

HVAC SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING DUCTWORK TO REMAIN SIZE IN INCHES (PLAN DIM. FIRST)		ROUND DUCT DOWN
	EXISTING DUCTWORK/EQUIPMENT TO BE REMOVED		ROUND DUCT UP
	NEW DUCTWORK SIZE IN INCHES (PLAN DIM. FIRST)		GOOSENECK
	NEW FLEXIBLE DUCT		ROOF MOUNTED EXHAUST FAN
	NEW DUCTSOX DUCTWORK		DRYWELL
	NESTED SQUARE/RECTANGULAR BRANCH TAKE OFF		DUCT ACCESS DOOR
	SPIN-IN FITTING WITH VOLUME DAMPER		COMBINATION FIRE/SMOKE DAMPER (VERTICAL POSITION)
	SPIN-IN FITTING WITHOUT VOLUME DAMPER		FIRE DAMPER (VERTICAL POSITION)
	DUCT TRANSITION (RECTANGLE TO RECTANGLE)		FIRE DAMPER (HORIZONTAL POSITION)
	DUCT TRANSITION (RECTANGLE TO ROUND)		MOTORIZED VOLUME DAMPER IN DUCTWORK
	DUCT TEE WITH TURNING VANES		MANUAL VOLUME DAMPER IN DUCTWORK
	DUCT ELBOW UP		DUCT MOUNTED SMOKE DETECTOR
	DUCT ELBOW DOWN		SIDEWALL RETURN GRILLE
	90° ELBOW WITH TURNING VANES		SIDEWALL SUPPLY GRILLE
	90° RADIUS ELBOW (R=1.5W)		FLEXIBLE DUCT CONNECTOR
	45° BRANCH TAKE-OFF WITH VOLUME DAMPER		CEILING DIFFUSER (SUPPLY, RETURN, & EXHAUST)
	ELECTRIC DUCT HEATER		EXISTING CEILING DIFFUSER (SUPPLY, RETURN, & EXHAUST)
	UC ?? AFF		AIR DEVICE IDENTIFICATION AIRFLOW NECK SIZE
	SUPPLY AIRFLOW DIRECTION		EXHAUST/RETURN AIRFLOW DIRECTION
	NEW CONNECTION TO EXISTING		THERMOSTAT (MTD, 4'-0" AFF)
	HEAT DETECTOR		HUMIDISTAT
	CARBON MONOXIDE SENSOR		HVAC EQUIPMENT CONTROL
			STATIC PRESSURE SENSOR
			CARBON DIOXIDE SENSOR

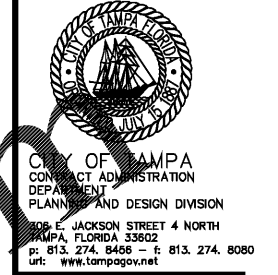
HVAC PIPING AND VALVES LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ELBOW - TURNED UP		TRIPLE DUTY VALVE (SHUT-OFF, BALANCING & CHECK)
	ELBOW - TURNED DOWN		BALL VALVE
	PIPE RISER		AUTO CIRCUIT SETTER VALVE
	TEE - OUTLET UP		HORIZONTAL SWING CHECK VALVE
	TEE - OUTLET DOWN		Y-TYPE STRAINER WITH BLOW DOWN AND VALVE
	CAP		BASKET TYPE STRAINER
	UNION		
	CONCENTRIC INCREASER		COMPRESSED AIR PIPING
	ECCENTRIC REDUCER		CONDENSER WATER RETURN PIPING
	FLEXIBLE PIPE CONNECTOR		CONDENSER WATER SUPPLY PIPING
	THERMOMETER		CONDENSATE PIPING
	PRESSURE GAGE		CHILLED WATER RETURN PIPING
	P/T		CHILLED WATER SUPPLY PIPING
	AUTOMATIC AIR VENT		HOT WATER HEATING SYSTEM RETURN PIPING
	MANUAL AIR VENT		HOT WATER HEATING SYSTEM SUPPLY PIPING
	VENTURI FLOW MEASUREMENT DEVICE		FUEL GAS PIPING
	BUTTERFLY VALVE		REFRIGERATION SYSTEM DISCHARGE PIPING
	MOTORIZED CONTROL VALVE (BUTTERFLY VALVE)		REFRIGERATION SYSTEM RETURN PIPING (GAS)
			REFRIGERATION SYSTEM SUPPLY PIPING (LIQUID)

- ### HVAC GENERAL NOTES
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FLORIDA BUILDING CODE - MECHANICAL WITH REVISIONS, NATIONAL ELECTRIC CODE, NFPA AND ALL LOCAL ORDINANCES.
 - ALL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS.
 - REFER TO ARCHITECTURAL PLANS FOR EXACT CEILING GRID AND DIFFUSER LOCATIONS.
 - PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL HAVE STUDIED AND COMPARED THE CONTRACT DOCUMENTS WITH EXISTING/PROPOSED CONDITIONS AND NOT LATER THAN TEN (10) DAYS PRIOR TO THE BID OPENING SHALL REPORT TO THE ENGINEER ANY ERROR, INCONSISTENCY, OR OMISSION IN THE CONTRACT DOCUMENTS.
 - ALL DUCTWORK SHALL BE SEALED WITH A NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT. PROVIDE HOT-DIPPED GALVANIZED STEEL FASTENERS, ANCHORS, RODS, STRAPS, TRIM AND ANGLES FOR SUPPORT OF DUCTWORK.
 - FABRICATE DUCT FITTINGS TO MATCH ADJOINING DUCTS AND TO COMPLY WITH DUCT REQUIREMENTS AS APPLICABLE TO FITTINGS. LIMIT ANGULAR TAPERS TO 30 DEGREES FOR CONTRACTING TAPERS AND 20 DEGREES FOR EXPANDING TAPERS.
 - PROVIDE FLEXIBLE CONNECTION FROM EACH DUCTWORK CONNECTION AIR MOVING EQUIPMENT.
 - ALL DUCTS SHOWN ARE IN CLEAR DIMENSIONS.
 - PROVIDE ACCESS PANELS IN WALLINGS FOR ACCESS TO VOLUME DAMPERS, FIRE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, AND WHERE REQUIRED FOR MAINTENANCE OF ALL PIPING AND MECHANICAL EQUIPMENT. PANELS SHALL HAVE A 1/2" RATING EQUIVALENT TO THE PENETRATED ASSEMBLY. MINIMUM 1 HOUR PROVIDED FIRE DAMPERS AT ALL DUCT PENETRATIONS OF FIREWALLS.
 - INSULATE OUTSIDE AIR SUPPLY, AND RETURN DUCTWORK WITH INSULATION, WHICH HAS A MINIMUM R-VALUE OF 8. DUCTWORK INSULATION, FITTINGS, COVERS AND FINISHES SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50 AND ALL BE IN COMPLIANCE WITH NFPA 90A.
 - LOCATE ALL THERMOSTATS 48" AFF UNLESS OTHERWISE NOTED. EXACT LOCATION OF ALL THERMOSTATS SHALL BE APPROVED BY THE ARCHITECT AND THE ENGINEER.
 - CONTRACTOR SHALL CLEAN ALL COILS AND REPLACE ALL FILTERS AND BELTS AT SUBSTANTIAL COMPLETION.
 - AIR CONDITIONING EQUIPMENT SHALL BE AS SPECIFIED. ARCHITECT AND ENGINEER WILL REVIEW ANY SUBSTITUTION FOR COMPATIBILITY.
 - DUCT SIZES AND EQUIPMENT OPENINGS THRU ROOFS, SLABS AND WALL PARTITIONS SHALL SUIT EQUIPMENT FURNISHED. SEE SHOP DRAWINGS FOR EQUIPMENT DIMENSIONS.
 - PROVIDE "P" TRAP AT AIR HANDLER UNITS.
 - SLEEVE AND SEAL ALL PIPING PASSING THROUGH WALLS, FLOORS AND ROOF UNLESS NOTED OTHERWISE.
 - ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE THE RESPONSIBILITY OF THE TRADE INVOLVED.
 - A COPY OF THE FINAL TEST AND BALANCE REPORT, REVIEWED AND ACCEPTED BY THE ENGINEER OF RECORD SHALL BE MADE AVAILABLE AT THE FINAL CONSTRUCTION SURVEY. NO FINAL INSPECTION OF HVAC CONSTRUCTION BY THE ENGINEER OF RECORD WILL BE CONDUCTED PRIOR TO RECEIPT AND ACCEPTANCE OF A FINAL TEST AND BALANCE REPORT.
 - THE MAXIMUM ALLOWABLE LEAKAGE FOR THE DUCTWORK IS 2 %.
 - THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR HVAC EQUIPMENT AND DUCTWORK SHOWN ON THE PLANS AND SPECIFICATIONS FOR THE ENGINEER'S APPROVAL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO REDO ANY WORK, WHICH WAS NOT APPROVED, OR THE ENGINEER MAY REQUIRE A CREDIT TO THE OWNER. PROVIDE A SET OF AS BUILTS AFTER THE JOB IS COMPLETED. THIS SET SHALL BE CONTINUOUSLY UPDATED DURING CONSTRUCTION.
 - PROVIDE AIR TURNING VANES AT ALL 90-DEGREE ELBOWS. PROVIDE VOLUME DAMPERS AT EACH BRANCH TAKEOFF AS INDICATED IN THE SMACNA "HVAC DUCT CONSTRUCTION STANDARDS".
 - PROVIDE FILTER RACKS WHICH ARE ACCESSIBLE FOR MAINTENANCE AND SEALED AIR TIGHT.
 - CONTRACTOR SHALL INSTALL HVAC SYSTEMS AS REQUIRED BY THE MANUFACTURER AND ENGINEER TO INSURE QUIET OPERATION. NO UNDUE VIBRATION OR SOUND SHALL BE TRANSMITTED TO BUILDING STRUCTURE AND OCCUPIED AREAS. IF THE EQUIPMENT INSTALLED HAS A HIGHER SOUND PRESSURE LEVEL THAN THE EQUIPMENT SPECIFIED, THEN IT WILL BE THE CONTRACTORS AND THE MANUFACTURERS RESPONSIBILITY TO ELIMINATE ANY ADDITIONAL NOISE TRANSMISSION.

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M-4.1	ENLARGED MECHANICAL PLAN - PART 1
M-4.2	ENLARGED MECHANICAL PLAN - PART 2
M-5.0	MECHANICAL SCHEDULES
M-5.1	MECHANICAL SCHEDULES
M-6.0	MECHANICAL DETAILS
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M-6.3	MECHANICAL DETAILS
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M-7.0	MECHANICAL SPECIFICATIONS
M-7.1	MECHANICAL SPECIFICATIONS
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M-7.3	MECHANICAL SPECIFICATIONS

NOTE:
SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT PERTAIN TO THIS PROJECT.

HVAC ABBREVIATIONS							
ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ADA	AMERICAN WITH DISABILITIES ACT	EWB	ENTERING WET BULB TEMPERATURE	LRA	LOCKED ROTOR AMPS	SMACNA	SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
A.F.F.	ABOVE FINISHED FLOOR	EWI	ENTERING WATER TEMPERATURE	LWB	LEAVING WET BULB TEMPERATURE	SP	STATIC PRESSURE
A.F.G.	ABOVE FINISHED GRADE	FBC	FLORIDA BUILDING CODE	LWT	LEAVING WATER TEMPERATURE	SS	SANITARY SEWER STACK
AFR	ABOVE FINISHED ROOF	FCU	FAN COIL UNIT	SH	THOUSANDS OF BTU PER HOUR	TSP	TOTAL STATIC PRESSURE
AHU	AIR-HANDLING UNIT	FD	FIRE DAMPER	MC	MECHANICAL CONTRACTOR	UBC	UNIFORM BUILDING CODE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	FD	FLOOR DRAIN	MCA	MINIMUM CIRCUIT AMPS	UL	UNDERWRITERS LABORATORIES
AP	ACCESS PANEL	FLA	FULL LOAD AMPS	MOCP	MAXIMUM OVER CURRENT PROTECTION	UMC	UNIFORM MECHANICAL CODE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, & AIR CONDITIONING ENGINEERS	F.P.C.	FIRE PROTECTION CONTRACTOR	NC	NATURALLY CLOSED	UON	UNLESS OTHERWISE NOTED
		FPM	FEET PER MINUTE	NEC	NATIONAL ELECTRIC CODE	UPC	UNIFORM PLUMBING CODE
		FT	FEET	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	V	VENT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	GAL	GALLONS	NIC	NOT IN CONTRACT	V	VOLTS
		G.C.	GENERAL CONTRACTOR	NO	NORMALLY OPEN	VAV	VARIABLE AIR VOLUME
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS	GPH	GALLONS PER HOUR	NTS	NOT TO SCALE	VB	VACUUM BREAKER
		GPM	GALLONS PER MINUTE	OA	OUTSIDE AIR	VFD	VARIABLE FREQUENCY DRIVE
BHP	BRAKE HORSE POWER	HP	HORSEPOWER	PC	PLUMBING CONTRACTOR	VIF	VERIFY IN FIELD
BTU	BRITISH THERMAL UNIT	HR	HOURS	PSI	POUNDS PER SQUARE INCH	VRF	VARIABLE REFRIGERANT FLOW
BTUH	BRITISH THERMAL UNITS PER HOUR	HSPF	HEATING SEASON PERFORMANCE FACTOR	PSIG	POUNDS PER SQUARE INCH-GAUGE	VRV	VARIABLE REFRIGERANT VOLUME
CFM	CUBIC FEET PER MINUTE	HVAC	HEATING, VENTILATION, & AIR CONDITIONING	PTAC	PACKAGED TERMINAL AIR CONDITIONER	VS	VENT STACK
CO	CLEAN OUT	Hz	HERTZ	PVC	POLYVINYL CHLORIDE	VTR	VENT THROUGH ROOF
COP	COEFFICIENT OF PERFORMANCE	IBC	INTERNATIONAL BUILDING CODE	RA	RETURN AIR		
CPVC	CHLORINATED POLYVINYL CHLORIDE	IECC	INTERNATIONAL ENERGY CONSERVATION CODE	RD	ROOF DRAIN		
CJ	CONDENSING UNIT	IMC	INTERNATIONAL MECHANICAL CODE	RLA	RATED LOAD AMPS	%RH	PERCENT RELATIVE HUMIDITY
DDC	DIRECT DIGITAL CONTROLS	IPC	INTERNATIONAL PLUMBING CODE	RO	ROOF OVERFLOW	ΔP	CHANGE IN PRESSURE
DIA.	DIAMETER	IPLV	INTEGRATED PART-LOAD VALUE	RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER	ΔT	CHANGE IN TEMPERATURE
EAT	ENTERING AIR TEMPERATURE	KW	KILOWATTS	RPM	REVOLUTIONS PER MINUTE	°C	DEGREES CELSIUS
EC	ELECTRICAL CONTRACTOR	LAT	LEAVING AIR TEMPERATURE	RTU	ROOF TOP UNIT	°F	DEGREES FAHRENHEIT
EDB	ENTERING DRY BULB TEMPERATURE	LB	POUNDS FORCE	SA	SUPPLY AIR	°K	DEGREES KELVIN
EER	ENERGY EFFICIENCY RATIO	LDB	LEAVING DRY BULB TEMPERATURE	SC	SITE CONTRACTOR	°R	DEGREES RANKIN
ESP	EXTERNAL STATIC PRESSURE	LEED	LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN	SEER	SEASONAL ENERGY EFFICIENCY RATIO	"WC	INCHES WATER COLUMN
FTR	EXISTING TO REMAIN ELECTRICAL UNIT HEATER					Ø	DIAMETER
						φ	ELECTRICAL PHASE



James E. Jackson, Jr., AIA, NOMA
City Architect
Edward D. Rice, AIA
Project Architect
Kevin L. Henika, AIA
Project Architect
Thomas A. Hester, Sr., AIA, NOMA
Project Architect
David R. Pagitt
Supervisor, Architectural Drafting
Kinsley C. Tillman
Drafting Technician
Jerry P. Sanders
Drafting Technician
Byron K. Thomas, LEED AP
Drafting Technician

MEP CONSULTANT
GRINER ENGINEERING, INC.
1628 1st AVENUE NORTH
ST. PETERSBURG, FL 33713

STRUCTURAL CONSULTANT
BILLER REINHART
STRUCTURAL GROUP, INC.
4014 GUNN HWY. SUITE 240
TAMPA, FL 33713

CIVIL CONSULTANT
B M CIVIL LLC
12315 WYCLIFF PLACE
TAMPA, FL 33626

LANDSCAPE CONSULTANT
DAVID CONNER & ASSOCIATES
1509 W. SWANN AVENUE SUITE 255
TAMPA, FL 33606

FIRE STATION 23
20770 TROUT CREEK DR.
TAMPA, FL 33647

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REVISIONS

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SEAL

Joseph H. Griner III, P.E. FL. 39491

SCALE: N.T.S

MECHANICAL COVER SHEET

SHEET NUMBER

M-1.0

X OF X

GRINER ENGINEERING, INC.
1628 First Avenue North
St. Petersburg, Florida 33713
Phone: (727)-822-2335
Fax: (727)-821-3361
Certificate of Authorization #3173

Date	06-15-2017
Drawn	JL
Designed	JL
EOR	JHG
Job no.	17049