# Development Services

## From Concept to Construction

Phone: 503-823-7300 Email: bds@portlandoregon.gov 1900 SW 4th Ave, Portland, OR 97201
More Contact Info (http://www.portlandoregon.gov//bds/article/519984)

## APPEAL SUMMARY

**Status:** Decision Rendered - Held over from ID 15953, item #2 (10/1//17), for additional information

| | |
|---|---|
| **Appeal ID:** 16057 | **Project Address:** 5 SE MLK Jr Blvd |
| **Hearing Date:** 11/1/17 | **Appellant Name:** Joseph Dietz |
| **Case No.:** B-008 | **Appellant Phone:** 312-768-6236 |
| **Appeal Type:** Building | **Plans Examiner/Inspector:** Thomas Ng, Jerry Engelhardt |
| **Project Type:** commercial | **Stories:** 17 **Occupancy:** S-2, M, B, R-2 **Construction Type:** 1-A |
| **Building/Business Name:** 5 MLK | **Fire Sprinklers:** Yes - Throughout |
| **Appeal Involves:** Reconsideration of appeal | **LUR or Permit Application No.:** |
| **Plan Submitted Option:** pdf [File 1] | **Proposed use:** Office, Residential, Retail |

## APPEAL INFORMATION SHEET

### Appeal item 1

| | |
|---|---|
| **Code Section** | Section 1812 Radon Control Methods R-2 and R-3 Occupancies |
| **Requires** | Radon Control Methods, R-2 and R-3 Occupancies<br><br>Section 1811.3.2 – ASD SSESD location. One SSESD shall be installed every 4,000 square feet or portion thereof of building subslab area served by an ASD system. Exception: One SSESD shall be sintalled for every 15,000 square feet or portion thereof of building subslab area served by an ASD system utilizing a gas conveyance piping system complying with Section 1811.3.4<br>Section 1811.3.3 – SSESD blower sizing. Each SSESD shall be equipped with a blower having a minimum capacity as follows: 1. 200 cubic feet per minute (CFM) for SSESDs connected to a gas conveyance piping system complying with Section 1811.3.4. 2. 100 CFM for all other ASD systems.<br>Section 1812.3.7 – sub floor soil exhaust system ducts (SSESD). SSESDs shall be provided in accordance with this section and shall run continuous from below the soil-gas retarder to the termination point described in Section 1812.3.7.5.<br>Section 1812.3.3 – Soil-gas-retarder. A minimum of 6mill polyethylene or equivalent flexible sheeting material shall be placed on top of the gas-permeable layer prior to casting the slab or placing the floor assembly to serve as a soil-gas retarder by bridging any cracks that develop in the slab or floor assembly and to prevent concrete from entering the void spaces in the aggregated base material.<br>Section 1812.3.6 – Passive sub-slab depressurization system (basement or slab on grade). In basement or slab-on-grade buildings, sub-slab soil exhaust system ducts complying with Section 1812.3.7 shall be installed during construction.<br>Section 1812.3.7 – sub-slab soil exhaust system ducts (SSESD). SSESD's shall be provide in |

| | |
|---|---|
| | accordance with this section shall run continuous from below the soil-gas-retarder to the termination point described in section 1812.3.7.5 |
| **Proposed Design** | The SE 5 MLK building is a high-rise, fully sprinklered mixed-use building with a retail on the ground floor, office on levels 2 through 6, and R-2 occupancy residential units on floors 7 through 17.<br><br>There are no residential or living spaces in the basement (three levels of underground parking) or ground levels of the building, where slab-on-grade conditions occur. All spaces in the basement and ground levels (between the ground and the residential spaces), including mechanical spaces, the parking garages, retail and lobbies are mechanically ventilated and exhausted per code requirements for air exchange and/or moisture control. |
| **Reason for alternative** | We propose that the alternate design with the above-listed measures, including the code-compliant mechanically ventilated/exhausted spaces that separate all the residential/livings areas from the ground floor, exceeds the Radon Control requirements listed in Section 1812. We are proposing that the building will therefore not have the sub-slab depressurization system as described in section 1812.<br>M003 SCHEDULES<br><br>Fan schedule with sizing for GF LL1-1 & LL1-2<br>Note 12 indicating that the fan is to operate continuously, per Oregon Mechanical Code for garage ventilation (section 404).<br>M005 SCHEDULES<br><br>Mechanical ventilation tables, including Level 1 (to be served by dedicated supply fans from outside air intake louvers) and Levels 2 through 6 (served by dedicated outside air unit DOAS L1-1)<br>M100 LOWER LEVEL 03 PLAN – MECHANICAL<br>M101 LOWER LEVEL 02 PLAN – MECHANICAL<br>M102 LOWER LEVEL 01 PLAN – MECHANICAL<br><br>CO2 and NO2 sensors indicated, with sheet note 4 indicating garage ventilation operation<br>Ventilation supply at gridline 7<br>Exhaust intake at gridline 1<br>M103 – LEVEL 01 PLAN – MECHANICAL<br><br>Level 1 is to be provided outside air ventilation via perimeter intake louvers, with dedicated supply fans, electric duct heaters and filters. |

## APPEAL DECISION

**Omission of radon ventilation: Granted as proposed.**

The Administrative Appeal Board finds that the information submitted by the appellant demonstrates that the approved modifications or alternate methods are consistent with the intent of the code; do not lessen health, safety, accessibility, life, fire safety or structural requirements; and that special conditions unique to this project make strict application of those code sections impractical.

Pursuant to City Code Chapter 24.10, you may appeal this decision to the Building Code Board of Appeal within 180 calendar days of the date this decision is published. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portlandoregon.gov/bds/appealsinfo, call (503) 823-7300 or come in to the Development Services Center.

# FAN SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | LOCATION | AREA SERVED | DISCH | TYPE | DRIVE | AIR FLOW (CFM) | SP (IN WG) | FAN RPM | MTR RPM | ELECTRICAL | | | | | | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | BHP | HP | VOLTS | PH | VFD (Y/N) | BACKUP POWER (Y/N) | | | |
| DEF | R-1 | GREENHECK | CUBE-240HP | ROOF | EAST RESIDENTIAL UNITS DRYER EXHAUST | UPBLAST | CENTRIFUGAL | BELT | 6600 | 1 | 1175 | 1725 | 2.50 | 3 | 460 | 3 | Yes | Yes | 43x34 | 184 | 1,2,3,4,6,8,11 |
| DEF | R-2 | GREENHECK | CUBE-240HP | ROOF | WEST RESIDENTIAL UNITS DRYER EXHAUST | UPBLAST | CENTRIFUGAL | BELT | 6600 | 1 | 1175 | 1725 | 2.50 | 3 | 460 | 3 | Yes | Yes | 43x34 | 184 | 1,2,3,4,6,8,11 |
| EF | L6-1 | GREENHECK | SQ | L6 | DOG ROOM | HORIZ | INLINE | DIRECT | 300 | 0.5 | 0 | 0 | 0.00 | | 0 | 0 | No | No | | | |
| EF | R-1 | GREENHECK | CW-121-VG | ROOF | TRASH CHUTE | HORIZ | CENTRIFUGAL SIDEWALL | DIRECT | 1800 | 0.5 | 1713 | 1725 | 0.40 | 1/2 | 115 | 1 | Yes | No | 25x28.25 | 57 | |
| EF | R-2 | GREENHECK | CUE-060-VG | ROOF | LEVEL 17 AMENITY TOILETS | UPBLAST | CENTRIFUGAL | BELT | 200 | 0.1 | 1725 | 1725 | 0.03 | 1/10 | 115 | 1 | Yes | No | 18.5x13.5 | 26 | |
| EF | R-4 | GREENHECK | CUE-060-VG | PENT. ROOF | POOL FILTRATION ROOM EXHAUST | | | | 0 | | 0 | 0 | 0.00 | | 115 | 0 | Yes | No | | | |
| EPF | L6-1 | GREENHECK | TBI-FS-3H42 | L6 | NORTH ELEVATOR PRESSURIZATION | HORIZ | MEDIUM PRESSURE AXIAL | BELT | 21000 | 1 | 1207 | 1725 | 6.92 | 7.5 | 460 | 3 | Yes | Yes | 38X30 | 550 | 1,2,3,4,8,10,11 |
| EPF | R-1 | GREENHECK | TBI-FS-5H43 | PENT. ROOF | SOUTH ELEVATOR PRESSURIZATION | DOWN | MEDIUM PRESSURE AXIAL | BELT | 52000 | 2 | 1250 | 1725 | 44.71 | 50 | 460 | 3 | Yes | Yes | 64x100 | 2031 | 1,2,3,4,8,10,11 |
| GF | LL1-1 | GREENHECK | 40-APH | LL1 | GARAGE LL1-LL3 (SUPPLY) | HORIZ | PLENUM | DIRECT | 46155 | 0.75 | 1170 | 1170 | 24.40 | 25 | 460 | 3 | Yes | No | 51x56x51 | 1031 | 1,2,3,4,8,11,12 |
| GF | LL1-2 | GREENHECK | 40-APH | LL1 | GARAGE LL1-LL3 (EXHAUST) | HORIZ | PLENUM | DIRECT | 46155 | 0.75 | 1170 | 1170 | 24.40 | 25 | 460 | 3 | Yes | No | 51x56x51 | 1031 | 1,2,3,4,8,11,12 |
| RF | R-1 | GREENHECK | CSW-40-BI | R-1 | ELEVATOR RELIEF | UPBLAST | CENTRIFUGAL | BELT | 16500 | 1 | 725 | 1170 | 4.86 | 6 | 460 | 3 | Yes | Yes | 52x60x70 | 1350 | 1,2,3,4,8,10 |
| SPF | R-1 | GREENHECK | TBI-FS-4H30 | ROOF | STAIR PRESSURIZATION (EAST) | HORIZ | MEDIUM PRESSURE AXIAL | BELT | 12000 | 1 | 1616 | 1725 | 5.85 | 7.5 | 460 | 3 | Yes | Yes | 28x30x50 | 354 | 1,2,3,4,8,10,11 |
| SPF | R-2 | GREENHECK | TBI-FS-4H24 | ROOF | STAIR PRESSURIZATION (WEST) | HORIZ | MEDIUM PRESSURE AXIAL | BELT | 10000 | 1.3 | 2348 | 1725 | 7.23 | 7.5 | 460 | 3 | Yes | Yes | 24X25X34 | 354 | 1,2,3,4,8,10,11 |

NOTES
1. VARIABLE FREQUENCY DRIVE (VFD) PROVIDED BY MECHANICAL. WIRED BY ELECTRICAL.
2. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
3. PROVIDE NEMA PREMIUM EFFICIENCY MOTOR.
4. PROVIDE NON-OVERLOADING MOTOR.
5. PROVIDE ECM (ELECTRONICALLY COMMUTATED MOTOR) WITH FACTORY MOUNTED POTENTIOMETER FOR SPEED ADJUSTMENT.
6. PROVIDE VIBRATION ISOLATION AND SEISMIC RESTRAINT PER SPECIFICATIONS.
7. PROVIDE BACKDRAFT DAMPER.
8. PROVIDE MOTORIZED DAMPER (WITH END SWITCH), APPLICABLE FOR FANS GREATER THAN 300 CFM.
9. PROVIDE DRAIN CONNECTION, GREASE TRAP, CLEAN OUT PORT, AND NON-STICK WHEEL FOR KITCHEN GREASE EXHAUST APPLICATION.
10. PROVIDE WEATHERHOOD.
11. LIFE SAFETY PRESSURIZATION AND SMOKE EXHAUST SYSTEMS TO BE CONTROLLED AND MONITORED BY FIRE ALARM SYSTEM.
12. FAN SIZED PER OREGON MECHANICAL CODE SECTION 404 ENCLOSED PARKING GARAGES. FAN TO OPERATE CONTINUOUSLY AT MINIMUM VENTILATION PER OREGON MECHANICAL CODE SECTION 404.2, WITH COMPLIANCE TO ENERGY CODE. FAN TO INCREASE TO MAXIMUM VENTILATION, WHERE THE SYSTEM IS ARRANGED TO OPERATE AUTOMATICALLY UPON DETECTION OF CARBON MONIXIDE AND NITROGEN DIOXIDE AT EXCEEDING CODE CONCENTRATION LEVELS BY APPROVED DETECTION DEVICES.

# FAN SCHEDULE - TYPICAL RESIDENT UNITS

| TAG | # | MANUFACTURER | MODEL NUMBER | LOCATION | AREA SERVED | DISCH | TYPE | DRIVE | AIR FLOW (CFM) | SP (IN WG) | FAN RPM | MTR RPM | ELECTRICAL | | | | | | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | BHP | HP | VOLTS | PH | VFD (Y/N) | BACKUP POWER (Y/N) | | | |
| TEF | | PANASONIC | FV-05-11VKS1 | UNITS, SEE PLANS | UNIT RESTROOM (SINGLE) | CEILING | CENTRIFUGAL | DIRECT | 30/80 | 0.1 | 980 | 980 | 0.00 | 1/50 | 120 | 1 | No | No | 10.25x10.25x7-3/8 | 9.3 | 1,2,3,4,6 |
| TEF | | PANASONIC | FV-10NLF1 | UNITS, SEE PLANS | UNIT RESTROOM (MULTIPLE) | HORIZ | INLINE | DIRECT | 100 | 0.3 | 1590 | 1590 | 0.00 | 1/25 | 120 | 1 | No | No | 14x9.5x8 | 17 | 1,2,3,4,5,7 |

NOTES
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. PROVIDE VIBRATION ISOLATION AND SEISMIC RESTRAINT PER SPECIFICATIONS.
3. SEE SOUND ATA SPECIFICATION FOR MAXIMUM SOUND LEVELS.
4. PROVIDE SUPPLIED BACKDRAFT DAMPER.
5. PROVIDE ACCESS DOOR FOR SERVICE.
6. FAN TO BE CONTROLLED BY BUILT-IN HUMIDISTAT AND OCCUPANCY SENSOR.
7. FAN TO BE CONTROLLED BY LOCAL OCCUPANCY SENSOR(S). COORDINATE WITH ELECTRICAL SUBCONTRACTOR.

# WATER-TO-WATER HEAT EXCHANGER SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | LOCATION | TYPE (PLATE&FRAME) | QUANTITY (PLATES) | AREA (SQ FT) | CAPACITY (MBH) | HOT SIDE | | | | | COLD SIDE | | | | | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | FLOW (GPM) | P.D. (FT WG) | EWT (°F) | LWT (°F) | PASSES | FLOW (GPM) | P.D. (FT WG) | EWT (°F) | LWT (°F) | PASSES | | | |
| HX | 1 | SPXFLOW | APV | MECH PENTHOUSE | L039 ENERGYSAVER | 106 | 444 | 5.2 | 850 | 9.91 | 97.4 | 85 | 1 | 700 | 7.09 | 76 | 91 | 1 | 63X23X56 | 2163 | 1,2,3 |
| HX | 2 | SPXFLOW | APV | MECH PENTHOUSE | L039 ENERGYSAVER | 106 | 444 | 5.2 | 850 | 9.91 | 97.4 | 85 | 1 | 700 | 7.09 | 76 | 91 | 1 | 63X23X56 | 2163 | 1,2,3 |

NOTES
1. PROVIDE UNIT RATED FOR ASME WORKING PRESSURE OF 150 PSIG.
2. PROVIDE SEISMIC STAND DESIGNED BY A LICENSED STRUCTURAL ENGINEER.
3. PERFORMANCE BASED ON COLD-SIDE WATER.

# COOLING TOWER SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | TYPE | NOM. CAP. (MBH) | WATER | | | | | | ELECTRICAL | | | | | | UNIT SIZE (L'xW'xH') | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | FLOW (GPM) | AMB WB (°F) | LWT (°F) | EWT (°F) | P.D.+LIFT (FT WG) | MAKEUP WATER (GPM) | FAN (HP) | VOLTS | PH | FLA (A) | VFD (Y/N) | EMERG POWER (Y/N) | SUMP HTR (KW) | | | |
| CT | 1 | MARLEY | NC8403 | INDUCED DRAFT | 10500 | 1400 | 69 | 76 | 91 | 12 | 20 | (2) 20 | 460 | 3 | 0 A | Yes | No | (2) 15 | 17x18x12 | 14220 | 1,2,3,4,5,6,7,8,9,10,11 |

NOTES
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. VFD TO BE REMOTELY MOUNTED INDOORS AS INDICATED ON PLANS. ELECTRICAL TO PROVIDE SEPARATE DISCONNECT SWITCH AT TOWER.
3. PROVIDE MOTOR SHAFT GROUNDING SYSTEM FOR MOTOR CONTROLLED BY VFD.
4. PROVIDE TEAO NEMA PREMIUM EFFICIENCY, INVERTER READY MOTOR.
5. PROVIDE VIBRATION SHUT-OFF SWITCH WITH SEPARATE 120V ELECTRICAL CONNECTION. COORDINATE POWER AND WIRING WITH ELECTRICAL.
6. PROVIDE SEISMICALLY RATED VIBRATION ISOLATORS. ATTACH TO CONCRETE STRUCTURE. COORDINATE WITH STRUCTURAL DESIGN.
7. COOLING TOWER PERFORMANCE SHALL BE CTI CERTIFIED.
8. PROVIDE INDIVIDUAL CELL, SUMP, FAN CONTROLS TO ALLOW FULL INDEPENDENT OPERATION OF EACH CELL.
9. PROVIDE FACTORY MUTUAL APPROVED UNIT.
10. PROVIDE MOTOR ACCESS LADDER AND HANDRAIL.
11. PROVIDE INLET SCREENS AND EXTENDED LUBRICATION LINES.

# NATURAL GAS HEATING WATER BOILER SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | LOCATION | INPUT CAP (MBH) | OUTPUT CAP (MBH) | MIN EFF (AFUE%) | EWT (°F) | LWT (°F) | FLOW (GPM) | WATER P.D. (FT WG) | PRESS RATING (PSIG) | FLUE SIZE (IN) | MAX NOX (PPM) | ELECTRICAL | | | EMERG POWER (Y/N) | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | VOLTS | PH | MCA | | | | |
| B | 1 | AERCO | BMK 2000 | MECH PENTHOUSE | 2000 | 1900 | 94 | 70 | 110 | 100 | 10 | 80 | 8" | 16 | 120 | 1 | 16 | No | 44x28x78 | 1760 | 1,2,3,4,5,6,7,8,9 |
| B | 2 | AERCO | BMK 2000 | MECH PENTHOUSE | 2000 | 1900 | 94 | 70 | 110 | 100 | 10 | 80 | 8" | 16 | 120 | 1 | 16 | No | 44x28x78 | 1760 | 1,2,3,4,5,6,7,8,9 |

NOTES
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. PROVIDE NATURAL GAS FUEL SUPPLY AT 14 IN. WC.
3. INSTALL ON HOUSEKEEPING PAD. COORDINATE WITH STRUCTURAL ENGINEER.
4. PROVIDE THERMOMETER AND PRESSURE GAUSGE AT HOT WATER INLET AND OUTLET.
5. PROVIDE ASME SAFTEY RELIEF VALVE AT 125 PSI.
6. PROVIDE WATER FLOW SWITCH, LOW WATER CUTOOF, AND MANUAL RESET HIGH LIMIT SAFETY SWITCHES.
7. PROVIDE LOW PRESSURE GAS SWITCH, AUXILIARY SAFTEY SHUTOFF GAS VALVE, MAIN MANUAL SHUTOFF VALVE, GAS PRESSURE REGULATORS, SPARK IGNITION ASSEMBLY AND AUTOMATIC GAS VALVE OPERATOR.
8. BOILER PROVIDED WITH MODULATING BURNER CONTROL.
9. PROVIDE MANUFACTURERS CONDENSATE NEUTRALIZTION KIT FOR BOILER CONDENSTAE.

# PUMP SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | IMPELLER SIZE (IN) | INLET/OUTLET CONNECTION SIZE (IN) | SYSTEM SERVED (TAG) | TYPE | FLOW (GPM) | HEAD (FT WG) | MIN. EFF. (%) | NPSH (FT) | RPM | ELECTRICAL | | | | | EMERG POWER (Y/N) | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | BHP | HP | VOLTS | PH | VFD | | | |
| TWP | 1 | ARMSTRONG | 4300 IVS | 8 | 4 | CT-1 | INLINE | 700 | 50 | 74 | 13.1 | 1827 | 11.8 | 15 | 460 | 3 | Yes | Yes | 600 | 1-9 |
| TWP | 2 | ARMSTRONG | 4300 IVS | 8 | 4 | CT-1 | INLINE | 700 | 50 | 74 | 13.1 | 1827 | 11.8 | 15 | 460 | 3 | Yes | Yes | 600 | 1-9 |
| TWP | 3 | ARMSTRONG | 4300 IVS | 8 | 4 | CT-1 | INLINE | 700 | 50 | 74 | 13.1 | 1827 | 11.8 | 15 | 460 | 3 | Yes | Yes | 600 | 1-9 |
| HWP | 1 | ARMSTRONG | 4380 | 6 | 2 | B-1,2 | INLINE | 100 | 20 | 54 | 14.9 | 1721 | 0.9 | 1 | 460 | 3 | No | Yes | 212 | 1,2,3,6,7 |
| HWP | 2 | ARMSTRONG | 4380 | 6 | 2 | B-1,2 | INLINE | 100 | 20 | 54 | 14.9 | 1721 | 0.9 | 1 | 460 | 3 | No | Yes | 212 | 1,2,3,6,7 |
| CWP | 1 | ARMSTRONG | 4300 IVS | 12 | 6 | COND. WATER | INLINE | 850 | 90 | 83 | 11.3 | 1823 | 23.2 | 25 | 460 | 3 | Yes | Yes | 930 | 1-9 |
| CWP | 2 | ARMSTRONG | 4300 IVS | 12 | 6 | COND. WATER | INLINE | 850 | 90 | 83 | 11.3 | 1823 | 23.2 | 25 | 460 | 3 | Yes | Yes | 930 | 1-9 |
| CWP | 3 | ARMSTRONG | 4300 IVS | 12 | 6 | COND. WATER | INLINE | 850 | 90 | 83 | 11.3 | 1823 | 23.2 | 25 | 460 | 3 | Yes | Yes | 930 | 1-9 |

NOTES
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. PROVIDE NON-OVERLOADING NEMA PREMIUM EFFICIENCY, INVERTER READY MOTOR.
3. FOR PUMPS LOCATED INDOORS PROVIDE OPEN DRIPPROOF (ODP) MOTORS.
4. PROVIDE VARIABLE FREQUENCY DRIVE (VFD) BY MECHANICAL AND WIRED BY ELECTRICAL.
5. PROVIDE MOTOR SHAFT GROUNDING SYSTEM FOR MOTOR CONTROLLED BY VFD.
6. PROVIDE INLET SUCTION DIFFUSER OR STRAINER. SEE PIPING DESIGN.
7. PROVIDE VIBRATION ISOLATION AND SEISMIC RESTRAINT PER SPECIFICATIONS.
8. PUMPS TO RUN IN PARALLEL.
9. PROVIDE PUMP MOUNTED VFD AND SENSORLESS PUMP CONTROLLER AS BASE BID. SEE SECTION 232123.

# AIR SEPARATOR SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | LOCATION | SYSTEM SERVED | FLOW (GPM) | PRESSURE DROP (FT WG) | CONN. SIZE (IN) | INTEGRAL STRAINER (Y/N) | SIZE DIA x H (IN) | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AS | 1 | SPIROTHERM | VSR 1200 FA | MECH PENTHOUSE | COND. WATER | 1700 | 4 | 8" | N | 24x57 | 1050 | 1,2 |

NOTES
1. PROVIDE SEPARATOR RATED FOR ASME WORKING PRESSURE OF 150 PSIG.
2. PROVIDE WITH AUTOMATIC AIR VENT AND ROUTE TO FLOOR SINK.

# EXPANSION TANK SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | SYSTEM SERVED | TYPE | TANK VOL. (GAL) | ACCEPT. VOL. (GAL) | SYSTEM VOL. (GAL) | FILL PRESS. (PSIG) | OPER. PRESS. (PSIG) | MIN. TEMP. (°F) | MAX. TEMP. (°F) | SYSTEM CONN. (IN) | SIZE DIA x H (IN) | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ET | 1 | WESSELS | NTA-144 | COND. WATER | DIAPHRAM | 45 | 36 | 7370 | 8 | 45 | 60 | 90 | 1" | 20"x38" | 148 | 1,2,3 |

NOTES
1. PROVIDE TANK RATE FOR ASME WORKING PRESSURE OF 125 PSIG.
2. PROVIDE TANK WITH VERTICAL CONFIGURATION.
3. ANCHOR TO HOUSEKEEPING PAD. COORDINATE WITH STRUCTURAL DESIGN.

# DEDICATED OUTSIDE AIR SYSTEM SCHEDULE

| TAG | # | MANUFACTURER | MODEL NUMBER | LOCATION | SUPPLY AIR FAN | | | | | EXHAUST AIR FAN | | | | | PLATE TYPE HEAT EXCHANGER | | | | DX COOLING | | | | | COMPRESSORS | | GAS HEATING | | | ELECTRICAL | | | | | | UNIT SIZE (L"xW"xH") | OPER. WT. (LBS) | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | FLOW (CFM) | ESP (IN WG) | TSP (IN WG) | BHP | HP | FLOW (CFM) | ESP (IN WG) | TSP (IN WG) | BHP | HP | SUMMER | | WINTER | | CAP TOTAL (MBH) | CAP SENS. (MBH) | EAT DB/WB (°F) | LAT DB/WB (°F) | REFRIG | QTY | HP (EA) | INPUT (MBH) | OUTPUT (MBH) | AFUE (%) | EAT (°F) | LAT (°F) | MCA (A) | VOLTS | PH | VFD (Y/N) | EMERG POWER (Y/N) | SINGLE POC (Y/N) | | | |
| | | | | | | | | | | | | | | | OA/EAT (DB/WB °F) | LAT (DB/WB °F) | EAT (DB/WB °F) | LAT (DB/WB °F) | | | | | | | | | | | | | | | | | | | |
| DOAS | L1-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DOAS | R-1 | VALENT | VPRP-210-10F-20I-C-5GC | ROOF | 5775 | 2 | 6.286 | 8 | 10 | 5776 | 1 | 2.37 | 3 | 4 | 92 | 82.2 | 25.2 | 52.1 | 150.1 | 150.1 | 82.2 | 58.4 | R-410A | 2 | | 191 | 153 | 80 | 52.1 | 76.5 | 46 | 460 | 3 | Yes | No | No | 115x67x55 | 4135 | 1-10 |
| DOAS | R-2 | VALENT | VPRP-210-10F-20I-C-5GC | | 0 | | | 0 | | 0 | | | 0 | 0 | | | | | | | | | | 0 | | | | 0 | | 0 | 460 | 0 | Yes | Yes | Yes | | | |

NOTES:
1. COORDINATE WITH ELECTRICAL FOR POWER AND DISCONNECT AS REQUIRED.
2. PROVIDE INVERTER READY NEMA PREMIUM EFFICIENCY MOTORS WITH SHAFT GROUNDING SYSTEM.
3. MOTORS SHALL BE (BELT/DIRECT) DRIVE.
4. PROVIDE 1" SUPPLY AIR PRE-FILTERS, 6" MERV-13 SUPPLY FINAL FILTERS, AND 1" EXHAUST FILTER.
5. PROVIDE FACTORY INSTALLED 115V/1PH GFCI OUTLET.
6. PROVIDE FACTORY INSTALLED SMOKE DETECTOR IN SUPPLY ABOVE 2000 CFM.
7. PROVIDE FACTORY INSTALLED CONTROLS PACKAGE.
8. PROVIDE ROOF CURB WITH VIBRATION ISOLATION.
9. PROVIDE MODULATING BURNER WITH GAS CONTROLS.
10. PROVIDE OSA INLET WITH MOTORIZED DAMPERS. SPRING RETURN TO CLOSE ON POWER FAILURE.
11. UNIT TO HAVE DEDICATED BOILER FOR HOT WATER COIL. SEE BOILER SCHEDULE.

BUILDING DEPT STAMP

PROJECT TEAM

GREC Architects

OWNER
**GERDING EDLEN**

ARCHITECT
**GREC ARCHITECTS**

CIVIL ENGINEER
**KPFF CONSULTING ENGINEERS**

STRUCTURAL ENGINEER
**KPFF CONSULTING ENGINEERS**

MEP/FP ENGINEER
**GLUMAC**

LANDSCAPE ARCHITECT
**PLACE STUIDO**

GLUMAC
900 SW Fifth Ave., Suite 1600
Portland, OR 97204
T. 503.227.5280 F. 503.274.7674
www.glumac.com
Job. No.: 02.16.00534
Contact: Paul Leonetti
engineers for a sustainable future

NOTES
THIS DOCUMENT IS PRELIMINARY, AND WITH THE ACCOMPANYING DRAWINGS, SPECIFICATIONS AND PROJECT MANUAL, DESCRIBES THE GENERAL SCOPE OF THE PROJECT AND DESIGN CONCEPT IN TERMS OF THE INTERIOR DESIGN, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. THESE DOCUMENTS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT. ON THE BASIS OF THE SCOPE INDICATED, DESCRIBED OR INFERRED, THE CONTRACTOR SHALL DETERMINE AND INCLUDE IN THE PROPOSALS ALL ITEMS NECESSARY TO PROVIDE THE PROPER EXECUTION AND COMPLETION OF THE WORK.

NOT FOR CONSTRUCTION

ISSUANCES

| REVISION | DATE | REASON FOR ISSUE |
|---|---|---|
| | 08-11-2017 | FOUNDATION PERMIT |
| 01 | 11-01-2017 | FND. PERMIT CORRECTIONS 1 |
| | 06-30-2017 | 50%CD/GMP |
| | 04-07-2017 | DESIGN DEVELOPMENT |

PROJECT

5 MLK

5 SE MARTIN LUTHER KING JR BLVD.
PORTLAND, OR 97214

DRAWING

SCHEDULES

DATE 08-07-2017
PROJ. NO. 02.16.00534
SHEET **M003**

# OUTDOOR AIR CALCULATION (SINGLE ZONE OR 100% OSA SYSTEM) - LEVEL 1

**SYSTEM: AHU-#** | BASED ON ASHRAE 62.1-2007 - TABLE 6-1

| ROOM # | ZONE | DESCRIPTION | APPLICATION | AREA (SF) | TABLE 6-1 OUTDOOR AIR (CFM/SF) | TABLE 6-1 OCCUPANCY (P/1OOO SF) | CALCULATED OCCUPANTS | OVERRIDE # OCCUPANTS/ # FIXTURES | NUMBER OF OCCUPANTS / FIXTURES | OUTDOOR AIR REQ. (CFM/PERSON) | EXHAUST RATE REQ. (CFM/SF) | BREATHING ZONE OUTDOOR AIR FLOW (CFM) Vbz | TABLE 6-2 ZONE AIR DIST. EFFECTIVENESS Ez | ZONE OUTDOOR AIR FLOW (CFM) Voz | EXHAUST REQUIRED (CFM) | OSA/EXH AIRFLOW PROVIDED (CFM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LL3 - ELEVATOR VESTIBULE | SF L1-1 | | CORRIDORS | 274 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 16 | 0.8 | 21 | - | |
| LL2 - ELEVATOR VESTIBULE | SF L1-1 | | CORRIDORS | 273 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 16 | 0.8 | 20 | - | |
| LL1 - ELEVATOR VESTIBULE | SF L1-1 | | CORRIDORS | 275 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 17 | 0.8 | 21 | - | |
| LL1 - STORAGE | SF L1-1 | | OCCUPIIABLE STOR. FOR DRY GOODS | 99 | 0.06 | 2 | 0.2 | | 0.2 | 5.0 | 0.0 | 7 | 0.8 | 9 | 0 | |
| L1 - ELEVATOR LOBBY | WSHP L1-11 | | MAIN ENTRY LOBBIES | 955 | 0.06 | 10 | 9.6 | | 9.6 | 5.0 | - | 105 | 0.8 | 131 | - | |
| LL1 - RETAIL | (FUTURE TENANT) | | SALES (EXCEPT SPACES BELOW) | 4480 | 0.12 | 15 | 67.2 | | 67.2 | 7.5 | - | 1042 | 0.8 | 1302 | - | |
| L1 - BIKE ROOM | WSHP L1-1 | | OCCUPIIABLE STOR. FOR DRY GOODS | 3228 | 0.06 | 2 | 6.5 | | 6.5 | 5.0 | 0.0 | 226 | 0.8 | 282 | 0 | |
| L1 - BIKE ROOM | WSHP L1-2 | | OCCUPIIABLE STOR. FOR DRY GOODS | 1272 | 0.06 | 2 | 2.5 | | 2.5 | 5.0 | 0.0 | 89 | 0.8 | 111 | 0 | |
| L1 - LOCKER ROOM | WSHP L1-3 | | (EXH) LOCKER/DRESSING ROOMS | 804 | - | - | - | | 0.0 | - | 0.3 | 0 | 0.8 | 0 | 201 | |
| L1 - COFFEE BAR | WSHP L1-4 | | COFFEE STATIONS | 135 | 0.06 | 20 | 2.7 | | 2.7 | 5.0 | - | 22 | 0.8 | 27 | - | |
| L1 - LOBBY | WSHP L1-5 | | MAIN ENTRY LOBBIES | 748 | 0.06 | 10 | 7.5 | | 7.5 | 5.0 | - | 82 | 0.8 | 103 | - | |
| L1 - LOBBY | WSHP L1-6 | | MAIN ENTRY LOBBIES | 748 | 0.06 | 10 | 7.5 | | 7.5 | 5.0 | - | 82 | 0.8 | 103 | - | |
| L1 - CORRIDOR | WSHP L1-7 | | CORRIDORS | 2534 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 152 | 0.8 | 190 | - | |
| L1 - MAIL ROOM/STORAGE | WSHP L1-8 | | CORRIDORS | 777 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 47 | 0.8 | 58 | - | |
| L1 - BUILDING ENGINEER | WSHP L1-9 | | OFFICE SPACE | 240 | 0.06 | 5 | 1.2 | | 1.2 | 5.0 | - | 20 | 0.8 | 26 | - | |
| L1-BOH CORRIDOR | WSHP L1-10 | | CORRIDORS | 750 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 45 | 0.8 | 56 | - | |
| L1 - FIRE COMMAND CENTER | FC/CU | | OFFICE SPACE | 216 | 0.06 | 5 | 1.1 | | 1.1 | 5.0 | - | 18 | 0.8 | 23 | - | |
| | | | | | | | | | | | | | | | | |
| | | | | **17,808** | | | | Total all zones Pz: | **105.9** | | | | | | | **0** |

**LEED EQc2 - 30% Increased Ventilation ?:** **NO**

**OUTDOOR AIR INTAKE FLOW (CFM) , Vot** **2483**

# OUTDOOR AIR CALCULATION (SINGLE ZONE OR 100% OSA SYSTEM) - DOAS L1-1

**SYSTEM: AHU-#** | BASED ON ASHRAE 62.1-2007 - TABLE 6-1

| ROOM # | ZONE | DESCRIPTION | APPLICATION | AREA (SF) | TABLE 6-1 OUTDOOR AIR (CFM/SF) | TABLE 6-1 OCCUPANCY (P/1OOO SF) | CALCULATED OCCUPANTS | OVERRIDE # OCCUPANTS/ # FIXTURES | NUMBER OF OCCUPANTS / FIXTURES | OUTDOOR AIR REQ. (CFM/PERSON) | EXHAUST RATE REQ. (CFM/SF) | BREATHING ZONE OUTDOOR AIR FLOW (CFM) Vbz | TABLE 6-2 ZONE AIR DIST. EFFECTIVENESS Ez | ZONE OUTDOOR AIR FLOW (CFM) Voz | EXHAUST REQUIRED (CFM) | OSA/EXH AIRFLOW PROVIDED (CFM) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL 2 - OFFICE | FUTURE TENANT | | OFFICE SPACE | 21800 | 0.06 | 5 | 109.0 | | 109.0 | 5.0 | - | 1853 | 0.8 | 2316 | - | |
| LEVEL 2 - CONFERENCE | FUTURE TENANT | | CONFERENCE/ MEETING | 3000 | 0.06 | 50 | 150.0 | | 150.0 | 5.0 | - | 930 | 0.8 | 1163 | - | XXX |
| LEVEL 2 - BREAK | FUTURE TENANT | | BREAK ROOMS | 1000 | 0.12 | 50 | 50.0 | | 50.0 | 5.0 | - | 370 | 0.8 | 463 | - | |
| LEVEL 3 - OFFICE | FUTURE TENANT | | OFFICE SPACE | 21400 | 0.06 | 5 | 107.0 | | 107.0 | 5.0 | - | 1819 | 0.8 | 2274 | - | |
| LEVEL 3 - CONFERENCE | FUTURE TENANT | | CONFERENCE/ MEETING | 3000 | 0.06 | 50 | 150.0 | | 150.0 | 5.0 | - | 930 | 0.8 | 1163 | - | |
| LEVEL 3 - BREAK | FUTURE TENANT | | BREAK ROOMS | 1000 | 0.12 | 50 | 50.0 | | 50.0 | 5.0 | - | 370 | 0.8 | 463 | - | |
| LEVEL 4 - OFFICE | FUTURE TENANT | | OFFICE SPACE | 18845 | 0.06 | 5 | 94.2 | | 94.2 | 5.0 | - | 1602 | 0.8 | 2002 | - | |
| LEVEL 4 - CONFERENCE | FUTURE TENANT | | CONFERENCE/ MEETING | 3000 | 0.06 | 50 | 150.0 | | 150.0 | 5.0 | - | 930 | 0.8 | 1163 | - | |
| LEVEL 4 - BREAK | FUTURE TENANT | | BREAK ROOMS | 1000 | 0.12 | 50 | 50.0 | | 50.0 | 5.0 | - | 370 | 0.8 | 463 | - | |
| LEVEL 5 - OFFICE | FUTURE TENANT | | OFFICE SPACE | 14500 | 0.06 | 5 | 72.5 | | 72.5 | 5.0 | - | 1233 | 0.8 | 1541 | - | |
| LEVEL 5 - CONFERENCE | FUTURE TENANT | | CONFERENCE/ MEETING | 3000 | 0.06 | 50 | 150.0 | | 150.0 | 5.0 | - | 930 | 0.8 | 1163 | - | |
| LEVEL 5 - BREAK | FUTURE TENANT | | BREAK ROOMS | 1000 | 0.12 | 50 | 50.0 | | 50.0 | 5.0 | - | 370 | 0.8 | 463 | - | |
| LEVEL 6 - FITNESS | WSHP L6-1 | | HEALTH CLUB/ AEROBICS ROOM | 698 | 0.06 | 40 | 27.9 | | 27.9 | 20.0 | - | 600 | 0.8 | 750 | - | |
| LEVEL 6 - YOGA | WSHP L6-2 | | HEALTH CLUB/ AEROBICS ROOM | 507 | 0.06 | 40 | 20.3 | | 20.3 | 20.0 | - | 436 | 0.8 | 545 | - | |
| LEVEL 6 - YOGA | WSHP L6-3 | | HEALTH CLUB/ AEROBICS ROOM | 507 | 0.06 | 40 | 20.3 | | 20.3 | 20.0 | - | 436 | 0.8 | 545 | - | |
| LEVEL 6 - CORRIDOR | WSHP L6-4 | | CORRIDORS | 577 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 35 | 0.8 | 43 | - | |
| LEVEL 6 - COMMON | WSHP L6-5 | | CONFERENCE/ MEETING | 1300 | 0.06 | 50 | 65.0 | | 65.0 | 5.0 | - | 403 | 0.8 | 504 | - | |
| LEVEL 6 - FITNESS | WSHP L6-6 | | HEALTH CLUB/ AEROBICS ROOM | 962.5 | 0.06 | 40 | 38.5 | | 38.5 | 20.0 | - | 828 | 0.8 | 1035 | - | |
| LEVEL 6 - FITNESS | WSHP L6-7 | | HEALTH CLUB/ AEROBICS ROOM | 962.5 | 0.06 | 40 | 38.5 | | 38.5 | 20.0 | - | 828 | 0.8 | 1035 | - | |
| LEVEL 6 - LOCKER | WSHP L6-8 | | (EXH) LOCKER/DRESSING ROOMS | 596 | - | - | - | | 0.0 | - | 0.3 | 0 | 0.8 | 0 | 149 | |
| LEVEL 6 - DOG WASH | WSHP L6-9 | | (EXH) PET SHOPS (ANIMAL AREAS) | 661 | - | - | - | | 0.0 | - | 0.9 | 0 | 0.8 | 0 | 595 | |
| LEVEL 6 - OFFICE | WSHP L6-10 | | OFFICE SPACE | 348 | 0.06 | 5 | 1.7 | | 1.7 | 5.0 | - | 30 | 0.8 | 37 | - | |
| LEVEL 6 - OFFICE | WSHP L6-11 | | OFFICE SPACE | 191 | 0.06 | 5 | 1.0 | | 1.0 | 5.0 | - | 16 | 0.8 | 20 | - | |
| LEVEL 6 - OFFICE | WSHP L6-12 | | OFFICE SPACE | 230 | 0.06 | 5 | 1.2 | | 1.2 | 5.0 | - | 20 | 0.8 | 24 | - | |
| LEVEL 6 - OFFICE | FUTURE TENANT | | OFFICE SPACE | 2605 | 0.06 | 5 | 13.0 | | 13.0 | 5.0 | - | 221 | 0.8 | 277 | - | |
| LEVEL 6 - COMMUNITY | WSHP L6-13 | | CONFERENCE/ MEETING | 1229 | 0.06 | 50 | 61.5 | | 61.5 | 5.0 | - | 381 | 0.8 | 476 | - | |
| LEVEL 6 - OFFICES | WSHP L6-14 | | OFFICE SPACE | 558 | 0.06 | 5 | 2.8 | | 2.8 | 5.0 | - | 47 | 0.8 | 59 | - | |
| LEVEL 6 - COMMUNITY | WSHP L6-15 | | CONFERENCE/ MEETING | 419 | 0.06 | 50 | 21.0 | | 21.0 | 5.0 | - | 130 | 0.8 | 162 | - | |
| LEVEL 6 - CONFERENCE | WSHP L6-16 | | CONFERENCE/ MEETING | 607 | 0.06 | 50 | 30.4 | | 30.4 | 5.0 | - | 188 | 0.8 | 235 | - | |
| LEVEL 6 - CORRIDOR | WSHP L6-17 | | CORRIDORS | 569 | 0.06 | 0 | 0.0 | | 0.0 | 0.0 | - | 34 | 0.8 | 43 | - | |
| | | | | | | | | | | | | | | | | |
| | | | | **106,072** | | | | Total all zones Pz: | **1525.6** | | | | | | | **0** |

**LEED EQc2 - 30% Increased Ventilation ?:** **NO**

**OUTDOOR AIR INTAKE FLOW (CFM) , Vot** **20427**

BUILDING DEPT STAMP

PROJECT TEAM

GREC Architects

OWNER
**GERDING EDLEN**

ARCHITECT
**GREC ARCHITECTS**

CIVIL ENGINEER
**KPFF CONSULTING ENGINEERS**

STRUCTURAL ENGINEER
**KPFF CONSULTING ENGINEERS**

MEP/FP ENGINEER
**GLUMAC**

LANDSCAPE ARCHITECT
**PLACE STUIDO**

GLUMAC
900 SW Fifth Ave., Suite 1600
Portland, OR 97204
T. 503.227.5280 F. 503.274.7674
www.glumac.com
Job. No.: 02.16.00534
Contact: Paul Leonetti
engineers for a sustainable future

NOTES
THIS DOCUMENT IS PRELIMINARY, AND WITH THE ACCOMPANYING DRAWINGS, SPECIFICATIONS AND PROJECT MANUAL, DESCRIBES THE GENERAL SCOPE
OF THE PROJECT AND DESIGN CONCEPT IN TERMS OF THE INTERIOR DESIGN, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. THESE DOCUMENTS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE FULL PERFORMANCE AND
COMPLETION OF THE REQUIREMENTS OF THE CONTRACT. ON THE BASIS OF THE SCOPE INDICATED, DESCRIBED OR INFERRED, THE CONTRACTOR SHALL
DETERMINE AND INCLUDE IN THE PROPOSALS ALL ITEMS NECESSARY TO PROVIDE THE PROPER EXECUTION AND COMPLETION OF THE WORK.

NOT FOR CONSTRUCTION

ISSUANCES

| REVISION | DATE | REASON FOR ISSUE |
|---|---|---|
| | 08-11-2017 | FOUNDATION PERMIT |
| | 06-30-2017 | 50%CD/GMP |
| | 04-07-2017 | DESIGN DEVELOPMENT |

PROJECT

5 MLK

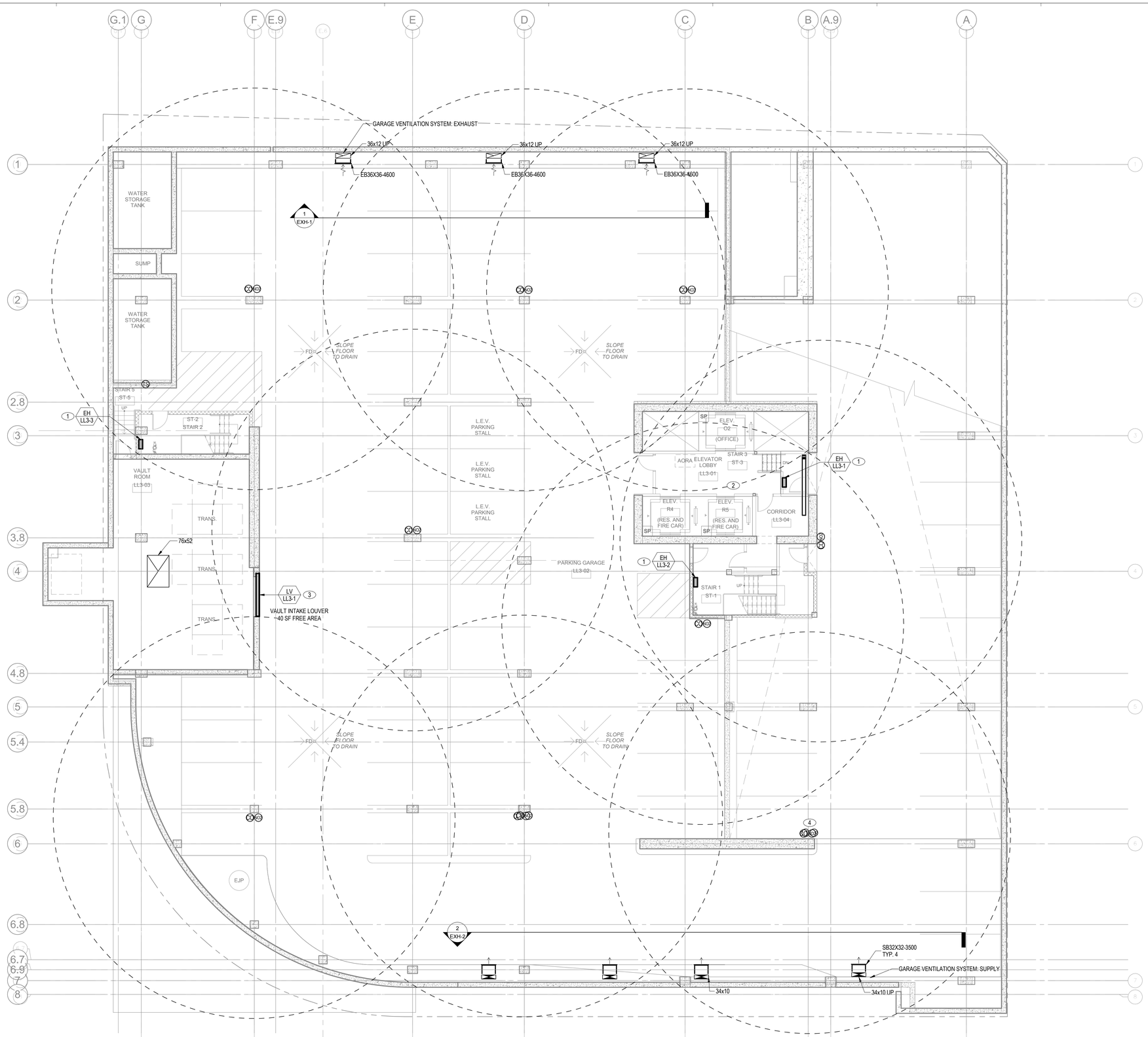
5 SE MARTIN LUTHER KING JR BLVD.
PORTLAND, OR 97214

DRAWING

SCHEDULES

DATE
08-07-2017
PROJ. NO.
02.16.00534
12" = 1'-0"

SHEET
**M005**




## 1 LOWER LEVEL 03 - FLOOR PLAN - MECHANICAL

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

1/8" = 1'-0"

0 8 16 24 32

## SHEET NOTES

A. ASFDJALSKFJD

## KEYED NOTES #

1 ELECTRIC UNIT HEATER FOR FREEZE PROTECTION IN LOWER LEVEL STAIRS. THERMOSTAT TO BE LOCATED ABOVE AT LOWER LEVEL 1.

2 CORRIDORS AND ELEVATOR LOBBIES IN LOWER LEVELS VENTILATED VIA DEDICATED FAN AT LEVEL 1.

3 VAULT VENTILATION PER PGE REQUIREMENTS.

4 CO AND NO2 SENSORS, WITH ANNOTED OUTLINES TO INDICATE 5,000 SF, SUCH THAT ANY POINT AT GARAGE IS WITHIN 40 FEET OF A SENSOR. GARAGE VENTILATION FANS ARE TO MODULATE TO MAINTAIN CO LEVELS AT 25 PPM OR LESS, AND NO2 LEVELS BELOW 2 PPM.

BUILDING DEPT STAMP

PROJECT TEAM

GREC Architects

OWNER
**GERDING EDLEN**

ARCHITECT
**GREC ARCHITECTS**

CIVIL ENGINEER
**KPFF CONSULTING ENGINEERS**

STRUCTURAL ENGINEER
**KPFF CONSULTING ENGINEERS**

MEP/FP ENGINEER
**GLUMAC**

LANDSCAPE ARCHITECT
**PLACE STUIDO**

GLUMAC
900 SW Fifth Ave., Suite 1600
Portland, OR 97204
T. 503.227.5280 F. 503.274.7674
www.glumac.com
Job. No.: 02.16.00534
Contact: Paul Leonetti
engineers for a sustainable future

NOTES

THIS DOCUMENT IS PRELIMINARY, AND WITH THE ACCOMPANYING DRAWINGS, SPECIFICATIONS AND PROJECT MANUAL, DESCRIBES THE GENERAL SCOPE
OF THE PROJECT AND DESIGN CONCEPT IN TERMS OF THE INTERIOR DESIGN, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. THESE DOCUMENTS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE FULL PERFORMANCE AND
COMPLETION OF THE REQUIREMENTS OF THE CONTRACT. ON THE BASIS OF THE SCOPE INDICATED, DESCRIBED OR INFERRED, THE CONTRACTOR SHALL
DETERMINE AND INCLUDE IN THE PROPOSALS ALL ITEMS NECESSARY TO PROVIDE THE PROPER EXECUTION AND COMPLETION OF THE WORK.

NOT FOR CONSTRUCTION

ISSUANCES

| REVISION | DATE | REASON FOR ISSUE |
|---|---|---|
| | 08-11-2017 | FOUNDATION PERMIT |
| 01 | 11-01-2017 | FND. PERMIT CORRECTIONS 1 |
| | 06-30-2017 | 50%CD/GMP |
| | 04-07-2017 | DESIGN DEVELOPMENT |

PROJECT

5 MLK

5 SE MARTIN LUTHER KING JR BLVD.
PORTLAND, OR 97214

DRAWING

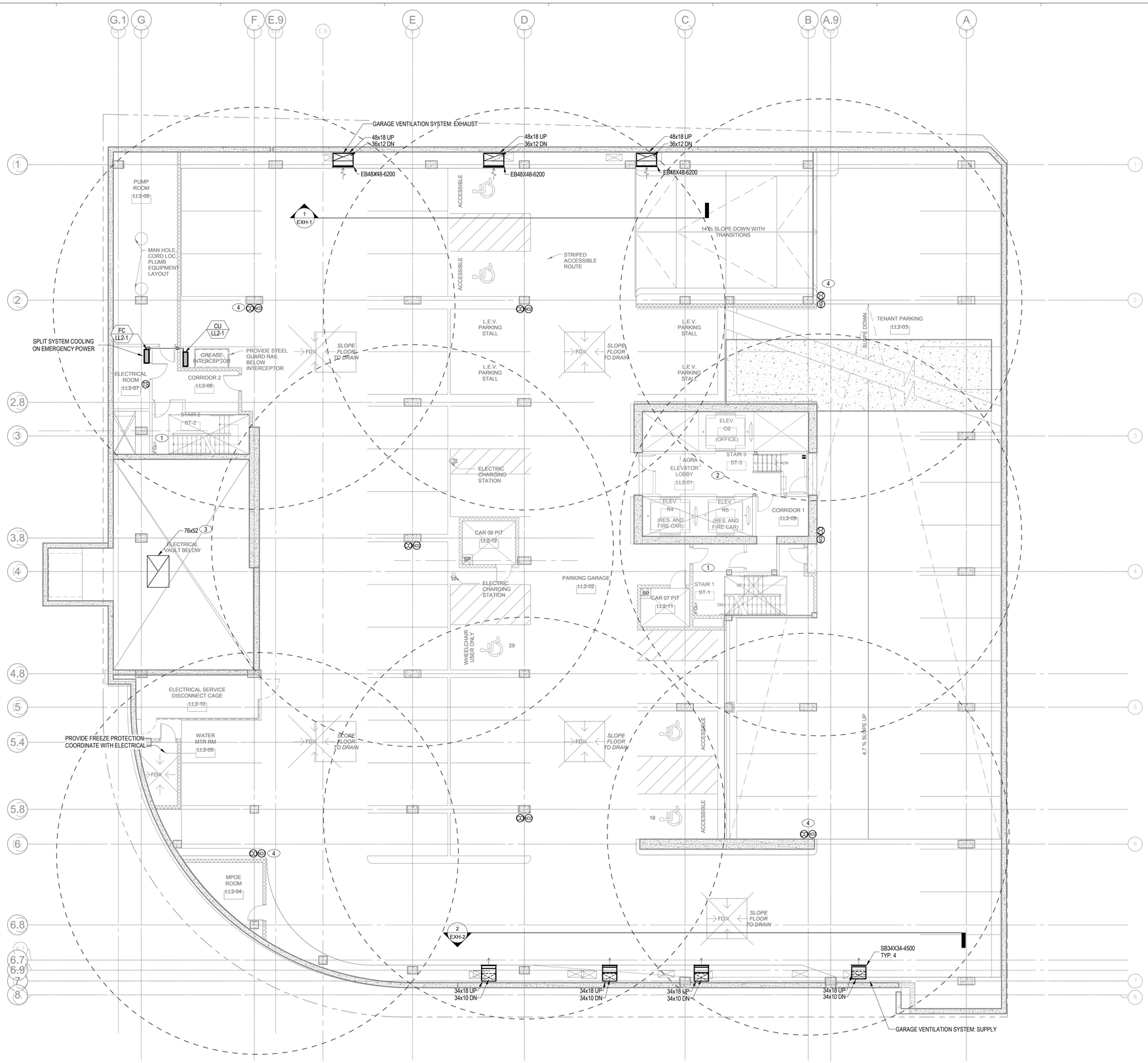
LOWER LEVEL 03 PLAN - MECHANICAL

DATE
08-07-2017

PROJ. NO.
02.16.00534

1/8" = 1'-0"

SHEET
**M100**




## 1 LOWER LEVEL 02 - FLOOR PLAN - MECHANICAL

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

1/8" = 1'-0"

0 8 16 24 32

## SHEET NOTES

## KEYED NOTES (#)

1 ELECTRIC UNIT HEATER FOR FREEZE PROTECTION IN LOWER LEVEL STAIRS. THERMOSTAT TO BE LOCATED ABOVE AT LOWER LEVEL 1.

2 CORRIDORS AND ELEVATOR LOBBIES IN LOWER LEVELS VENTILATED VIA DEDICATED FAN AT LEVEL 1.

3 VAULT VENTILATION PER PGE REQUIREMENTS.

4 CO AND NO2 SENSORS, WITH ANNOTED OUTLINES TO INDICATE 5,000 SF, SUCH THAT ANY POINT AT GARAGE IS WITHIN 40 FEET OF A SENSOR. GARAGE VENTILATION FANS ARE TO MODULATE TO MAINTAIN CO LEVELS AT 25 PPM OR LESS, AND NO2 LEVELS BELOW 2 PPM.

BUILDING DEPT STAMP

PROJECT TEAM

GREC Architects

OWNER
**GERDING EDLEN**

ARCHITECT
**GREC ARCHITECTS**

CIVIL ENGINEER
**KPFF CONSULTING ENGINEERS**

STRUCTURAL ENGINEER
**KPFF CONSULTING ENGINEERS**

MEP/FP ENGINEER
**GLUMAC**

LANDSCAPE ARCHITECT
**PLACE STUIDO**


GLUMAC
900 SW Fifth Ave., Suite 1600
Portland, OR 97204
T. 503.227.5280 F. 503.274.7674
www.glumac.com
Job. No.: 02.16.00534
Contact: Paul Leonetti
engineers for a sustainable future


NOTES

THIS DOCUMENT IS PRELIMINARY, AND WITH THE ACCOMPANYING DRAWINGS, SPECIFICATIONS AND PROJECT MANUAL, DESCRIBES THE GENERAL SCOPE
OF THE PROJECT AND DESIGN CONCEPT IN TERMS OF THE INTERIOR DESIGN, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. THESE DOCUMENTS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE FULL PERFORMANCE AND
COMPLETION OF THE REQUIREMENTS OF THE CONTRACT. ON THE BASIS OF THE SCOPE INDICATED, DESCRIBED OR INFERRED, THE CONTRACTOR SHALL
DETERMINE AND INCLUDE IN THE PROPOSALS ALL ITEMS NECESSARY TO PROVIDE THE PROPER EXECUTION AND COMPLETION OF THE WORK.

NOT FOR CONSTRUCTION

ISSUANCES

| REVISION | DATE | REASON FOR ISSUE |
|---|---|---|
| | 08-11-2017 | FOUNDATION PERMIT |
| 01 | 11-01-2017 | FND. PERMIT CORRECTIONS 1 |
| | 06-30-2017 | 50%CD/GMP |
| | 04-07-2017 | DESIGN DEVELOPMENT |

PROJECT

5 MLK

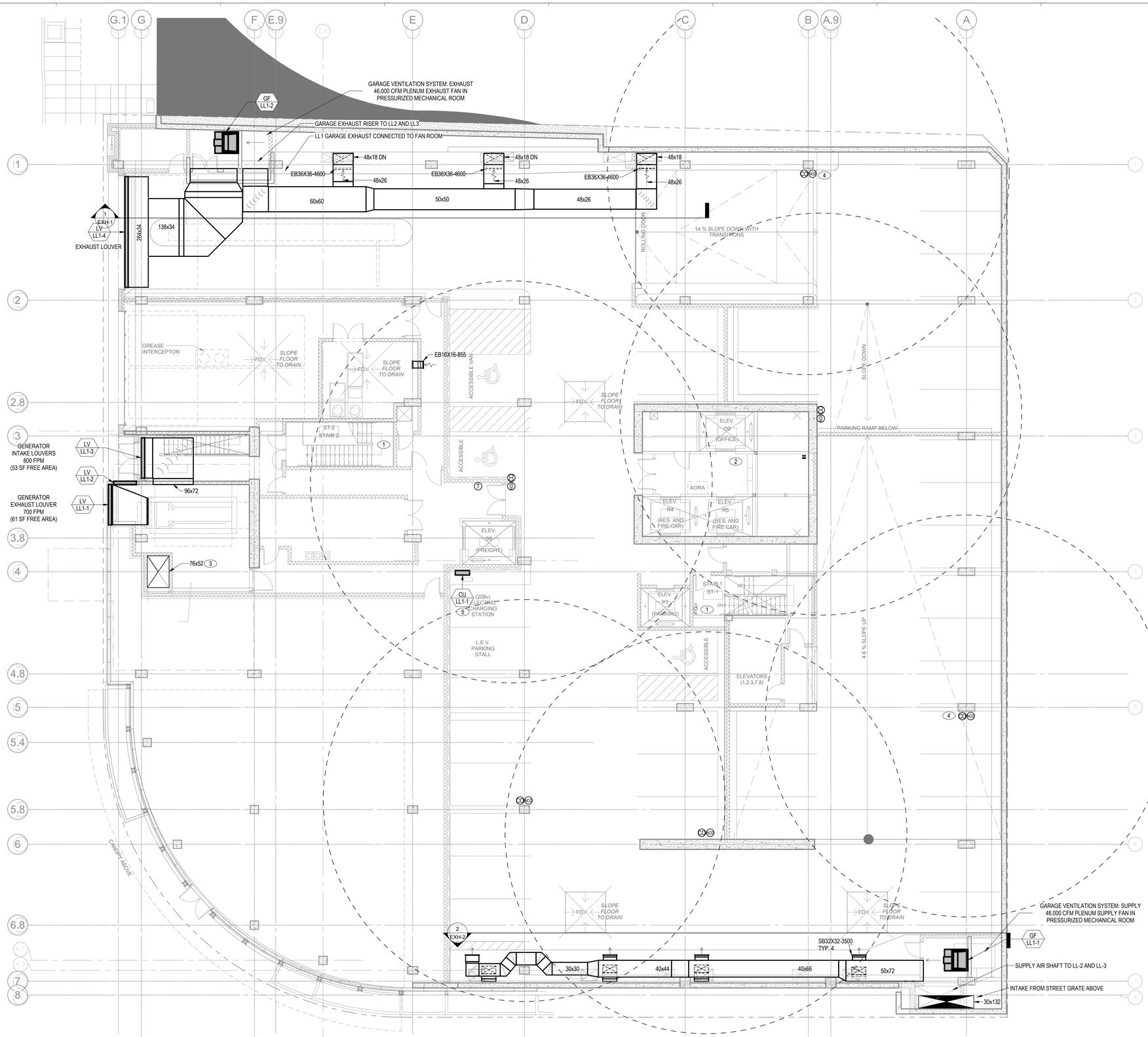
5 SE MARTIN LUTHER KING JR BLVD.
PORTLAND, OR 97214

DRAWING

LOWER LEVEL 02 PLAN - MECHANICAL

DATE
08-07-2017
PROJ. NO.
02.16.00534
1/8" = 1'-0"

SHEET
**M101**




## 1 LOWER LEVEL 01 - FLOOR PLAN - MECHANICAL

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

1/8" = 1'-0"

0 8 16 24 32

## SHEET NOTES

## KEYED NOTES (#)

1 ELECTRIC UNIT HEATER FOR FREEZE PROTECTION IN LOWER LEVEL STAIRS. THERMOSTAT TO BE LOCATED ABOVE AT LOWER LEVEL 1.

2 CORRIDORS AND ELEVATOR LOBBIES IN LOWER LEVELS VENTILATED VIA DEDICATED FAN AT LEVEL 1.

3 VAULT VENTILATION PER PGE REQUIREMENTS.

4 CO AND NO2 SENSORS, WITH ANNOTED OUTLINES TO INDICATE 5,000 SF, SUCH THAT ANY POINT AT GARAGE IS WITHIN 40 FEET OF A SENSOR. GARAGE VENTILATION FANS ARE TO MODULATE TO MAINTAIN CO LEVELS AT 25 PPM OR LESS, AND NO2 LEVELS BELOW 2 PPM.

5 CONDENSING UNIT SERVES EMERGENCY POWER ELECTRICAL ROOM AND FIRE COMMAND CENTER ROOM LEVEL ABOVE.

BUILDING DEPT STAMP

PROJECT TEAM

GREC Architects

OWNER
**GERDING EDLEN**

ARCHITECT
**GREC ARCHITECTS**

CIVIL ENGINEER
**KPFF CONSULTING ENGINEERS**

STRUCTURAL ENGINEER
**KPFF CONSULTING ENGINEERS**

MEP/FP ENGINEER
**GLUMAC**

LANDSCAPE ARCHITECT
**PLACE STUIDO**


GLUMAC
900 SW Fifth Ave., Suite 1600
Portland, OR 97204
T. 503.227.5280 F. 503.274.7674
www.glumac.com
Job. No.: 02.16.00534
Contact: Paul Leonetti
engineers for a sustainable future


NOTES

THIS DOCUMENT IS PRELIMINARY, AND WITH THE ACCOMPANYING DRAWINGS, SPECIFICATIONS AND PROJECT MANUAL, DESCRIBES THE GENERAL SCOPE
OF THE PROJECT AND DESIGN CONCEPT IN TERMS OF THE INTERIOR DESIGN, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. THESE DOCUMENTS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE FULL PERFORMANCE AND
COMPLETION OF THE REQUIREMENTS OF THE CONTRACT. ON THE BASIS OF THE SCOPE INDICATED, DESCRIBED OR INFERRED, THE CONTRACTOR SHALL
DETERMINE AND INCLUDE IN THE PROPOSALS ALL ITEMS NECESSARY TO PROVIDE THE PROPER EXECUTION AND COMPLETION OF THE WORK.

NOT FOR CONSTRUCTION

ISSUANCES

| REVISION | DATE | REASON FOR ISSUE |
|---|---|---|
| | 08-11-2017 | FOUNDATION PERMIT |
| 01 | 11-01-2017 | FND. PERMIT CORRECTIONS 1 |
| | 06-30-2017 | 50%CD/GMP |
| | 04-07-2017 | DESIGN DEVELOPMENT |

PROJECT

5 MLK

5 SE MARTIN LUTHER KING JR BLVD.
PORTLAND, OR 97214

DRAWING

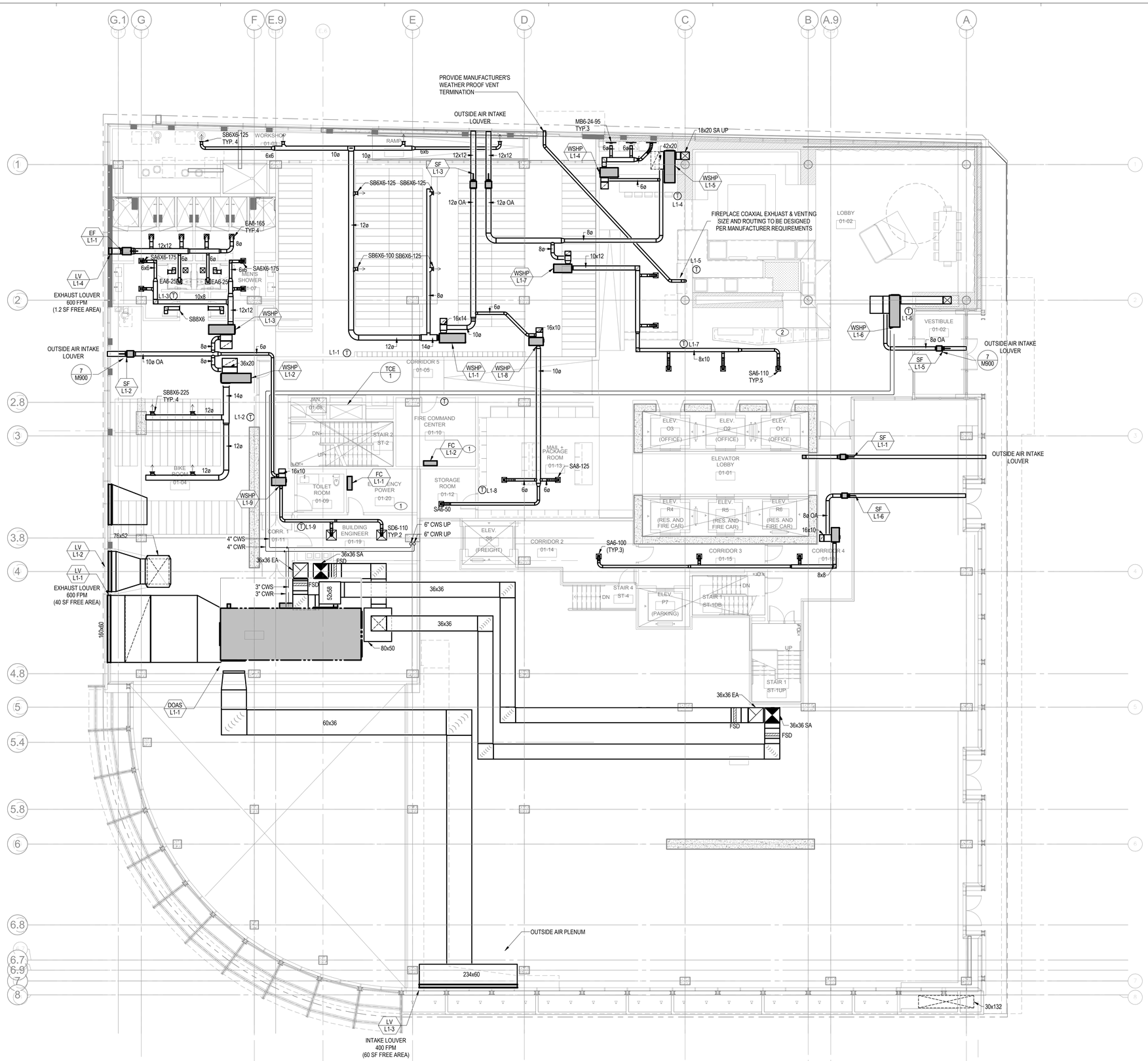
LOWER LEVEL 01 PLAN - MECHANICAL

DATE
08-07-2017

PROJ. NO.
02.16.00534

1/8" = 1'-0"

SHEET
**M102**




## 1 LEVEL 01 - FLOOR PLAN - MECHANICAL

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

1/8" = 1'-0"

0 8 16 24 32

# SHEET NOTES

# KEYED NOTES

1 SPACE COOLED BY SPLIT SYSTEM, CONDENSING UNIT LOCATED LEVEL BELOW.

2 SPACE SERVED BY FAN COIL, CONDENSING UNIT LOCATED LEVEL ABOVE.

BUILDING DEPT STAMP

PROJECT TEAM

GREC Architects

OWNER
**GERDING EDLEN**

ARCHITECT
**GREC ARCHITECTS**

CIVIL ENGINEER
**KPFF CONSULTING ENGINEERS**

STRUCTURAL ENGINEER
**KPFF CONSULTING ENGINEERS**

MEP/FP ENGINEER
**GLUMAC**

LANDSCAPE ARCHITECT
**PLACE STUIDO**

GLUMAC
900 SW Fifth Ave., Suite 1600
Portland, OR 97204
T. 503.227.5280 F. 503.274.7674
www.glumac.com
Job. No.: 02.16.00534
Contact: Paul Leonetti
engineers for a sustainable future

NOTES

THIS DOCUMENT IS PRELIMINARY, AND WITH THE ACCOMPANYING DRAWINGS, SPECIFICATIONS AND PROJECT MANUAL, DESCRIBES THE GENERAL SCOPE
OF THE PROJECT AND DESIGN CONCEPT IN TERMS OF THE INTERIOR DESIGN, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. THESE DOCUMENTS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL OF THE WORK REQUIRED FOR THE FULL PERFORMANCE AND
COMPLETION OF THE REQUIREMENTS OF THE CONTRACT. ON THE BASIS OF THE SCOPE INDICATED, DESCRIBED OR INFERRED, THE CONTRACTOR SHALL
DETERMINE AND INCLUDE IN THE PROPOSALS ALL ITEMS NECESSARY TO PROVIDE THE PROPER EXECUTION AND COMPLETION OF THE WORK.

NOT FOR CONSTRUCTION

ISSUANCES

| REVISION | DATE | REASON FOR ISSUE |
|---|---|---|
| | 08-11-2017 | FOUNDATION PERMIT |
| 01 | 11-01-2017 | FND. PERMIT CORRECTIONS 1 |
| | 06-30-2017 | 50%CD/GMP |
| | 04-07-2017 | DESIGN DEVELOPMENT |

PROJECT

5 MLK

5 SE MARTIN LUTHER KING JR BLVD.
PORTLAND, OR 97214

DRAWING

LEVEL 01 PLAN - MECHANICAL

DATE
08-07-2017
PROJ. NO.
02.16.00534
1/8" = 1'-0"

SHEET
**M103**