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HENDERSON COUNTY SCHOOLS
INVESTING IN EXCELLENCE

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KDE Project No. BG 19-068
Architect Project No. 1807-244

Date: October, 2019

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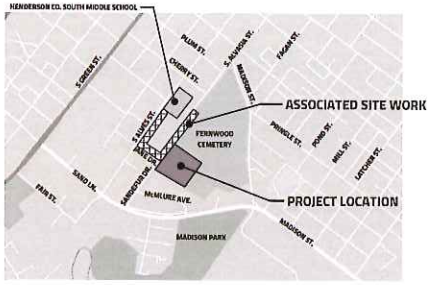

SITE LOCATION PLAN

NO SCALE

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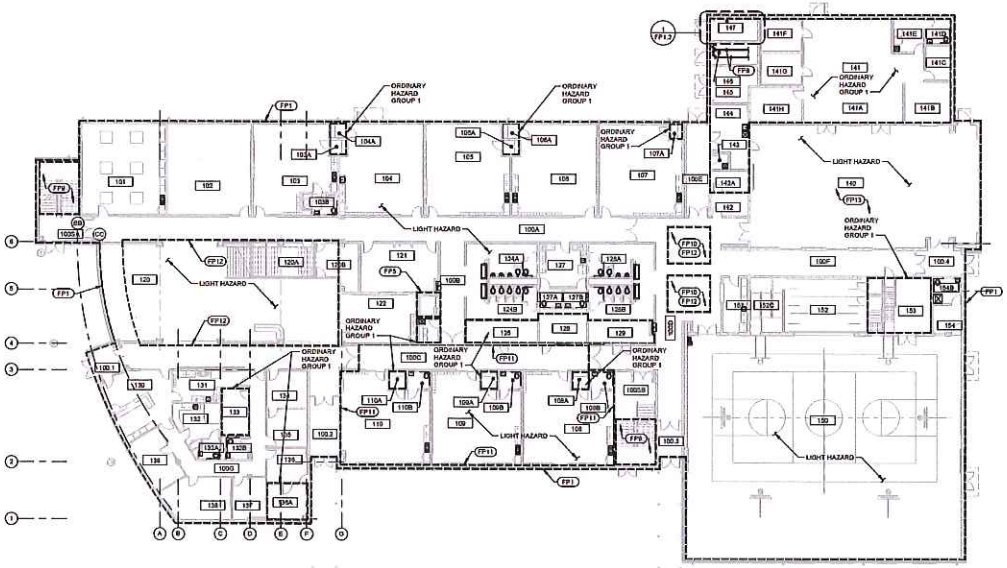
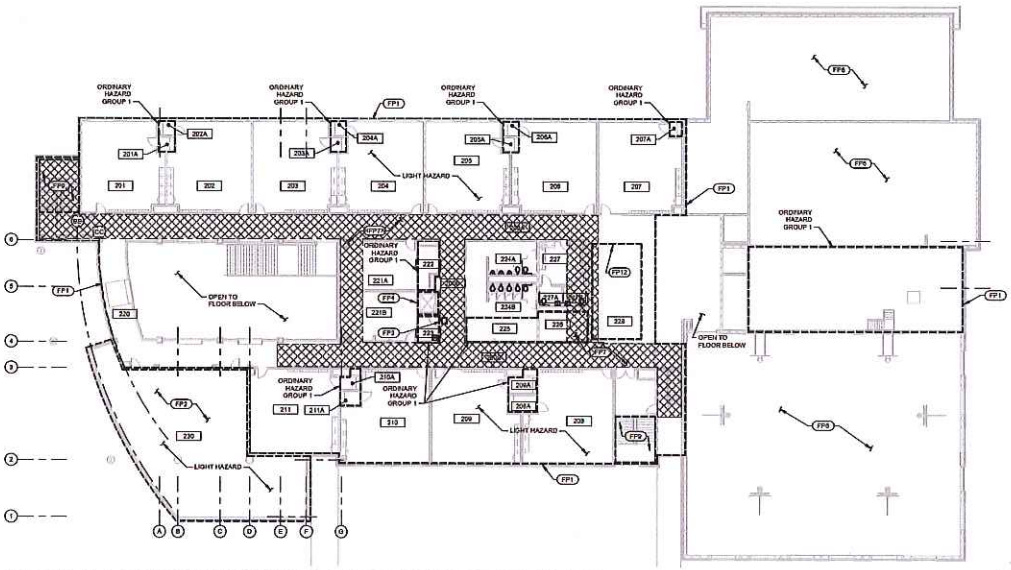


FIRST FLOOR FIRE PROTECTION PLAN

1/16" = 1'-0"



SECOND FLOOR AND MECHANICAL PLATFORM FIRE PROTECTION PLAN

1/16" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL FIELD VERIFY ROUTING AND CLEARANCE AND INSTALL SO ALL EQUIPMENT AND MATERIALS FIT PROPERLY AND CAN BE SERVICED. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS PRIOR TO INSTALLATION.

B. COORDINATE SPRINKLER PIPING AND EQUIPMENT WITH ARCHITECTURAL LAYOUT, LIGHT FIXTURE SUPPORTS, CONDUIT, HVAC, PLUMBING AND OTHER TRADES.

C. PIPING SHALL NOT BE SUPPORTED FROM ROOF DECK.

D. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING REGULATIONS, CODES, AND STANDARDS:
KENTUCKY BUILDING CODE
KENTUCKY MECHANICAL CODE
KENTUCKY PLUMBING CODE
OSHA
NFPA 13 AND OTHER APPLICABLE NFPA STANDARDS

E. ALL SPRINKLER HEADS SHALL BE QUICK RESPONSE AND SHALL HAVE STAINLESS STEEL FLEXIBLE CONNECTORS WHERE APPLICABLE.

F. COORDINATE SPRINKLER HEAD STYLE WITH CEILING TYPES. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR TYPES OF CEILINGS.

G. SPRINKLER HEADS SHALL BE LOCATED IN THE CENTER OF CEILING TILES.

H. SEAL AROUND ALL PENETRATIONS. FIRE STOP ALL FIRE-RATED WALLS OR FLOOR PENETRATIONS.

I. THE KITCHEN EQUIPMENT CONTRACTOR IS PROVIDING THE FIRE PROTECTION SYSTEM FOR THE GREASE HOOD AND INCLUDES DESIGN AND LAYOUT SPECIFIC TO THE COOKING EQUIPMENT UNDER THE GREASE HOOD. SUBMISSION OF THE DESIGN TO THE FIRE MARSHAL FOR APPROVAL, THE INSTALLATION OF THE FIRE PROTECTION SYSTEM NOZZLES AND PIPING SYSTEM, AND CONNECTION OF THE PIPING SYSTEM TO THE HOOD FIRE PROTECTION CABINET.

PLAN NOTES:

FP1 PROVIDE WET TYPE FIRE PROTECTION SYSTEM IN AREA INDICATED PER NFPA 13.

FP2 PROTECT EXTERIOR COVERED DECK WITH DRY-TYPE SPRINKLER SYSTEM PER NFPA 13.

FP3 PROVIDE DRY-TYPE VALVE AND AIR COMPRESSOR TO SERVE EXTERIOR COVERED DECK. SET AIR COMPRESSOR ON 4" THICK HOUSEKEEPING PAD ON MECHANICAL PLATFORM. SECURE COMPRESSOR TO PAD.

FP4 PROVIDE SPRINKLER IN TOP OF ELEVATOR SHAFT. SPRINKLER ORDINARY HAZARD GROUP 1. PROVIDE MONITORED SHUT-OFF VALVE AND FLOW SWITCH. SHUT-OFF VLAVE SHALL BE UPSTREAM OF FLOW SWITCH

FP5 PROVIDE SPRINKLER IN BOTTOM OF ELEVATOR PIT. SPRINKLER ORDINARY HAZARD GROUP 1. PROVIDE MONITORED SHUT-OFF VALVE AND FLOW SWITCH. SHUT-OFF VLAVE SHALL BE UPSTREAM OF FLOW SWITCH

FP6 SEE "FIRST FLOOR FIRE PROTECTION PLAN" THIS SHEET FOR WORK IN THIS AREA.

FP7 HATCH INDICATES MECHANICAL MEZZANINE. PROVIDE WET TYPE FIRE PROTECTION SYSTEM IN AREA INDICATED PER NFPA 13.

FP8 PROVIDE ZONE CONTROL VALVE(S) PER NFPA. PROVIDE A MINIMUM OF ONE ZONE PER FLOOR.

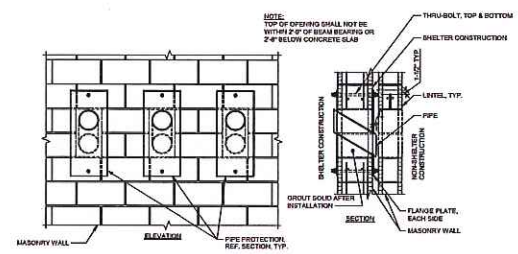
FP9 SPRINKLER UNDER STAIR LANDINGS PER NFPA.

FP10 SUSPENDED DECORATIVE CEILING. SPRINKLER ABOVE AND BELOW.

FP11 OUTLINE INDICATES TORNADO SHELTER. PROVIDE STRUCTURAL PIPE PENTRATION AT ALL PIPE PENTRATIONS LARGER THAN 2-1/16"ø. REFER TO "STRUCTURAL SIDEWALL PIPE PENETRATION DETAIL" THIS SHEET.

FP12 DECORATIVE CEILING. SPRINKLER HEADS IN DECORATIVE CEILING SHALL BE CONCEALED TYPE HEADS WITH PAINTABLE COVER. PAINT IN FIELD TO MATCH CEILING COLOR.

FP13 AREA INCLUDES LAY-IN CEILING WITH RECESSED HARD CEILING "CLOUDS". SPRINKLER HEADS IN HARD CEILING SHALL BE CONCEALED TYPE HEADS WITH PAINTABLE COVER. PAINT IN FIELD TO MATCH CEILING COLOR.



NOTES:
1. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPECIFIC WALL, CEILING AND STRUCTURAL CONSTRUCTION INFORMATION AND DETAILS
2. FOR PENTRATIONS 2-1/16"ø AND LARGER.

STRUCTURAL SIDEWALL PIPE PENETRATION DETAIL.

NO SCALE

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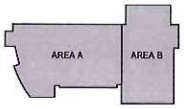

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Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CSM	CSM	ZIP

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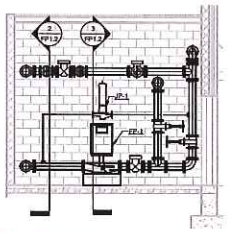
Sheet title:
FIRST, SECOND FLOOR & MECH. PLATFORM FIRE PROTECTION PLANS

Architect's Project No: 1807-244
Date: October, 2019

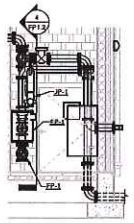
Drawing No:
FP1.1



FIRE PUMP ROOM SW ELEVATION

4 1/4" = 1'-0"

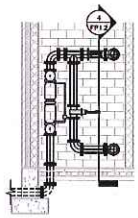
(NOTE: REFER TO "FIRE PROTECTION SYSTEM FLOW DIAGRAM" THIS SHEET FOR ADDITIONAL INFORMATION.)



FIRE PUMP ROOM NE ELEVATION

3 1/4" = 1'-0"

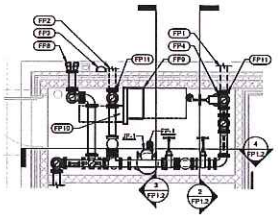
(NOTE: REFER TO "FIRE PROTECTION SYSTEM FLOW DIAGRAM" THIS SHEET FOR ADDITIONAL INFORMATION.)



FIRE PUMP ROOM SE ELEVATION

2 1/4" = 1'-0"

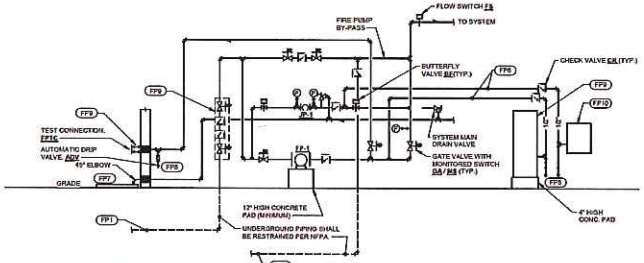
(NOTE: REFER TO "FIRE PROTECTION SYSTEM FLOW DIAGRAM" THIS SHEET FOR ADDITIONAL INFORMATION.)



ENLARGED FIRE PUMP ROOM PLAN

1 1/4" = 1'-0"

(NOTE: REFER TO "FIRE PROTECTION SYSTEM FLOW DIAGRAM" THIS SHEET FOR ADDITIONAL INFORMATION.)



FIRE PROTECTION SYSTEM FLOW DIAGRAM

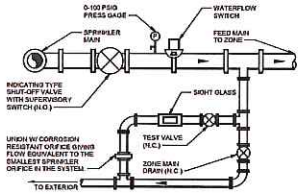
NO SCALE

FIRE PROTECTION PUMP SCHEDULE

SYMBOL	FLOW (GPM)	PUMP HEAD AT DESIGN (PSI)	SYSTEM FLUID	SUCTION SIZE	DISCHARGE SIZE	ELECTRICAL MOTOR SIZE (HP)	RPM	VOLT / PHASE	DISCONNECT / CONTROLLER / STARTER	MANUFACTURER	MODEL	TYPE	NOTES
FP-1	500	40	WATER	4"	4"	30	3500	460 / 3	SEE NOTE 1	AC FIRE PUMP	4x6x7F 1580	IN-LINE	NOTE 1
JP-1	5	75	WATER	1-1/4"	1-1/4"	1	3450	460 / 3	SEE NOTE 2	GOULDS	1ESV9	IN-LINE	NOTE 2

NOTES:

1. PROVIDE FIRE PUMP WITH CONTROLLER WITH SOFT START, UL/FM TESTED SOLENOID, 100,000 AIMP C.B. INTERUPT CAPACITY. TORNATECH MODEL GPA FIRE PUMP CONTROLLER OR APPROVED EQUAL PRIOR TO BID.
2. PROVIDE JOCKEY PUMP WITH TORNATECH MODEL JP3 JOCKEY PUMP CONTROLLER WITH DISCONNECT OR APPROVED EQUAL PRIOR TO BID.



ZONE CONTROL VALVE DETAIL

NO SCALE

PLAN NOTES:

- FP1 6" INCOMING FIRE SERVICE. REFER TO SITE CIVIL PLANS FOR CONTINUATION. DASHED LINE INDICATES PIPING BELOW GRADE.
- FP2 6" FIRE PROTECTION LINE TO FIRE DEPARTMENT CONNECTION. REFER TO SITE CIVIL PLANS FOR CONTINUATION AND FDC LOCATION. DASHED LINE INDICATES PIPING BELOW GRADE.
- FP3 PROVIDE AUDIBLE ALARM ON OUTSIDE OF BUILDING PER NFPA.
- FP4 VERTICAL DOUBLE CHECK VALVE ASSEMBLY WITH MONITORED SWITCH VALVES.
- FP5 DISCHARGE TO NEAREST FLOOR DRAIN.
- FP6 1/2" PRESSURE SENSING PIPE. INSTALL PER NFPA REQUIREMENTS.
- FP7 PROVIDE CONCRETE SPLASH BLOCK AT GRADE.
- FP8 FIRE PUMP TEST CONNECTION.
- FP9 FIRE PUMP (FP-1) CONTROLLER. PROVIDE SUPPORT STRUCTURE AS REQUIRED.
- FP10 JOCKEY PUMP (JP-1) CONTROLLER. PROVIDE SUPPORT STRUCTURE AS REQUIRED.
- FP11 6" FIRE PROTECTION DOWN.

FIRE PROTECTION SYMBOL LIST

SYMBOL:	DESCRIPTION:
	NEW PIPE
	NEW PIPE
	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
	SHUTOFF VALVE
	AUTOMATIC DRAIN VALVE
FP	FIRE PROTECTION
	FLOW SWITCH
	BUTTERFLY VALVE
	OS&Y VALVE
M	MONITORING SWITCH
	FIRE DEPARTMENT CONNECTION
	FIRE PUMP TEST HEADER
	CHECK VALVE
	PRESSURE RELIEF VALVE
	ANGLE VALVE

FIRE PROTECTION MATERIALS LIST

THE SYMBOLS AND THE MATERIALS LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS WHETHER SPECIFIED OR NOT.

CATALOG NAMES AND NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NAMES AND NUMBERS. THE FIRST LISTED MANUFACTURER IS THE BASIS OF DESIGN.

ADV AUTOMATIC DRIP VALVE, 175 PSI WP, BRASS BAR, STAINLESS STEEL SPRING AND RETAINING RING, CLOSING PRESSURE 13.5 PSI WITH INCREASING PRESSURE, OPENING PRESSURE 12.5 PSI WITH DECREASING PRESSURE, 1/2" NPT INLET AND 1/4" NPT DRAIN OUTLET. MANUFACTURERS & CATALOG NO.: VIKING B-1, CENTRAL AD-1, GEM AD-1, REUMLE-G.

BE 2-1/2" TO 12" BUTTERFLY VALVE, 175 PSI WP, LUGGED OR GROOVED TYPE, IRON BODDY, ALUMINUM BRONZE OR EPDM COATED IRON DISC, STAINLESS STEEL STEM AND SCREWS, EPDM SEAT, INTEGRAL MONITOR SWITCH, RATED FOR DEAD END SERVICE, UL/FM. MANUFACTURERS & CATALOG NO.: GEM 8200FP, 7700 FP, CENTRAL BFV, HIBCO LC3610-9, GID-4765-BH, VICTAULIC 705-W.

CK 2-1/2" TO 8" CHECK VALVE, 250 PSI WP, FLANGED OR GROOVED, IRON BODY, BRONZE MOUNTED BRONZE SEAT RING AND RUBBER DISC FACING SWING TYPE, UL/FM. MANUFACTURERS & CATALOG NO.: VIKING D-100-1, CENTRAL 60, RELIABLE DORS.

FPTC FIRE PUMP TEST CONNECTION, CAST BRASS HORIZONTAL BODY WITH BACK INLET, MALE CONNECTIONS WITH RIGID END N.P.T. X PIN LUG HOSE THREAD SWIVELS, REMOVABLE BRASS HOSE GATE VALVES, CAPS, CHAINS, FLUSH POLISHED CHROME PLATED WALL PLATE LABELED "PUMP TEST CONNECTION", 4" INLET X TWO (2) 2-1/2" OUTLETS UL THREADS TO MATCH LOCAL FIRE DEPARTMENT. MANUFACTURERS & CATALOG NO.: POTTER-ROEMER 5882 SERIES, CLROVER, GUARDIAN, ELKHART.

FS FLOW SWITCH, VANE TYPE FOR USE ON WET FIRE SPRINKLER SYSTEMS TO DETECT A MINIMUM FLOW OF 10 GPM. TWO SINGLE POLE DOUBLE THROW SWITCHES WITH PNEUMATIC RETARD-ADJUSTABLE FROM 0-60 SECONDS WITH AUTOMATIC RESET, TAMPER RESISTANT METAL HOUSING. UL/FM. MANUFACTURERS & CATALOG NO.: SYSTEM SENSOR WFD SERIES, POTTER ELECTRIC VSR-F.

GA 2-1/2" TO 12", 250# WP, OS&Y, FLANGED OR GROOVED, IRON BODY, BRONZE MOUNTED RESILIENT WEDGE, RISING STEM, COUNTER CLOCKWISE TO OPEN, UL/FM. MANUFACTURERS & CATALOG NO.: MUELLER #A-2360-6, CLOW #F-6130, STOCKHAM #G-612, CRANE #167

MS MONITOR SWITCH, ELECTRIC, ONE SINGLE POLE, DOUBLE THROW CONTACT, CAST ALUMINUM HOUSING WITH CORROSION RESISTANT PARTS, WITH J-BOLTS FOR MOUNTING. UL/FM. VERIFY ELECTRICAL CHARACTERISTICS WITH ELECTRICAL CONTRACTOR PRIOR TO PURCHASE. MANUFACTURERS & CATALOG NO.: POTTER ELECTRIC OSYSU-1, SYSTEM SENSOR OSV2

HYDRANT FLOW DATA

SOURCE	HYDRANT #271
DATE OF TEST:	05-29-19
STATIC PRESSURE:	48 PSI
RESIDUAL PRESSURE:	40 PSI
FLOW:	918 GPM

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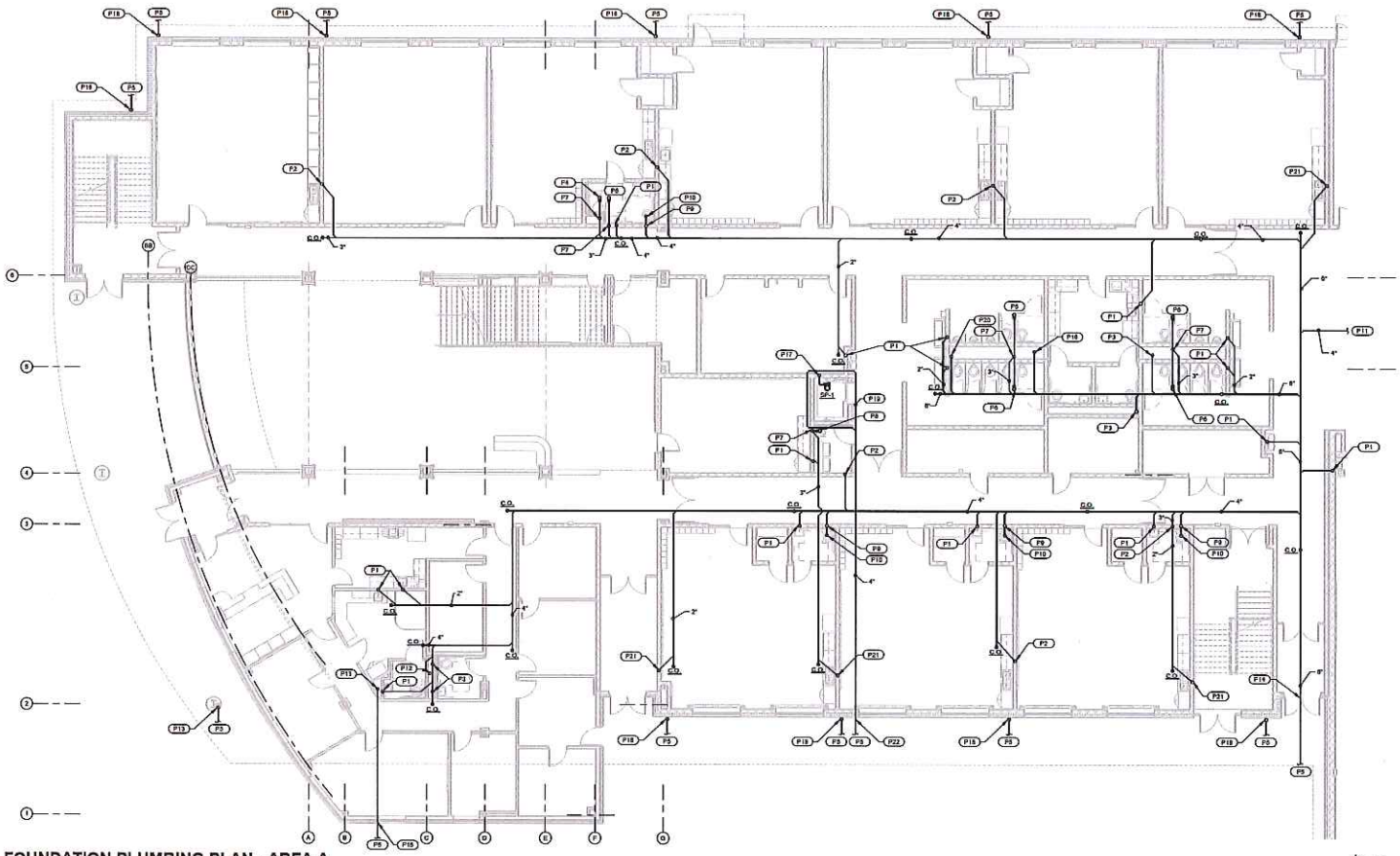
Sheet title:
ENLARGED FIRE PROTECTION PLAN AND NOTES

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
FP1.2



FOUNDATION PLUMBING PLAN - AREA A

1/8" = 1'-0"

PLUMBING LEGEND:

- COLD WATER PIPING
- HOT WATER PIPING
- HOT WATER RECIRCULATION PIPING
- VENT PIPING
- WASTE PIPING
- GW — GREASE WASTE
- G — NATURAL GAS PIPING
- STD — STORM DRAINAGE PIPING
- SHUT-OFF VALVE
- CHECK VALVE
- WATER HAMMER ARRESTOR
- RISER DOWN
- RISER UP
- FLOOR DRAIN
- VTR — VENT THRU ROOF
- CALIBRATED BALANCING VALVE

GENERAL NOTES: (TYP. FOR ALL DRAWINGS)

A. CONTRACTOR SHALL FIELD VERIFY CONDITIONS AT ALL POINTS OF CONNECTION PRIOR TO INSTALLATION.

B. ALL PIPING SHOWN ON DRAWINGS IS DIAGRAMMATIC. ADDITIONAL OFFSETS, WHICH MAY BE REQUIRED IN WASTE AND VENT RISERS SHALL BE PROVIDED AS REQUIRED.

C. COORDINATE PIPING LAYOUT WITH HVAC, ELECTRICAL, LIGHTING AND OTHER SPECIALTIES TO AVOID CONFLICTS.

D. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING REGULATIONS, CODES, AND STANDARDS:
KENTUCKY BUILDING CODE
KENTUCKY MECHANICAL CODE
KENTUCKY PLUMBING CODE
OSHA

E. FIRESTOP ALL FIRE-RATED WALL OR FLOOR PENETRATIONS.

F. PIPING SHALL NOT BE SUPPORTED FROM ROOF DECK. SUPPORT FROM STRUCTURE.

G. WHERE PERMITS OR FEES ARE REQUIRED FOR BUILDING UTILITY SERVICE CONNECTIONS, SETTING METER AND ROUTING OF GAS LINE, CONTRACTOR SHALL ARRANGE FOR ALL PAPERWORK AND PAY FOR THESE CHARGES.

H. COMMISSIONING: CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OWNER COMMISSIONING AGENT. COMMISSIONING AGENT RESPONSIBILITIES WILL INCLUDE:
- FUNCTIONAL TEST OF PLUMBING SYSTEMS INCLUDING VERIFICATION OF MANUAL AND SENSOR OPERATED FLUSH VALVES AND FAUCETS
- FUNCTIONAL TEST OF DOMESTIC WATER PUMPS
- FUNCTIONAL ALARM TESTS
- FUNCTIONAL TEST OF BUILDING MANAGEMENT SYSTEM AND INTEGRATION OF EQUIPMENT.

FINAL REPORT. CONTRACTOR SHALL BE RESPONSIBLE FOR FIXING ANY DEFICIENCIES WITH INSTALLATION FOUND DURING COMMISSIONING.

PLAN NOTES:

- P1 2" WASTE UP TO FIXTURE(S).
- P2 3" WASTE UP.
- P3 4" WASTE UP.
- P4 3" WASTE UP TO FIXTURE(S).
- P5 SEE CIVIL SITE PLANS FOR CONTINUATION.
- P6 3" WASTE UP TO SHOWER DRAIN.
- P7 1-1/2" VENT UP.
- P8 3" WASTE UP TO MOP BASIN.
- P9 2" VENT UP.
- P10 4" WASTE UP TO FIXTURE(S).
- P11 SEE SHEET P1.2 FOR CONTINUATION.
- P12 2" WASTE UP TO OPEN SITE DRAIN IN WALL.
- P13 6" STORM UP.
- P14 I.E. 95.2'. INVERT BASED ON FINISHED FLOOR ELEVATION OF 100.0'.
- P15 I.E. 98.2'. INVERT BASED ON FINISHED FLOOR ELEVATION OF 100.0'.
- P16 6" WASTE UP.
- P17 2" SUMP PUMP DISCHARGE UP.
- P18 6" STORM UP. PROVIDE CAST IRON DOWNSPOUT BOOT SIMILAR TO J.R. HOE "D-SERIES". COORDINATE SIZE WITH ARCHITECTURAL DOWNSPOUTS.
- P19 4" PERFORATED FOUNDATION DRAIN.
- P20 6" VENT UP.
- P21 2" WASTE UP.
- P22 6" STORM. I.E. 95.4'. INVERT BASED ON FINISHED FLOOR ELEVATION OF 100.0'.

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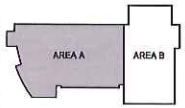

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Sheet title:

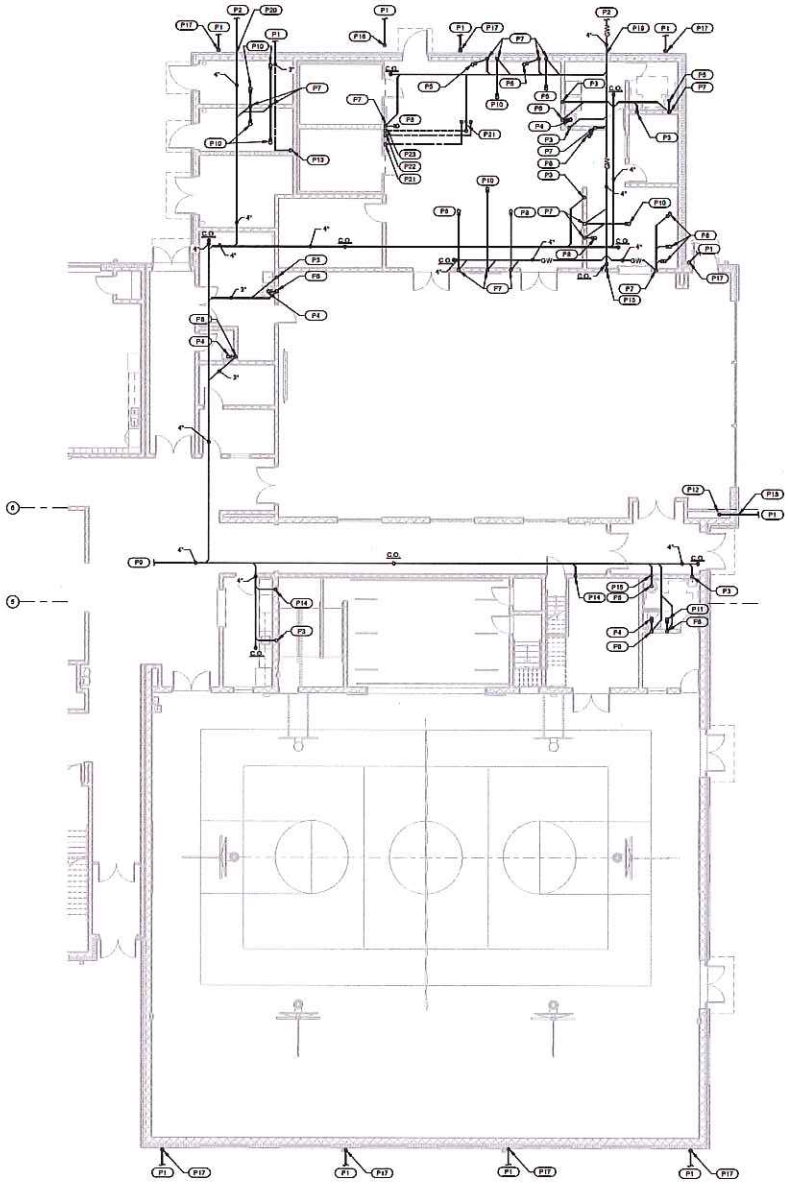
FOUNDATION PLUMBING PLAN - AREA A

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

P1.1



FOUNDATION PLUMBING PLAN - AREA B

1/8" = 1'-0"

GENERAL PLAN NOTES:

A. ALL GREASE WASTE (GW) PIPING SHALL BE CAST IRON. TRANSITION TO PVC AFTER GREASE INTERCEPTOR.

B. COORDINATE WASTE LOCATIONS SERVING FLOOR DRAINS, FLOOR SINKS AND FOOD SERVICE EQUIPMENT WITH KITCHEN EQUIPMENT CONTRACTOR (KEC) AND FOOD SERVICE DRAWINGS.

PLAN NOTES:

- P1 SEE CIVIL SITE PLANS FOR CONTINUATION.
- P2 SEE SITE UTILITY DRAWING, U1.1 FOR CONTINUATION.
- P3 2" WASTE UP TO FIXTURE.
- P4 2" WASTE UP TO FIXTURE.
- P5 4" WASTE UP TO FIXTURE.
- P6 1-1/2" VENT UP.
- P7 2" VENT UP.
- P8 4" WASTE UP TO FLOOR SINK.
- P9 SEE SHEET P1.1 FOR CONTINUATION.
- P10 4" WASTE UP TO FLOOR DRAIN.
- P11 3" WASTE UP TO FLOOR DRAIN.
- P12 4" STORM UP.
- P13 3" INCOMING WATER SERVICE UP.
- P14 4" WASTE UP.
- P15 4" VENT UP.
- P16 3-PSI INCOMING NATURAL GAS SERVICE UP TO GAS METER AND REGULATOR. SIZE FOR 1,400 CFH.
- P17 6" STORM UP. PROVIDE CAST IRON DOWNSPOUT BOOT SIMILAR TO J.R. HOE "O-SERIES". COORDINATE SIZE WITH ARCHITECTURAL DOWNSPOUTS.
- P18 I.E. 96.3'. RIVERT BASED ON FINISHED FLOOR ELEVATION OF 100'-0"
- P19 I.E. 97.8'. RIVERT BASED ON FINISHED FLOOR ELEVATION OF 100'-0"
- P20 I.E. 98.3'. RIVERT BASED ON FINISHED FLOOR ELEVATION OF 100'-0"
- P21 1/2" CW, 1/2" HW, 2" WASTE, 2" LOOP VENT TO KEC SINK.
- P22 1/2" CW UP.
- P23 1/2" HW UP.
- P24 2" LOOP VENT UP.

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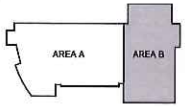

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Sheet title:

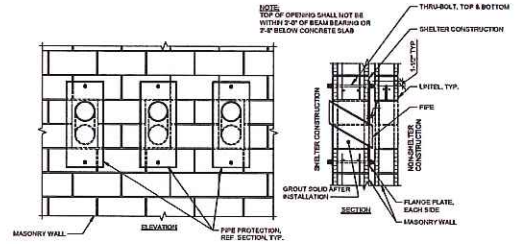
FOUNDATION PLUMBING PLAN - AREA B

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

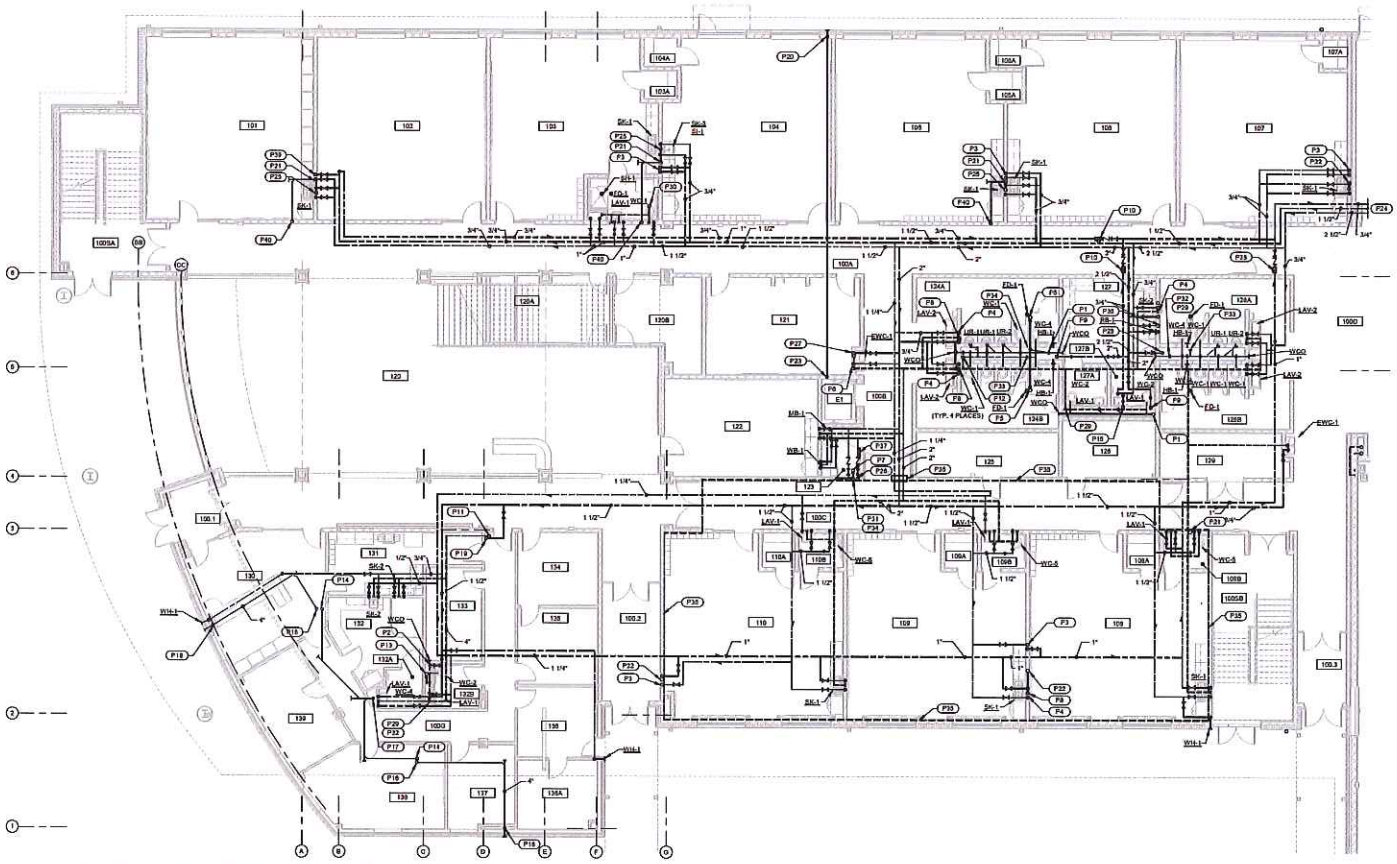
P1.2



NOTES:
1. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPECIFIC WALL, CEILING AND STRUCTURAL CONSTRUCTION INFORMATION AND DETAILS.
2. FOR PENTRATIONS 2-1/16"± AND LARGER.

STRUCTURAL SIDEWALL PIPE PENETRATION DETAIL

NO SCALE



FIRST FLOOR PLUMBING PLAN - AREA A

1/0" = 1'-0"

PLAN NOTES:

- P1 4" WASTE UP AND DOWN.
- P2 1-1/2" CW DOWN IN CHASE TO SERVE FIXTURES.
- P3 1/2" HW & CW UP TO FIXTURE(S) ON SECOND FLOOR.
- P4 1/2" HW & CW UP AND DOWN TO FIXTURE(S) ON FIRST AND SECOND FLOOR.
- P5 3" WASTE UP TO FLOOR DRAIN.
- P6 1-1/2" WASTE UP TO FIXTURE, 2" WASTE DOWN.
- P7 3" WASTE UP TO MOP BASIN.
- P8 2" WASTE UP TO FIXTURE.
- P9 2" CW UP AND DOWN TO FIXTURE(S) IN CHASE ON FIRST AND SECOND FLOOR.
- P10 CALIBRATED BALANCING VALVE. BALANCE TO PROVIDE 0.5 GPM.
- P11 4" VENT UP.
- P12 6" VENT UP AND DOWN.
- P13 3" OPEN SITE DRAIN WITH TRAP PRIMER (TP-1). SUPPLY WITH 4" FUNNEL APPROXIMATELY 1'-0" ABOVE FINISH FLOOR. COORDINATE WITH ARCHITECT FOR EXACT LOCATION OF ACCESS DOOR.
- P14 4" STORM UP TO RD-1.
- P16 3/4" HW, 1/2" HW UP AND DOWN TO FIXTURES IN CHASE.
- P16 4" STORM OVERFLOW UP TO RD-1.
- P17 6" STORM OVERFLOW DOWN IN CHASE.
- P18 4" STORM OVERFLOW DOWN IN CHASE. TERMINATE AT EDGE OF BUILDING ETID A LAMBS TONGUE DRAIN SPOUT APPROXIMATELY 8" ABOVE FINISHED GRADE.
- P19 3/4" CW UP.
- P20 2" SUMP PUMP DISCHARGE DOWN. TO EXTERIOR OF BUILDING. DISCHARGE AT 2'-0" ABOVE GRADE. PROVIDE LAMBS TOUNGUE AT EXTERIOR.
- P21 3" WASTE UP AND DOWN.
- P22 2" WASTE UP AND DOWN.
- P23 2" SUMP PUMP DISCHARGE DOWN.
- P24 SEE SHEET P1.4 FOR CONTINUATION.
- P25 ROUTE 2" WASTE FROM SINK(S) HORIZONTALLY IN WALL AND CONNECT TO 3" WASTE.
- P26 3/4" CW, 3/4" HW UP TO SERVE MOP BASIN.
- P27 1/2" CW UP TO SERVE WATER COOLER.
- P28 2" CW DOWN IN CHASE TO SERVE FIXTURES.
- P29 4" VENT DOWN IN CHASE TO SERVE FIXTURES.
- P30 4" VENT UP.
- P31 3" WASTE DOWN.
- P32 4" WASTE DOWN.
- P33 1-1/2" VENT DOWN.
- P34 1-1/2" VENT UP.
- P35 PROVIDE STRUCTURAL PIPE PENTRATION AT ALL PIPE PENTRATIONS OF WALL OR STRUCTURAL SLAB ABOVE LARGER THAN 5-1/16"±. REFER TO "STRUCTURAL SIDEWALL PIPE PENETRATION DETAIL" THIS SHEET.
- P36 1/2" CW UP TO REFRIGERATOR BOX (RB-1) ON SECOND FLOOR.
- P37 SUMP PUMP REMOTE ALARM. PROVIDE SUPPORT STRUCTURE AS REQUIRED.
- P38 CALIBRATED BALANCING VALVE. BALANCE TO PROVIDE 1.0 GPM.
- P39 1/2" HW, 3/4" CW UP TO FIXTURE(S) ON SECOND FLOOR.
- P40 3" WASTE UP.

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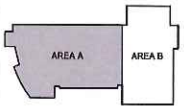

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Sheet title:

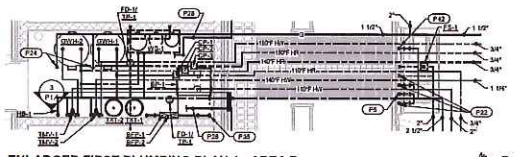
FIRST FLOOR PLUMBING PLAN - AREA A

Architect's Project No: 1807-244

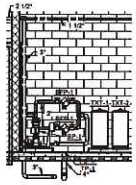
Date: October, 2019

Drawing No:

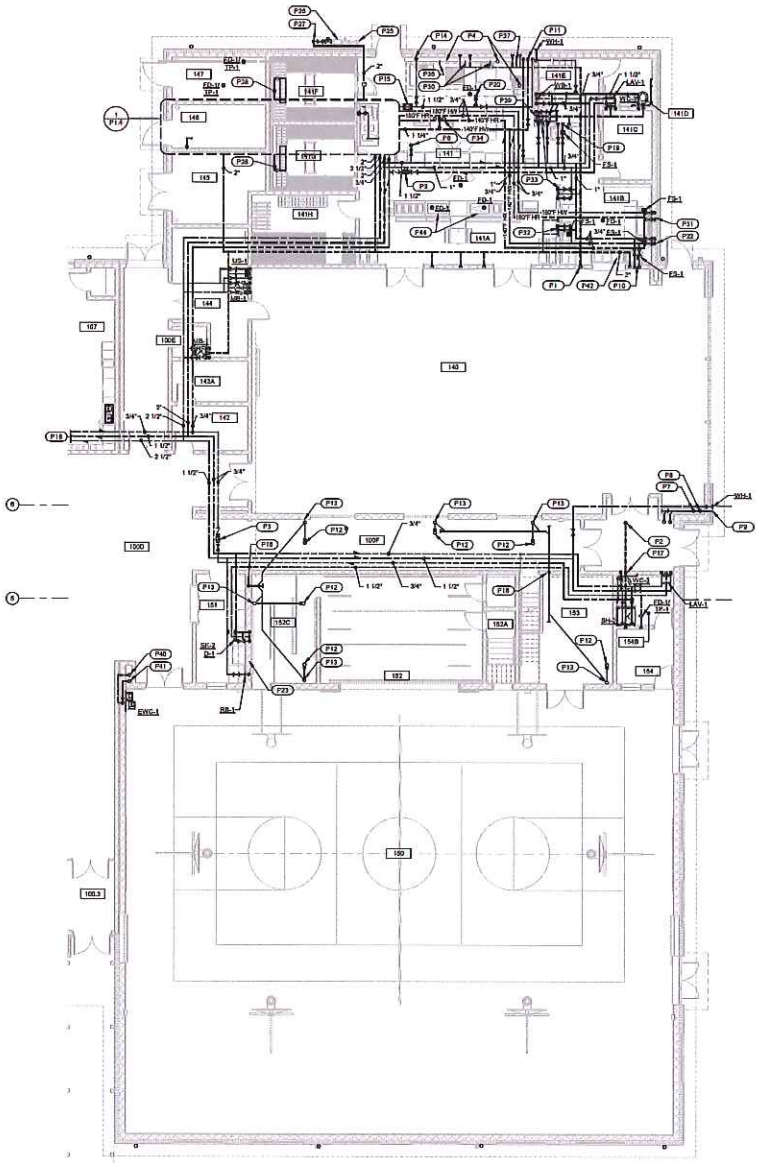
P1.3



1 ENLARGED FIRST PLUMBING PLAN 1 - AREA B
1/4" = 1'-0"



3 SECTION
1/4" = 1'-0"



FIRST FLOOR PLUMBING PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES:

A. COORDINATE UTILITY LOCATIONS, CONNECTIONS AND SIZES WITH FOOD SERVICE EQUIPMENT AND FOOD SERVICE EQUIPMENT SUPPLIER. REFER TO FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION. PLUMBING CONTRACTOR SHALL PROVIDE ALL FINAL CONNECTIONS TO EQUIPMENT INCLUDING ALL REQUIRED MATERIALS SUCH AS SUPPLY STOPS, VALVES, FILTERS, TRAPS, CHECK VALVES, PIPING, TUBING, IN-DIRECT WASTE CONNECTIONS ETC. BETWEEN KEC EQUIPMENT AND FLOOR DRAINS/FLOOR SINKS AND MAINTAIN MINIMUM AIR GAP REQUIREMENTS.

B. PROVIDE 4" HIGH CONCRETE EQUIPMENT PAD FOR ALL EQUIPMENT IN MECHANICAL ROOM.

PLAN NOTES:

P1 4" VENT UP AND DOWN. 4" VENT THRU ROOF.

P2 4" VENT UP.

P3 CALIBRATED BALANCING VALVE. BALANCE TO PROVIDE 0.8 GPM.

P4 4" WASTE STUBBED UP FROM BELOW FOR CONNECTION TO FLOOR TROUGH PROVIDED BY K.E.C. INSTALLED BY PLUMBING CONTRACTOR.

P5 1/2" CW DOWN TO K.E.C. PROVIDED HOT WATER DISPENSER. PROVIDE SHUT-OFF VALVE, CONNECTION TO K.E.C PROVIDED FILTER AND FINAL CONNECTION.

P6 3/4" CW UP TO ROOF HYDRANT ON ROOF. ROUTE DRAIN LINE TO MOP BASIN IN ROOM 141E.

P7 4" STORM UP & DOWN.

P8 4" STORM OVERFLOW DRAIN UP.

P9 4" STORM OVERFLOW. TERMINATE AT EDGE OF BUILDING INTO A LAMBS TONGUE DRAIN SPOUT APPROXIMATELY 8" ABOVE FINISHED GRADE.

P10 1/2" CW, 1/2" 180°F HW DOWN TO K.E.C. PROVIDED WASTE DISPOSER. PROVIDE EACH CONNECTION WITH VACUUM BREAKER. PROVIDE 2" INDIRECT WASTE TO FLOOR SINK.

P11 3/4" CW, 3/4" 180°HW, 1-1/2" NATURAL GAS DOWN TO K.E.C. PROVIDED UTILITY DISTRIBUTION SYSTEM.

P12 4" WASTE UP TO FLOOR DRAIN.

P13 2" VENT UP.

P14 1-1/2" NATURAL GAS DOWN TO K.E.C. PROVIDED UTILITY DISTRIBUTION SYSTEM.

P15 K.E.C. PROVIDED PLUMBING CONTRACTOR INSTALLED AUTOMATIC NATURAL GAS SHUT-OFF VALVE. K.E.C. SHALL BE RESPONSIBLE FOR CONTROLS AND INTERCONNECTING VALVE WITH HOOD FIRE SUPPRESSION SYSTEM.

P16 4" WASTE DOWN.

P17 4" VENT DOWN.

P18 SEE SHEET P1.3 FOR CONTINUATION.

P19 1/2" CW, 1/2" HW DOWN TO K.E.C. PROVIDED TWO-COMPARTMENT SINK. PLUMBING CONTRACTOR SHALL PROVIDE CHROME PLATED BRASS ANGLE SUPPLY LOOSE KEY STOPS WITH COMPRESSION FITTING AND CHROME PLATED SOFT COPPER RISERS AND ESCUTCHEON. CONNECT WASTE FROM TWO COMPARTMENTS TO 2" IN-DIRECT WASTE TO FLOOR SINK.

P20 1" GAS UP TO KEC PROVIDED MAKE-UP AIR UNIT.

P21 1/2" 180°F HW, 1/2" CW DOWN TO K.E.C. PROVIDED DISHWASHER. PROVIDE SHUT-OFF VALVES AT CONNECTIONS TO EQUIPMENT.

P22 1/2" CW, 1/2" HW, 2" LOOP VENT DOWN UNDERSLAB TO SERVE K.E.C. PROVIDED WORK TABLE SINK.

P23 1" CW UP TO MECHANICAL PLATFORM B.

P24 1" GAS DOWN TO WATER HEATER. PROVIDE WITH UNION, SHUT-OFF VALVE, AND DIRTLEG

P25 INCOMING GAS SERVICE DOWN.

P26 GAS METER AND PRESSURE REGULATOR BY UTILITY COMPANY. METER AND REGULATOR SHALL BE CAPABLE OF 2,000 CFH AT 2PSI TO 10" W.C. PAINT ALL EXPOSED NATURAL GAS PIPING GRAY. CONTRACTOR SHALL PAY ALL UTILITY FEES, PERMITS ETC. THIS INCLUDES GAS METER, TAP FEES AND PIPING. PROVIDE WITH AUTOMATIC EARTHQUAKE ACTIVATED SHUT-OFF VALVE.

P27 2" GAS PIPING DOWN TO GAS METER AND REGULATOR.

P28 3/4" COPPER DRAIN LINE FROM FREEZER/COOLER EVAPORATOR. PROVIDE WITH 3/4" FLEXIBLE ELASTOMERIC INSULATION AND SELF REGULATING HEATING CABLE AND ALL NECESSARY ACCESSORIES FOR COMPLETE AND OPERATIONAL SYSTEM. BASED ON THERMON MODEL BSX OR APPROVED EQUAL PRIOR TO BID. 120V, 3 WATS/FT.

P29 1" GAS UP TO K.E.C. MAKE-UP AIR UNIT.

P30 3/4" GAS FROM K.E.C. PROVIDED UTILITY DISTRIBUTION SYSTEM TO K.E.C. PROVIDED RANGE AND CONVECTION OVEN. PLUMBING CONTRACTOR SHALL PROVIDE FINAL CONNECTION.

P31 1/2" CW, 1/2" 180°F HW DOWN TO K.E.C. PROVIDED DISH MACHINE. PROVIDE 2" IN-DIRECT WASTE TO FLOOR SINK. INSTALL K.E.C. PROVIDED DRAIN TEMPERING KIT.

P31 1/2" CW, 1/2" 180°F HW DOWN TO K.E.C. PROVIDED DISH MACHINE. PROVIDE 2" IN-DIRECT WASTE TO FLOOR SINK.

P32 1/2" CW, 1/2" 140°F HW DOWN TO K.E.C. PROVIDED THREE COMPARTMENT SINK RINSE FAUCET. PROVIDE 1-1/2" WASTE FROM THREE COMPARTMENTS TO FLOOR SINK. PLUMBING CONTRACTOR SHALL PROVIDE CHROME PLATED BRASS ANGLE SUPPLY LOOSE KEY STOPS WITH COMPRESSION FITTING AND CHROME PLATED SOFT COPPER RISERS AND ESCUTCHEON

P33 1/2" CW, 1/2" HW, 2" WASTE, 1-1/2" VENT DOWN TO K.E.C. PROVIDED HAND SINK. PLUMBING CONTRACTOR SHALL PROVIDE CHROME PLATED BRASS ANGLE SUPPLY LOOSE KEY STOPS WITH COMPRESSION FITTING AND CHROME PLATED SOFT COPPER RISERS, 1-1/4" 17 GAUGE CAST BRASS ADA COMPLIANT P-TRAP WITH CLEANOUT AND ESCUTCHEON. INSULATE TRAP WASTE AND SUPPLIES WITH TRUBRO HANDI-LAV-GUARD INSULATION KIT.

P34 1/2" CW, 1/2" HW, 2" WASTE, 2" LOOP VENT FROM BELOW TO K.E.C. PROVIDED WORK TABLE SINK. PLUMBING CONTRACTOR SHALL PROVIDE CHROME PLATED BRASS ANGLE SUPPLY LOOSE KEY STOPS WITH COMPRESSION FITTING AND CHROME PLATED SOFT COPPER RISERS, 1-1/4" 17 GAUGE CAST BRASS P-TRAP WITH CLEANOUT.

P35 3" INCOMING WATER SERVICE DOWN.

P36 3/4" CW FROM K.E.C. PROVIDED UTILITY DISTRIBUTION SYSTEM TO K.E.C. PROVIDED COMBI-OVEN. PLUMBING CONTRACTOR SHALL INSTALL K.E.C. PROVIDED FILTER AND PROVIDE FINAL CONNECTION. PROVIDE 2" INDIRECT WASTE TO K.E.C. FURNISHED FLOOR TROUGH.

P37 1/2" CW, 1/2" 140°F HW, 3/4" GAS FROM K.E.C. PROVIDED UTILITY DISTRIBUTION SYSTEM TO K.E.C. PROVIDED TILTING SKILLET. PLUMBING CONTRACTOR SHALL PROVIDE FINAL CONNECTION.

P38 1/2" CW, 1/2" 140°F HW DOWN TO K.E.C. PROVIDED PRE-RINSE FAUCET. PROVIDE 2" IN-DIRECT WASTE TO FLOOR SINK.

P39 1/2" CW, 1/2" HW, 3" WASTE, 1-1/2" VENT DOWN TO K.E.C. PROVIDED MOP SINK.

P40 1/2" CW UP. REFER TO "MECHANICAL PLATFORM AND ROOF PLUMBING PLANS" ON SHEET P1.6 FOR CONTINUATION.

P41 1-1/2" VENT UP. REFER TO "MECHANICAL PLATFORM AND ROOF PLUMBING PLANS" ON SHEET P1.6 FOR CONTINUATION.

P42 PROVIDE 1-1/2" IN-DIRECT WASTE FROM DISH TABLE TO FLOOR SINK.

P43 PROVIDE 3/8" CW TO K.E.C. PROVIDED ICE CUBBER. PROVIDE WITH SHUT-OFF VALVE. PROVIDE 1/2" IN-DIRECT WASTE FROM K.E.C. PROVIDED ICE CUBBER TO FLOOR SINK.

P44 PROVIDE 1" IN-DIRECT WASTE FROM K.E.C. PROVIDED COLD PAN COUNTER TO FLOOR DRAIN.

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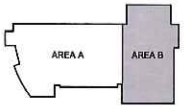

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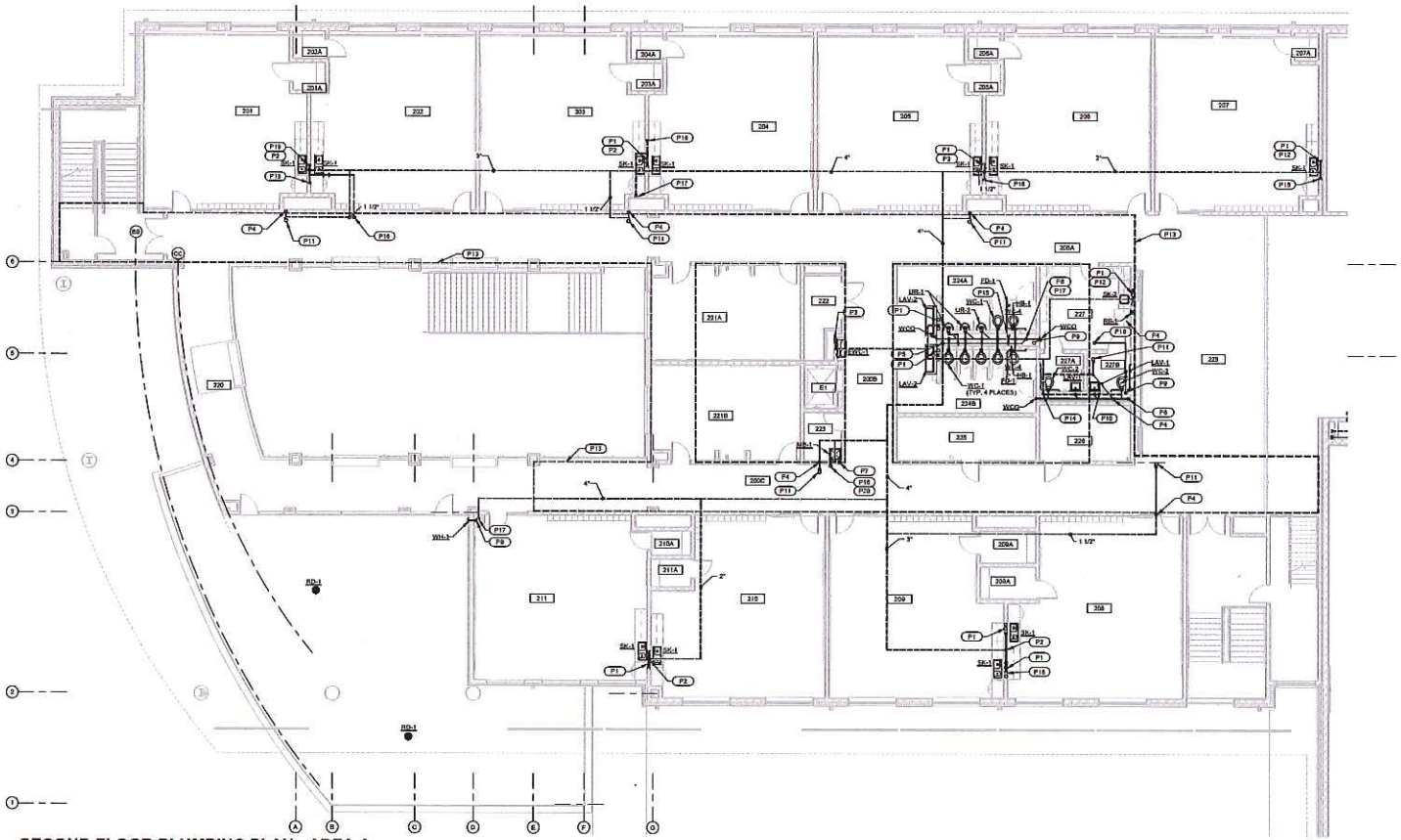
Sheet title:
FIRST FLOOR PLUMBING PLAN - AREA B

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
P1.4

PLAN NOTES:

- P1 1/2" CW, 1/2" HW FROM BELOW.
- P2 3" WASTE DOWN. ROUTE WASTE FROM SINK(S) HORIZONTALLY IN WALL TO WASTE RISER.
- P3 1/2" CW, 1-1/2" WASTE DOWN.
- P4 3" WASTE DOWN.
- P5 6" VENT UP AND DOWN, 8" VENT THRU ROOF.
- P6 4" WASTE DOWN.
- P7 3/4" HW, 3/4" CW FROM BELOW.
- P8 3/4" CW FROM BELOW.
- P9 2" CW FROM BELOW TO SERVE FIXTURES IN CHASE.
- P10 1/2" HW FROM BELOW TO SERVE FIXTURES IN CHASE.
- P11 3" WASTE UP TO FLOOR DRAIN ON MECHANICAL PLATFORM.
- P12 3" WASTE DOWN. ROUTE WASTE FROM SINK HORIZONTALLY IN WALL TO WASTE RISER.
- P13 DASHED LINE INDICATED MECHANICAL PLATFORM A.
- P14 2" VENT DOWN IN CHASE FIXTURES.
- P15 1-1/2" VENT DOWN.
- P16 3/4" CW UP TO HOSE BIBB ON MECHANICAL PLATFORM A.
- P17 4" VENT DOWN.
- P18 1-1/2" VENT DOWN.
- P19 3/4" CW, 1/2" HW FROM BELOW.
- P20 PROVIDE SHUT-OFF VALVE IN VERTICAL.



SECOND FLOOR PLUMBING PLAN - AREA A
1/8" = 1'-0"

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AREA A | AREA B

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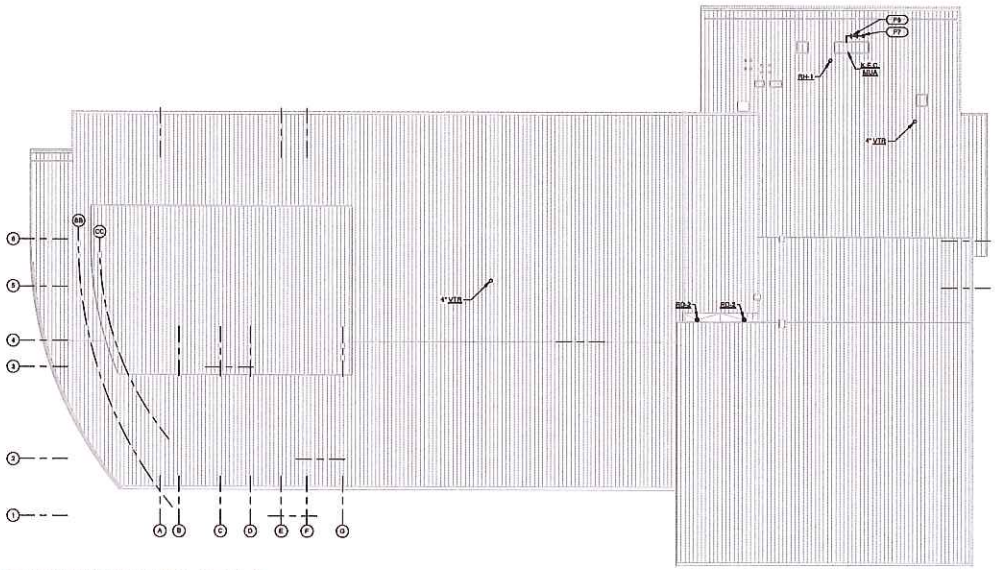
Sheet title:
SECOND FLOOR PLUMBING PLAN

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
P1.5

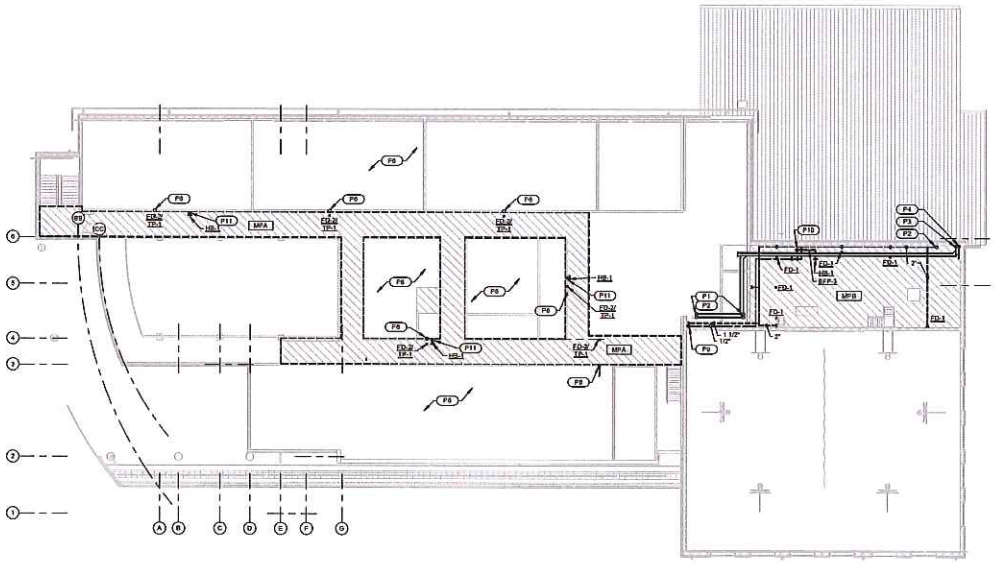
PLAN NOTES:

- P1 4" STORM UP TO RD-3.
- P2 4" STORM OVERFLOW UP TO RD-2.
- P3 4" STORM DOWN.
- P4 4" STORM OVERFLOW DOWN.
- P5 4" VENT DOWN, 4" VENT THROUGH ROOF.
- P6 REFER TO "SECOND FLOOR PLUMBING PLAN" ON SHEET P1.5 FOR VENTING IN AREA A.
- P7 1" GAS DOWN.
- P8 1" GAS TO K.E.C. PROVIDED MAKE-UP AIR UNIT. PROVIDE WITH SHUT-OFF VALVE, DIRT LEG AND UNION.
- P9 1/2" CW, 1-1/2" VENT DOWN TO ELECTRIC WATER COOLER.
- P10 1" CW DOWN.
- P11 3/4" CW DOWN.



ROOF PLUMBING PLAN - AREA B

1/16" = 1'-0"



MECHANICAL PLATFORM PLUMBING PLAN

1/16" = 1'-0"

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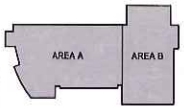

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Sheet title:

MECHANICAL PLATFORM AND ROOF PLUMBING PLANS

Architect's Project No: 1807-244

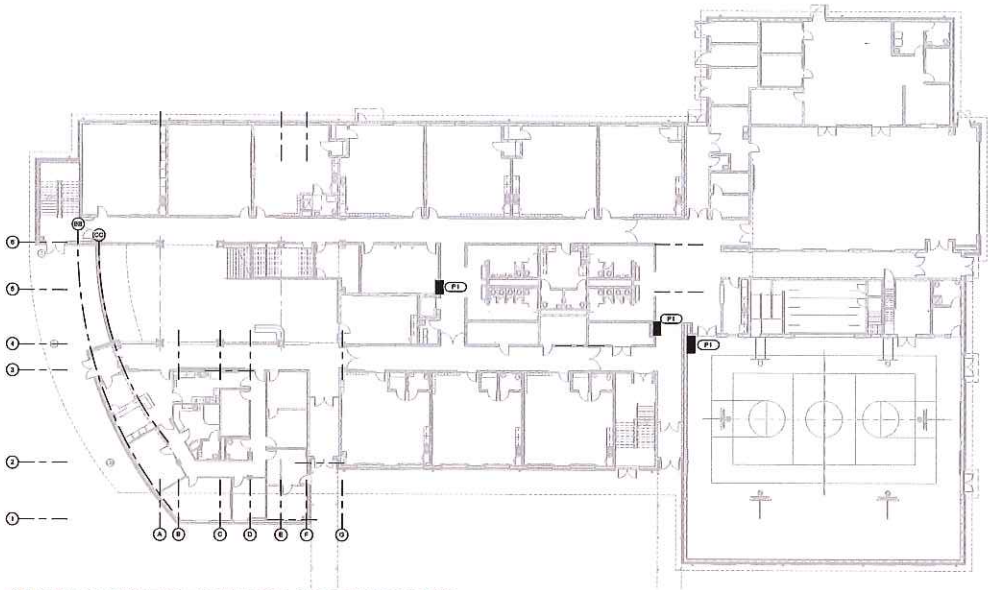
Date: October, 2019

Drawing No:

P1.6

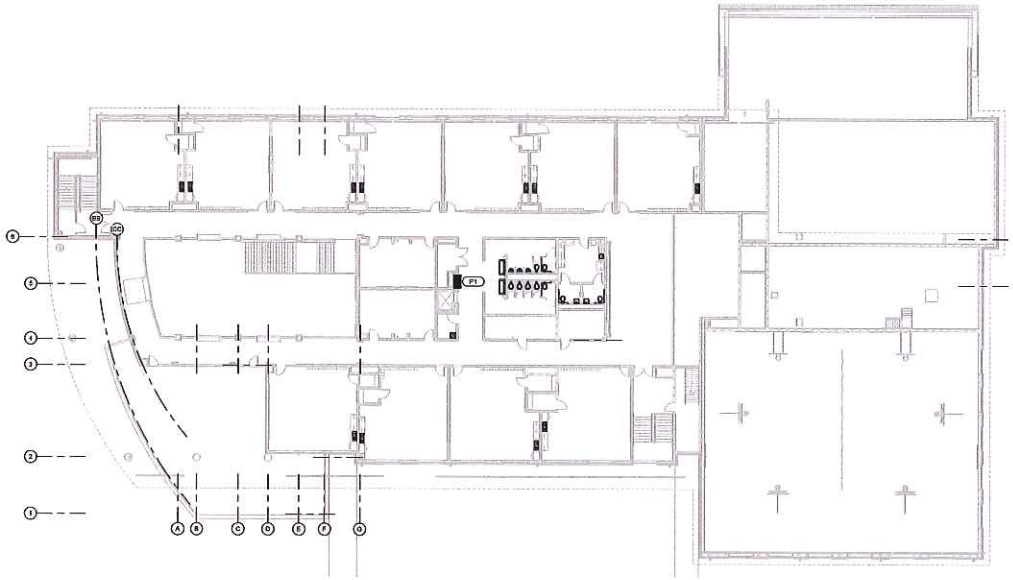
PLAN NOTES:

(M1) WATER BOTTLE FILLING STATION.



FIRST FLOOR WATER BOTTLE FILLING STATION PLAN

1/16" = 1'-0"



SECOND FLOOR WATER BOTTLE FILLING STATION PLAN

1/16" = 1'-0"

THIS PLAN REQUIRED BY KENTUCKY PLUMBING CODE KRS183.060

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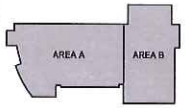

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Sheet title:

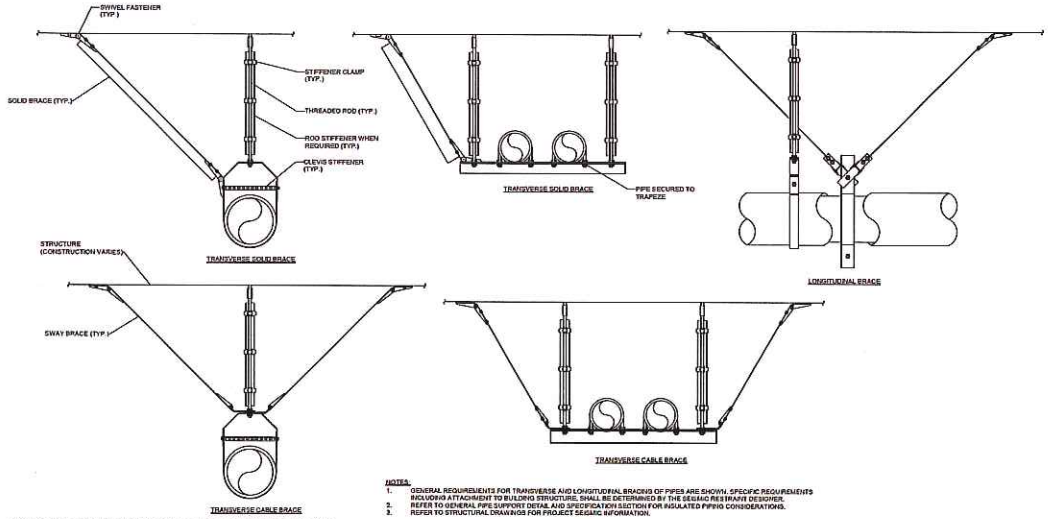
WATER BOTTLE FILLING STATION PLANS

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

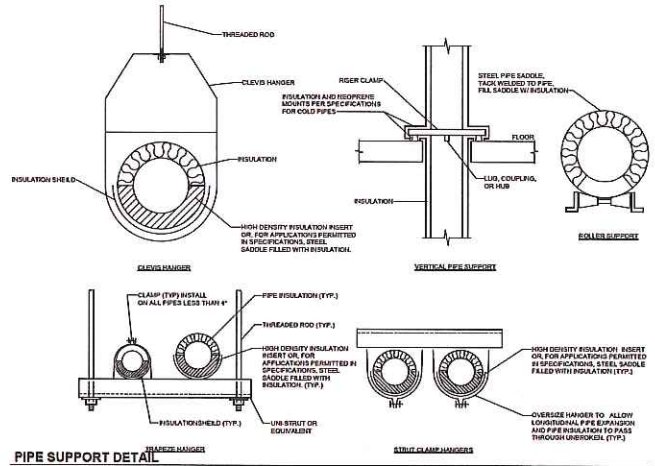
P1.7



NOTES:
1. GENERAL REQUIREMENTS FOR TRANSVERSE AND LONGITUDINAL BRACING OF PIPES ARE SHOWN. SPECIFIC REQUIREMENTS INCLUDING ATTACHMENT TO BUILDING STRUCTURE, SHALL BE DETERMINED BY THE SEISMIC RESTRAINT DESIGNER.
2. REFER TO GENERAL PIPE SUPPORT DETAIL AND SPECIFICATION SECTION FOR INSULATED PIPING CONSIDERATIONS.
3. REFER TO STRUCTURAL DRAWINGS FOR PROJECT SEISMIC INFORMATION.

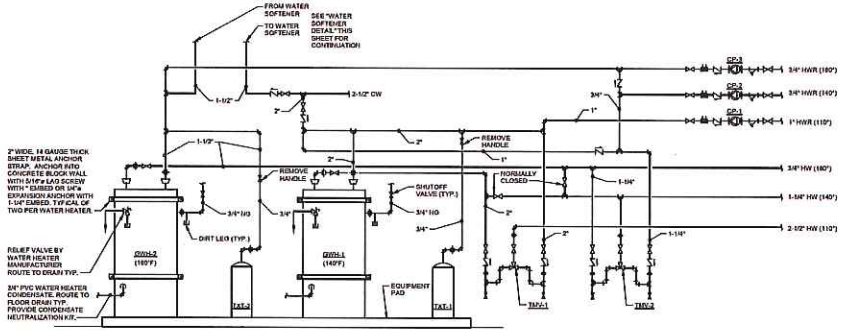
TYPICAL SEISMIC BRACING OF SUSPENDED PIPING

NO SCALE



PIPE SUPPORT DETAIL

NO SCALE



WATER HEATER PIPING DETAIL

NO SCALE

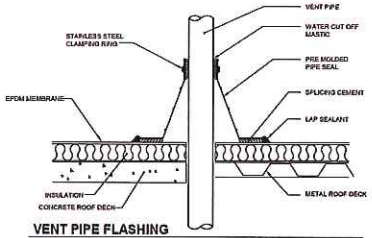
DOMESTIC HOT WATER CIRCULATING PUMP SEQUENCE OF OPERATION

THE PUMP SHALL BE CONTROLLED BY A DEDICATED DIGITAL CONTROLLER. THE CONTROLLER SHALL BE PROVIDED BY THE BUILDING MANAGEMENT SYSTEM (BMS) CONTRACTOR AND CONNECTED TO THE BMS. THE PUMP(S) SHALL BE PROGRAMMED TO OPERATE ON AN OCCUPANCY SCHEDULE. THE OCCUPANCY SCHEDULE SHALL BE ADJUSTABLE AT THE OPERATOR INTERFACE.

OCCUPIED MODE
THE CONTROLLER SHALL ENABLE OCCUPIED MODE WHEN THE BMS DETERMINES OCCUPANCY IS TRUE. DURING OCCUPIED MODE, THE PUMP(S) SHALL BE PROGRAMMED TO OPERATE FROM AN AQUASTAT. WHEN THE AQUASTAT INDICATES HOT WATER RETURN TEMPERATURE IS BELOW 105°F (ADJ.) FOR THE 110°F LOOP, BELOW 130°F (ADJ.) FOR THE 140°F LOOP, AND BELOW 175°F FOR THE 180°F LOOP, THE PUMP(S) SHALL BE INDEXED ON. WHEN THE AQUASTAT INDICATES HOT WATER RETURN TEMPERATURE REACHES 110°F (ADJ.) FOR THE 110°F LOOP, 140°F (ADJ.) FOR THE 140°F LOOP, AND 180°F FOR THE 180°F LOOP THE PUMP(S) SHALL BE INDEXED OFF.

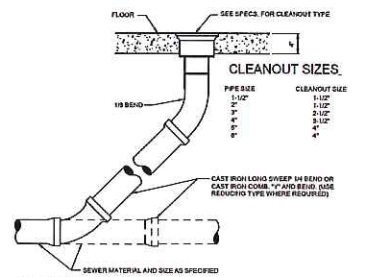
OVERRIDE MODE
THE CONTROLLER SHALL ENABLE OVERRIDE MODE WHEN THE BMS DETERMINES OCCUPANCY IS FALSE VIA THE OCCUPANCY SCHEDULE AND AN OCCUPANCY SENSOR INDICATES OCCUPANCY IS TRUE. DURING OVERRIDE MODE, THE PUMP SHALL BE PROGRAMMED TO OPERATE AS DESCRIBED DUCT OCCUPIED MODE. OVERRIDE DURATION SHALL BE 60 MINUTES (ADJ.)

UNOCCUPIED MODE
THE CONTROLLER SHALL ENABLE UNOCCUPIED MODE WHEN THE BMS DETERMINES OCCUPANCY IS FALSE. DURING UNOCCUPIED MODE, THE PUMP(S) SHALL BE SHALL BE INDEXED OFF.



VENT PIPE FLASHING

NO SCALE

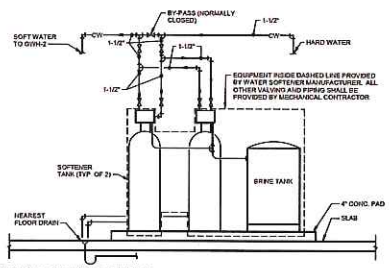


CLEANOUT SIZES

PIPE SIZE	CLEANOUT SIZE
1-1/2"	1-1/2"
2"	1-1/2"
3"	2-1/2"
4"	3-1/2"
5"	4"
6"	4"

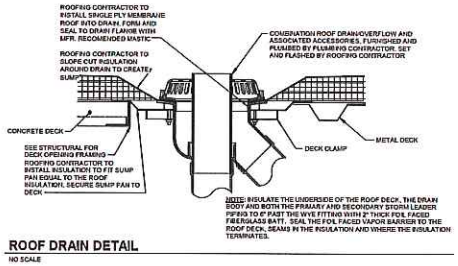
TYPICAL CLEANOUT DETAIL

NO SCALE



WATER SOFTENER DETAIL

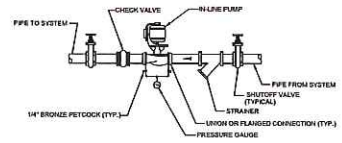
NO SCALE



NOTE: INSULATE THE UNDERSIDE OF THE ROOF DECK, THE DRAIN BODY AND BOTH THE PRIMARY AND SECONDARY STORM LEADER PIPING TO 4' PAST THE WYE FITTING WITH 2" THICK FOIL FACED FIBERGLASS BATT. SEAL THE FOIL FACED VAPOR BARRER TO THE ROOF DECK, SEAMS IN THE INSULATION AND WHERE THE INSULATION TERMINATES.

ROOF DRAIN DETAIL

NO SCALE



IN LINE PUMP

NO SCALE

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Sheet title:

PLUMBING DETAILS

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

P2.1

PLUMBING FIXTURE ROUGH-IN SCHEDULE

FIXTURE DESCRIPTION	DOMESTIC C.W.	DOMESTIC H.W.	SANITARY	VENT	IPC 2006 DFU	IPC 2006 CWFU	IPC 2006 HWFU	REMARKS
WATER CLOSET	1-1/2"	-	4"	2"	6	10	-	-
LAVATORY	1/2"	1/2"	1-1/2"	1-1/2"	1	1.5	1.5	NOTE 1
SINK	1/2"	1/2"	1-1/2"	1-1/2"	3	1.5	1.5	NOTE 1
MOP BASIN	3/4"	3/4"	3"	1-1/2"	3	3	3	-
FLOOR DRAIN	-	-	3"	1-1/2"	6	-	-	-
FLOOR DRAIN	-	-	4"	2"	8	-	-	-
HOSE BIBB / WALL HYDRANT	3/4"	-	-	-	-	2.5	-	-
ELECTRIC WATER COOLER	1/2"	-	1-1/2"	1-1/2"	1		-	-
SHOWER/WASHER BOX	1/2"	1/2"	2"	1-1/2"	2	2	2	-

NOTES:
1. SANITARY RISER UP IN WALL TO FIXTURE SHALL BE A MINIMUM OF 2".
2. SIZES SHOWN ARE MINIMUMS. SIZES SHOWN ON THE DRAWING THAT ARE LARGER THAN THE SIZES LISTED IN THE SCHEDULE SHALL DICTATE THE ROUGH-IN SIZE.

WATER HAMMER ARRESTOR SCHEDULE

MARK	U.P.S.	F.U. RATING	J.R. SMITH	JOSAM	ZURN	JOHN/EPEC
A	1"	1 - 11	5000	75001	100	65001
B	1"	12 - 32	5010	75002	200	65002
C	1"	33 - 60	5020	75003	300	65003
D	1"	61 - 113	5030	75004	400	65004
E	1"	114 - 154	5040	75005	500	65005

MISCELLANEOUS EQUIPMENT SCHEDULE

SYMBOL	LOCATION	DESCRIPTION	REMARKS
BFP-1 BFP-2	MECHANICAL ROOM	2" REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER. PROVIDE WITH TWO SHUTOFF BALL VALVES, TEST COCKS AND A "Y" STRAINER. MOUNT BACKFLOW PREVENTERS STACKED WITH BOTTOM BFP AT 24" A.F.F. PROVIDE AIR GAP FITTINGS AND ROUTE DRAIN TO FLOOR DRAIN.	BASED ON WILKINS MODEL 975XL/U3
BFP-3	MECHANICAL ROOM	1" REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER. PROVIDE WITH TWO SHUTOFF BALL VALVES, TEST COCKS AND A "Y" STRAINER. MOUNT BACKFLOW PREVENTERS STACKED WITH BOTTOM BFP AT 24" A.F.F. PROVIDE AIR GAP FITTINGS AND ROUTE DRAIN TO FLOOR DRAIN.	BASED ON WILKINS MODEL 975XL/U3
BP-1	MECHANICAL ROOM	BOOSTER PUMP - 2 PUMP ASSEMBLY, STANDARD DPUMP, 70 GPM, 20 FT. HEAD, 3600 RPM, 1.5 HP MOTOR, 460V 3 PHASE	BASED ON B&G MODEL HVL203-4SV
CP-1 (100°F)	MECHANICAL ROOM	CIRCULATING PUMP - 3-SPEED INLINE PUMP WITH 1 GPM, 20 FT. HEAD, 270 WATTS. 115 VOLT, 1 PHASE. PROVIDE WITH COMBINATION AQUASTAT/TIMER CONTROL.	BASED ON B&G NBF-36
CP-2 (100°F)	MECHANICAL ROOM	CIRCULATING PUMP - 3-SPEED INLINE PUMP WITH 1 GPM, 20 FT. HEAD, 270 WATTS. 115 VOLT, 1 PHASE. PROVIDE WITH COMBINATION AQUASTAT/TIMER CONTROL.	BASED ON B & G PL-359
CP-3 (100°F)	MECHANICAL ROOM	CIRCULATING PUMP - 3-SPEED INLINE PUMP WITH 1 GPM, 20 FT. HEAD, 270 WATTS. 115 VOLT, 1 PHASE. PROVIDE WITH COMBINATION AQUASTAT/TIMER CONTROL.	BASED ON B & G PL-359
GWH-1 GWH-2	MECHANICAL ROOM	DOMESTIC WATER HEATER - GAS FIRED HOT WATER HEATER, 285,000 BTU/HR INPUT CAPACITY, 273,600 BTU/HR CAPACITY OUTPUT, 120V/1PH WITH 15 AMP BREAKER, STAINLESS STEEL HEAT EXCHANGER AND GLASS LINED TANK; MINIMUM GAS PRESSURE 4" W.C., MODULATING BURNER WITH 5:1 TURNDOWN. PROVIDE WITH CONDENSATE NEUTRALIZATION KIT AND 4" CONCENTRIC VENT KIT.	BASED ON LOCHINVAR MODEL SHELD SHA-205-125
SP-1	ELEVATOR PIT	SUMP PUMP, 1-1/2" DISCHARGE, 1/2 HP, 20 GPM AT 20 FT WITH OILTIED CONTROL. PROVIDE WITH CHECK VALVE AND ELECTRIC PLUG IN THE ELEVATOR SHAFT. INSTALL THE CONTROL SENSORS AND REMOTE ALARM PANEL PER MANUFACTURER'S RECOMMENDATIONS. INSTALL THE REMOTE ALARM PANEL IN JANITOR'S CLOSET NEXT TO ELEVATOR SHAFT ON FIRST FLOOR. MOUNT THE REMOTE ALARM IN THE JANITORS ROOM 125. PROVIDE 120V OUTLET(S) AS REQUIRED.	BASED ON LIBERTY MODEL ELV200
TMV-1 TMV-2	MECHANICAL ROOM	LEAD FREE THERMOSTATIC WATER MIXING VALVE WITH 3 GPM MINIMUM FLOW RATE, 27 GPM MAXIMUM FLOW RATE AT 10 PSI DROP, 93-140 DEGF RANGE, 3/4" INLETS, 1" OUTLET, 125 PSI MAXIMUM WORKING PRESSURE, CHECK STOPS, INTEGRAL STRAINERS, COPPER ENCAPSULATED THERMOSTATIC ASSEMBLY AND LOCKING HANDLE. PROVIDE AN INLET THERMOMETER, WALL SUPPORT AND BALL VALVES WITH DIAL THERMOMETERS. INSTALL ACCORDING TO MANUFACTURER INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS	BASED ON SYMMONS MODEL 7-400
TXT-1 TXT-2	MECHANICAL ROOM	THERMAL EXPANSION TANK - ASME RATED, REPLACEABLE BLADDER TYPE, PRECHARGED, 150 PSI MAXIMUM DESIGN PRESSURE, 1" NPT STAINLESS STEEL SYSTEM CONNECTION, STANDARD TIRE VALVE CHARGING CONNECTION, 35 GALLON ACCEPTANCE VOLUME, SET TANK PRESSURE TO 60 PSI.	BASED ON WESSELS MODEL TXA-130-WO
WS-1	MECHANICAL ROOM	DOMESTIC WATER SOFTENER - TWO (2) 11"Ø x 63.1" SOFTENER TANKS, 18"Ø x 38" BRINE TANK. SOFTENER SHALL PROVIDE ALTERNATING PROGRESSIVE FLOW, AUTOMATIC REGENERATION WITH 1-1/2" NPT IN / OUT, WITH 12' CORD AND PLUG.	BASED ON CULLIGAN HE 1.5 TWIN

PLUMBING FIXTURE LIST

CO - FLOOR CLEANOUT ACCESS COVERS. ZURN Z-1400 CAST IRON BODY WITH ROUND NICKEL BRONZE FRAME AND COVER. FLOOR CLEANOUT ACCESS COVERS - CARPETED FLOORS. FURNISH CAST IRON BODY WITH NICKEL BRONZE CARPET CLAMP.

EWC-1 ELKAY LESTRILRK99SP, WALL HUNG, ADA, UL LABELED SELF-CONTAINED ELECTRIC WATER COOLER WITH FRONT PUSH PADS, STAINLESS STEEL SURFACES, VISUAL FILTER MONITOR, AUTOMATIC FILTER RESET, FLEXIBLE SAFETY BUBBLER, BOTTLE FILLING STATION, STEEL MOUNTING FRAME, NON-FERROUS WATERWAYS, , AUTOMATICALLY OPERATE, PERMANENTLY LUBRICATED AIR COOLED, HERMETICALLY SEALED COOLING UNIT HAVING FREEZE-UP PROTECTION, ADJUSTABLE TEMPERATURE CONTROL, 120 VOLT, 1 PHASE 8.0 GPH. FURNISH WITH CHROME PLATED P-TRAP, STOP VALVE WITH SUPPLY TUBING. MOUNT 33-7/8" FLOOR TO LOW ORIFICE.

FD-1 - FLOOR DRAIN ZURN Z-415. CAST IRON BODY, NICKEL BRONZE ADJUSTABLE 9" ROUND STRAINER HEAD WITH SECURED SQUARE HOLE GRATE. SEE PLANS FOR SIZE. REFER TO PLANS FOR LOCATIONS TO BE PROVIDED WITH TRAP PRIMER (TP-1) CONNECTION. SEE SCHEDULE BELOW FOR TRAP PRIMER INFORMATION.

FD-2 - SAME AS FD-1 EXCEPT PROVIDE WITH 8" DIAMETER FUNNEL

FS-1 - FLOOR SINK 10"x10"x7" DEEP NICKEL BRONZE FRAME AND SQUARE SLOTTED GRATE. HALF GRATE WITH ANTI-SPLASH DOME STRAINER IN BOTTOM. BASED ON ZURN Z1600.

HB-1 - HOSE BIB WOODFORD 24P POLISHED CHROME HOSE BIBB WITH VACUUM BREAKER AND REMOVABLE KEY. MOUNT 18" ABOVE FINISHED FLOOR.

LAV-1 - LAVATORY AMERICAN STANDARD "LUCERNE" 0356.421.20 X 18" WHITE VITREOUS CHINA WALL HUNG LAVATORY. FURNISH WITH SLOAN EAF-300-EM SENSOR OPERATED HAND WASHING FAUCET WITH 0.5 GPM, HARDWIRED TRANSFORMER, INTEGRATED TEMPERATURE CONTROL LEVER AND GRID STRAINER; 1-1/4" 17 GAUGE CAST BRASS ADA COMPLIANT P-TRAP WITH CLEANOUT, ESCUTCHEON, LOOSE KEY STOP WALL SUPPLIES AND CHROME PLATED SOFT COPPER RISERS. INSULATE TRAP, WASTE AND SUPPLIES W/ TRUEBRO HANDI-LAV-GUARD INSULATION KIT. FURNISH WITH ZURN FLOOR MOUNTED CARRIER SUITABLE FOR FIXTURE. MOUNT 34" FLOOR TO RIM. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL REQUIRED LOW VOLTAGE TRANSFORMERS, LINE AND LOAD SIDE OVERCURRENT PROTECTION, LOAD SIDE LOW VOLTAGE CABLING AND LOAD SIDE CONDUIT RACEWAY SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE ALL LOW VOLTAGE TRANSFORMER LOCATIONS WITH ELECTRICAL CONTRACTOR.

LAV-2 - LAVATORY ACORN "MERIDIAN EDGE CORTERRA 3832-1-50-MXTP, TWO WASH STATION WHITE CORTERRA RECYCLED SOLID-SURFACE POLYMER RESIN WALL HUNG WHITE BASIN SYSTEM LAVATORY WITH 304 STAINLESS STEEL HINGED TRAP ENCLOSURE. FURNISH WITH HARDWIRED SENSOR OPERATED FAUCET WITH 120V TRANSFORMER AND 0.5 GPM FLOW. ASSE 1070 TEMPERING VALVE AND OPEN GRID STRAINER, 1-1/2" 17 GAUGE CAST BRASS P-TRAP WITH CLEANOUT, ESCUTCHEON, LOOSE KEY STOP WALL SUPPLIES AND CHROME PLATED SOFT COPPER RISERS. FURNISH WITH ACORN FLOOR MOUNTED CARRIER SUITABLE FOR FIXTURE. MOUNT 34" FLOOR TO RIM.

MB-1 - MOP BASIN. FIAT MSB. 24" X 24" MOLDED STONE RECEPTOR WITH BRASS DRAIN BODY, STAINLESS STEEL DOME STRAINER, LINT BASKET AND VINYL BUMPER GUARD. FURNISH WITH CHICAGO 897 SUPPLY FITTING WITH INTEGRAL STOPS, VACUUM BREAKER, BUCKET HOOK, WALL BRACE AND HOSE END SPOUT; FIAT 832-AA, 30" LONG HEAVY-DUTY CLOTH REINFORCED RUBBER HOSE WITH STAINLESS STEEL HOSE BRACKET, 858-CC STAINLESS STEEL MOP HANGER WITH THREE RUBBER TOOL GRIPS, TWO STAINLESS STEEL WALL GUARDS. 833-AA SILICONE SEALANT. MOUNT 32" FLOOR TO FAUCET, 18" FLOOR TO HOSE BRACKET, 54" FLOOR TO MOP HANGER.

RH-1 - ROOF HYDRANT - FREEZELESS ROOF HYDRANT, AUTOMATIC DRAINING, LONG LIFE PACKING WITH VALVE SEAT, ONE-PIECE VARIABLE FLOW PLUNGER, BRASS NOZZLE WITH 3/4" MALE HOSE THREAD, ROOF DECK HYDRANT SUPPORT, WOODFORD RH-1

RB-1 - GATEY 38823 REFRIGERATOR CONNECTION BOX WITH VALVE. COORDINATE MOUNTING HEIGHT WITH EQUIPMENT.

RD-1 - FROST MODEL 100C4AJP ULTRA LOW PROFILE 4" OUTLET COMBINATION ROOF DRAIN / OVERFLOW AND ASSOCIATED ACCESSORIES. FURNISHED AND PLUMBED BY PLUMBING CONTRACTOR, SET AND FLASHED BY ROOFING CONTRACTOR

RD-2 - FROST MODEL 100C4LP LOW PROFILE 4" OUTLET COMBINATION ROOF DRAIN / OVERFLOW AND ASSOCIATED ACCESSORIES, FURNISHED AND PLUMBED BY PLUMBING CONTRACTOR, SET AND FLASHED BY ROOFING CONTRACTOR.

SH-1 - SHOWER ENCLOSURE - AQUARIUS MODEL 0883/BF, 84"W X 36"D X 77-1/4"H WHITE SOLID SURFACE ADA ROLL-IN SHOWER, TEXTURED FLOOR, MICROBAN ANTI-MICROBIAL PROTECTION, TWO 24" AND ONE 30" GRAB BARS, CURTAIN ROD AND WHITE VINYL CURTAIN, SHELF AND FOLD UP SEAT. PROVIDE SYMMONS C-88-500-830-V-X TEMPTROL PACKAGED UNIT, DIVERTER, SHOWER HEAD WITH ARM AND FLANGE WALL-MOUNTED SHOWER, 30" SLIDE BAR, PRESSURE BALANCING MIXING VALVE WITH COMBINATION INTEGRAL VOLUME CONTROL AND ADJUSTABLE STOP SCREW TO LIMIT HANDLE TURN, BLUE VACUUM BREAKER, WALL CONNECTION AND FLANGE, FLEXIBLE METAL HOSE AND INTEGRAL SERVICE STOPS. MOUNT MIXING VALVE AT 48" FLOOR TO CENTERLINE AND BOTTOM OF SLIDE BAR AT 48" ABOVE FLOOR. PROVIDE WITH 2" SHOWER DRAIN. SHOWER FLOOR SHALL BE RECESSED IN FLOOR FOR NO CURB. REFER TO DRAWINGS FOR LEFT OR RIGHT HAND CONFIGURATION.

SH-2 - SHOWER ENCLOSURE - AQUARIUS MODEL 0383/BF, 36"W X 36"D X 77-1/4"H WHITE SOLID SURFACE ADA TRANSFER SHOWER, TEXTURED FLOOR, MICROBAN ANTI-MICROBIAL PROTECTION, ONE 24" SMOOTH 53 S-BAR AND ONE 36-1/2"-(30" SMOOTH 53 L-BAR GRAB BARS, CURTAIN ROD AND WHITE VINYL CURTAIN, SHELF AND FOLD UP SEAT. PROVIDE SYMMONS C-99-500-830-V-X TEMPTROL PACKAGED UNIT, DIVERTER, SHOWER HEAD WITH ARM AND FLANGE WALL-MOUNTED SHOWER, 30" SLIDE BAR, PRESSURE BALANCING MIXING VALVE WITH COMBINATION INTEGRAL VOLUME CONTROL AND ADJUSTABLE STOP SCREW TO LIMIT HANDLE TURN, BLUE VACUUM BREAKER, WALL CONNECTION AND FLANGE, FLEXIBLE METAL HOSE AND INTEGRAL SERVICE STOPS. MOUNT MIXING VALVE AT 48" FLOOR TO CENTERLINE AND BOTTOM OF SLIDE BAR AT 48" ABOVE FLOOR. PROVIDE WITH 2" SHOWER DRAIN. SHOWER FLOOR SHALL BE RECESSED IN FLOOR FOR NO CURB. REFER TO DRAWINGS FOR LEFT OR RIGHT HAND CONFIGURATION.

SI-1 - POINT OF USE BOILER INTERCEPTOR - 1.2 GALLON LIQUID HOLDING CAPACITY, POLYETHYLENE TANK MOUNTED UNDER SINK. BASED ON GREASE MODEL USI-1184-2.

SK-1 - SINK ELKAY DRKAD17174RRC, 37-1/4" x 17" x 4", DOUBLE BOWL 18 GAUGE STAINLESS STEEL SELF-RIM COUNTER INSERT CLASSROOM ADA SINK AND FAUCET/BUBBLER KIT. FURNISH WITH ELKAY FAUCET LK2034SC, ELKAY BUBBLER KIT LK1141A. ELKAY LK-35 STAINLESS STEEL STRAINER WITH TAILPIECE, 1-1/2" 17 GAUGE CAST BRASS ADA COMPLIANT P-TRAP WITH CLEANOUT, ESCUTCHEON, LOOSE KEY STOP WALL SUPPLIES AND CHROME PLATED SOFT COPPER RISERS.

SK-2 - ELKAY LR-1918, 18" x 18" x 7-1/2" DEEP SINGLE COMPARTMENT 18 GAUGE STAINLESS STEEL SELF-RIM COUNTER INSERT THREE HOLE LEDGE SINK. FURNISH WITH CHICAGO FAUCET 1100-GN8AE3-317AB WITH LE SWING SPOUT, 4" WRISTBLADE HANDLES, 2.2 GPM AERATOR, ELKAY LK-99 STAINLESS STEEL STRAINER WITH TAILPIECE, 1-1/2" 17 GAUGE CAST BRASS ADA COMPLIANT P-TRAP WITH CLEANOUT, ESCUTCHEON, LOOSE KEY STOP WALL SUPPLIES AND CHROME PLATED SOFT COPPER RISERS.

SK-3 - ELKAY DLR-1918, 19-1/2" x 18" x 10-1/8" DEEP SINGLE COMPARTMENT 18 GAUGE STAINLESS STEEL SELF-RIM COUNTER INSERT THREE HOLE LEDGE SINK. FURNISH WITH CHICAGO FAUCET 1100-GN8AE3-317AB WITH LE SWING SPOUT, 4" WRISTBLADE HANDLES, 2.2 GPM AERATOR, ELKAY LK-99 STAINLESS STEEL STRAINER WITH TAILPIECE, 1-1/2" 17 GAUGE CAST BRASS ADA COMPLIANT P-TRAP WITH CLEANOUT, ESCUTCHEON, LOOSE KEY STOP WALL SUPPLIES AND CHROME PLATED SOFT COPPER RISERS.

TP-1 - TRAP PRIMER - ZURN Z1022-XL, 1/2" PIPE SIZE.

UR-1 - URINAL AMERICAN STANDARD "TRIMBROOK" 6551.017, WHITE VITREOUS CHINA WALL HUNG 1.0 GPF SIPHON JET URINAL WITH EXTENDED SHIELDS, FLUSHING RIM, INTEGRAL TRAP AND 3/4" TOP SPUD. FURNISH WITH FLOOR MOUNTED CARRIER FITTING SUPPORT. FURNISH WITH SLOAN MODEL ROYAL 186 ES3-1.0-TMO-HW SENSOR OPERATED FLUSH VLAVE, HARDWIRED SENSOR WITH TRUE MECHANICAL OVERRIDE BUTTON, POLISHED CHROME, DIAPHRAM VALVE WITH VACUUM BREAKER SCREWDRIVER STOP. MOUNT 30" FLOOR TO RIM. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL REQUIRED LOW VOLTAGE TRANSFORMERS, LINE AND LOAD SIDE OVERCURRENT PROTECTION, LOAD SIDE LOW VOLTAGE CABLING AND LOAD SIDE CONDUIT RACEWAY SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE ALL LOW VOLTAGE TRANSFORMER LOCATIONS WITH ELECTRICAL CONTRACTOR.

UR-2 - SAME AS UR-1 EXCEPT MOUNTED AT 17" FLOOR TO RIM.

US-1 - UTILITY SINK - FIAT MODEL L-1, 26-1/4" x 17-1/4" X 13" DEEP WALL MOUNTED SINK. FURNISH WITH CHICAGO FAUCET 897-317ABCP RIGHT-HAND SPOUT, 4" FIXED CENTERS, LAMINAR FLOW CONTROL DEVICE IN SPOUT, WITH WRIST BLADE HANDLES. ELKAY LK-99 STAINLESS STEEL STRAINER WITH TAILPIECE, AND ESCUTCHEON, LOOSE KEY QUARTER TURN ANGLE STOPS, AND 38 BRAIDED FLEXIBLE RISER

WB-1 - WASHER BOX, GATEY 38XXX SERIES WASHING MACHINE OUTLET BOX WITH DRAIN AND VALVES. COORDINATE MOUNTING HEIGHT WITH EQUIPMENT. PROVIDE WITH A P-TRAP.

WC-1 - WATER CLOSET AMERICAN STANDARD "AFWALL" 2257.103 WHITE VITREOUS CHINA WALL HUNG SIPHON JET ELONGATED BOWL WITH TOP SPUD. FURNISH WITH SLOAN ROYAL 111 ES3-1.6-TMO-HW HARD WIRED SENSOR OPERATED FLUSH VALVE WITH TRUE MECHANICAL OVER-RIDE BUTTON, WITH VACUUM BREAKER SCREWDRIVER STOP, BENEKE 523 S3 ANTI-BACTERIAL SAN-SHIELD WHITE SOLID PLASTIC OPEN FRONT INTEGRAL CHECK SEAT LESS COVER, ZURN COMBINATION CARRIER FITTING SUPPORT. MOUNT 19" FLOOR TO RIM. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL REQUIRED LOW VOLTAGE TRANSFORMERS, LINE AND LOAD SIDE OVERCURRENT PROTECTION, LOAD SIDE LOW VOLTAGE CABLING AND LOAD SIDE CONDUIT RACEWAY SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE ALL LOW VOLTAGE TRANSFORMER LOCATIONS WITH ELECTRICAL CONTRACTOR.

WC-2 - SAME AS WC-1 EXCEPT MOUNT EQ. AT 17" FLOOR TO RIM.

WC-3 - WATER CLOSET AMERICAN STANDARD "MADERA" 3461.001 WHITE VITREOUS CHINA FLOOR MOUNT, 16-1/2" RIM HEIGHT, SIPHON JET ELONGATED BOWL WITH TOP SPUD. FURNISH WITH SLOAN ROYAL 111 ES3-1.6-TMO-HW HARD WIRED SENSOR OPERATED FLUSH VALVE WITH TRUE MECHANICAL OVER-RIDE BUTTON, WITH VACUUM BREAKER SCREWDRIVER STOP, QUIET EQUIPMENT, BENEKE 523 S3 ANTI-BACTERIAL SAN-SHIELD WHITE SOLID PLASTIC OPEN FRONT INTEGRAL CHECK SEAT LESS COVER; PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL REQUIRED LOW VOLTAGE TRANSFORMERS, LINE AND LOAD SIDE OVERCURRENT PROTECTION, LOAD SIDE LOW VOLTAGE CABLING AND LOAD SIDE CONDUIT RACEWAY SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE ALL LOW VOLTAGE TRANSFORMER LOCATIONS WITH ELECTRICAL CONTRACTOR.

WC-4 - WATER CLOSET AMERICAN STANDARD "AFWALL" 2257.103 WHITE VITREOUS CHINA WALL HUNG SIPHON JET ELONGATED BOWL WITH TOP SPUD. FURNISH WITH SLOAN ROYAL 153 ES3-1.6-OR-IN-BOX HARDWIRED SENSOR OPERATED FLUSH VALVE WITH TRUE MECHANICAL OVER-RIDE BUTTON, WITH VACUUM BREAKER SCREWDRIVER STOP, BENEKE 523 S3 ANTI-BACTERIAL SAN-SHIELD WHITE SOLID PLASTIC OPEN FRONT INTEGRAL CHECK SEAT LESS COVER, ZURN COMBINATION CARRIER FITTING SUPPORT. MOUNT 19" FLOOR TO RIM. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL REQUIRED LOW VOLTAGE TRANSFORMERS, LINE AND LOAD SIDE OVERCURRENT PROTECTION, LOAD SIDE LOW VOLTAGE CABLING AND LOAD SIDE CONDUIT RACEWAY SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE ALL LOW VOLTAGE TRANSFORMER LOCATIONS WITH ELECTRICAL CONTRACTOR.

WC-5 - WATER CLOSET AMERICAN STANDARD "MADERA" 3461.001 WHITE VITREOUS CHINA FLOOR MOUNT, 16-1/2" RIM HEIGHT, SIPHON JET ELONGATED BOWL WITH TOP SPUD. FURNISH WITH SLOAN ROYAL 153 ES3-1.6-OR-IN-BOX HARDWIRED SENSOR OPERATED FLUSH VALVE WITH TRUE MECHANICAL OVER-RIDE BUTTON, WITH VACUUM BREAKER SCREWDRIVER STOP, QUIET EQUIPMENT, BENEKE 523 S3 ANTI-BACTERIAL SAN-SHIELD WHITE SOLID PLASTIC OPEN FRONT INTEGRAL CHECK SEAT LESS COVER; PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL REQUIRED LOW VOLTAGE TRANSFORMERS, LINE AND LOAD SIDE OVERCURRENT PROTECTION, LOAD SIDE LOW VOLTAGE CABLING AND LOAD SIDE CONDUIT RACEWAY SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE ALL LOW VOLTAGE TRANSFORMER LOCATIONS WITH ELECTRICAL CONTRACTOR.

WH-1 - WALL HYDRANT WOODFORD MODEL B67. BACKFLOW PROTECTED, FREEZELESS, TAMPER RESISTANT BOX WITH ANODIZED ALUMINUM FINISH. MOUNT 18" ABOVE GRADE.

WCO - WALL CLEANOUT ACCESS COVER - ZURN Z1469 STAINLESS STEEL COVER AND SCREW.

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Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CSM	CSM	JYP

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Sheet title:

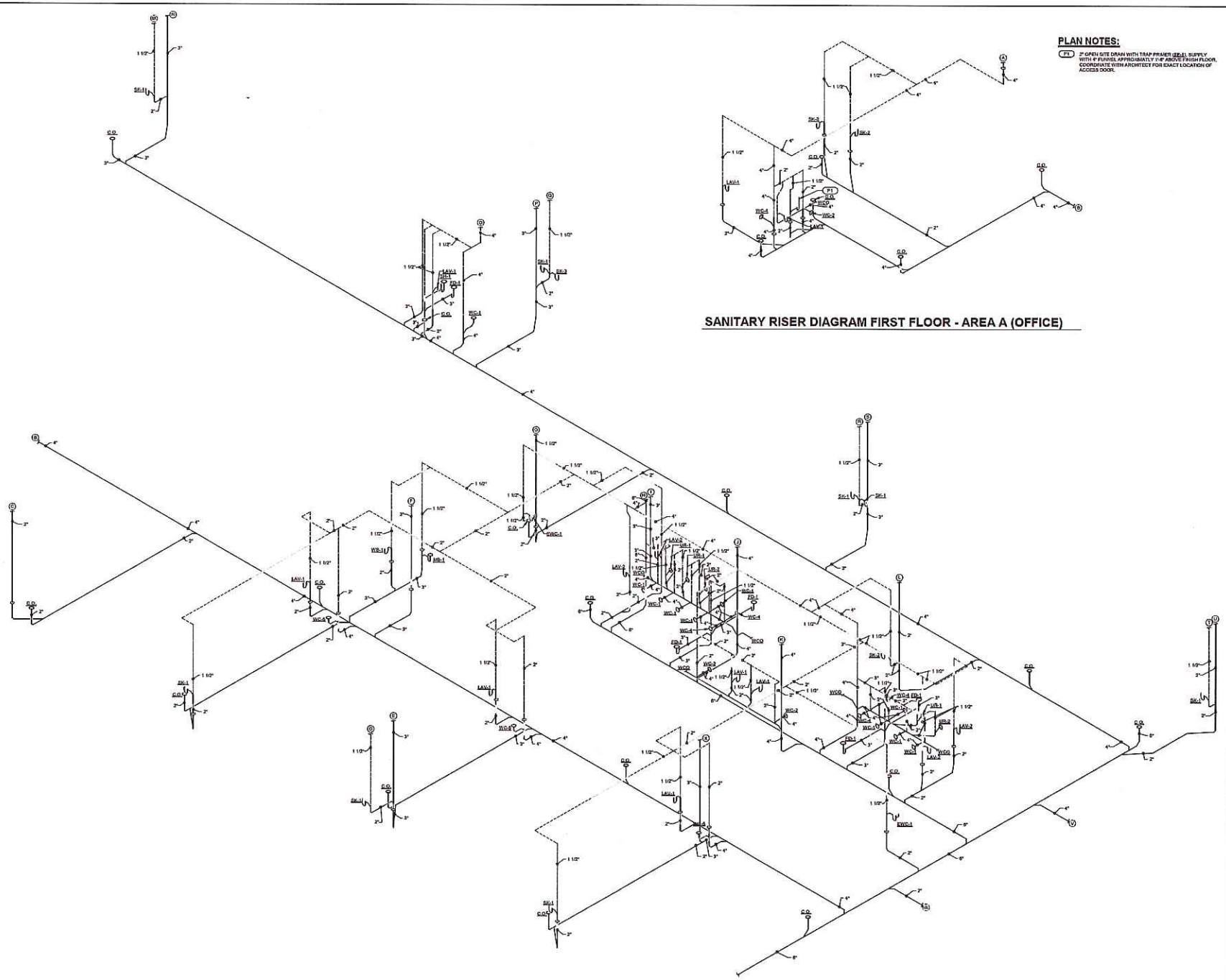
PLUMBING SCHEDULES

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

P3.1



PLAN NOTES:

P1 2" OPEN SITE DRAIN WITH TRAP PRIMER (RE-1). SUPPLY WITH 6" FUNNEL APPROXIMATELY 1'-0" ABOVE FINISH FLOOR. COORDINATE WITH ARCHITECT FOR EXACT LOCATION OF ACCESS DOOR.

SANITARY RISER DIAGRAM FIRST FLOOR - AREA A (OFFICE)

SANITARY RISER DIAGRAM FIRST FLOOR - AREA A

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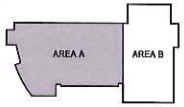

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Revisions:

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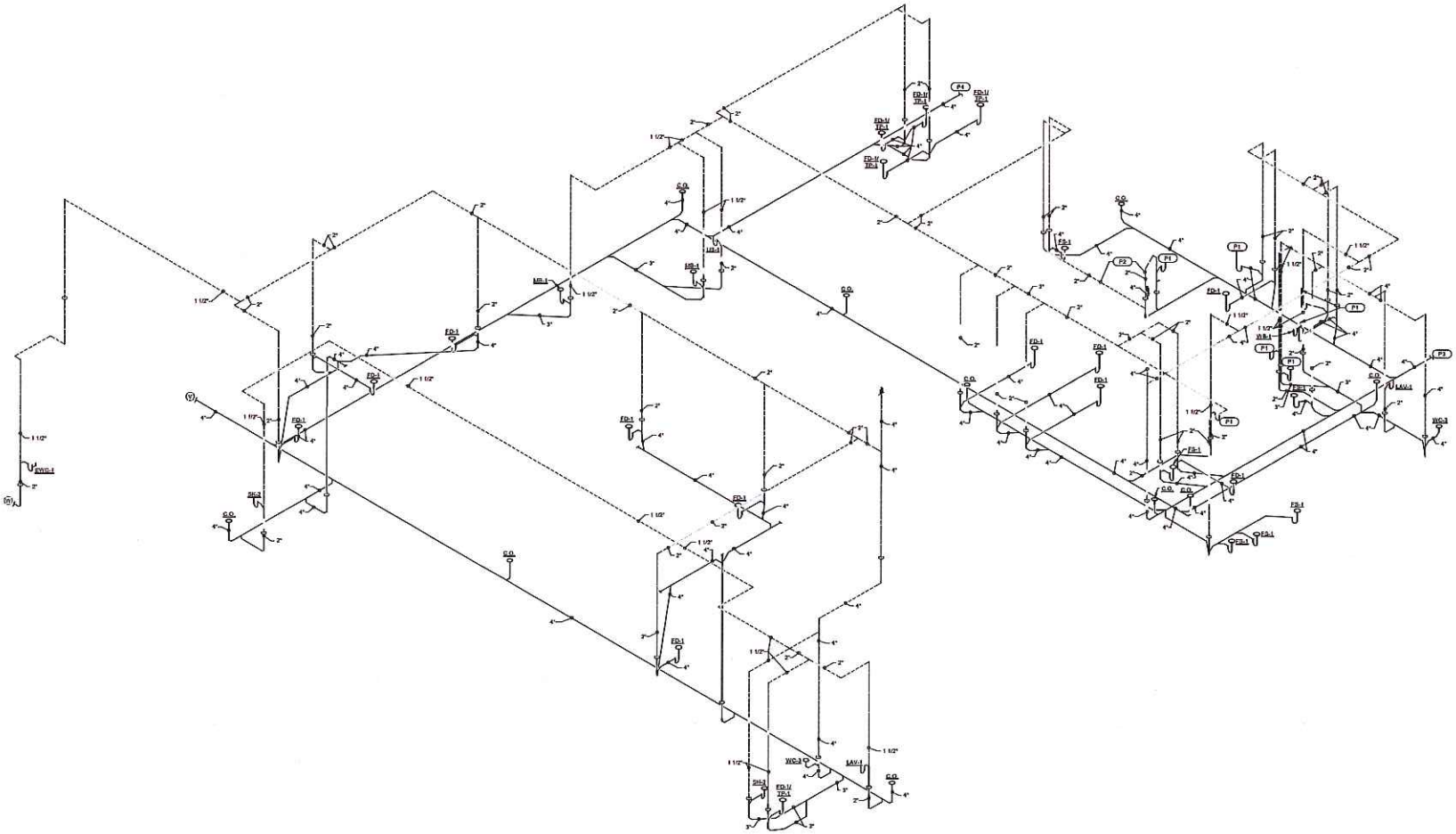
Sheet title:
SANITARY RISER DIAGRAM - FIRST FLOOR AREA A

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
P4.1

PLAN NOTES:

- (P1) K.E.C. PROVIDED FIXTURE.
- (P2) LOOP VENT.
- (P3) 4" GREASE WASTE TO GREASE INTERCEPTOR. REFER TO "SITE UTILITY PLAN" SHEET U1.1 FOR LOCATION AND MORE INFORMATION.
- (P4) 4" WASTE FROM GREASE INTERCEPTOR. REFER TO "SITE UTILITY PLAN" SHEET U1.1 FOR LOCATION AND MORE INFORMATION.



SANITARY RISER DIAGRAM FIRST FLOOR - AREA B

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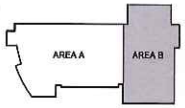

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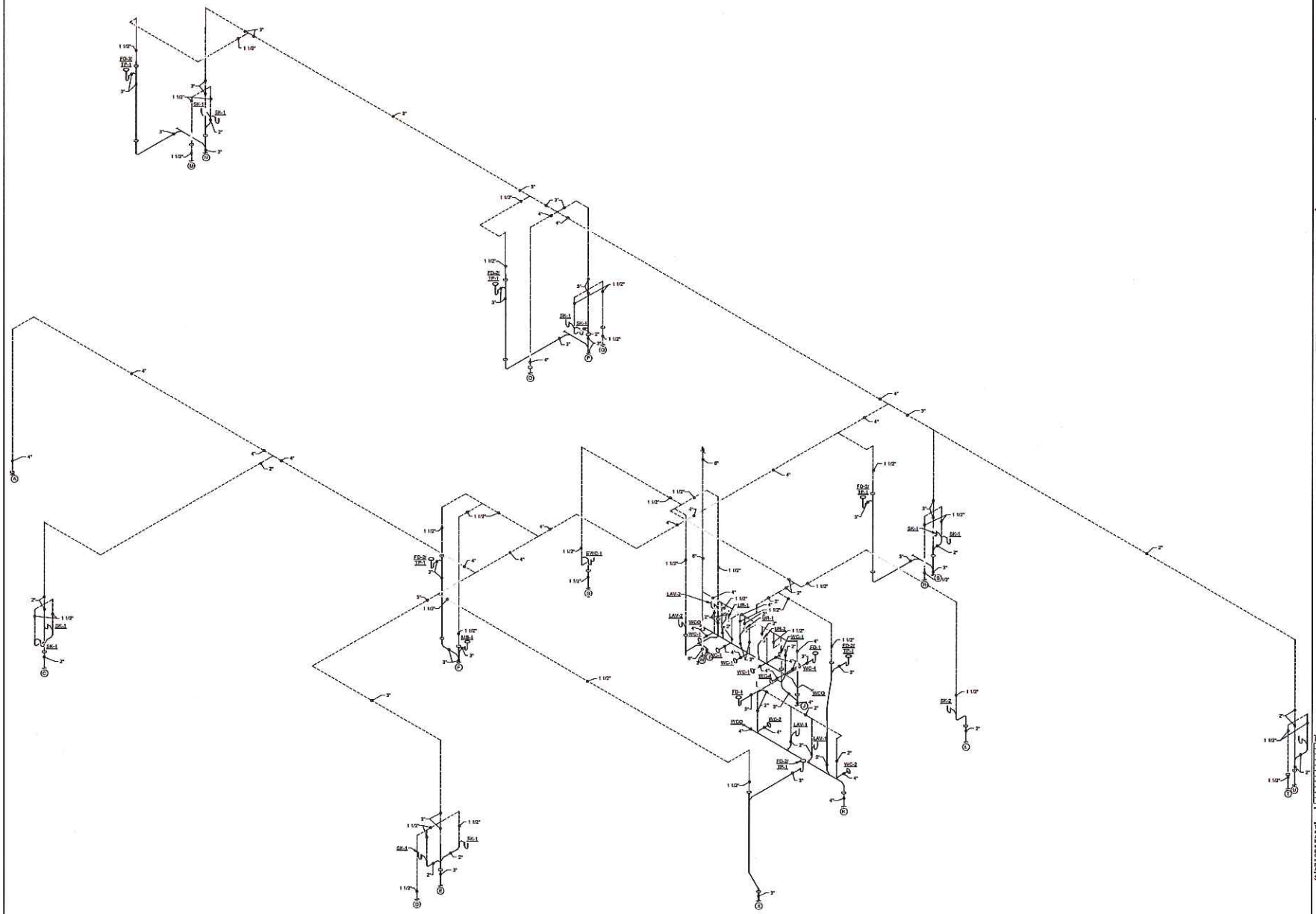
Sheet title:
SANITARY RISER DIAGRAM - AREA B

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
P4.2



SANITARY RISER DIAGRAM SECOND FLOOR - AREA A

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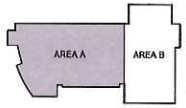

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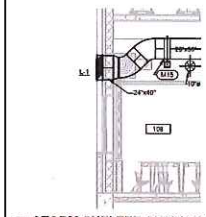
Sheet title:
SANITARY RISER DIAGRAM - SECOND FLOOR AREA A

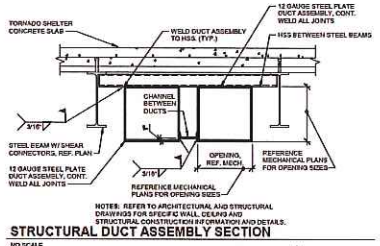
Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
P4.3

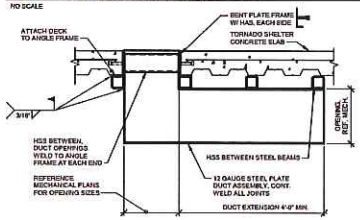


1 STORM SHELTER SECTION 1
1/4" = 1'-0"

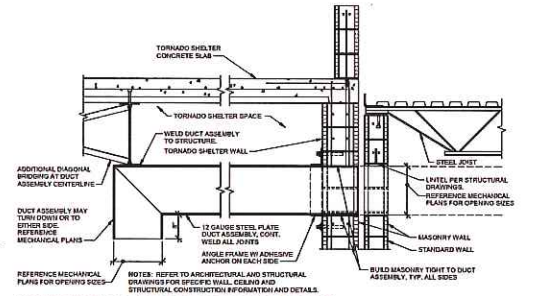
2 STORM SHELTER SECTION 2
1/4" = 1'-0"



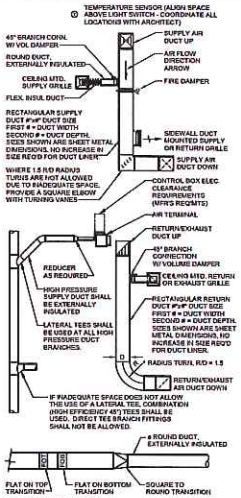
STRUCTURAL DUCT ASSEMBLY SECTION
NO SCALE



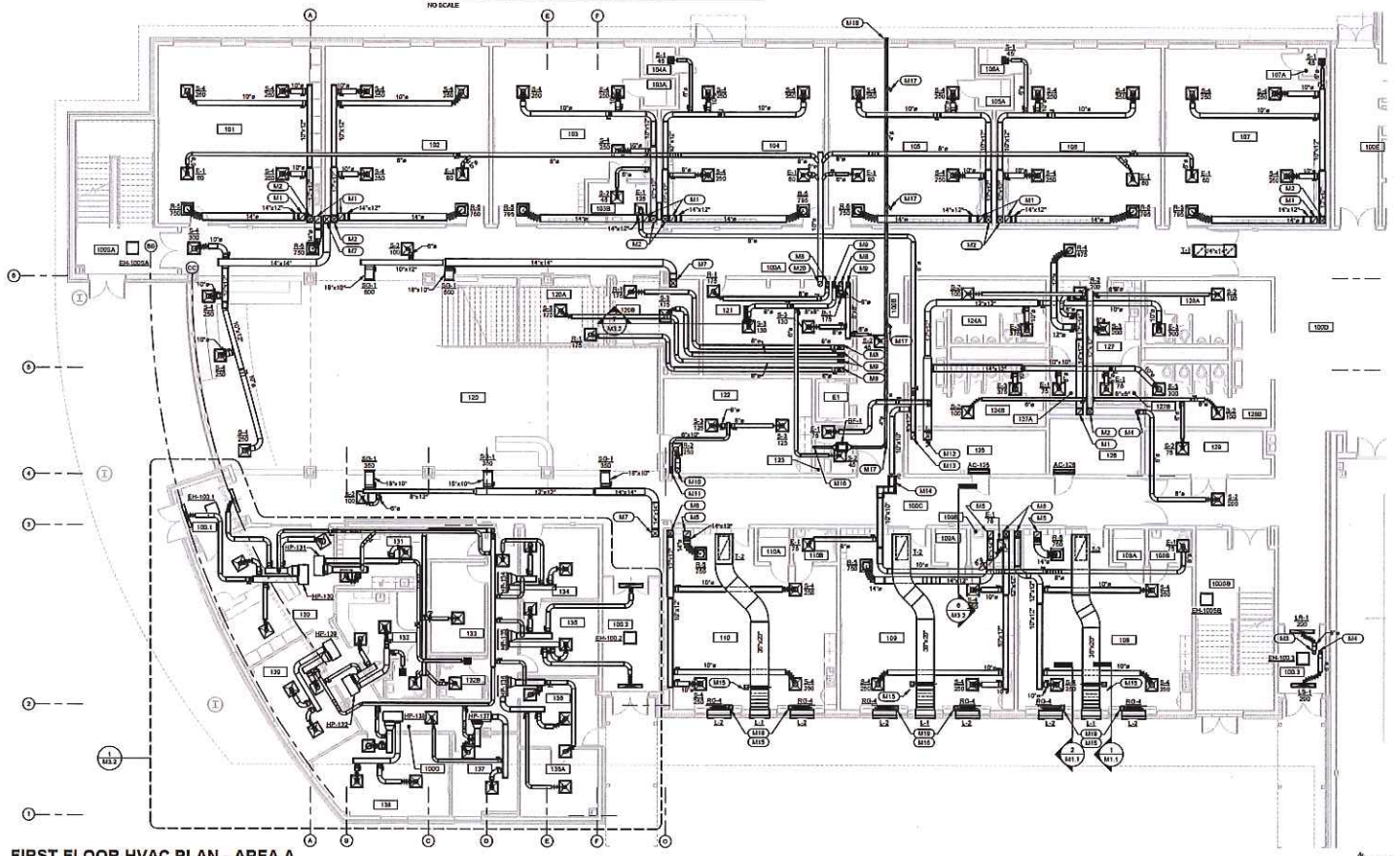
STRUCTURAL DUCT ASSEMBLY DETAIL
NO SCALE



STRUCTURAL SIDEWALL DUCT ASSEMBLY DETAIL
NO SCALE



HIGH AND LOW PRESSURE DUCT LEGEND
NO SCALE



FIRST FLOOR HVAC PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES: (TYPICAL FOR ALL DRAWINGS)

A. THE HVAC DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO INDICATE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTWORK AND PIPING. CONTRACTOR SHALL MAKE MODIFICATIONS IN THE INSTALLATION SO ALL EQUIPMENT AND MATERIALS FIT PROPERLY AND CAN BE SERVICED. CONTRACTOR SHALL VERIFY ALL POINTS OF CONNECTION PRIOR TO INSTALLATION.

B. ALL WALL MOUNTED DEVICES SUCH AS THERMOSTATS SHALL BE MOUNTED AT 60" A.F.F. UNLESS NOTED OTHERWISE. WHEN AN ELECTRICAL SWITCH OR OTHER DEVICE IS MOUNTED IN THE SAME LOCATION, ALL DEVICES SHALL BE ALIGNED VERTICALLY. VERIFY ALL DEVICE LOCATIONS WITH ENGINEER PRIOR TO INSTALLATION.

C. ALL SUPPLY, RETURN AND OUTSIDE AIR INTAKE DUCTWORK SHALL BE EXTERNALLY INSULATED.

D. SUPPORT ALL DIFFUSERS WITH GALVANIZED SUPPORT WIRE AT A MINIMUM OF TWO OPPOSITE CORNERS TO THE BUILDING STRUCTURAL SYSTEM.

E. COORDINATE LOCATION OF GRILLES AND DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLANS.

F. COORDINATE DUCTWORK WITH LIGHT FIXTURE SUPPORTS, CONDUIT, PLUMBING, FIRE PROTECTION PIPING AND OTHER TRADES.

G. ALL CONTROL WIRING SHALL BE BY MECHANICAL CONTRACTOR.

H. SEAL AROUND ALL PENETRATIONS.

I. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING REGULATIONS, CODES, AND STANDARDS:
   KENTUCKY BUILDING CODE
   KENTUCKY MECHANICAL CODE
   KENTUCKY PLUMBING CODE
   SMACNA HVAC DUCT CONSTRUCTION STANDARDS
   OSHA
   APPLICABLE NFPA STANDARDS

J. ROUTE DUCTWORK AS SHOWN ON PLAN; FIELD VERIFY ROUTING, AND CLEARANCES. COORDINATE ANY CONFLICTS WITH ENGINEER PRIOR TO INSTALLATION.

K. FIRE STOP ALL FIRE-RATED WALL OR FLOOR PENETRATIONS.

L. ROUTE ALL DUCTWORK AS TIGHT AS POSSIBLE TO BOTTOM OF STRUCTURE AND HIGH BETWEEN STRUCTURE. COORDINATE WITH OTHER TRADES TO MAINTAIN CEILING HEIGHTS.

M. CONTRACTOR SHALL PROTECT ALL SURFACES WHILE PERFORMING CONSTRUCTION ACTIVITIES.

N. VERIFY EQUIPMENT NAMES AND NUMBERS WITH OWNER PRIOR TO LABELING.

O. ALL CONTROL VALVES SHALL BE 2-WAY UNLESS NOTED OTHERWISE.

P. COMMISSIONING: CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OWNER COMMISSIONING AGENT. COMMISSIONING AGENT RESPONSIBILITIES WILL INCLUDE:
   - VERIFICATION OF TESTING AND BALANCING FOR AIR AND HYDRAULIC SYSTEMS.
   - EQUIPMENT FUNCTIONAL TESTING THROUGH ALL MODES OF OPERATION DESCRIBED IN THE SEQUENCE OF OPERATION.
   - FUNCTIONAL ALARM TESTS.
   - FUNCTIONAL TEST OF BUILDING MANAGEMENT SYSTEM AND INTEGRATION OF EQUIPMENT.
   - FINAL REPORT. CONTRACTOR SHALL BE RESPONSIBLE FOR FIXING ANY DEFICIENCIES WITH INSTALLATION FOUND DURING COMMISSIONING.

PLAN NOTES:

M1 14"x12" RETURN DUCT UP.
M2 12"x12" SUPPLY DUCT UP.
M3 6"ø RETURN DUCT UP.
M4 8"ø SUPPLY DUCT UP.
M5 14"x12" RETURN DUCT UP. CONSTRUCT AS STRUCTURAL DUCT ASSEMBLY. REFER TO DETAIL ON THIS SHEET FOR ADDITIONAL REQUIREMENTS. PROVIDE FIRE DAMPER AT SLAB PENETRATION WITH ACCESS ABOVE SLAB.
M6 12"x12" SUPPLY DUCT UP. CONSTRUCT AS STRUCTURAL DUCT ASSEMBLY. REFER TO DETAIL ON THIS SHEET FOR ADDITIONAL REQUIREMENTS. PROVIDE FIRE DAMPER AT SLAB PENETRATION WITH ACCESS ABOVE SLAB.
M7 16"x14" SUPPLY DUCT UP.
M8 8"x8" RETURN DUCT UP.
M9 8"x8" SUPPLY DUCT UP.
M10 10"ø RETURN DUCT UP.
M11 6"x10" SUPPLY DUCT UP.
M12 18"x18" EXHAUST DUCT UP.
M13 8"x12" EXHAUST DUCT UP.
M14 10"x10" EXHAUST DUCT. CONSTRUCT AS STRUCTURAL DUCT ASSEMBLY. REFER TO DETAIL ON THRIS SHEET FOR ADDITIONAL REQUIREMENTS.
M15 PROVIDE INSULATED LOW LEAK MOTORIZED DAMPER. EXTERNALLY INSULATE DUCTWORK FROM EXTERIOR WALL UP TO MOTORIZED DAMPER.
M16 4"ø RIGID ALUMINUM DRYER EXHAUST DOWN TO DRYER BOX. PROVIDE IPS CORPORATION DRYER BOX MODEL 438 OR EQUAL.
M17 4"ø RIGID ALUMINUM DRYER EXHAUST CLEANOUT.
M18 4"ø DRYER EXHAUST VENT CAP. PROVIDE WITH INTEGRAL BACKDRAFT DAMPER.
M19 MOTORIZED DAMPER SHALL BE ACCESSIBLE BY REMOVAL OF GRILLE.
M20 10"ø EXHAUST DUCT UP.

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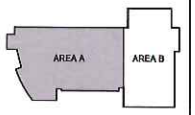

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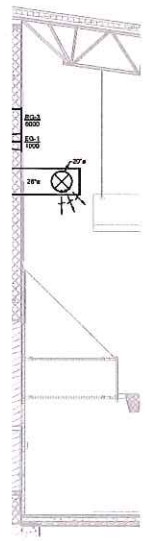
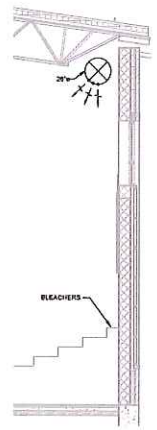
Sheet title:
FIRST FLOOR HVAC PLAN - AREA A

Architect's Project No: 1807-244
Date: October, 2019

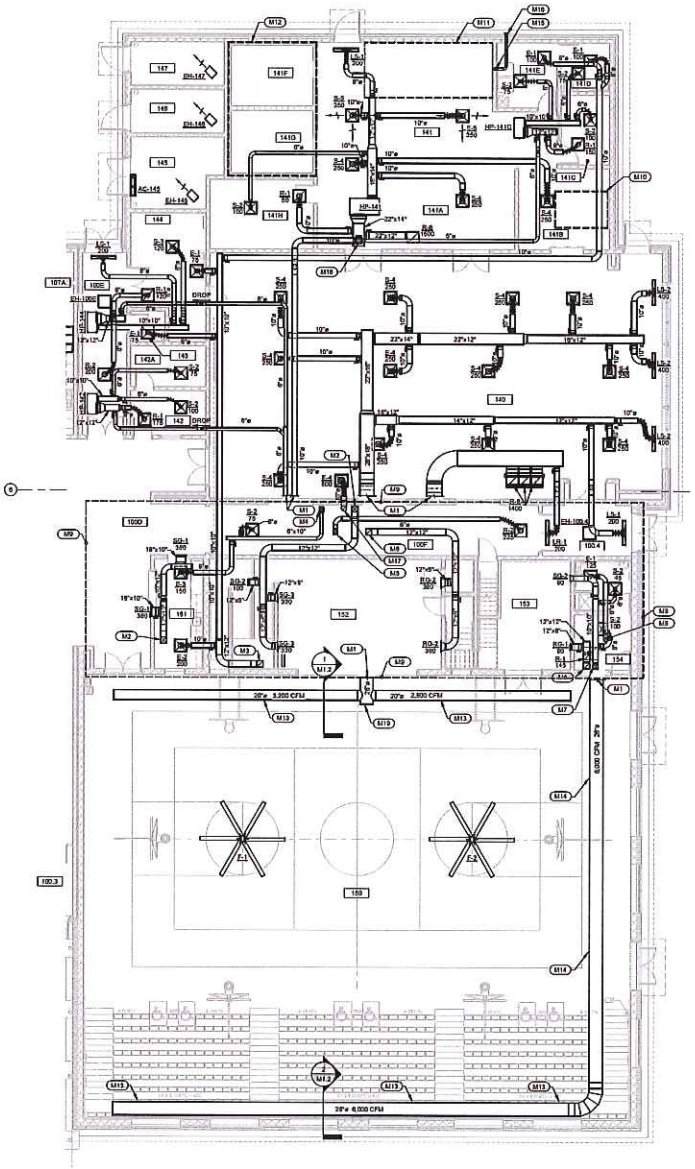
Drawing No:
M1.1



1 Section
1/4" = 1'-0"



2 Section
1/4" = 1'-0"



FIRST FLOOR HVAC PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES:

A. IT IS THE RESPONSIBILITY OF THE KITCHEN EQUIPMENT CONTRACTOR (KEC) TO REVIEW ALL PLUMBING, FIRE PROTECTION AND MECHANICAL DESIGN DRAWINGS REGARDING INTERFACE WITH THEIR SUPPLIED EQUIPMENT AND SERVICES TO INSURE ACCURATE COORDINATION. REFER TO THE FOOD SERVICE DRAWINGS FOR EQUIPMENT INFORMATION AND CHARACTERISTICS.

PLAN NOTES:

M1 REFER TO "ENLARGED HVAC PLANS - MECHANICAL PLATFORM B" ON SHEET M3.1 FOR CONTINUATION.

M2 12"x12" SUPPLY DUCT UP.

M3 12"x12" EXHAUST DUCT UP.

M4 8"x8" SUPPLY DUCT UP.

M5 8"x8" RETURN DUCT UP.

M6 12"x12" RETURN DUCT UP.

M7 10"x10" SUPPLY DUCT UP.

M8 8"ø EXHAUST DUCT UP.

M9 REFER TO "ENLARGED HVAC PLANS - MECHANICAL PLATFORM B" ON SHEET M3.1 FOR WORK ABOVE THIS AREA.

M10 THE KITCHEN EQUIPMENT CONTRACTOR (KEC) IS PROVIDING THE DISHWASHER STAINLESS STEEL PANT LEG DUCTWORK, DISHWASHER EXHAUST FAN, AND ASSOCIATED MATERIALS, ETC. HOWEVER IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR (GC) FOR RECEIVING AND STORING THE EQUIPMENT AND MATERIALS ONSITE AND SETTING THE MAJOR EQUIPMENT IN PLACE. IT IS THE RESPONSIBILITY OF MECHANICAL CONTRACTOR (MC) TO INSTALL THIS EQUIPMENT AND ALL ASSOCIATED MATERIALS (PROVIDED BY THE KEC). THIS INCLUDES, BUT IS NOT LIMITED TO INSTALLING THE EXHAUST FAN, STAINLESS STEEL DUCT BETWEEN THE DISHWASHER AND EXHAUST FAN, PROVIDING AND INSTALLING LOW VOLTAGE POWER BETWEEN THE DISH MACHINE, FAN STARTER AND THE BUILDING MANAGEMENT SYSTEM (BMS). THE KEC MUST PROVIDE ALL SPECIAL FITTINGS AND OR ADAPTORS TO MAKE THE FINAL CONNECTIONS TO ALL EQUIPMENT THEY SUPPLY. REFER TO THE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.

M11 THE KITCHEN EQUIPMENT CONTRACTOR (KEC) IS PROVIDING THE HOOD, HOOD EXHAUST FAN, MAKE-UP AIR UNIT AND ASSOCIATED MATERIALS, ETC. HOWEVER IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR (GC) FOR RECEIVING AND STORING THE EQUIPMENT AND MATERIALS ONSITE AND SETTING THE MAJOR EQUIPMENT IN PLACE. IT IS THE RESPONSIBILITY OF MECHANICAL CONTRACTOR (MC) TO INSTALL THIS EQUIPMENT AND ALL ASSOCIATED MATERIALS (PROVIDED BY THE KEC). THIS INCLUDES, BUT IS NOT LIMITED TO INSTALLING THE HOOD, EXHAUST FAN, GREASE DUCT BETWEEN THE HOOD AND EXHAUST FAN, MAKE-UP AIR UNIT, DUCTWORK BETWEEN THE HOOD SUPPLY PLENUM AND MAKE-UP AIR UNIT, PROVIDING AND INSTALLING LOW VOLTAGE POWER BETWEEN THE HOOD, EXHAUST FAN STARTER, MAKE-UP AIR UNIT, FIRE SUPPRESSION SYSTEM AND THE BUILDING MANAGEMENT SYSTEM (BMS). THE KEC MUST PROVIDE ALL SPECIAL FITTINGS AND OR ADAPTORS TO MAKE THE FINAL CONNECTIONS TO ALL EQUIPMENT THEY SUPPLY. REFER TO THE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.

M12 THE KITCHEN EQUIPMENT CONTRACTOR (KEC) IS PROVIDING THE FREEZER AND COOLER COMPLETE INCLUDING SITE ASSEMBLY REFRIGERATION INTERCONNECTIONS BETWEEN THE EVAPORATOR AND THE CONDENSER AND MOUNTING. THE CONDENSING UNITS SHALL BE MOUNTED ON THE ROOF DIRECTLY ABOVE THE EVAPORATORS AND AT LEAST 10' FROM ANY ROOF EDGE. THE KEC INSTALLER IS RESPONSIBLE FOR PROVIDING A PIPING / ELECTRICAL PORTAL COMPATIBLE WITH THE ROOF SYSTEM TO BE INSTALLED BY THE GC ROOFING CONTRACTOR. THE KEC INSTALLER IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PIPING AND CONDUIT PENETRATION SLEEVES. THE PLUMBING CONTRACTOR WILL PROVIDE 1/2" COPPER CONDENSATE PIPING AND ARMAFLEX INSULATION BETWEEN THE EVAPORATOR COIL THROUGH THE PROVIDED COOLER BOX WALL SLEEVE TO AIR GAP ABOVE THE NEAREST DRAIN. REFER TO THE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.

M13 FABRIC DUCT WITH EVENLY SPACED HOLES TO PROVIDE AIRFLOW AT A VELOCITY OF 50 FPM AT 9'-0" ABOVE FINISHED FLOOR. PROVIDE PHYSICAL COLOR SAMPLES TO ARCHITECT FOR SELECTION.

M14 NO HOLES IN THIS FABRIC DUCT SECTION.

M15 4"ø RIGID ALUMINUM DRYER EXHAUST DOWN TO DRYER BOX. PROVIDE IPS CORPORATION DRYER BOX MODEL 425 OR EQUAL.

M16 4"ø DRYER EXHAUST VENT CAP. PROVIDE WITH INTEGRAL BACK-DRAFT DAMPER.

M17 10"ø EXHAUST UP.

M18 10"ø OUTSIDE AIR DOWN TO RETURN DUCT. PROVIDE WITH MANUAL BALANCING DAMPER.

M19 SECTION OF DUCT SHALL BE RIGID DOUBLE WALL DUCT WITH INSULATION IN INTERSTITIAL SPACE COMPLYING WITH NFPA REQUIREMENTS. INSULATION SHALL HAVE A MINIMUM THERMAL CONDUCTIVITY OF 35 BTU-INCH/FT²-H°F. PAINT TO MATCH FABRIC DUCT COLOR.

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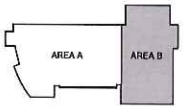

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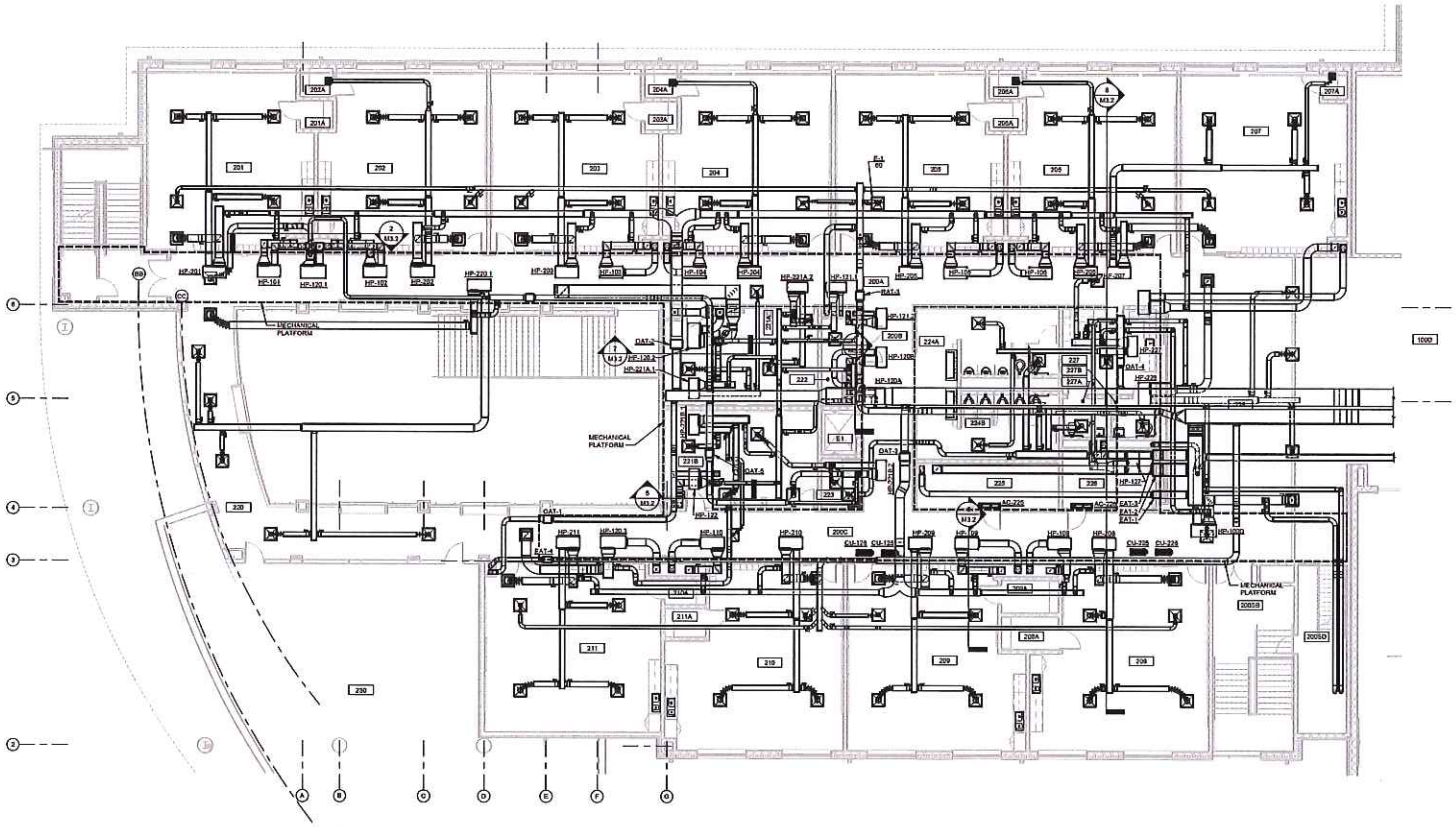
Sheet title:
FIRST FLOOR HVAC PLAN - AREA B

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
M1.2

GENERAL PLAN NOTES:

A. PLAN IS FOR COORDINATION PURPOSES. REFER TO "SECOND FLOOR, MECH. PLATFORM SUPPLY & RETURN HVAC PLAN - AREA A" SHEET M1.4 AND "SECOND FLOOR, MECH. PLATFORM OUTSIDE AIR & EXHAUST HVAC PLAN - AREA A" SHEET M1.5 FOR ADDITIONAL INFORMATION.



SECOND FLOOR & MECHANICAL PLATFORM HVAC PLAN - AREA A (COMPOSITE)
1/8" = 1'-0"

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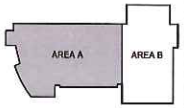

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Sheet title:
SECOND FLOOR & MECH. PLATFORM HVAC PLAN - AREA A (COMPOSITE)

Architect's Project No: 1807-244
Date: October, 2019

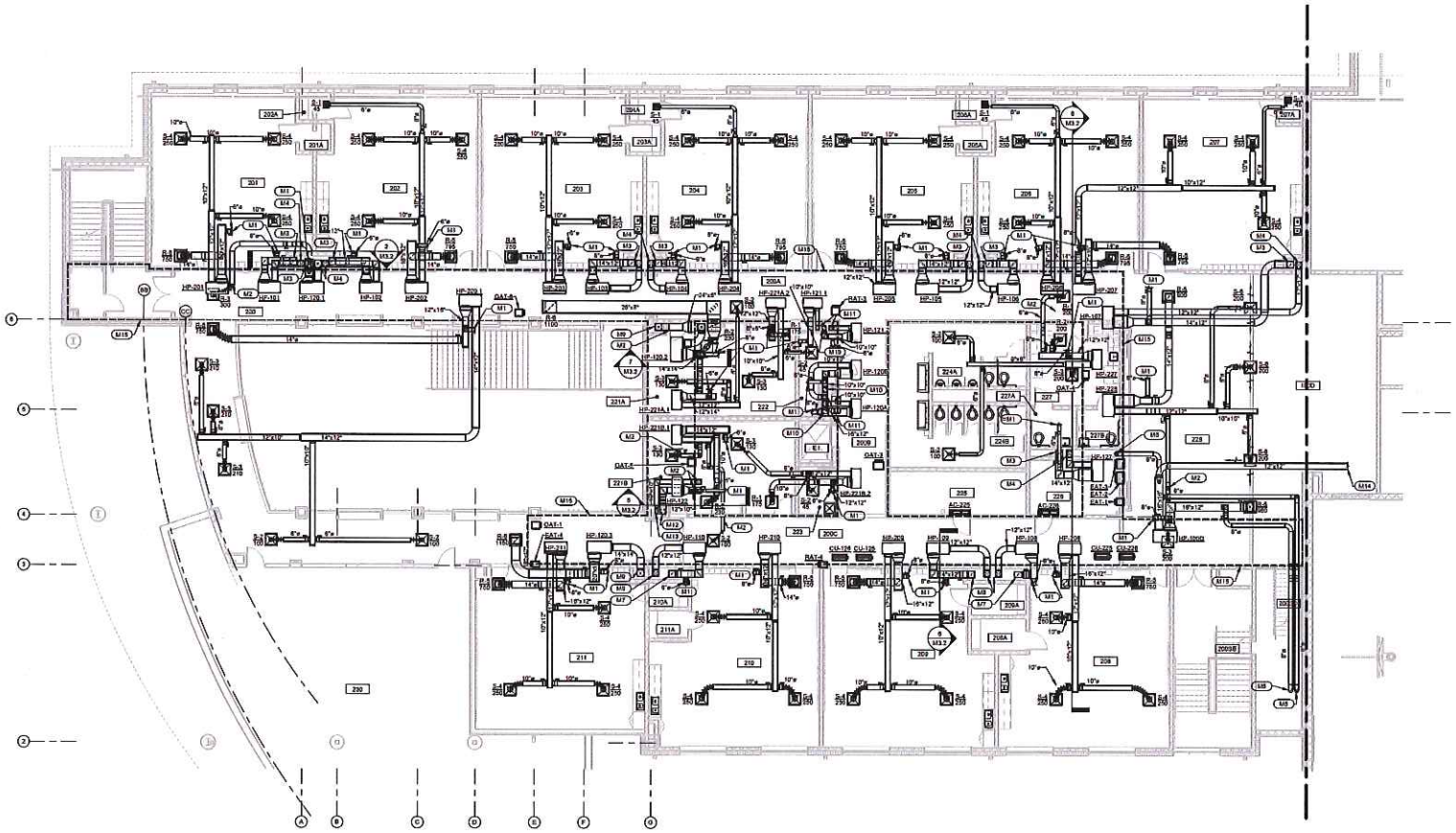
Drawing No:
M1.3

GENERAL NOTES:

A. THE MECHANICAL CONTRACTOR SHALL REMOVE BLOCK WALL COURSINGS AND COORDINATE WITH MECHANICAL PLATFORM SAFETY RAIL BARS AS REQUIRED TO ROUTE DUCTWORK FROM MECHANICAL PLATFORM TO AREAS THEY SERVE.

PLAN NOTES:

- M1 SEE OUTSIDE AIR CONTINUATION ON "SECOND FLOOR MECH. PLATFORM HVAC PLAN - AREA A (OA & EXHAUST)" SHEET M1.5.
- M2 DROP DUCT AND ROUTE BELOW MECHANICAL PLATFORM.
- M3 14"x12" RETURN DUCT DOWN.
- M4 12"x12" SUPPLY DUCT DOWN.
- M5 8"ø RETURN DUCT DOWN.
- M6 8"ø SUPPLY DUCT DOWN.
- M7 14"x12" RETURN DUCT DOWN. CONSTRUCT AS STRUCTURAL DUCT ASSEMBLY. REFER TO DETAIL ON SHEET M1.1 FOR ADDITIONAL REQUIREMENTS. PROVIDE FIRE DAMPER AT SLAB PENETRATION WITH ACCESS ABOVE SLAB.
- M8 12"x12" SUPPLY DUCT DOWN. CONSTRUCT AS STRUCTURAL DUCT ASSEMBLY. REFER TO DETAIL ON SHEET M1.1 FOR ADDITIONAL REQUIREMENTS. PROVIDE FIRE DAMPER AT SLAB PENETRATION WITH ACCESS ABOVE SLAB.
- M9 14"x14" SUPPLY DUCT DOWN.
- M10 8"x8" RETURN DUCT DOWN.
- M11 8"x8" SUPPLY DUCT DOWN.
- M12 10"ø RETURN DUCT DOWN.
- M13 8"x10" SUPPLY DUCT DOWN.
- M14 REFER TO "ENLARGED HVAC PLANS - MECHANICAL PLATFORM B" SHEET M3.1 FOR CONTINUATION.
- M15 DASHED LINE INDICATES MECHANICAL PLATFORM "A".



SECOND FLOOR MECHANICAL PLATFORM HVAC PLAN - AREA A (SUPPLY & RETURN)

1/8" = 1'-0"

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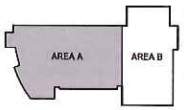

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Sheet title:
SECOND FLOOR, MECH. PLATFORM HVAC PLAN - AREA A (SUPPLY & RETURN)

Architect's Project No: 1807-244

Date: October, 2019

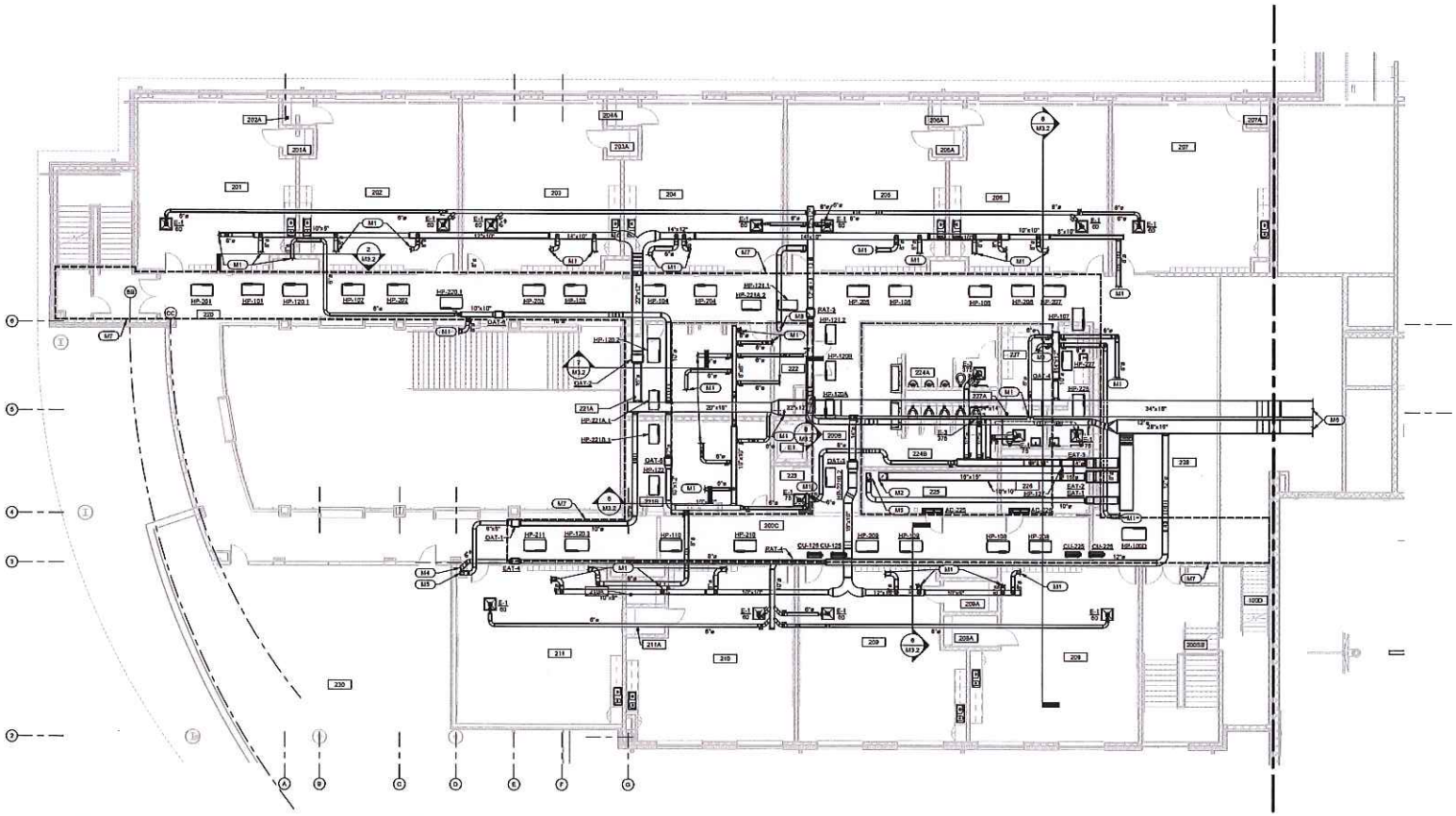
Drawing No:
M1.4

GENERAL NOTES:

A. THE MECHANICAL CONTRACTOR SHALL REMOVE BLOCK WALL COURSINGS AND COORDINATE WITH MECHANICAL PLATFORM SAFETY RAIL BARS AS REQUIRED TO ROUTE DUCTWORK FROM MECHANICAL PLATFORM TO AREAS THEY SERVE.

PLAN NOTES:

- M1 SEE OUTSIDE AIR CONTINUATION ON "SECOND FLOOR, MECH. PLATFORM HVAC PLAN - AREA A (SUPPLY & RETURN)" SHEET M1.4.
- M2 18"x18" EXHAUST DUCT DOWN.
- M3 8"x12" EXHAUST DUCT DOWN.
- M4 8"ø EXHAUST DUCT DOWN.
- M5 8"x8" OUTSIDE AIR DUCT DOWN.
- M6 REFER TO "ENLARGED HVAC PLANS - MECHANICAL PLATFORM B" SHEET M3.1 FOR CONTINUATION.
- M7 DASHED LINE INDICATES MECHANICAL PLATFORM "A".
- M8 10"ø EXHAUST DUCT DOWN.



SECOND FLOOR MECHANICAL PLATFORM HVAC PLAN - AREA A (OA & EXHAUST)

1/8" = 1'-0"

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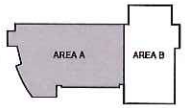

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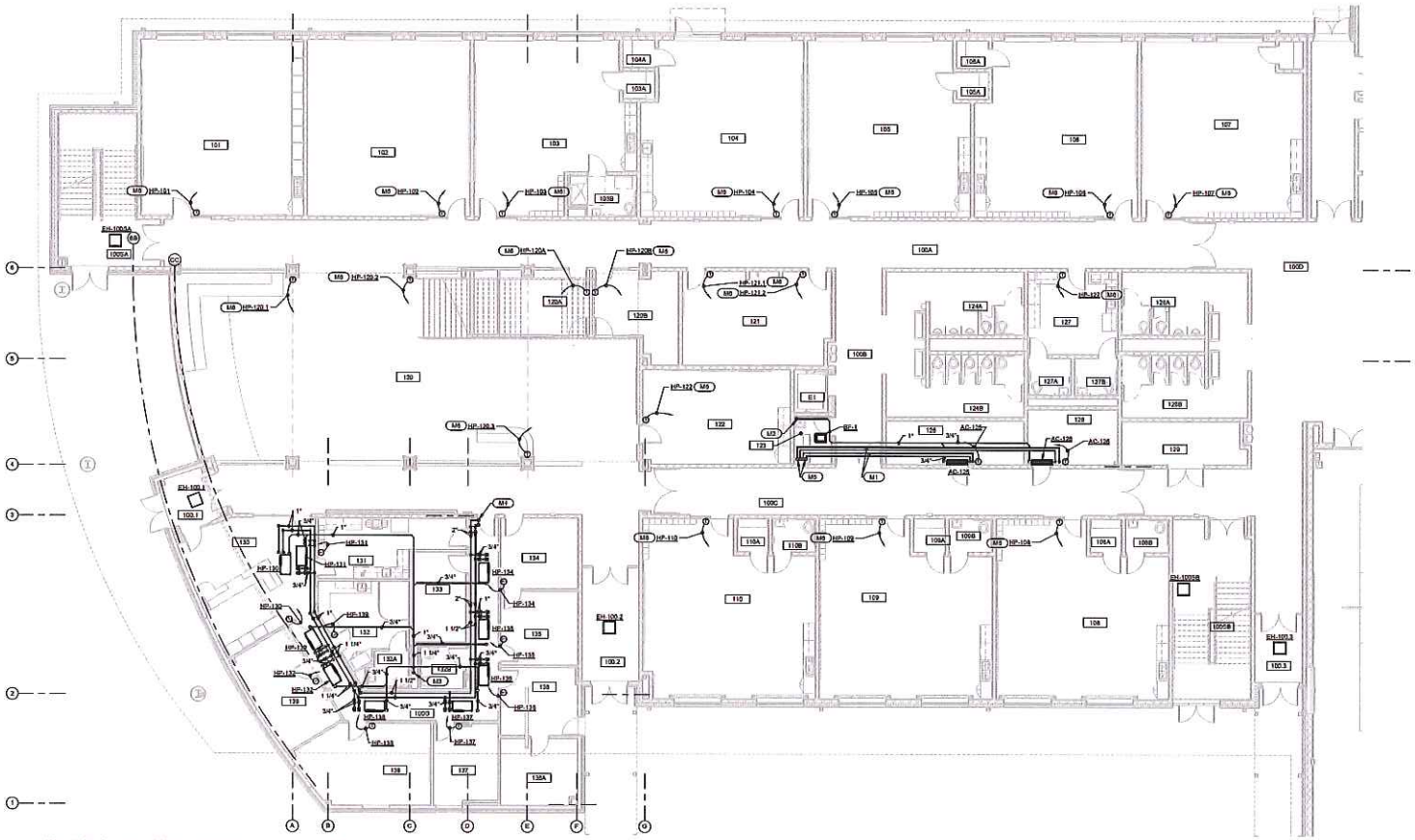
Sheet title:
SECOND FLOOR MECH. PLATFORM HVAC PLAN - AREA A (OA & EXHAUST)

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
M1.5

PLAN NOTES:

- M1 DUCTLESS SPLIT SYSTEM REFRIGERANT LINE SET. SIZE AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.
- M2 1" CONDENSATE DRAIN DOWN AND DISCHARGE IN MOB BASIN. MAINTAIN MINIMUM 2" AIR GAP.
- M3 1-1/4" CONDENSATE DRAIN DOWN IN WALL AND DISCHARGE TO OPEN SITE DRAIN IN WALL. MAINTAIN MINIMUM 2" AIR GAP. REFER TO PLUMBING PLANS FOR OPEN SITE DRAIN.
- M4 2" OWSAR UP.
- M5 REFRIGERANT LINE SET UP.
- M6 UNIT LOCATED ON MECHANICAL PLATFORM A. REFER TO SHEETS M1.3, M1.4, M1.5 OR M2.3 FOR UNIT LOCATION.



FIRST FLOOR HVAC PIPING PLAN - AREA A
1/8" = 1'-0"

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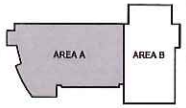

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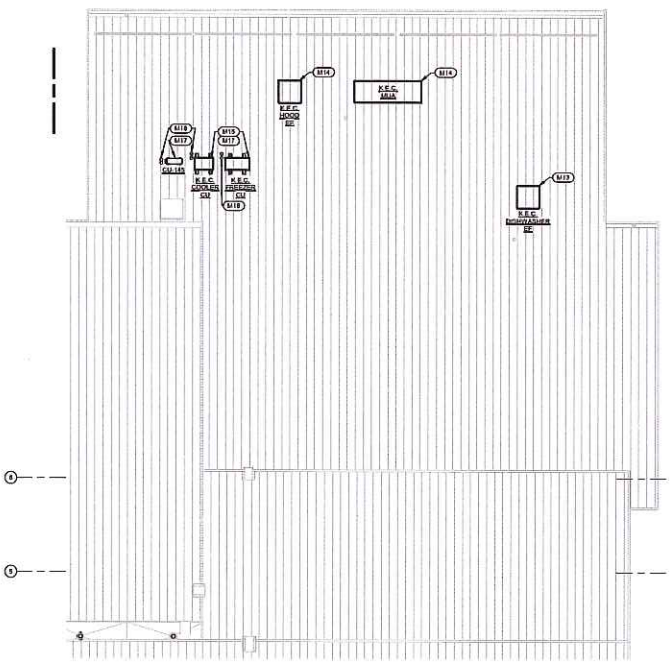
Sheet title:
FIRST FLOOR HVAC PIPING PLANS - AREA A

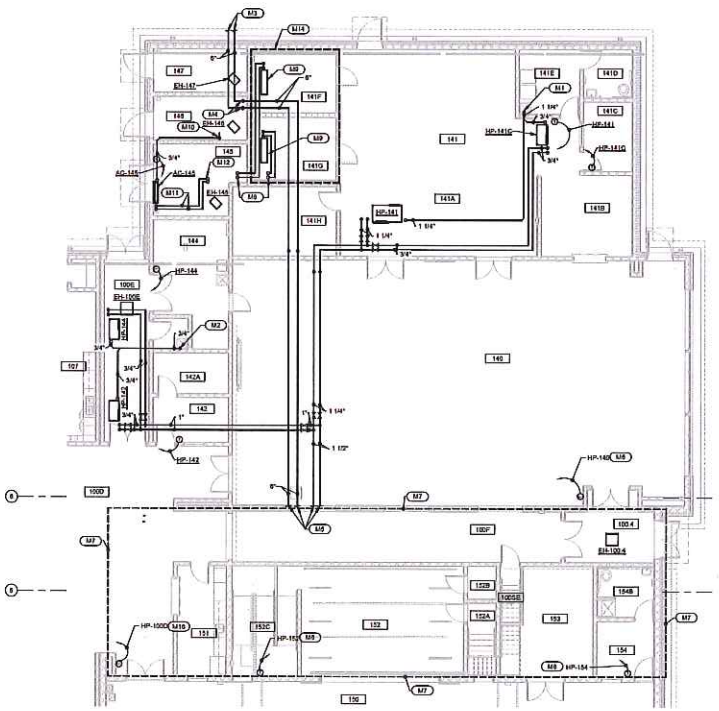
Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
M2.1



ROOF HVAC PLAN - AREA B

1/8" = 1'-0"



FIRST FLOOR HVAC PIPING PLAN - AREA B

1/8" = 1'-0"

GENERAL NOTES:

A. IT IS THE RESPONSIBILITY OF THE KITCHEN EQUIPMENT CONTRACTOR (KEC) TO REVIEW ALL PLUMBING, FIRE PROTECTION AND MECHANICAL DESIGN DRAWINGS REGARDING INTERFACE WITH THEIR SUPPLIED EQUIPMENT AND SERVICES TO INSURE ACCURATE COORDINATION. REFER TO THE FOOD SERVICE DRAWINGS FOR EQUIPMENT INFORMATION AND CHARACTERISTICS.

B. COORDINATE ALL ROOF PENETRATION WITH ROOFING MANUFACTURER AND INSTALLER. ALL PENETRATIONS SHALL NOT VOID ROOFING WARRANTY.

PLAN NOTES:

M1 1-1/4" CONDENSATE DRAIN DOWN AND DISCHARGE IN MOP BASIN. MAINTAIN MINIMUM 2" AIR GAP.

M2 3/4" CONDENSATE DRAIN DOWN AND DISCHARGE IN MOP BASIN. MAINTAIN MINIMUM 2" AIR GAP.

M3 DASHED LINE INDICATE GEOTHERMAL PIPING UNDERGROUND. REFER TO "SITE UTILITY PLAN" ON SHEET U.1 FOR CONTINUATION.

M4 8" GWSBR DOWN. PROVIDE SHUT-OFF VALVES IN VERTICAL. PROVIDE 4" TEE ON SUPPLY AND RETURN WITH SHUT-OFF VALVES AND BLIND FLANGE CAPS.

M5 REFER TO "ENLARGED HVAC PLANS - MECHANICAL PLATFORM B" ON SHEET M3.1 FOR CONTINUATION.

M6 UNIT LOCATED ON MECHANICAL PLATFORM B. REFER TO "ENLARGED HVAC PLANS - MECHANICAL PLATFORM B" ON SHEET M3.1 FOR UNIT LOCATION.

M7 REFER TO "ENLARGED HVAC PLANS - MECHANICAL PLATFORM B" ON SHEET M3.1 FOR WORK ABOVE THIS AREA.

M8 REFRIGERANT PIPING UP THRU PIPE PORTAL TO CONDENSER (PROVIDED BY KEC).

M9 EVAPORATOR PROVIDED BY KEC.

M10 3/4" CONDENSATE DRAIN DOWN AND DISCHARGE TO FLOOR DRAIN. MAINTAIN MINIMUM 2" AIR GAP.

M11 DUCTLESS SPLIT SYSTEM REFRIGERANT LINE SET. SIZE AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

M12 REFRIGERANT LINE SET UP THRU PIPE CURB ASSEMBLY TO CONDENSING UNIT ON ROOF.

M13 K.E.C. PROVIDED DISHWASHER EXHAUST FAN. THE KITCHEN EQUIPMENT CONTRACTOR (KEC) IS PROVIDING THE DISHWASHER STAINLESS STEEL PAINT LED DUCTWORK, DISHWASHER EXHAUST FAN, AND ASSOCIATED MATERIALS, ETC. HOWEVER IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR (GC) FOR RECEIVING AND STORING THE EQUIPMENT AND MATERIALS ONSITE AND SETTING THE MAJOR EQUIPMENT IN PLACE. IT IS THE RESPONSIBILITY OF MECHANICAL CONTRACTOR (MC) TO INSTALL THIS EQUIPMENT AND ALL ASSOCIATED MATERIALS (PROVIDED BY THE KEC). THIS INCLUDES, BUT IS NOT LIMITED TO INSTALLING THE EXHAUST FAN, STAINLESS STEEL DUCT BETWEEN THE DISHWASHER AND EXHAUST FAN, PROVIDING AND INSTALLING LOW VOLTAGE POWER BETWEEN THE DISH MACHINE, FAN STARTER AND THE BUILDING MANAGEMENT SYSTEM (BMS). THE KEC MUST PROVIDE ALL SPECIAL FITTINGS AND OR ADAPTORS TO MAKE THE FINAL CONNECTIONS TO ALL EQUIPMENT THEY SUPPLY. REFER TO THE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.

M14 K.E.C. PROVIDED HOOD MAKE-UP AIR UNIT AND HOOD EXHAUST FAN. THE KITCHEN EQUIPMENT CONTRACTOR (KEC) IS PROVIDING THE HOOD, HOOD EXHAUST FAN, MAKE-UP AIR UNIT AND ASSOCIATED MATERIALS, ETC. HOWEVER IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR (GC) FOR RECEIVING AND STORING THE EQUIPMENT AND MATERIALS ONSITE AND SETTING THE MAJOR EQUIPMENT IN PLACE. IT IS THE RESPONSIBILITY OF MECHANICAL CONTRACTOR (MC) TO INSTALL THIS EQUIPMENT AND ALL ASSOCIATED MATERIALS (PROVIDED BY THE KEC). THIS INCLUDES, BUT IS NOT LIMITED TO INSTALLING THE HOOD, EXHAUST FAN, GREASE DUCT BETWEEN THE HOOD AND EXHAUST FAN, MAKE-UP AIR UNIT, DUCTWORK BETWEEN THE HOOD SUPPLY PLENUM AND MAKE-UP AIR UNIT, PROVIDING AND INSTALLING LOW VOLTAGE POWER BETWEEN THE HOOD, EXHAUST FAN STARTER, MAKE-UP AIR UNIT, FIRE SUPPRESSION SYSTEM AND THE BUILDING MANAGEMENT SYSTEM (BMS). THE KEC MUST PROVIDE ALL SPECIAL FITTINGS AND OR ADAPTORS TO MAKE THE FINAL CONNECTIONS TO ALL EQUIPMENT THEY SUPPLY. REFER TO THE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.

M15 K.E.C. PROVIDED FREEZER/COOLER EQUIPMENT. THE KITCHEN EQUIPMENT CONTRACTOR (KEC) IS PROVIDING THE FREEZER AND COOLER COMPLETE INCLUDING SITE ASSEMBLY REFRIGERATION INTERCONNECTIONS BETWEEN THE EVAPORATOR AND THE CONDENSER AND MOUNTING. THE CONDENSING UNITS SHALL BE MOUNTED ON THE ROOF DIRECTLY ABOVE THE EVAPORATORS AND AT LEAST 10' FROM THE EDGE OF ANY ROOF. THE KEC INSTALLER IS RESPONSIBLE FOR PROVIDING A PIPING / ELECTRICAL PORTAL COMPATIBLE WITH THE ROOF SYSTEM TO BE INSTALLED BY THE GC ROOFING CONTRACTOR. THE KEC INSTALLER IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PIPING AND CONDUIT PENETRATION SLEEVES. THE PLUMBING CONTRACTOR WILL PROVIDE 1/4" COPPER CONDENSATE PIPING AND ARMAFLEX INSULATION BETWEEN THE EVAPORATOR COIL, THROUGH THE PROVIDED COOLER BOX WALL SLEEVE TO AIR GAP ABOVE THE NEAREST DRAIN. REFER TO THE FOOD SERVICE DRAWINGS FOR ADDITIONAL INFORMATION.

M16 UNIT LOCATED ON MECHANICAL PLATFORM A. REFER TO SHEETS M1.3, M1.4, M1.5 OR M2.3 FOR UNIT LOCATION.

M17 PROVIDE EQUIPMENT SUPPORT CURB TO MOUNT EQUIPMENT. SECURE EQUIPMENT TO CURB.

M18 REFRIGERANT LINE SET DOWN THRU PIPE CURB ASSEMBLY.

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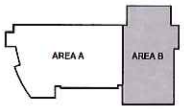

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Sheet title:

FIRST FLOOR HVAC PIPING PLANS - AREA B

Architect's Project No: 1807-244

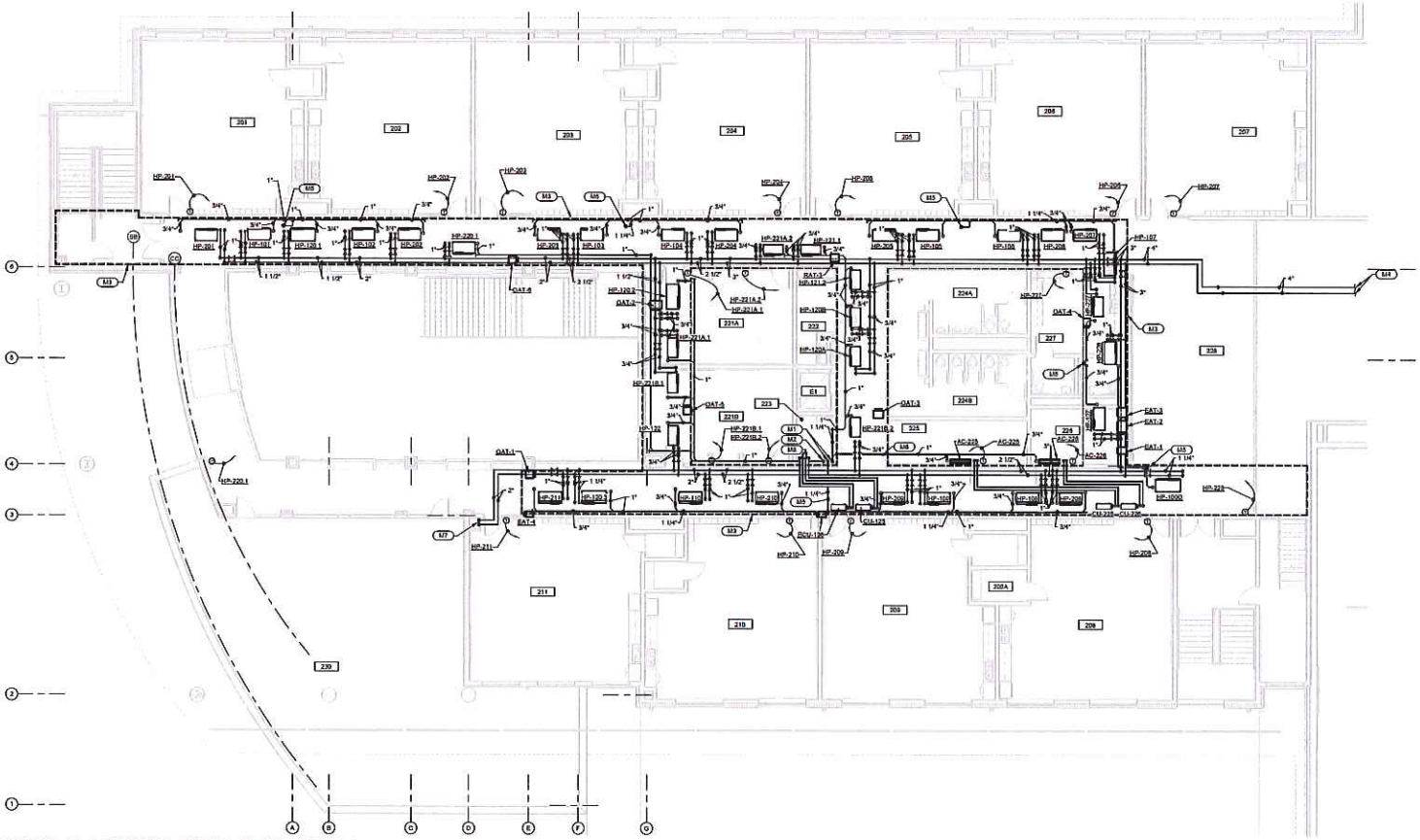
Date: October, 2019

Drawing No:

M2.2

PLAN NOTES:

- M1 1-1/4" CONDENSATE DRAIN DOWN AND DISCHARGE IN MOP BASIN. MAINTAIN MINIMUM 2" AIR GAP.
- M2 1" CONDENSATE DRAIN DOWN AND DISCHARGE IN MOP BASIN. MAINTAIN MINIMUM 2" AIR GAP.
- M3 DASHED LINE INDICATES MECHANICAL PLATFORM "A".
- M4 REFER TO "ENLARGED HVAC PLAN - MECHANICAL PLATFORM B" ON SHEET M3.1 FOR CONTINUATION.
- M5 1-1/4" CONDENSATE DROP TO FLOOR DRAIN. MAINTAIN MINIMUM AIR GAP.
- M6 ROUTE CONDENSATE UNDER MECHANICAL PLATFORM.
- M7 2" OWSAR DOWN.
- M8 REFRIGERANT SET DOWN.



SECOND FLOOR HVAC PIPING PLAN - AREA A

1/8" = 1'-0"

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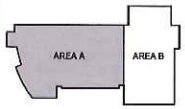

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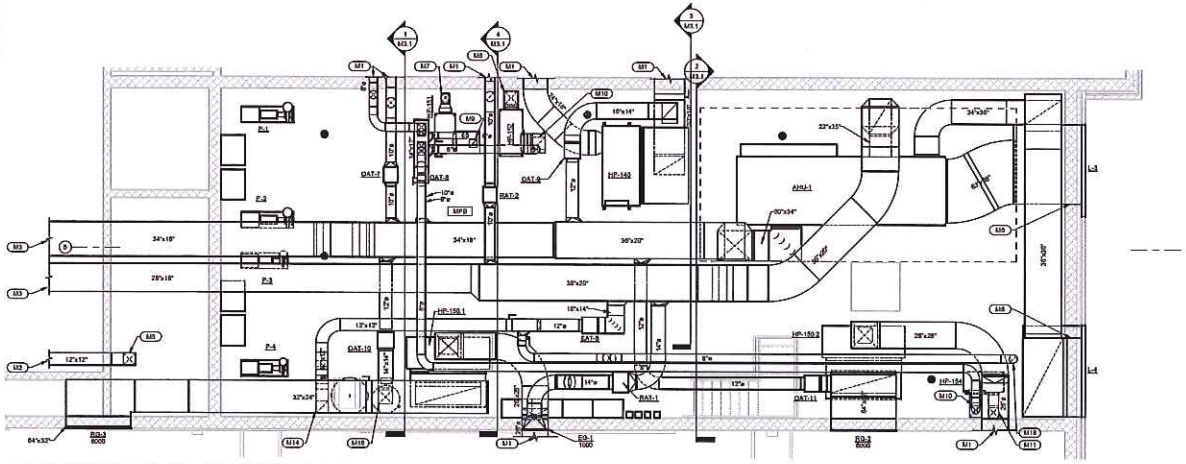
Sheet title:
SECOND FLOOR & MECH. PLATFORM HVAC PIPING PLAN - AREA A

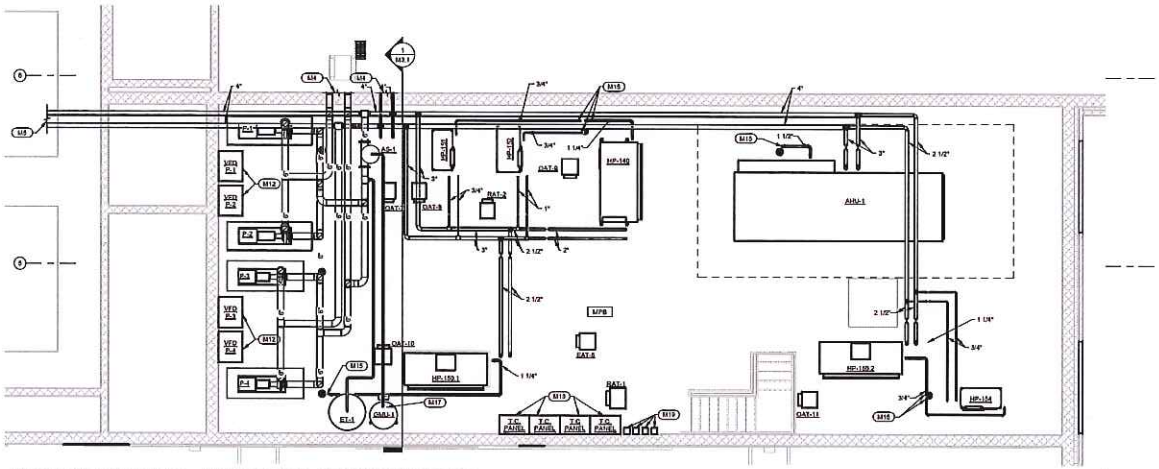
Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
M2.3



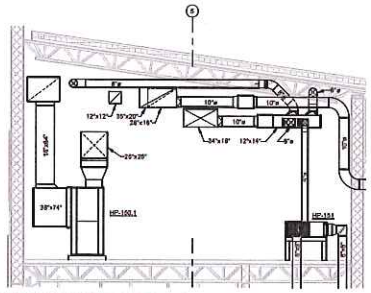
MECHANINCAL PLAN - MECHANICAL PLATFORM AREA B

1/4" = 1'-0"



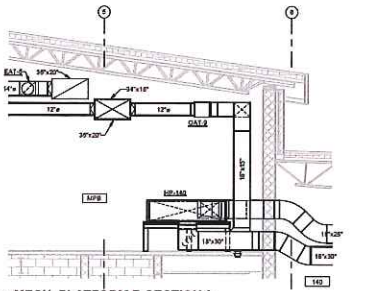
MECHANINCAL PLAN - MECHANICAL PLATFORM AREA B

1/4" = 1'-0"



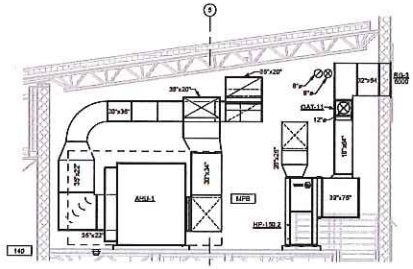
4 MECH. PLATFORM B SECTION 4

1/4" = 1'-0"



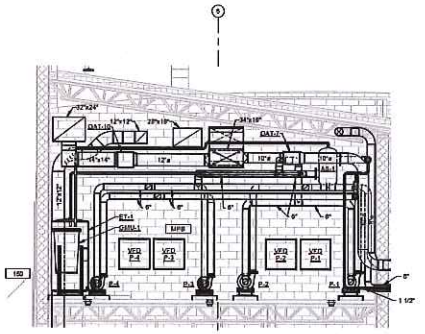
3 MECH. PLATFORM B SECTION 3

1/4" = 1'-0"



2 MECH. PLATFORM B SECTION 2

1/4" = 1'-0"



1 MECH. PLATFORM B SECTION 1

1/4" = 1'-0"

GENERAL NOTES:

A. PROVIDE 4" HIGH CONCRETE EQUIPMENT PAD FOR ALL EQUIPMENT IN MECHANICAL ROOM. PROVIDE SEISMIC RATED VIBRATION ISOLATORS ON ALL EQUIPMENT SUCEPTIBLE TO VIBRATIONS.

B. REFER TO "FIRST FLOOR HVAC PLAN - AREA B" SHEET M1.2 AND "FIRST FLOOR HVAC PIPING PLANS - AREA B" SHEET M2.2 FOR WORK BELOW THIS AREA.

PLAN NOTES:

M1 REFER TO "FIRST FLOOR HVAC PLAN - AREA B" ON SHEET M1.2 FOR CONTINUATION.

M2 REFER TO "SECOND FLOOR, MECH. PLATFORM HVAC PLAN - AREA A (SUPPLY & RETURN)" ON SHEET M1.4 FOR CONTINUATION.

M3 REFER TO "SECOND FLOOR MECH. PLATFORM HVAC PLAN - AREA A (OA & EXHAUST)" ON SHEET M1.5 FOR CONTINUATION.

M4 REFER TO "FIRST FLOOR HVAC PIPING PLANS - AREA B" ON SHEET M2.2 FOR CONTINUATION.

M5 REFER TO "SECOND FLOOR & MECH. PLATFORM HVAC PIPING PLAN - AREA A" ON SHEET M2.3 FOR CONTINUATION.

M6 PROVIDE 78"x108"x60" DEEP PLENUM ON BACKSIDE OF LOUVER. SLOPE BOTTOM OF PLENUM TOWARDS LOUVER. INSULATE WITH 2" RIGID INSULATION.

M7 8"x8" SUPPLY DUCT DOWN.

M8 12"x12" SUPPLY DUCT DOWN.

M9 8"x8" RETURN DUCT DOWN. PROVIDE MANUAL BALANCING DAMPER IN VERTICAL.

M10 12"x12" RETURN DUCT DOWN.

M11 10"x10" SUPPLY DUCT DOWN.

M12 PROVIDE SUPPORT STRUCTURE AS REQUIRED TO MOUNT VFD

M13 PROVIDE SUPPORT STRUCTURE AS REQUIRED TO MOUNT TEMPERATURE CONTROL PANEL.

M14 CONNECT 14"x14" OUTSIDE AIR DUCT TO BOTTOM OF 32"x24" RETURN

M15 DISCHARGE CONDENSATE DRAIN TO NEAREST FLOOR DRAIN. MAINTAIN 2" AIRGAP.

M16 12"x12" EXHAUST DUCT DOWN.

M17 EXTEND GEOTHERMAL LOOP AIR VENTS AND PRESSURE RELIEF VALVES IN MECHANICAL ROOM TO DYCOL TANK. REFER TO "TEMPERATURE CONTROL FLOW DIAGRAMS" ON SHEET M8.1 FOR ADDITIONAL REQUIREMENTS.

M18 8"x EXHAUST DUCT DOWN.

M19 PROVIDE CONTROL POWER TRANSFORMERS FOR AIR TERMINAL UNITS. COORDINATE POWER REQUIREMENTS AND LOCATION WITH ELECTRICAL CONTRACTOR.

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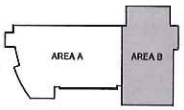

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Revisions:

#	Description	Date

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Sheet title:
ENLARGED HVAC PLANS - MECHANICAL PLATFORM AREA B

Architect's Project No: 1807-244

Date: October, 2019

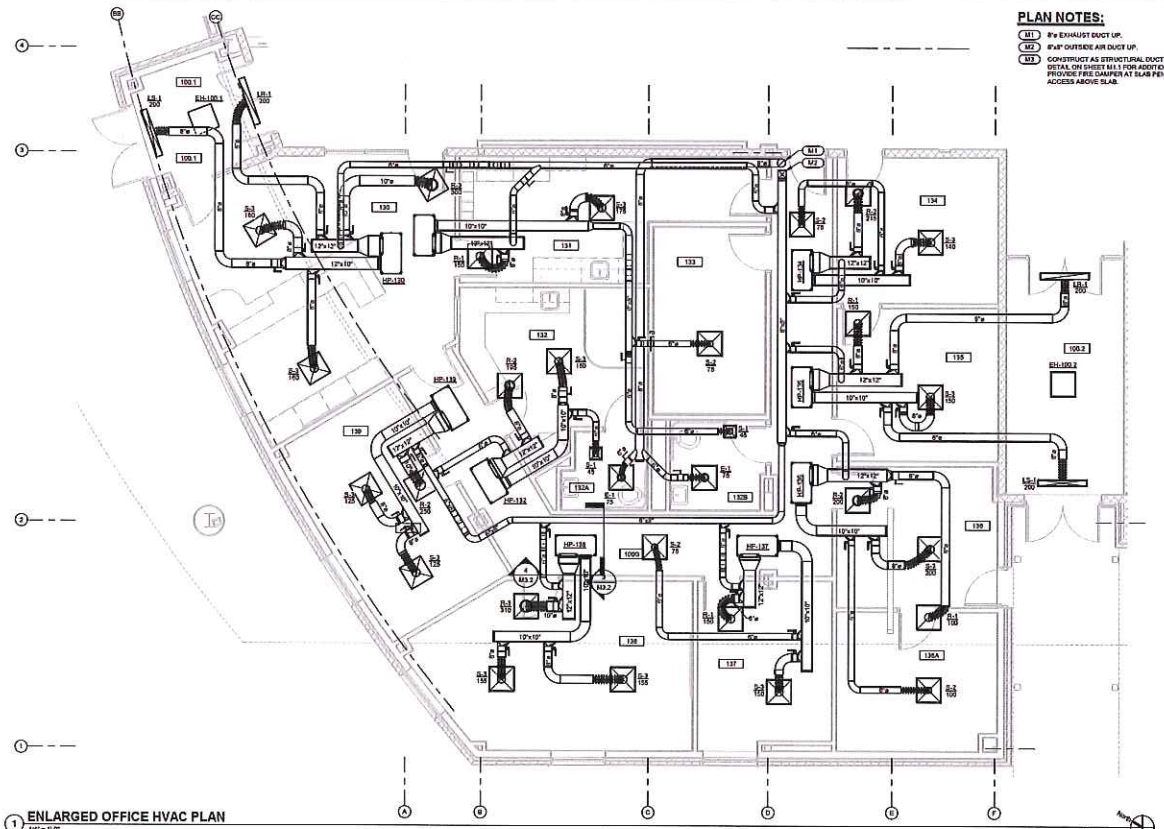
Drawing No:
M3.1

PLAN NOTES:

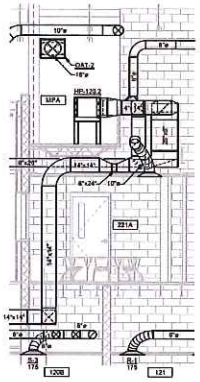
M1 8"ø EXHAUST DUCT UP.

M2 8"x8" OUTSIDE AIR DUCT UP.

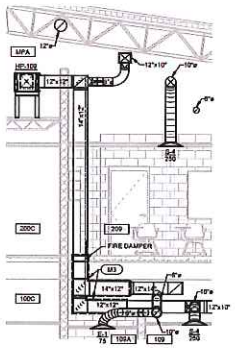
M3 CONSTRUCT AS STRUCTURAL DUCT ASSEMBLY. REFER TO DETAIL ON SHEET M4.1 FOR ADDITIONAL REQUIREMENTS. PROVIDE FIRE DAMPER AT SLAB PENETRATION WITH ACCESS ABOVE SLAB.



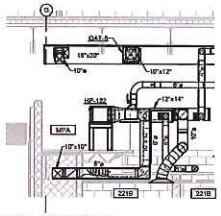
1 ENLARGED OFFICE HVAC PLAN
1/4" = 1'-0"



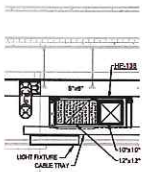
7 HP-120.2 SECTION
1/4" = 1'-0"



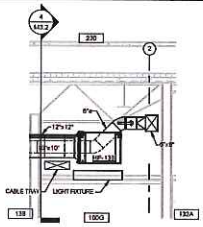
6 HP-109 SECTION
1/4" = 1'-0"



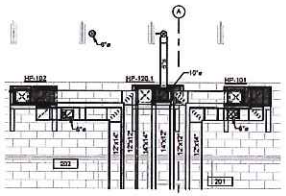
5 HP-122 SECTION
1/4" = 1'-0"



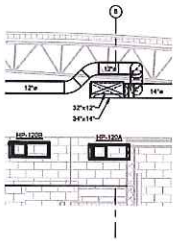
4 HP-138 SECTION 2
1/2" = 1'-0"



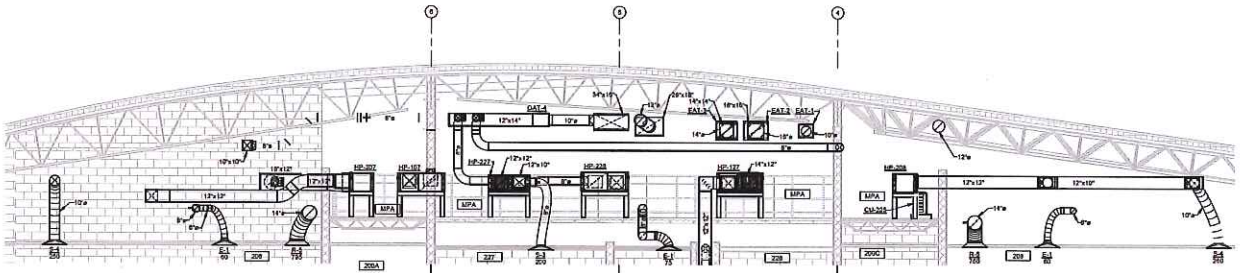
3 HP-138 SECTION 1
1/2" = 1'-0"



2 HP-102, 120.1, 101 SECTION
1/4" = 1'-0"



9 HP-120A, HP-120B SECTION
1/4" = 1'-0"



8 GENERAL HVAC SECTION
1/4" = 1'-0"

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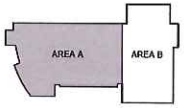

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Sheet title:

ENLARGED OFFICE HVAC PLAN & HVAC SECTIONS

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

M3.2

MISC. EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION
ET-1	WATER EXPANSION TANK - BAG MODEL NUMBER B1000, ASME RATED, BLADDER TYPE, VERTICAL TANK 264 GALLON TANK AND ACCEPTANCE VOLUME. PROVIDE WITH REPLACEABLE BLADDER, 1-1/2" NPT SYSTEM CONNECTION, 3/4" NPT DRAIN, AND STANDARD SCHRADER VALVE CHARGING CONNECTION.
AS-1	AIR SEPARATOR BSO MODEL RL-8, ASME STEEL CONSTRUCTION, 125 PSI MAXIMUM WORKING PRESSURE.
GMU-1	GLYCOL SOLUTION MAKE-UP UNIT EQUAL TO BELL AND GOSSETT MODEL GMU-60. 55 GALLON POLYETHYLENE RESERVOIR WITH REMOVABLE LID AND VISIBLE SCALE IN GALLONS, AUTOMATIC CHECK VALVE, BALANCING TANK, EXPANSION TANK, DISCHARGE PRESSURE GAUGE, AND PRESSURE SWITCH. 115/1/60 SINGLE POINT POWER CONNECTIONS.
AC-125 AC-135 AC-235 AC-335	COOLING ONLY DUCTLESS MULTI-SPLIT SYSTEM INDOOR UNIT - WALL MOUNTED FREE DISCHARGE INDOOR UNIT, 12 MBH MAX., 9.4 MBH MIN. COOLING CAPACITY, 12.0 EER, 20.8 SEER, 0.33 FLA., 1.0 MCA. PROVIDE WITH PACKAGED WALL MOUNTED THERMOSTAT, FACTORY DISCONNECT AND BACNET INTERFACE.
CU-125 CU-135 CU-235 CU-335	COOLING ONLY DUCTLESS MINI-SPLIT SYSTEM OUTDOOR UNIT WITH VARIABLE SPEED INVERTER DRIVEN COMPRESSOR - 208 VOLTS, 1 PHASE, 11 MCA, 15 A MOCP. PROVIDE WITH VIBRATION ISOLATORS AND SECURE TO MEZZANINE FLOOR. PROVIDE WITH DISCONNECT SWITCH. BACNET INTERFACE. BASED ON MITSUBISHI MODEL PUY-A18NKA7
AC-145	COOLING ONLY DUCTLESS MULTI-SPLIT SYSTEM INDOOR UNIT - WALL MOUNTED FREE DISCHARGE INDOOR UNIT, 18 MBH MAX., 9 MBH MIN. COOLING CAPACITY, 9.8 EER, 18.8 SEER, 0.33 FLA., 1.0 MCA. PROVIDE WITH PACKAGED WALL MOUNTED THERMOSTAT, FACTORY DISCONNECT AND BACNET INTERFACE.
CU-145	COOLING ONLY DUCTLESS MINI-SPLIT SYSTEM OUTDOOR UNIT WITH VARIABLE SPEED INVERTER DRIVEN COMPRESSOR - 208 VOLTS, 1 PHASE, 11 MCA, 15 A MOCP. PROVIDE WITH VIBRATION ISOLATORS AND SECURE TO MEZZANINE FLOOR. PROVIDE WITH DISCONNECT SWITCH. BACNET INTERFACE. BASED ON MITSUBISHI MODEL PUY-A18NKA7
F-1, F-2	HIGH VOLUME LOW VELOCITY FAN. 14FT DIAMETER, 208 VOLTS, 3 PHASE, 14.9 MAX AMP DRAW, 1.5 HP DIRECT DRIVE MOTOR. PROVIDE WITH CONTROLLER CAPABLE OF BACNET INTERFACE. COORDINATE WITH MOUNTING STRUCTURE. PROVIDE WITH STRUCTURAL BRACING PER MANUFACTURERS RECOMMENDATIONS. BASED ON BRASSWIND MODEL BASIC 6.
RF-1	RAINE DRYER EXHAUST BOOSTER FAN, CONTINENTAL FAN MANUFACTURING MODEL DVK-100B-C WITH CURRENT SENSOR, 110 CFM @ 6" ESP, 2820 RPM, 63.4 WATTS, 120 VOLT. INSTALL CURRENT SENSOR ON DRYER TO ENERGIZE FAN UPON OPERATION OF DRYER. EXTEND WIRING AS REQUIRED TO INTERCONNECT FAN, SENSOR AND DRYER PER MANUFACTURER RECOMMENDATIONS. PROVIDE FAN WITH HANGERS AND VIBRATION ISOLATORS.
L-1	ALUMINUM FEMA LOUVER RECESSED/FLUSH MOUNT CONFIGURATION, 3/16" BLADE AND FRAME THICKNESS, MILL FINISH. PROVIDE WITH ALUMINUM MESH BIRD SCREEN, MOUNTING HOLES. BASED ON RUSKIN MODEL EF5000WD. SIZED FOR 40"x24" OPENING. PROVIDE PHYSICAL COLOR SAMPLES TO ARCHITECT FOR SELECTION. PROVIDE 120V MOTORIZED DAMPER IN DUCT. MOTORIZED DAMPER SHALL BE POWERED CLOSED, SPRING OPEN.
L-2	ALUMINUM FEMA LOUVER RECESSED/FLUSH MOUNT CONFIGURATION, 3/16" BLADE AND FRAME THICKNESS, MILL FINISH. PROVIDE WITH ALUMINUM MESH BIRD SCREEN, MOUNTING HOLES. BASED ON RUSKIN MODEL EF5000WD. SIZED FOR 43"x12" OPENING. PROVIDE PHYSICAL COLOR SAMPLES TO ARCHITECT FOR SELECTION. PROVIDE 120V MOTORIZED DAMPER IN DUCT. MOTORIZED DAMPER SHALL BE POWERED CLOSED, SPRING OPEN.
L-3 L-4	ALUMINUM LOUVER RECESSED/FLUSH MOUNT CONFIGURATION, 6" DEEP, 1/8" FRAME THICKNESS, 1/8" THICKNESS FIXED DRAINABLE BLADES, MILL FINISH. PROVIDE WITH WITH ALUMINUM MESH BIRD SCREEN, MOUNTING HOLES. BASED ON RUSKIN MODEL ELF6370WD/FDS-602. SIZED FOR 60"x 100" OPENING. PROVIDE PHYSICAL COLOR SAMPLES TO ARCHITECT FOR SELECTION. PROVIDE SUPPORT STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS TO SUPPORT AND CONNECT MULTIPLE LOUVER SECTIONS.

PUMP SCHEDULE

SYMBOL	SERVICE	FLOW (GPM)	PUMP HEAD AT DESIGN (FT)	SYSTEM FLUID	SUCTION SIZE	DISCHARGE SIZE	MOTOR SIZE (HP)	RPM	VOLT / PHASE	ELECTRICAL DISCONNECT BY (1)	DISCONNECT TYPE (1)	CONTROLLER/STARTER BY (1)	CONTROLLER/STARTER TYPE (1)	MANUFACTURER	MODEL	AS-BUILT MANUFACTURER	AS-BUILT MODEL/ SERIAL #	TYPE	NOTES
P-1 P-2	WELL LOOP	720	90	(3)	5"	4"	25	1780	460 / 3	EC	NF	TCC-EC	VFD-D	BELL & GOSSETT	SERIES E-1810 EBB			BASE MOUNTED END SUCTION	(5)
P-3 P-4	BUILDING LOOP	500	65	(3)	4"	3"	15	1800	460 / 3	EC	NF	TCC-EC	VFD-D	BELL & GOSSETT	SERIES E-1510 BBD			BASE MOUNTED END SUCTION	(5)

NOTES:
1. SEE "SCHEDULE GENERAL NOTES"
2. PROVIDE PREMIUM EFFICIENT MOTOR, CONCRETE INERTIA BASE WITH SIESMIC SPRING ISOLATORS, VARIABLE FREQUENCY DRIVE CONTROL WITH INTEGRAL DISCONNECT.
3. 20% PROPYLENE GLYCOL

SCHEDULE GENERAL NOTES:

A. DISCONNECT AND CONTROLLER STARTER BY:
- MFR = FURNISHED AND INSTALLED BY MANUFACTURER
- EC = FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- MC = FURNISHED LOOSE BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR
- MFR-EC = FURNISHED LOOSE BY MANUFACTURER AND INSTALLED BY ELECTRICAL CONTRACTOR.
- TCC-EC = FURNISHED LOOSE BY TEMPERATURE CONTROL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.

B. DISCONNECT TYPE.
- F = FUSED
- NF = NON-FUSED
- EC = TYPE SPECIFIED BY DIVISION 26. SEE ELECTRICAL SHEETS.

C. CONTROLLER STARTER TYPE:
- FV = FULL VOLTAGE
- WYE = WYE-DELTA
- SS = SOLID STATE (SOFT START)
- MS = MANUAL STARTER
- VFD = VARIABLE FREQUENCY DRIVE
- VFD-D = VARIABLE FREQUENCY DRIVE WITH BYPASS
- VFD-FD = VARIABLE FREQUENCY DRIVE WITH FUSED DISCONNECT
- AT = AUTO TRANSFORMER
- EC = TYPE SPECIFIED BY DIVISION 26. SEE ELECTRICAL SHEETS.
- VFD-D = VARIABLE FREQUENCY DRIVE WITH DOOR INTERLOCKING AND PADLOCKABLE INPUT DISCONNECT

WATER TO AIR HEAT PUMP SCHEDULE

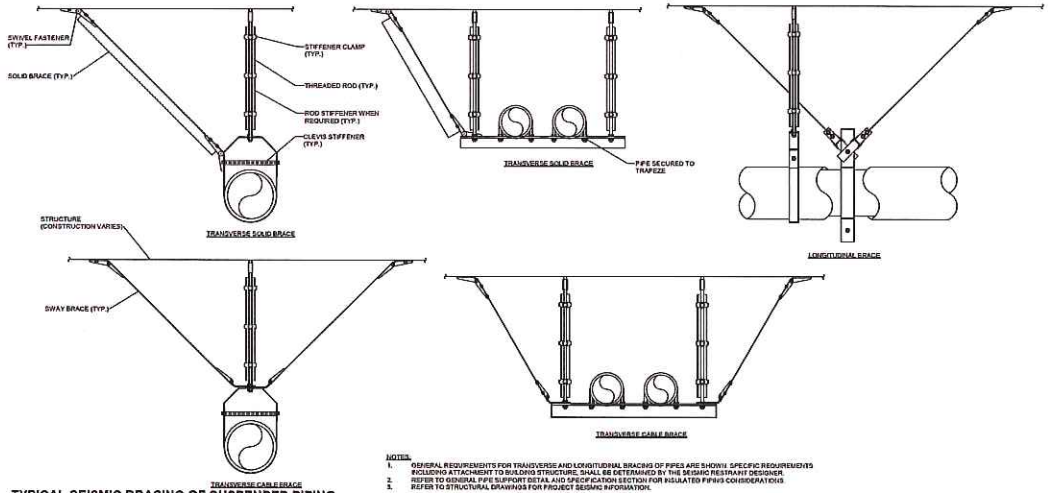
MARK	MODEL	ELECTRICAL FREQ. (HZ)	VOLT. (V)	PHASE	MCA (AMPS)	MOCP (AMPS)	SUPPLY FAN NOMINAL AIR FLOW (CFM)	DESIGN AIRFLOW	POWER (HP)	OUTSIDE AIR (CFM)	OUTSIDE AIR FRIDGE	FLUID FLOW (GPM)	FLUID FD (FT)	COOLING TOTAL CAP. (BTU)	SENSIBLE CAP. (BTU)	LOB (°F)	LWB (°F)	LWT (°F)	HEATING TOTAL CAP. (MBH)	LDB (°F)	LWT (°F)	EFFICIENCY EER	COP	AS-BUILT MANUFACTURER	AS-BUILT MODEL/ SERIAL #	NOTES
HP-100D	DXHP0301	60	208	1	24	40 A	1,140	1,140	0.75	150	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-101	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-102	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-103	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-104	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-105	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-106	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-107	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-108	DXHP0241	60	208	1	18	30 A	760	760	0.33	225	OAT-3	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-109	DXHP0241	60	208	1	18	30 A	760	760	0.33	225	OAT-3	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-110	DXHP0241	60	208	1	18	30 A	760	760	0.33	225	OAT-3	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-120.1	DXHP0301	60	208	1	24	40 A	1,140	1,050	0.75	175	OAT-4	8.0	7.97	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-120.3	DXHP0301	60	208	1	24	40 A	1,140	1,100	0.75	175	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-120A	DXHP0301	60	208	1	24	40 A	1,140	1,150	0.75	175	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-120B	DXHP0301	60	208	1	24	40 A	1,140	1,150	0.75	175	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-121	DXHP0301	60	208	1	24	40 A	1,140	1,150	0.75	175	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-121A	DXHP0301	60	208	1	24	40 A	1,140	1,150	0.75	175	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-121B	DXHP0301	60	208	1	24	40 A	1,140	1,150	0.75	175	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-121C	DXHP0301	60	208	1	24	40 A	1,140	1,150	0.75	175	OAT-4	8.0	8.88	36,000	26,900	58	56	95	40,790	101	43	16.3	5.1			NOTES 1,3,3,4,5,6,7
HP-121.1	DXHP0201	60	208	1	5	15 A	215	176	0.33	20	OAT-5	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-121.2	DXHP0201	60	208	1	5	15 A	215	176	0.33	20	OAT-5	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-121.3	DXHP0201	60	208	1	5	15 A	215	176	0.33	20	OAT-5	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-121.4	DXHP0201	60	208	1	5	15 A	215	176	0.33	20	OAT-5	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-121.5	DXHP0201	60	208	1	5	15 A	215	176	0.33	20	OAT-5	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-121.6	DXHP0201	60	208	1	5	15 A	215	176	0.33	20	OAT-5	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-127	DXHP0241	60	208	1	18	30 A	760	876	0.33	100	OAT-4	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-130	DXHP0151	60	208	1	11	15 A	475	530	0.33	75	OAT-1	3.8	6.51	14,270	10,430	60	57	95	16,640	97	44	14.5	4.8			NOTES 1,3,3,4,5,7
HP-131	DXHP0301	60	208	1	18	30 A	760	295	0.33	30	OAT-1	2.3	4.73	8,970	6,670	59	57	95	9,140	97	44	14.1	5.2			NOTES 1,3,3,4,5,7
HP-132	DXHP0201	60	208	1	5	15 A	215	195	0.33	30	OAT-1	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,7
HP-134	DXHP0201	60	208	1	5	15 A	215	215	0.33	30	OAT-1	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,7
HP-135	DXHP0301	60	208	1	18	30 A	760	320	0.33	60	OAT-1	3.0	2.08	11,820	8,630	59	57	95	11,910	97	44	14.1	5.0			NOTES 1,3,3,4,5,7
HP-136	DXHP0201	60	208	1	5	15 A	265	300	0.33	30	OAT-1	1.5	0.97	8,910	6,650	59	57	100	8,750	98	41	14.1	5.3			NOTES 1,3,3,4,5,7
HP-137	DXHP0201	60	208	1	5	15 A	215	216	0.33	20	OAT-1	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,7
HP-138	DXHP0201	60	208	1	5	15 A	265	310	0.33	50	OAT-1	2.3	4.73	8,970	6,670	59	57	95	9,140	97	44	14.1	5.2			NOTES 1,3,3,4,5,7
HP-139	DXHP0201	60	208	1	5	15 A	265	350	0.33	30	OAT-1	2.3	1.68	8,970	6,670	59	57	95	9,140	97	44	14.1	5.2			NOTES 1,3,3,4,5,7
HP-140	DXHP0301	60	208	1	24	40 A	1,800	1,600	0.50	600	OAT-6	10.0	10.07	127,110	99,640	62	59	95	115,930	97	44	13.4	4.0			NOTES 1,3,3,4,5,6,8
HP-141	DXHP0401	60	208	1	32	50 A	1,530	1,550	0.33	420	OAT-7	12.0	10.56	61,000	38,000	58	56	95	53,930	99	43	17.2	5.4			NOTES 1,3,3,4,5,6,7
HP-141C	DXHP0601	60	208	1	5	15 A	215	250	0.33	50	OAT-7	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-142	DXHP0201	60	208	1	5	15 A	215	176	0.33	50	OAT-4	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,7
HP-143	DXHP0201	60	208	1	5	15 A	265	320	0.33	50	OAT-4	2.3	1.68	8,970	6,670	59	57	95	9,140	97	44	14.1	5.2			NOTES 1,3,3,4,5,7
HP-150.1	GEVS1804	60	460	3	34	45 A	6,000	6,000	5.00	780	OAT-10	45.0	31.00	160,000	119,700	62	57	95	192,000	97	44	14.1	4.4			NOTES 1,3,3,4,5,6,8
HP-150.2	GEVS1804	60	460	3	34	45 A	6,000	6,000	5.00	750	OAT-11	45.0	31.00	160,000	119,700	62	57	95	192,000	97	44	14.1	4.4			NOTES 1,3,3,4,5,6,8
HP-151	DXHP0201	60	208	1	5	15 A	215	225	0.33	50	OAT-8	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-152	DXHP0241	60	208	1	18	30 A	760	760	0.33	125	OAT-4	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-154	DXHP0201	60	208	1	5	15 A	215	230	0.33	50	OAT-8	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-200	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-203	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-203	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-204	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-205	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-206	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-207	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-2	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-208	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-3	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-209	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-3	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-210	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-3	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-211	DXHP0241	60	208	1	18	30 A	760	760	0.33	110	OAT-3	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-220.1	DXHP0241	60	208	1	18	30 A	760	830	0.33	150	OAT-6	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
HP-221A.1	DXHP0201	60	208	1	5	15 A	215	230	0.33	30	OAT-6	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,7
HP-221A.2	DXHP0201	60	208	1	5	15 A	215	215	0.33	30	OAT-6	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,7
HP-221B.1	DXHP0201	60	208	1	5	15 A	215	230	0.33	30	OAT-6	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,7
HP-221B.2	DXHP0201	60	208	1	5	15 A	215	178	0.33	30	OAT-6	1.5	1.36	7,670	5,490	57	55	99	7,740	101	42	14.2	4.7			NOTES 1,3,3,4,5,6,7
HP-227	DXHP0151	60	208	1	11	15 A	475	400	0.33	100	OAT-4	3.8	8.61	14,270	10,430	60	57	95	16,640	97	44	14.5	4.8			NOTES 1,3,3,4,5,6,7
HP-228	DXHP0241	60	208	1	18	30 A	760	600	0.33	125	OAT-4	6.0	7.47	26,870	18,660	58	56	95	28,120	99	43	17.7	5.4			NOTES 1,3,3,4,5,6,7
TOTAL: 87									7.570				343.8													

NOTES:
1. PERFORMANCE BASED ON STANDARD ECM MOTOR SPEED
2. COOLING PERFORMANCE BASED ON 20% PROPYLENE GLYCOL SOLUTION, 85°F ENTERING WATER TEMPERATURE, 80°F db / 67°F wb ENTERING AIR TEMPERATURE.
3. HEATING PERFORMANCE BASED ON 20% PROPYLENE GLYCOL SOLUTION, 50°F ENTERING WATER TEMPERATURE, 70°F db ENTERING AIR TEMPERATURE.
4. PROVIDE WITH ECM FAN MOTOR 1/2" CABINET INSULATION
5. PROVIDE HORIZONTAL UNITS WITH HANGERS WITH VIBRATION ISOLATORS AND SEISMIC RESTRAINTS. INSTALL VERTICAL UNITS ON 4" THICK CONCRETE HOUSEKEEPING PAD WITH SEISMIC VIBRATION ISOLATORS.
6. PROVIDE WITH DUAL COMPRESSORS FOR MULTI-STAGE OPERATION
7. PROVIDE WITH 24V INPUT IONIZATION AIR CLEANING SYSTEM MOUNTED ON FAN INLET AFTER PARTICLE FILTER AND BEFORE COIL. BASED ON OSPRIME-03P-OC0-24. ACCEPTABLE MANUFACTURES MUST BE UL AND cUL APPROVED.
8. PROVIDE WITH 24V INPUT IONIZATION AIR CLEANING SYSTEM MOUNTED ON FAN INLET AFTER PARTICLE FILTER AND BEFORE COIL. BASED ON OSPRIME-OC-48. ACCEPTABLE MANUFACTURES MUST BE UL AND cUL APPROVED.

AIR HANDLING UNIT SCHEDULE

SYMBOL	AHU-1
MANUFACTURER	VALENT
MODEL	VFREE-310-350-HW3HP-C-10A
AS-BUILT MANUFACTURER	
AS-BUILT MODEL/SERIAL #	
OUTSIDE AIRFLOW (CFM)	100%
TYPE	GEOTHERMAL WATER SOURCE HEAT PUMP
HEATING PERFORMANCE	
ENTERING AIR TEMPERATURE (°F db)	45.1
LEAVING AIR TEMPERATURE (°F db)	90.0
DESIGN FLUID FLOW RATE (GPM), CIRCUIT A/ CIRCUIT B	37.5 / 52.5
ENTERING FLUID TEMPERATURE (°F)	20
LEAVING FLUID TEMPERATURE (°F) CIRCUIT A/CIRCUIT B	43.7 / 43.1
FLUID PRESSURE DROP (PSI) CIRCUIT A/ CIRCUIT B	18.13 / 11.49
TOTAL CAPACITY (MBH)	365.5
COOLING PERFORMANCE	
ENTERING AIR TEMPERATURE (°F db / °F wb)	82.4 / 69.8
COIL LEAVING AIR TEMP. (°F db / °F wb)	55.8 / 54.5
DESIGN FLUID FLOW RATE (GPM), CIRCUIT A/ CIRCUIT B	37.5 / 52.5
ENTERING FLUID TEMPERATURE (°F)	85
LEAVING FLUID TEMPERATURE (°F) CIRCUIT A/CIRCUIT B	95.5 / 96.5
FLUID PRESSURE DROP (FT.)	18.13 / 11.49
TOTAL CAPACITY (MBH)	368.1
SENSIBLE CAPACITY (MBH)	277.8
HOT GAS REHEAT CAPACITY (MBH)	182.9
FAN	SUPPLY / EXHAUST
AIRFLOW (CFM)	7,570 / 8,265
EXTERNAL STATIC PRESSURE (IN. W.G.)	1.5 / 1.5
FAN TYPE	PLENUM / PLENUM
FAN QUANTITY	2 / 2
FAN SPEED (RPM)	2,032 / 1,839
FAN POWER (BHP) EACH	2.9 / 2.2
MOTOR SIZE (HP) EACH	5.0 / 3.0
ENERGY WHEEL PERFORMANCE	SUMMER / WINTER
ENTERING AIR TEMPERATURE (°F db / °F wb)	99 / 78 / 5 / 4.6
LEAVING AIR TEMPERATURE (°F db / °F wb)	82.4 / 68.9 / 48.1 / 38.1
EFFECTIVENESS	0.63 / 0.80
SINGLE POINT POWER CONNECTION	
MOTOR VOLTAGE / PHASE / CYCLES	460 / 3 / 60
MCA/MOP (AMPS)	89.0 / 100
(1) DISCONNECT BY / TYPE	MFR / NF
(1) STARTER BY / TYPE	MFR / MFR
FILTER	SUPPLY / OUTDOOR / EXHAUST
FILTER THICKNESS (IN.) / TYPE	4"/MERV 14 / 2"/MERV 8 / 2"/MERV 8
NOTES	(2) (3)

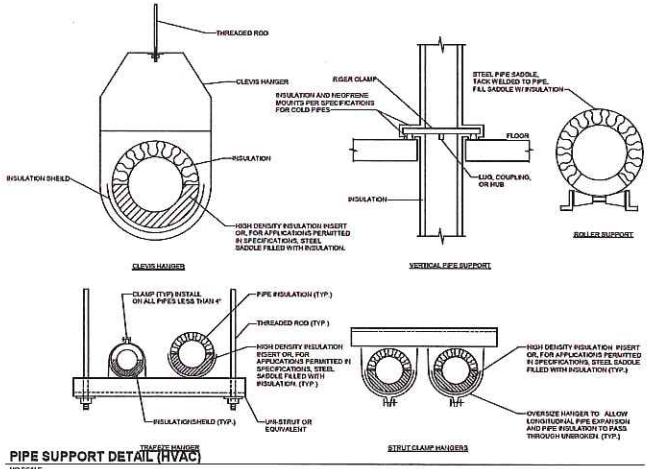
(1) SEE "SCHEDULE GENERAL NOTES"
(2) PROVIDE AHU WITH THE FOLLOWING



NOTES:
1. GENERAL REQUIREMENTS FOR TRANSVERSE AND LONGITUDINAL BRACING OF PIPES ARE SHOWN. SPECIFIC REQUIREMENTS INCLUDING ATTACHMENT TO BUILDING STRUCTURE, SHALL BE DETERMINED BY THE SEISMIC RESTRAINT DESIGNER.
2. REFER TO GENERAL PIPE SUPPORT DETAIL AND SPECIFICATION SECTION FOR INSULATED PIPING CONSIDERATIONS.
3. REFER TO STRUCTURAL DRAWINGS FOR PROJECT SEISMIC INFORMATION.

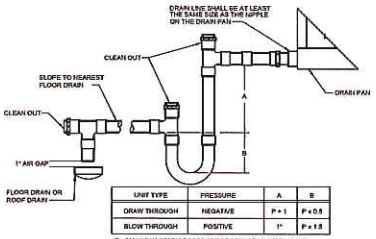
TYPICAL SEISMIC BRACING OF SUSPENDED PIPING

NO SCALE



PIPE SUPPORT DETAIL (HVAC)

NO SCALE

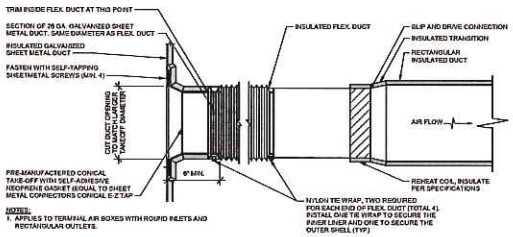


UNIT TYPE	PRESSURE	A	B
DRAW THROUGH	NEGATIVE	P + 1	P + 0.5
BLOW THROUGH	POSITIVE	1"	P + 1.5

P = MAXIMUM STATIC PRESSURE AT DRAIN PAN OR PLENUM SECTION (INCHES W.G.)

CONDENSATE DRAIN TRAP DETAIL

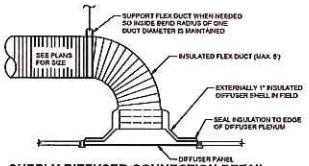
NO SCALE



NOTES:
1. APPLIES TO TERMINAL AIR BOXES WITH ROUND INLETS AND RECTANGULAR OUTLETS.

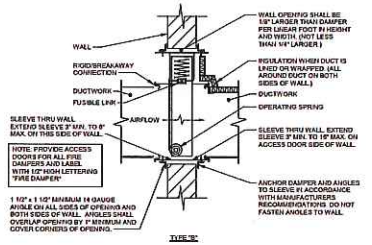
TERMINAL AIR BOX DETAIL

NO SCALE



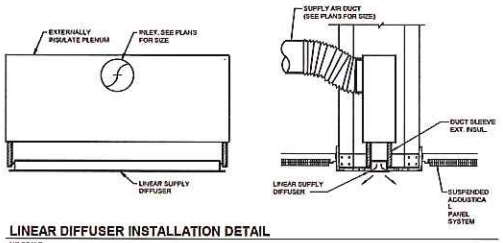
SUPPLY DIFFUSER CONNECTION DETAIL

NO SCALE



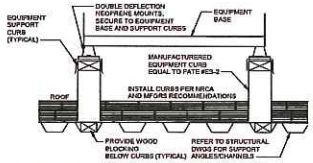
FIRE DAMPER THRU WALL DETAIL

NO SCALE



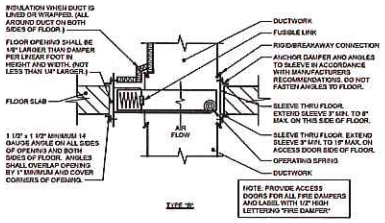
LINEAR DIFFUSER INSTALLATION DETAIL

NO SCALE



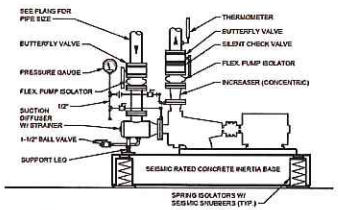
EQUIPMENT SUPPORT CURBS DETAIL

NO SCALE



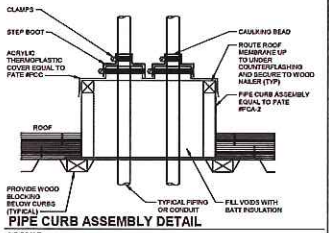
FIRE DAMPER THRU FLOOR DETAIL

NO SCALE



END SUCTION PUMP DETAIL

NO SCALE



PIPE CURB ASSEMBLY DETAIL

NO SCALE

NEW ELEMENTARY SCHOOL

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Not for Construction
10/14/2019
3:02:51 PM

Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CSM	CSM	JTP

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Sheet title:

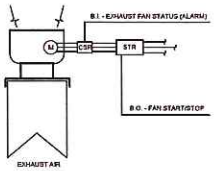
HVAC DETAILS

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

M5.1

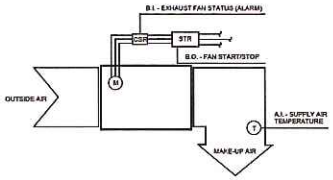


KITCHEN HOOD EXHAUST FAN SEQUENCE OF OPERATION

THE KITCHEN HOOD EXHAUST FAN PROVIDED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR SHALL BE CONTROLLED BY A SWITCH LOCATED ON THE ASSOCIATED KITCHEN HOOD. THE HOOD SYSTEM WILL BE MONITORED BASED ON THE BUILDING OCCUPANCY SCHEDULE. THE OCCUPANCY SCHEDULE SHALL BE ADJUSTABLE AT THE OPERATOR INTERFACE. THE KITCHEN HOOD EXHAUST FAN STATUS (ON/OFF) SHALL BE DISPLAYED AT THE OPERATOR WORKSTATION. DURING UNOCCUPIED MODE, AN ALARM SHALL BE GENERATED AT THE OPERATOR INTERFACE IF THE FAN IS INDEXED ON.

AN ALARM SHALL BE GENERATED AT THE OPERATOR INTERFACE UPON THE FOLLOWING:

- IF THE FAN STATUS DOES NOT MATCH THE COMMAND OPERATION.
- ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM. UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE ASSOCIATED KITCHEN HOOD EXHAST FAN SHALL BE INDEXED ON.



KITCHEN HOOD MAKE-UP AIR UNIT SEQUENCE OF OPERATION

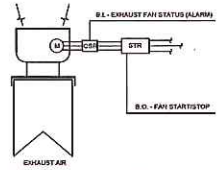
PROVIDE UNIT CONTROLLER CAPABLE OF INTEGRATING MAKE-UP AIR UNIT CONTROLLER BUILDING MANAGEMENT SYSTEM (BMS). THE MAKE-UP AIR UNIT SHALL BE INTERLOCKED WITH THE KITCHEN HOOD AND KITCHEN HOOD EXHAUST FAN. UNDER NORMAL OPERATION, THE MAKE-UP AIR UNIT SHALL BE ENERGIZED ANYTIME THE EXHAUST FAN IS ENERGIZED. UPON ACTIVATION OF THE HOOD FIRE SUPRESSION SYSTEM, THE MAKE-UP AIR UNIT SHALL BE DE-ENERGIZED.

MODE 1 SUMMER OPERATION. UPON SIGNAL TO START, THE INTAKE DAMPER SHALL OPEN AND THE BLOWER SHALL OPERATE ANYTIME THE EXHAUST FAN IS ENERGIZED UNDER NORMAL CONDITIONS. THE GAS BURNER SHALL BE OFF.

MODE 2 WINTER OPERATION. UPON SIGNAL TO START, THE INTAKE DAMPER SHALL OPEN AND THE BLOWER SHALL OPERATE ANYTIME THE EXHAUST FAN IS ENERGIZED UNDER NORMAL CONDITIONS. THE GAS BURNER SHALL BE MODULATED TO MAINTAIN A SUPPLY AIR TEMPERATURE OF 75°F (ADJ.).

AN ALARM SHALL BE GENERATED AT THE OPERATOR INTERFACE UPON THE FOLLOWING:

- IF THE FAN STATUS DOES NOT MATCH THE COMMAND OPERATION.
- ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM. UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE ASSOCIATED KITCHEN HOOD MAKE-UP AIR UNIT SHALL BE INDEXED OFF.
- SUPPLY AIR TEMPERATURE FALLS BELOW 60°F.



KITCHEN DISHWASHER EXHAUST FAN SEQUENCE OF OPERATION

THE KITCHEN HOOD EXHAUST FAN PROVIDED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR SHALL BE CONTROLLED BY A SWITCH LOCATED ON THE DISHWASHER HOOD. THE HOOD SYSTEM WILL BE MONITORED BASED ON THE BUILDING OCCUPANCY SCHEDULE. THE OCCUPANCY SCHEDULE SHALL BE ADJUSTABLE AT THE OPERATOR INTERFACE. THE KITCHEN HOOD EXHAUST FAN STATUS (ON/OFF) SHALL BE DISPLAYED AT THE OPERATOR WORKSTATION. DURING UNOCCUPIED MODE, AN ALARM SHALL BE GENERATED AT THE OPERATOR INTERFACE IF THE FAN IS INDEXED ON.

AN ALARM SHALL BE GENERATED AT THE OPERATOR INTERFACE UPON THE FOLLOWING:

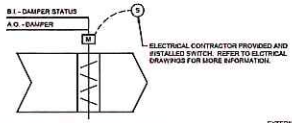
- IF THE FAN STATUS DOES NOT MATCH THE COMMAND OPERATION.

MISCELLANEOUS CONTROLS

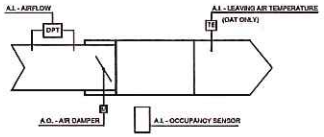
1. THE BUILDING AUTOMATION SYSTEM (BAS) SHALL MONITOR THE GLYCOL MAKE-UP UNIT LOW FLUID LEVEL ALARM CONTACT AND ALARM TO THE BAS UPON LOW GLYCOL FLUID LEVEL.
2. PROVIDE TEMPERATURE SENSORS IN NEW WALK-IN COOLER AND FREEZER. TEMPERATURE SENSORS SHALL BE APPLICATION SPECIFIC FOR USE IN COMMERCIAL FREEZERS. CONTROLLER SHALL MONITOR TEMPERATURES AND ALARM AT OPERATOR WORKSTATION IF TEMPERATURE IS ABOVE USER DEFINED ABSOLUTE (ADJ.).

TORNADO SHELTER NATURAL VENTILATION SEQUENCE OF OPERATION:

THE TORNADO SHELTER NATURAL VENTILATION SYSTEM CONSISTS OF SIX LOUVERS WITH MOTORIZED DAMPERS AND GRILLES ON THE INTERIOR. THE INTENT OF THIS SYSTEM IS TO PROVIDE NATURAL VENTILATION IN THE EVENT OF A POWER OUTAGE WHEN THE NORMAL HVAC SYSTEM CANNOT PROVIDE THE NECESSARY VENTILATION AIR. THE DAMPER SHALL BE 120V POWERED CLOSED, SPRING OPEN TYPE. UPON LOSS IN POWER, THE DAMPERS SHALL FAIL OPEN. EACH CLASSROOM SHALL HAVE A SWITCH TO ALLOW FOR A MANUAL OVERRIDE OF THE DAMPERS. THE SWITCH SHALL BE LABELED "MANUALLY ACTIVATE TORNADO SHELTER NATURAL VENTILATION". AN ALARM SHALL BE GENERATED AT THE OPERATOR INTERFACE UPON LOSS IN POWER TO THE MOTORIZED DAMPER.



TORNADO SHELTER LOUVER WITH DAMPER. TYPICAL OF 6. REFER TO PLANS FOR ADDITIONAL INFORMATION.



SINGLE DUCT UNIT CONTROL DIAGRAM & SEQUENCE OF OPERATION

THIS UNIT SHALL BE CONTROLLED BY A DEDICATED DIGITAL CONTROLLER. THIS CONTROLLER SHALL BE CONNECTED TO THE BUILDING AUTOMATION SYSTEM (BAS) CONTROL NETWORK. THE CONTROLLER SHALL BE PROVIDED BY THE MANUFACTURER AND SHALL BE PROGRAMMED TO CONTROL THE AIRFLOW.

THE UNIT WILL OPERATE ON THE OCCUPANCY SCHEDULE. THE OCCUPANCY SCHEDULE SHALL BE ADJUSTABLE AT THE OPERATOR INTERFACE. AIR TERMINAL UNITS SHALL BE ASSOCIATED WITH SCHEDULE GROUP. EACH SCHEDULE GROUP SHALL BE CAPABLE OF HAVING DEDICATED OCCUPANCY SCHEDULE. AIR TERMINAL UNITS CONSIST OF OUTSIDE AIR TERMINAL UNITS (OAT), EXHAUST AIR TERMINAL UNITS (EAT) AND RELIEF AIR TERMINAL UNITS (RAT).

OCCUPANCY SCHEDULE GROUPS
MAIN, SECOND FLOOR, CLASSROOMS, CAFETERIA, GYM. REFER TO AIR TERMINAL UNIT SCHEDULES FOR SCHEDULE GROUP.

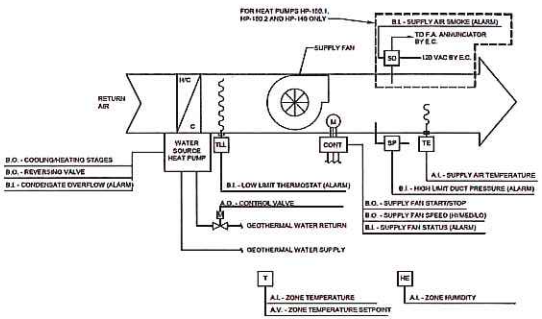
OCCUPIED MODE
THE CONTROLLER SHALL ENABLE OCCUPIED MODE WHEN THE BAS DETERMINES OCCUPANCY IS TRUE VIA THE OCCUPANCY SCHEDULE. WHEN THERE IS AN OVERRIDE SIGNAL THROUGH THE SPACE TEMPERATURE SENSOR OR WHEN THE OCCUPANCY SENSOR INDICATES OCCUPANCY IS TRUE, ALL OATs, EATs and RATs ASSOCIATED WITH THAT OCCUPANCY SCHEDULE GROUP SHALL ENABLE OCCUPIED MODE UNLESS INDICATED OTHERWISE. OVERRIDE TIME SHALL BE 60 MINUTES (ADJ.). THE AIR TERMINAL UNIT CONTROLLERS SHALL MONITOR THE BUILDING OCCUPANCY AS DETERMINED BY THE BAS, LEAVING AIR TEMPERATURE (OAT ONLY), AND INLET AIR PRESSURE TRANSDUCER. DURING OCCUPIED MODE, THE CONTROLLER SHALL MODULATE THE INLET AIR DAMPER TO MAINTAIN THE CALCULATED MAXIMUM AIRFLOW SETPOINTS BASED ON THE INLET AIR PRESSURE TRANSDUCER.

UNOCCUPIED MODE
THE CONTROLLER SHALL ENABLE UNOCCUPIED MODE WHEN THE BAS DETERMINES OCCUPANCY IS FALSE VIA THE OCCUPANCY SCHEDULE. DURING UNOCCUPIED MODE THE CONTROLLER SHALL MODULATE THE INLET AIR DAMPER TO THE CLOSED POSITION.

PROVIDE 120/24 VOLT TRANSFORMER BANK MOUNTED IN MECHANICAL PLATFORM B TO CONTROL ALL AIR TERMINAL UNITS. REFER TO ELECTRICAL PLANS FOR TRANSFORMER BANK LOCATIONS.

GENERAL SCHEDULING:
ANYTIME THE BUILDING INDICATES OCCUPANCY IS TRUE, THE "MAIN" AIR TERMINAL UNITS SHALL ENABLE OCCUPIED MODE.

ANYTIME THE KITCHEN HOOD EXHAUST SYSTEM IS ACTIVATED, THE BAS SHALL OVERRIDE ALL OUTSIDE AIR TERMINAL UNITS (OAT) TO OCCUPIED MODE AND SHALL OVERRIDE THE "CAFETERIA" RELIEF AIR TERMINAL UNIT (RAT-7) AND THE "MAIN" RELIEF AIR TERMINAL UNIT (RAT-8) TO THE CLOSED POSITION.



WSHP CONTROL DIAGRAM AND SEQUENCE OF OPERATION

THIS UNIT SHALL BE CONTROLLED BY A DEDICATED DIGITAL CONTROLLER. THIS CONTROLLER SHALL BE CONNECTED TO THE BUILDING AUTOMATION SYSTEM (BAS). THE CONTROLLER SHALL BE PROVIDED BY THE MANUFACTURER AND SHALL BE PROGRAMMED TO CONTROL THE AIRFLOW. THE UNIT WILL OPERATE ON THE OCCUPANCY SCHEDULE AND INCLUDE OPTIMUM START/STOP ALGORITHM. THE OCCUPANCY SCHEDULE SHALL BE ADJUSTABLE AT THE BAS OPERATOR INTERFACE. EACH WSHP SHALL BE ASSOCIATED WITH A SCHEDULE OCCUPACY GROUP. EACH OCCUPANCY GROUP SHALL BE CAPABLE OF HAVING DEDICATED OCCUPANCY SCHEDULE.

THE SPACE THERMOSTATS SHALL HAVE A SETPOINT RANGE OF 68°F (ADJ.) TO 78°F (ADJ.). SETPOINT RANGE SHALL BE ADJUSTABLE AT THE OPERATOR INTERFACE.

INPUTS	OUTPUTS
CONDENSATE OVERFLOW (ALARM) - B.I	CONTROL VALVE - A.O.
HIGH LIMIT DUCT PRESSURE (ALARM) - B.I.	COOLING/HEATING STAGES - B.O.
LOW LIMIT THERMOSTAT (ALARM) - B.I.	REVERSING VALVE - B.O.
SUPPLY FAN SMOKE (ALARM) - B.I	SUPPLY FAN SPEED (HI/MED/LO) - B.O.
SUPPLY FAN STATUS (ALARM) - B.I.	SUPPLY FAN START/STOP - B.O
SUPPLY AIR TEMPERATURE - A.I.	
ZONE HUMIDITY - A.I	
ZONE TEMPERATURE - A.I	
ZONE TEMPERATURE SETPOINT - A.V.	

OCCUPANCY SCHEDULE GROUPS
MAIN, SECOND FLOOR, CLASSROOMS, CAFETERIA, GYM. REFER TO AIR TERMINAL UNIT SCHEDULES FOR SCHEDULE GROUP.

OCCUPIED MODE

THE CONTROLLER SHALL ENABLE OCCUPIED MODE IN WHEN THE BAS DETERMINES OCCUPANCY IS TRUE, WHEN THE OPTIMAL START SEQUENCE IS ENABLED OR WHEN THERE IS AN OVERRIDE SIGNAL THROUGH THE SPACE TEMPERATURE SENSOR. OVERRIDE DURATION SHALL BE 60 MINUTES (ADJ.) AND SHALL OVERRIDE INDIVIDUAL WATER SOURCE HEAT PUMPS SERVING THAT SPACE.

THE SPACE TEMPERATURE SENSOR SHALL OPERATE ON A 5°F (ADJ.) DEADBAND WITH A 2°F OFFSET (ADJ.). UPON A CALL FOR COOLING OR HEATING, THE CONTROLLER SHALL OPEN THE GEOTHERMAL LOOP CONTROL VALVE AND ENABLE THE COMPRESSOR(S) AND MODULATE THE SUPPLY FAN BETWEEN ITS HIGHEST AND LOWEST AIRFLOW SETTINGS AS REQUIRED TO MAINTAIN A 72°F (ADJ.) SPACE TEMPERATURE. WHEN THE SPACE TEMPERATURE IS SATISFIED, THE CONTROLLER SHALL INDEX THE COOLING AND HEATING MODES TO OFF, CLOSE THE GEOTHERMAL LOOP CONTROL VALVE AND MODULATE THE SUPPLY FAN TO ITS LOWEST AIRFLOW SETTING.

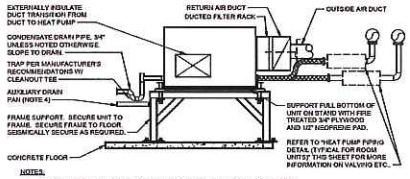
NIGHT SETBACK (UNOCCUPIED)

THE CONTROLLER SHALL ENABLE NIGHT SETBACK MODE WHEN THE BAS DETERMINES OCCUPANCY IS FALSE. THE CONTROLLER SHALL OPEN THE CONTROL VALVE AND ENABLE THE COMPRESSOR(S) AND MODULATE THE SUPPLY FAN BETWEEN ITS HIGHEST AND LOWEST AIRFLOW SETTINGS AS REQUIRED TO MAINTAIN SPACE TEMPERATURE SETPOINT. THE SUPPLY FAN AND TEMPERATURE CONTROL SEQUENCE SHALL ENABLE WHEN SPACE TEMPERATURE IS ABOVE 85°F (ADJ.). BELOW 55°F (ADJ.). WHEN THE SPACE TEMPERATURE IS SATISFIED, THE CONTROLLER SHALL INDEX THE COOLING AND HEATING MODES TO OFF, CLOSE THE GEOTHERMAL LOOP CONTROL VALVE AND CONTROL THE SUPPLY FAN TO OFF.

TEMPERATURE CONTROL

THE CONTROLLER SHALL ENABLE HEATING OR COOLING MODES AS REQUIRED TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINTS.

ALARMS/SAFETIES:
ALL SAFETY DEVICES SHALL BE HARD WIRED. THE UNIT SHALL BE STOPPED AND AN ALARM GENERATED AT THE OPERATOR INTERFACE UPON THE ALARMS INDICATED ABOVE.

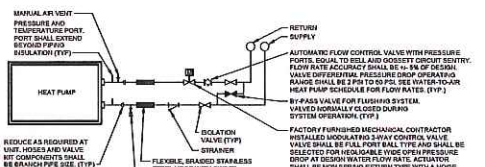


NOTES:

1. PROVIDE FLEXIBLE CONNECTIONS AT SUPPLY & RETURN DUCT CONNECTIONS.
2. INSTALL UNIT TO ALLOW ACCESS TO PIPING, ELECTRICAL PANELS, AND FILTERS.
3. ALL HOSE KITS AND VALVING SHALL BE THE SAME SIZE AS THE PIPE RUNOUTS. TRANSITIONS AS REQUIRED FROM HOSES TO HEAT PUMP CONNECTION.
4. PROVIDE 18"x18"x2" DEEP AUXILIARY CONDENSATE DRAIN PAN WITH CONDENSATE OVERFLOW ALARM. SEE POINTS LIST AND FLOW DIAGRAM FOR MORE INFORMATION.

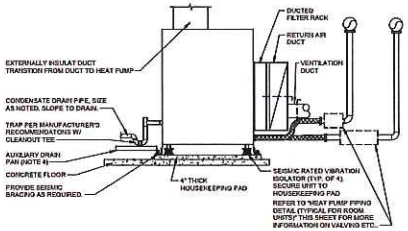
FRAME MOUNTED WATER SOURCE HEAT PUMP INSTALLATION DETAIL

NO SCALE



HEAT PUMP PIPING DETAIL

NO SCALE

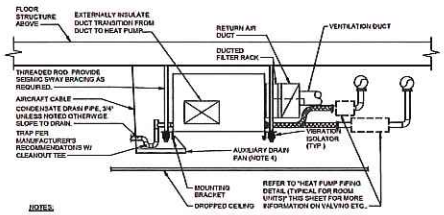


NOTES:

1. PROVIDE FLEXIBLE CONNECTIONS AT SUPPLY & RETURN DUCT CONNECTIONS.
2. INSTALL UNIT TO ALLOW ACCESS TO PIPING, ELECTRICAL PANELS, AND FILTERS.
3. ALL HOSE KITS AND VALVING SHALL BE THE SAME SIZE AS THE PIPE RUNOUTS. TRANSITIONS AS REQUIRED FROM HOSES TO HEAT PUMP CONNECTION.
4. PROVIDE 18"x18"x2" DEEP AUXILIARY CONDENSATE DRAIN PAN WITH CONDENSATE OVERFLOW ALARM. SEE POINTS LIST AND FLOW DIAGRAM FOR MORE INFORMATION.

FLOOR MOUNTED WATER SOURCE HEAT PUMP INSTALLATION DETAIL

NO SCALE

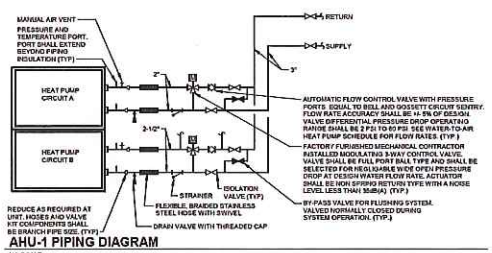


NOTES:

1. PROVIDE FLEXIBLE CONNECTIONS AT SUPPLY & RETURN DUCT CONNECTIONS.
2. INSTALL UNIT TO ALLOW ACCESS TO PIPING, ELECTRICAL PANELS, AND FILTERS.
3. ALL HOSE KITS AND VALVING SHALL BE THE SAME SIZE AS THE PIPE RUNOUTS. TRANSITIONS AS REQUIRED FROM HOSES TO HEAT PUMP CONNECTION.
4. PROVIDE 18"x18"x2" DEEP AUXILIARY CONDENSATE DRAIN PAN WITH CONDENSATE OVERFLOW ALARM. SEE POINTS LIST AND FLOW DIAGRAM FOR MORE INFORMATION.

SUSPENDED WATER SOURCE HEAT PUMP INSTALLATION DETAIL

NO SCALE



AHU-1 PIPING DIAGRAM

NO SCALE

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Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CSM	CSM	JFP

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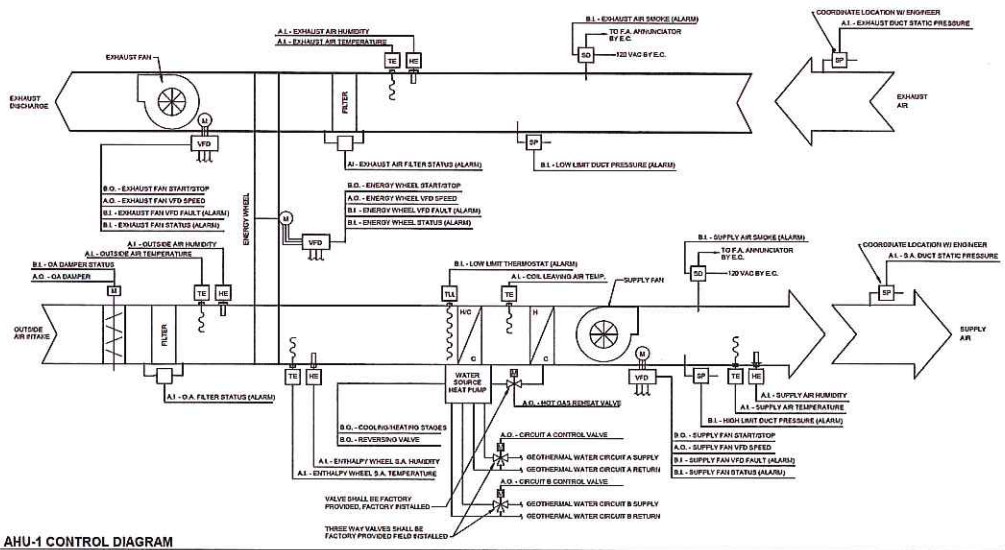
Sheet title:
TEMPERATURE CONTROL DIAGRAMS & HVAC DETAILS

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
M6.1



AHU-1 CONTROL DIAGRAM

NO SCALE

AHU-1 SEQUENCE OF OPERATION

THIS UNIT INCLUDES A 100% OUTSIDE AIR UNIT WITH VARIABLE SPEED ENERGY WHEEL, VARIABLE SPEED SUPPLY FAN, VARIABLE SPEED EXHAUST FAN AND MODULATING WATER SOURCE HEAT PUMP WITH HOT GAS REHEAT FOR HEATING AND COOLING. THIS UNIT SHALL BE CONTROLLED BY A DEDICATED DIGITAL CONTROLLER. THIS CONTROLLER SHALL BE CONNECTED TO THE BUILDING AUTOMATION SYSTEM (BAS). THE CONTROLLER SHALL BE PROVIDED BY THE AHU-1 MANUFACTURER AND SHALL BE PROGRAMMED BY THE MANUFACTURER TO CONTROL THE SUPPLY AIR TEMPERATURE. THE TEMPERATURE CONTROL CONTRACTOR SHALL INTEGRATE THIS CONTROLLER INTO THE BAS. THE CONTROLLERS SHALL BE EXPANDABLE FOR THE ADDITION OF FUTURE INPUTS AND OUTPUTS.

INPUTS
COOLING/HEATING AIR TEMPERATURE - A.I.
ENERGY WHEEL S.A. HUMIDITY - A.I.
ENERGY WHEEL S.A. TEMPERATURE - A.I.
ENERGY WHEEL STATUS (ALARM) - B.I.
ENERGY WHEEL VFD FAULT (ALARM) - B.I.
EXHAUST AIR HUMIDITY - A.I.
EXHAUST AIR SMOKE (ALARM) - B.I.
EXHAUST AIR TEMPERATURE - A.I.
EXHAUST DUCT STATIC PRESSURE - A.I.
EXHAUST FILTER STATUS (ALARM) - A.I.
EXHAUST FAN VFD FAULT (ALARM) - B.I.
EXHAUST FAN STATUS (ALARM) - B.I.
HIGHT LIMIT DUCT PRESSURE (ALARM) - B.I.
OUTSIDE AIR DAMPER STATUS - B.I.
OUTSIDE AIR FILTER STATUS (ALARM) - A.I.
OUTSIDE AIR HUMIDITY - A.I.
OUTSIDE AIR TEMPERATURE - A.I.
LOW LIMIT DUCT PRESSURE (ALARM) - B.I.
LOW LIMIT THERMOSTAT (ALARM) - B.I.
SUPPLY FAN STATUS (ALARM) - B.I.
SUPPLY FAN VFD FAULT (ALARM) - B.I.
SUPPLY AIR DUCT STATIC PRESSURE - A.I.
SUPPLY AIR HUMIDITY - A.I.
SUPPLY AIR SMOKE (ALARM) - B.I.
SUPPLY AIR TEMPERATURE - A.I.

OUTPUTS
COOLING/HEATING STAGES - B.O.
ENERGY WHEEL START/STOP - B.O.
ENERGY WHEEL VFD SPEED - A.O.
EXHAUST FAN START/STOP - B.O.
EXHAUST FAN VFD SPEED - A.O.
GEOTHERMAL WATER CIRCUIT A VALVE - A.O.
GEOTHERMAL WATER CIRCUIT B VALVE - A.O.
HOT GAS RE HEAT VALVE - A.O.
OUTSIDE AIR DAMPER - A.O.
REVERSING VALVE - B.O.
SUPPLY FAN STARTSTOP - B.O.
SUPPLY FAN VFD SPEED - A.O.

THE UNIT WILL OPERATE ON AN OCCUPANCY SCHEDULE. THE OCCUPANCY SCHEDULE SHALL BE ADJUSTABLE AT THE BAS OPERATOR INTERFACE.

OCCUPIED MODE
THE CONTROLLER SHALL ENABLE OCCUPIED MODE WHEN THE BAS DETERMINES OCCUPANCY IS TRUE.

UNOCCUPIED MODE
THE CONTROLLER SHALL ENABLE UNOCCUPIED MODE WHEN THE BAS DETERMINES OCCUPANCY IS FALSE. THE CONTROLLER SHALL DISABLE COOLING, DEHUMIDIFICATION OR HEATING MODES. AFTER 30 SECONDS, THE SUPPLY FAN SHALL BE DISABLED, OUTDOOR AIR DAMPER SHALL BE DE-ENERGIZED AND FAIL CLOSED.

TEMPERATURE CONTROL
THE CONTROLLER SHALL ENABLE THE TEMPERATURE CONTROL SEQUENCE WHEN OCCUPIED MODE IS ENABLED. THE SUPPLY AIR TEMPERATURE SETPOINT WILL BE RESET TO THE OPTIMAL SETPOINT CONFIGURED BY THE BAS. THE BAS WILL RESET THE SUPPLY AIR TEMPERATURE SETPOINT BASED ON THE CURRENT OUTSIDE AIR TEMPERATURE BUT WILL OVERRIDE THIS RESET FUNCTION AND RETURN THE SUPPLY AIR TEMPERATURE SETPOINT TO 55°F (ADJ.) IF MORE THAN TWO (ADJ.) ZONE'S BEGIN TO OVERHEAT. ALSO, THE BAS WILL OVERRIDE THIS RESET FUNCTION WHENEVER OUTDOOR DEW POINT IS HIGHER THAN 60°F (ADJ.) OR INDOOR HUMIDITY IS HIGHER THAN 60% RH (ADJ.). IF THE SUPPLY AIR TEMPERATURE DROPS BELOW THE MINIMUM LIMIT, A LOW TEMPERATURE ALARM WILL BE ANNUNCIATED, AND THE UNIT WILL SHUT DOWN. IF THE SUPPLY AIR TEMPERATURE RISES ABOVE THE MAXIMUM LIMIT, A HIGH TEMPERATURE ALARM WILL BE ANNUNCIATED. THE SUPPLY AIR TEMPERATURE SHALL BE LIMITED TO A RANGE OF 55°F (ADJ.) TO 75°F (ADJ.). THE CONTROLLER SHALL ENABLE HEATING, REHEAT, ENERGY RECOVERY OR COOLING MODES AS REQUIRED TO MAINTAIN THE SUPPLY AIR TEMPERATURE.

HEATING MODE
THE TEMPERATURE CONTROL PID LOOP SHALL DETERMINE HEATING REQUIRED DUE TO THE DIFFERENCE BETWEEN THE SUPPLY AIR TEMPERATURE AND THE SUPPLY AIR TEMPERATURE SETPOINT. THE CONTROLLER SHALL MODULATE THE CAPACITY TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT. WHEN THE UNIT MODULATES OUT OF COOLING MODE TOWARD THE HEATING MODE, THE ENERGY RECOVERY WHEEL SHALL MODULATE FROM 0-100% CAPACITY BEFORE ENABLING MECHANICAL HEAT DURING HEATING MODE, THE ENERGY RECOVERY WHEEL SHALL OPERATE AT 100%.

DEFROST MODE
IF THE ENTHALPY WHEEL SUPPLY AIR TEMPERATURE DROPS BELOW 35°F, THE ENERGY RECOVERY WHEEL SHALL MODULATE FROM 0-100% CAPACITY TO MAINTAIN THE ENTHALPY WHEEL SUPPLY AIR TEMPERATURE ABOVE 35°F.

COOLING MODE
THE TEMPERATURE CONTROL PID LOOP SHALL DETERMINE COOLING REQUIRED DUE TO THE DIFFERENCE BETWEEN THE SUPPLY AIR TEMPERATURE AND THE SUPPLY AIR TEMPERATURE SETPOINT. THE CONTROLLER SHALL MODULATE THE CAPACITY TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT. WHEN THE UNIT MODULATES OUT OF HEATING MODE TOWARD THE COOLING MODE, AND OUTDOOR AIR TEMPERATURE IS GREATER THAN THE SUPPLY AIR TEMPERATURE SETPOINT BY 5°F, THE ENERGY RECOVERY WHEEL SHALL MODULATE FROM 0-100% CAPACITY BEFORE ENABLING MECHANICAL COOLING. DURING COOLING MODE, THE ENERGY RECOVERY WHEEL SHALL OPERATE AT 100%.

DEHUMIDIFICATION MODE
THE CONTROLLER SHALL ENABLE DEHUMIDIFICATION MODE WHEN THE EXHAUST AIR RELATIVE HUMIDITY IS GREATER THAN RELATIVE HUMIDITY SETPOINT OF 50% (ADJ.) AND THE EXHAUST AIR DEWPOINT IS GREATER THAN 45°F (ADJ.). THE CONTROLLER SHALL MODULATE THE COOLING CAPACITY TO MAINTAIN THE COIL LEAVING AIR TEMPERATURE SETPOINT OF 55°F (ADJ.) AND MODULATE THE HOT GAS REHEAT VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT.

WSHP COOLING OPERATION
IN COOLING MODE, THE CONTROLLER SHALL ENABLE THE DIGITAL SCROLL COMPRESSOR AND MODULATE CAPACITY TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. IF THE DIGITAL SCROLL COMPRESSOR IS NOT ABLE TO MAINTAIN THE SUPPLY AIR TEMPERATURE, ADDITIONAL FIXED STAGES OF CAPACITY SHALL BE ENABLED AND THE DIGITAL SCROLL COMPRESSOR SHALL CONTINUE TO MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. IF THE COMBINATION OF MULTIPLE COMPRESSORS LOWERS THE SUPPLY AIR TEMPERATURE BELOW ITS SETPOINT, THE CONTROL SHALL DISABLE ONE OR MORE FIXED STAGES OF CAPACITY AND THE DIGITAL SCROLL COMPRESSOR SHALL CONTINUE TO MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. IN DEHUMIDIFICATION MODE THE CONTROLLER SHALL ENABLE THE DIGITAL SCROLL COMPRESSOR AND FIXED STAGES OF CAPACITY AS REQUIRED TO MAINTAIN OR EXCEED THE EVAPORATOR COIL LEAVING AIR TEMPERATURE SETPOINT AND MODULATE THE HOT GAS REHEAT VALVE AS REQUIRED TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. THE CONTROLLER SHALL MODULATE THE WATER VALVE ON EACH CIRCUIT TO MAINTAIN A CONDENSING TEMPERATURE OF 105°F.

WSHP HEATING OPERATION
IN HEATING MODE, THE CONTROLLER SHALL ENABLE THE DIGITAL SCROLL COMPRESSOR AND MODULATE CAPACITY TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. IF THE DIGITAL SCROLL COMPRESSOR IS NOT ABLE TO MAINTAIN THE SUPPLY AIR TEMPERATURE, ADDITIONAL FIXED STAGES OF CAPACITY SHALL BE ENABLED AND THE DIGITAL SCROLL COMPRESSOR SHALL CONTINUE TO MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. IF THE COMBINATION OF MULTIPLE COMPRESSORS RAISES THE SUPPLY AIR TEMPERATURE ABOVE ITS SETPOINT, THE CONTROL SHALL DISABLE ONE OR MORE FIXED STAGES OF CAPACITY AND THE DIGITAL SCROLL COMPRESSOR SHALL CONTINUE TO MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT. THE CONTROLLER SHALL MODULATE THE WATER VALVE ON EACH CIRCUIT TO MAINTAIN A CONDENSING TEMPERATURE OF 40°F.

SUPPLY & EXHAUST FAN OPERATION
DURING OCCUPIED MODE, THE CONTROLLER SHALL OPEN THE OUTDOOR AIR DAMPER TO 100% OPEN. THE SUPPLY FAN SHALL BE ENABLED UPON CLOSURE OF THE OUTDOOR AIR DAMPER END SWITCH. THE EXHAUST FAN SHALL BE ENABLED 30 SECONDS AFTER CLOSURE OF THE SUPPLY FAN PRESSURE SWITCH. THE SUPPLY AND EXHAUST FANS SHALL REMAIN ON DURING OCCUPIED MODE. THE SUPPLY FAN SHALL MODULATE TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE SETPOINT (ADJ.). THE EXHAUST FAN SHALL MODULATE TO MAINTAIN THE EXHAUST DUCT STATIC PRESSURE SETPOINT (ADJ.). DURING UNOCCUPIED MODE, THE SUPPLY AND EXHAUST FANS SHALL BE OFF.

DAMPER OPERATION
DURING OCCUPIED MODE, THE CONTROLLER SHALL OPEN THE OUTDOOR AIR DAMPER TO 100% OPEN. DURING UNOCCUPIED MODE, THE CONTROLLER SHALL CLOSE THE OUTDOOR AIR DAMPER.

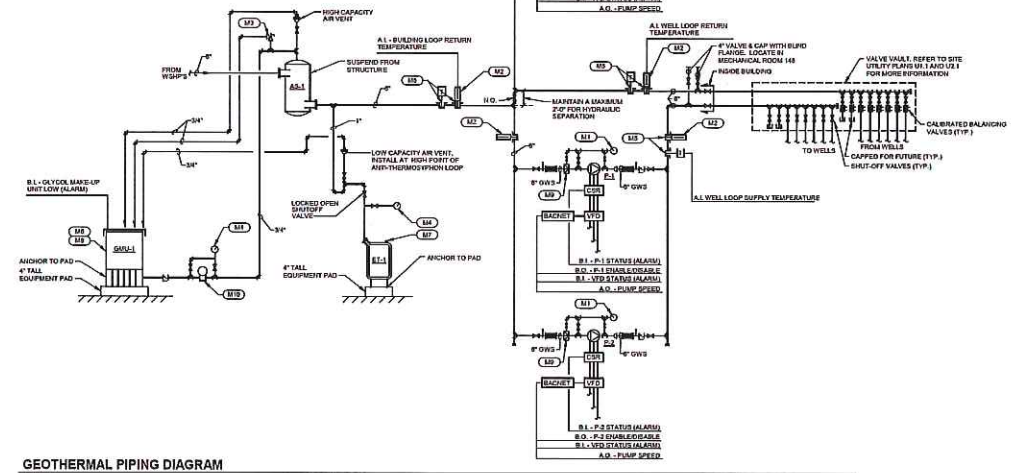
ALARMS/SAFETIES
ALL SAFETY DEVICES SHALL BE HARD WIRED. THE UNIT SHALL BE STOPPED AND AN ALARM GENERATED AT THE OPERATOR INTERFACE WHENEVER

TEMPERATURE CONTROL LEGEND

TE	TEMPERATURE ELEMENT (DUCT MOUNTED)
M	ACTUATOR / MOTOR
VFD	VARIABLE FREQUENCY DRIVE
CSM	CURRENT SENSING RELAY
TLL	LOW LIMIT SAFETY THERMOSTAT
TS	TEMPERATURE SENSOR
STR	MOTOR STARTER
TE	TEMPERATURE SENSOR WITH AVERAGING ELEMENT
CA	CONDENSATE ALARM UNIT
STE	SPACE TEMPERATURE ELEMENT
SP	STATIC PRESSURE SENSOR
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
A.I.	ANALOG INPUT
A.O.	ANALOG OUTPUT
B.I.	BINARY INPUT
B.O.	BINARY OUTPUT
R.W.	READ / WRITE
R.O.	READ ONLY
A.V.	ANALOG VALVE
B.V.	BINARY VALVE
VP	VELOCITY PRESSURE SENSOR
SD	SMOKE DETECTOR (BY OTHERS)
FS	FLOW SWITCH
FT	FLOW TRANSMITTER
HE	HUMIDITY ELEMENT
FM	FLOW METER
HWS	HEATING HOT WATER SUPPLY
HWR	HEATING HOT WATER RETURN
HK SP	STATIC PRESSURE SENSOR / SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DPS	DIFFERENTIAL PRESSURE SWITCH (ADJ.)
LPS	LOW PRESSURE STEAM SUPPLY
LPR	LOW PRESSURE STEAM RETURN
H	WALL MOUNTED HUMIDISTAT
T	WALL MOUNTED THERMOSTAT
T/H	WALL MOUNTED COMBINATION THERMOSTAT / HUMIDISTAT
CO2	WALL MOUNTED CARBON DIOXIDE SENSOR
M	MOTOR
AMS	AIRFLOW MEASURING STATION
F/A	FIRE ALARM

DIAGRAM KEY NOTES:

- M1.1 PRESSURE GAUGE EQUAL TO TRERICE 600CB WITH SNUBBER, 0 TO 100 PSI RANGE, 1 PSI MINOR DIVISIONS. INSTALL WITH MOUNTING ON WALL, STAND, OR VIBRATION-FREE PIPE ABOVE PUMP. FLEXIBLE CONNECTOR. INSTALL FLEXIBLE COPPER TUBING TO PIPING CONNECTIONS TO AVOID VIBRATION DAMAGE TO THE GAUGE. CONNECTION LOCATIONS SHALL BE AS FOLLOWS WITH NO EXCEPTIONS:
  (1) FACTORY GAUGE TAPPING ON INLET OF SUCTION DIFFUSER
  (2) FACTORY GAUGE TAPPING ON PUMP INLET FLANGE.
  (3) FACTORY GAUGE TAPPING ON PUMP OUTLET FLANGE.
  (4) BALL VALVES WITH NO EXCEPTIONS.
- M1.2 THERMOMETER, 0°F TO 100°F RANGE, 2°F MINOR DIVISIONS, EQUAL TO TRERICE 6A OR 5X9.
- M1.3 125 PSI RELIEF VALVE.
- M1.4 PRESSURE GAUGE EQUAL TO TRERICE 600CB WITH SNUBBER, 0 TO 60 PSI RANGE, 1 PSI MINOR DIVISIONS.
- M1.5 PROVIDE THERMOWELL. COORDINATE STEM LENGTH AND LAGGING EXTENSION WITH ENGINEER. TYPICAL FOR ALL THERMOSTATS AND TEMPERATURE SENSORS.
- M1.6 PROVIDE PROPYLENE GLYCOL AS REQUIRED FOR A 20% PROPYLENE GLYCOL SOLUTION BY VOLUME IN THE COMPLETE GEOTHERMAL WATER SYSTEM. CONTRACTOR SHALL TEST WATER SOLUTION AT PROJECT COMPLETION AND PROVIDE WRITTEN NOTIFICATION OF A 20% PROPYLENE GLYCOL SOLUTION.
- M1.7 SET EXPANSION TANK PRESSURE TO 10 PSI. EXPANSION TANK PRESSURE SHALL BE SET PRIOR TO CONNECTION TO SYSTEM.
- M1.9 SET GAU-1 CUT-IN PRESSURE TO 10 PSI AND CUT OUT PRESSURE TO 30 PSI.
- M1.8 SUCTION DIFFUSER EQUAL TO BELL AND GOSSETT MODEL .
- M1.10 WATER PRESSURE REDUCING VALVE. SET TO 10 PSI.



GEOTHERMAL PIPING DIAGRAM

NO SCALE

GEOTHERMAL SYSTEM LOOP SEQUENCE OF OPERATION

THE GEOTHERMAL SYSTEM SHALL BE CONTROLLED BY A DEDICATED DIGITAL CONTROLLER. THE CONTROLLER SHALL BE CONNECTED TO THE BUILDING AUTOMATION SYSTEM (BAS) TO ALLOW COMMUNICATION BETWEEN CONTROLLERS. THE CONTROLLERS SHALL BE EXPANDABLE FOR THE ADDITION OF FUTURE INPUTS AND OUTPUTS.

THE GEOTHERMAL SYSTEM SHALL CONSIST OF WELL LOOP AND BUILDING LOOP PUMPS WHERE THE WELL LOOP CIRCULATES WATER THROUGH THE GEOTHERMAL WELL FIELD AND THE BUILDING LOOP CIRCULATES WATER THROUGH THE BUILDING LOOP TO THE INDIVIDUAL WATER SOURCE HEAT PUMPS.

INPUTS
BUILDING LOOP RETURN TEMPERATURE - A.I
BUILDING LOOP SUPPLY TEMPERATURE - A.I
GLYCOL MAKEUP UNIT LOW (ALARM) - B.I.
PUMP P-1 STATUS (ALARM) - B.I.
PUMP P-1 VFD STATUS (ALARM) - B.I
PUMP P-2 STATUS (ALARM) - B.I.
PUMP P-2 VFD STATUS (ALARM) - B.I.
PUMP P-3 STATUS (ALARM) - B.I.
PUMP P-3 VFD STATUS (ALARM) - B.I.
PUMP P-4 STATUS (ALARM) - B.I.
PUMP P-4 VFD STATUS (ALARM) - B.I.
WELL LOOP RETURN TEMPERATURE - A.I.
WELL LOOP SUPPLY TEMPERATURE - A.I.

OUTPUTS
PUMP P-1 SPEED - A.O.
PUMP P-1 START/STOP - B.O.
PUMP P-2 SPEED - A.O.
PUMP P-2 START/STOP - B.O.
PUMP P-3 SPEED - A.O.
PUMP P-3 START/STOP - B.O.
PUMP P-4 SPEED - A.O.
PUMP P-4 START/STOP - B.O.

WELL LOOP OPERATION
PUMPS P-1 AND P-2 ARE DESIGNATED AS THE WELL LOOP PUMPS AND SHALL BE OPERATED IN LEAD/STANDBY SEQUENCE. THE STANDBY PUMP SHALL START UPON FAILURE OF THE LEAD PUMP. THE LEAD PUMP SHALL BE ALTERNATED WEEKLY (EVERY 168 HRS) TO EQUALIZE RUN HOURS. THE PRIMARY PUMPS SHALL OPERATE DURING BOTH OCCUPIED AND UNOCCUPIED MODES.

THE LEAD PUMP FOR THE WELL LOOP SHALL BE INDEXED ON TO MAINTAIN THE BUILDING LOOP RETURN SYSTEM TEMPERATURE SETPOINT OF 65°F (ADJ.). THE WELL LOOP PUMP SHALL OPERATE ON A 5°F (ADJ.) DEADBAND WITH A 5°F OFFSET (ADJ.). WHEN THE BUILDING LOOP RETURN SYSTEM TEMPERATURE IS OUTSIDE OF THAT TEMPERATURE RANGE, THE WELL LOOP PUMP SHALL BE INDEXED ON AND MODULATE SPEED TO THE 5°F OFFSET. THE WELL LOOP PUMP SHALL REMAIN ON UNTIL THE BUILDING LOOP RETURN SYSTEM TEMPERATURE REACHES 5° F (ADJ.) BELOW THE TEMPERATURE RANGE FOR COOLING MODE, OR 5°F (ADJ.) ABOVE FOR HEATING MODE, THEN INDEXED OFF. THE PUMP SHALL RUN FOR A MINIMUM OF 15 MINUTES EACH TIME IT IS INDEXED ON.

BUILDING LOOP OPERATION

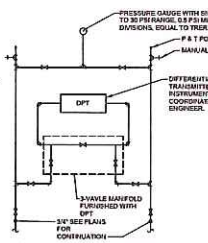
PUMPS P-3 AND P-4 ARE DESIGNATED AS THE BUILDING LOOP PUMPS AND SHALL BE OPERATED IN LEAD/STANDBY SEQUENCE. THE STANDBY PUMP SHALL START UPON FAILURE OF THE LEAD PUMP. THE LEAD PUMP SHALL BE ALTERNATED WEEKLY (EVERY 168 HRS) TO EQUALIZE RUN HOURS. THE BUILDING LOOP PUMPS SHALL OPERATE CONTINUOUSLY DURING OCCUPIED MODE, AND AS REQUIRED BASED ON DEMAND DURING UNOCCUPIED MODE.

THE LEAD PUMP FOR THE BUILDING LOOP SHALL BE MODULATED TO MAINTAIN THE BUILDING LOOP SYSTEM DIFFERENTIAL PRESSURE SETPOINT BASED ON THE SYSTEM DIFFERENTIAL PRESSURE TRANSMITTER. SEE "SYSTEM DIFFERENTIAL PRESSURE TRANSMITTER P# NO DETAIL" FOR FURTHER REQUIREMENTS.

ALARMS
THE LEAD PUMP SHALL BE STOPPED, THE STANDBY PUMP SHALL START AND ALARM GENERATED AT THE OPERATOR INTERFACE WHENEVER A SAFETY DEVICE IS TRIPPED. ALL SAFETY DEVICES SHALL BE HARD WIRED

TEMPERATURE CONTROL NOTES:

- TC.1 ADDITIONAL TEMPERATURE CONTROL POINTS MAY BE REQUIRED TO COMPLETE THE SEQUENCE OF OPERATION. SEE SEQUENCE OF OPERATION.
- TC.2 ALL EXPOSED TEMPERATURE CONTROL WIRING SHALL BE INSTALLED IN CONDUIT.
- TC.3 BAS CONTRACTOR SHALL PROVIDE CONTROLS TRAINING SESSIONS PER SPECIFICATIONS. THESE TRAINING SESSIONS SHALL BE SCHEDULED WITH THE OWNER AND ENGINEER.
- TC.4 BAS CONTRACTOR SHALL PROVIDE LABOR AND MATERIAL WARRANTY ON THE FACILITY MANAGEMENT SYSTEM PER SPECIFICATIONS. WARRANTY PERIOD SHALL BEGIN ON DATE OF SUBSTANTIAL COMPLETION. SUBSTANTIAL COMPLETION DATE SHALL BE ESTABLISHED BY WRITTEN NOTICE.
- TC.5 TEMPERATURE CONTROL RELAYS USED FOR MOTOR STARTING APPLICATION SHALL HAVE HAND-OFF-AUTO TOGGLE SWITCH
- TC.6 BAS CONTRACTOR SHALL PROVIDE SURGE PROTECTION FOR ALL TEMPERATURE CONTROL PANELS.



SYSTEM DIFFERENTIAL PRESSURE TRANSMITTER PIPING DETAIL

NO SCALE

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Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CSM	CSM	JTP

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Sheet title:
TEMPERATURE CONTROL/ FLOW DIAGRAMS

Architect's Project No: 1807-244
Date: October, 2019

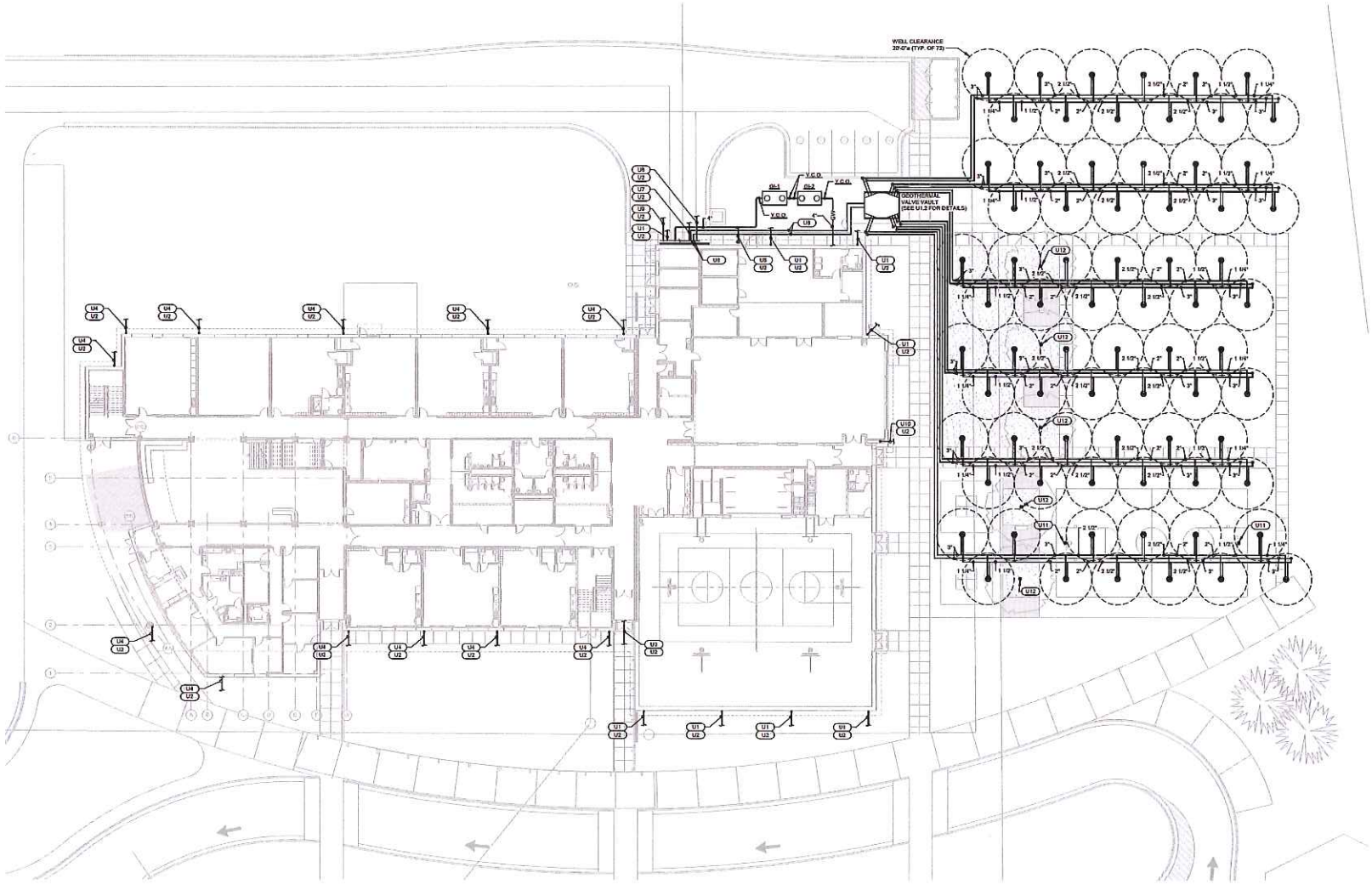
Drawing No:
M6.2

PLAN NOTES:

- U1 — 6" STORM. REFER TO 'FOUNDATION PLUMBING PLAN - AREA B' ON SHEET P1.2 FOR INVERT.
- U2 — REFER TO SITE CIVIL PLANS FOR CONTINUATION.
- U3 — 8" WASTE. REFER TO 'FOUNDATION PLUMBING PLAN - AREA A' ON SHEET P1.1 FOR INVERT.
- U4 — 6" STORM. REFER TO 'FOUNDATION PLUMBING PLAN - AREA A' ON SHEET P1.1 FOR INVERT.
- U5 — INCOMING NATURAL GAS SERVICE SIZED FOR 2,000 CFH AT 10" W.C. SEE PLUMBING PLANS FOR MORE INFORMATION AND CONTINUATION INTO BUILDING.
- U6 — 6" INCOMING FIRE SERVICE. SEE FIRE PROTECTION PLANS FOR MORE INFORMATION AND CONTINUATION INTO BUILDING.
- U7 — 2" INCOMING WATER SERVICE. SEE PLUMBING PLANS FOR MORE INFORMATION AND CONTINUATION INTO BUILDING.
- U8 — 8" GEOTHERMAL WATER SUPPLY AND RETURN. SEE MECHANICAL PLANS FOR MORE INFORMATION AND CONTINUATION INTO BUILDING.
- U9 — 4" FIRE SERVICE OUT TO FIRE DEPARTMENT CONNECTION. SEE FIRE PROTECTION PLANS FOR MORE INFORMATION AND CONTINUATION INTO BUILDING.
- U10 — 4" STORM. REFER TO 'FOUNDATION PLUMBING PLAN - AREA B' ON SHEET P1.2 FOR INVERT.
- U11 — BASKETBALL GOAL FOUNDATION. COORDINATE LOCATION WITH GEOTHERMAL WELL FIELD.
- U12 — LANDSCAPING TREE. COORDINATE LOCATION WITH GEOTHERMAL WELL FIELD.

GENERAL PLAN NOTES:

A. REFER TO PLUMBING PLANS, FIRE PROTECTION PLANS, MECHANICAL PLANS AND SITE CIVIL PLANS FOR ADDITIONAL SITE, INVERTS, NOTES AND REQUIREMENTS.
B. COORDINATE LOCATION AND DEPTHS OF GEOTHERMAL PIPING AND WELLS WITH LANDSCAPING CONTRACTOR AND PLAYGROUND EQUIPMENT CONTRACTOR.
C. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 20'-0" BETWEEN BOREHOLES.
D. CONTRACTOR SHALL INCLUDE 60 FT OF TEMPORARY CASING. PROVIDE A UNIT PRICE ($/FT) FOR ADDITIONAL CASING IF REQUIRED DUE TO SOIL CONDITIONS.
E. EACH BORE SHALL BE 6" BORING, 1-1/4" SUPPLY AND RETURN, 600 FEET DEEP.
F. CONTRACTOR SHALL PROVIDE UNIT PRICE FOR ONE ADDITIONAL BOREHOLE AT 600 FEET DEEP AND A SEPERATE UNIT PRICE TO EXTEND BOREHOLE (&FT).



SITE UTILITY PLAN

1/16" = 1'-0"

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Revisions:

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Designed By:	Drawn By:	Checked By:
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Sheet title:

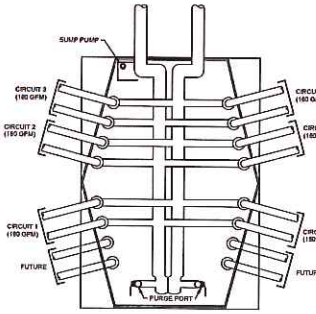
SITE UTILITY PLAN

Architect's Project No: 1807-244

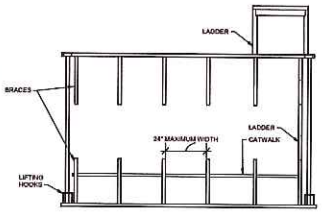
Date: October, 2019

Drawing No:

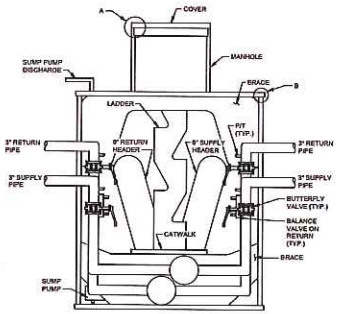
U1.1



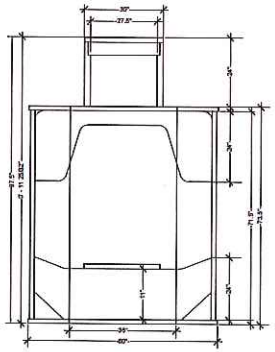
PIPING SCHEME



SIDE SECTION VIEW



END SECTION VIEW



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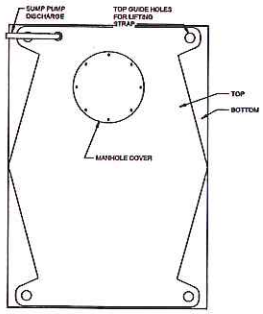
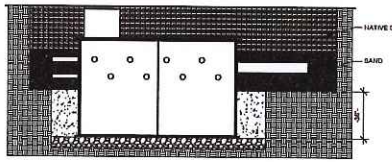
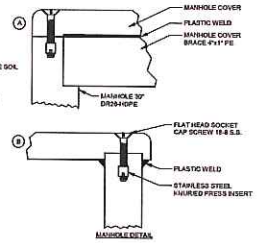


TOP VIEW



VAULT INSTALLATION



MANHOLE DETAIL

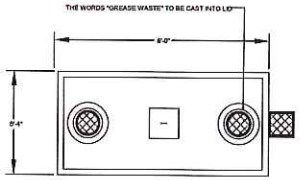
VALVE VAULT - HIGH DENSITY POLYETHYLENE EXTERNAL SHELL WITH UV STABILIZER, MINIMUM WALL THICKNESS OF 1", HEAT WELDED INTERNAL AND EXTERNAL BEAMS, 48" HIGH WALLS, 30" MANHOLE WITH 2000 POUND LOAD BEARING CAPACITY. PIPING, FITTINGS AND BRACING SHALL BE CONSTRUCTED OF HIGH DENSITY POLYETHYLENE BASED ON ATLANTIS VALVE VAULT WITH TWO 8" MAINS, EIGHT 3" CIRCUITS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. SIX CIRCUITS ARE USED. CAP TWO CIRCUITS FOR FUTURE.

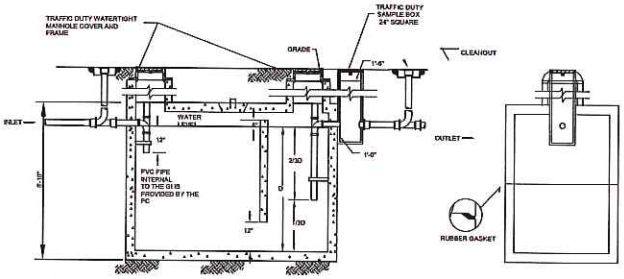
VALVE VAULT DETAILS

NO SCALE

GENERAL NOTES:

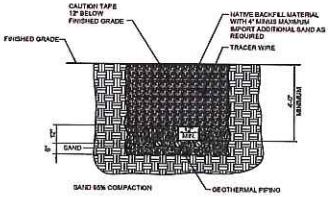
1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH 5000 psi XYPEX ADDITIVE OR APPROVED EQUAL REQUIRED.
2. STEEL REINFORCEMENT: ASTM A-615, GRADE 60.
3. 1.5" MINIMUM CONCRETE COVER REQUIRED ON ALL REINFORCING STEEL.
4. ALL INTERIOR PIPING SHALL BE MINIMUM 6" SDR 26 PVC.
5. ALL TANK JOINTS SHALL HAVE WATER TIGHT SEALS.
6. EXCAVATION SIDE SLOPES SHALL BE A MINIMUM OF 1:1 OR SHALLOWER IN POOR SOIL CONDITIONS.
7. 4" CLEANOUT SHALL BE INSTALLED WITHIN 10' OF INTERCEPTOR INLET.
8. MULTIPLE INTERCEPTOR FACILITIES MUST HAVE A TWO-WAY CLEANOUT BETWEEN EACH INTERCEPTOR.
9. GREASE INTERCEPTOR SHALL BE INSTALLED A MINIMUM OF 10' AWAY FROM SINKS AND DISHWASHERS TO PROVIDE ADEQUATE COOLING OF WASTE WATER.
10. NEW INTERCEPTOR MUST BE FILLED WITH WATER AFTER INSTALLATION TO PREVENT FLOATING UNDER HIGH GROUND WATER CONDITIONS.
11. PLACE #9 STONE BEDDING MINIMUM 6" THICK, UNDERCUT WET OR PUMPING MATERIAL, REPLACING WITH #2 STONE.
12. GRADE SURFACES AROUND INTERCEPTOR AWAY FROM MANHOLE CASTINGS TO MINIMIZE STORM WATER INFILTRATION.
13. ALL BRACES, BRACKETS, NUTS AND BOLTS SHALL BE STAINLESS STEEL.
14. VACUUM TEST THE INTERCEPTOR AFTER INSTALLATION IS COMPLETE FOR 20 MINUTES AT -4" WC.





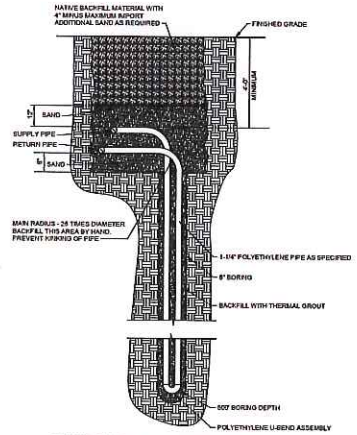
GREASE INTERCEPTOR DETAIL (1500 GALLON)

NO SCALE



TYPICAL SUPPLY & RETURN PIPING TRENCH DETAIL

NO SCALE



TYPICAL VERTICAL BORE DETAIL

NO SCALE

GEO TRENCH DETAILS

NO SCALE

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Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CSM	CSM	JTP

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Sheet title:

SITE UTILITY DETAILS

Architect's Project No: 1807-244

Date: October, 2019

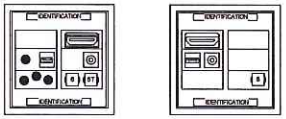
Drawing No:

U1.2

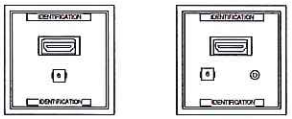
INFORMATION OUTLET FACEPLATE CONFIGURATIONS

INFORMATION OUTLET JACK LEGEND

- CAT 6 RJ-45 (DATA)
- CAT 6 RJ-45 (TELEPHONE)
- RCA PORT
- 3.5mm JACK
- HDMI
- USB



AVI1 AVI2



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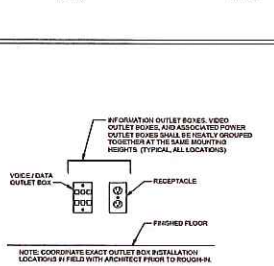

NOTE: COORDINATE EXACT OUTLET BOX INSTALLATION LOCATIONS IN FIELD WITH ARCHITECT PRIOR TO ROUGH-IN.

TYPICAL INFORMATION OUTLET AND POWER OUTLET DETAIL

NO SCALE

ELECTRICAL LEGEND - LIGHTING

SYMBOL	DESCRIPTION
	HALF-HATCHING PATTERN SHOWN WITHIN LIGHTING FIXTURE SYMBOLS INDICATES LIGHTING FIXTURE CONNECTED TO UNSWITCHED CIRCUIT FOR BATTERY BACK-UP UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE LIGHTING PLANS.
	CEILING OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
	CEILING OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
	CEILING OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
	CEILING OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
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	CEILING OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
	CEILING OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
	WALL OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
	WALL OUTLET AND LIGHTING FIXTURE AS SCHEDULED.
	CEILING OUTLET AND EXIT LIGHT FIXTURE AS SCHEDULED. ARROWS INDICATE DIRECTION ARROWS REQUIRED
	WALL OUTLET AND EXIT LIGHT FIXTURE AS SCHEDULED. ARROWS INDICATE DIRECTION ARROWS REQUIRED
	SITE LIGHTING POLE AND FIXTURE AS SCHEDULED, COMPLETE WITH BASE AND GROUNDING SYSTEM.
F1	SYMBOL INDICATES FIXTURE TYPE WHEN SHOWN ON LIGHTING PLANS AND SITE ELECTRICAL PLANS ADJACENT TO FIXTURE SYMBOL. REFER TO LIGHTING FIXTURE SCHEDULE FOR FIXTURE REQUIREMENTS.
S_{DIM}	OUTLET BOX AND 20A, DIMMING SWITCH. MOUNT AT 48 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE. LOCATE WITHIN 12" OF STRIKE SIDE OF DOOR, UNLESS NOTED OTHERWISE. LOWER CASE LETTER INDICATES CIRCUIT SWITCHED.
S_{3A}	OUTLET BOX AND 20A, THREE-WAY SWITCH. MOUNT AT 48 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE. LOCATE WITHIN 12" OF STRIKE SIDE OF DOOR, UNLESS NOTED OTHERWISE. LOWER CASE LETTER INDICATES CIRCUIT SWITCHED.
S_{4A}	OUTLET BOX AND 20A, FOUR-WAY SWITCH. MOUNT AT 48 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE. LOCATE WITHIN 12" OF STRIKE SIDE OF DOOR, UNLESS NOTED OTHERWISE. LOWER CASE LETTER INDICATES CIRCUIT SWITCHED.
S_{O}	OCCUPANCY SENSOR SWITCH. MOUNT AT 48 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE. LOCATE WITHIN 12" OF STRIKE SIDE OF DOOR, UNLESS NOTED OTHERWISE.
S_{S}	OUTLET BOX AND 20A, SINGLE POLE SWITCH. MOUNT AT 48 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE. LOCATE WITHIN 12" OF STRIKE SIDE OF DOOR, UNLESS NOTED OTHERWISE. LOWER CASE LETTER INDICATES CIRCUIT SWITCHED.
OS_{A}	OCCUPANCY SENSOR. THE LETTER(S) DESIGNATION NEXT TO THE SYMBOL (IF SHOWN) INDICATE SWITCHING ZONES TO BE CONTROLLED VIA THE OCCUPANCY SENSOR. IF A LETTER DESIGNATION IS NOT SHOWN, THE OCCUPANCY SENSOR SHALL CONTROL ALL LIGHTING FIXTURES WITHIN THE ROOM. SEE OCCUPANCY SENSOR CONTROL WIRING DIAGRAMS, AND DETAILS, SHEET E1.4, FOR ADDITIONAL REQUIREMENTS.
	PHOTOCELL - DAYLIGHT HARVESTING.
	SENSOR - DAYLIGHT HARVESTING.
NL	SYMBOL INDICATES LIGHTING FIXTURE WITH UNSWITCHED LIGHTING CIRCUIT WHEN SHOWN ON LIGHTING PLANS ADJACENT TO FIXTURE, UNLESS NOTED OTHERWISE.

ELECTRICAL LEGEND - POWER

SYMBOL	DESCRIPTION
	WALL OUTLET WITH 20A, 125V DUPLEX RECEPTACLE. MOUNT 18 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE.
	WALL OUTLET WITH 20A, 125V DUPLEX RECEPTACLE. MOUNT 48 INCHES ABOVE FINISHED FLOOR TO CENTER, OR 8 INCHES ABOVE COUNTER OR COUNTER BACKSPLASH TO CENTER, UNLESS NOTED OTHERWISE.
	WALL OUTLET WITH 20A, 125V DOUBLE-DUPLEX RECEPTACLE. MOUNT 18 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE.
	WALL OUTLET WITH 20A, 125V DOUBLE-DUPLEX RECEPTACLE. MOUNT 48 INCHES ABOVE FINISHED FLOOR TO CENTER, OR 8 INCHES ABOVE COUNTER OR COUNTER BACKSPLASH TO CENTER, UNLESS NOTED OTHERWISE.
	WALL OUTLET WITH 20A, 125V SIMPLEX RECEPTACLE & INTEGRAL USB PORT. MOUNT 18 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE.
	WALL OUTLET WITH TYPE OF RECEPTACLE AS NOTED. MOUNT 18 INCHES ABOVE FINISHED FLOOR TO CENTER, UNLESS NOTED OTHERWISE.
"TV"	SYMBOL INDICATES RECEPTACLE DEDICATED FOR TV USE WHEN SHOWN PLANS ADJACENT TO SYMBOL.
"GFI"	SYMBOL INDICATES GROUND FAULT INTERRUPTER TYPE RECEPTACLE WHEN SHOWN PLANS ADJACENT TO SYMBOL.
"WP"	SYMBOL INDICATES WEATHER RESISTANT RECEPTACLE IN WEATHERPROOF WHILE IN USE ENCLOSURE WHEN SHOWN ON PLANS ADJACENT TO SYMBOL.
"T"	SYMBOL INDICATES TAMPER RESISTANT WHEN SHOWN ON PLANS ADJACENT TO SYMBOL.
1,2,3,...	NUMBERS INDICATE CIRCUIT NUMBERS WHEN SHOWN NEXT TO OR WITHIN SYMBOL ON PLANS.
a,b,c,...	LOWER CASE LETTERS INDICATE SWITCHING ARRANGEMENT WHEN SHOWN NEXT TO OR WITHIN SYMBOL ON PLANS
+43"	NUMBER INDICATES MOUNTING HEIGHT ABOVE FINISHED FLOOR TO BOTTOM OF OUTLET BOX WHEN SHOWN NEXT TO SYMBOL.
	SYMBOL INDICATES WALL MOUNT JUNCTION BOX.
	SYMBOL INDICATES CEILING MOUNT JUNCTION BOX.
	SYMBOL INDICATES PUSH BUTTON
	SYMBOL INDICATED PUSH BUTTON. (EMERGENCY POWER OFF)
S	SYMBOL INDICATED SAFETY DISCONNECT SWITCH ON POWER SHEET, UNLESS NOTED OTHERWISE.
	SYMBOL INDICATES MOTOR LOCATION.
20A/3	FUSIBLE DISCONNECT SWITCH RATED FOR CONNECTED LOAD AND INSTALLATION LOCATION. MOUNT AT 84 INCHES A.F.F. TO CENTER, UNLESS NOTED OTHERWISE. NUMBERS INDICATE AMPERE RATING AND NUMBER OF POLES, UNLESS NOTED OTHERWISE.
20A/3	NON-FUSIBLE DISCONNECT SWITCH RATED FOR CONNECTED LOAD AND INSTALLATION LOCATION. MOUNT AT 84 INCHES A.F.F. TO CENTER, UNLESS NOTED OTHERWISE. NUMBERS INDICATE AMPERE RATING AND NUMBER OF POLES, UNLESS NOTED OTHERWISE.
TYPE X	SYMBOL INDICATES FLOOR BOX WITH POWER ONLY. TYPE AS INDICATED. SEE MULTI-FUNCTION FLOOR BOX SCHEDULE, THIS SHEET, FOR ADDITIONAL REQUIREMENTS.
TYPE X	SYMBOL INDICATES MULTI-FUNCTION FLOOR BOX. TYPE AS INDICATED. SEE MULTI-FUNCTION FLOOR BOX SCHEDULE, THIS SHEET, FOR ADDITIONAL REQUIREMENTS.
TYPE X	SYMBOL INDICATES POKE-THRU LOCATION. TYPE AS INDICATED. SEE MULTI-FUNCTION FLOOR BOX SCHEDULE, THIS SHEET, FOR ADDITIONAL REQUIREMENTS.
	CONNECTION TO ELECTRICAL SYSTEM GROUNDING SYSTEM.
L11-1,2,3	HOMERUN TO PANEL INDICATED. NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. PREFIX INDICATES PANEL NOMENCLATURE. NUMBERS INDICATE CIRCUIT NUMBERS.
PHASE CONDUCTOR / NEUTRAL / GROUND	CIRCUIT. NUMBER OF CROSSBARS INDICATE QUANTITY OF CONDUCTORS REQUIRED. MINIMUM CONDUIT SIZE SHALL BE ONE INCH TRADE SIZE. MINIMUM SIZE CONDUCTORS SHALL BE 12 AWG.

ELECTRICAL LEGEND - TECHNOLOGY

TELECOMMUNICATIONS

SYMBOL	DESCRIPTION
	VOICE/DATA OUTLET. MOUNT OUTLET AT SAME HEIGHT AS ASSOCIATED POWER OUTLET, UNLESS NOTED OTHERWISE. PROVIDE 1 INCH CONDUIT FROM OUTLET BOX TO NEAREST ACCESSIBLE CEILING CAVITY. BUSH CONDUIT ENDS. OUTLET BOX SHALL BE 4" SQUARE BY 2-3/4" DEEP WITH A SINGLE-GANG PLASTER RING, UNLESS NOTED OTHERWISE. SEE "TYPICAL INFORMATION OUTLET & CONDUIT INSTALLATION DETAIL", "TYPICAL INFORMATION OUTLET AND POWER OUTLET DETAIL", AND "INFORMATION OUTLET FACEPLATE CONFIGURATIONS", THIS SHEET, FOR ADDITIONAL REQUIREMENTS.
WA	WIRELESS NETWORK ACCESS SYSTEM OUTLET. INSTALL WITHIN ACCESSIBLE CEILING CAVITY SPACE, UNLESS NOTED OTHERWISE. SEE "WIRELESS NETWORK ACCESS POINT OUTLET CONFIGURATION", THIS SHEET, FOR ADDITIONAL DETAILS.
	WALL MOUNT WIRELESS NETWORK ACCESS SYSTEM OUTLET. INSTALL WITHIN ACCESSIBLE CEILING CAVITY SPACE, UNLESS NOTED OTHERWISE. SEE "WIRELESS NETWORK ACCESS POINT OUTLET CONFIGURATION", THIS SHEET, FOR ADDITIONAL DETAILS.
	WALL MOUNT JUNCTION BOX.
"WP"	INDICATES DEVICE SHALL BE LISTED FOR OUTDOOR WET LOCATION USE
"WG"	INDICATES PROVIDE DEVICE WITH WIRE GUARD

VIDEO/SOUND

SYMBOL	DESCRIPTION
	WALL MOUNT TELEVISION OUTLET. COORDINATE EXACT INSTALLATION LOCATION AND MOUNTING HEIGHT WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. IN GENERAL, TV OUTLET BOX SHALL BE INSTALLED AT THE SAME HEIGHT AND CLOSE TO THE ASSOCIATED POWER OUTLET BOX. PROVIDE 1 INCH CONDUIT FROM OUTLET BOX TO NEAREST ACCESSIBLE CEILING CAVITY. BUSH CONDUIT ENDS. PROVIDE ROS QUAD-SHIELD 75 OHM COAXIAL CABLE TO OUTLET BOX TO THE MAIN COMMUNICATIONS ROOM 128. TERMINATE AND LABEL BOTH ENDS OF CABLE. TEST CABLE FOR PROPER OPERATION. COORDINATE EXACT INSTALLATION & TERMINATION LOCATIONS.
	WALL MOUNT AUDIO/VISUAL OUTLET. COORDINATE EXACT INSTALLATION LOCATION AND MOUNTING HEIGHT WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. IN GENERAL, OUTLET BOX SHALL BE INSTALLED AT THE SAME HEIGHT AND CLOSE TO THE ASSOCIATED POWER OUTLET BOX. PROVIDE 1 INCH CONDUIT FROM OUTLET BOX TO NEAREST ACCESSIBLE CEILING CAVITY. BUSH CONDUIT ENDS. SEE "INFORMATION OUTLET FACEPLATE CONFIGURATIONS", THIS SHEET, FOR ADDITIONAL REQUIREMENTS.
TL	CEILING MOUNT SPEAKER FOR TEACH LOGIC SYSTEM, COMPLETE WITH BAFFLE AND BACKBOX TRANSFORMER. SPEAKER GRILLE SHALL NOT HAVE COMPANY LOGO
AV	CEILING MOUNT SPEAKER FOR AUDIO/VISUAL SYSTEM. COMPLETE WITH BAFFLE AND BACKBOX TRANSFORMER. SPEAKER GRILLE SHALL NOT HAVE COMPANY LOGO
	WALL MOUNT MICROPHONE OUTLET. COORDINATE EXACT INSTALLATION LOCATION AND MOUNTING HEIGHT WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. IN GENERAL, OUTLET BOX SHALL BE INSTALLED AT THE SAME HEIGHT AND CLOSE TO THE ASSOCIATED POWER OUTLET BOX. PROVIDE 1 INCH CONDUIT FROM OUTLET BOX TO NEAREST ACCESSIBLE CEILING CAVITY. BUSH CONDUIT ENDS.
	WALL MOUNTED HORN SPEAKER.

ACCESS CONTROL

SYMBOL	DESCRIPTION
	EMPLOYEE BADGE READER. ACCESS CONTROL SYSTEM. MOUNT AT 48 INCHES ABOVE FINISHED FLOOR TO CENTER UNLESS OTHERWISE NOTED (FURNISHED AND INSTALLED BY ACCESS CONTROL CONTRACTOR). PROVIDE A QUANTITY OF ONE DATA CABLE TO EACH READER. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING DATA CABLE TO ACCESS CONTROL PANEL IN CEILING CAVITY ABOVE DOOR, AND FOR PROVIDING ALL CONDUCTORS, RACEWAYS, AND CONDUITS AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. TERMINATIONS BY ACCESS CONTROL SYSTEM PROVIDER.
DPS	DOOR POSITION SWITCH. MONITORED BY ACCESS CONTROL SYSTEM. (FURNISHED AND INSTALLED BY DOOR HARDWARE CONTRACTOR).
ES	ELECTRIC STRIKE DEVICE. CONTROLLED VIA ACCESS CONTROL SYSTEM. (FURNISHED AND INSTALLED BY DOOR HARDWARE CONTRACTOR)
DP	DURESS PANIC BUTTON ALARM ACTIVATION DEVICE ACCESS CONTROL SYSTEM. PROVIDE WITH ACCESSORIES TO PREVENT ACCIDENTAL DEPRESSION OF BUTTON. SURFACE MOUNT ON UNDER-SIDE OF NURSE STATION COUNTER. COORDINATE EXACT INSTALLATION LOCATION IN FIELD WITH OWNER PRIOR TO ROUGH-IN. PROVIDE OUTLET BOX AND CONDUIT IN WALL TO ACCESSIBLE SPACES AS REQUIRED FOR INSTALLATION OF LOW VOLTAGE CABLING. (FURNISHED AND INSTALLED BY DOOR HARDWARE CONTRACTOR).
KP	KEY PAD DEVICE. ACCESS CONTROL SYSTEM. (FURNISHED AND INSTALLED BY THE ACCESS CONTROL SYSTEM CONTRACTOR). PROVIDE CONDUIT RACEWAY SYSTEM AS REQUIRED TO ALLOW THE REQUIRED CABLING TO BE INSTALLED TO THE KEY PAD DEVICE.
DB	DOOR BELL

VIDEO SURVEILLANCE SYSTEM

SYMBOL	DESCRIPTION
	CAMERA ASSEMBLY, HOUSING, AND MOUNTING ACCESSORIES. VIDEO SURVEILLANCE. PROVIDE A QUANTITY OF ONE DATA CABLE TO EACH CAMERA LOCATION. CAMERAS SHALL BE OWNER-FURNISHED AND CONTRACTOR-INSTALLED.
	WALL MOUNT CAMERA ASSEMBLY, HOUSING, AND MOUNTING ACCESSORIES. VIDEO SURVEILLANCE. PROVIDE A QUANTITY OF ONE DATA CABLE TO EACH CAMERA LOCATION. CAMERAS SHALL BE OWNER-FURNISHED AND CONTRACTOR-INSTALLED.
"WG"	INDICATES PROVIDE DEVICE WITH WIRE GUARD

ELECTRICAL LEGEND - SYSTEMS

FIRE ALARM SYSTEM

SYMBOL	DESCRIPTION
	MANUAL PULL STATION. FIRE ALARM SYSTEM. MOUNT AT 49 INCHES A.F.F. TO CENTER, UNLESS NOTED OTHERWISE.
S	CEILING MOUNT SMOKE DETECTOR.
H	CEILING MOUNT HEAT DETECTOR.
CO	CEILING MOUNT CARBON DIOXIDE DETECTOR.
	AUDIO-VISUAL ALARM DEVICE. FIRE ALARM SYSTEM. WALL MOUNT AT 80 INCHES A.F.F. TO CENTER, OR 6 INCHES BELOW CEILING TO TOP, WHICHEVER IS LOWER. ALL AUDIO/VISUAL DEVICES SHALL BE SPEAKER STROBES TO CORRESPOND TO THE VOICE EVAC SYSTEM BEING PROVIDED AS PART OF THE FIRE ALARM SYSTEM.
	AUDIO-VISUAL ALARM DEVICE. FIRE ALARM SYSTEM. WALL MOUNT AT 80 INCHES A.F.F. TO CENTER, OR 6 INCHES BELOW CEILING TO TOP, WHICHEVER IS LOWER.
FS	FLOW SWITCH. ADDRESSABLE MONITORING DEVICE. FIRE ALARM SYSTEM
PS	PRESSURE SWITCH. ADDRESSABLE MONITORING DEVICE. FIRE ALARM SYSTEM
TS	TAMPER SWITCH. ADDRESSABLE MONITORING DEVICE. FIRE ALARM SYSTEM
SD SD	DUCT SMOKE DETECTOR. FIRE ALARM SYSTEM. NOMENCLATURE NEXT TO SYMBOL INDICATES INTERCONNECTIONS I.E. "SFD" INDICATES SMOKE AND FIRE DAMPER, "SD" INDICATES SMOKE DAMPER, "AHU" INDICATES AIR HANDLER UNIT, ETC.
HO	DOOR HOLD OPEN DEVICE. (FURNISHED AND INSTALLED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE POWER CIRCUIT AND FIRE ALARM SYSTEM INTERCONNECTION CIRCUITS AND PROGRAMMING). ELECTRICAL CONTRACTOR SHALL PROVIDE POWER TO THE HOLD OPEN DEVICES FROM THE FIRE ALARM CONTROL SYSTEM. ELECTRICAL CONTRACTOR SHALL COORDINATE VOLTAGE REQUIREMENTS WITH GENERAL CONTRACTOR PRIOR TO PURCHASE OF HOLD-OPEN DEVICES.
"WG"	INDICATES PROVIDE DEVICE WITH WIRE GUARD.
"WP"	INDICATES DEVICE SHALL BE LISTED FOR OUTDOOR WET LOCATION USE.

OVERHEAD PAGING SYSTEM

SYMBOL	DESCRIPTION
VP	CEILING SPEAKER FOR OVERHEAD PAGING SYSTEM COMPLETE WITH BAFFLE AND BACKBOX TRANSFORMER. SPEAKER SHALL HAVE MUTE OVERRIDE INPUT FOR TEACH LOGIC SYSTEM. SPEAKER GRILLE SHALL NOT HAVE COMPANY LOGOS. SPEAKER GRILL SHALL BE WHITE. DEVICE FOR PAGING USE.
	FLUSH MOUNT OUTLET BOX WITH OVERHEAD PAGING SYSTEM SPEAKER VOLUME CONTROL DEVICE. PROVIDE ENGRAVED DEVICE PLATE WHICH READS "PAGING VOLUME".
SP	FLUSH MOUNT OUTLET BOX FOR OUTDOOR PAGING SYSTEM SPEAKER.
	CLASSROOM INTERCOM/CALL BUTTON
	MASTER VIP STATION.

INTERCOM SYSTEMS

SYMBOL	DESCRIPTION
	DOOR PHONE STATION.
	MASTER MONITOR STATION. DESK TOP. PROVIDE OUTLET BOX IN WALL (AND/OR) ME WORK AS REQUIRED. CONDUIT AND CIRCUITS PER MANUFACTURER'S REQUIREMENTS.
	WALL MOUNT DOOR PHONE STATION.
	MASTER DOOR PHONE STATION.

CLOCK SYSTEMS

SYMBOL	DESCRIPTION
	WALL MOUNT POWERED ANALOG CLOCK
	FLUSH MOUNT, POE POWERED, DIGITAL CLOCK. PROVIDE ONE DATA CABLE TO COMMUNICATIONS ROOM.

MULTI-FUNCTION FLOORBOX SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	SERIES	COVER ASSEMBLY	SERVICES
A	RECESSED, MULTI-SERVICE, LARGE CAPACITY FLOOR BOX FOR POWER, COMMUNICATION, AUDIO, & VIDEO APPLICATIONS. DESIGNED FOR USE IN SLAB ON GRADE APPLICATIONS. HEAVY DUTY COVER ASSEMBLY RATED FOR 3,000LBS. MINIMUM BOX DEPTH OF 5-1/8 INCHES.	WALKER / WIREMOLD	EF8455	CAST ALUMINUM, BRUSH ALUMINUM FINISH, (SEE REMARKS FOR ADDITIONAL REQUIREMENTS)	1. TWO NEMA 5-20R GFI RECEPTACLES.
B	RECESSED, MULTI-SERVICE, LARGE CAPACITY FLOOR BOX FOR POWER, COMMUNICATION, AUDIO, & VIDEO APPLICATIONS. DESIGNED FOR USE IN SLAB ON GRADE APPLICATIONS. HEAVY DUTY COVER ASSEMBLY RATED FOR 3,000LBS. MINIMUM BOX DEPTH OF 5-1/8 INCHES.	WALKER / WIREMOLD	RFB2	CAST ALUMINUM, BRUSH ALUMINUM FINISH, (SEE REMARKS FOR ADDITIONAL REQUIREMENTS)	1. TWO NEMA 5-20R GFI RECEPTACLES. 2. TWO DATA CABLES AND OUTLET
C	RECESSED, MULTI-SERVICE, LARGE CAPACITY FLOOR BOX FOR POWER, COMMUNICATION, AUDIO, & VIDEO APPLICATIONS. DESIGNED FOR USE ON SECOND FLOOR APPLICATIONS. HEAVY DUTY COVER ASSEMBLY RATED FOR 3,000LBS. MINIMUM BOX DEPTH OF 5-1/8 INCHES.	WALKER / WIREMOLD	RC7	CAST ALUMINUM, BRUSH ALUMINUM FINISH, (SEE REMARKS FOR ADDITIONAL REQUIREMENTS)	1. TWO NEMA 5-20R GFI RECEPTACLES. 2. TWO DATA CABLES AND OUTLET 3. ONE HDMI CABLE AND OUTLET
D	RECESSED, MULTI-SERVICE, LARGE CAPACITY FLOOR BOX FOR POWER, COMMUNICATION, AUDIO, & VIDEO APPLICATIONS. DESIGNED FOR USE ON SECOND FLOOR APPLICATIONS. HEAVY DUTY COVER ASSEMBLY RATED FOR 3,000LBS. MINIMUM BOX DEPTH OF 5-1/8 INCHES.	WALKER / WIREMOLD	RC7	CAST ALUMINUM, BRUSH ALUMINUM FINISH, (SEE REMARKS FOR ADDITIONAL REQUIREMENTS)	1. THREE NEMA 5-20R GFI RECEPTACLES. 2. SIX DATA CABLES AND OUTLET
E	RECESSED, MULTI-SERVICE, LARGE CAPACITY FLOOR BOX FOR POWER, AND COMMUNICATION, AUDIO, & VIDEO APPLICATIONS. DESIGNED FOR USE ON SECOND FLOOR APPLICATIONS. HEAVY DUTY COVER ASSEMBLY RATED FOR 3,000LBS. MINIMUM BOX DEPTH OF 5-1/8 INCHES.	WALKER / WIREMOLD	RC7	CAST ALUMINUM, BRUSH ALUMINUM FINISH, (SEE REMARKS FOR ADDITIONAL REQUIREMENTS)	1. THREE NEMA 5-20R GFI RECEPTACLES. 2. FACEPLATES AND CABLES FOR AVI1 CONFIGURATION SHOWN IN "AVI" INFORMATION OUTLET FACE PLATE CONFIGURATION.
F	RECESSED, MULTI-SERVICE POKE-THRU FOR POWER AND COMMUNICATION APPLICATIONS. DESIGNED FOR USE ON SECOND FLOOR APPLICATIONS. HEAVY DUTY COVER ASSEMBLY RATED FOR 3,000LBS. MINIMUM BOX DEPTH OF 5-1/8 INCHES.	WALKER / WIREMOLD	4AT	CAST ALUMINUM, BRUSH ALUMINUM FINISH, (SEE REMARKS FOR ADDITIONAL REQUIREMENTS)	

REMARKS

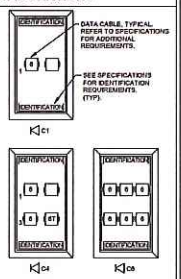
1. INSTALLED COVER ASSEMBLY SHALL BE FLUSH WITH THE FINISHED FLOOR.
2. PROVIDE FLUSH TILE COVER ASSEMBLY IN ALL LOCATIONS WHERE THE FINISHED FLOORING IS TILE OR FINISHED CONCRETE.
3. PROVIDE CUSTOM COVER ASSEMBLY IN ALL LOCATIONS WHERE THE FINISHED FLOORING IS FINISHED CONCRETE. CUSTOM COVER SHALL EXTEND PAST EDGES OF BOX ASSEMBLY AND SHALL BE FLUSH WITH FINISHED CONCRETE FLOOR.
4. COVER SHALL COMPLY WITH UL594.
5. PROVIDE FLOOR BOX ASSEMBLY WITH ALL ACCESSORIES AS REQUIRED TO HOUSE AND MOUNT ALL SERVICES INDICATED AND NOTED.
6. PROVIDE FLOOR BOXES WITH BLANK DEVICE PLATES ON ALL UNUSED OPENINGS WITHIN BOX.
7. COORDINATE EXACT INSTALLATION LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
8. SAW CUT FLOORS AS REQUIRED FOR INSTALLATION.
9. PROVIDE TWO 1-1/4" CONDUITS (FOR LOW VOLTAGE COMMUNICATIONS) FROM LOW VOLTAGE COMPARTMENT TO NEAREST ACCESSIBLE CEILING CAVITY SPACE ON THE ASSOCIATED FLOOR. BUSH CONDUIT ENDS.
10. PROVIDE 3/4" CONDUIT(S) TO FLOOR BOX FOR POWER FEED(S).
11. PATCH AND REPAIR VAPOR BARRIER IN SLAB-ON-GRADE LOCATIONS.
12. FORMING & BLOCKING OUT HOLES FOR FLOOR BOXES. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO FORM HOLES & PROVIDE BLOCKING AS REQUIRED DURING POURING OF CONCRETE FLOORS TO ALLOW FOR INSTALLATION OF FLOOR BOXES AND ASSOCIATED CONDUIT RACEWAY SYSTEMS.
11. APPROVED ALTERNATE MANUFACTURERS: HUBBELL.

INFORMATION OUTLET FACEPLATE CONFIGURATIONS

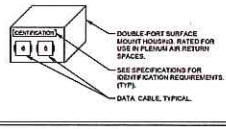
C# C#

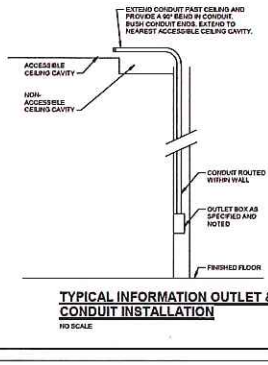
INFORMATION OUTLET JACK LEGEND

- BLANK
- CAT 6 RJ-45 (DATA)
- CAT 6 RJ-45 (TELEPHONE)



WIRELESS NETWORK ACCESS POINT OUTLET CONFIGURATION





TYPICAL INFORMATION OUTLET & CONDUIT INSTALLATION

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Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CWW	SDB	AHB

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Sheet title:

ELECTRICAL LEGEND

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

E1.1

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	FIXTURE SERIES	LAMP: TYPE	LAMP: QNTY PER FIXTURE	LAMP: WATTS	FIXTURE VOLTAGE	BALLAST	MOUNTING	LIGHT CONTROL: LENS	LIGHT CONTROL: REFLECTOR	LIGHT CONTROL: LOUVER FINISH	REMARKS
F1	2'x4' LED SPECIFICATION GRADE, STATIC FIXTURE WITH DECORATIVE SATIN WHITE LENS AND FLUSH DOOR FRAME. (8" MAX FIXTURE DEPTH). DIMMABLE USING 0-10V CONTROLS DOWN TO 1%. 4800 LUMEN OUTPUT	LITHONIA METALUX TBD	FSL SERIES 24FR SERIES TBD	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 90 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	RECESSED	SATIN WHITE	—	—	1. PROVIDE FIXTURE(S) WITH SLIDE-TO-OFF TYPE, 0 TO 10V DIMMING CONTROLLER(S) (QNTY AS INDICATED ON THE LIGHTING PLANS). FULLY COMPATIBLE WITH AND RATED FOR OPERATION WITH FIXTURES. FINISH COLOR OF DIMMING CONTROLLERS AND DEVICE PLATES SHALL MATCH THE COLOR OF ALL OTHER WIRING DEVICES/DEVICE PLATES CONNECTED TO NORMAL POWER.
F1B	SAME AS FIXTURE 'F1' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F2	2'x2' LED SPECIFICATION GRADE, STATIC FIXTURE WITH DECORATIVE SATIN WHITE LENS AND FLUSH DOOR FRAME. (8" MAX FIXTURE DEPTH). DIMMABLE USING 0-10V CONTROLS DOWN TO 1%. 3200 LUMEN OUTPUT	LITHONIA METALUX TBD	FSL SERIES 22FR SERIES TBD	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 82 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	RECESSED	SATIN WHITE	—	—	1. PROVIDE FIXTURE(S) WITH SLIDE-TO-OFF TYPE, 0 TO 10V DIMMING CONTROLLER(S) (QNTY AS INDICATED ON THE LIGHTING PLANS). FULLY COMPATIBLE WITH AND RATED FOR OPERATION WITH FIXTURES. FINISH COLOR OF DIMMING CONTROLLERS AND DEVICE PLATES SHALL MATCH THE COLOR OF ALL OTHER WIRING DEVICES/DEVICE PLATES CONNECTED TO NORMAL POWER.
F2B	SAME AS FIXTURE 'F2' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F3	6" APERTURE, MEDIUM DISTRIBUTION OPEN DOWNLIGHT, RECESSED DOWNLIGHT, WITH A MAXIMUM FIXTURE DEPTH OF 8". WHITE TRIM. DIMMABLE USING 0 TO 10V DIMMING CONTROLS DOWN TO 1%. 2500 LUMEN OUTPUT.	PATHWAY GOTHAM PHILIPS OMEGA LTG PORTFOLIO	6VLED2500 SERIES EVO 35/25-8 SERIES OMNLED-2500 SERIES LED20D025-ERM SERIES	LEDS 3500K (50,000 HRS WITH 70% LUMEN MAINTENANCE)	QNTY AS REQUIRED	__W (FIXTURE INPUT WATTS)	120/277	—	RECESSED	—	SOFT SPECULAR CLEAR	—	1. PROVIDE FIXTURE(S) WITH SLIDE-TO-OFF TYPE, 0 TO 10V DIMMING CONTROLLER(S) (QNTY AS INDICATED ON THE LIGHTING PLANS). FULLY COMPATIBLE WITH AND RATED FOR OPERATION WITH FIXTURES. FINISH COLOR OF DIMMING CONTROLLERS AND DEVICE PLATES SHALL MATCH THE COLOR OF ALL OTHER WIRING DEVICES/DEVICE PLATES CONNECTED TO NORMAL POWER.
F3B	SAME AS FIXTURE 'F3' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1000 LUMENS.	PATHWAY GOTHAM PHILIPS OMEGA LTG PORTFOLIO	6VLED2500 SERIES EVO 35/25-8 SERIES OMNLED-2500 SERIES LED20D025-ERM SERIES	LEDS 3500K (50,000 HRS WITH 70% LUMEN MAINTENANCE)	QNTY AS REQUIRED	__W (FIXTURE INPUT WATTS)	120/277	—	RECESSED	—	SOFT SPECULAR CLEAR	—	
F4	2'x4' LED SPECIFICATION GRADE, STATIC PRISMATIC LENS AND FLUSH DOOR FRAME. (8" MAX FIXTURE DEPTH). 4000 LUMEN OUTPUT	LITHONIA COOPER COLUMBIA	2GTL SERIES 2GR SERIES LJ7H SERIES	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 90 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	RECESSED	.156" THICK, UV STABILIZED	—	—	
F4B	SAME AS FIXTURE 'F4' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F5	48" L X 12"W HIGH BAY GYM LIGHTING FIXTURE WITH ACRYLIC FROSTED LENS, GENERAL DISTRIBUTION. DIMMABLE USING 0-10V DIMMING CONTROLS DOWN TO 1%. PROVIDE WITH INTEGRAL FIXTURE MOUNT OCCUPANCY SENSOR AND DAYLIGHT SENSOR. HIGH-EFFICIENCY FIXTURE WITH 18,000 LUMEN OUTPUT.	LITHONIA METALUX DAY-BRITE	BIG SERIES HB SERIES W/ WIREGUARD FBA LED HIGH BAY SERIES W/ MOTION & DAYLIGHT SENSOR	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 90 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	PENDANT	MATTE WHITE ACRYLIC	—	—	1. PROVIDE FIXTURE(S) WITH SLIDE-TO-OFF TYPE, 0 TO 10V DIMMING CONTROLLER(S) (QNTY AS INDICATED ON THE LIGHTING PLANS). FULLY COMPATIBLE WITH AND RATED FOR OPERATION WITH FIXTURES. FINISH COLOR OF DIMMING CONTROLLERS AND DEVICE PLATES SHALL MATCH THE COLOR OF ALL OTHER WIRING DEVICES/DEVICE PLATES CONNECTED TO NORMAL POWER. 2. VERIFY EXACT MOUNTING HEIGHT OFF FLOOR WITH ARCHITECTURAL ELEVATIONS. 3. PROVIDE ALL REQUIRED ACCESSORIES TO CABLE MOUNT FIXTURES.
F5B	SAME AS FIXTURE 'F5' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 7500 LUMENS.												
F6	8' LENSED STRIP FIXTURE WITH GALVANIZED FINISH SUITABLE FOR USE IN MECHANICAL AND ELECTRICAL ROOMS. 3000 LUMEN OUTPUT.	LITHONIA METALUX COLUMBIA DAY-BRITE	2LIN SERIES SNLED LENSED SERIES LCL SERIES W/ DISC FLUXSTREAM SERIES	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 82 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	SURFACE/ CHAIN	—	—	—	1. CHAIN MOUNT FIXTURE IN ALL EXPOSED CEILING AREAS. 2. SURFACE MOUNT FIXTURES IN LOCATIONS WITH HARD CEILINGS.
F6B	SAME AS FIXTURE 'F6' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F7	8' LENSED STRIP FIXTURE WITH GALVANIZED FINISH SUITABLE FOR USE IN MECHANICAL AND ELECTRICAL ROOMS. 3000 LUMEN OUTPUT PER 4'-0" SECTION.	LITHONIA METALUX COLUMBIA DAY-BRITE	2LIN SERIES SNLED LENSED SERIES LCL SERIES W/ DISC FLUXSTREAM SERIES	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 82 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	SURFACE/ CHAIN	—	—	—	1. CHAIN MOUNT FIXTURE IN ALL EXPOSED CEILING AREAS. 2. SURFACE MOUNT FIXTURES IN LOCATIONS WITH HARD CEILINGS.
F7B	SAME AS FIXTURE 'F7' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F8	2'x4' LED SPECIFICATION GRADE, STATIC PRISMATIC LENS AND FLUSH DOOR FRAME. (8" MAX FIXTURE DEPTH). 4000 LUMEN OUTPUT	LITHONIA COOPER COLUMBIA	2GTL SERIES 2GR SERIES LJ7H SERIES	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 90 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	RECESSED	.156" THICK, UV STABILIZED	—	—	
F8B	SAME AS FIXTURE 'F8' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F10	2'X2' LED SPECIFICATION GRADE, STATIC PRISMATIC LENS AND FLUSH DOOR FRAME. (8" MAX FIXTURE DEPTH) 3000 LUMEN OUTPUT	LITHONIA COOPER COLUMBIA	2GTL SERIES 2GR SERIES LJ7H2 SERIES	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 90 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	RECESSED	.156" THICK, UV STABILIZED	—	—	
F10B	SAME AS FIXTURE 'F10B' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F11	2'x2' LED SPECIFICATION GRADE, STATIC FIXTURE WITH DECORATIVE SATIN WHITE LENS AND FLUSH DOOR FRAME. (8" MAX FIXTURE DEPTH). DIMMABLE USING 0-10V CONTROLS 3000 LUMEN OUTPUT	LITHONIA METALUX TBD	FSL SERIES 22FR SERIES TBD	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 82 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	—	RECESSED	SATIN WHITE	—	—	
F11B	SAME AS FIXTURE 'F11' WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER SOURCE FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS.												
F13	6" APERTURE, MEDIUM DISTRIBUTION DOWNLIGHT WITH PARK AVENUE DOWNLIGHT REFLECTOR AND A MAXIMUM FIXTURE DEPTH OF 7". WHITE TRIM. DIMMABLE USING 0-10V CONTROLS 2000 LUMEN OUTPUT.	PATHWAY TBD TBD	CALIBER PLUS SERIES WITH GFW TBD TBD	LEDS 3000K (50,000 HRS WITH 60% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	__W (NOMINAL FIXTURE INPUT WATTS)	120/	—	RECESSED	—	—	—	

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Revisions:

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Sheet title:
LIGHTING FIXTURE SCHEDULE

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
E1.2

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	FIXTURE SERIES	LAMP TYPE	LAMP QNTY PER FIXTURE	LAMP WATTS	FIXTURE VOLTAGE	BALLAST	MOUNTING	LIGHT CONTROL LENS	LIGHT CONTROL REFLECTOR	LIGHT CONTROL LOUVER FINISH	REMARKS
F120	SURFACE MOUNT STRIP FIXTURE WITH DROP LENS (SUITABLE FOR INSTALLATION IN ELEVATOR SHAFT PIT AREAS) MAX. FIXTURE MAXIMUM DIMENSIONS SHALL BE 24"(L) x 2-1/4"(H) x 3"(D). (FIXTURE LUMEN OUTPUT ~ 3000 LUMENS)	LITHONIA	ZL1D-L24-3400LM-FSTMVOLT-40K-80CRI-WH	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	SURFACE MOUNTED	MATTE WHITE ACRYLIC	--	--	
		TBD	TBD										
		TBD	TBD										
F16	LINEAR LED FIXTURE WITH CYLINDRICAL SHAPED LENS. HANG AT DIFFERENT HEIGHTS AND CREATE CROSSING 500LIFT	SELUX	PURELIGHT LED	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	PENDANT	MATTE WHITE ACRYLIC	--	--	
		EUREKA	STROKE										
		SPLIGHTING	PAVO										
F18	4' LED CIRCULAR FIXTURE WITH 3-SIDED LUMINOUS LENS PROVIDING SIDE AND DOWNLIGHT. PROVIDE WITH MULTI-POINT CONNECTIONS FOR HANGING BACK TO SINGLE-POINT CONNECTION CANOPY. PROVIDE POWER THROUGH AIR CRAFT CABLE.	SPLIGHTING	NOVATO	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	PENDANT	MATTE WHITE ACRYLIC	--	--	
		TBD	TBD										
		TBD	TBD										
F19	9' LED CIRCULAR FIXTURE WITH 3-SIDED LUMINOUS LENS PROVIDING SIDE AND DOWNLIGHT. PROVIDE WITH MULTI-POINT CONNECTIONS FOR HANGING BACK TO SINGLE-POINT CONNECTION CANOPY. PROVIDE POWER THROUGH AIR CRAFT CABLE.	SPLIGHTING	NOVATO	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	PENDANT	MATTE WHITE ACRYLIC	--	--	
		TBD	TBD										
		TBD	TBD										
F17	8" CYLINDER TYPE LED PENDANT FIXTURE. 2000 LUMENS. 0 TO 10V DIMMING DRIVER.	LITHONIA	LONBCYL SERIES	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	PENDANT	MATTE WHITE ACRYLIC	--	--	
		TBD	TBD										
		TBD	TBD										
F18A	LINEAR RECESSED LED FIXTURE 4" WIDE AND 4' IN LENGTH	MARK LIGHTING	SLOT 4 LED SERIES	LEDS 3000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	--	--	
		LUMENWERX	VIA 4										
		TBD	TBD										
F18C	LINEAR RECESSED LED FIXTURE 4" WIDE AND 8' IN LENGTH	MARK LIGHTING	SLOT 4 LED SERIES	LEDS 3000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	--	--	
		LUMENWERX	VIA 4										
		TBD	TBD										
F18D	LINEAR RECESSED LED FIXTURE 4" WIDE AND 8' IN LENGTH	MARK LIGHTING	SLOT 4 LED SERIES	LEDS 3000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	--	--	
		LUMENWERX	VIA 4										
		TBD	TBD										
F19	LINEAR RECESSED LED FIXTURE 4" WIDE. PROVIDE ACCESSORIES FOR HARD CEILING. 84" CONTINOUS.	MARK LIGHTING	SLOT 4 LED SERIES	LEDS 3000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	--	--	
		LUMENWERX	VIA 4										
		TBD	TBD										
F19A	LINEAR RECESSED LED FIXTURE 4" WIDE AND 4' IN LENGTH. PROVIDE ACCESSORIES FOR HARD CEILING.	MARK LIGHTING	SLOT 4 LED SERIES	LEDS 3000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	--	--	
		LUMENWERX	VIA 4										
		TBD	TBD										
F19C	LINEAR RECESSED LED FIXTURE 4" WIDE AND 8' IN LENGTH. PROVIDE ACCESSORIES FOR HARD CEILING.	MARK LIGHTING	SLOT 4 LED SERIES	LEDS 3000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	--	--	
		LUMENWERX	VIA 4										
		TBD	TBD										
F19D	LINEAR RECESSED LED FIXTURE 4" WIDE AND 8' IN LENGTH. PROVIDE ACCESSORIES FOR HARD CEILING.	MARK LIGHTING	SLOT 4 LED SERIES	LEDS 3000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	--	--	
		LUMENWERX	VIA 4										
		TBD	TBD										
F20	4' WALL MOUNT STRIP LIGHTING WITH INTEGRAL OCCUPANCY SENSOR AND 2 ELECTRONIC DRIVERS FOR 50% REDUCTION OF LUMEN OUTPUT WHEN STAIRWELL IS VACANT. PROVIDE WITH WALL BRACKET AND INTEGRAL BATTERY BACK-UP CAPABLE OF OPERATING FIXTURE ON LOSS OF NORMAL POWER FOR A MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1400 LUMENS. TOTAL LUMEN OUTPUT ~ 4000 LUMEN	LITHONIA	WLX-4ft-MVOLTTLP835-DMBS-EL14L-WHITE SERIES	LEDS 3500K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	39.5W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	WALL	MATTE WHITE ACRYLIC	--	--	
		TBD	TBD										
		TBD	TBD										
EX1	EXIT LIGHTING FIXTURE, SINGLE-FACE, INJECTION MOLDED ACRYLIC PANELS, WHITE HOUSING, GREEN LIGHTS ON MIRRORED BACKGROUND.	LITHONIA	PRECISE SERIES	LED (GREEN)	QNTY AS REQ'D	AS REQ'D	120/277 (MULTI-VOLT)	--	CEILING	--	--	--	⊗
		MCPHILBEN	44 LINE (CUSTOM)										
		SURE-LITES	ELX SERIES										
		DUAL LITE	LE SERIES										
		PHILIPS CHLORIDE	CE-10500 SERIES (MIRRORED)										
EX3	EXIT LIGHTING FIXTURE, SINGLE-FACE, INJECTION MOLDED ACRYLIC PANELS, WHITE HOUSING, GREEN LETTERS WITH ON MIRRORED BACKGROUND	LITHONIA	PRECISE SERIES	LED (GREEN)	QNTY AS REQUIRED	AS REQ'D	120/277 (MULTI-VOLT)	--	WALL	--	--	--	⊗
		MCPHILBEN	44 LINE (CUSTOM)										
		SURE-LITES	ELX SERIES										
		DUAL LITE	LE SERIES										
		PHILIPS CHLORIDE	CE-10500 SERIES (MIRRORED)										
S1	8" SURFACE MOUNT UNDER CANOPY, WITH A MAXIMUM FIXTURE DEPTH OF 2", ...999 LUMEN OUTPUT			LEDS 4000K (50,000 HRS WITH 70% LUMEN MAINTENANCE)	QNTY AS REQUIRED	48.1W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	SOFT SPECULAR CLEAR	--	
S2	8" APERTURE, MEDIUM DISTRIBUTION OPEN DOWNLIGHT, RECESSED DOWNLIGHT, WITH A MAXIMUM FIXTURE DEPTH OF 8", NOMINAL 2000 LUMENS OUTPUT, DIMMABLE USING 0 TO 10V DIMMING CONTROLS. 2000 LUMEN OUTPUT	PATHWAY	6VLED4000 SERIES	LEDS 4000K (50,000 HRS WITH 70% LUMEN MAINTENANCE)	QNTY AS REQUIRED	23.2W (NOMINAL FIXTURE INPUT WATTS)	120/277 (MULTI-VOLT)	--	RECESSED	--	SOFT SPECULAR CLEAR	--	
		GOTHAM	EVO 4G/4G-8 SERIES										
		PHILIPS OMEGA LTD	DIMLED-4000 SERIES										
		PORTFOLIO	LD6200040-ERM SERIES										
S3	BOLLARDS MATCHING SITE LIGHTING POLES AND FIXTURES.						277V						FIXTURE PROVIDED AS PART OF SITE FURNISHING PACKAGE. REFER TO 129309 SITE FURNISHING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
S4	OUTDOOR-RATED, ARCHITECTURAL FLOOR LIGHTING WITH CAST ALUMINUM HOUSING AND MOUNT, FULL VISOR, AND INTEGRAL LED DRIVERS. APPROXIMATE DIMENSIONS 10"(W) X 8.5"(H) X 8"(D). 50° x 80° OPTICS OR APPROVED EQUAL.	ECOSENSE	WSH4A3-40-277-BK	LEDS 4000K (50,000 HRS WITH 70% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	277V	--	SURFACE MOUNTED	--	--	--	
		H/M LIGHTING	CFL LED SERIES										
		TBD	TBD										
S5	12" ROUND SURFACE MOUNT FIXTURE WITH WHITE FINISH SUITABLE FOR USE IN 1000 LUMEN OUTPUT.	LITHONIA	LONBCYL SERIES	LEDS 4000K (50,000 HRS WITH 80% LUMEN MAINTENANCE) 80 CRI	QNTY AS REQUIRED	W (NOMINAL FIXTURE INPUT WATTS)	120V	--	SURFACE	POLYCARBONATE	--	--	
		KIRHALL	MILLENIUM SERIES										
		LUMINAIRE	APEX 13 SERIES										
S5B	SAME AS FIXTURE TYPE "S5B" WITH THE ADDITION OF AN INTEGRAL INVERTER AND BATTERY BACK-UP SYSTEM CAPABLE OF OPERATING FIXTURE UPON LOSS OF NORMAL POWER SOURCE FOR MINIMUM OF 90 MINUTES CONTINUOUSLY WITH AN OUTPUT OF 1000 LUMENS.												
S251	25' ROUND TAPERED STEEL SITE POLE AND ONE LIGHTING FIXTURE FOR AREA ILLUMINATION. FIXTURE SHALL BE FINISHED DIE-CAST ALUMINUM HOUSING. FIXTURE AND POLE SHALL HAVE A CUSTOM POWDER COAT FINISH. FIXTURE SHALL BE PROVIDED WITH TYPE T4M DISTRIBUTION.	LITHONIA	RSX1 SERIES	LED WHITE 4000K CRI: 80 RATED LIFE: L86=100,000	QNTY AS REQUIRED	62 (MAX)	277V	--	POLE	--	TYPE IV	--	1. FIXTURE SHALL BE SELECTED DURING SHOP DRAWING REVIEW FROM MANUFACTURER'S FULL LINE OF STANDARD FINISHED 2. SEE BASE DETAIL, SHEET E7.5, FOR ADDITIONAL REQUIREMENTS.
		MCGRAW-EDISON	GALLEON LED SERIES										
		HUBBELL	VIPER SERIES										
S25B	25' ROUND TAPERED STEEL SITE POLE AND TWO (@ 180°) LIGHTING FIXTURE FOR AREA ILLUMINATION. FIXTURE SHALL BE FINISHED DIE-CAST ALUMINUM HOUSING. FIXTURE AND POLE SHALL HAVE A CUSTOM POWDER COAT FINISH. FIXTURE SHALL BE PROVIDED WITH TYPE T4M DISTRIBUTION.	LITHONIA	RSX1 SERIES	LED WHITE 4000K CRI: 80 RATED LIFE: L86=100,000	QNTY AS REQUIRED	148 (MAX)	277V	--	POLE	--	TYPE IV	--	1. FIXTURE SHALL BE SELECTED DURING SHOP DRAWING REVIEW FROM MANUFACTURER'S FULL LINE OF STANDARD FINISHED 2. SEE BASE DETAIL, SHEET E7.5, FOR ADDITIONAL REQUIREMENTS.
		MCGRAW-EDISON	GALLEON LED SERIES										
		HUBBELL	VIPER SERIES										
S301	30' ROUND TAPERED STEEL SITE POLE AND ONE LIGHTING FIXTURE FOR AREA ILLUMINATION. FIXTURE SHALL BE FINISHED DIE-CAST ALUMINUM HOUSING. FIXTURE AND POLE SHALL HAVE A CUSTOM POWDER COAT FINISH. FIXTURE SHALL BE PROVIDED WITH TYPE T4M DISTRIBUTION.	LITHONIA	RSX1 SERIES	LED WHITE 4000K CRI: 80 RATED LIFE: L86=100,000	QNTY AS REQUIRED	62 (MAX)	277V	--	POLE	--	TYPE IV	--	1. FIXTURE SHALL BE SELECTED DURING SHOP DRAWING REVIEW FROM MANUFACTURER'S FULL LINE OF STANDARD FINISHED 2. SEE BASE DETAIL, SHEET E7.5, FOR ADDITIONAL REQUIREMENTS.
		MCGRAW-EDISON	GALLEON LED SERIES										
		HUBBELL	VIPER SERIES										
S30B	30' ROUND TAPERED STEEL SITE POLE AND TWO (@ 180°) LIGHTING FIXTURE FOR AREA ILLUMINATION. FIXTURE SHALL BE FINISHED DIE-CAST ALUMINUM HOUSING. FIXTURE AND POLE SHALL HAVE A CUSTOM POWDER COAT FINISH. FIXTURE SHALL BE PROVIDED WITH TYPE T4M DISTRIBUTION.	LITHONIA	RSX1 SERIES	LED WHITE 4000K CRI: 80 RATED LIFE: L86=100,000	QNTY AS REQUIRED	148 (MAX)	277V	--	POLE	--	TYPE IV	--	1. FIXTURE SHALL BE SELECTED DURING SHOP DRAWING REVIEW FROM MANUFACTURER'S FULL LINE OF STANDARD FINISHED 2. SEE BASE DETAIL, SHEET E7.5, FOR ADDITIONAL REQUIREMENTS.
		MCGRAW-EDISON	GALLEON LED SERIES										
		HUBBELL	VIPER SERIES										

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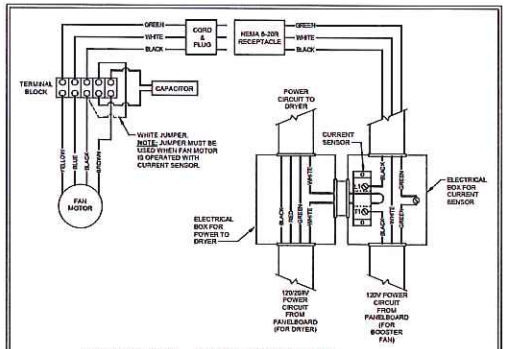
Sheet title:
LIGHTING FIXTURE SCHEDULE(CONTINUED)

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
E1.3



WIRING DETAIL - DRYER BOOSTER FAN

NO SCALE

[NOTE: THIS DETAIL IS BASED ON CFM CONTINUEAL FAN DRYER BOOSTER WIT INCURRENT SENSOR. THE CONTRACTOR SHALL INSTALL THE BOOSTER FAN AND REQUIRED POWER AND CONTROL INTERCONNECTION CIRCUITS PER THE APPROVED SUBMITTALS FOR THE ACTUAL BOOSTER FAN SYSTEM BEING PROVIDED ON THIS PROJECT.]

LCP Name: LIGHTING CONTROL PANEL "BLCP1"
Location: 1ST FLOOR ELEC ROOM 123
Surface/Flush: SURFACE MOUNT
Power Circuit: (SEE 1ST & 2ND FLR LTG PLAN - AREA A, SHEETS E4.1a, E4.1b & E4.2a, E4.2b)

Relay #	Circuit	Description	LV Switch/Sensor	Channel
1	NOTE 1	1ST FLR - ZONE "A"	Sensor	--
2	NOTE 1	1ST FLR - ZONE "B"	Sensor	--
3	NOTE 1	1ST FLR - ZONE "C"	Sensor	--
4	NOTE 1	1ST FLR - ZONE "D"	Sensor	--
5	NOTE 1	1ST FLR - ZONE "E"	Sensor	--
6	NOTE 1	1ST FLR - ZONE "Z"	Sensor	--
7	NOTE 2	1ST FLR - ZONE "E"	Sensor	--
8	NOTE 2	1ST FLR - ZONE "F"	Sensor	--
9	NOTES 2,4	1ST FLR - ZONE "G"	Sensor	--
10	NOTE 2	1ST FLR - ZONE "S"	Sensor	--
11	NOTE 2	1ST FLR - ZONE "T"	Sensor	--
12	NOTE 3	2ND FLR - ZONE "M"	Sensor	--
13	NOTE 3	2ND FLR - ZONE "J"	Sensor	--
14	NOTE 3	2ND FLR - ZONE "K"	Sensor	--
15	NOTE 3	2ND FLR - ZONE "T"	Sensor	--
16	NOTE 3	2ND FLR - ZONE "Z"	Sensor	--

NOTES:
1. SEE 1ST FLOOR LIGHTING PLAN - AREA A, SHEET E4.1a, FOR BRANCH CIRCUIT NUMBER.
2. SEE 1ST FLOOR LIGHTING PLAN - AREA B, SHEET E4.1b, FOR BRANCH CIRCUIT NUMBER.
3. SEE 2ND FLOOR LIGHTING PLAN - AREA A, SHEET E4.2a, FOR BRANCH CIRCUIT NUMBER.
4. SEE 2ND FLOOR LIGHTING PLAN - AREA B, SHEET E4.2b, FOR BRANCH CIRCUIT NUMBER.

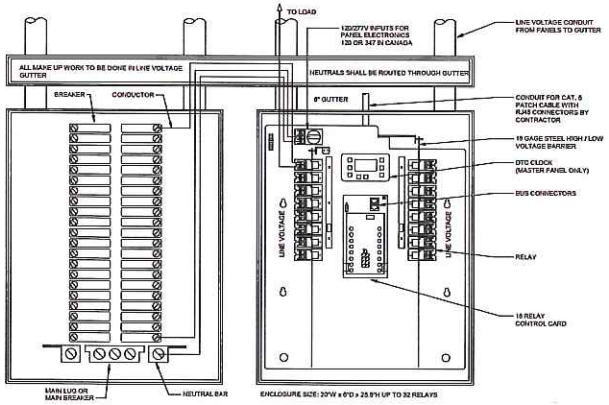
LCP Name: BUILDING SITE LIGHTING CONTROL PANEL "SBLCP1"
Location: 1ST FLOOR ELEC ROOM 123
Surface/Flush: SURFACE MOUNT
Power Circuit: (SEE ELECTRICAL SITE PLANS, SHEETS E7.1)

Relay #	Circuit	Description	LV Switch/Sensor	Channel
1	NOTE 1	FLAG POLE LTG	Sensor	--
2	NOTE 1	POLE LTG. WEST LOT	Sensor	--
3	NOTE 1	POLE LTG. NORTH	Sensor	--
4	NOTE 1	CANOPY LTG.	Sensor	--
5	NOTE 1	BOLLARD	Sensor	--
6		SPARE	Sensor	--
7		SPARE	Sensor	--
8		SPARE	Sensor	--
9		SPARE	Sensor	--
10		SPARE	Sensor	--
11		SPARE	Sensor	--
12		SPARE	Sensor	--
13		SPARE	Sensor	--
14		SPARE	Sensor	--
15		SPARE	Sensor	--
16		SPARE	Sensor	--

NOTES:
1. SEE ELECTRICAL SITE PLAN, SHEET E7.1, FOR BRANCH CIRCUIT NUMBER.

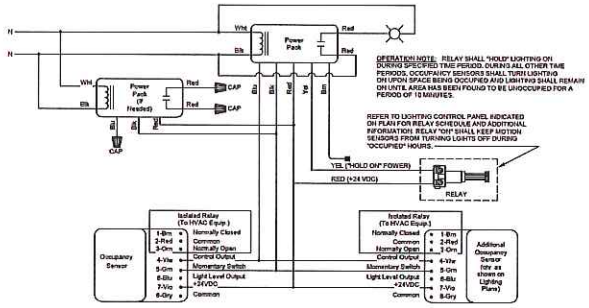
BREAKER PANEL
PANEL DETAIL

GR 2400 SERIES RELAY PANEL
PANEL DETAIL



LIGHTING CONTROL PANEL (BLDG. INTERIOR LIGHTING CONTROL)

NO SCALE

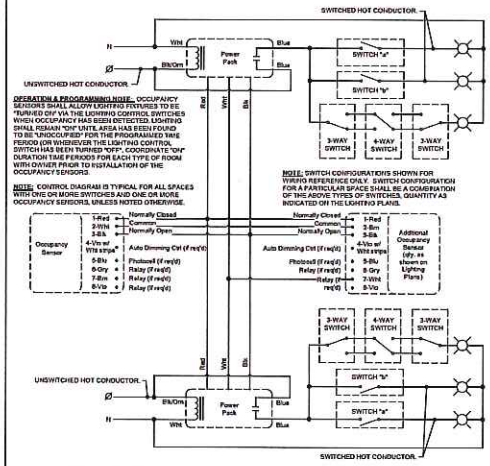


OPERATION NOTE: RELAY SHALL "HOLD" LIGHTING ON DURING SPECIFIED TIME PERIOD. DURING ALL OTHER TIME PERIODS, OCCUPANCY SENSORS SHALL TURN LIGHTING ON UPON SPACE BEING OCCUPIED AND LIGHTING SHALL REMAIN ON UNTIL AREA HAS BEEN FOUND TO BE UNOCCUPIED FOR A PERIOD OF 15 MINUTES.

REFER TO LIGHTING CONTROL PANEL INDICATED ON PLAN FOR RELAY SCHEDULE AND ADDITIONAL INFORMATION. RELAY "ON" SHALL KEEP MOTION SENSORS FROM TURNING LIGHTS OFF DURING "OCCUPIED" HOURS.

TYPICAL LIGHTING CONTROL DIAGRAM - CORRIDORS & OPEN AREAS

NO SCALE



OPERATION & PROGRAMMING NOTE: OCCUPANCY SENSORS SHALL ALLOW LIGHTING FIXTURES TO BE "TURNED ON" VIA THE LIGHTING CONTROL SWITCHES WHEN OCCUPANCY HAS BEEN DETECTED. LIGHTING SHALL REMAIN "ON" UNTIL AREA HAS BEEN FOUND TO BE "UNOCCUPIED" FOR THE PROGRAMMED TIME PERIOD (OR WHENEVER THE LIGHTING CONTROL SWITCH HAS BEEN TURNED "OFF"). COORDINATE "ON" DURATION TIME PERIODS FOR EACH TYPE OF ROOM WITH OWNER PRIOR TO INSTALLATION OF THE OCCUPANCY SENSORS.

NOTE: CONTROL DIAGRAM IS TYPICAL FOR ALL SPACES WITH ONE OR MORE SWITCHES AND ONE OR MORE OCCUPANCY SENSORS, UNLESS NOTED OTHERWISE.

NOTE: SWITCH CONFIGURATIONS SHOWN FOR WIRING REFERENCE ONLY. SWITCH CONFIGURATION FOR A PARTICULAR SPACE SHALL BE A COMBINATION OF THE ABOVE TYPES OF SWITCHES, QUANTITY AS INDICATED ON THE LIGHTING PLANS.

TYPICAL MULTI-CONTROL LIGHTING CONTROL DIAGRAM

NO SCALE

GENERAL LIGHTING CONTROL NOTES:

A. OCCUPANCY SENSOR AND INTERIOR LIGHTING CONTROL PANEL DESIGNS ARE BASED ON PRODUCTS BY LCAD LIGHTING CONTROLS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WIRING AND DESIGN CHANGES REQUIRED TO USE PRODUCTS BY ANOTHER MANUFACTURER. APPROVED EQUALS INCLUDE: COOPER CONTROLS, LVS, AND HUBBELL CONTROL SOLUTIONS.

B. CEILING MOUNT SENSOR LOCATIONS ARE BASED ON SENSOR SWITCH CM PDT8 SERIES OCCUPANCY SENSOR.

C. INTERIOR LIGHTING CONTROL PANELS ARE BASED ON LCAD GR2400 RELAY PANEL.

D. DAYLIGHT SENSORS ARE BASED ON SENSOR SWITCH CM PC-ADC SERIES SENSORS.

E. IT IS NOT THE INTENT OF THIS DRAWING TO SHOW, NOR DOES THIS DRAWING SHOW EVERY CONFIGURATION OF LIGHTING CONTROL DIAGRAM REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL LIGHTING CONTROL PER THE LIGHTING CONTROL SYSTEM MANUFACTURER'S REQUIREMENTS

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Revisions:

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Sheet title:

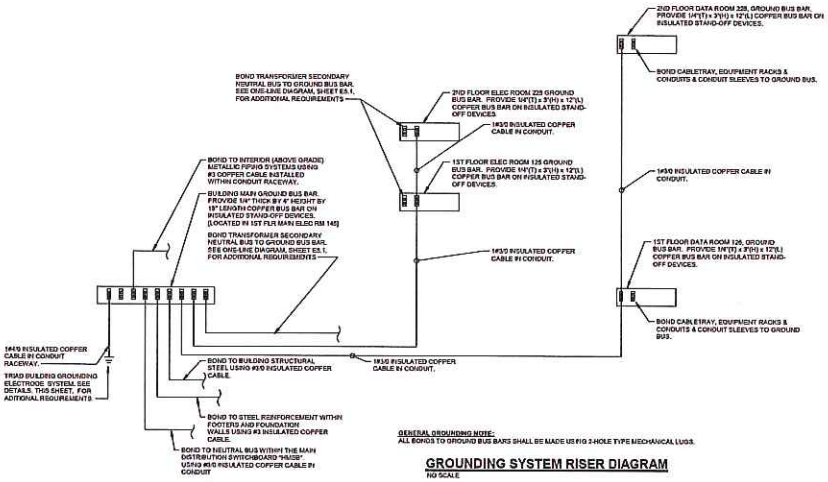
ELECTRICAL DETAILS

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

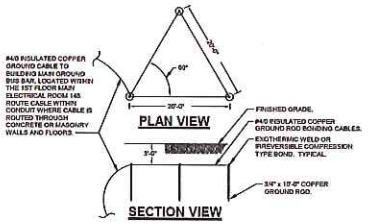
E1.4



GENERAL GROUNDING NOTE:
ALL BONDS TO GROUND BUS BARS SHALL BE MADE US FIG 2-HOLE TYPE MECHANICAL LUGS.

GROUNDING SYSTEM RISER DIAGRAM

NO SCALE



GROUNDING ELECTRODE SYSTEM DETAIL

NO SCALE

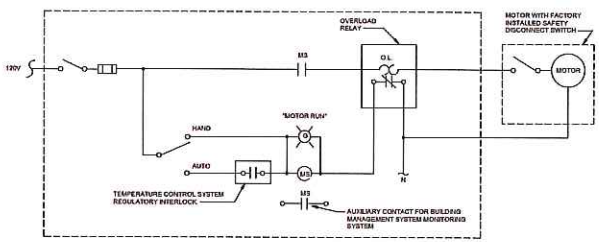
MOTOR CONTROL SCHEDULE

MOTOR NAME	MOTOR USE	MOTOR LOCATION	MOTOR HP	VOLT	PH	MOTOR CONTROLLER							REMARKS
						TYPE	LOCATION	STR SIZE	SW. SIZE	FUSE	AUXILIARY CONTROL DEVICES		
											DEVICE	LOCATION	
BP-1	BOOSTER PUMP	MECH. ROOM 148	1.5	460	3	A	MAIN ELEC ROOM	0	30A/I	NOTE 1	H.A. SWITCH, PILOT LIGHT	STARTER COVER	SEE CONTROL WIRING DIAGRAM, THIS SHEET
CP-1	CIRCULATING PUMP	MECH. ROOM 148	–	120	1	A	MECH. ROOM 148	0	30A/I	NOTE 1	H.A. SWITCH, PILOT LIGHT	STARTER COVER	SEE CONTROL WIRING DIAGRAM, THIS SHEET
CP-2	CIRCULATING PUMP	MECH. ROOM 148	–	120	1	A	MECH. ROOM 148	0	30A/I	NOTE 1	H.A. SWITCH, PILOT LIGHT	STARTER COVER	SEE CONTROL WIRING DIAGRAM, THIS SHEET
CP-3	CIRCULATING PUMP	MECH. ROOM 148	–	120	1	A	MECH. ROOM 148	0	30A/I	NOTE 1	H.A. SWITCH, PILOT LIGHT	STARTER COVER	SEE CONTROL WIRING DIAGRAM, THIS SHEET

MOTOR CONTROLLER LEGEND

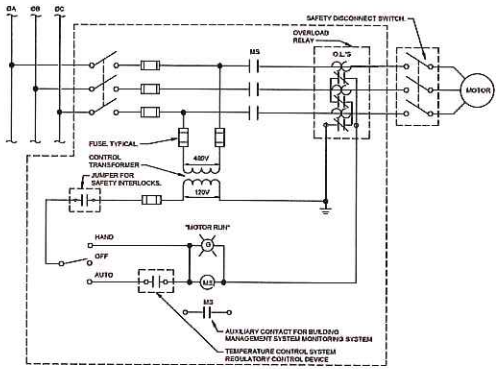
TYPE	DESCRIPTION
A	INDIVIDUAL, COMBINATION, FULL-VOLTAGE, NON-REVERSING MAGNETIC MOTOR CONTROLLER IN NEMA 1 ENCLOSURE.
B	INDIVIDUAL, COMBINATION, FULL-VOLTAGE, NON-REVERSING MAGNETIC MOTOR CONTROLLER IN NEMA 3R ENCLOSURE.

NOTES:
1. PROVIDE FUSE(S) AS REQUIRED FOR PROTECTION OF MOTOR LOAD USING RK3 TYPE FUSES.



CONTROL WIRING DIAGRAM FOR: CIRCULATING PUMPS "CP-1", "CP-2", "CP-3"

NO SCALE



MOTOR CONTROL WIRING DIAGRAM FOR: BOOSTER PUMP "BP-1"

NO SCALE

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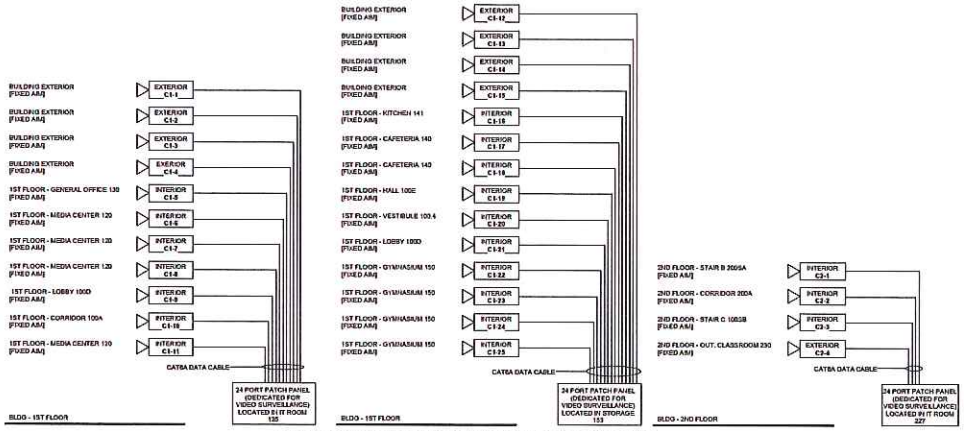
Sheet title:
ELECTRICAL DETAILS(CONTINUED)

Architect's Project No: 1807-244
Date: October, 2019

Drawing No:
E1.5



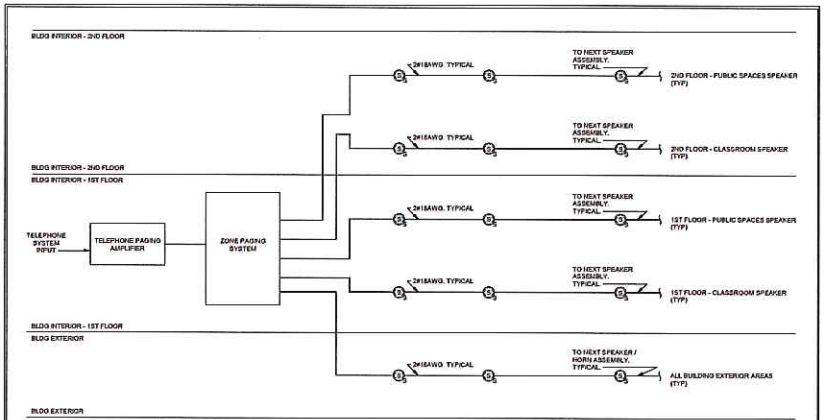
VIDEO SURVEILLANCE SYSTEM SIMPLE WIRING DIAGRAMS

NO SCALE

CAMERA SCHEDULE (VIDEO SURVEILLANCE SYSTEM)

CONFIRM LENS REQUIREMENTS PRIOR TO PURCHASE

CAM #	CAMERA LOCATION	IT ROOM (FOR NETWORK FEED)	CAMERA & HOUSING DESCRIPTION	AIMING & VIEWING REQUIREMENTS
C1-1	BUILDING EXTERIOR	IT ROOM 125	EXTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3104, 3108, AND EXITING ELEVATOR.
C1-2	BUILDING EXTERIOR	IT ROOM 125	EXTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3129, AND EXITING ELEVATOR.
C1-3	BUILDING EXTERIOR	IT ROOM 125	EXTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3104, 3108, AND 3112.
C1-4	BUILDING EXTERIOR	IT ROOM 125	EXTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3099, 3132, AND 3177.
C1-5	1ST FLOOR, GENERAL OFFICE 130	IT ROOM 125	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3059.
C1-6	1ST FLOOR, MEDIA CENTER 120	IT ROOM 125	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3071 AND 3097.
C1-7	1ST FLOOR, MEDIA CENTER 120	IT ROOM 125	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3071 AND 3097.
C1-8	1ST FLOOR, MEDIA CENTER 120	IT ROOM 125	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3138 AND PASSAGE 3103.
C1-9	1ST FLOOR, LOBBY 100D	IT ROOM 125	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3124.
C1-10	1ST FLOOR, CORRIDOR 100A	IT ROOM 125	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C1-11	1ST FLOOR, MEDIA CENTER 120	IT ROOM 125	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3071 AND 3097.
C1-12	BUILDING EXTERIOR	STORAGE 153	EXTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3071 AND 3097.
C1-13	BUILDING EXTERIOR	STORAGE 153	EXTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3138 AND PASSAGE 3103.
C1-14	BUILDING EXTERIOR	STORAGE 153	EXTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3124.
C1-15	BUILDING EXTERIOR	STORAGE 153	EXTERIOR FIXED AIM CAMERA WITH DOMED WALLL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C1-16	1ST FLOOR, KITCHEN 141	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C1-17	1ST FLOOR, CAFETERIA 140	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3138 AND PASSAGE 3103.
C1-18	1ST FLOOR, CAFETERIA 140	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3124.
C1-19	1ST FLOOR, HALL 100E	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C1-20	1ST FLOOR, VESTIBULE 100.4	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3071 AND 3097.
C1-21	1ST FLOOR, LOBBY 100D	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDORS 3071 AND 3097.
C1-22	1ST FLOOR, GYMNASIUM 150	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3138 AND PASSAGE 3103.
C1-23	1ST FLOOR, GYMNASIUM 150	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3124.
C1-24	1ST FLOOR, GYMNASIUM 150	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C1-25	1ST FLOOR, GYMNASIUM 150	STORAGE 153	INTERIOR FIXED AIM CAMERA WITH DOMED WALL MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C2-1	2ND FLOOR, STAIR B 200SA	IT ROOM 227	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS WITHIN CORRIDOR 3124.
C2-2	2ND FLOOR, CORRIDOR 200A	IT ROOM 227	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C2-3	2ND FLOOR, STAIR C 100SB	IT ROOM 227	INTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.
C2-4	2ND FLOOR, OUT. CLASSROOM 230	IT ROOM 227	EXTERIOR FIXED AIM CAMERA WITH DOMED CEILING MOUNT HOUSING	MAXIMUM VIEW OF PERSONS EXITING ELEVATOR.



PUBLIC ADDRESS AND MASS NOTIFICATION (OVERHEAD PAGING) SIMPLE DIAGRAM

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Revisions:

#	Description	Date

Designed By:	Drawn By:	Checked By:
CWW	SDB	AMB

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Sheet title:

ELECTRICAL DETAILS(CONTINUED)

Architect's Project No: 1807-244

Date: October, 2019

Drawing No:

E1.6