

three inches = one foot
 one and one-half inches = one foot
 one inch = one foot
 three-quarters inch = one foot
 one-half inch = one foot
 three-eighths inch = one foot
 one-quarter inch = one foot
 one-eighth inch = one foot

PIPING SYMBOLS	
PIPING SYMBOL	DESCRIPTION
—HPS—	HIGH PRESSURE STEAM (60 PSIG AND ABOVE)
---HPR---	HIGH PRESSURE STEAM CONDENSATE RETURN
—MPS—	MEDIUM PRESSURE STEAM (16 PSIG THRU 59 PSIG)
---MPR---	MEDIUM PRESSURE STEAM CONDENSATE RETURN
—LPS—	LOW PRESSURE STEAM (15 PSIG AND BELOW)
---LPR---	LOW PRESSURE STEAM CONDENSATE RETURN
—PC—	CONDENSATE PUMP DISCHARGE
—HWS—	HOT WATER HEATING SUPPLY
---HWR---	HOT WATER HEATING RETURN
—GWS—	GLYCOL-WATER HEATING SUPPLY
---GWR---	GLYCOL-WATER HEATING RETURN
—SWS—	SOLAR WATER SUPPLY
---SWB---	SOLAR WATER RETURN
—RL—	REFRIGERANT LIQUID
—RS—	REFRIGERANT SUCTION
—RHG—	REFRIGERANT HOT GAS
—CWS—	CONDENSER WATER SUPPLY (FROM TOWER)
---CWR---	CONDENSER WATER RETURN (TO TOWER)
—CHS—	CHILLED WATER SUPPLY
---CHR---	CHILLED WATER RETURN
—CCS—	CHILLED GLYCOL-WATER SUPPLY
---GCR---	CHILLED GLYCOL-WATER RETURN
—MW—	MAKE-UP WATER
—D—	DRAIN LINE
—V—	VENT LINE
—GWS—	GLYCOL-WATER RUN AROUND SUPPLY
---GWR---	GLYCOL-WATER RUN AROUND RETURN
—X—	EXISTING PIPE TO BE REMOVED
—FWPD—	FEEDWATER PUMP DISCHARGE
—FWPS—	FEEDWATER PUMP SUCTION
—CTPD—	CONDENSATE TRANSFER PUMP DISCHARGE
—CTPS—	CONDENSATE TRANSFER PUMP SUCTION
—VR—	VACUUM CONDENSATE RETURN
—TC—	TUBE CLEANER WATER SUPPLY
—BO—	BOILER BLOWOFF
—CBD—	CONTINUOUS BLOWDOWN
—BWS—	BOILER WATER SAMPLE
—FWS—	FEEDWATER SAMPLE (FROM DEAERATOR)
—CF—	CHEMICAL FEED
—OFL—	OVERFLOW
—A—	COMPRESSED AIR
—G—	NATURAL GAS MAIN FUEL
—G(I)—	NATURAL GAS IGNITER FUEL
—LPG(I)—	LIQUEFIED PETROLEUM GAS IGNITER FUEL
—FOS—	FUEL OIL SUPPLY
—FOR—	FUEL OIL RETURN
—CW—	COLD WATER (CITY WATER)
—SW—	SOFTENED WATER
—HW—	HOT WATER
—RH—	ROLLER-TYPE HANGER
—SH—	VARIABLE SPRING-TYPE HANGER (TYPE 51)*
—SCH—	SPRING CUSHION-TYPE HANGER (TYPE 48 OR 49)*
—C—	CLEVIS-TYPE HANGER
—TH—	TRAPEZE HANGER (PROVIDE U-BOLT PIPE ATTACHMENT TO TRAPEZE EXCEPT WHERE RH ARE INDICATED)
—PS—	FLOOR-SUPPORTED PIPE STAND
—RC—	RISER CLAMP (TYPE 42)*
—WB—	WALL BRACKET (TYPE 31, 32, 33)*
—CSH—	CONSTANT SUPPORT HANGER (TYPE 54, 55, 56)*
—SS—	SLIDING SUPPORTS (TYPE 35)*

NOTE :
NOT ALL SYMBOLS
SHOWN APPLY

* TYPE NUMBERS REFER TO MANUFACTURER'S STANDARDIZATION SOCIETY STANDARD PRACTICE SP-58

GENERAL PIPING SYMBOLS	
PIPING SYMBOL	DESCRIPTION
→	DIRECTION OF PIPE PITCH (DOWN)
→	DIRECTION OF FLOW
⊗	ANCHOR
⊗	REDUCER OR INCREASER
⊗	ECCENTRIC REDUCER
⊗	TOP CONNECTION, 45° OR 90°
⊗	BOTTOM CONNECTION, 45° OR 90°
⊗	SIDE CONNECTION
⊗	CAPPED OUTLET
⊗	RISE OR DROP IN PIPE
⊗	UNION
⊗	PIPE UP
⊗	PIPE DOWN
⊗	INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
⊗	FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
⊗	THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
⊗	THERMOMETER
⊗	PRESSURE GAGE
⊗	FLOW ELEMENT
⊗	REFRIGERANT SIGHT GLASS
⊗	TEST PLUG (PRESSURE/TEMPERATURE)
⊗	AUTOMATIC AIR VENT
⊗	MANUAL AIR VENT
⊗	QUICK-COUPLE HOSE CONNECTOR

NOTE :
NOT ALL SYMBOLS
SHOWN APPLY

VALVE SYMBOLS	
VALVE SYMBOL	DESCRIPTION
⊗	GATE VALVE - THREADED/FLANGED
⊗	GLOBE VALVE - THREADED/FLANGED
⊗	GATE VALVE WITH 3/4" HOSE ADAPTER
⊗	CHECK VALVE
⊗	WYE STRAINER (WITH BALL VALVE & HOSE CONNECTION)
⊗	WYE STRAINER WITH VALVED DRAIN AND QUICK-COUPLE HOSE CONNECTOR
⊗	FLEXIBLE CONNECTION
⊗	ANGLE GLOBE VALVE
⊗	BUTTERFLY VALVE
⊗	BALL VALVE
⊗	MODULATING CONTROL VALVE
⊗	MODULATING CONTROL BUTTERFLY VALVE
⊗	TWO POSITION CONTROL VALVE
⊗	THREE-WAY MODULATING CONTROL VALVE
⊗	THREE-WAY TWO POSITION CONTROL VALVE
⊗	PRESSURE REGULATING VALVE
⊗	PRESSURE SAFETY VALVE
⊗	AUTOMATIC BALANCING CONTROL VALVE
⊗	WATER BALANCE DEVICE
⊗	CIRCUIT SETTER VALVE
⊗	GATE VALVE WITH GLOBE-VALVED BYPASS
⊗	PLUG VALVE
⊗	CONTROL VALVE (CV) - FLOAT-OPERATED
⊗	PRESSURE REDUCING VALVE (PRV)
⊗	WATER LEVEL CONTROLLER
⊗	FLOW METER

NOTE :
NOT ALL SYMBOLS
SHOWN APPLY

FINAL CONSTRUCTION DRAWINGS
 APPROVED FOR CONSTRUCTION

Dwg. File	
Revisions	Date

ARCHITECT/ENGINEERS:

AKEA INC.

3603 NW 98TH ST., SUITE B
 GAINESVILLE, FLORIDA 32606
 PH: (352) 474-6124
 FAX: (352) 474-6324
 CERT OF AUTH: FL #26693
 EXPIRES: 02/28/2017

Stephen T. Stoffe, PE
 Florida Reg. 70349

AKEA, INC. SEAL

CONSULTANTS:

WALKER PARKING CONSULTANTS
 4904 Eisenhower Blvd
 Suite 150
 Tampa, FL 33634
 813.888.5800 Ph
 813.888.5822 Fax
 BE-0003840
 www.walkerparking.com

FRANK DAUGHTRY architect
 200 E. Government Street
 Suite 240-A
 Pensacola, FL 32502
 Voice 850-433-3023
 Fax 850-433-3025
 Email frank@frankdo.com

Approved:

Asst. Chief, Engineering Service _____
 Engineering Bldg. Maint. Foreman _____
 Engineering Operation Foreman _____
 Engineering Health & Safety _____
 Engineering Planning & Analysis _____
 C.O.T.R. _____

Drawing Title

PIPING AND VALVE SYMBOLS

Approved: Chief, Engineering Service _____
 Approved: Service Chief _____

Project Title

CONSTRUCT 525 SPACE PARKING GARAGE

CONTRACT No. VA249-14-C-0150 P.O. No. 821C40254

Building Number	Checked	Drawn
160	STS	CRR

Location
 VAMC MOUNTAIN HOME, TENNESSEE

Date MARCH 26, 2015

Project No. 621-330

DRAWING NO. **M002**
 Page 81 of 131

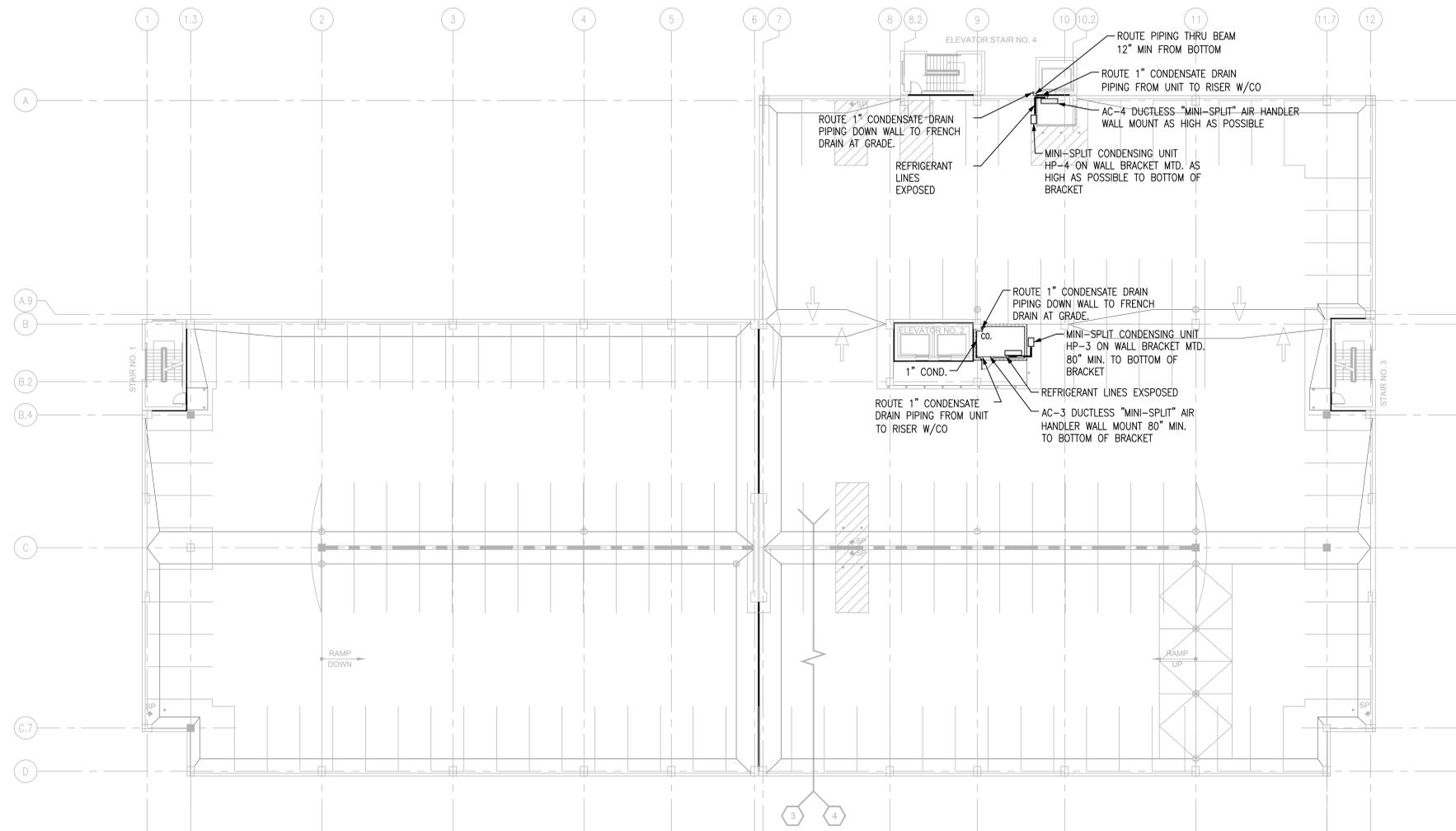


SHEET NOTES

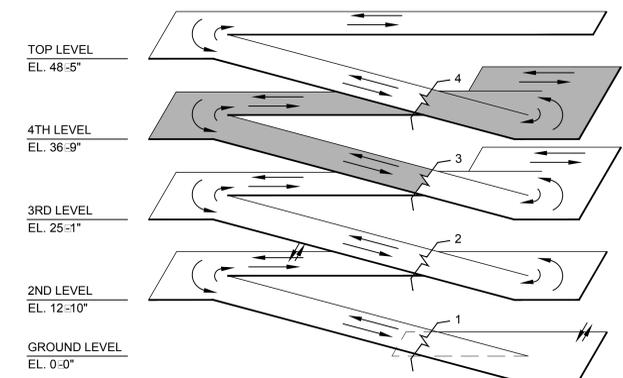
A. PROVIDE SEISMIC BRACING FOR ALL DUCTWORK AND EQUIPMENT IN ACCORDANCE WITH SMACNA FOR MOUNTAIN HOME TENNESSEE.

SHEET KEYNOTES

NOT USED



MECHANICAL SYSTEMS PLAN - FOURTH LEVEL
SCALE: 1/16" = 1'



ISOMETRIC

FINAL CONSTRUCTION DRAWINGS
APPROVED FOR CONSTRUCTION

Dwg. File	Revisions	Date

ARCHITECT/ENGINEERS:

AKEA INC.

3603 NW 98TH ST., SUITE B
GAINESVILLE, FLORIDA 32606
PH: (352) 474-6124
FAX: (352) 474-6324
CERT OF AUTH: FL #26693
EXPIRES: 02/28/2017

Stephen T. Stoffa, PE
Florida Reg. 70349

AKEA, INC. SEAL

CONSULTANTS:

WALKER PARKING CONSULTANTS
4904 Eisenhower Blvd
Suite 150
Tampa, FL 33634
813.888.5800 Ph
813.888.5825 Fax
BE-0003840
www.walkerparking.com

FRANK DAUGHTRY architect
200 E. Government Street
Suite 240-A
Pensacola, FL 32502
Voice 850-433-3023
Fax 850-433-3025
Email frank@frankdo.com

Approved:

Asst. Chief, Engineering Service _____
Engineering Bldg. Maint. Foreman _____
Engineering Operation Foreman _____
Engineering Health & Safety _____
Engineering Planning & Analysis _____
C.O.T.R. _____

Drawing Title

MECHANICAL SYSTEMS PLAN - FOURTH LEVEL

Approved: Chief, Engineering Service _____
Approved: Service Chief _____

Project Title

CONSTRUCT 525 SPACE PARKING GARAGE

CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254

Building Number	Checked	Drawn
160	STS	CRR

Location
VAMC MOUNTAIN HOME, TENNESSEE

Date
MARCH 26, 2015

Project No.
621-330

DRAWING NO.
M202

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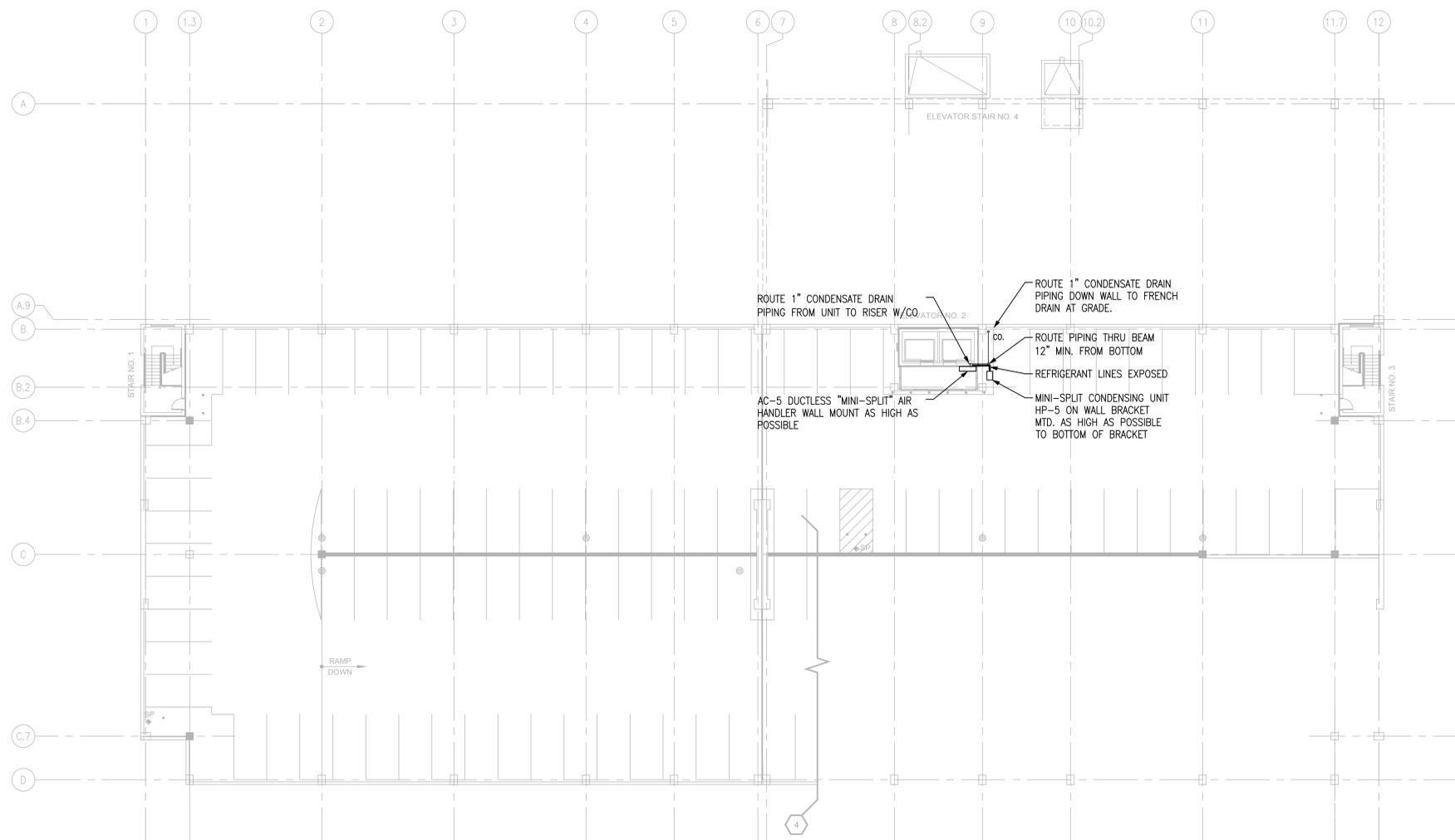


SHEET NOTES

A. PROVIDE SEISMIC BRACING FOR ALL DUCTWORK AND EQUIPMENT IN ACCORDANCE WITH SMACNA FOR MOUNTAIN HOME, TENNESSEE.

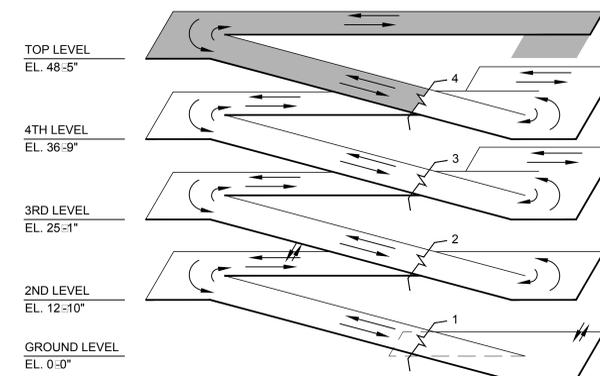
SHEET KEYNOTES

NOT USED



MECHANICAL SYSTEMS PLAN - TOP LEVEL

SCALE: 1/16" = 1'



ISOMETRIC

FINAL CONSTRUCTION DRAWINGS
APPROVED FOR CONSTRUCTION

Dwg. File	Revisions	Date

ARCHITECT/ENGINEERS:



3603 NW 98TH ST., SUITE B
GAINESVILLE, FLORIDA 32606
PH: (352) 474-6124
FAX: (352) 474-6324
CERT OF AUTH: FL #26693
EXPIRES: 02/28/2017

Stephen T. Stoffa, PE
Florida Reg. 70349

AKEA, INC.

CONSULTANTS:

WALKER
PARKING CONSULTANTS
4904 Eisenhower Blvd
Suite 150
Tampa, FL 33634
813.888.5800 Ph
813.888.5822 Fax
BE-0003840
www.walkerparking.com



FRANK DAUGHTRY
architect
200 E. Government Street
Suite 240-A
Pensacola, FL 32502
Voice 850-433-3023
Fax 850-433-3025
Email frank@frankda.com

Approved:

Asst. Chief, Engineering Service
Engineering Bldg. Maint. Foreman
Engineering Operation Foreman
Engineering Health & Safety
Engineering Planning & Analysis
C.O.T.R.

Drawing Title	Project Title
MECHANICAL SYSTEMS PLAN - TOP LEVEL	CONSTRUCT 525 SPACE PARKING GARAGE
Approved: Chief, Engineering Service	CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254
Approved: Service Chief	Building Number 160 Checked STS Drawn CRR
	Location VAMC MOUNTAIN HOME, TENNESSEE

Date	Project No.	DRAWING NO.
MARCH 26, 2015	621-330	M203
		Page 86 of 131

