



### OUTSIDE AIR CALCULATION

**OFFICE/BREAK AREA:**  
 $R_p = 5 \text{ CFM/PERSON}$   
 $P_z = 5 \text{ PEOPLE/1000 SQ. FT.} = 4 \text{ PEOPLE}$   
 $R_o = 0.06 \text{ CFM/SQ. FT.}$   
 $A_z = 783 \text{ SQ. FT.}$   
 $V = R_p \times P_z + R_o \times A_z = 67 \text{ CFM OSA REQUIRED}$

**CONFERENCE:**  
 $R_p = 5 \text{ CFM/PERSON}$   
 $P_z = 50 \text{ PEOPLE/1000 SQ. FT.} = 9 \text{ PEOPLE}$   
 $R_o = 0.06 \text{ CFM/SQ. FT.}$   
 $A_z = 180 \text{ SQ. FT.}$   
 $V = R_p \times P_z + R_o \times A_z = 56 \text{ CFM OSA REQUIRED}$

**RECEPTION:**  
 $R_p = 5 \text{ CFM/PERSON}$   
 $P_z = 30 \text{ PEOPLE/1000 SQ. FT.} = 3 \text{ PEOPLE}$   
 $R_o = 0.06 \text{ CFM/SQ. FT.}$   
 $A_z = 109 \text{ SQ. FT.}$   
 $V = R_p \times P_z + R_o \times A_z = 23 \text{ CFM OSA REQUIRED}$

**WAITING:**  
 $R_p = 5 \text{ CFM/PERSON}$   
 $P_z = 10 \text{ PEOPLE/1000 SQ. FT.} = 3 \text{ PEOPLE}$   
 $R_o = 0.06 \text{ CFM/SQ. FT.}$   
 $A_z = 272 \text{ SQ. FT.}$   
 $V = R_p \times P_z + R_o \times A_z = 30 \text{ CFM OSA REQUIRED}$

**CORRIDOR/HALLWAY:**  
 $R_p = \text{N/A}$   
 $P_z = \text{N/A}$   
 $R_o = 0.06 \text{ CFM/SQ. FT.}$   
 $A_z = 244 \text{ SQ. FT.}$   
 $V = R_o \times A_z = 15 \text{ CFM OSA REQUIRED}$

191 TOTAL CFM OF OUTSIDE AIR IS REQUIRED.

250 CFM OF OUTSIDE AIR IS PROVIDED.  
 AC-1 = 100 CFM  
 AC-2 = 150 CFM

## MECHANICAL NOTES

(ALL WORK DONE TO BE IN COMPLIANCE WITH 2018 INTERNATIONAL MECHANICAL CODE, 2018 IECC AND LOCAL AMENDMENTS).

- GENERAL**
- BUILDING IS SINGLE STORY.
  - FURNISH ALL LABOR, MATERIALS, TOOLS EQUIPMENT, FEES, PERMITS, CERTIFICATE OF INSPECTION, ETC. NECESSARY OR REASONABLY REQUIRED FOR THE COMPLETE INSTALLATION OF ALL AIR CONDITIONING WORK. THE WORK SHALL BE IN STRICT ACCORDANCE WITH THE ASHRAE GUIDE, AND ALL LOCAL AND STATE CODES, ORDINANCES AND REGULATIONS.
  - COORDINATE ALL MECHANICAL WORK WITH ARCHITECT AND OTHER TRADES PRIOR TO WORK.
  - CONTRACTOR SHALL VERIFY SCALE OF DRAWINGS WITH ARCHITECTURAL DRAWINGS BEFORE SUBMITTING ANY BID.
  - MECHANICAL CONTRACTOR SHALL VERIFY AND COORDINATE SIZE AND LOCATION OF ALL EXISTING HVAC EQUIPMENT. EXISTING EQUIPMENT AND DUCTWORK SHALL BE CLEANED AND SERVICED. CONTRACTOR SHALL REPLACE ALL WORK OR DEFECTIVE PARTS AND RETURN ALL EXISTING EQUIPMENT AND REUSED DUCTS TO GOOD WORKING CONDITION. INFORM OWNER/LANDLORD OF MAJOR REPAIRS REQUIRED TO MAKE EXISTING UNITS OPERATIONAL. REMOVE EXISTING DUCT AND HVAC MATERIALS NOT UTILIZED WITH WRITTEN APPROVAL OF THE OWNER/LANDLORD. EXISTING CONDITIONS SHALL BE VERIFIED PRIOR TO SUBMITTING BID.

- EQUIPMENT**
- MECHANICAL CONTRACTOR TO VERIFY AND COORDINATE AVAILABLE VOLTAGE WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
  - ALL MECHANICAL EQUIPMENT LOCATION TO COMPLY WITH THE 2018 I. M. C.
  - CONTRACTOR SHALL MOUNT ALL MECHANICAL EQUIPMENT LEVEL IN CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS, MAINTAINING ALL MINIMUM RECOMMENDED CLEARANCES.
  - PROVIDE ONE SET OF FARR 30-30 THROWAWAY FILTERS AND ONE SET OF FINAL FILTERS, FRAMES, MOUNTING HARDWARE AND ACCESSORIES. PROVIDE ONE SET OF THROWAWAY FILTERS FOR USE DURING THE CONSTRUCTION PERIOD. REMOVE THE FIRST SET OF THROWAWAY FILTERS AFTER THE CONSTRUCTION PERIOD AND INSTALL THE SECOND SET OF FINAL FILTERS (PRIOR TO BALANCING THE SYSTEM).

- DUCTWORK**
- PROVIDE SPIN-IN BALANCING DAMPERS AT ALL NEW BRANCH CONNECTIONS.
  - THE MAXIMUM LENGTH OF ANY NEW FLEX DUCT SHALL NOT EXCEED 8 FEET.
  - ALL NEW BRANCH CONNECTIONS SHALL BE A MINIMUM OF 2 FEET AWAY FROM ANY ELBOW.
  - ALL DUCTS SHALL BE GALVANIZED SHEET METAL. ALL NEW DUCTWORK TO BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH ASHRAE GUIDELINES, THE LATEST SMACNA STANDARDS, THE 2018 I. E. C. C. AND CHAPTER 6 OF THE 2018 INTERNATIONAL MECHANICAL CODE FOR LOW PRESSURE DESIGN.
  - ALL NEW FLEX DUCTS SHALL BE THERMAFLEX TYPE KM MIN R-6 VALUE OR APPROVED EQUAL CONFORMING TO UL 181, NFPA 90A AND 90B.
  - MECHANICAL CONTRACTOR SHALL VERIFY THAT ALL DUCTWORK WILL FIT WHERE INDICATED WITHOUT INTERFERENCES.
  - DUCTS SHALL CONFORM TO DIMENSIONS ON THE DRAWINGS UNLESS LOCATION OF STRUCTURAL MEMBERS PROHIBIT. IN CASE OF A CHANGE IN DIMENSIONS, CROSS SECTIONAL AREAS SHALL BE MAINTAINED.
  - ALL DUCTS SHALL BE SUBSTANTIALLY SUPPORTED WITH HANGERS TO THE STRUCTURE. PLACING SUPPORTS NOT OVER 8 FEET APART ALONG THE LENGTH OF THE DUCT. SHEET METAL SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:  
 UP TO 12" WIDTH 26 GAUGE STEEL  
 13" TO 30" WIDTH 24 GAUGE STEEL  
 31" TO 60" WIDTH 22 GAUGE STEEL
  - EXHAUST DUCTS SHALL BE MINIMUM 26 GAUGE GALVANIZED STEEL - SEE MECH EQUIPMENT SCHEDULE OR FLOOR PLAN FOR SIZE & TERMINATION POINT.
  - ALL "FACTORY MADE" DUCT MUST BE CLASS "0" OR CLASS "1".  
 11) PROVIDE FULL RADIUS ELBOWS, TURNING VANES, AND SPLITTER DAMPERS IN BRANCHES AND EXTRACTORS WHERE APPLICABLE.  
 12) DUCT SIZES SHOWN ARE "CLEAR INSIDE" DIMENSIONS.  
 13) MECHANICAL CONTRACTOR SHALL CAP ALL OPENINGS IN EXISTING DUCTWORK ABOVE THE CEILING.
  - ALL SUPPLY AND RETURN DUCTS LOCATED IN UNCONDITIONED SPACES SHALL HAVE A MINIMUM OF R-8 INSULATION. ALL SUPPLY AND RETURN DUCTS LOCATED OUTSIDE THE BUILDING SHALL HAVE A MINIMUM OF R-8 INSULATION IN ACCORDANCE WITH THE 2018 I.E.C.C.**
  - ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK, SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), MASTIC-PLUG-EMBED-FABRIC SYSTEMS OR TAPES. TAPES AND MASTICS USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A AND SHALL BE MARKED 181A-P FOR PRESSURE SENSITIVE TAPE, TAPES AND MASTICS USED TO SEAL FLEXIBLE AIR AIR DUCT AND FLEXIBLE CONNECTORS SHALL COMPLY WITH UL 181B AND SHALL BE MARKED 181B-FX FOR PRESSURE SENSITIVE TAPE OR 181M FOR MASTIC. DUCT CONNECTION TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. UNLISTED DUCT TAPE IS NOT PERMITTED AS SEALANT ON ANY METAL DUCTS.

- OUTLETS**
- THE MECHANICAL CONTRACTOR SHALL COORDINATE EXACT DIFFUSER AND GRILLE LOCATIONS WITH ELECTRICAL CONTRACTOR AND ALL OTHER TRADES AND ALSO COORDINATE SPACE AVAILABILITY FOR DUCTWORK ABOVE RECESSED LIGHTING TO AVOID RELOCATING DUCTWORK AT THE MECHANICAL CONTRACTORS EXPENSE.
  - ALL AIR DISTRIBUTION DEVICES IN LAY-IN CEILINGS SHALL BE SUPPORTED IN COMPLIANCE WITH SECTION 2.3.1.3 OF NFPA 90A & 2018 INTERNATIONAL BUILDING CODE.
  - DIFFUSERS SHALL MATCH EXISTING OR APPROVED EQUAL, NECK SIZE AS INDICATED.
  - RETURN AIR GRILLES SHALL MATCH EXISTING OR APPROVED EQUAL.

- CONTROLS**
- THERMOSTATS ARE EXISTING. RELOCATE AS INDICATED ON FLOOR PLAN.
  - ARCHITECT, CONTRACTOR AND OWNER/TENANT TO COORDINATE EXACT T-STAT LOCATIONS.

- PIPING**
- CONDENSATE DRAINS ARE EXISTING - COORDINATE LOCATION AND TERMINATION.

- INSULATION**
- ALL INSULATION, MATERIAL, COVERINGS, ADHESIVES, VAPOR-BARRIERS AND TAPES SHALL CONFORM TO NFPA 90A, FLAME SPREAD CLASSIFICATION NOT TO EXCEED 25 AND SMOKE DEVELOPMENT NOT TO EXCEED 50.
  - INSULATE ALL SHEET METAL DUCTWORK FOR AIR CONDITIONING SYSTEMS WITH A MINIMUM VALUE OF R-6, 3/4 LB. DENSITY EXTERIOR INSULATION, WITH FSK JACKET AND VAPOR BARRIER WITHIN THE BUILDING ENVELOPE AND R-8 OUTSIDE OF BUILDING ENVELOPE.

- TESTING**
- TEST AND BALANCE ALL AIR SYSTEMS PER AABC OR NEBB LATEST STANDARDS. SUBMIT REPORT TO ENGINEER WITHIN 10 DAYS OF COMPLETING TEST AND BALANCE.
  - COPY OF THE AIR BALANCE REPORT SHALL BE PROVIDED TO THE MECHANICAL INSPECTOR FOR FINAL APPROVAL. REPORT SHALL BE SEALED AND WET SIGNED.



**FIGGES**  
 DESIGN  
 INTERIORS LLC

**PINAL PROFESSIONAL VILLAGE**  
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**2nd CHANCE TREATMENT CENTER**

**MECHANICAL notes and schedules**

PROJECT:

SHEET TITLE:

PROJECT NO: 2125.01  
 DATE: 11-19-2021  
 REVISED:

DRAWN BY: JD

SHEET

**M2.1**

OF



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