

City of Portland, Oregon - Bureau of Development Services

1900 SW Fourth Avenue • Portland, Oregon 97201 | 503-823-7300 | www.portland.gov/bds

Permit Revision Submittal Requirements and Application

A Permit Revision is required when there are proposed changes to the project after the permit has been issued. This may arise due to discrepancies between the city-approved permit drawings and actual field conditions, or the customer has changed their mind about an aspect of the project. In all cases, a revision to the existing permit must be submitted, reviewed and approved.

Minimum Submittal Requirements (check all boxes and sign below):

- □ A copy of this application.
- One PDF copy of plans for electronic submittals or three copies for paper submittals.
- □ All plans must clearly reflect the proposed change(s). Changes must be bubbled.
- Drawings and calculations must be stamped and signed by the Architect and/or the Engineer of Record, if applicable.
- Project narrative for extensive revisions.
- One PDF copy of calculations and other supporting documents for electronic submittals or two copies for paper submittals.
- Copy of Inspector's correction notice, if the revision is due to an inspection correction. One PDF copy for electronic submittals and two copies for paper submittals.

Applicant Information:

| Applicant Name Dree Hayden | |
|--------------------------------------|-----------------------------------|
| Street Address 351 Nw 12th Ave | City/State/ZIP Portland, Or 97209 |
| Email d.hayden@alliant-systems.com | Phone 9712171747 |
| Value of Proposed Revision \$0.00 | Issued Permit # IVR#:4706171 |
| Job Site Address 18440 Ne Portal Way | City/State/ZIP Portland, Or 97230 |

Description of Revision

add mechanical plans to issued MT permit - 21-055455-MT

Applicant Signature

_{Date}7.19.21

Fees:

An invoice with permit fees will be sent to the applicant once minimum submittal requirements have been verified. Permit Revisions are subject to fees associated with plan review, processing and any increase in project value.

The Bureau of Development Services fee schedule is on the BDS web site: www.portlandoregon.gov/bds/article/102792

Helpful Information:

Bureau of Development Services |City of Portland, Oregon 1900 SW 4th Avenue, Portland, OR 97201 For Hours Call 503-823-7310 or visit www.portlandoregon.gov/bds

Important Telephone Numbers:

| BDS main number | 503-823-7300 |
|--|--------------|
| DSC automated information line | 503-823-7310 |
| Building code information | 503-823-1456 |
| BDS 24-hour inspection request line | 503-823-7000 |
| Residential information for one- and two-family dwelling | 503-823-7388 |
| General Permit Processing and Fee Estimate info | 503-823-7357 |
| Zoning Information Line | 503-823-7526 |
| City of Portland TTY | 503-823-6868 |

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| HYDRONIC PIPING LEGEND | | | | | | | |
|--|---------------------------|--|--|--|--|--|--|
| SYMBOL ABBREVIATION | DESCRIPTION | | | | | | |
| HWS HWS | HEATING WATER SUPPLY | | | | | | |
| – — – –HWR– — – – – – – – HWR | HEATING WATER RETURN | | | | | | |
| CNDS CNDS | INDIRECT CONDENSATE DRAIN | | | | | | |
| CHWS——— CHWS | CHILLED WATER SUPPLY | | | | | | |
| —————————————————————————————————————— | CHILLED WATER RETURN | | | | | | |
| NGNG | GAS PIPING LOW PRESSURE | | | | | | |
| IND IND | INDIRECT DRAIN | | | | | | |
| NG G | GAS PIPING LOW PRESSURE | | | | | | |
| | HIGH PRESSURE STEAM | | | | | | |
| MPS MPS | MEDIUM PRESSURE STEAM | | | | | | |
| LPS LPS | LOW PRESSURE STEAM | | | | | | |

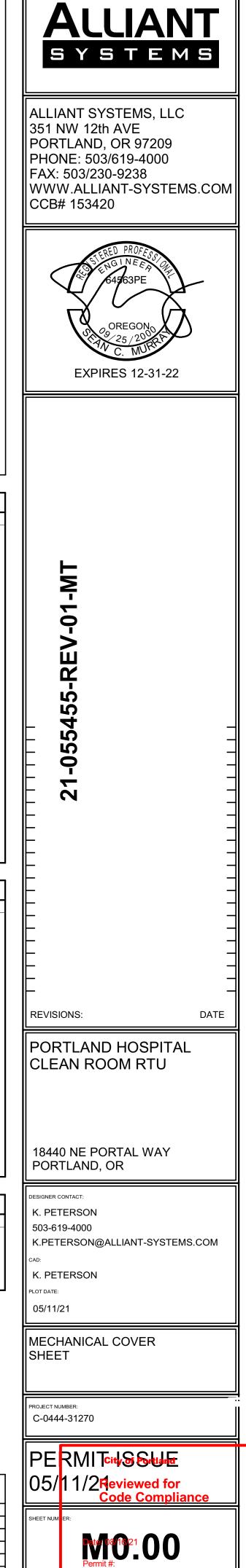
| GENERAL SYMBOL LEGEND | HVAC DUCT LEGEND | HVAC GENERAL NOTES - STATE OF OREGON | | | | | |
|--|---|---|--|--|--|--|--|
| SYMBOL ABBREVIATION DESCRIPTION | DUCT UP DUCT DOWN DESCRIPTION | | | | | | |
| SECTION TAG | RECTANGULAR SUPPLY | 2. MATERIALS, METHODS, AND INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF THE MOST RECENTLY ADOPTED VERSIONS OF - | | | | | |
| DETAIL TAG | ROUND SUPPLY | THE 2019 OREGON MECHANICAL SPECIALTY CODE (2018 IMC W/ STATE OF OREGON AMENDMENTS) THE 2019 STATE OF OREGON STRUCTURAL SPECIALTY CODE (2018 IBC W/ STATE OF OREGON AMENDMENTS) THE 2019 STATE OF OREGON ZERO ENERGY READY COMMERCIAL CODE (OZERCC) (ASHRAE 90.1 - 2016 OR 2018 IECC) THE 2019 INTERNATIONAL FIRE CODE AND ALL OTHER APPLICABLE LOCAL CODES, AMENDMENTS, AND ORDINANCES. | | | | | |
| (#) NOTE BY SYMBOL | | , , , | | | | | |
| (#) DEMOLITION NOTE BY SYMBOL (#) REVISION DELTA | ROUND RETURN | 4. DUCTS SHALL BE INSULATED AS INDICATED ON PLANS, OR AS OTHERWISE REQUIRED BY THE OZERCC . - DUCT WRAP, WHERE INDICATED, SHALL BE 2-3/16" 0.75 LB/CU FT FIBERGLASS DUCT INSULATION WITH A FACTORY APPLIED REINFORCED ALUMINUM FOIL | | | | | |
| POC POINT OF CONNECTION EQUIPMENT TAG | RECTANGULAR EXHAUS | | | | | | |
| EQUIPMENT FAG DEMOLITION RELOCATE | ROUND EXHAUST | FLEXIBLE DUCT SHALL BE A MANOFACTORED ASSEMBLY INCLUDING. REINFORCED EXTERIOR VAFOR BARRIER, MINIMUM R-6 FIBERGLASS INSULATION, NON-PERFORATED INTERIOR LINER, AND STRUCTURAL WIRE HELIX. ASSEMBLY SHALL BE CERTIFIED AS A UL 181 LISTED, CLASS-1 AIR DUCT. FLEXIBLE DUCT SHALL BE FULLY SUPPORTED, AND SHALL ONLY BE USED WHERE SHOWN. LENGTH OF FLEX DUCT SHALL NOT EXCEED 8' UNLESS NOTED OTHERWISE. | | | | | |
| CONTROLS / ALARM LEGEND | RECTANGULAR OUTSID | | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION © CO2 CARBON DIOXIDE SENSOR (f) H'STAT HYDROMETER / HUMIDITY SENSOR | ROUND OUTSIDE AIR | 7. PROVIDE FIRE DAMPERS AND/OR FIRE/SMOKE DAMPERS WHERE INDICATED ON PLANS AND AS REQUIRED BY SECTION 717 OF THE OSSC. INSTALL FIRE DAMPERS AND FIRE/SMOKE DAMPERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, THE TERMS OF THEIR LISTINGS, AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING, MECHANICAL, AND FIRE CODES AND ORDINANCES. | | | | | |
| T'STAT THERMOSTAT / TEMP SENSOR W T'STAT THERMOSTAT WIRELESS | 2-LINE 1-LINE DESCRIPTION | 8. PIPING PENETRATIONS OF FIRE RATED WALLS OR FLOORS SHALL BE SLEEVED AND FIRE STOPPED WITH LISTED MATERIALS SO AS TO MAINTAIN THE INTEGRITY AND RATING OF THE FLOOR OR WALL. | | | | | |
| ① P T'STAT THERMOSTAT PENDANT MOUNT ② CO CO CARBON MONOXIDE SENSOR ⑤ WALL SWITCH / SPEED CONTROL | 12/10 W 12/10 W RECTANGULAR DUCT 12/10 W INSULATION WRAP | 9. PROVIDE RETURN DUCT SMOKE DETECTOR CONFIGURED TO PROVIDE AUTOMATIC SHUT DOWN OF ALL HEATING, COOLING, OR VENTILATION EQUIPMENT DELIVERING IN EXCESS OF 2000 CFM IN ACCORDANCE WITH SECTION 606 OF THE OMSC. POWER WIRING AND INTERLOCK WIRING WITH THE BUILDING FIRE ALARM SYSTEM SHALL BE BY THE ELECTRICAL CONTRACTOR. | | | | | |
| CP WALL MOUNTED CONTROL PANEL (SD) DUCT MOUNTED SMOKE DETECTOR | 12ØW 12ØW ROUND DUCT INSULATION WRAP | 10. HVAC EQUIPMENT, VALVES AND DAMPERS SHALL BE LOCATED IN EASILY ACCESSIBLE LOCATIONS. ACCESS PANELS REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE IDENTIFIED AND LOCATED BY THE MECHANICAL CONTRACTOR FOR ULTIMATE INCLUSION IN ARCHITECTURAL DRAWINGS. ACCESS | | | | | |
| (SP) DUCT MOUNTED STATIC PRESSURE SENSOR | IZ/10 SLSM RECTANGULAR DUCT SOUND LINED WRAP | PANELS SHALL BE PROVIDED AND INSTALLED BY THE WALL-CEILING CONTRACTOR PER SPECIFICATIONS. 11. HVAC TEMPERATURE SET POINTS, DEAD BANDS, AND SCHEDULES SHALL BE PROGRAMMED TO MEET SECTION 6.4.3 OF ASHRAE 90.1 - 2016 | | | | | |
| FSD 11/2 & 3 HOUR COMBINATION FIRE SMOKE DAMPER | 12/10 K-27 12/10 K-27 RECTANGULAR DUCT K SOUND INSULATED | -27 12. ALL WIRING EXPOSED WITHIN A PLENUM SHALL MEET THE REQUIREMENTS IN SECTION 602.2.1.1 OF THE OMSC. ALL COMBUSTIBLE ELECTRICAL EQUIPMENT EXPOSED WITHIN A PLENUM SHALL MEET THE REQUIREMENTS IN SECTION 602.2.1.4 OF THE OMSC. | | | | | |
| PIPING SYMBOL LEGEND | 12Ø K-27 12Ø K-27 ROUND DUCT K-27 SOUND INSULATED | | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION | | GENERAL ABBREVIATIONS | | | | | |
| CONCENTRIC REDUCER ECCENTRIC REDUCER | FLEX DUCTWORK | ABBV FULL NAME ABBV FULL NAME ABBV FULL NAME ADJ ADJUSTABLE GAL GALLONS OD OUTSIDE DIMENSION | | | | | |
| ⊗ ST F&T STEAM TRAP ∇MAV MAV MANUAL AIR VENT | | AFF ABOVE FINISHED FLOOR GALV GALVANIZED OFCI OWNER FURNISHED CONTRACTOR AL ALUMINUM GC GENERAL CONTRACTOR INSTALLED | | | | | |
| PIPE ANCHOR | | ALT ALTERNATE GPH GALLONS PER HOUR PSI PRESSURE PER SQUARE INCH AP ACCESS PANEL GPM GALLONS PER MINUTE PSIA PRESSURE PER SQUARE INCH | | | | | |
| PIPE GUIDE UN PIPE UNION | | AVG AVERAGE GWB GYPSUM WALL BOARD FSIA FRESSURE FER SQUARE INCH ABSOLUTE BAS BUILDING AUTOMATION SYSTEM HP HORSE POWER PSIG PRESSURE PER SQUARE INCH GAGE | | | | | |
| | | BOTTBOTTOMHRHOURQTYQUANTITYBTUBRITISH THERMAL UNITSHTGHEATINGQTYQUANTITYBTUHBRITISH THERMAL UNITS PER HOURHZHERTZRRELOCATE | | | | | |
| FLOW ARROW, DIRECTION OF FLOW TPT PRESSURE/TEMPERATURE TEST PLUG | | BTUH BRITISH THERMAL UNITS PER HOUR HZ HERTZ R RELOCATE CAP CAPACITY ID INSIDE DIMENSION RE REMOVE CAP CAPACITY ID INSIDE DIMENSION REQ'D REQUIRED | | | | | |
| | STRAIGHT TEE 45° ENTRY TEE LATERAL TEE CONICAL TEE | CFH CUBIC FEET PER HOUR IN INCHES RPM REVOLUTIONS PER MINUTE CFCI CONTRACTOR FURNISHED I/O INPUT / OUTPUT DO DOUBLE | | | | | |
| PS PRESSURE SWITCH OR PRESSURE SENSOR | ROUND BRANCH FITTINGS | CONTRACTOR INSTALLED KW KILOWATT STL STEL CFM CUBIC FEET PER MINUTE I BS POUNDS STL STAINLESS STEEL | | | | | |
| SLOPE SLOPE PIPE DOWN IN DIRECTION OF ARROW ++++++++++++++++++++++++++++++++++++ | निश्ने | CONN CONNECTION MAX MAXIMUM SUSP SUSPENDED | | | | | |
| STRAINER W/ BLOWDOWN VALVE | R=1.5D | CP CONTROLS PANEL MCA MINIMUM CIRCUIT AMPACITY TD TEMPERATURE DIFFERENTIAL DIA DIAMETER MFR MANUFACTURER TEMP TEMPERATURE | | | | | |
| VB VACUUM BREAKER VH WALL TYPE INDICATOR ASSEMBLY | 15° MAX R=1.5D | DIA DIAMETER DN DOWN MISC MISCELLANEOUS TYP TYPICAL MISC MISCELLANEOUS UNO UNLESS NOTED OTHERWISE | | | | | |
| WATER FLOW DETECTOR | | E EXISTING MIN MINIMUM FEE EEEICIENCY MT MOUNT V VOLT(S) | | | | | |
| WATER HAMMER ARRESTOR VERTICAL PIPE DROP OR RISER | | ELEV ELEVATION MISC MISCELLANEOUS VEL VELOCITY | | | | | |
| PIPE TAKE OFF - UP PIPE TAKE OFF - DOWN | ROUND ELBOW SINGLE PIECE OFFSET MULTI-PIECE OFFSE ROUND ELBOWS AND OFFSETS | F FAHRENHEIT N NEW Ø VOLTAGE PHASE & DUCT DIAMETER | | | | | |
| O 90 DEGREE ELBOW UP | | FLEX FLEXIBLE NOM NOMINAL | | | | | |
| 90 DEGREE ELBOW DOWN O TEE UP | | FPM FEET PER MINUTE NTS NOT TO SCALE FUT FUTURE | | | | | |
| □ □ TEE DOWN □ ↓ BREAK IN LINE - SHOWN FOR CLARITY | | | | | | | |
| PIPE CAP | | HVAC ABBREVIATIONS ABBV FULL NAME ABBV FULL NAME | | | | | |
| | STRAIGHT TEE 45° ENTRY TEE LATERAL TEE | ACAIR CONDITIONING UNITFDFIRE DAMPERRLREFRIGERANT LIQUIDAPDAIR PRESSURE DROPFOBFLAT ON BOTTOMRTUROOF TOP UNIT | | | | | |
| VALVES & GAUGES SYMBOL ABBREVIATION DESCRIPTION | RECTANGULAR BRANCH FITTINGS | BDD BACKDRAFT DAMPER FOT FLAT ON TOP SA SUPPLY AIR | | | | | |
| AUTOMATIC FLOW CONTROL VALVE | | BSB BRANCH SELECTOR BOX FSD FIRE SMOKE DAMPER SER SEASONAL ENERGY EFFICIENCY RATIO | | | | | |
| AUTOMATIC TWO-WAY VALVE | | BWGBOTTOM WALL GRILLEGRGRILLESLSOUND LININGBWRBOTTOM WALL REGISTERGRDGRILLE/DIFFUSERSMSHEET METAL | | | | | |
| BALL CHECK OR DRIP VALVE BV BALL VALVE | R=1.5D | COMBCOMBUSTIONHGHOT GAS LINESPSTATIC PRESSURECNDSCONDENSATEHVACHEATING VENTILATION AND AIRSUCSUCTION LINE | | | | | |
| BALV BALANCING VALVE | | COND CONDENSER CONDITIONING TOD TOP OF DUCT CU CONDENSING UNIT LAT LEAVING AIR TEMPERATURE TSP TOTAL STATIC PRESSURE | | | | | |
| BFV BUTTERFLY VALVE CV CHECK VALVE | l t t t | DB DUCT BOARD LIQ LIQUID INSIDE TV TURN VANES DDC DIRECT DIGITAL CONTROL MD MOTORIZED DAMPED TWG TOP WALL GRILLE | | | | | |
| RV RELIEF VALVE | MITERED ELBOW RADIUS ELBOW RADIUS TRANSITION ELBOY | M MD MOTORIZED DAMPER DIFF DIFFUSER MUA MUA MAKE-UP AIR | | | | | |
| TPV PRESSURE -TEMPERATURE RELIEF VALVE | RECTANGULAR ELBOWS | DX DIRECT EXPANSION NG NATURAL GAS UH UNIT HEATER | | | | | |
| | | EAT ENTERING AIR TEMPERATURE OAF OUTSIDE AIR FAN VAV VARIABLE AIR VOLUME EC EGGCRATE OBD OPPOSED BLADE DAMPER VD VOLUME DAMPER | | | | | |
| → → PRV PRESSURE REDUCING VALVE | | EER ENERGY EFFICIENCY RATIO VFD VARIABLE FREQUENCY DRIVE EF EXHAUST FAN PLBG PLUMBING VRV VARIABLE REFRIGERANT VOLUME | | | | | |
| OS&Y OUTSIDE SCREW AND YOKE VALVE | | ESP EXTERNAL STATIC PRESSURE RA RETURN AIR EXH EXHAUST REG REGISTER (GRILLE WITH DAMPER) Ø DUCT DIAMETER RH RELATIVE HUMIDITY RELATIVE HUMIDITY Ø DUCT DIAMETER | | | | | |
| Image: Horizontal distance GC GAS COCK Image: Horizontal distance GV GATE VALVE | STRAIGHT OFFSET TRANSITION STRAIGHT OFFS | | | | | | |
| GLV GLOBE VALVE | RECTANGULAR OFFSETS | FITTING ABBREVIATIONS | | | | | |
| | | ABBV FULL NAME ABBV FULL NAME ABBV FULL NAME A COMPRESSED AIR LINE EWT ENTERING WATER TEMPERATURE NC NORMALLY CLOSED | | | | | |
| B FCV FLOW CONTROL VALVE DDCV DDCV DOUBLE DETECTOR CHECK VALVE | | CHWR CHILLED WATER RETURN HWR HEATING WATER RETURN NO NORMALLY OPEN | | | | | |
| THERMOMETER | | CHWSCHILLED WATER SUPPLYHWSHEATING WATER SUPPLYTDVTRIPLE DUTY VALVECWRCONDENSER WATER RETURNLWTLEAVING WATER TEMPERATURETDVTRIPLE DUTY VALVECWSCONDENSER WATER SUPPLLWTLEAVING WATER TEMPERATURETDVTRIPLE DUTY VALVE | | | | | |
| PRESSURE GAUGE WITH GAUGE COCK FLOW MEASURING DEVICE | i Would'y delfices i | Wayfair Q | | | | | |
| | | Geary Pacific Supply | | | | | |
| | Sales & Service | Vistar of Portland O Fujicolor Processing | | | | | |
| | Apria Healthcare Q | ME Puntal Way | | | | | |
| | | Western Beverage V 18440 NE Portal Way, Distribution International Portland, OR 97230 | | | | | |
| | IITTAL - SEISMIC ANALYSIS | Portland, OR 97230 | | | | | |
| | | Cag Logistics Statewide Restoration | | | | | |
| | POSED TO BE COMPLETED, FOR REVIEW TO CODE AUTHORITIES AS A | Pport Wa | | | | | |
| DEFERRED SUBMITTALS: | North West 🚱 🥌 | | | | | | |
| | CONSTRUCTION DETAILING FOR HVAC HORAGE AND SEISMIC RESTRAINT | Graphic Packaging Control International Control Project Sheet Index | | | | | |
| | | | | | | | |
| ANALYSIS/DETAILING TO INC - ALL GRADE OR ROOF MOUT | NTED EQUIPMENT >400 LBS | AS Ceregnino Prut Stand A PacWest Machinery M0.02 MECHANICAL SCHEDULES | | | | | |
| - ALL SUSPENDED DUCT W/ > | 6 SF CROSS SECTION | Hampton Inn Portland East IODECITE LOCATIONI | | | | | |
| - TYPE-1 GREASE EXHAUST I | JUCIWORK SYSTEMS | JOBSITE LOCATION M3.00 MECHANICAL DETAILS | | | | | |

| GENERAL SYMBOL LEGEND | HVAC DUCT LEGEN | D | [| HVA | | RAL NOTES - STATE OF OR | EGON | |
|---|---|---------------------------------------|---|--|---------------------------|---|-------------------|--|
| SYMBOL ABBREVIATION DESCRIPTION | | SCRIPTION | | | | ROUTING OR EVERY OFFSET WHICH MAY | | ED THE HVAC CONTRACTOR IS TO |
| SECTION TAG | | CTANGULAR SUPPLY | COORDINA ⁻ 2. MATERIALS | TE WITH ALL OTHER TRADES AND | IS TO VERIF | Y WITH THE PROVISIONS OF THE MOST RE MC W/ STATE OF OREGON AMENDMENTS) | WORK. | |
| DETAIL TAG | | UND SUPPLY | - THE 2019 S - THE 2019 S | TATE OF OREGON STRUCTURAL S TATE OF OREGON ZERO ENERGY | PECIALTY CO READY COMM | DE (2018 IBC W/ STATE OF OREGON AMENDMENTS) MERCIAL CODE (OZERCC) (ASHRAE 90.1 - 20 PLICABLE LOCAL CODES, AMENDMENTS, AMENDMENDMENTS, AMENDMENDMENDMENDMENDMENDMENDMENDMENDMEND | 016 OR 2018 | |
| (#) NOTE BY SYMBOL (#) DEMOLITION NOTE BY SYMBOL | | CTANGULAR RETURN | 3. DUCT CONS | STRUCTION AND HANGING SHALL | COMPLY WIT | H CHAPTER 6 OF THE OMSC AND WITH CU MORE THAN 12" BELOW STRUCTURAL SYS | RRENT SMAC | |
| REVISION DELTA | | UND RETURN | | | | AS OTHERWISE REQUIRED BY THE OZER CU FT FIBERGLASS DUCT INSULATION WIT | | RY APPLIED REINFORCED ALUMINUM FOIL |
| POC POINT OF CONNECTION EQUIPMENT TAG | | CTANGULAR EXHAUST | VAPOR BAF 5. FLEXIBLE D | | ASSEMBLY I | NCLUDING: REINFORCED EXTERIOR VAPO | R BARRIER, N | MINIMUM R-6 FIBERGLASS INSULATION, |
| -x + x + x DEMOLITION RELOCATE | RO | UND EXHAUST | | L BE FULLY SUPPORTED, AND SH | | RE HELIX. ASSEMBLY SHALL BE CERTIFIEI USED WHERE SHOWN. LENGTH OF FLEX [| | |
| CONTROLS / ALARM LEGEND | | CTANGULAR OUTSIDE AIR | | | | T IN ACCORDANCE WITH OSSC CHAPTER 1 | | |
| SYMBOL ABBREVIATION DESCRIPTION © CO2 CARBON DIOXIDE SENSOR (A) H'STAT HYDROMETER / HUMIDITY SENSOR | RO | UND OUTSIDE AIR | DAMPERS A | ND FIRE/SMOKE DAMPERS IN ACC | ORDANCE W | WHERE INDICATED ON PLANS AND AS REQ (ITH THE MANUFACTURER'S INSTRUCTION G, MECHANICAL, AND FIRE CODES AND OF | IS, THE TERM | |
| T'STAT THERMOSTAT / TEMP SENSOR W T'STAT THERMOSTAT WIRELESS P T'STAT THERMOSTAT PENDANT MOUNT | 2-LINE 1-LINE D | ESCRIPTION | | ETRATIONS OF FIRE RATED WALL AND RATING OF THE FLOOR OR W | | S SHALL BE SLEEVED AND FIRE STOPPED \ | WITH LISTED | MATERIALS SO AS TO MAINTAIN THE |
| Image: Color Colo | | CTANGULAR DUCT | EQUIPMEN | | CFM IN ACCC | TO PROVIDE AUTOMATIC SHUT DOWN OF RDANCE WITH SECTION 606 OF THE OMSC ICAL CONTRACTOR. | | |
| CP WALL MOUNTED CONTROL PANEL (SD) DUCT MOUNTED SMOKE DETECTOR | | OUND DUCT SULATION WRAP | EQUIPMEN | SHALL BE IDENTIFIED AND LOCA | ED BY THE N | | INCLUSION | NELS REQUIRED FOR MECHANICAL IN ARCHITECTURAL DRAWINGS. ACCESS |
| SP DUCT MOUNTED STATIC PRESSURE SENSOR | | CTANGULAR DUCT DUND LINED WRAP | PANELS SHALL BE PROVIDED AND INSTALLED BY THE WALL-CEILING CONTRACTOR PER SPECIFICATIONS. 11. HVAC TEMPERATURE SET POINTS, DEAD BANDS, AND SCHEDULES SHALL BE PROGRAMMED TO MEET SECTION 6.4.3 OF ASHRAE 90.1 - 2016 | | | | | 6.4.3 OF ASHRAE 90.1 - 2016 |
| Image: Constraint of the second se | $1 \times 10/10 \text{ K} = 0/10 \times 10^{-10} \text{ K} = 0.000 \text{ K}$ | CTANGULAR DUCT K-27 DUND INSULATED | | | | REQUIREMENTS IN SECTION 602.2.1.1 OF REQUIREMENTS IN SECTION 602.2.1.4 OF | | ALL COMBUSTIBLE ELECTRICAL |
| PIPING SYMBOL LEGEND | | OUND DUCT K-27 OUND INSULATED | | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION AAV AAV AUTOMATIC AIR VENT | | EX DUCTWORK | ABBV FULL | NAME | GE ABBV | NERAL ABBREVIATIONS | ABBV | FULL NAME |
| CONCENTRIC REDUCER ECCENTRIC REDUCER ST F&T STEAM TRAP | | | ADJ ADJU | NAME STABLE E FINISHED FLOOR | GAL GALV | GALLONS GALVANIZED | OD OFCI | OUTSIDE DIMENSION OWNER FURNISHED CONTRACTOR |
| Image: Stand Fail Steam TRAP Image: Distance of the steam Trap < | HVAC DUCT DETAIL | S | AL ALUM ALT ALTER | INUM RNATE | GC GPH | GENERAL CONTRACTOR GALLONS PER HOUR | PSI | INSTALLED PRESSURE PER SQUARE INCH |
| → → PIPE GUIDE → ↓ UN PIPE UNION | | | AVG AVER | | GPM GWB HP | GALLONS PER MINUTE GYPSUM WALL BOARD | PSIA PSIG | PRESSURE PER SQUARE INCH ABSOLUTE PRESSURE PER SQUARE INCH GAGE |
| Image: Strice of the Electron | | | BOTT BOTT | ING AUTOMATION SYSTEM OM SH THERMAL UNITS | HP HR HTG | HORSE POWER HOUR HEATING | QTY | QUANTITY |
| FLOW ARROW, DIRECTION OF FLOW | | | | SH THERMAL UNITS PER HOUR | HZ | HERTZ INSIDE DIMENSION | R RE | RELOCATE REMOVE |
| | STRAIGHT TEE 45° ENTRY TEE LATERAL TE | | CFH CUBIC | FEET PER HOUR RACTOR FURNISHED | IN I/O | INCHES INPUT / OUTPUT | REQ'D RPM | REQUIRED REVOLUTIONS PER MINUTE |
| PS PRESSURE SWITCH OR PRESSURE SENSOR | ROUND BRANCH FITTIN | <u>IGS</u> | CFM CUBIC | RACTOR INSTALLED | KW | KILOWATT POUNDS | SQ STL SSTL | SQUARE STEEL STAINLESS STEEL |
| SLOPE SLOPE PIPE DOWN IN DIRECTION OF ARROW | | | | NG IECTION ROLS PANEL | LBS MAX | MAXIMUM | SUSP | SUSPENDED TEMPERATURE DIFFERENTIAL |
| STRAINER W/ BLOWDOWN VALVE | R=1.5D 15° MAX | R=1.5D | DIA DIAME | ETER | MCA MFR MISC | MINIMUM CIRCUIT AMPACITY MANUFACTURER MISCELLANEOUS | TD TEMP TYP | TEMPERATURE TEMPERATURE TYPICAL |
| Image: Wall Type Indicator Assembly | | 2 | DN DOWI E EXIST | ING | MISC MISC MIN | MISCELLANEOUS MISCELLANEOUS MINIMUM | UNO | UNLESS NOTED OTHERWISE |
| WATER FLOW DETECTOR WATER HAMMER ARRESTOR VERTICAL PIPE DROP OR RISER | | | EFF EFFIC ELEV ELEV | ATION | MT MISC | MOUNT MISCELLANEOUS | VEL | VOLT(S) VELOCITY |
| PIPE TAKE OFF - UP | ROUND ELBOW SINGLE PIECE OFFSET ROUND ELBOWS AND OFF | MULTI-PIECE OFFSET | | ENHEIT | MIN N | MINIMUM NEW | W Ø | WATT(S) VOLTAGE PHASE & DUCT DIAMETER |
| PIPE TAKE OFF - DOWN O 90 DEGREE ELBOW UP | | | FLEX FLEXI | LOAD AMPS BLE PER MINUTE | NIC NOM | NOT IN CONTRACT NOMINAL NOT TO SCALE | | |
| → 90 DEGREE ELBOW DOWN → TEE UP | | | FUT FUTU | | NTS | NOT TO SCALE | | |
| → TEE DOWN → → BREAK IN LINE - SHOWN FOR CLARITY | | | | | ŀ | IVAC ABBREVIATIONS | | |
| PIPE CAP | | , , | ABBV FULL | NAME ONDITIONING UNIT | ABBV | FULL NAME FIRE DAMPER | ABBV | FULL NAME REFRIGERANT LIQUID |
| VALVES & GAUGES | STRAIGHT TEE 45° ENTRY TEE | LATERAL TEE | APD AIR P | RESSURE DROP DRAFT DAMPER | FD FOB FOT | FIRE DAMPER FLAT ON BOTTOM FLAT ON TOP | RL RTU | ROOF TOP UNIT |
| SYMBOL ABBREVIATION DESCRIPTION | RECTANGULAR BRANCH F | <u>III IINGS</u> | BOD BOTT | DRAFT DAMPER OM OF DUCT CH SELECTOR BOX | FPB FSD | FAN POWERED BOX FIRE SMOKE DAMPER | SA SAT SEER | SUPPLY AIR SUPPLY AIR TEMPERATURE SEASONAL ENERGY EFFICIENCY RATIO |
| 一一校 AUTOMATIC TWO-WAY VALVE 一校 AUTOMATIC THREE-WAY VALVE | | | BWG BOTT | OM WALL GRILLE OM WALL REGISTER | GR GRD | GRILLE GRILLE/DIFFUSER | SL SM | SOUND LINING SHEET METAL |
| Image: Ball check or drip value Image: BV Ball value | R=1.5D | R=1.5D | CNDS COND | BUSTION ENSATE | HG HVAC | HOT GAS LINE HEATING VENTILATION AND AIR | SP SUC | STATIC PRESSURE SUCTION LINE |
| BALV BALANCING VALVE BFV BUTTERFLY VALVE | | | CU CONE | ENSER ENSING UNIT | LAT | CONDITIONING LEAVING AIR TEMPERATURE | TOD TSP | TOP OF DUCT TOTAL STATIC PRESSURE |
| | ل ل MITERED ELBOW RADIUS ELBOW RADIU | L IS TRANSITION ELBOW | | BOARD CT DIGITAL CONTROL | LIQ MD | LIQUID INSIDE MOTORIZED DAMPER | TV TWG TWR | TURN VANES TOP WALL GRILLE TOP WALL REGISTER |
| | RECTANGULAR ELBOWS | | DMPR DAMP | | MUA NG | MAKE-UP AIR NATURAL GAS | UC UH | UNDER CUT UNIT HEATER |
| TPV PRESSURE -TEMPERATURE RELIEF VALVE | | | EAT ENTE | RING AIR TEMPERATURE RATE | OA OAF | OUTSIDE AIR OUTSIDE AIR FAN | VAV VD | VARIABLE AIR VOLUME VOLUME DAMPER |
| | | 15° MAX | EER ENER EF EXHA | GY EFFICIENCY RATIO UST FAN | OBD PLBG | OPPOSED BLADE DAMPER PLUMBING | VFD VRV | VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT VOLUME |
| OS&Y OUTSIDE SCREW AND YOKE VALVE | | | ESP EXTER EXH EXHA | RNAL STATIC PRESSURE UST | RA REG RH | RETURN AIR REGISTER (GRILLE WITH DAMPER) RELATIVE HUMIDITY | Ø | DUCT DIAMETER |
| Image: Weight of the second | | ION STRAIGHT OFFSET | | | | | | |
| Image: GLV GLOBE VALVE Image: GLV GLOBE VALVE Image: GLV HOSE END DRAIN VALVE | RECTANGULAR OFFSE | TS | ABBV FULL | NAME | FI ABBV | FULL NAME | ABE | BV FULL NAME |
| FCV FLOW CONTROL VALVE | | | A COMF | PRESSED AIR LINE | EWT | ENTERING WATER TEMPERATURE | NC NO | NORMALLY CLOSED |
| | | | CHWS CHILL | ED WATER RETURN ED WATER SUPPLY ENSER WATER RETURN | HWR HWS | HEATING WATER RETURN HEATING WATER SUPPLY | TD\ | |
| t t Q PRESSURE GAUGE WITH GAUGE COCK | | i mound derives i | CWS COND | ENSER WATER SUPPL | LWT | LEAVING WATER TEMPERATURE | | |
| FLOW MEASURING DEVICE | | | Wayfair 🖗 🤤 🖓 | ieary Pacific Supply | | | | |
| | | Sales & Service Vistar of Po | Portland Q R g | color Processing | | | | |
| | | Apria Healthcare 🛛 | NE Pertal Way Kinco | GCC Q | | | | |
| | | Western Bev | everage 🖗 👘 18440 NE Pc Portland, OR | | | | | |
| DEFERRED SUBN | IITTAL - SEISMIC ANALYSIS | | Cag Logistics Management Services | Statewide Restoration | | | | |
| THE FOLLOWING ITEMS ARE PR DOCUMENTED, AND SUBMITTED | OPOSED TO BE COMPLETED, OFOR REVIEW TO CODE AUTHORITIES AS A | Airpor W | 0 | action | 6 | | | |
| DEFERRED SUBMITTALS: | | North West 🚱 🕳 Handling Systems | | | | | — — — — | |
| | D CONSTRUCTION DETAILING FOR HVAC CHORAGE AND SEISMIC RESTRAINT | or Way | | nic Packaging 🗬 | | | SHEE | <u>T INDEX</u> |
| MINIMUM MECHANICAL ITEM ANALYSIS/DETAILING TO INC | CLUDE THE FOLLOWING: | Chevron O | MedCure Nation | al Glass Industries PacWest.Machinery | M0.0 M0.0 | 1 MECHANICAL SCHEDULES | | |
| - ALL GRADE OR ROOF MOU - ALL SUSPENDED COMPON - ALL SUSPENDED DUCT W/ | ENTS OR EQUIPMENT >75 LBS | h WoodSpring Suites Portland East | O Continuum Global Solutions | (mi) (308) | M0.0 M2.0 | 1 MECHANICAL FIRST FLOOR HVA | | |
| - ALL SUSPENDED DUCT W/ - TYPE-1 GREASE EXHAUST | | | OBSITE LO | CATION | M2.0 M3.0 | | J | |
| | | | | | | | | |

| GENERAL SYMBOL LEGEND | HVAC DUCT LEGEND | HVAC GENERAL NOTES - STATE OF OREGON | | | | | |
|---|--|---|--|--|--|--|--|
| SYMBOL ABBREVIATION DESCRIPTION | DUCT UP DUCT DOWN DESCRIPTION | 1. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING OR EVERY OFFSET WHICH MAY BE REQUIRED. THE HVAC CONTRACTOR IS TO | | | | | |
| SECTION TAG | RECTANGULAR SUP | PLY COORDINATE WITH ALL OTHER TRADES AND IS TO VERIFY ALL CLEARANCES BEFORE COMMENCING WORK. 2. MATERIALS, METHODS, AND INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF THE MOST RECENTLY ADOPTED VERSIONS OF - | | | | | |
| DETAIL TAG | | THE 2019 OREGON MECHANICAL SPECIALTY CODE (2018 IMC W/ STATE OF OREGON AMENDMENTS) THE 2019 STATE OF OREGON STRUCTURAL SPECIALTY CODE (2018 IBC W/ STATE OF OREGON AMENDMENTS) THE 2019 STATE OF OREGON ZERO ENERGY READY COMMERCIAL CODE (OZERCC) (ASHRAE 90.1 - 2016 OR 2018 IECC) THE 2019 INTERNATIONAL FIRE CODE AND ALL OTHER APPLICABLE LOCAL CODES, AMENDMENTS, AND ORDINANCES. | | | | | |
| (#) NOTE BY SYMBOL | RECTANGULAR RET | | | | | | |
| (#) DEMOLITION NOTE BY SYMBOL (#) REVISION DELTA | ROUND RETURN | 4. DUCTS SHALL BE INSULATED AS INDICATED ON PLANS, OR AS OTHERWISE REQUIRED BY THE OZERCC . - DUCT WRAP, WHERE INDICATED, SHALL BE 2-3/16" 0.75 LB/CU FT FIBERGLASS DUCT INSULATION WITH A FACTORY APPLIED REINFORCED ALUMINUM FOIL | | | | | |
| POC POINT OF CONNECTION | RECTANGULAR EXH | AUST VAPOR BARRIER. | | | | | |
| # EQUIPMENT TAG ***** DEMOLITION RELOCATE | ROUND EXHAUST | FLEXIBLE DUCT SHALL BE A MANUFACTURED ASSEMBLY INCLUDING: REINFORCED EXTERIOR VAPOR BARRIER, MINIMUM R-6 FIBERGLASS INSULATION, NON-PERFORATED INTERIOR LINER, AND STRUCTURAL WIRE HELIX. ASSEMBLY SHALL BE CERTIFIED AS A UL 181 LISTED, CLASS-1 AIR DUCT. FLEXIBLE DUCT SHALL BE FULLY SUPPORTED, AND SHALL ONLY BE USED WHERE SHOWN. LENGTH OF FLEX DUCT SHALL NOT EXCEED 8' UNLESS NOTED OTHERWISE. | | | | | |
| CONTROLS / ALARM LEGEND | RECTANGULAR OUT | SIDE AIR 6. PROVIDE EARTHQUAKE RESTRAINT FOR HVAC EQUIPMENT IN ACCORDANCE WITH OSSC CHAPTER 16 AND ASCE 7-16. | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION © CO2 CARBON DIOXIDE SENSOR (A) H'STAT HYDROMETER / HUMIDITY SENSOR | ROUND OUTSIDE AIR | 7. PROVIDE FIRE DAMPERS AND/OR FIRE/SMOKE DAMPERS WHERE INDICATED ON PLANS AND AS REQUIRED BY SECTION 717 OF THE OSSC. INSTALL FIRE DAMPERS AND FIRE/SMOKE DAMPERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, THE TERMS OF THEIR LISTINGS, AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING, MECHANICAL, AND FIRE CODES AND ORDINANCES. | | | | | |
| T'STAT THERMOSTAT / TEMP SENSOR W T'STAT T'STAT THERMOSTAT WIRELESS | 2-LINE 1-LINE DESCRIPTION | 8. PIPING PENETRATIONS OF FIRE RATED WALLS OR FLOORS SHALL BE SLEEVED AND FIRE STOPPED WITH LISTED MATERIALS SO AS TO MAINTAIN THE INTEGRITY AND RATING OF THE FLOOR OR WALL. | | | | | |
| ① P T'STAT THERMOSTAT PENDANT MOUNT ② CO CO CARBON MONOXIDE SENSOR ③ WALL SWITCH / SPEED CONTROL | I2/10 W I2/10 W RECTANGULAR DUC INSULATION WRAP | 9. PROVIDE RETURN DUCT SMOKE DETECTOR CONFIGURED TO PROVIDE AUTOMATIC SHUT DOWN OF ALL HEATING, COOLING, OR VENTILATION EQUIPMENT DELIVERING IN EXCESS OF 2000 CFM IN ACCORDANCE WITH SECTION 606 OF THE OMSC. POWER WIRING AND INTERLOCK WIRING WITH THE BUILDING FIRE ALARM SYSTEM SHALL BE BY THE ELECTRICAL CONTRACTOR. | | | | | |
| CP WALL MOUNTED CONTROL PANEL (SD) DUCT MOUNTED SMOKE DETECTOR | 12ØW 12ØW ROUND DUCT INSULATION WRAP | 10. HVAC EQUIPMENT, VALVES AND DAMPERS SHALL BE LOCATED IN EASILY ACCESSIBLE LOCATIONS. ACCESS PANELS REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE IDENTIFIED AND LOCATED BY THE MECHANICAL CONTRACTOR FOR ULTIMATE INCLUSION IN ARCHITECTURAL DRAWINGS. ACCESS | | | | | |
| (SP) DUCT MOUNTED STATIC PRESSURE SENSOR | Image: state | | | | | | |
| FSD 11/2 & 3 HOUR COMBINATION FIRE SMOKE DAMPER | 12/10 K-27 RECTANGULAR DUC SOUND INSULATED | 12. ALL WIRING EXPOSED WITHIN A PLENUM SHALL MEET THE REQUIREMENTS IN SECTION 602.2.1.1 OF THE OMSC. ALL COMBUSTIBLE ELECTRICAL EQUIPMENT EXPOSED WITHIN A PLENUM SHALL MEET THE REQUIREMENTS IN SECTION 602.2.1.4 OF THE OMSC. | | | | | |
| PIPING SYMBOL LEGEND | Izø K-27 Izø K-27 ROUND DUCT K-27 Sound insulated | | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION | | GENERAL ABBREVIATIONS | | | | | |
| CONCENTRIC REDUCER | | ABBV FULL NAME ABBV FULL NAME ABBV FULL NAME ADJ ADJUSTABLE GAL GALLONS OD OUTSIDE DIMENSION | | | | | |
| ⊗ ST F&T STEAM TRAP □ □ □ MAV MANUAL AIR VENT | HVAC DUCT DETAILS | AFF ABOVE FINISHED FLOOR GALV GALVANIZED OFCI OWNER FURNISHED CONTRACTOR AL ALUMINUM GC GENERAL CONTRACTOR INSTALLED | | | | | |
| + PIPE ANCHOR PIPE GUIDE | | ALT ALTERNATE GPH GALLONS PER HOUR PSI PRESSURE PER SQUARE INCH AP ACCESS PANEL GPM GALLONS PER MINUTE PSIA PRESSURE PER SQUARE INCH AVG AVERAGE GWB GYPSUM WALL BOARD PSIA PRESSURE PER SQUARE INCH | | | | | |
| UN PIPE UNION | | BAS BUILDING AUTOMATION SYSTEM HP HORSE POWER PSIG PRESSURE PER SQUARE INCH GAGE | | | | | |
| FLEXIBLE PIPE CONNECTOR | | BTU BRITISH THERMAL UNITS HTG HEATING GTY GUANTIY BTUH BRITISH THERMAL UNITS PER HOUR HZ HERTZ R RELOCATE | | | | | |
| FLOW ARROW, DIRECTION OF FLOW TPT PRESSURE/TEMPERATURE TEST PLUG | | CAP CAPACITY ID INSIDE DIMENSION RE REMOVE REQ'D REQUIRED | | | | | |
| PUMP P PS PRESSURE SWITCH OR PRESSURE SENSOR | STRAIGHT TEE 45° ENTRY TEE LATERAL TEE CONICAL T ROUND BRANCH FITTINGS | CFCI CONTRACTOR FURNISHED I/O INPUT / OUTPUT SQ SQUARE | | | | | |
| RPBPRPBP REDUCED PRESSURE BACKFLOW PREVENTOR SLOPE SLOPE PIPE DOWN IN DIRECTION OF ARROW | | CFM CUBIC FEET PER MINUTE LBS POUNDS STL STEL | | | | | |
| | | CONN CONNECTION MAX MAXIMUM SUSP SUSP CP CONTROLS PANEL MCA MINIMUM CIRCUIT AMPACITY TD TEMPERATURE DIFFERENTIAL | | | | | |
| STRAINER W/ BLOWDOWN VALVE VB VACUUM BREAKER | R=1.5D | DIA DIAMETER MFR MANUFACTURER TEMP TEMPERATURE | | | | | |
| WALL TYPE INDICATOR ASSEMBLY | | Image: Discrete bin bown Misc Misc Miscellaneous Uno United otherwise E EXISTING Min Minimum Minimum Minimum Minimum | | | | | |
| WATER HAMMER ARRESTOR | | EFF EFFICIENCY MT MOUNT V VOL1(S) ELEV ELEVATION MISC MISCELLANEOUS VEL VELOCITY | | | | | |
| User Vertical PIPE DROP OR RISER User PIPE TAKE OFF - UP | ROUND ELBOW SINGLE PIECE OFFSET MULTI-PIECE OF | FSET EXST EXISTING MIN MINIMUM W WATT(S) F FAHRENHEIT N NEW Ø VOLTAGE PHASE & DUCT DIAMETER | | | | | |
| PIPE TAKE OFF - DOWN O 90 DEGREE ELBOW UP | ROUND ELBOWS AND OFFSETS | FLA FULL LOAD AMPS NIC NOT IN CONTRACT FLEX FLEXIBLE NOM NOMINAL | | | | | |
| | | FPM FEET PER MINUTE NTS NOT TO SCALE FUT FUTURE | | | | | |
| Image: State of the state o | | | | | | | |
| PIPE CAP | | HVAC ABBREVIATIONS ABBV FULL NAME ABBV FULL NAME FULL NAME | | | | | |
| VALVES & GAUGES | L L P STRAIGHT TEE <u>45° ENTRY TEE</u> LATERAL TE | AC AIR CONDITIONING UNIT FD FIRE DAMPER RL REFRIGERANT LIQUID APD AIR PRESSURE DROP FOB FLAT ON BOTTOM RTU ROOF TOP UNIT | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION | <u>RECTANGULAR BRANCH FITTINGS</u> | BDD BACKDRAFT DAMPER FOT FLAT ON TOP SA SUPPLY AIR | | | | | |
| AUTOMATIC FLOW CONTROL VALVE | | BOD BOTTOM OF DUCT FPB FAN POWERED BOX SAT SUPPLY AIR TEMPERATURE BSB BRANCH SELECTOR BOX FSD FIRE SMOKE DAMPER SEER SEASONAL ENERGY EFFICIENCY RATIO BWG BOTTOM WALL GRILLE GR GRILLE SL SOUND LINING | | | | | |
| AUTOMATIC THREE-WAY VALVE BALL CHECK OR DRIP VALVE | | BWR BOTTOM WALL REGISTER GRD GRILLE/DIFFUSER SM SHEET METAL COMB COMBUSTION HG HOT GAS LINE SP STATIC PRESSURE | | | | | |
| BV BALL VALVE | $\square \square $ | | | | | | |
| Ø BALV BALANCING VALVE BFV BUTTERFLY VALVE | | CU CONDENSING UNIT LAT LEAVING AIR TEMPERATURE TSP TOTAL STATIC PRESSURE DB DUCT BOARD LIQ LIQUID INSIDE TV TURN VANES | | | | | |
| CV CHECK VALVE RV RELIEF VALVE | MITERED ELBOW RADIUS ELBOW RADIUS TRANSITION EL | DDC DIRECT DIGITAL CONTROL MD MOTORIZED DAMPER TWG TOP WALL GRILLE | | | | | |
| | RECTANGULAR ELBOWS | DMPR DAMPER DX DIRECT EXPANSION NG NATURAL GAS UC UNDER CUT | | | | | |
| TPV PRESSURE -TEMPERATURE RELIEF VALVE | | EAT ENTERING AIR TEMPERATURE OA OUTSIDE AIR OUTSIDE AIR EC EGGCRATE OAF OUTSIDE AIR FAN VAV VARIABLE AIR VOLUME CO EGGCRATE OBD OPPOSED BLADE DAMPER VD VOLUME DAMPER | | | | | |
| PRV PRESSURE REDUCING VALVE | | EER ENERGY EFFICIENCY RATIO OBD OFFOSED BLADE DAMPER VFD VARIABLE FREQUENCY DRIVE EF EXHAUST FAN PLBG PLUMBING VRV VARIABLE REFRIGERANT VOLUME | | | | | |
| Image: How with the second state of the second s | | EXTERNAL STATIC PRESSURE RA RETORNAL EXH EXHAUST REG REGISTER (GRILLE WITH DAMPER) Ø DUCT DIAMETER | | | | | |
| Image: How with the second | STRAIGHT OFFSET TRANSITION STRAIGHT OF | FSET RH RELATIVE HUMIDITY | | | | | |
| GLV GLOBE VALVE | RECTANGULAR OFFSETS | FITTING ABBREVIATIONS | | | | | |
| HOSE END DRAIN VALVE | | ABBV FULL NAME ABBV FULL NAME ABBV FULL NAME A COMPRESSED AIR LINE EWT ENTERING WATER TEMPERATURE NC NORMALLY CLOSED | | | | | |
| DDCV DOUBLE DETECTOR CHECK VALVE | | CHWRCHILLED WATER RETURNNONORMALLY OPENCHWSCHILLED WATER SUPPLYHWSHEATING WATER SUPPLYTDVTRIPLE DUTY VALVE | | | | | |
| | | CWR CONDENSER WATER RETURN CWS CONDENSER WATER SUPPL | | | | | |
| PRESSURE GAUGE WITH GAUGE COCK FLOW MEASURING DEVICE | | Wayfair Q Geary Pacific Supply | | | | | |
| | | | | | | | |
| | Sales & Service Apria Healthca | Vistar of Portland | | | | | |
| | Apria Healthca | NE Partal Way Kinco Kinco | | | | | |
| | | Portland, OR 97230 | | | | | |
| DEFERRED SUBM | ITTAL - SEISMIC ANALYSIS | Cag Logistics Statewide Restoration | | | | | |
| THE FOLLOWING ITEMS ARE PRO | POSED TO BE COMPLETED, FOR REVIEW TO CODE AUTHORITIES AS A | Aijont W | | | | | |
| DOCOMENTED, AND SOBMITTED DEFERRED SUBMITTALS: | North West | ev. | | | | | |
| | CONSTRUCTION DETAILING FOR HVAC HORAGE AND SEISMIC RESTRAINT | Graphic Packaging Contractional PROJECT SHEET INDEX | | | | | |
| | | M0.00 MECHANICAL COVER SHEET M0.01 MECHANICAL SCHEDULES | | | | | |
| ANALYSIS/DETAILING TO INCL - ALL GRADE OR ROOF MOUN - ALL SUSPENDED COMPONE | NTED EQUIPMENT >400 LBS | As Ceregnino Proir stand PacWest Machinery | | | | | |
| - ALL SUSPENDED COMPONE - ALL SUSPENDED DUCT W/ > - TYPE-1 GREASE EXHAUST D | 6 SF CROSS SECTION | IM2.02 MECHANICAL ROOF HVAC PLANS | | | | | |
| - TYPE-1 GREASE EXHAUST D | JUGI WURN STSTENS | JOBSITE LOCATION M3.00 MECHANICAL DETAILS | | | | | |

| GENERAL SYMBOL LEGEND | HVAC DUCT LEGEND | HVAC GENERAL NOTES - STATE OF OREGON | | | | | |
|--|--|--|--|--|--|--|--|
| SYMBOL ABBREVIATION DESCRIPTION | DUCT UP DUCT DOWN DESCRIPTION | 1. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW EXACT ROUTING OR EVERY OFFSET WHICH MAY BE REQUIRED. THE HVAC CONTRACTOR IS TO | | | | | |
| SECTION TAG | RECTANGULAR SUPPLY | COORDINATE WITH ALL OTHER TRADES AND IS TO VERIFY ALL CLEARANCES BEFORE COMMENCING WORK. 2. MATERIALS, METHODS, AND INSTALLATION SHALL COMPLY WITH THE PROVISIONS OF THE MOST RECENTLY ADOPTED VERSIONS OF - | | | | | |
| DETAIL TAG | | THE 2019 OREGON MECHANICAL SPECIALTY CODE (2018 IMC W/ STATE OF OREGON AMENDMENTS) THE 2019 STATE OF OREGON STRUCTURAL SPECIALTY CODE (2018 IBC W/ STATE OF OREGON AMENDMENTS) THE 2019 STATE OF OREGON ZERO ENERGY READY COMMERCIAL CODE (OZERCC) (ASHRAE 90.1 - 2016 OR 2018 IECC) THE 2019 INTERNATIONAL FIRE CODE AND ALL OTHER APPLICABLE LOCAL CODES, AMENDMENTS, AND ORDINANCES. | | | | | |
| (#) NOTE BY SYMBOL | RECTANGULAR RETURN | DUCT CONSTRUCTION AND HANGING SHALL COMPLY WITH CHAPTER 6 OF THE OMSC AND WITH CURRENT SMACNA STANDARDS. EARTHQUAKE BRACE ALL DUCTS 28" DIA AND LARGER WHICH ARE SUSPENDED MORE THAN 12" BELOW STRUCTURAL SYSTEM. | | | | | |
| (#) DEMOLITION NOTE BY SYMBOL (#) REVISION DELTA | ROUND RETURN | 4. DUCTS SHALL BE INSULATED AS INDICATED ON PLANS, OR AS OTHERWISE REQUIRED BY THE OZERCC . - DUCT WRAP, WHERE INDICATED, SHALL BE 2-3/16" 0.75 LB/CU FT FIBERGLASS DUCT INSULATION WITH A FACTORY APPLIED REINFORCED ALUMINUM FOIL | | | | | |
| POC POINT OF CONNECTION | RECTANGULAR EXHAUST | VAPOR BARRIER. | | | | | |
| # EQUIPMENT TAG * * * * * DEMOLITION RELOCATE | ROUND EXHAUST | 5. FLEXIBLE DUCT SHALL BE A MANUFACTURED ASSEMBLY INCLUDING: REINFORCED EXTERIOR VAPOR BARRIER, MINIMUM R-6 FIBERGLASS INSULATION, NON-PERFORATED INTERIOR LINER, AND STRUCTURAL WIRE HELIX. ASSEMBLY SHALL BE CERTIFIED AS A UL 181 LISTED, CLASS-1 AIR DUCT. FLEXIBLE DUCT SHALL BE FULLY SUPPORTED, AND SHALL ONLY BE USED WHERE SHOWN. LENGTH OF FLEX DUCT SHALL NOT EXCEED 8' UNLESS NOTED OTHERWISE. | | | | | |
| CONTROLS / ALARM LEGEND | RECTANGULAR OUTSIDE AIR | 6. PROVIDE EARTHQUAKE RESTRAINT FOR HVAC EQUIPMENT IN ACCORDANCE WITH OSSC CHAPTER 16 AND ASCE 7-16. | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION O CO2 CARBON DIOXIDE SENSOR | ROUND OUTSIDE AIR | 7. PROVIDE FIRE DAMPERS AND/OR FIRE/SMOKE DAMPERS WHERE INDICATED ON PLANS AND AS REQUIRED BY SECTION 717 OF THE OSSC. INSTALL FIRE DAMPERS AND FIRE/SMOKE DAMPERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, THE TERMS OF THEIR LISTINGS, AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING, MECHANICAL, AND FIRE CODES AND ORDINANCES. | | | | | |
| H'STAT HYDROMETER / HUMIDITY SENSOR ① T'STAT THERMOSTAT / TEMP SENSOR ① T'STAT THERMOSTAT WIRELESS | 2-LINE 1-LINE DESCRIPTION | 8. PIPING PENETRATIONS OF FIRE RATED WALLS OR FLOORS SHALL BE SLEEVED AND FIRE STOPPED WITH LISTED MATERIALS SO AS TO MAINTAIN THE INTEGRITY AND RATING OF THE FLOOR OR WALL. | | | | | |
| ① P T'STAT THERMOSTAT PENDANT MOUNT ② CO CO CARBON MONOXIDE SENSOR ③ WALL SWITCH / SPEED CONTROL | I2/10 W I2/10 W RECTANGULAR DUCT INSULATION WRAP | 9. PROVIDE RETURN DUCT SMOKE DETECTOR CONFIGURED TO PROVIDE AUTOMATIC SHUT DOWN OF ALL HEATING, COOLING, OR VENTILATION EQUIPMENT DELIVERING IN EXCESS OF 2000 CFM IN ACCORDANCE WITH SECTION 606 OF THE OMSC. POWER WIRING AND INTERLOCK WIRING WITH THE BUILDING FIRE ALARM SYSTEM SHALL BE BY THE ELECTRICAL CONTRACTOR. | | | | | |
| CP WALL MOUNTED CONTROL PANEL | 12ØW 12ØW INSULATION WRAP | 10. HVAC EQUIPMENT, VALVES AND DAMPERS SHALL BE LOCATED IN EASILY ACCESSIBLE LOCATIONS. ACCESS PANELS REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE IDENTIFIED AND LOCATED BY THE MECHANICAL CONTRACTOR FOR ULTIMATE INCLUSION IN ARCHITECTURAL DRAWINGS. ACCESS | | | | | |
| SD DUCT MOUNTED SMOKE DETECTOR (SP) DUCT MOUNTED STATIC PRESSURE SENSOR | Lizio SLSM LINED WRAP | PANELS SHALL BE PROVIDED AND INSTALLED BY THE WALL-CEILING CONTRACTOR PER SPECIFICATIONS. 11. HVAC TEMPERATURE SET POINTS, DEAD BANDS, AND SCHEDULES SHALL BE PROGRAMMED TO MEET SECTION 6.4.3 OF ASHRAE 90.1 - 2016 | | | | | |
| FSD 11/2 & 3 HOUR COMBINATION FIRE SMOKE DAMPER | 12/10 K-27 12/10 K-27 SOUND INSULATED | 12. ALL WIRING EXPOSED WITHIN A PLENUM SHALL MEET THE REQUIREMENTS IN SECTION 602.2.1.1 OF THE OMSC. ALL COMBUSTIBLE ELECTRICAL EQUIPMENT EXPOSED WITHIN A PLENUM SHALL MEET THE REQUIREMENTS IN SECTION 602.2.1.4 OF THE OMSC. | | | | | |
| PIPING SYMBOL LEGEND | Image: Sound insulated Image: Sound insulated Image: Sound insulated Image: Sound insulated | | | | | | |
| SYMBOL ABBREVIATION DESCRIPTION | 12Ø | GENERAL ABBREVIATIONS | | | | | |
| CONCENTRIC REDUCER | FLEX DUCTWORK | ABBV FULL NAME ABBV FULL NAME ADJ ADJUSTABLE GAL GALLONS OD OUTSIDE DIMENSION | | | | | |
| ⊗ ST F&T STEAM TRAP □ □ □ MAV MANUAL AIR VENT | HVAC DUCT DETAILS | AFF ABOVE FINISHED FLOOR GALV GALVANIZED OFCI OWNER FURNISHED CONTRACTOR AL ALUMINUM GC GENERAL CONTRACTOR INSTALLED ALT ALTERNATE GPH GALLONS PER HOUR DESUME PER SOLVAPE INCH | | | | | |
| ***** PIPE ANCHOR PIPE GUIDE | | ALT ALTERNATE GPH GALLONS PER HOUR PSI PRESSURE PER SQUARE INCH AP ACCESS PANEL GPM GALLONS PER MINUTE PSIA PRESSURE PER SQUARE INCH AVG AVERAGE GWB GYPSUM WALL BOARD PSIA PRESSURE PER SQUARE INCH | | | | | |
| Image: UN PIPE UNION Image: UN FLEXIBLE JOINT | T T T T | BAS BOTTBUILDING AUTOMATION SYSTEMHP HP HRHORSE POWERPSIGPRESSURE PER SQUARE INCH GAGEBOTTBOTTOMHRHOUROTXOLIANTITY | | | | | |
| FLEXIBLE PIPE CONNECTOR FLOW ARROW, DIRECTION OF FLOW | | BTUBRITISH THERMAL UNITSHTGHEATINGQTAQUANTITYBTUHBRITISH THERMAL UNITS PER HOURHZHERTZRRELOCATE | | | | | |
| PRESSURE/TEMPERATURE TEST PLUG PUMP | L L Z <u>STRAIGHT TEE</u> <u>45° ENTRY TEE</u> <u>LATERAL TEE</u> <u>CONICAL TEE</u> | CAPCAPACITYIDINSIDE DIMENSIONREREMOVECFHCUBIC FEET PER HOURININCHESREQUIREDCFHCUBIC FEET PER HOURININCHESRPMREVOLUTIONS PER MINUTE | | | | | |
| P PS PRESSURE SWITCH OR PRESSURE SENSOR | ROUND BRANCH FITTINGS | CFCI CONTRACTOR FURNISHED I/O INPUT/OUTPUT CONTRACTOR INSTALLED KW KILOWATT SQ SQUARE | | | | | |
| RPBP RPBP REDUCED PRESSURE BACKFLOW PREVENTOR SLOPE SLOPE PIPE DOWN IN DIRECTION OF ARROW | | CLG CEILING LBS POUNDS SSTL STAINLESS STEEL SUSP SUSPENDED | | | | | |
| Image: strain Strain Image: strain Strain Image: strain Strain | | CP CONTROLS PANEL MCA MINIMUM CIRCUIT AMPACITY TD TEMPERATURE DIFFERENTIAL | | | | | |
| VB VB VACUUM BREAKER VH WALL TYPE INDICATOR ASSEMBLY | 15° MAX R=1.5D | DIA DIAMETER MISCONCINCTIONER TYP TYPICAL DN DOWN MISC MISCELLANEOUS UNO UNLESS NOTED OTHERWISE | | | | | |
| WATER FLOW DETECTOR WATER HAMMER ARRESTOR | | EEXISTINGMINMINIMUMVVOLT(S)EFFEFFICIENCYMTMOUNTVELVELVEL | | | | | |
| →→ VERTICAL PIPE DROP OR RISER →→ PIPE TAKE OFF - UP | ん ROUND ELBOW SINGLE PIECE OFFSET MULTI-PIECE OFFSET | EXST EXISTING MISC MISCELLANEOUS W WATT(S) | | | | | |
| PIPE TAKE OFF - DOWN | ROUND ELBOWS AND OFFSETS | FFAHRENHEITNNEWØVOLTAGE PHASE & DUCT DIAMETERFLAFULL LOAD AMPSNICNOT IN CONTRACTØ | | | | | |
| O 90 DEGREE ELBOW UP → 90 DEGREE ELBOW DOWN | | FLEX FLEXIBLE NOM NOMINAL FPM FEET PER MINUTE NTS NOT TO SCALE FUT FUTURE | | | | | |
| O | | | | | | | |
| BREAK IN LINE - SHOWN FOR CLARITY | | | | | | | |
| | | ABBV FULL NAME ABBV FULL NAME ABBV FULL NAME AC AIR CONDITIONING UNIT FD FIRE DAMPER RL REFRIGERANT LIQUID | | | | | |
| VALVES & GAUGES SYMBOL ABBREVIATION DESCRIPTION | STRAIGHT TEE <u>45° ENTRY TEE</u> LATERAL TEE RECTANGULAR BRANCH FITTINGS | APDAIR PRESSURE DROPFOBFLAT ON BOTTOMRTUROOF TOP UNITBDDBACKDRAFT DAMPERFOTFLAT ON TOPSASUPPLY AIR | | | | | |
| AUTOMATIC FLOW CONTROL VALVE | | BODBOTTOM OF DUCTFPBFAN POWERED BOXSATSUPPLY AIR TEMPERATUREBSBBRANCH SELECTOR BOXFSDFIRE SMOKE DAMPERSEERSEASONAL ENERGY EFFICIENCY RATIO | | | | | |
| 一代 AUTOMATIC TWO-WAY VALVE 一袋 AUTOMATIC THREE-WAY VALVE | | BWG BOTTOM WALL GRILLE GR GRILLE SL SOUND LINING BWR BOTTOM WALL REGISTER GRD GRILLE/DIFFUSER SM SHEET METAL | | | | | |
| BALL CHECK OR DRIP VALVE BV BALL VALVE | $\square \square $ | COMBCOMBUSTIONHGHOT GAS LINESPSTATIC PRESSURECNDSCONDENSATEHVACHEATING VENTILATION AND AIRSUCSUCTION LINE | | | | | |
| Ø BALV BALANCING VALVE O BFV BUTTERFLY VALVE | | COND CONDENSER CONDITIONING TOD TOP OF DUCT CU CONDENSING UNIT LAT LEAVING AIR TEMPERATURE TSP TOTAL STATIC PRESSURE | | | | | |
| | L L L MITERED ELBOW RADIUS ELBOW RADIUS TRANSITION ELBOW | DBDUCT BOARDLIQLIQUID INSIDETVTURN VANESDDCDIRECT DIGITAL CONTROLMDMOTORIZED DAMPERTWGTOP WALL GRILLEDIFFDIFFUSERMULAMAKE-LID AIPTWRTOP WALL REGISTER | | | | | |
| RV RELIEF VALVE | RECTANGULAR ELBOWS | DMPR DAMPER DMPR DAMPER DMPR DAMPER DMPR DAMPER | | | | | |
| TPV PRESSURE -TEMPERATURE RELIEF VALVE | | EAT ENTERING AIR TEMPERATURE OA OUTSIDE AIR OAF OUTSIDE AIR FAN VAV VARIABLE AIR VOLUME | | | | | |
| PRV PRESSURE REDUCING VALVE | | ECEGGCRATEOBDOPPOSED BLADE DAMPERVDVOLUME DAMPERERENERGY EFFICIENCY RATIOOBDOPPOSED BLADE DAMPERVFDVARIABLE FREQUENCY DRIVEEFEXHAUST FANPLBGPLUMBINGVRVVARIABLE REFRIGERANT VOLUME | | | | | |
| Image: PV PLUG VALVE Image: PV PLUG VALVE Image: PV OS&Y OUTSIDE SCREW AND YOKE VALVE | | ESP EXTERNAL STATIC PRESSURE RA RETURN AIR Ø DUCT DIAMETER EXH EXHAUST REG REGISTER (GRILLE WITH DAMPER) Ø DUCT DIAMETER | | | | | |
| GC GAS COCK | STRAIGHT OFFSET TRANSITION STRAIGHT OFFSET | RH RELATIVE HUMIDITY | | | | | |
| GV GATE VALVE | RECTANGULAR OFFSETS | FITTING ABBREVIATIONS | | | | | |
| HOSE END DRAIN VALVE | · | ABBV FULL NAME ABBV FULL NAME ABBV FULL NAME A COMPRESSED AIR LINE EWT ENTERING WATER TEMPERATURE NC NORMALLY CLOSED | | | | | |
| B FCV FLOW CONTROL VALVE DDCV DDCV DOUBLE DETECTOR CHECK VALVE | | CHWR CHILLED WATER RETURN HWR HEATING WATER RETURN NO NORMALLY OPEN | | | | | |
| THERMOMETER | | CHWSCHILLED WATER SUPPLYHWSHEATING WATER SUPPLYTDVTRIPLE DUTY VALVECWRCONDENSER WATER RETURNLWTLEAVING WATER TEMPERATURETDVTRIPLE DUTY VALVECWSCONDENSER WATER SUPPLLWTLEAVING WATER TEMPERATURETDVTRIPLE DUTY VALVE | | | | | |
| PRESSURE GAUGE WITH GAUGE COCK FLOW MEASURING DEVICE | A mounty services a | Wayfair O | | | | | |
| | | Geary Pacific Supply | | | | | |
| | | of Portland P Fujicolor Processing | | | | | |
| | Apria Healthcare 🔗 | NE Partal Way GCC Kinco Kinco Kinco | | | | | |
| | Western | m Beverage Portland, OR 97230 | | | | | |
| DEFERRED SUBM | AITTAL - SEISMIC ANALYSIS | Cag Logistics Statewide Restoration | | | | | |
| THE FOLLOWING ITEMS ARE PRO | | 9 | | | | | |
| DOCUMENTED, AND SUBMITTED DEFERRED SUBMITTALS: | FOR REVIEW TO CODE AUTHORITIES AS A | | | | | | |
| | D CONSTRUCTION DETAILING FOR HVAC | Graphic Packaging Control Packaging Control PROJECT SHEET INDEX | | | | | |
| MINIMUM MECHANICAL ITEM | IS SUBJECT TO SEISMIC | MedCure National Glass Industries M0.00 MECHANICAL COVER SHEET M0.01 MECHANICAL SCHEDULES | | | | | |
| | | AS Cereghino Fruit Stand PacWest.Machinery PacWest.Machinery MU.01 MECHANICAL SCHEDULES | | | | | |
| ANALYSIS/DETAILING TO INC - ALL GRADE OR ROOF MOUT | NTED EQUIPMENT >400 LBS | M0.02 MECHANICAL SCHEDULES | | | | | |
| - ALL GRADE OR ROOF MOUN | NTED EQUIPMENT >400 LBS ENTS OR EQUIPMENT >75 LBS > 6 SF CROSS SECTION | M0.02 MECHANICAL SCHEDULES | | | | | |





| | ROOM DESIGN CONDITIONS | |
|---|---|-------|
| ROOM | (DRY BULB TEMP (F)/ | |
| NAME | RELATIVE HUMIDITY (%)) | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| CLEAN ROOM | COOLING: 72F/55% RH, HEATING 70F/35%RH | 1,040 |
| | NOTE: CODE ACCEPTABLE RANGE 68F-73F, 30%-60% RH | I |
| | | |
| DESIGN PARAMETERS/CONTINGENCIES | | |
| - DESIGN IS TO MEET 2016 HLAC STANDARDS FOR "SURGICAL P | ACK ASSEMBLY ROOM", MINIMUM 10 ACH OF RECIRCULATED AIR. | |
| | , | |

- ROOM DIMENSIONS ARE 44' x 26' x 9'6" - ROOF IS ASSUMED TO BE INSULATED.

- MAIN WAREHOUSE AREA IS ASSUMED TO BE 100F ON A DESIGN DAY. WALLS BETWEEN WAREHOUSE AND CLEANROOM ARE UNINSULATED 2X4 STUD WALLS W/ DRYWALL ON BOTH SIDES. - AIR FROM MAIN WAREHOUSE TO CLEAN ROOM MAY CAUSE HUMIDITY ISSUES. TUNE UP OF DOORS MAY BE REQUIRED.

| ROOM | AREA | HEIGHT | OCCUPANCY |
|--------------------|------|--------|-----------------------------|
| NAME | SF | FT. | TYPE |
| | | | |
| LAUNDRY CLEAN ROOM | 1040 | 9.50 | SURGICAL PACK ASSEMBLY ROOM |
| | | | |

| UNIT TAG | AREA SERVED | CONFIGURATION | MANUFACTURER & MODEL | | | | DX CC | DOLING | | | HOT GA |
|------------|----------------|-----------------------------|-------------------------|------|--------|----------|-----------|--------------|--------------|-----------|--------|
| | | | | | COOLIN | IG (MBH) | | | UNIT LEAVING | | HEAT |
| | | | | NOM | | | ENTERING | COIL LEAVING | | EER/IEER | |
| | | | | TONS | TOTAL | SENS | DB/WB (F) | DB/WB (F) | DB/DP | (ARI) | (MBH) |
| RTU-CR | CLEAN ROOM | SINGLE ZONE CONSTANT VOLUME | AAON RN | 10 | 109 | 81 | 75.7/62.6 | 50/50 | 52/50 | 11.7/13.8 | 65 |
| ACCEPTABLE | ALTERNATE MANU | FACTURERS: AAON, TRANE | | | | | | | | | |
| | | | | | | | | | | | |

ACCESSORIES/OPTIONS ..

1. ELEVATION 0 FT ABOVE SEA LEVEL.

2. DISCONNECTS INTEGRAL TO UNIT FROM FACTORY. (CONFIRM VOLTAGE PRIOR TO ORDERING UNIT).

3. ECONOMIZER UNIT - FURNISH COMPLETE WITH THE FOLLOWING FACTORY INSTALLED OPTIONS

- NON-FUSED DISCONNECT SWITCH

- MODULATING 100% OA ECONOMIZER COMPLIANT W/ 2019 OREGON ENERGY CODE (ASHRAE 90.1 2016 / TITLE 24 COMPLIANT: LOW LEAKAGE DAMPERS, FAULT DETECTION DIAGNOSTICS, AND ONBOARD AHU CONTROLLER) - COMPARATIVE ENTHALPY BASED ECONOMIZER CONTROL

5. FIELD INSTALLED HUMIDIFIER GENERATOR AND DISPERSION ARRAY HOUSED ABOVE CLEAN ROOM CEILING. SEE HUMIDIFER SCHEDULE.

6. COMPRESSOR OPTIONS: VARIABLE SPEED COMPRESSOR

7. PROVIDE WITH FACTORY INSTALLED, WIRED AND MOUNTED VFDs ON BOTH SUPPLY AND POWER EXHAUST

3. SMOKE DETECTOR W/ CENTRAL FIRE ALARM - UNIT REQUIRES RETURN AIR SMOKE DETECTOR TO BE INTERLOCKED WITH BUILDING FIRE ALARM SYSTEM. UNIT TO BE SHUTDOWN, AND FIRE ALARM SYSTEM TO BE NOTIFIED IN THE EVENT OF SMOKE DETECTOR ALARM. INSTALLATION RESPONSIBILITIES: - FIRE ALARM CONTRACTOR TO COORDINATE INSTALL REQUIREMENTS AND PROVIDE SMOKE DETECTOR

- MECHANICAL CONTRACTOR TO INSTALL SMOKE DETECTOR

- FIRE ALARM CONTRACTOR TO INTEGRATE WITH FIRE ALARM SYSTEM AND EXTEND WIRES TO UNIT CONTROL PANEL

- CONTROLS CONTRACTOR TO CONNECT INTERLOCK WIRING FROM FIRE ALARM FOR UNIT SHUTDOWN

- ELECTRICAL CONTRACTOR TO PROVIDE POWER WIRING FOR SMOKE DETECTOR OPERATION

9. BOTTOM OF OUTDOOR AIR INTAKE TO BE MINIMUM OF 3 FT ABOVE ROOF DECK.

10. FACTORY INSTALLED MAGNAHELIC PRESSURE GAGE ON FILTERS.

11. OUTDOOR AIR INTAKE LOUVERS TO PREVENT ENTRAINMENT OF WIND DRIVEN RAIN AND DRAIN AWAY PRECIPITATION. BIRDSCREEN MESH TO BE NO SMALLER THAN 0.5".

12. SURFACES ON INSIDE OF AIR HANDLER ARE TO BE VAPOR IMPERMEABLE. NO EXPOSED LINER ON INTERIOR OF UNIT. CASING TO BE ASHRAE 62.1 COMPLIANT CONSTRUCTION.

13.PROVIDE WITH MANUFACTURED, SEISMIC CURB OF SUFFICIENT HEIGHT TO MEET REQUIREMENT OF OUTDOOR AIR INTAKE AT MINIMUM 36" HEIGHT ABOVE ADJACENT ROOF SURFACE. 14. PROVIDE WITH MOTORIZED DAMPERS FOR OUTDOOR AND RELIEF AIR. DAMPERS TO MEET LEAKAGE RATES PER ASHRAE 90.1 2016 TABLE 6.4.3.4.3

| | | | | | | ELECTRIC S | STEAM HUMIDIFI | ER SCHEDULE | | |
|----------|-------------|-----------------------|--------------------------|-------------------------|------------------------|---------------|----------------------|-------------------------|--------------------|--------------------|
| | | | | | DI | SPERSION | | | | GENERAT |
| | | | AI | R HUMIDIFICATION | | DUCT SIZE | DISPE | RSION | | WA |
| UNIT TAG | UNIT SERVED | MANUFACTURER & MODEL | HUMIDIFICATION (LB/H) | ENTERING DB(F)/RH(%) | LEAVING DB(F)/RH(%) | W X H (IN) | RTU AIRFLOW (CFM) | ABSORPTION DIST (FT) | HEAT INPUT (KW) | WATER P MIN PSI |
| HU-CR | RTU-CR | PURE HUMIDIFIER EC-15 | 45.0 | 50F/28% | 50F/72% | 20X20 | 2,850 | 2' | 15.0 | 35.0 |

ACCESSORIES/OPTIONS NOTES: 1. ELEVATION: 0 FT

2. GENERATOR INSTALLED IN CEILING SPACE AND DISPERSION HOUSED IN SUPPLY AIR DUCT.

3. ROOM CONDITION 70F DB & 35% RH 4. PROVIDE MODULATING SCR HEATER CONTROL FOR 0-100% STEAM OUTPUT MODULATION.

5. PROVIDE WITH MANUFACTURER'S STAND ALONE CONTROLLER FOR DUAL HUMIDITY SENSOR CONTROL. HUMIDITY SENSOR IN SPACE FOR SPACE HUMIDITY CONTROL. HIGH LIMIT HUMIDITY SENSOR IN DUCT DOWNSTREAM OF HUMIDIFIER. MAXIMUM DUCT RELATIVE HUMIDITY TO B 6. HUMIDIFICATION DISPERSION TUBE HOT SURFACES IN AIRSTREAM TO BE INSULATED WITH MINIMUM R-5 INSULATION. INSULATION AND JACKETING TO BE RATED FOR PLENUM INSTALLATION. 7. PREHEATING JACKETS MOUNTED IN AIRSTREAM TO BE PROVIDED WITH AN AUTOMATIC VALVE TO SHUTOFF PREHEAT WHEN HUMIDIFICATION IS NOT REQUIRED.

8. PROVIDE WITH DRAIN TEMPERING KIT. INSTALL COPPER OR STAINLESS DRAIN PIPE UPSTREAM OF TEMPERING KIT.

9. INSTALL IN STRICT ACCORDANCE TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. 10. DISCONNECTS INTEGRAL TO UNIT FROM FACTORY. (CONFIRM VOLTAGE PRIOR TO ORDERING UNIT).

| | | | | | | | | PROJE | CT THERMA | |
|------|----------|------|------|--------|------------------|---|---------------------|-----------------------|------------------|--|
| | | | | | | PROJE | CT LOCATION | | | |
| | | | | | | ASHRAE WEATHE | R STATION REFERENCE | E | | |
| | | | | | | ASHRAE 2017 FUNDAME | ENTALS WEATHER DATA | A BASIS | | |
| | | | | | | | | | | |
| | | | | | | SPACE | | SUM | MER | |
| | | | | | | | TEMPE | ERATURE | I | |
| | | | | | | OUTDOOR 91.7° F | | / 67.3° F. MCWB | 63.2° F. DP / 84 | |
| | | | | | L | | | | | |
| | | | | ROOM | I INTERNAL LOADS | | | | | |
| | | | | | | | | | | |
| | | | | | | LOAD DESCRIPTION | | HEAT GAIN | UNITS | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | [| LAUNDRY (200 L | LB @ 140F EVERY 2 HOURS, ALMOST I | DRY) | 4,900 | BTU/H | |
| | | | | | | LB @ 140F EVERY 2 HOURS, ALMOST I BLES X 6 (86W/BULB, 4 BULBS/TABLE) | | 4,900 344 | BTU/H W | |
| | | | | | LIGHT TAB | | | | | |
| | | | | - | LIGHT TAB | BLES X 6 (86W/BULB, 4 BULBS/TABLE) | | 344 | W | |
| | | | | | LIGHT TAB | BLES X 6 (86W/BULB, 4 BULBS/TABLE) R OPEN/CLOSE (10x PER HOUR) | | 344 5,746 | W BTU/H | |
| AREA | LIGHTING | MISC | LOAD | PEOPLE | LIGHT TAB | BLES X 6 (86W/BULB, 4 BULBS/TABLE) R OPEN/CLOSE (10x PER HOUR) LIGHTING | | 344 5,746 1,040 | W BTU/H W | |

| | HLAC R | EQUIREMENTS | | | | | 1 | | | | - |
|---|----------|-----------------------|-----------------------|---------------------|---------------------|-----------------|------------------------|--------|--------------------|----------------------|--------------|
| PRESSURE RELATIONSHIP TO ADJACENT AREAS | | | | rside Air C/hr | MIN TOTAL C AC/I | | RECIRCUL MEANS OF F | | OUTDOOR AIR TOTALS | | |
| ASHRAE 170 | ACTUAL | PRESSURIZATION CFM | CODE MIN OSA AC/HR | ACTUAL OSA AC/HR | CODE MIN AC/HR | ACTUAL AC/HR | ASHRAE 170 | ACTUAL | REQD OSA CFM | ACTUAL OSA CFM | ACTU SUPF |
| POSITIVE | POSITIVE | 350 | 2 | 2.1 | 10 | 16.7 | NO | NO | 329 | 338 | 275 |

| | | ΝŬ | OFIOF | | | | | | GAS I | LAI | | | | | | | | | | |
|---|-------------------|------|-----------------|------------------|--------------|--------------------|-------------------|-------|----------------|---------|----|--------|-------|----------------|-------|-------|--------|------------|-----------------|----------|
| | | | | | | | | | | | | | | | | | | | | |
| A | S REHEAT | | | NATURAL | GAS HEA | Т | | | SUI | PPLY FA | N | | | POWER E | XHAUS | T FAN | | ECONOMIZER | VENTILATION | HU |
| | LEAVING DB (F) | HEAT | (MBH) OUTPUT | MIN EFFIC (%) | TURN DOWN | ENTERING DB (F) | LEAVING DB (F) | CFM | ESP (IN WC) | BHP | HP | DRIVE | CFM | ESP (IN WC) | BHP | HP | DRIVE | (Y/N) | MIN OA (CFM) | HU SC |
| | 70 | 90 | 73 | 81% | 10:1 | 62 | 86 | 2,850 | 1.6 | 2.22 | 3 | DIRECT | 2,850 | 0.75 | 1.90 | 3 | DIRECT | Y | 350 | |

| | | | GRILLE REGISTE | ER & DIFFU |
|--------|---|--------------------------------|--------------------|------------|
| SYMBOL | DEVICE TYPE AND SERVICE | MANUFACTURER & MODEL NUMBER | BORDER TYPE | FACE SIZE |
| | SUPPLY - LOUVERED FACE LAY-IN CEILING DIFFUSER | TITUS TMS | TYPE-3 (LAY-IN) | 24 x 24 |
| | RETURN - PERF FACE LAY-IN CEILING GRILLE | TITUS PAR | TYPE-3 (LAY-IN) | 24 x 24 |
| | | | | |

ACCEPTABLE ALTERNATE MANUFACTURERS (SUBJECT TO ENGINEERING APPROVAL) - PRICE, KREUGER

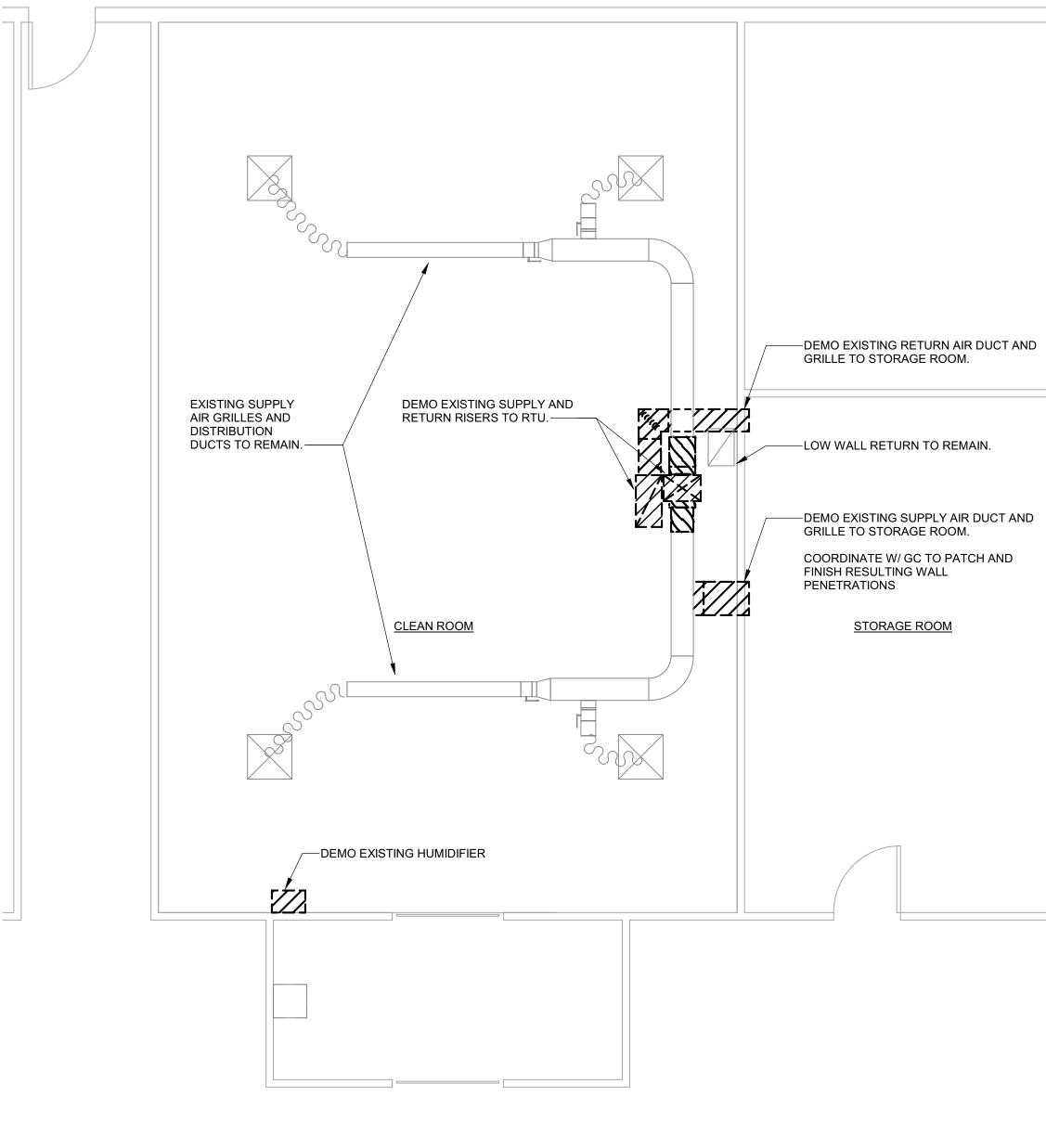
| | | ECT THERMA | | | 2 | | | | |] | | |
|--|---|---|--|---|---|---|--------------|--------------------------|----------------|-----------|---|-------|
| LOCATION TATION REFEREN | | | | | PORTLAND, | OREGON N (WMO #7269 | 30) | | | | | T |
| ALS WEATHER DA | | | COOLING 0.4% | | | 14 (1110 #1203 | | ATING 99.6% | | | S Y S T E M | |
| TEN | SU | MMER HU | IMIDITY | | TEMPERA | ATURE | WINTER | HUN | <i>I</i> IDITY | | | 9 |
| | B / 67.3° F. MCWB | | 7 HR / 75.1° F. MCWE | 3 | 21.7° F | | g | .6° F. DP / 9.0 H | | MCWB | | |
| | | | | | | | | | | | ALLIANT SYSTEMS, LLC 351 NW 12th AVE | |
| | | | | HEAT GAIN | | | | | | | PORTLAND, OR 97209 PHONE: 503/619-4000 | |
| | HEAT GAIN | UNITS | QTY | (BTU/H) | | | N | OTES | | | FAX: 503/230-9238 | |
| <i>'</i>) | 4,900 | BTU/H | 1 | 4,900 | | | | | | | WWW.ALLIANT-SYSTEMS | S.COM |
| | 344 5,746 | W BTU/H | 3 | 3,519 5,746 | | 50% DIVERSI | ty, half of | TABLES USED | ON AVERA | GE | | |
| | 1,040 | W | - | 3,546 887 | | | | | | | ELERED PROFESSI | |
| | 250 | BTU/H T LOAD TO ROOM TO | 4 | 1,000 | | | | | | | ENGINE EAG 64563PE | - |
| | | | | | | | | | | | EXPIRES 12-31-22 | |
| RECIRCULATED | | TOTALS | TOTAL A | AIRFLOW CALCU | JLATIONS | | OSA % | | REMARKS | | | |
| IEANS OF ROOM (| | | | | | | | | | | | |
| ASHRAE | REQD | ACTUAL ACTUA | L ACTUAL AG | | | | | | | | | |
| 170 ACT | rual OSA CFM | OSA SUPPL CFM | | HAUST CF | | | | | | | | |
| NO N | IO 329 | 338 2750 | 2400 | 0 0 | 1647 | 7 2750 | 12% | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| EXHAUST FAN | ECONOMIZER | | MIDIFIER PRE-F | ILTER FINA | AL FILTER | ELECTR | ICAL | | | | | _ |
| BHP HP C | ORIVE (Y/N) | | SEE MIDIFIER HEDULE | DEPTH MER' (IN) RATIN | | VOLT/ PH MCA | MROPD | DIMENSIONS LxWxH (IN) | WEIGHT | NOTES | | _ |
| 1.90 3 D | IRECT Y | | IU-CR 8 | 2" 14 | 4 | 460/3 32 | 45 | 83X79X43 | (LBS) 1,500 | 1-14, A-I | | - |
| B. PROVIDE SUI C. PROVIDE WIT PROVIDE OFF D. PROVIDE WIT E. CONTROL PC F. OUTDOOR A G. ZONE TEMPE H. CONTROLS A | RER'S STAND ALONE CO PPLY AND POWER EXHA TH OFF HOUR CONTROL F HOUR CONTROLS WIT TH ECONOMIZER WITH F OWER EXHAUST FAN VIA IR AND RELIEF AIR DAM ERATURE CONTROLS TO ARRANGED SUCH THAT O BE TESTED TO ENSUR | AUST FAN WITH VFD S WITH AUTOMATIC H OVERRIDE FOR TEI AULT DETECTION DI ROOM PRESSURE. PERS TO CLOSE WHE HAVE SETPOINT OV SIMULTANEOUS DEH | SHUTDOWN AND OF MPORARY OPERATI AGNOSTICS PER AS EN UNIT IS NOT IN U ERLAP RESTRICTIO UMIDIFICATION AND | PTIMUM START F ON AS REQUIRE SHRAE 90.1 2016 SE. NS.) HUMIDIFICATIC | PER ASHRAE ED FOR MAIN , SECTION 6 DN TO NOT C | E 90.1 2016 SEC ITENANCE. .4.3.12 DCCUR. | TION 6.4.3.3 | | | | PORTLAND HOSPITAL CLEAN ROOM RTU | |
| | | | | | | | | | | | | |
| ULE | | GENERATO | DR | | | | | | | | | |
| ION | HEAT INPUT | WAT WATER PR | | ELECTRICAL | | DIMENSION | e | | | | | |
| Г) | (KW) 15.0 | MIN PSI 35.0 | MAX PSI 60.0 | | FLA 18.1 | (IN) 30"X17"X24 | WE | EIGHT (LBS) 225 | NOTI | | 18440 NE PORTAL WAY PORTLAND, OR | |
| | MAXIMUM DUCT RELATIN | | | ULE | | | | | | | DESIGNER CONTACT: K. PETERSON 503-619-4000 K.PETERSON@ALLIANT-SYSTEMS. CAD: K. PETERSON PLOT DATE: 05/11/21 MECHANICAL SCHEDULES | СОМ |
| FACTURER EL NUMBER | BORDER TYPE | FACE SIZE | FINISH WHITE POWDE | D COAT | DTES | | | | | | PROJECT NUMBER: | ! |
| TMS | TYPE-3 (LAY-IN) TYPE-3 | 24 x 24 | WHITE POWDE UNLESS OTHERW WHITE POWDE | ISE NOTED | | ANS FOR NEG | | | | | C-0444-31270 | |
| PAR | (LAY-IN) | 24 x 24 | UNLESS OTHERW | | E FLOOR PL | ANS FOR NEC | K SIZE. | | | | PERMIT | |
| GINEERING APPF | ROVAL) - PRICE, KREUG | ER | | | | | | | | | 05/11/2Reviewed for Code Complian | се |
| | | | | | | | | | | | SHEET NUM ER: Permit #: 21-055455-REV-01-MT | |

| | | NOT | E: ALL SYSTEMS AND PIPING | MORK SCI | _ | ERY PROJECT | | | |
|---|---|--|--|-----------------------|--------------------------------------|---------------------------------------|----------------------------------|--|-------|
| SERVICE / USAG | E | LOCATION | | MATER | IAL | WORKING PRESURI (IN. WC) | SMACNA PRESSUF CLASS (IN. WC) | E SMACNA SEAL CLASS | NOTE |
| LOW PRESSURE SUPP | PLY AIR FR | OM RTU TO GI | RD'S GALV. S | STEEL UNLESS N | IOTED OTHERWISE | LOW PRESSURE | 1 | A | 1,2,3 |
| FLEXIBLE DUCT | | CONN TO GRD | 'S | PREINSUL | . FLEX | LOW PRESSURE | RATED +6", -1" | NA | 4 |
| RETURN AIR | FR | OM GRD'S TO | AHU | GALV. ST | EEL | LOW PRESSURE | 1 | A | 1,2,3 |
| AL ALL LONGITUDINAL ISTALLED IN ACCORDA STALL PER MANUFACTI | AND TRANSVERSE DUCT JOI NCE WITH MANUFACTURER'S JRER'S GUIDELINES AND INS | NTS WITH WEL S REQUIREMEN STRUCTIONS | CT CONSTRUCTION STANDAR .DS, GASKETS, MASTICS, TAPI ITS 17 FT. PRODUCT: ATCO UPC, | ES, OR OTHER A | | | | | |
| | | | DUC | CTWORK II | NSULATION SC | CHEDULE | | | |
| | SERVICE: | | NOTE: ALL SYSTEM DUCT LOCATION/TYPE: | MS AND INSULAT | ION TYPES MAY NOT B FIBERGLASS IN | | JECT | NOTES: | |
| | INSIDE BUILDING ENVELOP | E | | | | | | | |
| | INSULATED FLEXIBLE SUPPLY DUCT | со | NCEALED LOW PRESSURE DU | ICT | | M R-6 FIBERGLASS RFORATED INTERIOR | FLEXIBLE DUC | T SHALL BE CERTIFIE TED, CLASS-1 AIR DU | |
| | LOW PRESSURE SUPPLY AIR | CO | NCEALED LOW PRESSURE DU | ІСТ | INSULATION V | VRAP (MIN R-6) | | | |
| | RETURN AIR | C | ONCEALED FROM GRD TO AH | U | INSULATION W | VRAP (MIN R-6) | | | |
| | 1. SUPPLY AIR FIBERGLASS | DUCT WRAP I | TAINTEED, OWENS CORNING, NSULATION: 1.5 PCF - MINIMU FALLED AS INDICATED ON DR/ | M R-6, EXTERIOF | R FOIL SCRIM REINFOR | | COVERING | | |
| | | N | MECHANI | | G SCHEDULE | VERY PROJECT | | | |
| SERVICE | LOCATION | SIZE | PIPE | PIPE MATL STANDARD | EITTING | | NTS WORKI PRESSU | | NC |
| | INTERIOR ABOVE GRADE | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL | SCH 40 THRE | ADED ≤ 2 PS | 60 PSI | |
| | (EXPOSED, NON-PLENUM) | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | PRESS-CON | NECT MECH/ PRESS-C | | 60 PSI | |
| NATURAL GAS | INTERIOR ABOVE GRADE (IN-PLENUM OR CONCEALED) | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL | SCH 40 WE | .DED ≤ 5 PS | 60 PSI | |
| | EXTERIOR ABOVE | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL | SCH 40 WE | .DED ≤ 2 PS | 60 PSI | |
| | GRADE | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL | SCH 40 THRE | ADED ≤2 PS | 60 PSI | |

| | NOT | E: ALL SYSTEMS AND PIPING | G MATERIALS MAY | NOT BE USED ON EVER | Y PROJECT | | | |
|---|--|--|-------------------------------------|--|------------------------------------|-------------------------------------|-------------------------------------|-------|
| E | LOCATION | | MATERI | AL | WORKING PRESURE (IN. WC) | SMACNA PRESSURE S CLASS (IN. WC) | MACNA SEAL CLASS | NOTES |
| PLY AIR FR | OM RTU TO GR | RD'S GALV. | STEEL UNLESS NO | OTED OTHERWISE | LOW PRESSURE | 1 | A | 1,2,3 |
| | CONN TO GRD' | S | PREINSUL. | FLEX | LOW PRESSURE | RATED +6", -1" | NA | 4 |
| FR | OM GRD'S TO A | AHU | GALV. STI | EEL | LOW PRESSURE | 1 | A | 1,2,3 |
| AND TRANSVERSE DUCT JOI NCE WITH MANUFACTURER'S JRER'S GUIDELINES AND INS | NTS WITH WEL S REQUIREMEN STRUCTIONS | CT CONSTRUCTION STANDAF .DS, GASKETS, MASTICS, TAF ITS 17 FT. PRODUCT: ATCO UPC | PES, OR OTHER AP | | | | | |
| | | DU | CTWORK IN | ISULATION SC | HEDULE | | | |
| SERVICE: | | NOTE: ALL SYSTE DUCT LOCATION/TYPE: | EMS AND INSULATI | ON TYPES MAY NOT BE FIBERGLASS INSU | | ECT | NOTES: | |
| INSIDE BUILDING ENVELOP | E | | | | | | | |
| INSULATED FLEXIBLE SUPPLY DUCT | COI | NCEALED LOW PRESSURE D | ист | MANUF ASSEMBLY W/ F BARRIER, MINIMUM INSULATION, NON-PER LINER W/ STRUCTU | R-6 FIBERGLASS FORATED INTERIOR | FLEXIBLE DUCT SH LISTED, | IALL BE CERTIFIE CLASS-1 AIR DUC | |
| LOW PRESSURE SUPPLY AIR | | | | INSULATION WF | RAP (MIN R-6) | | | |
| RETURN AIR | C | ONCEALED FROM GRD TO A | HU | INSULATION WF | RAP (MIN R-6) | | | |
| 1. SUPPLY AIR FIBERGLASS | DUCT WRAP II | FAINTEED, OWENS CORNING NSULATION: 1.5 PCF - MINIMU FALLED AS INDICATED ON DR | JM R-6, EXTERIOR RAWINGS, AND AS | FOIL SCRIM REINFORCI REQUIRED PER CODE. | ED VAPOR BARRIER C | OVERING | | |
| | NC | MECHAN DTE: ALL SYSTEMS AND PIPI | | G SCHEDULE | ERY PROJECT | | | |
| LOCATION | SIZE | PIPE | PIPE MATL STANDARD | FITTINGS | JOIN | TS WORKING PRESSURE | TEST PRESSURE | NOTES |
| | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL S | CH 40 THREA | DED ≤ 2 PSI | 60 PSI | |
| INTERIOR ABOVE GRADE | | BLACK STEEL SCH 40 | ASTM A53-B | PRESS-CONN | ECT MECHAI PRESS-CC | | 60 PSI | 8 |
| | 1/2" - 2" | BLACK STEEL SCH 40 | | | | | | |
| GRADE (EXPOSED, | 1/2" - 2" 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL S | CH 40 WELI | DED ≤ 5 PSI | 60 PSI | |
| GRADE (EXPOSED, NON-PLENUM) INTERIOR ABOVE GRADE (IN-PLENUM OR | | | ASTM A53-B ASTM A53-B | BLACK STEEL S | | | 60 PSI 60 PSI | 1 |

| | | NOT | E: ALL SYSTEMS AND PIPING | WORK SCH MATERIALS MAY | - | ERY PROJECT | | | | |
|--|---|--|---|--|--------------------|----------------------------|---|-------------------------|---------------------|-------|
| SERVICE / USAG | E | LOCATION | | MATERIA | AL. | WORKING PRESUF (IN. WC) | | PRESSURE SI (IN. WC) | MACNA SEAL CLASS | NOTE |
| W PRESSURE SUP | PLY AIR FF | ROM RTU TO GF | RD'S GALV. S | STEEL UNLESS NO | OTED OTHERWISE | LOW PRESSURE | | 1 | A | 1,2,3 |
| FLEXIBLE DUC | Г | CONN TO GRD | 'S | PREINSUL. | FLEX | LOW PRESSURE | RATED | D +6", -1" | NA | 4 |
| RETURN AIR | FF | OM GRD'S TO | AHU | GALV. STE | EEL | LOW PRESSURE | | 1 | A | 1,2,3 |
| ALL LONGITUDINAL ALLED IN ACCORDA ILL PER MANUFACT | AND TRANSVERSE DUCT JOI NCE WITH MANUFACTURER'S URER'S GUIDELINES AND INS | NTS WITH WEL S REQUIREMEN STRUCTIONS | CT CONSTRUCTION STANDAR .DS, GASKETS, MASTICS, TAPE ITS 17 FT. PRODUCT: ATCO UPC, | ES, OR OTHER AP | | | | | | |
| | | | DUC | CTWORK IN | ISULATION SC | CHEDULE | | | | |
| | NOTE: ALL SYSTEMS AND INSULATION TYPES MAY NOT BE USED ON EACH PRO SERVICE: DUCT LOCATION/TYPE: FIBERGLASS INSULATION TYPE: | | | | DJECT | DJECT NOTES: | | | | |
| | INSIDE BUILDING ENVELOP | E | | I | | | | | | |
| | INSULATED FLEXIBLE SUPPLY DUCT | со | NCEALED LOW PRESSURE DU | PRESSURE DUCT MANUF ASSEMBLY W/ REINFORCED VAPOR BARRIER, MINIMUM R-6 FIBERGLASS INSULATION, NON-PERFORATED INTERIOR LINER W/ STRUCTURAL WIRE HELIX | | FLEXI | FLEXIBLE DUCT SHALL BE CERTIFIED AS A UI LISTED, CLASS-1 AIR DUCT. | | | |
| | LOW PRESSURE SUPPLY AIR | | | | | | | | | |
| | RETURN AIR | C | ONCEALED FROM GRD TO AH | U | INSULATION V | VRAP (MIN R-6) | | | | |
| | 1. SUPPLY AIR FIBERGLASS | DUCT WRAP I | TAINTEED, OWENS CORNING, NSULATION: 1.5 PCF - MINIMUI FALLED AS INDICATED ON DRA MECHANI | M R-6, EXTERIOR AWINGS, AND AS | FOIL SCRIM REINFOR | | COVERING | | | |
| | | NC | DTE: ALL SYSTEMS AND PIPIN | | | VERY PROJECT | | | | |
| SERVICE | LOCATION | SIZE | PIPE | PIPE MATL STANDARD | FITTING | is JO | INTS | WORKING PRESSURE | TEST PRESSURE | NO |
| | INTERIOR ABOVE GRADE | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL | SCH 40 THRI | EADED | ≤ 2 PSI | 60 PSI | |
| | (EXPOSED, NON-PLENUM) | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | PRESS-CON | | ANICAL CONNECT | ≤ 2 PSI | 60 PSI | |
| NATURAL GAS | INTERIOR ABOVE GRADE (IN-PLENUM OR CONCEALED) | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL | SCH 40 WE | LDED | ≤ 5 PSI | 60 PSI | |
| | EXTERIOR ABOVE | 1/2" - 2" | BLACK STEEL SCH 40 | ASTM A53-B | BLACK STEEL | SCH 40 WE | LDED | ≤ 2 PSI | 60 PSI | |
| | GRADE | | | | | | | | | |

| ALLIANT systems |
|---|
| ALLIANT SYSTEMS, LLC 351 NW 12th AVE PORTLAND, OR 97209 PHONE: 503/619-4000 FAX: 503/230-9238 WWW.ALLIANT-SYSTEMS.COM CCB# 153420 |
| OREGONO C. MURIC EXPIRES 12-31-22 |
| |
| |
| |
| |
| REVISIONS: DATE |
| 18440 NE PORTAL WAY PORTLAND, OR Designer contact: K. PETERSON |
| 503-619-4000 K.PETERSON@ALLIANT-SYSTEMS.COM cad: K. PETERSON PLOT DATE: 05/11/21 |
| MECHANICAL SCHEDULES PROJECT NUMBER: C-0444-31270 |
| PERMIT: Souther 05/11/2Reviewed for Code Compliance |
| SHEET NUM ER: Permit #: 21-055455-REV-01-MT |



$\underbrace{1}_{M2.01} \underbrace{\text{MECHANICAL FIRST FLOOR HVAC DEMO PLAN}}_{0 \quad 4' \quad 8' \quad 16'}$

GRILLE TO STORAGE ROOM.

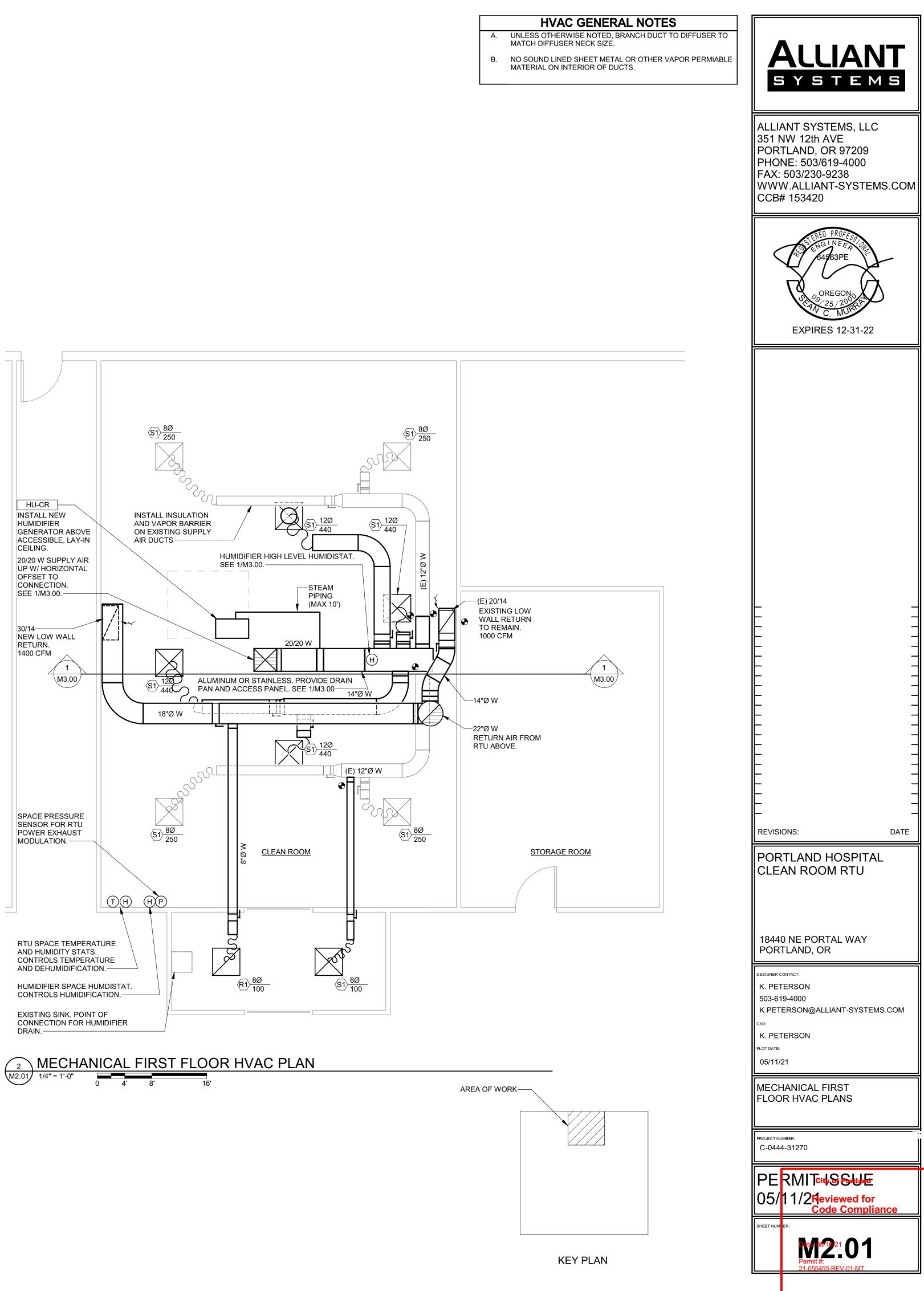
-LOW WALL RETURN TO REMAIN.

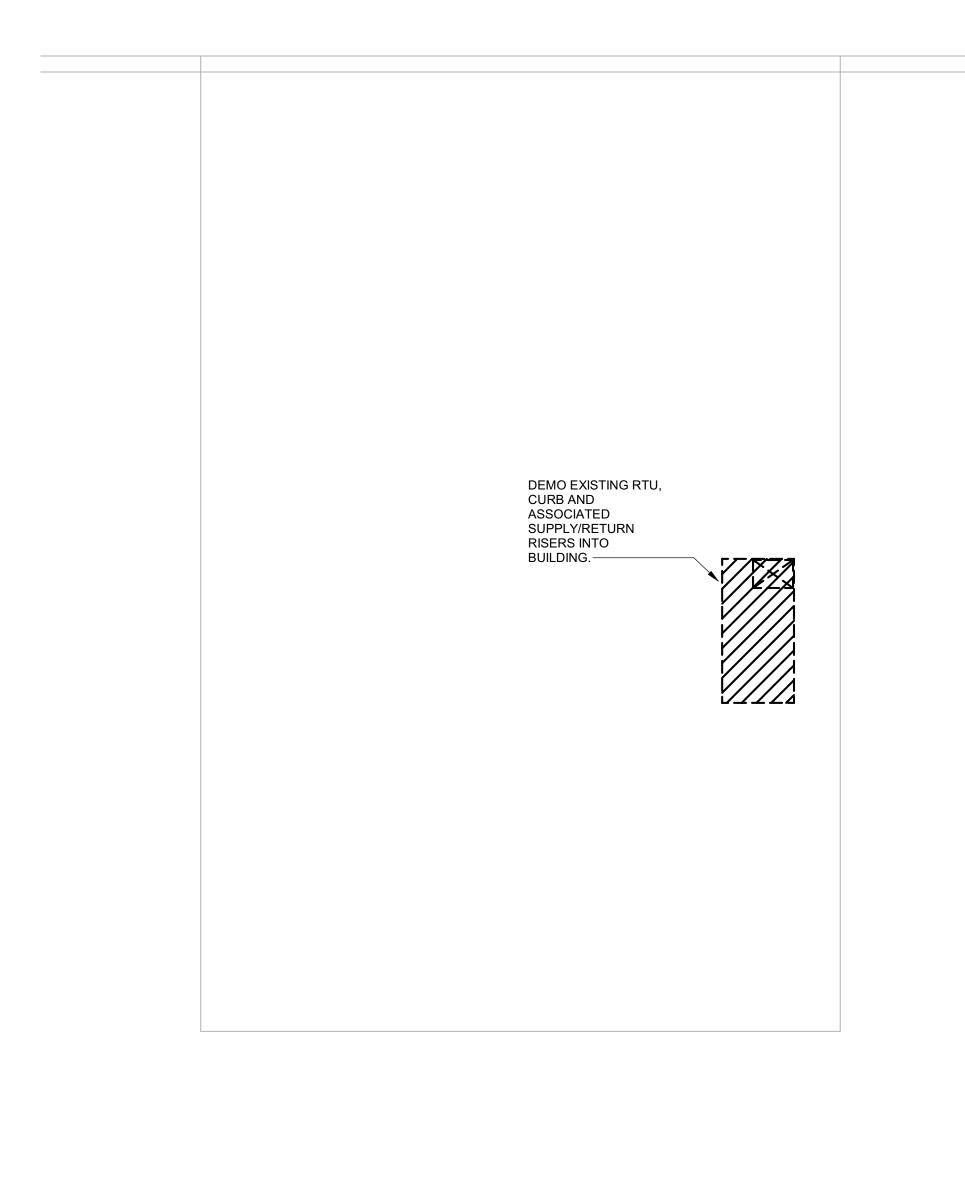
—DEMO EXISTING SUPPLY AIR DUCT AND

GRILLE TO STORAGE ROOM.

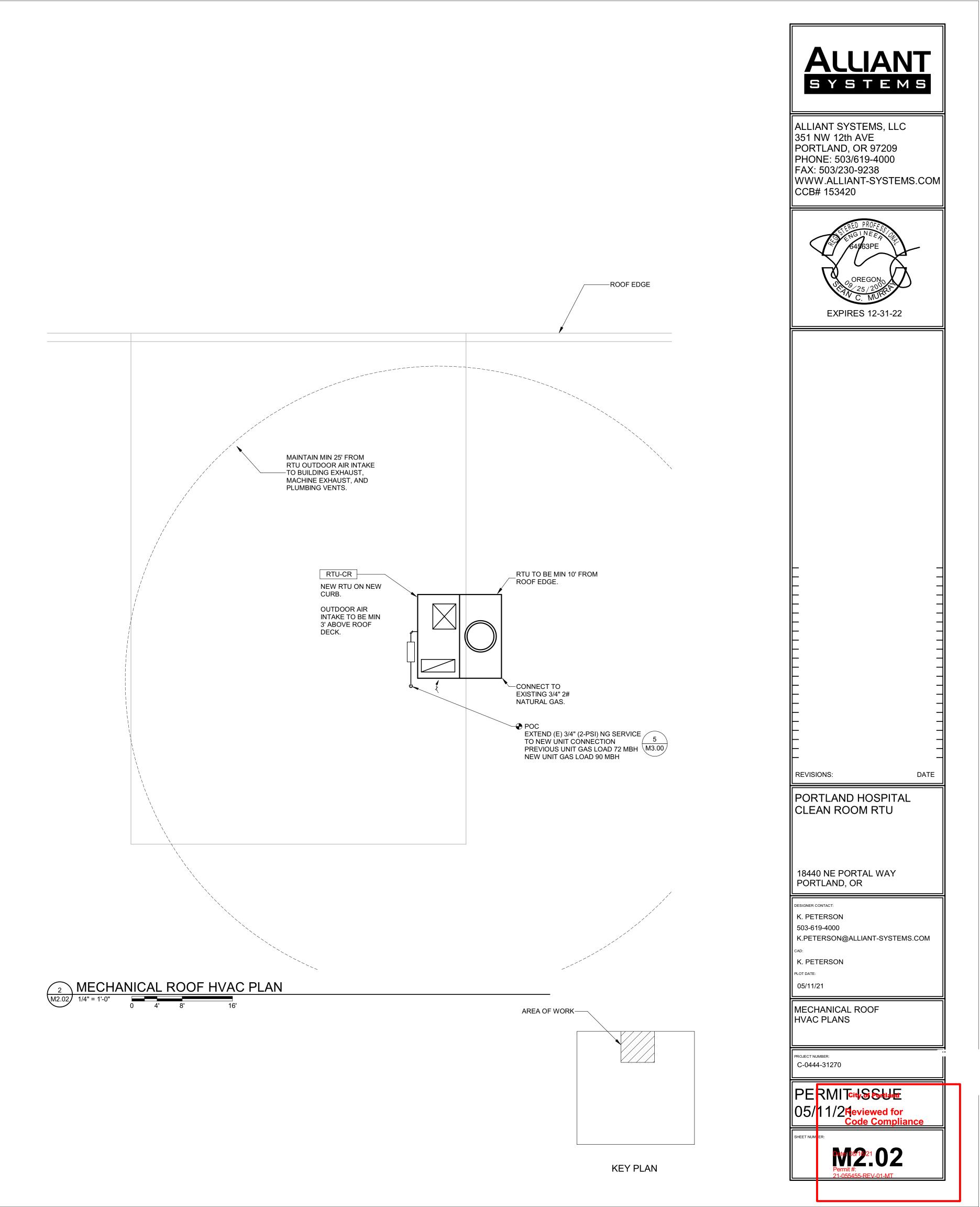
COORDINATE W/ GC TO PATCH AND FINISH RESULTING WALL

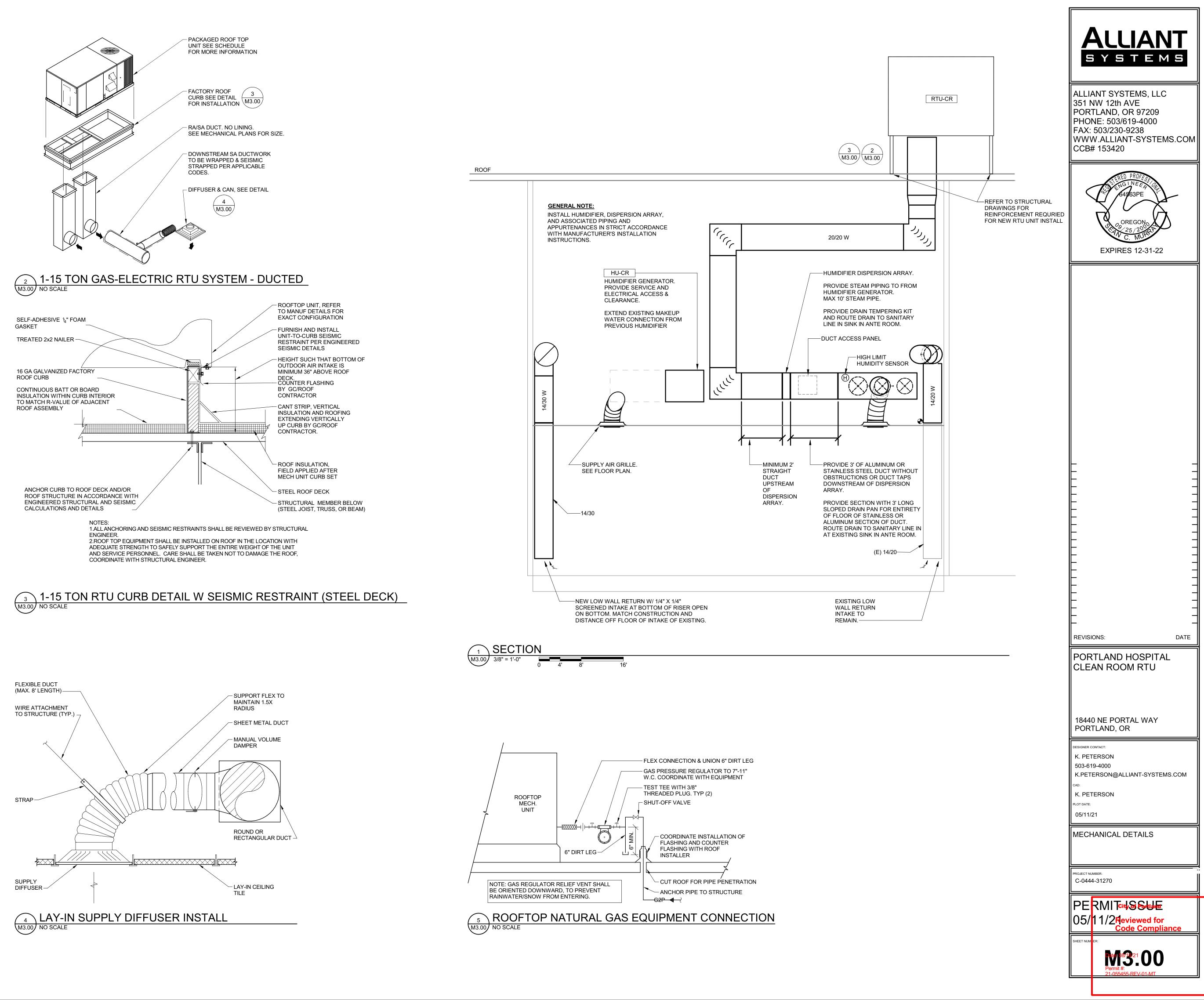
STORAGE ROOM





MECHANICAL ROOF HVAC DEMO PLAN M2.02 1/4" = 1'-0" 0 4' 8' 16'





STRUCTURAL NOTES

STRUCTURAL ABBE

| GENERAL | COE |
|--|------|
| THE CONTRACTOR IS RESPONSIBLE FOR CHECKING THE PLANS PRIOR TO THE START OF | 201 |
| CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY ERRORS OR INCONSISTANCY WITH THE | 201 |
| ARCHITECTURAL OR SUPPLIER DRAWINGS. SHOULD QUESTIONS ARISE REGARDING THE INFORMATION | DES |
| SHOWN ON THESE DRAWINGS THE CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE | SEIS |
| PROCEEDING. THE ENGINEER IS NOT RESPONSIBLE FOR IMPROPER CONSTRUCTION PRACTICES DUE | SEIS |
| TO MISUNDERSTANDING OR MISUSE OF THE INFORMATION ON THESE DRAWINGS. | (SIT |
| | |

THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE DURING THE CONSTRUCTION PERIOD FOR ALL CONDITIONS AT THE CONSTRUCTION SITE, INCLUDING SAFETY OF PROPERTY AND PERSONS. THE ENGINEER'S VISITS TO THE SITE AREA ARE NOT INTENDED, NOR SHALL THEY BE CONSTRUED TO INCLUDE A REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.

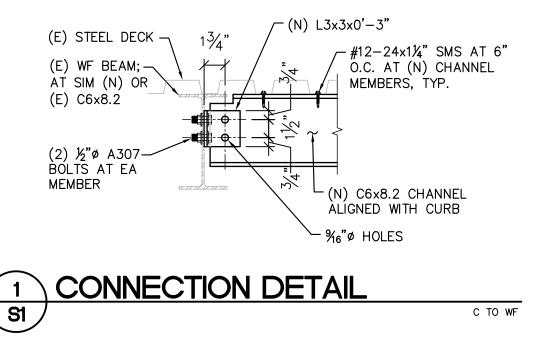
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF ALL LIFTING EQUIPMENT, SHORING, BRACING, SCAFFOLDING AND TEMPORARY SUPPORTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WATERPROOFING AND FLASHING DETAILS OF ALL STRUCTURAL & MECHANICAL ELEMENTS INDICATED ON THESE DRAWINGS.

WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE DIMENSIONS. DO NOT SCALE DRAWINGS. ALL STRUCTURAL DIMENSIONS ARE TO FACE OF FRAMING, UNLESS NOTED OTHERWISE.

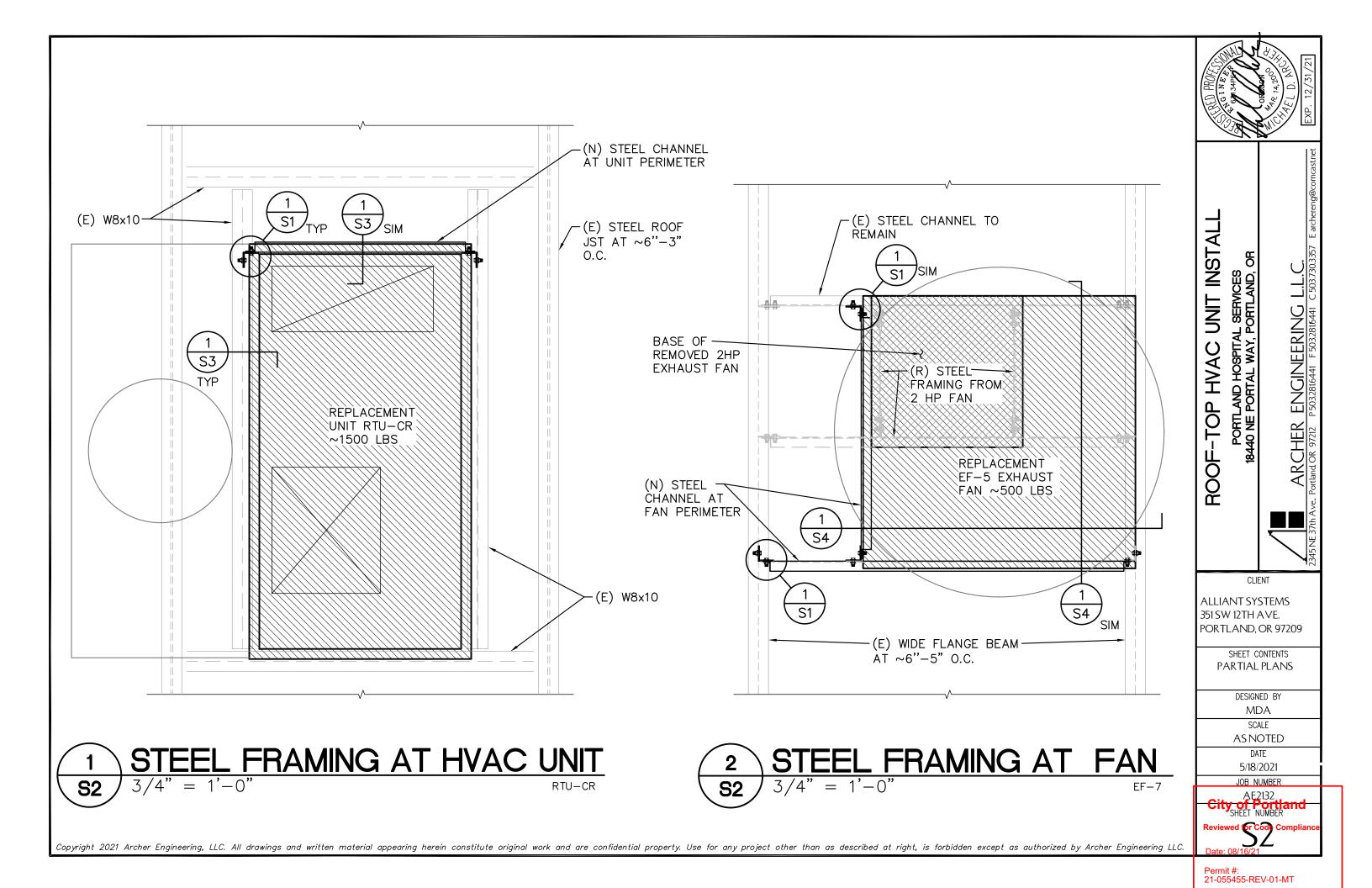
CONTRACTOR SHALL REVIEW DRAWINGS WITH RESPECT TO MATERIALS, LAYOUT, ELEVATIONS, AND DIMENSIONS BEFORE STARTING WORK. ANY APPARENT DISCREPANCY, AMBIGUITY, OR CONFLICT IN THESE DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION. ANY REVISION TO THESE DRAWINGS SHALL BE COMPLETED BEFORE PROCEEDING WITH THE WORK AFFECTED.

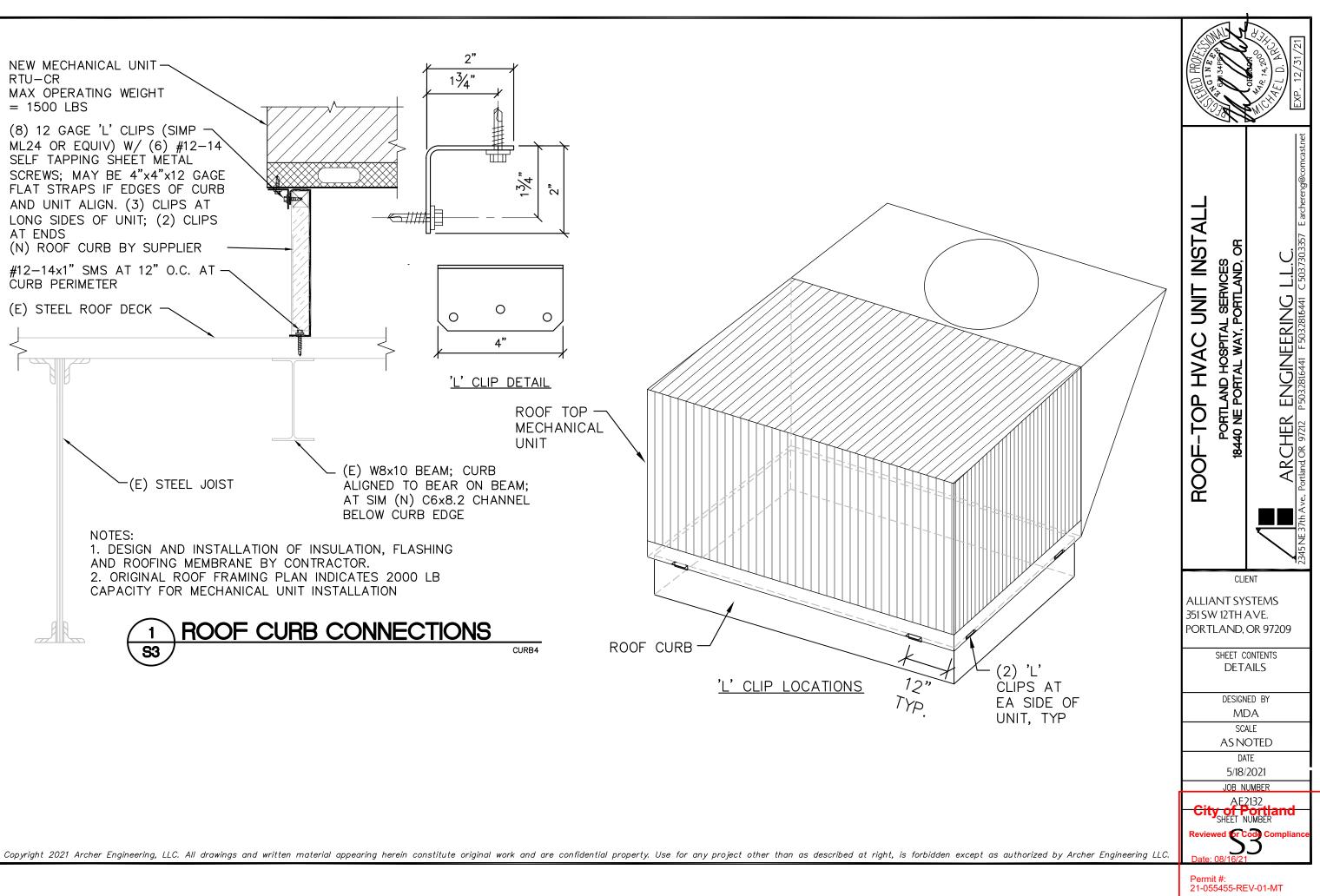
| <u>CODES AND STANDARDS</u> 2019 OREGON STRUCTURAL SPECIALTY CODE | вот | ВОТТОМ | LG |
|---|--------------------------|--|--------------------------|
| <u>DESIGN LOADS</u> SEISMIC LOADING: Ss= 0.880 S1= .371g (SITE SPECIFIC) | BTWN CL COL CTR | BETWEEN CENTER LINE COLUMN CENTER | MAX MIN (N) NTS |
| RTU-CR REPLACEMENT ROOF TOP HVAC UNIT. MAX OPERATING WEIGHT = 1500 LBS. (W/ CURB) | DBL DIA DWG | DOUBLE DIAMETER DRAWING | OC REQ SCH |
| EF—7 REPALCEMENT EXHAUST FAN. MAX OPERATING WEIGHT = 500 LBS (W/ CURB) | DTL (E) EA | DETAIL EXISTING EACH | SHT SIM SMS |
| ORIGINAL ROOF PLAN SPECIFIES THE MECHANICAL UNIT WEIGHT ALLOWANCE OF 2000 LBS | EQ EXT INT | EQUAL EXTERIOR INTERIOR | TYP UNO VERT W/ |

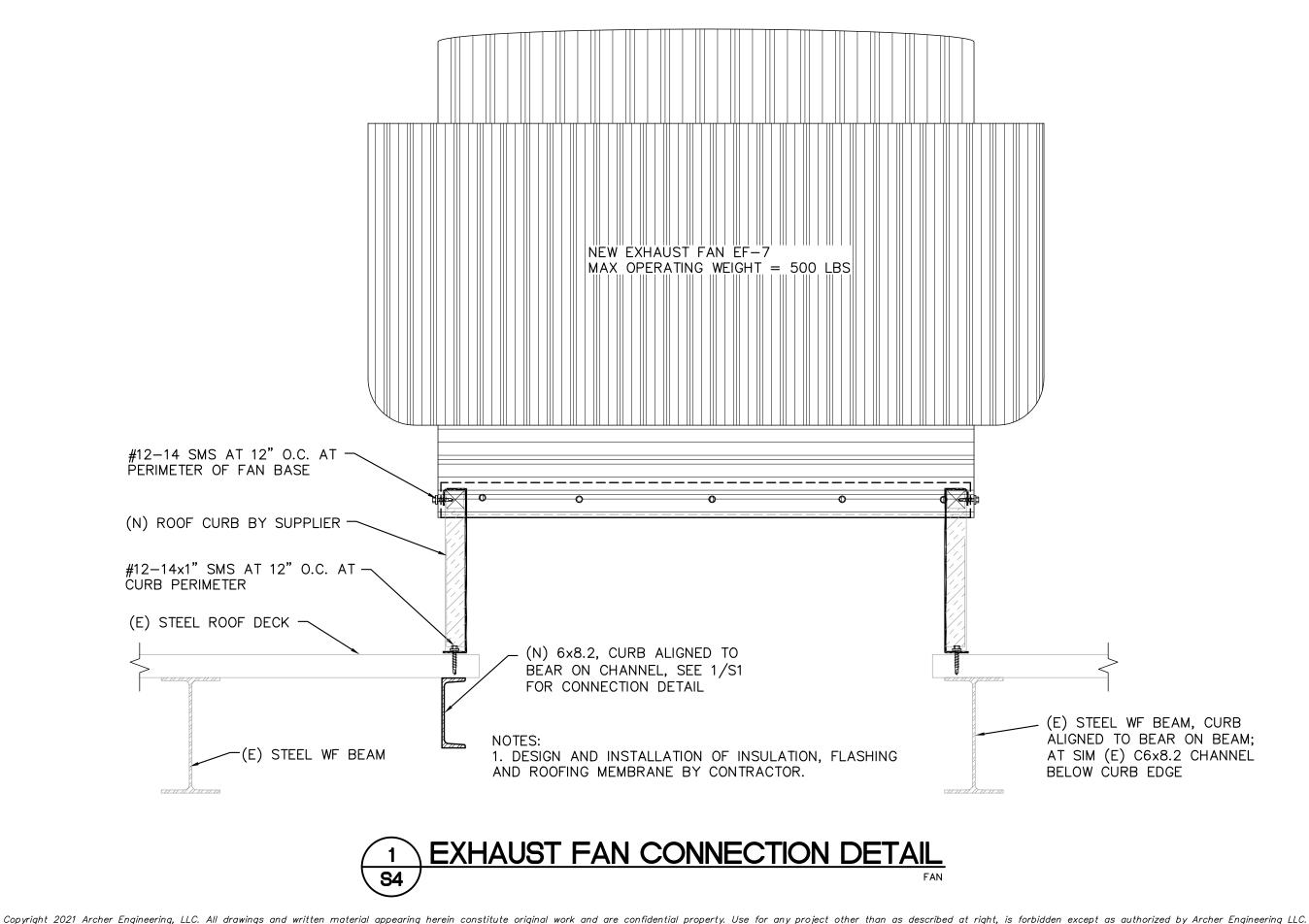


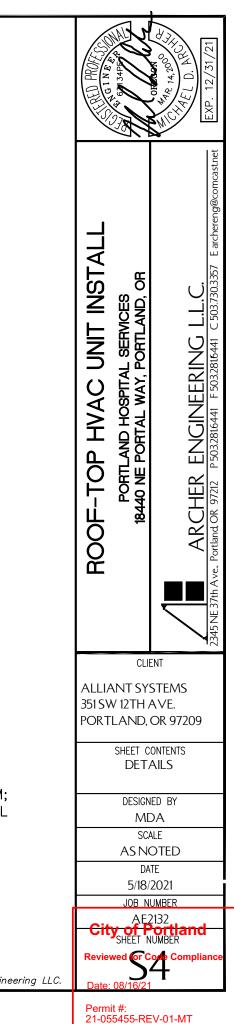
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| REVIATIONS | Land y Carlos I |
|---|---|
| LIGHT GAGE MAXIMUM MINIMUM NEW | EXP. 12/31/21 |
| NOT TO SCALE ON CENTER REQUIRED SCHEDULE SHEET SIMILAR SHEET METAL SCREW TYPICAL UNLESS NOTED OTHERWISE VERTICAL WITH | ROOF-TOP HVAC UNIT INSTALL PORTLAND HOSPITAL SERVICES 18440 NE PORTAL WAY, PORTLAND, OR ARCHER ENGINEERING L.L.C. 2345 NE 37th Ave. Portland OR 97212 P5032816441 F5032816441 C5037303357 Earchereng@concastnet |
| | CLIENT |
| | ALLIANT SYSTEMS 351 SW 12TH AVE. PORTLAND, OR 97209 |
| | SHEET CONTENTS STRUCTURAL NOTES |
| | DESIGNED BY MDA |
| | scale AS NOTED |
| | DATE 5/18/2021 |
| ſ | JOB NUMBER AE2132 |
| | City of Portland SHEET NUMBER |
| as authorized by Archer Engineering LLC. | Reviewed for Code Complianc |
| | Permit #: 21-055455-REV-01-MT |









(E) STEEL WF BEAM, CURB ALIGNED TO BEAR ON BEAM; AT SIM (E) C6x8.2 CHANNEL