

### HVAC NOTES

**DESCRIPTION:**

- THESE PLANS ARE SCHEMATIC IN NATURE AND ARE INTENDED TO ESTABLISH SIZE, GENERAL ROUTING, LOCATION AND PERFORMANCE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. ALL WORK SHALL BE FULLY COORDINATED WITH OTHER TRADES.

**GENERAL NOTES:**

- ALL MECHANICAL SYSTEMS ARE TO BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE NFPA STANDARDS, ANSI STANDARDS, THE LOCAL BUILDING CODE, NOISE & HEIGHT ORDINANCES, PLANS AND SPECIFICATIONS.
- ALL MATERIALS SHALL BE NEW AND ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES. EXCEPT APPROVED RULES AND ORDINANCES, ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR RESTORED TO ORIGINAL CONDITION.
- THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, ACCESS PANELS, CONTROL SYSTEMS, DEVICES, PERMITS AND SERVICES NECESSARY FOR FURNISHING AND INSTALLING A COMPLETE OPERABLE MECHANICAL SYSTEM.
- ALL LOUVERS, GRILLES, PIPING, ETC. SHALL BE PAINTED TO MATCH SURROUNDING COLOR AND TEXTURES AS REQUIRED BY ARCHITECT. VERIFY COLOR AND TEXTURE WITH ARCHITECT. PAINT ALL EXPOSED MECHANICAL EQUIPMENT WITH BENJAMIN MOORE EPOXY EMULSION 1B2.
- THE CONTRACTOR SHALL PROVIDE PLASTIC OR ALUMINUM TYPE EQUIPMENT IDENTIFICATION LABELS FOR ALL MECHANICAL EQUIPMENT AS PER SCHEDULE TAGS. (SETON OR SIMILAR)
- ALL O/A INTAKES SHALL HAVE A 2" HIGH STENCILED LETTERING READING "INTAKE" PER FBC REQUIREMENTS.
- ALL CUTTING, PATCHING, STRUCTURAL STEEL, WEATHER PROOFING, PAINTING, AND WALL OPENINGS SHALL BE BY THE GENERAL CONTRACTOR.
- ALL OPENINGS IN BUILDING STRUCTURE, FOR DUCTWORK, PIPING, ETC. TO BE 1/2" LARGER (ON ALL SIDES) THEN THE OUTSIDE DIMENSIONS. FILL VOIDS WITH FIRE RETARDANT SILICONE FOAM (I.E. CHASE-WOM CFC PR-855 BY CHASE TECHNOLOGY CORP.).
- BUILDING HVAC CALCULATIONS ARE BASED ON THE FOLLOWING:  
A. INDOOR DESIGN: SUMMER 75 DDB/50% RH, WINTER 72 DDB.  
B. OUTDOOR DESIGN: SUMMER 92 DDB/78DWB, WINTER 46 DDB.
- LOAD AND ENERGY CALCULATIONS ARE BASED ON THE FOLLOWING:  
WALL INSULATION R-VALUE: R-7.0  
ROOF INSULATION R-VALUE: R-30
- PROVIDE FLEXIBLE DUCT CONNECTORS, RATED AS REQUIRED, TO ALL FANS, A/C UNITS, OR MECHANICAL EQUIPMENT.
- PROVIDE MAINTENANCE AND OPERATION MANUAL ON ALL MECHANICAL EQUIPMENT. SUBMITTALS SHALL HAVE A SUMMARY SHEET SHOWING ALL SCHEDULED INFORMATION.
- HVAC CONTRACTOR WILL WARRANTY ALL MECHANICAL SYSTEMS, DUCTWORK, THERMOSTATS, AND ALL OTHER EQUIPMENT/PARTS AND LABOR UNDER THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE (1) YEAR AFTER C.O. OF BUILDING. ANY REPAIRS REQUIRING SYSTEM SHUT DOWN WILL BE DONE DURING NON OPERATIONAL PERIODS. HVAC CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO BIDDING AND PURCHASING ANY EQUIPMENT.
- AIR QUALITY SHOULD BE TESTED BEFORE OCCUPANCY AND SHOULD BE INSTRUMENTED AND MONITORED THEREAFTER, OR AT LEAST AT REGULAR INTERVALS.

**MECHANICAL EQUIPMENT NOTES:**

- ALL MECHANICAL EQUIPMENT SHALL BE ARI & U.L. LISTED WHERE APPLICABLE AND RATED FOR THE REQUIRED SERVICE PRESSURES, TEMPERATURES, AND SHALL BE PROVIDED WITH ALL NECESSARY TRANSFORMERS, SEALS, VALVES, CONNECTIONS, ETC. TO FUNCTION PROPERLY.
- PROVIDE IONIZATION TYPE SMOKE DETECTORS IN THE SUPPLY AIR DUCT OF ALL AIR HANDLING EQUIPMENT WITH AIR DELIVERY CAPACITIES GREATER THAN 2000 CFM TO SHUT DOWN THE UNIT UPON DETECTION OF SMOKE. SMOKE DETECTORS SHALL BE LOCATED TO PROVIDE ACCESS FOR MAINTENANCE AND INSPECTION AND SHALL NOT BE HIGHER THAN 48" ABOVE CEILING. SMOKE DETECTOR SHALL BE UL268A LISTED AND COMPATIBLE WITH THE FACT, SIMPLEX SERIES 2090 OR APPROVED EQUIVALENT. PROVIDE AUDIBLE VISUAL SIGNAL TO BE MOUNTED 4" MOUNTED BELOW THE CEILING OVER NORMALLY-OCCUPIED SPACE. DO NOT LOCATE IN RESTROOMS, JANITOR OR STORAGE). PROVIDE DUCT ACCESS DOORS FOR MAINTENANCE AND INSPECTION OF SMOKE DETECTORS. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER; COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING.
- PROVIDE TYPE "B" FIRE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING FIRE RATED WALLS, PARTITIONS, FLOORS OR ROOF SLABS AND AT FRESH AIR INTAKES. FIRE RATED DUCTS FOR RATED AREAS PROVIDE RADIATION DAMPERS IN RATED CEILING FOR ALL SLAB OPENINGS, CEILING FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY AS SPECIFIED BY ARCHITECT.
- IN CASE OF FIRE RATED CORRIDOR DUCTS SHALL PENETRATE THROUGH SIDE OF RATED ENCLOSURE ONLY. (NO PENETRATIONS THROUGH HORIZONTAL RATED STRUCTURE).
- PROVIDE BACKDRAFT DAMPERS ON ALL EXHAUST FANS AND/OR INLINE FANS.
- PROVIDE VIBRATION ISOLATORS ON ALL MECHANICAL EQUIPMENT AS CALLED FOR IN THE SCHEDULE. IF NOT SPECIFIED, AS FOLLOWS:  
- UP TO 3-occupied/11-unoccupied PERIODS PER DAY.  
- PROGRAMMABLE OUTPUT (CONTROL BY TIME OR TEMPERATURE)  
- SMART FAN (KEEPS THE FAN FROM RUNNING DURING UNOCCUPIED PERIODS)  
- OCCUPANCY STATUS AUX. CONTACT FOR O/A DAMPER CONTROL.  
- PASSWORD PROTECTION OPTION.
- ALL THERMOSTATS PROVIDED WITH REMOTE TEMPERATURE SENSOR(S) SHALL BE SET TO BE CONTROLLED BY THE REMOTE SENSOR(S) AND IGNORE THE READING OF ITS INTERNAL TEMPERATURE SENSOR.
- HERMISTAT SHALL BE 2 HEAT/2 COOL PROGRAMABLE THERMISTAT WITH THE FOLLOWING STANDARD FEATURES:  
- REMOTE SENSOR CAPABILITY  
- UP TO 3-occupied/11-unoccupied PERIODS PER DAY.  
- PROGRAMMABLE OUTPUT (CONTROL BY TIME OR TEMPERATURE)  
- SMART FAN (KEEPS THE FAN FROM RUNNING DURING UNOCCUPIED PERIODS)  
- OCCUPANCY STATUS AUX. CONTACT FOR O/A DAMPER CONTROL.  
- PASSWORD PROTECTION OPTION.
- ALL THERMOSTATS PROVIDED WITH REMOTE TEMPERATURE SENSOR(S) SHALL BE SET TO BE CONTROLLED BY THE REMOTE SENSOR(S) AND IGNORE THE READING OF ITS INTERNAL TEMPERATURE SENSOR.
- INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
- PROVIDE MOTOR STARTERS AS FOLLOWS (UNLESS OTHERWISE RECOMMENDED BY MOTOR MANUFACTURER):  
A: PROVIDE OVERLOAD PROTECTION - 1/3 HP AND ABOVE (ALL PHASES).  
B: PROVIDE ACROSS THE LINE VOLTAGE STARTING BELOW 25 HP.
- ALL OUTDOOR EQUIPMENT SHALL COMPLY WITH LOCAL ZONING NOISE ORDINANCES. MIN. REQUIREMENT SHALL NOT EXCEED A NOISE LEVEL OF 65 DB AS MEASURED RADIALLY 30 FT FROM THE EQUIPMENT IN ALL DIRECTIONS.
- FILTERS SHALL BE IN PLACE DURING CONSTRUCTION. PROVIDE A NEW SET PRIOR TO TEST AND BALANCE AND A FINAL SET AT THE END OF ONE YEAR SERVICE PERIOD.
- COUNTERBALANCED BACKDRAFT DAMPERS SHALL BE HEAVY DUTY EXTRUDED ALUMINUM RUSKIN MODEL CB02 OR APPROVED EQUAL.

**OUTSIDE AIR DAMPER CONTROLS NOTES:**

- OUTDOOR AIR SUPPLY DUCT SHALL BE EQUIPPED WITH MOTORIZED DAMPER THAT WILL AUTOMATICALLY SHUT WHEN THE SPACE SERVED IS NOT IN USE.
- MOTORIZED DAMPERS SHALL NOT BE LESS THAN A CLASS I LEAKAGE-RATED DAMPER WITH A MAXIMUM LEAKAGE RATE OF 4 CFM PER SQUARE FOOT AT 1.0 INCH WATER GAGE WHEN TESTED IN ACCORDANCE WITH AMCA 5000.
- OUTSIDE AIR DUCTS SHALL BE PROVIDED WITH A VOLUME MANUAL DAMPER, DOWNSTREAM FROM THE MOTORIZED DAMPER. DAMPER SHALL BE ADJUSTED TO PROVIDE THE AIRFLOW RATE REQUIRED BY CODE.

### TESTING AND BALANCING NOTES

- AIR DISTRIBUTION SYSTEM TESTING, ADJUSTING AND BALANCING SHALL BE PERFORMED ACCORDING TO 2010 FLORIDA BUILDING CODE, ENERGY CONSERVATION, SECTION 503.2.9.
- TEST, ADJUSTMENT AND SYSTEM BALANCE SHALL BE PERFORMED BY AN ENGINEER LICENSED IN THE STATE OR A COMPANY OR INDIVIDUAL HOLDING A CURRENT CERTIFICATION FROM A RECOGNIZED TESTING AND BALANCING ORGANIZATION. LICENSED MECHANICAL CONTRACTORS ARE ALLOWED TO TEST AND BALANCE SYSTEMS OF 15.0 TON OR LESS IN COOLING OR HEATING CAPACITY.
- COOLING OR HEATING SYSTEM CAPACITIES OF 65,000 BTUH OR LESS ARE EXEMPT FROM THE TEST AND BALANCE REQUIREMENT LISTED IN THE CODE.
- ALL HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS. A WRITTEN BALANCE REPORT SHALL BE PROVIDED TO THE OWNER FOR HVAC SYSTEMS WITH TOTAL AIR CONDITIONING AREA EXCEEDING 5,000 SQFT OR OTHERWISE REQUESTED BY THE OWNER FOR SMALLER SPACES.
- BALANCING PROCEDURES SHALL BE IN ACCORDANCE WITH THE NEBB PROCEDURAL STANDARDS, THE ABC NATIONAL STANDARDS, OR EQUIVALENT PROCEDURES.
- UPON CONSTRUCTION COMPLETION, ALL REUSED MECHANICAL SYSTEMS SHALL BE REBALANCED. ALL GRILLES IN SERVED AREAS SHALL BE BALANCED TO ACHIEVE REQUIRED DESIGN VALUES.

### KITCHEN HOOD VENTILATION SYSTEM DUCTS AND EXHAUST EQUIPMENT NOTES:

- CANOPY STYLE (WALL MOUNTED OR ISLAND), TYPE I- KITCHEN VENTILATION HOOD WITH THE FOLLOWING FEATURES: UL 710 LISTED, NSF CERTIFIED FOR GREASE EXHAUST SERVICE; ALL 18 GA. 304 STAINLESS STEEL CONSTRUCTION WITH STANDING SEAM CONSTRUCTION AND CONTINUOUSLY WELDED, LIQUID-TIGHT SEMAS; 20" HIGH, UL 1046 LISTED STAINLESS STEEL BAFFLE FILTERS; FACTORY PRE-WIRED FAN AND LIGHTING CONTROLS; PITCHED, FULL LENGTH GREASE TROUGH WITH REMOVABLE GREASE CONTAINER; UL LISTED, VAPOR-PROOF, GLOBE-TYPE LIGHT FIXTURES; 18 GA. STAINLESS STEEL ENCLOSURE WITH HANGING ANGLES; PERFORATED-FACE FRONT SUPPLY PLENUM, MANUFACTURED BY CAPTIVEAIRE.
- PROVIDE UL LISTED, NFPA APPROVED FIRE SUPPRESSION SYSTEM TO SERVE EACH HOOD: UL LISTED WET-CHEMICAL, DRY-CHEMICAL OR CO2-BASED (COORDINATE TYPE WITH OWNER).
- KITCHEN EXHAUST DUCTWORK SHALL BE MINIMUM 16 GA BLACK STEEL OR 18 GA STAINLESS STEEL WHELED EXHAUST DUCT. PROVIDE ACCESS DOORS IN THE VERTICAL FACE OF THE HORIZONTAL RUN EVERY 10'-0" AND AT ALL CHANGES IN DIRECTION. VENTILATION SYSTEM SHALL CONFORM TO NFPA-96 REQUIREMENTS AND RECOMMENDATIONS.
- WRAP KITCHEN EXHAUST DUCT WITH 1 HR. (SINGLE STORY WITH NON-RATED CEILINGS) OR 2 HR. (MULTI-STORY OR RATED CEILING) FIRE RATED MATERIAL SPACED 6" FROM DUCT ALL AROUND IN ACCORDANCE WITH N.F.P.A. 96 AND LOCAL CODES OR PROVIDE AN APPROVED ZERO CLEARANCE SYSTEM INSTALLED AS RECOMMENDED BY MANUFACTURER.
- ALL KITCHEN EXHAUST FANS SHALL BE BELOW UL-762 AND NFPA-96 CONSTRUCTION.
- SIZE ALL GREASE EXHAUST DUCTWORK AT 1500 FPM MIN. / 1600 FPM MAX.
- PROVIDE 30"L TRANSITIONS TO HOOD AND FAN CONNECTIONS.
- ALL EXHAUST SYSTEM ELBOWS, IF ALLOWED BY BUILDING STRUCTURE, SHALL BE 1.5 RADIUS ELBOWS.
- PROVIDE SWITCH WITH PILOT LIGHTS FOR SUPPLY AND EXHAUST FANS.
- PROVIDE INTERLOCK BETWEEN GAS SYSTEM (IF USED), ELECTRIC SYSTEM, FIRE SUPPRESSION SYSTEM AND THE AIR SUPPLY (IF USED) AND EXHAUST SYSTEM TO PROVIDE THE FOLLOWING OPERATION:  
A. IF THE SUPPRESSION SYSTEM IS ACTIVATED THE GAS SUPPLY AND ELECTRIC SUPPLY TO THE EQUIPMENT IS TURNED OFF. THE SUPPLY FAN SHALL BE TURNED OFF AND THE EXHAUST FAN SHALL CONTINUE TO RUN.  
B. NORMAL OPERATION: THE SUPPLY AND EXHAUST FANS ARE INTERLOCKED TO OPERATE TOGETHER. WHEN THE SYSTEM IS TURNED OFF A DUCT SENSOR SHALL OVERRIDE THE SWITCH AND CONTINUE TO OPERATE THE SYSTEM UNTIL THE EXHAUST DUCT TEMPERATURE DROPS TO 130F.
- EXHAUST HOOD, DUCTWORK, CLEANOUT AND ACCESS DOORS, FANS AND FIRE EXTINGUISHING SYSTEM SHALL BE INSTALLED IN COMPLIANCE WITH N.F.P.A. 96, AND LOCAL BUILDING DEPARTMENT REQUIREMENTS. ALL DETAILS AND DIAGRAMS SHOWN ARE TYPICAL AND MAY REQUIRE MODIFICATIONS AS REQUIRED BY LOCAL BUILDING ORDINANCES OR MANUFACTURERS.
- VERIFY WITH HOOD SUPPLIER THE CFM AND STATIC PRESSURE LOSS OF HOOD EXHAUST AND SUPPLY SYSTEM BEFORE PURCHASE OF FANS OR FABRICATION OF DUCT, NOTIFY ENGINEER OF ANY CHANGES.
- FAN AND ALL RELATED DUCTWORK FOR HOODS TO BE DONE BY THE MECHANICAL CONTRACTOR ALSO THE PERMIT FOR THE WORK.
- STARTER PROVIDED BY A/C CONTRACTOR INSTALLED BY ELECTRICAL CONTRACTOR. ALL EXTERNAL WIRING BY ELECTRICAL CONTRACTOR.
- FINAL TIE INTO THE BUILDING ALARM SYSTEM TO BE DONE BY THE BUILDING ELECTRICAL CONTRACTOR.
- BALANCING AND FINAL INSPECTION TO BE DONE BY THE MECHANICAL CONTRACTOR IN THE PRESENCE OF THE HOOD SUPPLIER.
- ALL ELECTRICAL AND MECHANICAL SHUT-OFF VALVES SHALL BE THE RESPONSIBILITY OF THE KITCHEN CONTRACTOR. THIS DOES NOT APPLY TO FINAL CONNECTION OF THE EQUIPMENT. THIS IS THE RESPONSIBILITY OF THE LUMBER AND ELECTRICAL CONTRACTOR.
- PERMIT FOR HOOD INSTALLATION AND ANSUL SYSTEM TO BE DONE BY THE KITCHEN CONTRACTOR (SUPPLIER) ALSO INSTALLATION OF THE HOOD AND ANSUL SYSTEM TO BE DONE BY KITCHEN SUPPLIER.
- PROVIDE ACCESS PANELS IN CEILING FOR CLEANOUTS ACCESS.

### THERMOSTAT NOTES

- THERMISTAT SHALL BE 2 HEAT/2 COOL PROGRAMABLE THERMISTAT WITH THE FOLLOWING STANDARD FEATURES:  
- REMOTE SENSOR CAPABILITY  
- UP TO 3-occupied/11-unoccupied PERIODS PER DAY.  
- PROGRAMMABLE OUTPUT (CONTROL BY TIME OR TEMPERATURE)  
- SMART FAN (KEEPS THE FAN FROM RUNNING DURING UNOCCUPIED PERIODS)  
- OCCUPANCY STATUS AUX. CONTACT FOR O/A DAMPER CONTROL.  
- PASSWORD PROTECTION OPTION.

ALL THERMOSTATS PROVIDED WITH REMOTE TEMPERATURE SENSOR(S) SHALL BE SET TO BE CONTROLLED BY THE REMOTE SENSOR(S) AND IGNORE THE READING OF ITS INTERNAL TEMPERATURE SENSOR.

### HVAC SYMBOL LEGEND

SYMBOL	DESCRIPTION
(T)	THERMOSTAT WITH SUBBASE
(S)	REMOTE TEMPERATURE SENSOR
(SD)	REMOTE DETECTOR
(SP)	STATIC PRESSURE SENSOR
---	EXISTING SUPPLY AIR DUCTWORK
---	EXISTING RETURN AIR DUCTWORK
---	CHANGE IN DUCT SIZE
---	DEMOLITION
---	EXISTING FLEX DUCTWORK
---	EXISTING EXHAUST AIR DUCTWORK
---	OPPOSED BLADE DAMPER
---	BACK DRAFT DAMPER
---	MANUAL VOLUME DAMPER
---	MOTORIZED CONTROL DAMPER
---	CEILING DIFFUSER OR GRILLE
---	RETURN AIR GRILLE
---	AIR TRANSFER GRILLE
---	NEW CONNECTION TO EXISTING EXHAUST FAN
---	AIR HANDLER UNIT
---	CONDENSING UNIT
---	WIRE MESH SCREEN
---	DIFFUSER DESIGNATION
---	DESIGN CFM (WHERE APPLICABLE)

NOTE: HVAC LEGEND IS PROVIDED AS A GENERAL REFERENCE. SOME SYMBOLS SHOWN MAY NOT PERTAIN TO THIS PROJECT.

### KITCHEN AIR BALANCE SCHEDULE

UNIT	SUPPLY AIR CFM	OUTSIDE AIR CFM	RETURN AIR CFM	EXHAUST AIR CFM	SPACE NET PRESSURE CFM
KSF-1	3984	3984	----	----	+3984
AHU-K-1	4000	871	3129	----	+871
KEF-1	----	----	----	-2460	-2460
KEF-2	----	----	----	-2520	-2520
EF-J-1 (JANITOR CLOSET)	----	----	----	-75	-75
CHEF-1	----	----	----	-300	-300
TOTAL	7984	4855	3129	-5355	-500

### BUILDING AIR BALANCE SCHEDULE (AFTER AHU-K-1 IS INSTALLED AND FUNCTIONING)

UNIT	SUPPLY AIR CFM	OUTSIDE AIR CFM	RETURN AIR CFM	EXHAUST AIR CFM	SPACE NET PRESSURE CFM
KSF-1	3984	3984	----	----	+3984
AHU-K-1	4000	871	3129	----	+871
KEF-1	----	----	----	-2460	-2460
KEF-2	----	----	----	-2520	-2520
EF-J-1 (JANITOR CLOSET)	----	----	----	-75	-75
CHEF-1	----	----	----	-300	-300
AHU-2 (EX)	8275	1790	6485	----	+1790
EF-10 (EX)	----	----	----	-85	-85
EF-11 (EX)	----	----	----	-85	-85
EF-12 (EX)	----	----	----	-300	-300
EF-13 (EX)	----	----	----	-200	-200
EF-28 (EX)	----	----	----	-85	-85
EF-29 (EX)	----	----	----	-85	-85
TOTAL	16259	6645	9614	-6195	+450 CFM BUILDING PRESSURE

### AIR DISTRIBUTION/DUCTWORK NOTES:

- REFER TO ARCHITECTURAL PLANS FOR CEILING TYPE.
- PROVIDE OFF WHITE FINISH (SUBJECT TO ARCHITECT'S APPROVAL).
- DUCTWORK MATERIALS:  
A. S/A AND R/A: GALVANIZED SHEET METAL W/ DUCT WRAP INSULATION WITH VAPOR BARRIER. JOHNS MANVILLE MICROULTE TYPE 75, 1.5 INCH THICKNESS, R=4.2 (MIN.) UNLESS OTHERWISE NOTED.  
B. GENERAL EXHAUST AIR DUCTWORK: GALVANIZED SHEETMETAL.  
C. KITCHEN HOOD EXHAUST - 16 GA. ALL WELDED CONSTRUCTION.  
D. FLEXIBLE AIR DUCT SHALL BE UL 181 RATED. SUCH DUCTS SHALL BE LISTED AND LABELED AS CLASS 0 OR CLASS 1 FLEXIBLE DUCTS. FLEXIBLE DUCT INSULATION TO BE R-4.2 MINIMUM.  
E. OUTSIDE AIR DUCTWORK/MAKE-UP AIR: GALVANIZED SHEETMETAL EXTERNALLY WRAPPED INSULATION (R-6 MIN)
- DUCT SYSTEM CONSTRUCTION AND SEALING REQUIREMENTS: DUCTWORK SHALL COMPLY WITH REQUIREMENTS AS PER TABLE 503.2.7.2. FBC 2010 EDITION AND "SMACNA" STANDARDS.
- ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH "SMACNA" STANDARDS AND FBC 2010 EDITION.
- INSULATION SHALL BE PROTECTED FROM DAMAGE, INCLUDING THAT DUE TO SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE, AND WIND, BUT NOT LIMITED TO THE FOLLOWING:  
A. INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED BY 20 GA SHEET METAL.  
B. INSULATION COVERING COOLING DUCTS LOCATED OUTSIDE THE CONDITIONED SPACE SHALL INCLUDE A VAPOR RETARD LOCATED OUTSIDE THE INSULATION.
- PROVIDE FOIL-FACED INSULATION (MIN. R-5.6) ON TOP/BACK OF ALL AIR DEVICES. TAPE ALL JOINTS AND SEAMS TO PROVIDE CONTINUOUS VAPOR BARRIER OVER DEVICE AND FLEXIBLE CONNECTION.
- ALL DUCTWORK AND DIFFUSERS SHALL BE RATED FOR THE USE PRESSURE AND TEMPERATURE SPECIFIED AND AS REQUIRED BY THE CEILING SYSTEM RATING.
- ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH "SMACNA" STANDARDS AND LOCAL BUILDING CODES.
- ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
- SEAL ALL DUCTS, JOINTS AND SEAMS IN AN APPROVED MANNER AND INSURE AGAINST LEAKAGE.
- PROVIDE ACCESS DOORS AS REQUIRED FOR ALL MECHANICAL EQUIPMENT TO SERVICE AND VISUALLY CHECK ROTATION OF FANS AND MOTORS, POSITION OF DAMPERS, REPLACE FIRE DAMPER LINKS, ADJUST OR REPLACE CONTROLS, ETC.
- PROVIDE VANED ELBOWS IN ALL CASES. SPLITTER DAMPERS WHERE INDICATED ON DRAWINGS AND VOLUME CONTROL DAMPERS IN ALL BRANCH DUCTS OR DIFFUSER CONNECTIONS.

### AIR DISTRIBUTION SCHEDULE

SYMBOL	USE	TYPE	DESIGN MANUFACTURER & MODEL NO.	REMARKS	ACCESSORIES
CD-1	SUPPLY AIR	DIFFUSERS	TITUS TDC-AA	18X18 LAY IN 24X24 MODULE 4 WAY-ROUND NECK	----
CD-2	SUPPLY AIR	DIFFUSERS	TITUS TDC-AA	6X6 SURFACE MOUNT 4 WAY-ROUND NECK	----
CD-3	SUPPLY AIR	DIFFUSERS	TITUS TDC-AA	18X18 LAY IN 24X24 MODULE 2 WAY-ROUND NECK	----
SR-1	SUPPLY AIR	GRILLES & REGISTERS	TITUS 300FS	6X6 OR PER PLAN SURFACE MOUNT	080
SR-2	SUPPLY AIR	GRILLES & REGISTERS	TITUS 300FS	36X10 SURFACE MOUNT	----
SR-3	SUPPLY AIR	GRILLES & REGISTERS	TITUS 300FS	18X6 SURFACE MOUNT	080
RAG-1	RETURN AIR	GRILLES & REGISTERS	TITUS 350FL	22X22 CRY-TR 24X24 MODULE	----
RAG-2	RETURN AIR	GRILLES & REGISTERS	TITUS 350FS	6X6 OR PER PLAN SURFACE MOUNT	080
RAG-3	RETURN AIR	GRILLES & REGISTERS	TITUS 350FS	10X10 SURFACE MOUNT	080
EG	EXHAUST AIR	GRILLES	TITUS 50F	22X22 LAY IN 24X24 MODULE	----
OAL	INTAKE AIR-LOWER	LOWERS	GREENHEX ESH-490D	N/A NO. 12-REB008 EXP. DATE: 11-3-17	WMS

GENERAL AND HVAC CONTRACTOR TO COORDINATE FINISH AND COLOR OF ALL AIR DISTRIBUTION PRODUCTS PRIOR TO ORDERING. TITUS AND GREENHEX ARE THE BASIS OF DESIGN.

### KITCHEN EXHAUST HOODS AND ASSOCIATED KSF'S AND KEF'S-CONTROLS

KITCHEN EXHAUST HOODS SHALL CONTROL ASSOCIATED FANS (KSF'S & KEF'S), LIGHTS AND FIRE SUPPRESSION SYSTEM VIA FACTORY-WIRED CONTROLS PACKAGE. INTERLOCK HOODS CONTROL WITH ASSOCIATED AHU(S) TO OPEN O/A DAMPER TO 100% O/A FLOW POSITION WHEN HOOD SUPPLY FANS ARE ON.

UPON ACTIVATION OF FIRE SUPPRESSION SYSTEM, HOOD CONTROLS SHALL SHUT DOWN KITCHEN GAS SUPPLY (VIA ELECTRIC SOLENOID VALVE), COOKING EQUIPMENT ELECTRIC SUPPLY (VIA INTERLOCK TO SHUT THE BREAKER), ASSOCIATED KSF'S, AND SHALL ANNUNCIATE CONDITION TO THE FACP.

### OUTSIDE AIR CALCULATIONS

(BASED ON ASHRAE STANDARD 62.1-2004)

OCCUPANCY TYPE	GROSS FLOOR AREA (SQ. FT.)	PEOPLE	REQUIRED OUTSIDE AIR CFM PER PERSON	CFM PER SQ. FT.	CFM REQUIRED	CFM PROVIDED
DISHWASHING	271	10	7.5	0.18	124	272
KITCHEN	972	15	7.5	0.18	288	599
TOTAL REQUIRED					412	----
TOTAL PROVIDED					----	871

### KITCHEN HOOD AND FIRE SUPPRESSION SYSTEM NOTES

KITCHEN HOOD AND FIRE SUPPRESSION SYSTEM SHALL BE DONE BY OTHER. PLEASE REFER TO HOOD MANUFACTURER'S DRAWINGS FOR HOOD AND FIRE SUPPRESSION SYSTEM DESIGN, DETAILS, EQUIPMENT INFORMATION (SCHEDULE).

### AIR CURTAIN SCHEDULE

MODEL	DOOR WIDTH (IN.)	DOOR HEIGHT (FT.)	FLA AT 120 V	SOUND DBA	WEIGHT (LBS)
MARS STD2120	120	8-10	15.3	71	145

**NOTES:**

- GENERAL AND HVAC CONTRACTOR TO COORDINATE FINISH AND COLOR PRIOR TO ORDERING.
- INSTALL AS PER MFR'S RECOMMENDATIONS.

### MECHANICAL INDEX

DRAWING			
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2	M-100.2	MECHANICAL INDEX, SYMBOL LEGEND AND NOTES (CONT.)	
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4	M-101	PROPOSED FLOOR PLAN - MECHANICAL	
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10	M-104	MECHANICAL DETAILS	

### SHOP DRAWING REQUIREMENTS

- CONTRACTOR SHALL SUBMIT 6 COPIES OF COMPLETED SHOP DRAWINGS, TOGETHER AT ONE TIME AND MUST COME THROUGH THE ARCHITECT. ALL SUBMITTALS SHALL BE MADE WITHIN 30 DAYS OF NOTICE TO PROCEED.
- ALL SUBMITTALS MUST CLEARLY INDICATE EXACTLY WHICH ITEMS ARE BEING PROPOSED FOR USE. IF NOT, THE SUBMITTAL SHALL BE REJECTED.
- SUBSTITUTIONS SHALL BE LIMITED TO ONE OF THE ALTERNATES LISTED IN THE CONSTRUCTION DOCUMENTS. PRODUCTS CONSIDERED TO BE EQUAL SHALL BE REVIEWED AND ACCEPTED BY THE ENGINEER, ARCHITECT AND OWNER (10) DAYS PRIOR TO BID DATE.
- THE CONTRACTOR ASSUMES ALL DESIGN RESPONSIBILITY AND ALL FINANCIAL RISKS FOR PROCEEDING PRIOR TO SHOP DRAWINGS PROCESSING, AND ON ANY ITEM OR WORK THAT IS AT VARIANCE TO THE CONSTRUCTION DOCUMENTS.
- SHOP DRAWINGS AND SUBMITTALS FOR EACH ITEM SHALL BE REVIEWED NO MORE THAN TWICE. A THIRD SUBMITTAL ON AN ITEM MUST BE ACCOMPANIED BY A PURCHASE ORDER FROM THE CONTRACTOR OR IT SHALL BE REJECTED.
- CIRCUMSTANCES NECESSITATING A REVISION TO THE PERMITTED DOCUMENTS NOT PROCESSED PRIOR TO INSTALLATION MAY NOT BE ACCEPTED. IF ACCEPTED IT MUST BE LEGIBLE, ACCURATE AND ACCOMPANIED BY A PURCHASE ORDER FROM THE CONTRACTOR. THE REVISION SHALL BE CHARGED TO THE CONTRACTOR AND DELIVERED TO HIM ON A C.O.D. BASIS.
- SUBSTITUTIONS FROM THE BASE DESIGN OR VARIATIONS TO THE PERMITTED CONTRACT DOCUMENTS, WHETHER RESULTING FROM PROCESSED SHOP DRAWINGS OR NOT, THAT RESULT IN REQUIREMENTS IN LETTERS OF AUTHORIZATION AND/OR PERMIT CONTRACT DOCUMENT CHANGES MANDATED BY THE AUTHORITY HAVING JURISDICTION WILL NOT BE MADE BY THIS OFFICE UNLESS ACCOMPANIED BY A PURCHASE ORDER FROM THE CONTRACTOR, AND RELEASED ON A C.O.D. BASIS.

### COORDINATION NOTES

- A/C CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE HIS WORK FOR SIZE, LOCATION, CLEARANCE, ACCESS AND ELECTRICAL CHARACTERISTICS WITH ALL OTHER TRADES AND TO PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW BEFORE INSTALLATION OF DUCTWORK OR EQUIPMENT. SHOP DRAWING WILL INCLUDE BEAM OR STRUCTURE ELEVATION & REQUIRED EQUIPMENT ACCESS AREAS.
- WALL, ROOF, AND CEILING OPENINGS INDICATED ON CONTRACTOR DRAWINGS ARE NOMINAL DIMENSIONS ONLY AND ALL DUCT, PIPE OR EQUIPMENT PENETRATIONS SHALL BE SLEEVED AND FIRE RATED AS REQUIRED, ADJUST OPENINGS.
- COORDINATE LOCATION OF CEILING DIFFUSERS, GRILLES AND REGISTERS IN THE FIELD WITH LIGHTS, SPRINKLERS AND ARCHITECTURAL ELEMENTS.
- COORDINATE LOCATION OF A/C UNITS, THERMOSTATS, FANS AND DUCTWORK WITH BUILDING STRUCTURE AND OTHER TRADES SO THAT NO INTERFERENCES OCCUR.
- IN GENERAL, DUCT OFFSETS HAVE NOT BEEN SHOWN. A/C CONTRACTOR TO COORDINATE THESE AS REQUIRED.
- MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH. PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION OR INSTALLATION OF MATERIALS OR EQUIPMENT.

### REQUIREMENTS FOR SUBMITTALS

IF CONTRACTOR SUBMITS A DIFFERENT EQUIPMENT MANUFACTURER-MODEL, THE CONTRACTOR SHALL ASSURE THAT THE EQUIPMENT HAS EQUAL OR BETTER ENERGY AND INDOOR ENVIRONMENTAL PERFORMANCE WHEN COMPARED TO THE EQUIPMENT SPECIFIED ON THE ORIGINAL CONSTRUCTION DOCUMENT.

THE PROPOSED SUBSTITUTION SHALL ALSO BE CONSISTENT WITH THE FOLLOWING REQUIREMENTS:  
- CAPACITY  
- EFFICIENCY  
- REFRIGERANT  
- ELECTRICAL DATA  
- WEIGHT  
- AUTOMATIC CONTROL  
- ANY SPECIAL NOTE OR ACCESSORY LISTED ON SCHEDULES

HVAC DESIGN REQUIRES	YES	NO
DUCT SMOKE DETECTOR	•	
FIRE DAMPER(S)		•
SMOKE DAMPER(S)		•
FIRE RATED ENCLOSURE	•	
FIRE RATED ROOF / FLOOR CEILING ASSEMBLY		•
FIRE STOPPING		•
SMOKE CONTROL		•

### PROJECT DESIGN PRESSURES

CONTRACTOR TO ASSURE THE SELECTION AND INSTALLATION OF THE CORRECT TYPE, MODEL, MATERIAL, ETC. OF EVERY EXTERIOR EQUIPMENT, ASSEMBLY, ETC. TO MEET THE SPECIFIED DESIGN WIND PRESSURES. REFER TO STRUCTURAL ENGINEER DRAWINGS.

### KITCHEN HOOD NOTES

PROVIDE KITCHEN HOOD TYPE I HOOD SHALL BE PROVIDED FOR THE KITCHEN AREA/SPACE (FOR GREASE AND SMOKE REMOVAL). PROVIDE TYPE II HOOD FOR THE DISHWASHING AREA (FOR STEAM, VAPOR, HEAT OR ODOR REMOVAL). ALSO PROVIDE PERMANENT VISIBLE LABEL IDENTIFYING THE HOOD AS TYPE I HOOD AND TYPE II HOOD RESPECTIVELY.

9150 W. Sunrise Blvd. Suite 200, Ft. Lauderdale, FL 33304  
 954-583-1111  
 SINGER ARCHITECTS  
 ARCHITECTS  
 10000 W. Sunrise Blvd. Suite 200, Ft. Lauderdale, FL 33304  
 954-583-1111  
 DELTA G CONSULTING  
 ENGINEERS  
 707 N.E. 31st Ave., Suite 200, Ft. Laud., FL 33304  
 954-583-1111  
 10/2019 by Register and Document FL, Inc.

NO. 15-012  
 DATE: 07/28/15  
 DRAWN BY: SBJ/PS/DRT  
 CHECKED BY: GSJ

REVISIONS  
 DATE  
 BY  
 03/29/16  
 08/26/16

DESCRIPTION  
 BUILDING DEPT. COMMENTS  
 KITCHEN REDESIGN

STAMP:  
 N  
 PROJECT: KITCHEN RENOVATION TO NORTH HOMELESS ASSISTANCE CENTER  
 BROWARD COUNTY  
 1700 BLOUNT ROAD, POMPANO BEACH, FL

SHEET TITLE:  
 MECHANICAL INDEX, SYMBOL LEGEND AND NOTES

SHEET NUMBER:  
 M-100.1