

ABBREVIATIONS

AC	AIR CONDITIONING
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
AP	ACCESS PANEL
BFP	BELOW FINISHED FLOOR
BHP	BRAKE HORSE POWER
BOT	BOTTOM
BTU/H	BRITISH THERMAL UNIT PER HOUR
CC	COOLING COIL
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHWS	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CT	COOLING TOWER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DP	DEW POINT
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EP	ELECTRIC-PNEUMATIC
ET	EXPANSION TANK
EL	ELEVATION
EQ	EQUIPMENT
EW	ENTERING WATER TEMPERATURE
EXIT	EXITING
ESP	EXTENSIVE
FSU	FAN COIL UNIT
FD	FLOOR DRAIN
FL	FLOOR
FN	FINS PER INCH
FPF	FEET PER FOOT
FRM	FLOORS PER MINUTE
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HUMIDITY
HP	HORSE POWER
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBA	LOCKED ROTOR AMPS
LIT	LEAKING WATER TEMPERATURE
MD	MOTORIZED DAMPER
MAX	MAXIMUM
MIN	MINIMUM
NC	NORMALLY CLOSED
NC	NOT IN CONTACT
NO	NORMALLY OPEN
OA	OUTSIDE AIR
OA	OUTSIDE AIR INTAKE
OS&K	OUTSIDE SCREW & YOKER
PD	PRESSURE DROP
PE	PNEUMATIC-ELECTRIC
PRESS	PRESSURE
RA	RETURN AIR
RD	ROOF DRAIN
RG	REFRIGERANT
RLA	RUNNING LOAD AMPS
RLA	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SENSOR
SA	SUPPLY AIR
SOBA	SELF CONTAINED BREATHING APPARATUS
SP	STATIC PRESSURE
STRUC	STRUCTURAL
STS	SYSTEM
T	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TTP	TYPICAL
US	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UN	UNLESS OTHERWISE NOTED
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
WB	WET BULB

PIPING

	PIPING AND/OR EQUIPMENT TO BE REMOVED
	EXISTING PIPING TO REMAIN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	CONDENSATE LINE
	REFRIGERANT PIPING
	DOMESTIC WATER
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BALL VALVE
	PLUG VALVE
	BUTTERFLY VALVE
	PRESSURE REDUCING VALVE
	GLOBE VALVE
	PIPE CAP
	SAFETY OR PRESSURE RELIEF VALVE
	VALVE IN RISER
	DIRECTION OF FLOW
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	TOP CONNECTION, 45 OR 90 DEG.
	BOTTOM CONNECTION, 45 OR 90 DEG.
	SIDE CONNECTION
	CAPPED OUTLET
	DROP IN PIPING
	RISE IN PIPING
	UNION
	OUTSIDE SCREW & YOKER (O S & Y)
	WATER FLOW MEASURING DEVICE
	ANGLE GLOBE VALVE
	FLEXIBLE CONNECTION
	PRESSURE GAUGE
	STRAINER WITH BALL VALVE
	EXPANSION JOINT

MECHANICAL GENERAL NOTES

- HVAC WORK CONSISTS OF PROVIDING AIR CONDITIONING SYSTEMS FOR A COMPLETE OPERATING SYSTEM AS INDICATED ON THE DRAWINGS. ALL WORK SHALL COMPLY WITH APPLICABLE CODES IN SPECIFICATIONS. IT IS THE INTENTION OF THE CONTRACT DRAWINGS AND SPECIFICATIONS TO CALL FOR COMPLETE, FINISHED WORK, TESTED, AND READY FOR OPERATION.
- TEST AND BALANCE SHALL BE PROVIDED BY A COMPANY SPECIALIZING IN THE TESTING AND BALANCING OF HVAC SYSTEMS AS SUBCONTRACTOR TO THE HVAC CONTRACTOR. GENERAL CONTRACTOR, THE TEST AND BALANCE CONTRACTOR SHALL BE A MEMBER OF EITHER ASHRAE OR NIBB. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ALL PIPING SUBJECT TO THERMAL EXPANSION AND/OR CONTRACTION THAT PENETRATES FLOOR SLAB SHALL BE SUITABLY SLEEVED AND FIRE-SHIELD.
- ALL PIPING SHALL BE SUPPORTED WITH COMMERCIAL MANUFACTURED CLAMPS, PROVIDE ISOLATION SLEEVES TO PREVENT CONTACT OF DISSIMILAR METALS.
- INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS AND RECOMMENDATIONS.
- CONTRACTOR TO PROVIDE ALL SUPPLEMENTARY STEEL REQUIRED TO SUPPORT MECHANICAL EQUIPMENT AND MATERIALS.
- ALL INSULATION SHALL BE FIRE RATED IN ACCORDANCE WITH ASHRAE 90A, 50/75 SMOKE DEVELOPMENT AND FLAME SPREAD REQUIREMENTS. INSULATION "R" VALUES SHALL COMPLY WITH THE FLORIDA ENERGY CODE.
- SEE ELECTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT.
- UNLESS OTHERWISE NOTED, COORDINATE ELEVATION AND LOCATION WITH WATER PIPING AND MAJOR ELECTRICAL CONDUITS OR CABLE TRAY.
- THE ENGINEER HAS MADE AN EXTENSIVE EFFORT TO IDENTIFY ALL FIELD CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO CHECK FIELD CONDITIONS PRIOR TO BUILDING AND REPORT ANY PROBLEMS/CONFLICTS TO THE ENGINEER WITHIN 2 DAYS OF DISCOVERY. ANY CHANGES RESULTING FROM CONDITIONS ARISING IN THE FIELD WHICH WERE NOT PROTOTYPED TO THE ENGINEER'S ATTENTION ARE TO BE MADE BY THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER.
- THE WORK INDICATED ON THESE DRAWINGS IS GENERALLY DIAGNOSTIC AND IS INTENDED TO CORRECT THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT OF PIPING AND EQUIPMENT, ETC.
- ALL WORK IS TO BE FREE OF DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. FOR 5 YEARS SET SPECIFICATION FOR WARRANTIES. ALL DEFECTS SHALL BE REPAIRED AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPAIRS. THE DISCRETION OF THE OWNER IN NO ADDITIONAL COST TO THE OWNER.
- WHEN CONFLICTS OCCUR IN SPECIFICATIONS OR IN THE DRAWINGS, OR BETWEEN EITHER, THE ITEMS OF GREATER QUANTITY OR HIGHER COST SHALL BE PROVIDED.
- THE CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES IN ORDER TO AVOID CONFLICTS.

NOTE:

THESE ARE STANDARD SYMBOLS AND GENERAL NOTES AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS. NUMBER WHEREVER THE SYMBOL APPEARS ON THE PROJECT DRAWINGS. THE ITEM SHALL BE PROVIDED AND INSTALLED.

DRAWING SYMBOLS

	SECTION NUMBER
	DRAWING NUMBER WHERE DRAWN
	DRAWING NUMBER WHERE CUT
	POINT OF DEMOLITION
	POINT OF NEW CONNECTION
	POINT OF INTERFACE BETWEEN CONTRACTORS
	DRAWINGS NOTES
	MATCH LINE AND RESPONSIBILITY LINE

CONTROLS

	ANALOG INPUT CONTROL POINT
	ANALOG OUTPUT CONTROL POINT
	DIGITAL INPUT CONTROL POINT
	DIGITAL OUTPUT CONTROL POINT
	TEMPERATURE OF WATER
	FLOW SWITCH
	VARIABLE FREQUENCY DRIVE
	MANUAL AIR VENT
	ROOM THERMOSTAT / TEMPERATURE SENSOR
	PRESSURE DIFFERENTIAL SENSOR
	2-WAY CONTROL VALVE
	HAND - OFF - AUTO SELECTOR SWITCH
	NORMALLY CLOSED CONTACTS
	NORMALLY OPEN CONTACTS
	ELECTRICAL WIRING
	NINE FUSE
	CONTROL TRANSFORMER
	TEMPERATURE SENSOR
	FLOW METER
	WATER METER

EQUIPMENT ONE LINE

	WATER COOLED CENTRIFUGAL CHILLER
	COOLING TOWER
	CHILLED WATER AND CONDENSER WATER PUMP
	AIR SEPARATOR
	EXPANSION TANK

DEAN S. KENTON, P.E.
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Signature	DATE
DRAWING REVISIONS	
REVISION	COMMENTS
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△	
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UNIVERSITY OF SOUTH FLORIDA SOUTH EAST CHILLER PLANT BR-590 COMPONENT #6

12225 USF MAPLE DRIVE
 TAMPA, FLORIDA 33620

DRAWING TITLE :
**LEGENDS, ABBREVIATIONS AND
 GENERAL NOTES**

Drawing Progress: 100% CONSTRUCTION DOCUMENTS

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 DATE: 03-31-2009
 PLOT SIZE: NOT TO SCALE
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