

### AIR HANDLING UNITS

MARK	LOCATION	SERVES	AHU-8 LEVEL 1 TRANS VAULT CENTRIFUGAL
SUPPLY FAN	TYPE		
	AIR FLOW: CFM		5,000
	NUMBER OF FANS		1
	CFM PER FAN		5,000
	ESP: IN WG		1.75
	WHEEL DIA: IN, EACH		15
	RPM, EACH		1,900
	BHP, EACH		3.5
	HP, EACH		5
	MOTOR RPM		1750
	FAN CLASS		ONE
	VOLTAGE/PHASE		460/3
	ISOLATION		INTERNAL
	VFD		YES
EXHAUST AND RETURN FANS	TYPE		
	AIR FLOW: CFM		
	NUMBER OF FANS		
	CFM PER FAN		
	ESP: IN WG		
	WHEEL DIA: IN, EACH		
	RPM, EACH		
	BHP, EACH		
	HP, EACH		
	MOTOR RPM		
	FAN CLASS		
	VOLTAGE/PHASE		
	ISOLATION		
	VFD		
COOLING COIL	TOTAL CLG: MBH		146
	SENSIBLE CLG: MBH		137
	FACE VEL: FPM, MAX		520
	SECTIONS, NUMBER		1
	ROWS		4
	FINS/FT		10
	AIR PD: IN WG		0.42
	EDB: F		85
	EWB: F		67
	LDB: F		60
	LWB: F		58
	EWI: F		42
	LWI: F		56
	GPM		22
	WATER PD: FT		3.7
HEAT RECOVERY COIL	TOTAL CAP: MBH		
	SENSIBLE CLG: MBH		
	FACE VEL: FPM, MAX		
	SECTIONS, NUMBER		
	ROWS		
	FINS/FT		
	AIR PD: IN WG		
	EDB: F		
	EWB: F		
	LDB: F		
	LWB: F		
	EWI: F		
	LWI: F		
	GPM		
	WATER PD: FT		
HEATING COIL	TOTAL HTG: MBH		
	FACE VELOCITY: FPM		
	SECTIONS, NUMBER		
	ROWS		
	FINS/FT		
	AIR PD: IN WG		
	EDB: F		
	LDB: F		
	EWI: F		
	LWI: F		
	GPM		
	WATER PD: FT		
PREFILTERS	TYPE		PLEATED
	EFF: %		30
	CLEAN PD: IN, WG		0.3
	MAX FACE VEL: FPM		440
	MFR		VILEDON
FINAL FILTERS FIRSTSTAGE	TYPE		
	EFF: %		
	CLEAN PD: IN, WG		
	MAX FACE VEL: FPM		
	MFR		
SOUND TRAPS	INLET [6]		
	DISCHARGE [6]		
OPER. WEIGHT	LBS		
BASIS OF DESIGN	MANUFACTURER		TRANE
	MODEL		M-SERIES
	NOTES		[1, 2, 3]

- NOTES:  
 1. UNIT ON EMERGENCY POWER.  
 2. 20% PROPYLENE GLYCOL.  
 3. NO PIPING CONNECTIONS TO COOLING COIL IN FOUNDATION CONSTRUCTION PACKAGE.

### PLUMBING DRAINS

MARK	DESCRIPTION	FIXTURE	D5 FLOOR DRAIN HVY DUTY	D6 FLOOR SINK HVY DUTY	D7 FLOOR DRAIN HVY DUTY
SIZE	PIPE SIZE: IN				
	SIZE: IN	9	12x12	12 DIA	
	TRAP PRIMER: IN	1/2	1/2		
MATERIAL	BODY	DCCI	DCCI	DCCI	
	STRAINER / GRATE	NB	SS	DCCI	
BASIS OF DESIGN	MANUFACTURER	ZURN	ZURN	JR SMITH	
	MODEL	ZN520	Z1901-2	2147	
	NOTES	[1, 2]		[1]	

- NOTES:  
 1. SIZE AS INDICATED ON PLANS.  
 2. PROVIDE WITH FUNNEL DRAIN FOR INDIRECT DRAINS.

### SAND AND OIL/WATER INTERCEPTORS

MARK	DESCRIPTION	FIXTURE	INT-1 OIL INTERCEPTOR RECESSED
SIZE	PIPE SIZE: IN		3 AND 6
	SIZE: IN		48 x 72 x 72
	CAPACITY: GPM		30
	CAPACITY: GALLONS		450
MATERIAL	BODY		PRECAST
	TOP		PRECAST
BASIS OF DESIGN	MANUFACTURER		UTILITY VAULT
	MODEL		660-SA
	NOTES		[1, 2, 3, 4]

- NOTES:  
 1. TOP SHALL BE PRECAST WITH NO. 3030P GALVANIZED DIAMOND PLATE COVER AND TWO NO. 1012P GALVANIZED DIAMOND PLATE COVERS FOR ACCESS TO THE INLET AND OUTLET SAMPLING TEES.  
 2. PROVIDE TWO PRECAST 18" HIGH RISER EXTENSIONS INCREASING THE INTERCEPTOR HEIGHT TO 108".  
 3. 450 GALLON CAPACITY.  
 4. MECHANICAL SHALL PROVIDE 8" SAMPLING TEES ON THE INLET AND OUTLET, SEE MANUFACTURER FOR LOCATION AND CONFIGURATION.

### SUPPLY GRILLES

MARK	DESCRIPTION	SG2 LOUVERED STEEL
CAPACITY	DUCT SIZE: IN	48 x 24
	MAX FLOW: CFM	5,000
	MAX SP: IN WG	0.06
	MAX CORE VEL: FPM	650
	MAX NC	30
BASIS OF DESIGN	MANUFACTURER	TITUS
	MODEL	272RL
	NOTES	[1, 2]

- NOTES:  
 1. PROVIDE GRILLES WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT CEILING SYSTEMS. REFER TO ARCHITECTURAL DRAWINGS.  
 2. NC BASED ON OCTAVE BANDS 2 - 7 SOUND POWER LEVELS MINUS A ROOM ABSORPTION OF 10 DB, MEASURED PER ASHRAE 70-91.

### SUMP PUMPS

MARK	LOCATION	P-1A SANITARY PUMP ROOM WASTE WATER	P-1B SANITARY PUMP ROOM WASTE WATER	P-2A STORM PUMP ROOM FOOTING DRAIN	P-2B STORM PUMP ROOM FOOTING DRAIN
CAPACITY	FLOW: GPM	100	100	70	70
	TDH: FT	22	22	26	26
	EFFICIENCY: %	25	25		
TYPE	DESCRIPTION	WET WELL	WET WELL	SUBMERSIBLE	SUBMERSIBLE
	MOTOR RPM	1,750	1,750	1,750	1,750
	MAX BHP				
	SUCT CONN: IN				
	DISCH CONN: IN	3	3	2	2
	IMP DIA: IN				
ELECTRICAL	VOLT/PHASE	460/3	460/3	460/3	460/3
	MOTOR HP	5	5	1.0	1.0
OPER WEIGHT	WEIGHT: LBS			115	115
BASIS OF DESIGN	MANUFACTURER	VAUGHAN	VAUGHAN	WEIL	WEIL
	MODEL	V3F	V3F	1418	1418
	NOTES	[1, 2, 3]	[1, 2, 3]	[1, 2, 3, 4, 5]	[1, 3, 4, 5, 6]

- NOTES:  
 1. REFER TO ELECTRICAL DRAWINGS FOR DISCONNECT SWITCH.  
 2. CONCRETE SUMP BASIN 120 x 48 x 141 DEEP.  
 3. ELECTRICAL DUPLEX PUMP CONTROL PANEL WITH ALTERNATE OPERATION, LEVEL CONTROLLERS AND SENSORS PROVIDED BY MANUFACTURER. LEVEL CONTROL PIPE BY MECHANICAL.  
 4. REMOVAL SYSTEM FOR RAISING AND LOWERING PUMP FROM WET WELL WITHOUT DISTURBING DISCHARGE PIPING. WEIL ACCESSORY MODEL 2613K5013 WITH 90 DEGREE GUIDE BRACKET. GUIDE PIPE BY MECHANICAL.  
 5. DUPLEX 40 x 40 SQUARE BASIN COVER WITH SINGLE DOOR ONE PUMP OPENING, LEVEL CONTROL PLATE AND MOTOR CABLE PLATE.  
 6. SUMP BASIN 120 x 48 x 102 DEEP.

### MECHANICAL LEGEND

#### GENERAL

SYMBOL	DESCRIPTION
	HEAVY LINE INDICATES NEW WORK
	LIGHT LINE INDICATES EXISTING WORK
	CENTERLINE
	MATCHLINE
	EXISTING WORK TO BE REMOVED
	PIPELINE - NORMAL DIRECTION OF FLOW
	KEY NOTE CALLOUT
	REVISION CALLOUT
	PLUMBING FIXTURE OR DRAIN CALLOUT, SEE SCHEDULE
	POINT OF CONNECTION
	EQUIPMENT CALLOUT, SEE SCHEDULE
	DIFFUSER OR GRILLE CALLOUT, SEE SCHEDULE
	VOLUME FLOW RATE (CFM), NONE INDICATED FOR TRANSFER GRILLE
	DIFFUSER OR GRILLE TYPE
	INDICATES DIAMETER OR ROUND
	DETAIL CALLOUT:
	INDICATES DETAIL NUMBER
	SHEET NUMBER WHERE DETAIL IS DRAWN
	SECTION CALLOUT:
	INDICATES DIRECTION OF CUTTING PLANE
	INDICATES SECTION LETTER
	SHEET NUMBER WHERE SECTION IS DRAWN

#### VENTILATION

DOUBLE	SINGLE	DESCRIPTION
		DUCT: 1ST SIZE (IN) INDICATES SIDE SHOWN, 2ND SIZE (IN) INDICATES SIDE NOT SHOWN, INSIDE FREE AREA
		BACKDRAFT DAMPER
		FLEXIBLE CONNECTOR
		SUPPLY GRILLE (SIDEWALL)
		RETURN/EXHAUST GRILLE (SIDEWALL)

#### EQUIPMENT

SYMBOL	DESCRIPTION
	THERMOSTAT OR TEMPERATURE SENSOR
	CONTROL WIRING/TUBING

#### PLUMBING AND PIPING

SYMBOL	DESCRIPTION
	COLD WATER
	HOT WATER
	HOT WATER CIRCULATING
	SOIL OR WASTE - ABOVE GROUND
	SOIL OR WASTE - BELOW GROUND
	SANITARY SEWER
	RAINWATER LEADER
	OVERFLOW RAINWATER LEADER
	VENT
	TRAP PRIMING LINE
	COMPRESSED AIR
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	GATE VALVE
	CHECK VALVE
	BALL VALVE
	CIRCUIT BALANCING VALVE
	ALIGNMENT GUIDE
	PLUG AND/OR CAP
	PIPE TURNING UP OR TOWARD
	PIPE TURNING DOWN OR AWAY
	FLOOR CLEANOUT

#### INSTRUMENTATION

SYMBOL	DESCRIPTION
	DENOTES CONTROL POINT
	AIR HANDLING UNIT
	ANALOG INPUT
	ANALOG OUTPUT
	AUXILIARY DEVICE OR CONTACT
	CONTROL RELAY
	CURRENT TRANSMITTER
	DIRECT DIGITAL CONTROL
	DIGITAL INPUT
	DIGITAL OUTPUT
	DIFFERENTIAL PRESSURE SWITCH
	DIFFERENTIAL PRESSURE SENSOR/TRANSMITTER
	NORMALLY CLOSED
	NORMALLY OPEN
	START/STOP
	SPACE TEMPERATURE SENSOR/TRANSMITTER
	VARIABLE FREQUENCY DRIVE

#### ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CO	CLEANOUT
CONN	CONNECTION
CW	COLD WATER
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DISCH	DISCHARGE
DN	DOWN
DWV	DRAINAGE WASTE AND VENT
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EFF	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
EXIST (E)	EXISTING
EWB	ENTERING WET BULB
EWI	ENTERING WATER TEMPERATURE
F	FAHRENHEIT
FCO	FLUSH CLEANOUT
FPM	FEET PER MINUTE
FRP	FIBERGLASS REINFORCED COVER
FT	FEET/FOOT
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HTG	HEATING
HW	HOT WATER
HWC	HOT WATER CIRCULATING
HVY	HEAVY
IE	INVERT ELEVATION
IMP	IMPELLER
IN	INCH
INT	INTERCEPTOR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	BRITISH THERMAL UNIT PER HOUR (THOUSAND)
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
NC	NOISE CRITERIA/NORMALLY CLOSED
NFHW	NON-FREEZE WALL HYDRANT
NO	NUMBER/NORMALLY OPEN
PD	PRESSURE DROP
RPM	REVOLUTIONS PER MINUTE
CA	COMPRESSED AIR
SDMH	STORM DRAIN MANHOLE
SS	STAINLESS STEEL/SANITARY SEWER
SP	STATIC PRESSURE
STD	STANDARD
SUCT	SUCTION
TDH	TOTAL DYNAMIC HEAD
TP	TRAP PRIMER
TYP	TYPICAL
V	VENT
VEL	VELOCITY
VS	VENT STACK
W	WASTE/WATT
WG	WATER GAGE
WS	WASTE STACK

### GENERAL NOTES

- THE MECHANICAL SYSTEM SHALL CONSIST OF ALL WORK SHOWN ON DRAWINGS, DIAGRAMS, AND AS DESCRIBED IN SPECIFICATIONS.
- INSTALL ALL MECHANICAL WORK AS HIGH AS POSSIBLE, TIGHT TO STRUCTURE ABOVE.
- THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR CONSTRUCTION DETAILS.
- ITEMS NOTED "TYPICAL" OR "TYP" ON ANY SHEET APPLY TO THAT PARTICULAR SHEET.
- COORDINATE WITH SPECIFICATIONS. IN CASE OF CONFLICT BETWEEN SPECIFICATIONS AND DRAWINGS THE MORE STRINGENT SHALL APPLY.
- PROVIDE NEC CODE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCES FOR ALL ELECTRICAL PANELS AND EQUIPMENT. OFFSET MECHANICAL WORK AS REQUIRED.
- COORDINATE ALL MECHANICAL WORK WITH THAT OF OTHER TRADES TO INSURE PROPER AND ADEQUATE INTERFACE OF THEIR WORK WITH THE WORK OF THIS CONTRACTOR. PROVIDE COORDINATED SHOP DRAWINGS PRIOR TO FABRICATION AND INSTALLATION.
- VERIFY EXISTING CONDITIONS BEFORE COMMENCING ANY WORK ON AN EXISTING MECHANICAL SYSTEM.
- COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES WITH CASEWORK AND ARCHITECTURAL DRAWINGS.
- LAYOUTS OF ALL IN-SLAB AND UNDER SLAB MECHANICAL, PIPING AND PLUMBING SERVICES, LOCATIONS AND EQUIPMENT ARE FOR REFERENCE ONLY. CONTRACTOR TO REQUEST FINAL LAYOUT DRAWINGS 30 DAYS PRIOR TO SCHEDULED POUR OF STRUCTURAL SLAB.

### DRAWING INDEX

MF0.01	MECHANICAL LEGEND, GENERAL NOTES, SCHEDULES AND DRAWING INDEX
MF0.02	CONTROLS, ENLARGED PLANS, SECTIONS, AND DETAILS
MF2.00	MECHANICAL PLAN - FOUNDATION SOUTH
MF2.10	MECHANICAL PLAN - FOUNDATION NORTH
M2.01	FIRST FLOOR PLAN - SOUTH - PLUMBING (FOR REFERENCE ONLY)
M2.11	FIRST FLOOR PLAN - NORTH - PLUMBING (FOR REFERENCE ONLY)