4" stub-through concealed PVC conduit
Leaf: 4" thick, 3-side lap, standard height
w/ Stucco white galvalume both sides
w/ Magnetic gasket
w/ 2 1/4" black neoprene sweep
(3) Component Hardware #9/59 spring assisted adjustable hinge
(1) Kason #27C cylinder locking deadbolt handle
(1) Kason #27C twist-off knob inside release
(1) Kason 'PUSH' pad
(1) Kason #1094 hydraulic door closer (polished chrome)
(1) Modulaire 75LC multi-monitor temperature alarm w/ IP-1 illuminated push button
(2) Terminal J-Box @ int.
(1) 14" x 14" non-heated view window
36" high AFF. .100 aluminum diamond tread kickplates (frame, ext. & int.)
36" high AFF. .100 aluminum diamond tread kickplates (leaf, ext. & int.)

PARTS
(4) ea. 4' LED light fixture #LED-440079 for Cooler or freezer application (65W, 120-277V, 0.6-0.3A)-
(Fixture ships loose for field installation.)
(1) ea. Modulaire 75LC Communicator, Wireless – Handles up to 8 systems-(ships loose for field installation)
(1) ea. Modulaire 75LC temperature alarm (Cooler) (1) Modulaire 75LC temperature alarms
(19) lf. Fabricated out of .100 aluminum diamond tread
Cut and pre-drilled for field installation @ the exposed exterior 36" high wainscoting
(1) set Boston 2000 vinyl bumper rail assembly (black)-Exposed exterior @ 37" A.F.F. (ships loose)
17' - 0" rail, (6) end cap
(1) ea. (2" x 4") x 96" x 16 ga. smooth stainless steel 304 #4 outside corner vertical closure
(1) ea. (2" x 4") x 48" x 16 ga. smooth stainless steel 304 #4 outside corner vertical closure
(1) ea. 6" x 96" x 16 ga. smooth stainless steel 304 #4 flat vertical closure
(1) ea. 6" x 48" x 16 ga. smooth stainless steel 304 #4 flat vertical closure
(1) set 16 ga. smooth stainless steel 304 #4 removable ceiling closure-Please Verify Closure Dimensions and Requirements
Estimated Cavity Size = 1' - 6" (18") high x 25' - 8" (308") long

REFRIGERATION
(1) ea. Freezer - Outdoor R448a split system w/ EcoNET
11648 BTUH @ 9.9F TD with 16.9 hr runtime @ -10F inside/85F outside room
105F @ cond. unit, 3768 altitude
(1) Russell R448a air cooled condensing unit #RFC400L4SEB-NT
208-230/1/3ø/60HzHP Scroll compressor
MCA=41, MOPD =60, AWEF: 3.15
43.875W x 33D x 35H x 352lbs.
(1) Russell R448a Next-Gen A8-Temp evaporator model #RL6E105DDARE
w/ (2) 2-speed EC motors (1A) & electric defrost (9.8A)
208-230/1ø/60Hz
43.625W x 15.5D x 18.125H x 52lbs.

(1) ea. Cooler - Outdoor R448a split system w/ EcoNET
10821 BTUH @ 10.1F TD with 13.6 hr runtime @ 35F inside/85F outside room
105F @ cond. unit, 3768 altitude
(1) Russell R448a air cooled condensing unit #RFC150E4SEA-NT
208-230/1/3ø/60HzHP Scroll compressor
MCA=15, MOPD =20, AWEF: 7.6
39.875W x 28.25D x 18.75H x 209lbs.
(1) Russell R448a Next-Gen A8-Temp evaporator model #RL6A094ADARE
w/ (2) 2-speed EC motors (1.6A) & air defrost
115V/1ø/60Hz
43.625W x 15.5D x 18.125H x 45lbs.

NOTES

Meets 2009 Federal Energy Independence and Security Act Requirements.
Meets 2018 Washington State Energy Code.
Min. R value freezer walls and ceilings R-32.
Min. R value freezer floors R-28.
Min. R value cooler walls and ceilings R-25.

STANDARD NOTES
To prevent condensation, a minimum 2" from the walk-in exterior surface is required. High humidity conditions may require force ventilation in addition to clearance.

Installation site floor must be true and level within 3/16" per 10' or additional costs may be incurred.

R-Plus Doors sliding and vertical lift doors shall not be considered means of egress. Check code egress requirements for your application.

RECESSED PIT
Recess plan is provided to set min. size to allow panel installation. Recess depth, concrete floor above and below insulation, design, reinforcement, thickness & construction of concrete should be designed by a Qualified Professional Engineer familiar with cold storage design, the site conditions and end users application. See project contract documents. All concrete and excavation work & design is by others.

ELECTRICAL
Field electrician to verify maximum acceptable load for light switches.If load is too high, then relay type controls should be used.
After wiring devices, ALL conduits must be sealed to stop moisture transfer through electrical raceways.
Failure to seal device per NEC codes WILL VOID WARRANTY.

REVISIONS

01 11/13/2023 Add floor panels in cooler.

NSF LABEL
N.S.F. LISTED (STD #7)
N.S.F. GASKET @ ALL PANEL JOINTS

- PRELIMINARY DRAWING -

Customer Note: This is a preliminary drawing only. Approving this drawing only indicates that you agree with overall dimensions and door and opening locations. Panel sizes and layout is subject to change. If "Nominal Size" has been quoted, the "Actual Dimensions" will be slightly smaller. Actual sizes and exact dimensions will be shown on subsequent non-preliminary drawings. Should discrepancies be found between drawing and sales order, customer may be asked to approve standard Submittal drawings.
The customer or their representative in signing these drawings is taking responsibility for overall size and fit around building walls, columns and ceiling restrictions, door locations, openings for equipment supplied by others, specifications and accessories listed.

☐ APPROVED FOR FABRICATION WITH NO CHANGES
☐ APPROVED FOR FABRICATION WITH CHANGES
☐ REVISE AND RESUBMIT

Signature: _____

23-IB-92781-01
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DESIGN DEVELOPMENT
SPOKANE, WA
PASCO #4 ORION HIGH SCHOOL
PASCO, WA

NOTE: TO PREVENT CONDENSATION, ALLOW 2" MIN. CLEARANCE AROUND THE EXTERIOR OF FREEZER WALKS. MAINTAIN RELATIVE HUMIDITY BELOW 55% AND TEMPERATURE BELOW 75°F
NOTE: FLOORS OF INSTALLATION SITES SHALL BE TRUE AND LEVEL WITHIN 3/16" PER 10' OR ADDITIONAL COSTS MAY BE INCURRED.
NOTE: MANUFACTURER IS NOT RESPONSIBLE FOR ELECTRICAL, PLUMBING, PERMITS OR CONCRETE WORK UNLESS LISTED ON THE QUOTE.

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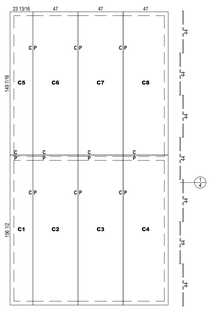
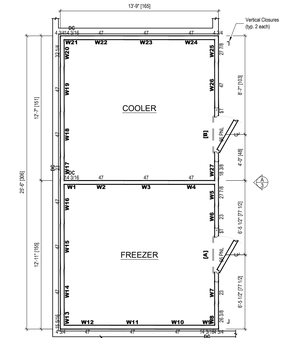
DATE DRAWN:	10/16/2023
DATE PRINTED:	11/13/2023
BY:	Kyle Lewis
CHK'D BY:	
DRW#:	23-IB-92781-01
BOX:	1 OF 1
SHEET:	1 OF 4



CEILING PANELS



WALL PANELS
Stucco galvalume
Stucco white galvalume

CONSTRUCTION LEGEND:
4" high density urethane
3 1/2" high density urethane

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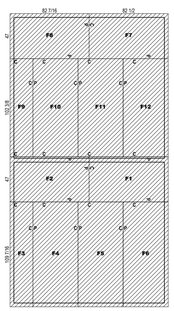
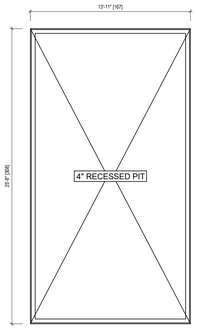
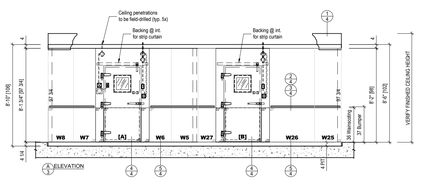


FLOOR PANELS



PIT PLAN



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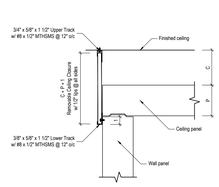
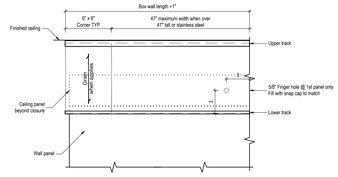


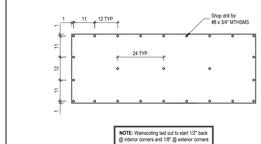
SECTION VIEW



FRONT VIEW

CAUTION: If ceiling height is not provided closures will be back ordered and shipped later additional freight charges will be charged

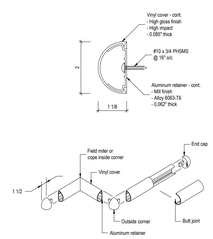
1/4 REMOVABLE CEILING CLOSURE



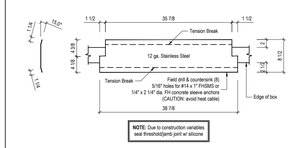
NOTE: Wainscoting laid out to start 1/2" back @ interior corners and 1/8" @ exterior corners

2 2/4 36" HIGH WAINSCOTING

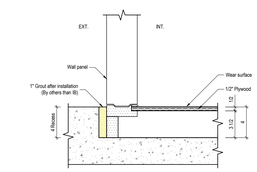
Please indicate where the bumper bar is to be located and if the outside corner and end cap call outs are correct.



3 3/4 BOSTON BUMPER RAIL



4 4 FLAT THRESHOLD
703 Flush Door



5 3 1/2" HTFN FLOOR
In Recessed Pit

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