CHILLER, RTU, CONDENSING UNIT REPLACEMENTS

Sturgis, South Dakota

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SEPTEMBER 12, 2012

TSP Project # 04121053

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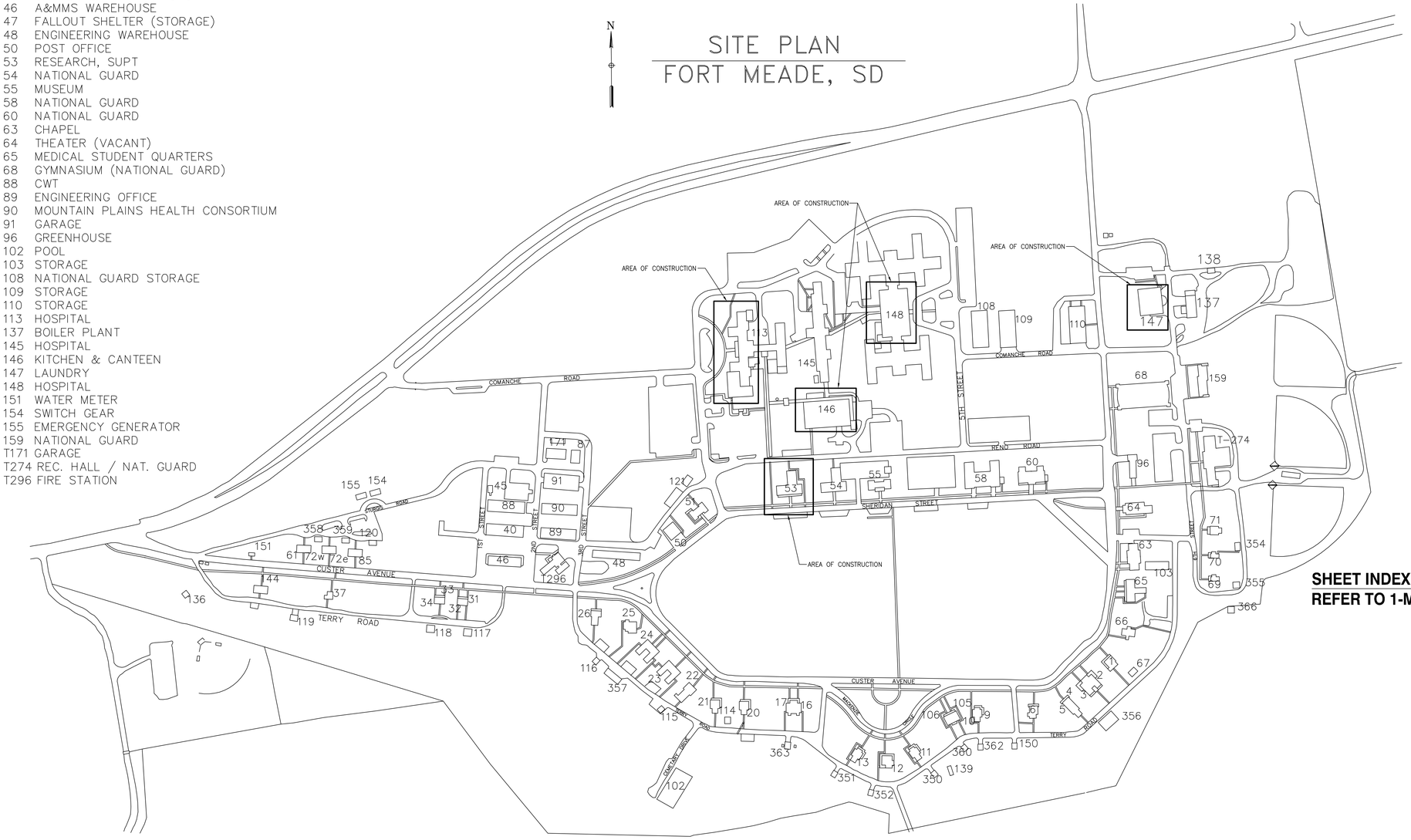

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REFER TO 1-MH-100

Revisions	Date

CONSULTANTS:

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TSP PROJECT #04121053

Drawing Title	OVERALL SITE PLAN
Approved: Project Director	
Project Title	DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT
Location	FORT MEADE, SD
Date	09-21-2012
Checked	SMT
Drawn	MMC
Project Number	568-12-111
Building Number	
Drawing Number	S-001
Dwg.	1 of 1

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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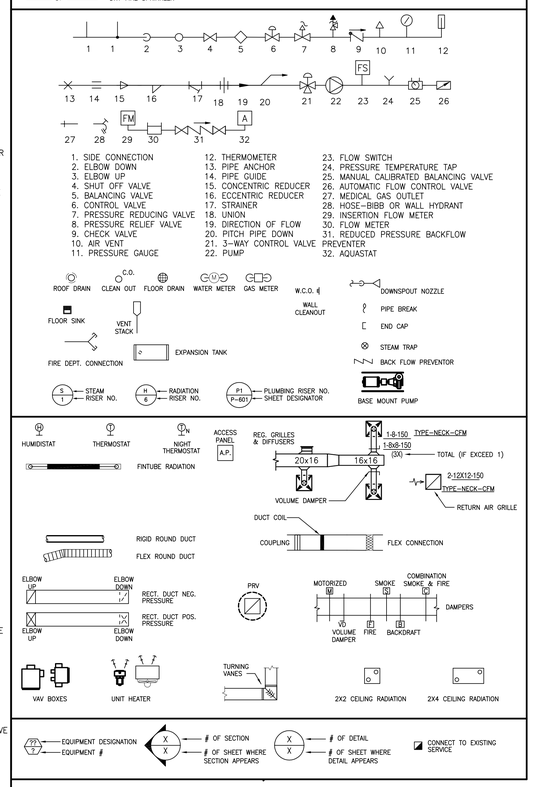
MECHANICAL ABBREVIATION LEGEND

A	
AB	ANCHOR BOLT
ABV	ABOVE
AC	AIR CONDITIONER
ACP	ACOUSTICAL CEILING PANEL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADA	AMERICAN WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
ANOD	ANODIZED
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECT/ARCHITECTURAL
ARR	ARRANGEMENT
AUTO	AUTOMATIC
AVG	AVERAGE
B	
BAL DMPR	BALANCE DAMPER
BB	BASE BOARD
BD	BOARD
BD DMPER	BACKDRAFT DAMPER
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM/BENCH MARK
BOB	BOTTOM OF BEAM
BOJ	BOTTOM OF JOIST
BOT	BOTTOM
BRG	BEARING
BRK	BRICK
BSMT	BASEMENT
BTC	BRITISH THERMAL UNIT
BTWN	BETWEEN
C	
C	CELSIUS/CENTIGRADE
CA	COMBUSTION AIR
CAB	CABINET
CAP	CAPACITY
CB	CATCH BASIN
CI	CAST IRON
CIP	CAST IN PLACE
CL	CENTER LINE
CLG	CEILING
CLKG	CAULKING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMB	COMBINATION
COMP	COMPOSITE/COMPRESSOR
COND	CONDENSATE
CONC	CONCRETE
CONN	CONNECT/CONNECTION
CONST	CONSTRUCT/CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CPT	CARPET
CRU	CONDENSATE RETURN UNIT
CT	CERAMIC TILE
CTR	CENTER
CW	COLD WATER
D	
db	DECIBEL
D	DEPTH
DEMO	DEMOLITION
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DISCH	DISCHARGE
DISP	DISPOSAL
DMPR	DAMPER
DN	DOWN
DS	DOWN SPOUT
DW	DISHWASHER
DWG	DRAWING
DX	DIRECT EXPANSION
E	
E	EAST
EA	EACH/EXHAUST AIR
EC	ELECTRICAL (SUB)CONTRACTOR
EL	ELEVATION
ELEC	ELECTRIC(AL)
EMERG	EMERGENCY
EP	ELECTRICAL PANEL
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EXC	EXCAVATE/EXCAVATION
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F	
F	FAHRENHEIT
FA	FRESH AIR
FAB	FABRICATE
FCU	FAN COIL UNIT
FD	FLOOR DRAIN/FIRE DAMPER
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIC	FURNISHED & INSTALLED BY CONTRACTOR
FIN	FINISH
F (CONTINUED)	
FIO	FURNISHED & INSTALLED BY OWNER
FLASH	FLASHING
FLEX	FLEXIBLE
FLR	FLOOR
FOF	FUEL OIL FILL
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FP	FIREPROOF(ING)
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR
FT	FOOT
FTG	FOOTING
FURN	FURNISH
FURR	FURRING
FUT	FUTURE
F&T	FLOAT & THERMOSTATIC
G	
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GARB DISP	GARBAGE DISPOSAL
GND	GROUND
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
GR	GRILLE
GWB	GYPSUM WALL BOARD
H	
HB	HOSE BIB
HC	HANDICAP
HORIZ	HORIZONTAL
HP	HORSEPOWER/HEAT PUMP
HPS	HIGH PRESSURE STEAM
HR	HEATING WATER RETURN/HOUR
HS	HEATING WATER SUPPLY
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
HW	HOT WATER
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
I	
ID	INSIDE DIAMETER/INSIDE DIMENSION
IE	INVERT ELEVATION
IN	INCHES
IND	INDICATE
INFO	INFORMATION
INSP	INSPECTION
INST	INSTALLATION
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
IPS	IRON PIPE SIZE
J	
JST	JOIST
JT	JOINT
JAN	JANITOR
K	
KO	KNOCK OUT
KW	KILOWATT
L	
L	LEFT/LENGTH
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LH	LEFT HAND
LPG	LIQUID PETROLEUM GAS
LWCO	LOW WATER CUT OFF
M	
MA	MIXED AIR
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MBH	THOUSANDS OF BTU'S PER HR
MC	MECHANICAL (SUB)CONTRACTOR
MECH	MECHANICAL
MEMB	MEMBRANE
MET	METAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MNT	MOUNT
MO	MASONRY OPENING
MOD	MODULE/MODIFY
MOT	MOTORIZED
MTD	MOUNTED
MTL	METAL
N	
N/A	NOT APPLICABLE
N	NORTH
NAT	NATURAL
NE	NORTHEAST
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NW	NORTHWEST
O	
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
O (CONTINUED)	
ODS	OVERFLOW DOWN SPOUT
OFD	OVERFLOW DRAIN
OPG	OPENING
ORD	OVERFLOW ROOF DRAIN
OZ	OUNCE
P	
PC	PRECAST
PERF	PERFORATED
PERP	PERPENDICULAR
PFIX	PLUMBING FIXTURE
PH	PHASE
PLAS	PLASTER
PLBG	PLUMBING
PLYWD	PLYWOOD
PNL	PANEL
POL	POLISH
PR	PAIR/PLUMBING RISER
PREFAB	PREFABRICATE
PRV	POWER ROOF VENTILATOR
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH GAUGE
PT	POINT
PVC	POLYVINYL CHLORIDE
Q	
QT	QUARRY TILE
QTR	QUARTER
R	
R	RISER
RA	RETURN AIR
RAD	RADIUS/RADIANT
RCP	REFLECTED CEILING PLAN
RD	ROUND/ROOF DRAIN
REBAR	REINFORCING BAR
REF	REFERENCE/REFRIGERANT
REG	REGISTER
REINF	REINFORCE
REL	RELIEF
REQ	REQUIRED
RET	RETURN
REV	REVISION
RH	RIGHT HAND
RHW	RECIRCULATING HOT WATER
RI	ROUGH IN
RM	ROOM
RO	ROUGH OPENING
RPM	REVOLUTIONS PER MINUTE
S	
S	SOUTH
SA	SUPPLY AIR
SAN	SANITARY
SCHED	SCHEDULE
SE	SOUTHEAST
SEC	SECOND
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SHWR	SHOWER
SI	SQUARE INCH
SIM	SIMILAR
SOFT	SOFTENER
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURE/STRUCTURAL
SURF	SURFACE
SUSP	SUSPENDED
SW	SOUTHWEST
SYM	SYMBOL
T	
T	TOP
TCC	TEMPERATURE CONTROL CONTRACTOR
TEMP	TEMPERATURE/ TEMPORARY
THD	THREADED
THK	THICK
TLT	TOILET
TOC	TOP OF CURB
TOF	TOP OF FOOTING
TOJ	TOP OF JOIST
TYP	TYPICAL
U	
UH	UNIT HEATER
UNEXC	UNEXCAVATED
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
UV	UNIT VENTILATOR
V	
V	VOLT/VENT
VAR	VARIABLE/VARIES
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VTR	VENT THRU ROOF
W	
W	WEST/WATER/CLOTHES/ WASHER/WATT/WASTE
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WH	WATER HEATER/WALL HUNG
WP	WATER PROOF
WS	WATER SOFTENER
WT	WEIGHT
WTR	WATER

MECHANICAL SYMBOL LEGEND

W	SOIL OR WASTE ABOVE GROUND
W	SOIL OR WASTE BELOW GROUND
	VENT PIPING
SCW	DOMESTIC COLD SOFT WATER
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC RECIRCULATING HOT WATER
TW	TEMPERED WATER
LS	LAWN SPRINKLER
180	180 WATER (OR TEMP INDICATED)
D	DRAIN
DE	DEIONIZED WATER
MA	MEDICAL AIR
LA	LAB AIR
AV	ACID RESISTANT VENT
AW	ACID RESISTANT WASTE
CO2	CARBON DIOXIDE
NI	NITROGEN
O	OXYGEN
NO	NITROUS OXIDE
MV	MEDICAL VACUUM
WAG	WASTE ANESTHESIA GAS
LV	LAB VACUUM
CA	COMPRESSED AIR
RD	ROOF DRAIN PIPING – STORM DRAIN
RD	ROOF DRAIN PIPING – UNDERGROUND STORM DRAIN
ORD	OVERFLOW ROOF DRAIN PIPING – STORM DRAIN
ORD	OVERFLOW ROOF DRAIN PIPING – STORM DRAIN
F	FIRE LINE
DF	DRY FIRE SPRINKLER
PD	PUMP DISCHARGE
RL	REF. LIQUID
RS	REF. SUCTION
HG	HOT GAS
CS	CONDENSER SUPPLY
CR	CONDENSER RETURN
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
GHS	GLYCOL HEATING WATER SUPPLY
GHR	GLYCOL HEATING WATER RETURN
GTS	GEOTHERMAL HEATING SUPPLY
GTR	GEOTHERMAL HEATING RETURN
LPG	LIQUIFIED PETROLEUM GAS
LPS	LOW PRESSURE STEAM SUPPLY (0–15 PSI)
LPR	LOW PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY (15 –60 PSI)
MPR	MEDIUM PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY (60 PSI & ABOVE)
HPR	HIGH PRESSURE STEAM RETURN
CD	CONDENSATE DRAIN
G	NATURAL GAS (FIRM)
IG	NATURAL GAS (INTERRUPTIBLE)
FOF	FUEL OIL FILL
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
FOG	FUEL OIL GAUGE



GENERAL NOTES

1. ALL SERVICES, EQUIPMENT, ETC., SHOWN ON PLANS ARE NEW AND SHALL BE FURNISHED UNDER THIS CONTRACTOR UNLESS OTHERWISE INDICATED.
2. IN GENERAL, ALL PIPING AND DUCTWORK SHALL BE RUN CONCEALED IN SUSPENDED CEILING SPACES AND IN SHAFTS PROVIDED UNLESS NOTED OR OTHERWISE INDICATED. CERTAIN ROOMS HAVE NO SUSPENDED CEILINGS, AND PIPING AND DUCTWORK IN THESE ROOMS IS TO BE EXPOSED.
3. ALL PIPING AND DUCTWORK IS INTENDED TO BE CONCEALED IN WALLS AND PARTITIONS UNLESS SPECIFICALLY NOTED OTHERWISE. SOME ITEMS MAY APPEAR NOT TO BE CONCEALED DUE TO DIGITAL REGISTRATION AND ALIGNMENT ISSUES ASSOCIATED WITH THE DUPLICATION PROCESS.
4. COOPERATE WITH THE OTHER TRADES TO AVOID ANY CONFLICTS BETWEEN PIPING, DUCTWORK, ELECTRICAL WORK, ETC.
5. ALL DETAILS, SCHEMATICS, DIAGRAMS, ETC., DESIGNATE GENERAL ARRANGEMENT ONLY.
6. FOR DETAILS, EQUIPMENT CONNECTIONS, AND PIPE SIZES NOT SHOWN ON FLOOR PLANS, REFER TO ELEVATIONS, DETAILS, RISERS AND SCHEDULES.
7. THIS CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES AND/OR OPENINGS WHERE REQUIRED TO RUN PIPES AND DUCTS THROUGH FOUNDATIONS, FLOOR SLABS, WALLS, BRIDGING AND BEAMS EXCEPT WHERE OTHERWISE INDICATED.
8. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
9. WHERE NEW SERVICES ARE SHOWN CONNECTING TO EXISTING, VERIFY EXACT LOCATION AND SIZE OF EXISTING.
10. ALL EXISTING SERVICES SHALL BE MAINTAINED UNLESS OTHERWISE INDICATED.
11. ALL DUCTS, PIPING, FIXTURES, ETC., WHICH ARE DASHED AND/OR INDICATED BY NOTE ON DEMOLITION PLANS SHALL BE REMOVED.
12. WHERE SHEET METAL HOUSING, PLENUMS AND DUCTWORK ARE FASTENED TO GENERAL CONSTRUCTION. TAKE SPECIAL CARE TO MAKE AN AIRTIGHT SEAL AT THIS POINT.
13. ALL DEMOLISHED EQUIPMENT SHALL BECOME SALVAGED PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROMPTLY REMOVE THE EQUIPMENT FROM THE SITE.
14. ALL PIPE PENETRATIONS OF RATED WALLS AND FLOORS SHALL BE SLEEVED AND PROPERLY FIRE SEALED.
15. ALL PIPE AND DUCT PENETRATIONS OF SMOKE PARTITION WALLS SHALL BE PROPERLY SEALED TO RESIST THE PASSAGE OF SMOKE AS REQUIRED BY THE LOCAL AUTHORITY.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.

DEMOLITION GENERAL NOTES

1. WHERE EQUIPMENT AND/OR FIXTURES ARE INDICATED TO BE REMOVED, THE EXISTING SERVICES SHALL BE CAPPED AND CONCEALED. ALL ABANDONED BRANCH SERVICES WHICH SERVE ABOVE EQUIPMENT, ETC., SHALL BE REMOVED BACK TO THE MAINS AND CAPPED, UNLESS OTHERWISE INDICATED.
2. CAP ANY REMAINING PIPE AND/OR DUCT OPENINGS.
3. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING AND PAINTING TO MATCH EXISTING WALLS, FLOORS, AND CEILINGS.

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148-MH-02	AREA "A" - HVAC PLAN
148-MH-03	AREA "E" AND "G" - HVAC PLAN
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Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER — REG. NO. 3610 — STEVEN M. TEGEN — SOUTH DAKOTA — DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #04121053

Drawing Title	BUILDING-53 SYMBOLS-ABBR.-GEN.NOTES
Approved: Project Director	
Project Title	DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT
Location	FORT MEADE, SD
Date	09-21-2012
Checked	SMT
Drawn	RAK
Project Number	568-12-111
Building Number	053
Drawing Number	1-MH-100
Dwg. 1 of 24	

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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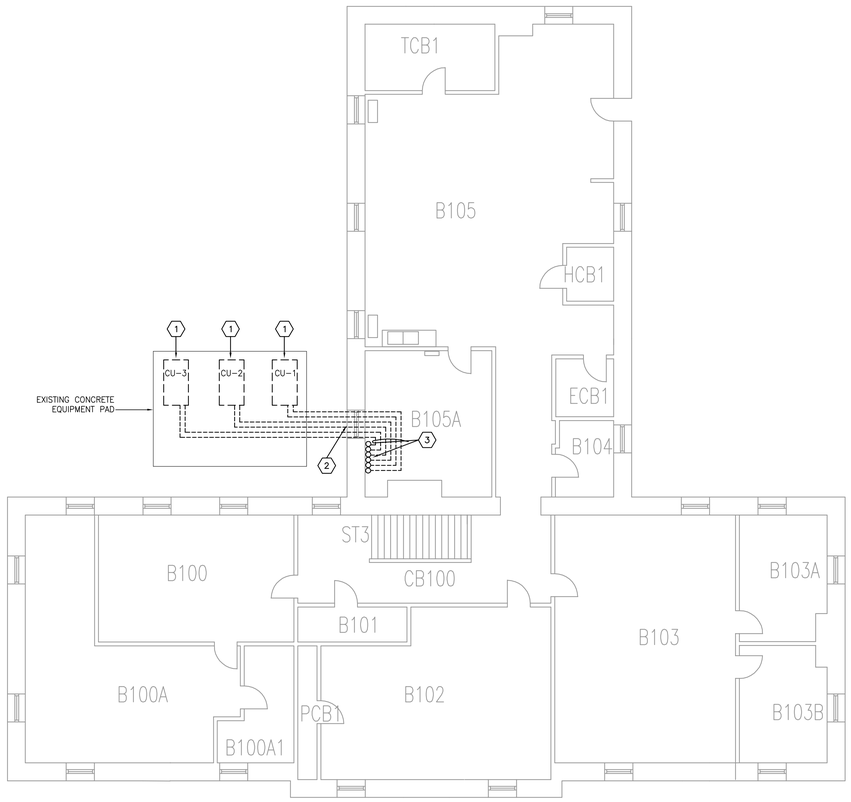
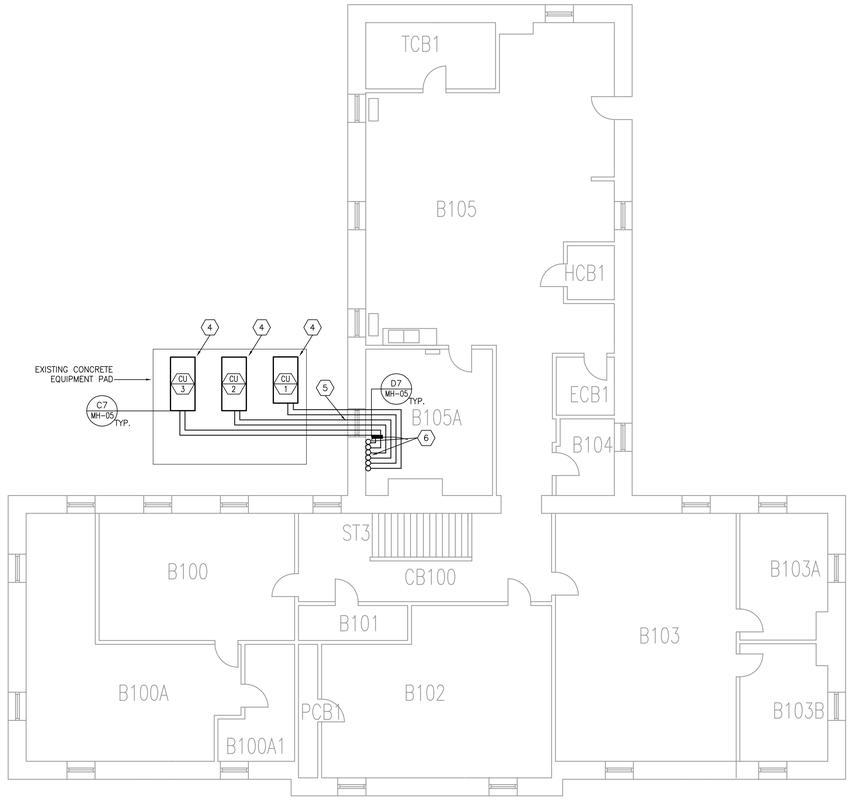


D1 BASEMENT DEMOLITION - HVAC PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH



D6 BASEMENT - HVAC PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH

NOTE: ALL WORK FOR BUILDING 53 SHALL BE A DEDUCT ALTERNATE TO THE BID. SEE DESCRIPTION OF ALTERNATES IN THE SPECIFICATIONS

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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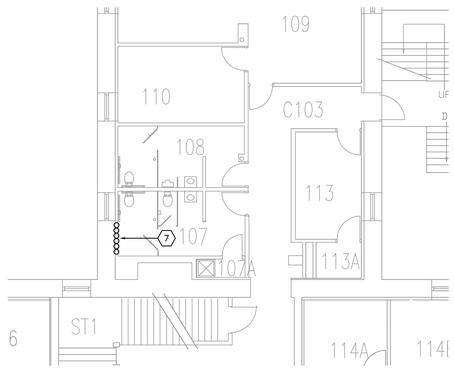
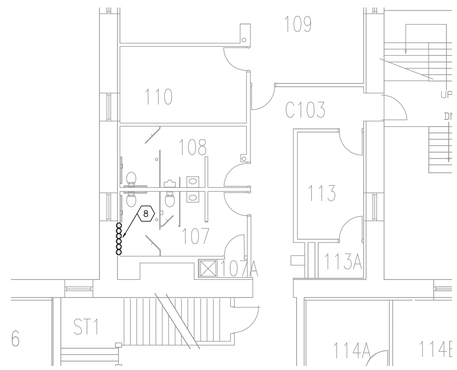
F2 EXISTING CONDENSING UNITS

SCALE: NONE



F5 PARTIAL FIRST FLOOR DEMOLITION - HVAC PLAN

SCALE: 1/8"=1'-0"



F7 PARTIAL FIRST FLOOR - HVAC PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES

A. REFRIGERANT PIPING SIZE SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER.

B. REFRIGERANT EXPOSED TO WEATHER SHALL BE HAVE P.V.C. JACKET INSTALLED OVER THE INSULATION. (P.V.C. JACKET TO BE U.V. RESISTANT.)

C. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

D. COORDINATE DISRUPTION OF SERVICE WITH OWNER.

SHEET KEYNOTES

1. REMOVE AIR COOLED CONDENSING UNIT AND RELATED REFRIGERANT PIPING AND TEMPERATURE CONTROLS. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
2. REMOVE REFRIGERANT PIPING THRU THE WALL. OPENINGS IN THE WALL MAY BE REUSED FOR NEW REFRIGERANT PIPING.
3. REMOVE REFRIGERANT PIPING INSIDE THE BUILDING AND RISERS THRU THE CEILING. PIPING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING. (APPROX. TOTAL VERTICAL RISE = 30 FT.)
4. INSTALL AIR COOLED CONDENSING UNIT WHERE EXISTING UNIT IS REMOVED. PROVIDE NEW REFRIGERANT PIPING AND TEMPERATURE CONTROLS.
5. INSTALL REFRIGERANT PIPING THRU THE WALL. SEAL OPENING AROUND NEW PIPING AIRTIGHT.
6. INSTALL REFRIGERANT PIPING INSIDE THE BUILDING AND RISERS THRU THE CEILING.
7. REMOVE REFRIGERANT PIPNG CONCEALED IN WALL. CUT WALL AS REQUIRED TO REMOVE PIPING. PIIPNG SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
8. INSTALL REFRIGERANT PIPING RISERS IN WALL WHERE EXISTING REFRIGERANT PIPING IS REMOVED. PATCH AND FINISH WALL TO MATCH SURROUNDING SURFACE.

Revisions	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TEGEDER SOUTH DAKOTA DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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www.teamtsp.com
TSP PROJECT #04121053

Drawing Title: BUILDING-53 BASEMENT-FIRST-FLOOR-HVAC-PLAN

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 053

Drawing Number: 53-MH-01

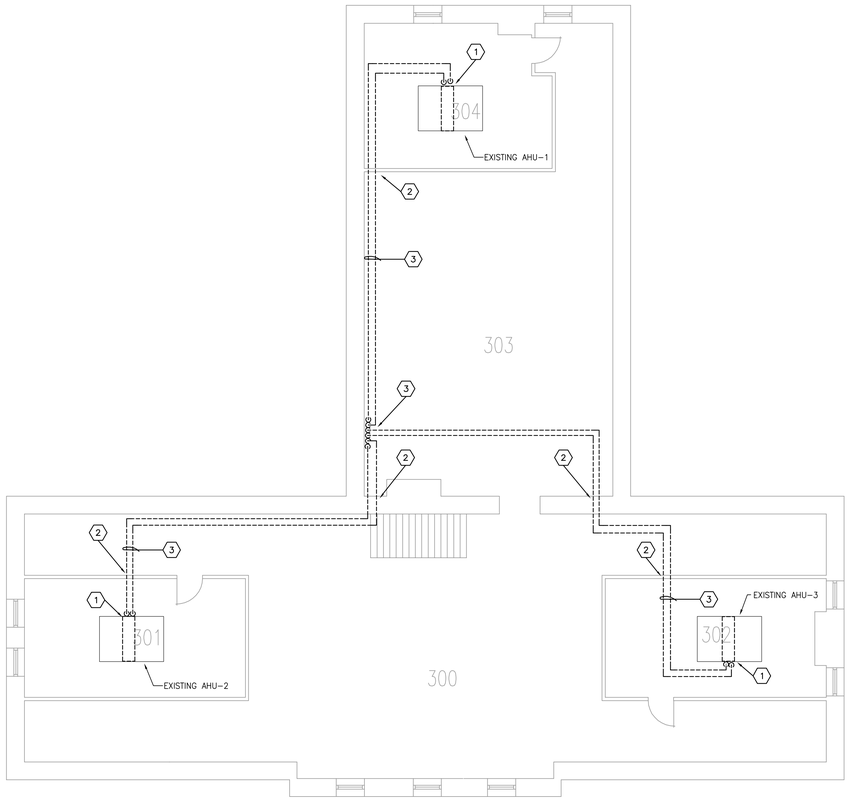
Dwg. 2 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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
G:\2012\04121053 Dept of VA (V23) BHHCS Chiller RTU Cond Unit\D-Drawings\Mechanical*53-MH-01.dwg 9-21-12 01:52:40 PM kingbo

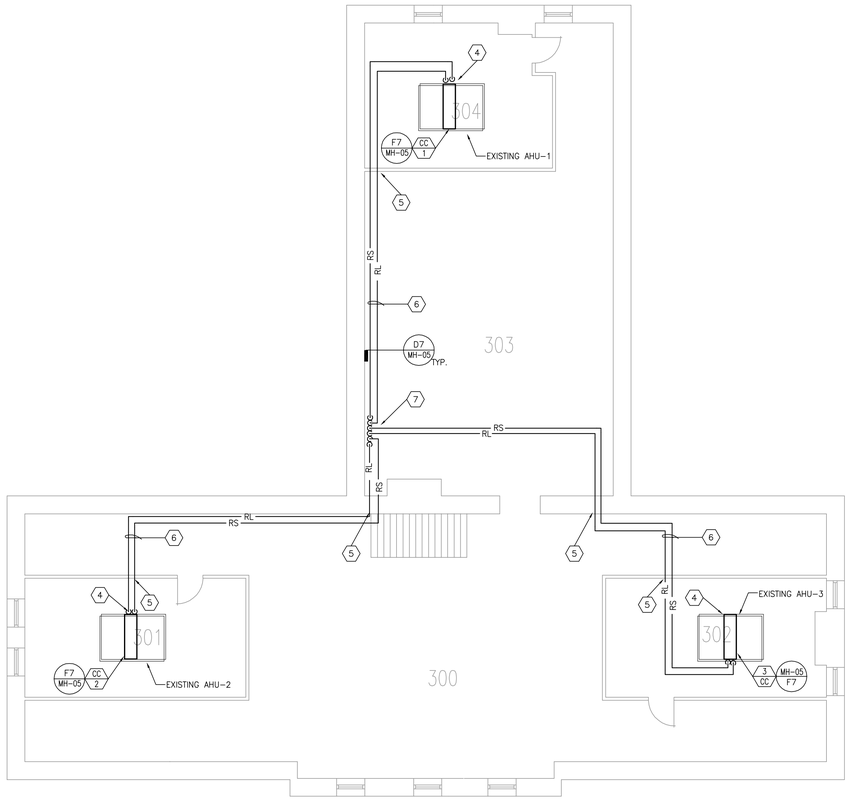


D1 ATTIC DEMOLITION - HVAC PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH

NOTE: ALL WORK FOR BUILDING 53 SHALL BE A DEDUCT ALTERNATE TO THE BID. SEE DESCRIPTION OF ALTERNATES IN THE SPECIFICATIONS



D6 ATTIC - HVAC PLAN

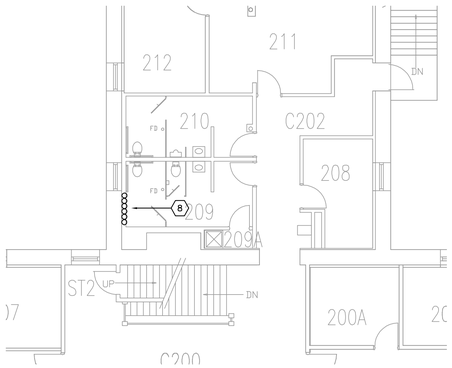
SCALE: 1/8"=1'-0"

PLAN NORTH

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

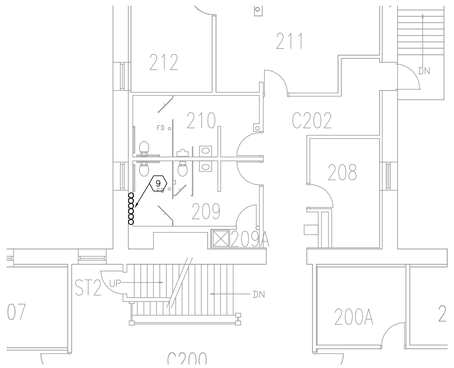
DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.



F5 PARTIAL SECOND FLOOR DEMOLITION - HVAC PLAN

SCALE: 1/8"=1'-0"



F7 PARTIAL SECOND FLOOR - HVAC PLAN

SCALE: 1/8"=1'-0"

SHEET KEYNOTES

A. REFRIGERANT PIPING SIZE SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER.

B. VERIFY EXISTING AHU CAPACITY AND DIMENSIONS FOR NEW EVAPORATOR COIL.

C. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

SHEET KEYNOTES

1. REMOVE EVAPORATOR COIL AND RELATED REFRIGERANT PIPING. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
2. REMOVE REFRIGERANT PIPING THRU THE WALL. OPENINGS IN THE WALL MAY BE REUSED FOR NEW REFRIGERANT PIPING.
3. REMOVE REFRIGERANT PIPING INSIDE THE BUILDING AND RISERS THRU THE ATTIC FLOOR. PIPING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
4. INSTALL NEW EVAPORATOR COIL WHERE EXISTING COIL IS REMOVED. PROVIDE NEW REFRIGERANT PIPING CONNECTIONS TO COIL.
5. INSTALL REFRIGERANT PIPING THRU THE WALL.
6. INSTALL REFRIGERANT PIPING INSIDE THE BUILDING WHERE EXISTING PIIPING IS REMOVED.
7. SEAL OPENINGS AROUND PIPING AIRTIGHT WHERE THEY PENETRATE THE ATTIC FLOOR.
8. REMOVE REFRIGERANT PIPNG CONCEALED IN WALL. CUT WALL AS REQUIRED TO REMOVE PIPING. PIIPNG SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
9. INSTALL REFRIGERANT PIPING RISERS IN WALL WHERE EXISTING REFRIGERANT PIPING IS REMOVED. PATCH AND FINISH WALL TO MATCH SURROUNDING SURFACE.

Revisions	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TEBBEN SOUTH DAKOTA
DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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www.teamtsp.com
TSP PROJECT #04121053

Drawing Title	BUILDING-53 SECOND-FLOOR-ATTIC-HVAC-PLAN
Approved: Project Director	
Project Title	DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT
Location	FORT MEADE, SD
Date	09-21-2012
Checked	SMT
Drawn	RAK
Project Number	568-12-111
Building Number	053
Drawing Number	53-MH-02
	Dwg. 3 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.

AIR COOLED CONDENSING UNIT SCHEDULE

MECHANICAL REQUIREMENTS											ELECTRICAL REQUIREMENTS												
														STARTER							DISCONNECT		
UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	COOLING CAP. MBH	TONS	UNIT F.L. AMP.	AMB. TEMP. (DEG. F)	SUCT. TEMP (DEG. F)	REFRIGERANT TYPE	MECH REMARKS	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	TYPE	SIZE	LOCATION	CNTRL. DVC.	AUX.	BY	CONTROL	TYPE	BY	ELEC REMARKS
CU-1	GROUND	CC-1	MCQUAY RCS-12F	144.6	12	49.2	95	45	R-410A	1,2,3	208/3	56.0	EXISTING	IN UNIT	–	–	–	–	MC	TCC	EXISTING	–	E1
CU-2	GROUIND	CC-2	MCQUAY RCS-15F	190.2	15	56.6	95	45	R-410A	1,2,3	208/3	64.0	EXISTING	IN UNIT					MC	TCC	EXISTING		E1
CU-3	GROUIND	CC-2	MCQUAY RCS-15F	190.2	15	56.6	95	45	R-410A	1,2,3	208/3	64.0	EXISTING	IN UNIT					MC	TCC	EXISTING		E1

MECH REMARKS:
1. UNIT EFFICIENCY MUST COMPLY WITH ASHRAE 90.1-2010 REQUIREMENTS.
2. HOT GAS BYPASS
3. SINGLE POINT POWER CONNECTION.
4. VERIFY EXISTING TEMPERATURE CONTROLS AND CONNECT TO NEW EQUIPMENT.

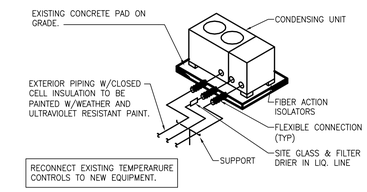
ELEC REMARKS:
E1. PROVIDE NEW FUSES AS RECOMMENDED BY CONDENSING UNIT EQUIPMENT MANUFACTURER.

NOTE: ALL WORK FOR BUILDING 53 SHALL BE A DEDUCT ALTERNATE TO THE BID. SEE DESCRIPTION OF ALTERNATES IN THE SPECIFICATIONS

COOLING COIL SCHEDULE

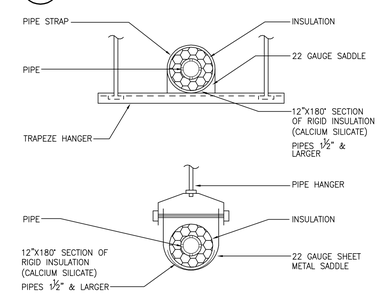
MECHANICAL REQUIREMENTS																
					AIR SIDE											
					ENT AIR		LVG AIR									
DESIG	SERVES	MANUFACT. DESIG.	TYPE	CLG CFM	DB	WB	DB	WB	APD	MBH	FINS / INCH	ROWS	SUCT. TEMP.	REF.	FACE VEL.	MECH REMARKS
CC-1	EXISTING AHU-1	AAON	DX	3900	80.0	67.0	55.3	55.0	0.9	144.6	14	6	45.0	R-410A	530	1
CC-2	EXISTING AHU-2	AAON	DX	4400	80.0	67.0	54.3	53.7	0.5	190.2	14	6	45.0	R-410A	430	1
CC-3	EXISTING AHU-3	AAON	DX	4400	80.0	67.0	54.3	53.7	0.5	190.2	14	6	45.0	R-410A	430	1

MECH REMARKS:
1. CUSTOM FABRICATED COIL TO FIT EXISTING AHU COOLING COIL CASING. FIELD VERIFY ALL DIMENSIONS.
2. VERIFY EXISTING AHU CAPACTIY AND DIMENSIONS FOR NEW EVAPORATOR COIL.
3. VERIFY EXISTING TEMPERATURE CONTROLS AND CONNECT TO NEW EQUIPMENT.

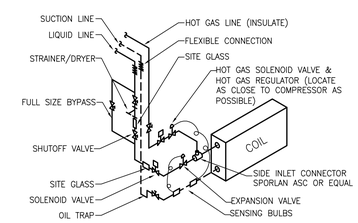


RECONNECT EXISTING TEMPERARURE CONTROLS TO NEW EQUIPMENT.

C7 CONDENSING UNIT PIPING
SCALE: NONE



D7 HANGER & INSULATION SADDLES
SCALE: NONE



RECONNECT EXISTING TEMPERARURE CONTROLS TO NEW EQUIPMENT.

F7 DX COIL PIPING
SCALE: NONE

Revisions: | Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER, STEVEN M. THOMPSON, REG. NO. 3510, STATE OF SOUTH DAKOTA
DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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www.teamtsp.com
TSP PROJECT #04121053
To Solve. To Excel. Together.

Drawing Title: BUILDING-53 MECHANICAL-SCHEDULES-DETAILS

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 053

Drawing Number: 53-MH-03

Dwg. 4 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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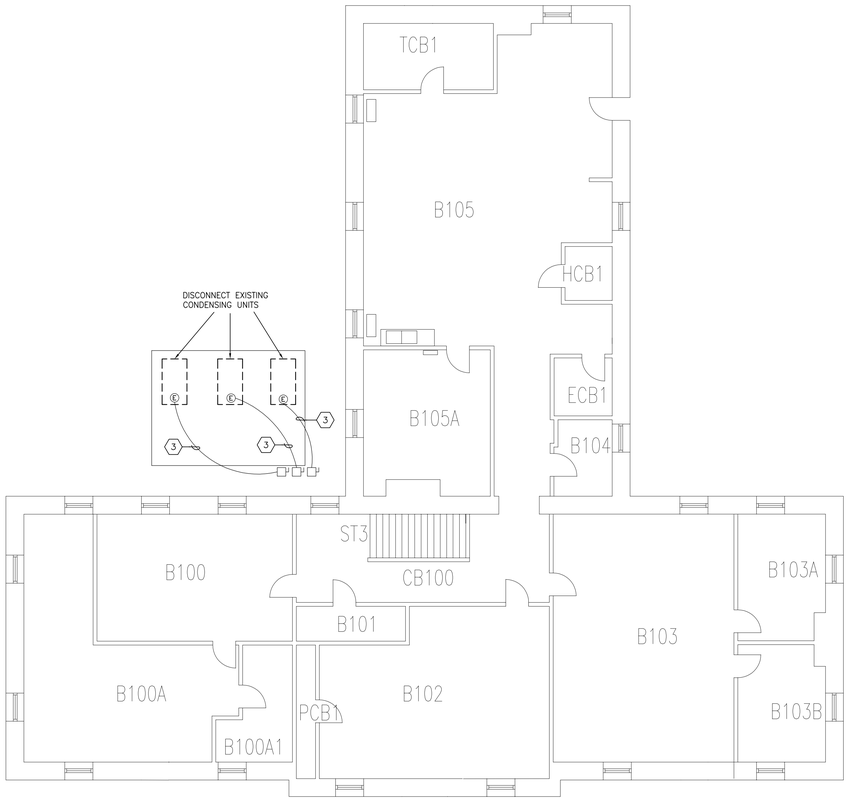
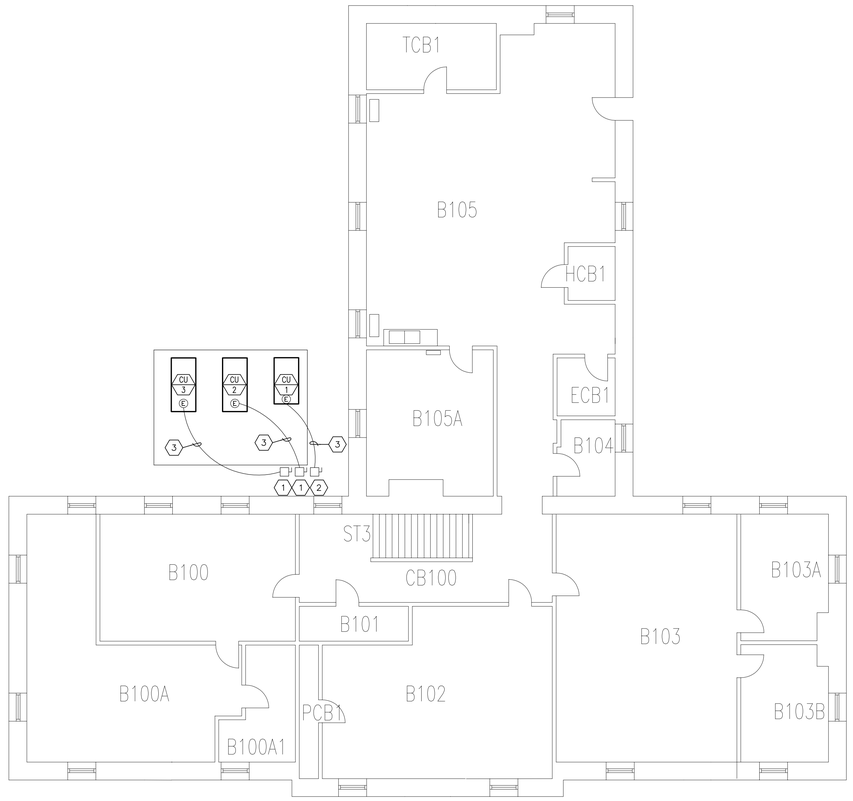


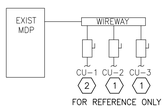
D1 BASEMENT ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



D5 BASEMENT ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



F6 PARTIAL POWER RISER DIAGRAM
SCALE: NO SCALE

SHEET GENERAL NOTES

SHEET KEYNOTES

1. PROVIDE NEW 80A FUSES IN FUSED DISCONNECT SWITCHES FOR CONDENSING UNITS CU-2 AND CU-3.
2. PROVIDE NEW 70A FUSES IN FUSED DISCONNECT SWITCH FOR CONDENSING UNIT CU-1.
3. DISCONNECT EXISTING CONDENSING UNITS. RECONNECT EXISTING BRANCH CIRCUITS TO NEW CONDENSING UNITS. EXTEND WIRING AS NEEDED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6729
DARRELL L. BREN
DATE: 09-13-12

ARCHITECT/ENGINEERS:

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www.teamtsp.com
TSP PROJECT #04121053

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Drawing Title: BUILDING 53 - BASEMENT ELECTRICAL PLANS

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: DLB | Drawn: JNK

Project Number: 568-12-111

Building Number: 053

Drawing Number: 53-EP-01

Dwg. 5 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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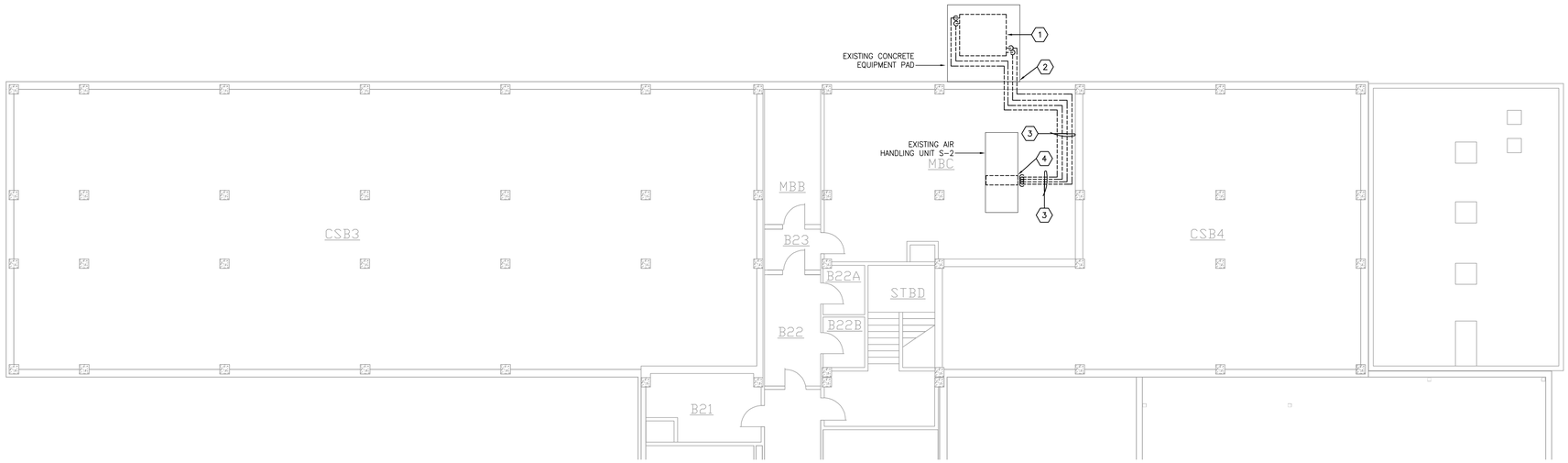
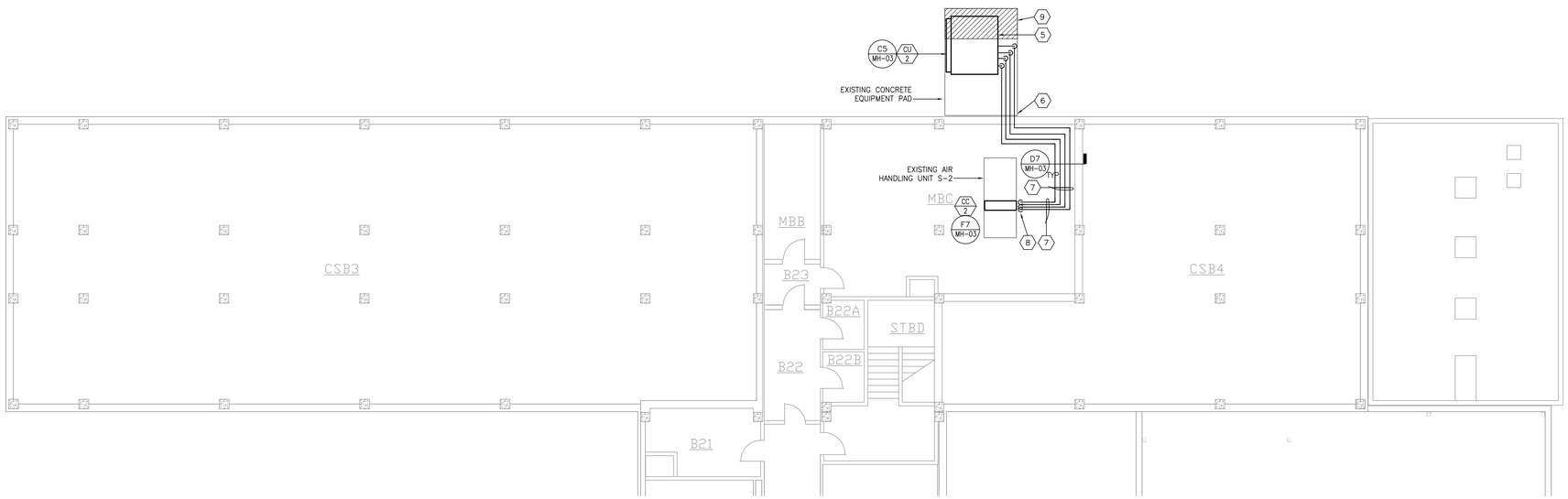


C1 BASEMENT FLOOR DEMOLITION - HVAC PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH



F1 BASEMENT FLOOR - HVAC PLAN

SCALE: 1/8"=1'-0"

PLAN NORTH

SHEET KEYNOTES

A. REFRIGERANT PIPING SIZE SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER.

B. REFRIGERANT EXPOSED TO WEATHER SHALL BE HAVE P.V.C. JACKET INSTALLED OVER THE INSULATION. (P.V.C. JACKET TO BE U.V. RESISTANT.)

C. VERIFY EXISTING AHU CAPACITY AND DIMENSIONS FOR NEW EVAPORATOR COIL.

D. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

E. COORDINATE DISRUPTION OF SERVICE WITH OWNER.

SHEET KEYNOTES

1. REMOVE AIR COOLED CONDENSING UNIT AND RELATED REFRIGERANT PIPING AND TEMPERATURE CONTROLS. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
2. REMOVE REFRIGERANT PIPING THRU THE WALL. OPENINGS IN THE WALL MAY BE REUSED FOR NEW REFRIGERANT PIPING.
3. REMOVE REFRIGERANT PIPING INSIDE THE BUILDING. PIPING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
4. REMOVE EVAPORATOR COILS AND RELATED REFRIGERANT PIPING. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
5. INSTALL AIR COOLED CONDENSING UNIT WHERE EXISTING UNIT IS REMOVED. PROVIDE NEW REFRIGERANT PIPING AND TEMPERATURE CONTROLS.
6. INSTALL REFRIGERANT PIPING THRU THE WALL. SEAL OPENING AROUND NEW PIPING AIRTIGHT.
7. INSTALL REFRIGERANT PIPING INSIDE THE BUILDING.
8. INSTALL NEW EVAPORATOR COILS WHERE EXISTING COILS ARE REMOVED. PROVIDE NEW REFRIGERANT PIPING CONNECTIONS TO THE COILS.
9. PROVIDE AN EXTENSION OF THE CONCRETE EQUIPMENT PAD AS NECESSARY TO ALLOW A MINIMUM OF 6 FT. CLEARANCE BETWEEN THE CONDENSING UNIT AND THE BUILDING WALL. CONCRETE EQUIPMENT PAD SHALL EXTEND A MINIMUM OF 1 FT. BEYOND THE CONDENSING UNIT.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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KEYPLAN

SCALE: NTS

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3616 STEVEN M. TOBIAS SOUTH DAKOTA DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #04121053

To Solve. To Excel. Together.

Drawing Title	BUILDING-113 BASEMENT-FLOOR-HVAC-PLAN
Approved: Project Director	
Project Title	DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT
Location	FORT MEADE, SD
Date	09-21-2012
Checked	SMT
Drawn	RAK
Project Number	568-12-111
Building Number	113
Drawing Number	113-MH-01
	Dwg. 6 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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
G:\2012\04121053 Dept of VA (V23)_BHHCS Chiller RTU Cond Unit\D-Drawings\Mechanical\113-MH-01.dwg 9-21-12 01:57:07 PM Kingbo

C1 PENTHOUSE-ROOF- DEMOLITION - HVAC PLAN
SCALE: 1/8"=1'-0"

A1 PENTHOUSE-ROOF - HVAC PLAN
SCALE: ViewportScale

GENERAL NOTES

A. REFRIGERANT PIPING SIZE SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER.

B. REFRIGERANT EXPOSED TO WEATHER SHALL BE HAVE P.V.C. JACKET INSTALLED OVER THE INSULATION. (P.V.C. JACKET TO BE U.V. RESISTANT.)

C. VERIFY EXISTING AHU CAPACITY AND DIMENSIONS FOR NEW EVAPORATOR COIL.

D. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

E. COORDINATE DISRUPTION OF SERVICE WITH OWNER.

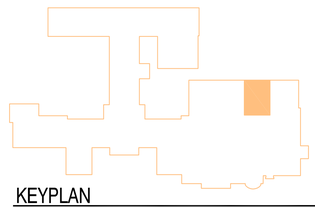
SHEET KEYNOTES

1. REMOVE AIR COOLED CONDENSING UNIT AND RELATED REFRIGERANT PIPING AND TEMPERATURE CONTROLS. ROOF MOUNTED EQUIPMENT AND PIPING SUPPORTS MAY BE REUSED FOR NEW EQUIPMENT AND REFRIGERANT PIPING.
2. REMOVE REFRIGERANT PIPING THRU THE WALL. OPENINGS IN THE WALL MAY BE REUSED FOR NEW REFRIGERANT PIPING.
3. REMOVE REFRIGERANT PIPING INSIDE THE BUILDING. PIPING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
4. REMOVE EVAPORATOR COILS AND RELATED REFRIGERANT PIPING. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
5. INSTALL AIR COOLED CONDENSING UNIT WHERE EXISTING UNIT IS REMOVED. PROVIDE NEW REFRIGERANT PIPING AND TEMPERATURE CONTROLS.
6. INSTALL REFRIGERANT PIPING THRU THE WALL. SEAL OPENING AROUND NEW PIPING AIRTIGHT.
7. INSTALL REFRIGERANT PIPING INSIDE THE BUILDING.
8. INSTALL NEW EVAPORATOR COILS WHERE EXISTING COILS ARE REMOVED. PROVIDE NEW REFRIGERANT PIPING CONNECTIONS TO THE COILS.
9. NEW CONDENSING UNIT SHALL SET ON EXISTING ROOF SUPPORTS. PROVIDE ADDITIONAL EQUIPMENT SUPPORTS AS NEEDED.
10. REPOSITION EXISTING WALK PADS ON ROOF AS NEEDED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.



KEYPLAN
SCALE: NTS

Revisions	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. FEBDEN SOUTH DAKOTA DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #04121053

To Solve. To Excel. Together.

Drawing Title: BUILDING-113 PENTHOUSE-ROOF-HVAC-PLAN

Approved Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date	Checked	Drawn
09-21-2012	SMT	RAK

Project Number: 568-12-111

Building Number: 113

Drawing Number: 113-MH-02

Dwg. 7 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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AIR COOLED CONDENSING UNIT SCHEDULE

MECHANICAL REQUIREMENTS														ELECTRICAL REQUIREMENTS												
																	STARTER							DISCONNECT		
UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	COOLING CAP. MBH	TONS	TOTAL WATTS	AMB. TEMP. (DEG. F)	SUCT. TEMP (DEG. F)	EER	COND. FAN	COMP.	REF. CKT.	REFRIGERANT TYPE	MECH REMARKS	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	TYPE	SIZE	LOCATION	CNTRL. DVC.	AUX.	BY	CONTROL	TYPE	BY	ELEC REMARKS
CU-1	ROOF	AHU 1	MCQUAY RCS-050D	567.5	47.3	51,604	95	45	11.0	4	4	2	R-410A	1,2,3	480/3	98	EXIST	IN UNIT					MC	TCC	NFD	DIV 26	E1
CU-2	GROUND	AHU S-2	MCQUAY RCS-050D	567.5	47.3	51,604	95	45	11.0	4	4	2	R-410A	1,2,3	208/3	220	EXIST	IN UNIT					MC	TCC	EXIST		

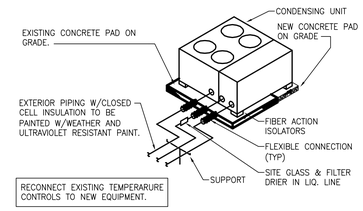
MECH REMARKS:
1. HOT GAS BYPASS.
2. SINGLE POINT POWER CONNECTION.
3. WITH COIL GAURDS.
4. VERIFY EXISTING TEMPERATURE CONTROLS AND CONNECT TO NEW EQUIPMENT.

ELEC REMARKS:
E1. PROVIDE A 400A, 3-POLE, HEAVY DUTY, NON-FUSED DISCONNECT SWITCH IN NEMA 3R ENCLOSURE.

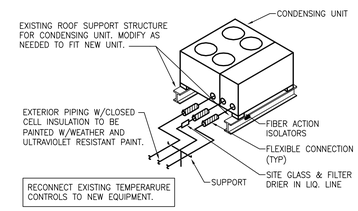
COOLING COIL SCHEDULE

MECHANICAL REQUIREMENTS														
					AIR SIDE									
					ENT AIR		LVG AIR							
DESIG	SERVES	MANUFACT. DESIG.	TYPE	CLG CFM	DB	WB	DB	WB	APD	MBH	FINS / INCH	ROWS	SUCT. TEMP.	REF.	FACE VEL.	MECH REMARKS
CC-1	AHU-1	AAON	DX	2000	80.0	67.0	55.3	55.0	0.5	60.0	14	6	45.0	R-410A	430	1
CC-2	AHU-2	AAON	DX	8260	95.0	70.0	55.1	52.9	0.9	444.7	14	6	45.0	R-410A	450	1

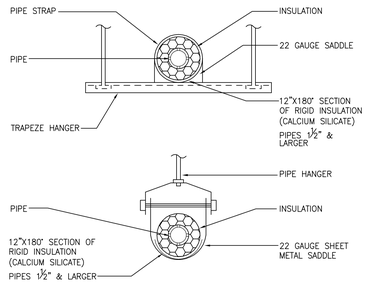
MECH REMARKS:
1. CUSTOM FABRICATED COIL TO FIT EXISTING AHU COOLING COIL CASING. FIELD VERIFY ALL DIMENSIONS.
2. VERIFY EXISTING TEMPERATURE CONROLS AND CONNECT TO NEW EQUIPMENT.



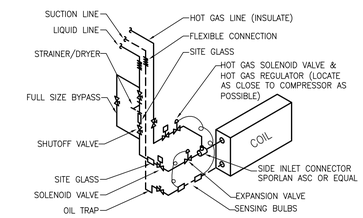
C5 CONDENSING UNIT PIPING
SCALE: NONE



C7 CONDENSING UNIT PIPING
SCALE: NONE



D7 HANGER & INSULATION SADDLES
SCALE: NONE



RECONNECT EXISTING TEMPERARURE CONTROLS TO NEW EQUIPMENT.

F7 DX COIL PIPING
SCALE: NONE

Revisions	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TEBBEN SOUTH DAKOTA
DATE: 9/21/2012

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TSP PROJECT #04121053

Drawing Title: BUILDING-113 SCHEDULES-DETAILS

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 113

Drawing Number: 113-MH-03

Dwg. 8 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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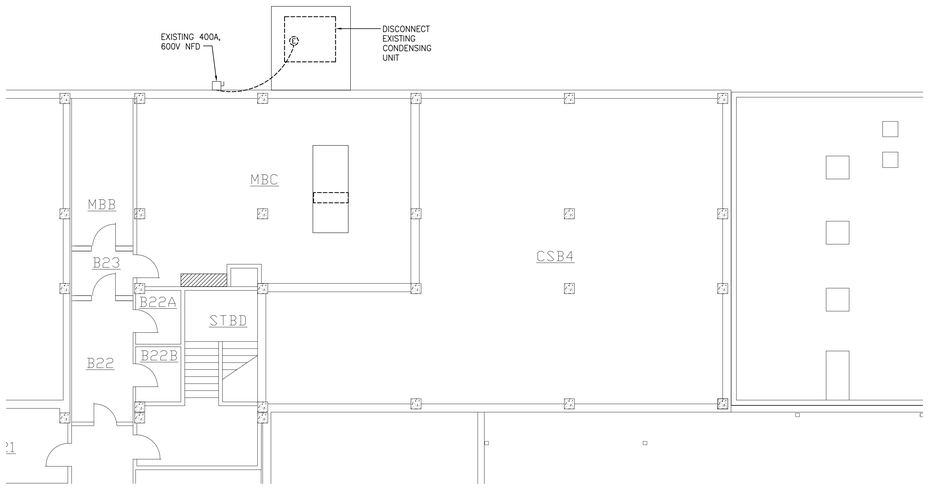
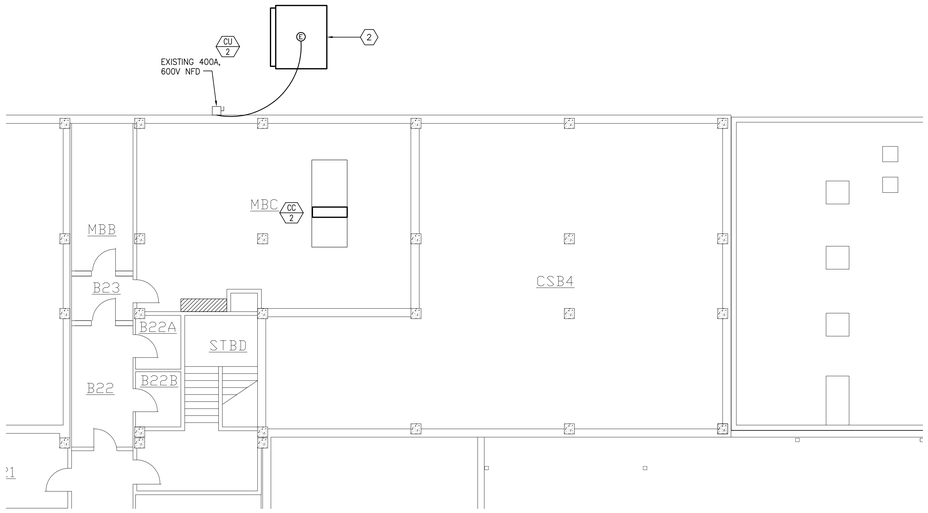


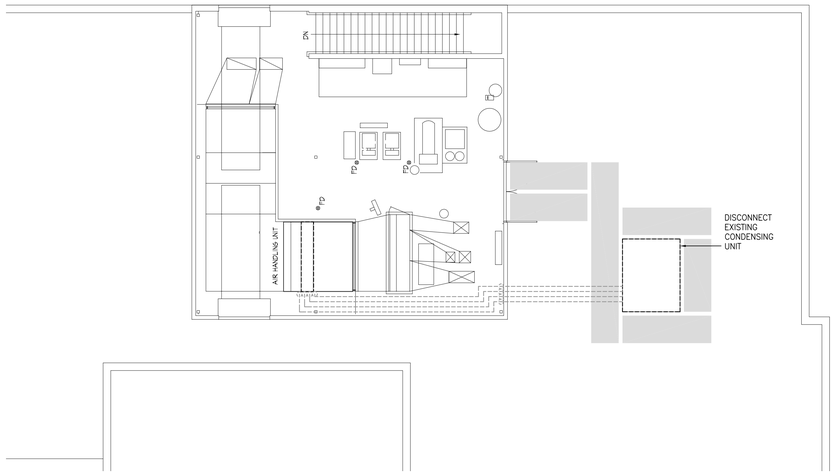
C1 BASEMENT ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



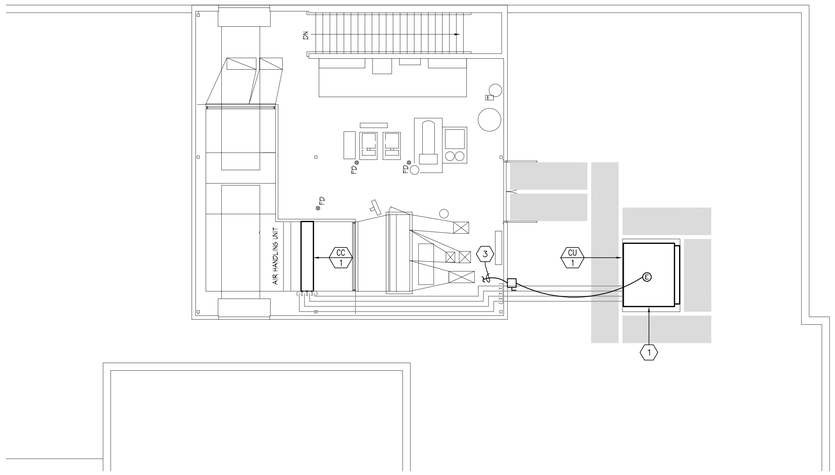
C3 BASEMENT ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



E1 ROOF ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



E3 ROOF ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

SHEET GENERAL NOTES

SHEET KEYNOTES

1. EXISTING CONDENSING UNIT CU-1 (ROOF) IS FED FROM 480V MCC LOCATED IN BASEMENT. DISCONNECT EXISTING CONDENSING UNIT. REMOVE EXISTING 125A FUSES IN MCC AND REPLACE WITH 110A FUSES. PROVIDE DISCONNECT SWITCH AND NEW CONDUCTORS (FOUR 4/0 CU AND ONE #4 CU GROUND IN 2-1/2" CONDUIT) FROM EXTERIOR DISCONNECT TO CU-1.
2. EXISTING CONDENSING UNIT CU-2 (ON GRADE) IS FED FROM 208V MCC LOCATED IN BASEMENT. DISCONNECT OLD CONDENSING UNIT AND RECONNECT EXISTING CIRCUIT TO NEW UNIT. RE-USE EXISTING 400A NFD. EXTEND WIRING TO NEW CONDENSING UNIT AS NEEDED.
3. INTERCEPT EXISTING CIRCUIT PREVIOUSLY SERVING CONDENSING UNIT.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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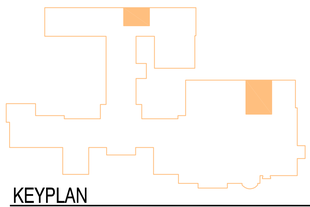

KEYPLAN
SCALE: NTS

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 6729 DARRELL L. BREN DATE: 09-13-12

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www.teamtsp.com
TSP PROJECT #04121053

To Solve. To Excel. Together.

Drawing Title: BUILDING 113 - ELECTRICAL PLANS

Approved Project Director:

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: DLB | Drawn: JNK

Project Number: 568-12-111

Building Number: 113

Drawing Number: 113-EP-01

Dwg. 9 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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C1 FIRST FLOOR DEMOLITION - HVAC PLAN
SCALE: 1/8"=1'-0"

A1 EXISTING ROOFTOP UNIT
SCALE: NONE

PLAN NORTH

GENERAL NOTES

A. COORDINATE DISRUPTION OF SERVICE WITH OWNER

SHEET KEYNOTES

1. REMOVE PACKAGED ROOFTOP HVAC UNIT WITH STEAM HEATING COIL. DISCONNECT DUCTS, PIPING AND CONTOLS. ROOF CURB TO REMAIN. DUCTS AND PIPING THRU ROOF DECK TO REMAIN FOR RECONNECTION TO NEW ROOFTOP UNIT.
2. REMOVE THERMOSTAT CONTROL FOR ROOFTOP UNIT. NEW THERMOSTAT TO BE INSTALLED IN THE SAME LOCATION.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN L. TEBBEN SOUTH DAKOTA
DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #04121053

Drawing Title: BUILDING-146 FIRST-FLOOR-DEMOLITION-HVAC-PLAN

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date	Checked	Drawn
09-21-2012	SMT	RAK

Project Number: 568-12-111

Building Number: 146

Drawing Number: 146-MH-01

Dwg. 10 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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C1 FIRST FLOOR - HVAC PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES

A. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

SHEET KEYNOTES

1. PROVIDE INSULATED CURB ADAPTER TO MATCH NEW ROOFTOP UNIT TO EXISTING ROOF CURB. INSTALL NEW ROOFTOP UNIT AND MAKE NEW DUCT, PIPING AND CONTROL CONNECTIONS ABOVE ROOF DECK. VERIFY DIMENSIONS OF EXISTING ROOF CURB AND LOCATIONS OF DUCTS AND PIPING.
2. INSTALL NEW THERMOSTAT CONTROL FOR NEW ROOFTOP UNIT WHERE EXISTING THERMOSAT IS REMOVED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TEBBEN SOUTH DAKOTA
DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #04121053

Drawing Title
BUILDING-146
FIRST-FLOOR-HVAC-PLAN

Approved: Project Director

Project Title
DEPT. OF V.A. (V23) BHHCS
CHILLER, RTU, COND. UNIT
REPLACEMENT

Location
FORT MEADE, SD

Date	Checked	Drawn
09-21-2012	SMT	RAK

Project Number
568-12-111

Building Number
146

Drawing Number
146-MH-02
Dwg. 11 of 24

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

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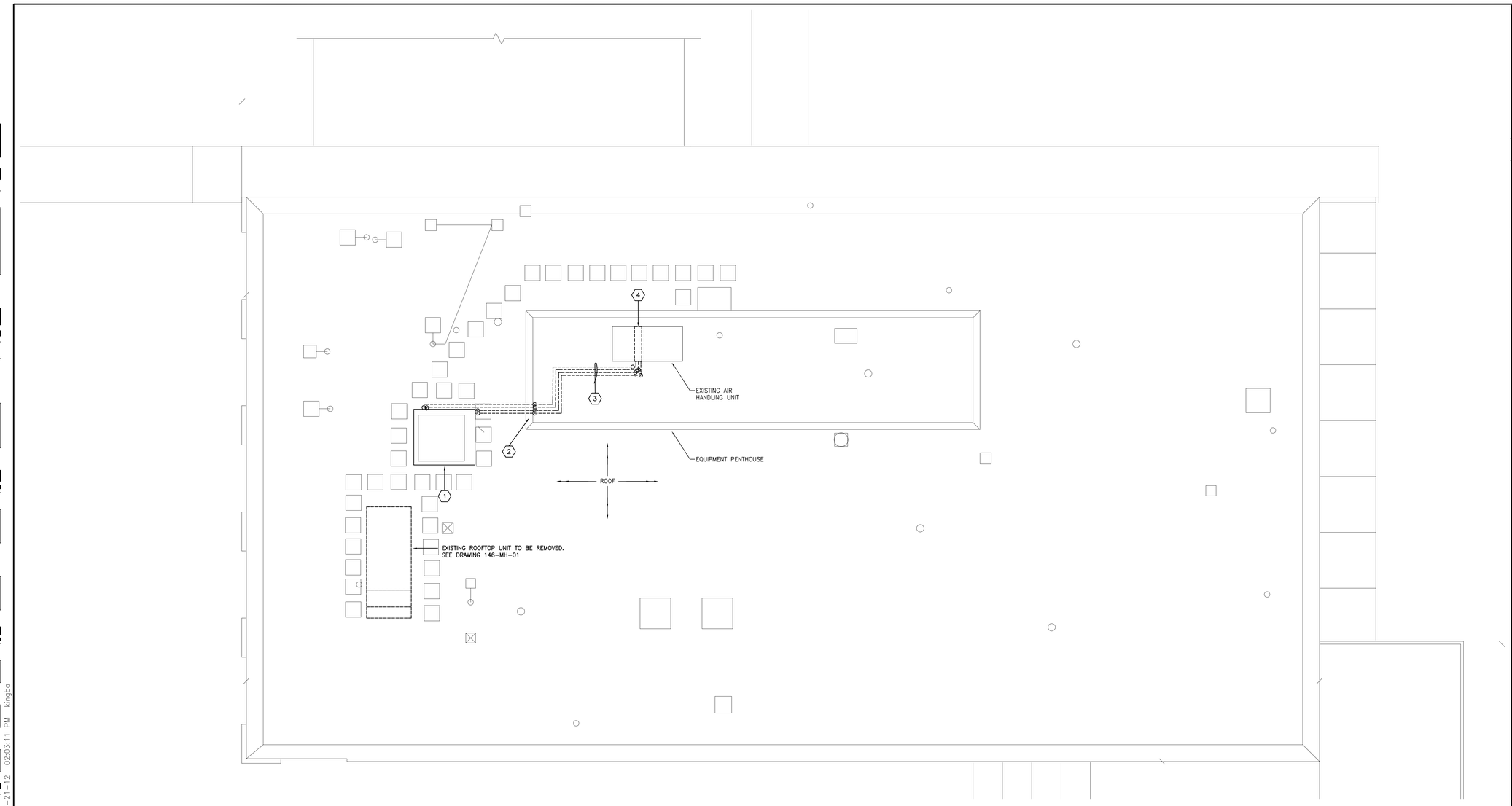

A1 PENTHOUSE-ROOF DEMOLITION- HVAC PLAN
SCALE: 1/8"=1'-0"

A1 EXISTING CONDENSING UNIT
SCALE: NONE

GENERAL NOTES

A. COORDINATE DISRUPTION OF SERVICE WITH OWNER

SHEET KEYNOTES

1. REMOVE AIR COOLED CONDENSING UNIT AND RELATED REFRIGERANT PIPING AND TEMPERATURE CONTROLS. ROOF MOUNTED EQUIPMENT AND PIPING SUPPORTS MAY BE REUSED FOR NEW EQUIPMENT AND REFRIGERANT PIPING.
2. REMOVE REFRIGERANT PIPING THRU THE WALL. OPENINGS IN THE WALL MAY BE REUSED FOR NEW REFRIGERANT PIPING.
3. REMOVE REFRIGERANT PIPING INSIDE THE BUILDING. PIPING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
4. REMOVE EVAPORATOR COILS AND RELATED REFRIGERANT PIPING. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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KEYPLAN
SCALE: NTS

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TERSEN SOUTH DAKOTA
DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #04121053

Drawing Title: BUILDING-146 PENTHOUSE-ROOF-DEMO.-HVAC-PLAN

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date	Checked	Drawn
09-21-2012	SMT	RAK

Project Number: 568-12-111

Building Number: 146

Drawing Number: 146-MH-03

Dwg. 12 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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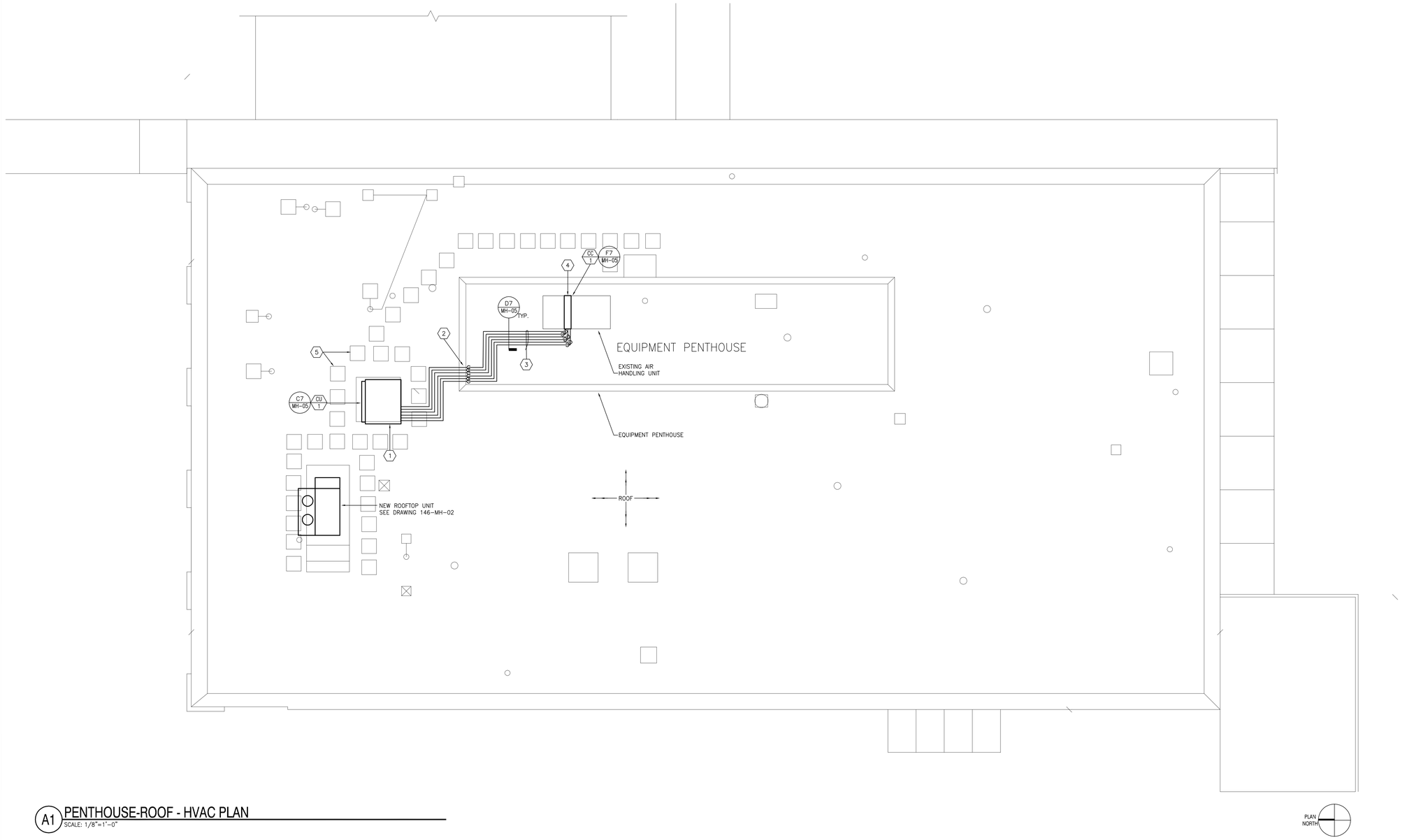

A1 PENTHOUSE-ROOF - HVAC PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES

A. REFRIGERANT PIPING SIZE SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER.

B. REFRIGERANT EXPOSED TO WEATHER SHALL BE HAVE P.V.C. JACKET INSTALLED OVER THE INSULATION. (P.V.C. JACKET TO BE U.V. RESISTANT.)

C. VERIFY EXISTING AHU CAPACITY AND DIMENSIONS FOR NEW EVAPORATOR COIL.

D. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

E. COORDINATE DISRUPTION OF SERVICE WITH OWNER.

SHEET KEYNOTES

1. INSTALL AIR COOLED CONDENSING UNIT WHERE EXISTING UNIT IS REMOVED. PROVIDE NEW REFRIGERANT PIPING AND TEMPERATURE CONTROLS. EXISTING ROOF SUPPORTS SHALL BE REUSED AND ADDED TO AS NECESSARY FOR NEW CONDENSING UNIT.
2. INSTALL REFRIGERANT PIPING THRU THE WALL. EXISTING WALL OPENINGS MAY BE REUSED FOR NEW REFRIGERANT PIPING. SEAL OPENING AROUND NEW PIPING AIRTIGHT.
3. INSTALL REFRIGERANT PIPING INSIDE THE BUILDING. EXISTING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
4. INSTALL NEW EVAPORATOR COILS WHERE EXISTING COILS ARE REMOVED. PROVIDE NEW REFRIGERANT PIPING CONNECTIONS TO THE COILS.
5. REPOSITION WALK PADS AS NEEDED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

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KEYPLAN
SCALE: NTS

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3516 STEVEN M. TEBBEN SOUTH DAKOTA
DATE: 9/21/2012

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TSP PROJECT #04121053
To Solve. To Excel. Together.

Drawing Title: BUILDING-146 PENTHOUSE-ROOF-HVAC-PLAN

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date	Checked	Drawn
09-21-2012	SMT	RAK

Project Number: 568-12-111

Building Number: 146

Drawing Number: 146-MH-04

Dwg. 13 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

G:\2012\041210S3 Dept of VA (V23)_BHHCS Chiller RTU Cond Unit\D-Drawings\Mechanical\+146-MH-04.dwg 9-21-12 02:04:16 PM kingbo

ROOF TOP UNIT SCHEDULE

MECHANICAL REQUIREMENTS – GENERAL INFORMATION / SUPPLY FAN

UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	OUTSIDE AIR MIN %	OUTSIDE AIR CFM	SUPPLY FAN CFM	EXT. SP (IN.)	RPM	BHP	HP
RTU-1	ROOF	CANTEEN / F.S.	AAON RNC-8-0-AB02-CHM	15	1200	8000	2.00	1400.0	5.0	7.5

MECHANICAL REQUIREMENTS – HEATING SECTION

UNIT NO.	STM. COIL TYPE	STM COIL ROWS	STM. PR. LBS.	EAT (DEG. F)	LAT (DEG. F)	AIR P.D.	FACE AREA	OUTPUT MBH
RTU-1	5JA	1	30.0	53	107	0.05	20.3	468

MECHANICAL REQUIREMENTS – COOLING SECTION

UNIT NO.	CAPACITY TONS	T.H. CAP. MBH	S.H. CAP. MBH	EAT (DEG. F) DB/WB	LAT (DEG. F) DB/WB	EER	REFRIGERANT	AMBIENT (DEG. F)	REF. CIRCUITS	COMP. NO.	COMP. HP	COND. FAN NO.	COND. FAN HP	CURB HGT IN. ABV ROOF	MECH REMARKS
RTU-1	18.0	256.0	198.0	80/67	55/53	11.7	R-410A	95	2	3	10.0,4.5,4.5	2	1	18	

ELECTRICAL REQUIREMENTS

UNIT NO.	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	STARTER TYPE	STARTER SIZE	STARTER LOCATION	STARTER CNTRL. DVC.	STARTER AUX.	STARTER BY	CONTROL	DISCONNECT TYPE	DISCONNECT BY	ELEC REMARKS
RTU-1	208/3	95	EXIST	INTEGRAL	–	IN UNIT	–	–	MC	TCC	IN UNIT	MC	

MECH REMARKS:
1. PROVIDE AN INSULATED ADAPTER BASE TO MATCH NEW RTU TO EXISTING ROOF CURB.
2. PROVIDE SINGLE POINT POWER CONNECTION AND FACTORY INSTALLED ELECTRICAL DISCONNECT.
3. PROVIDE PROGRAMMABLE THERMOSTAT.

AIR COOLED CONDENSING UNIT SCHEDULE

MECHANICAL REQUIREMENTS

UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	COOLING CAP. MBH	TONS	TOTAL WATTS	AMB. TEMP. (DEG. F)	SUCT. TEMP (DEG. F)	EER	COND. FAN	COMP.	REF. CKT.	REFRIGERANT TYPE	MECH REMARKS
CU-1	ROOF	CC-1	MCQUAY RCS-040D	444.7	37.5	51,604	95	45	11.3	4	4	2	R-410A	1,2,3

ELECTRICAL REQUIREMENTS

UNIT NO.	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	STARTER TYPE	STARTER SIZE	STARTER LOCATION	STARTER CNTRL. DVC.	STARTER AUX.	STARTER BY	CONTROL	DISCONNECT TYPE	DISCONNECT BY	ELEC REMARKS
CU-1	208/3	159	EXISTING	IN UNIT	–	–	–	–	MC	TCC	NFD	EC	E1

MECH REMARKS:
1. HOT GAS BYPASS.
2. SINGLE POINT POWER CONNECTION.
3. WITH COIL GAURDS.
4. VERIFY EXISTING TEMPERATURE CONTROLS AND CONNECT TO NEW EQUIPMENT.

ELEC REMARKS:
E1. ELECTRICAL CONTRACTOR SHALL PROVIDE A 3-POLE, HEAVY DUTY, NON-FUSED DISCONNECT IN NEMA 3R ENCLOSURE.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

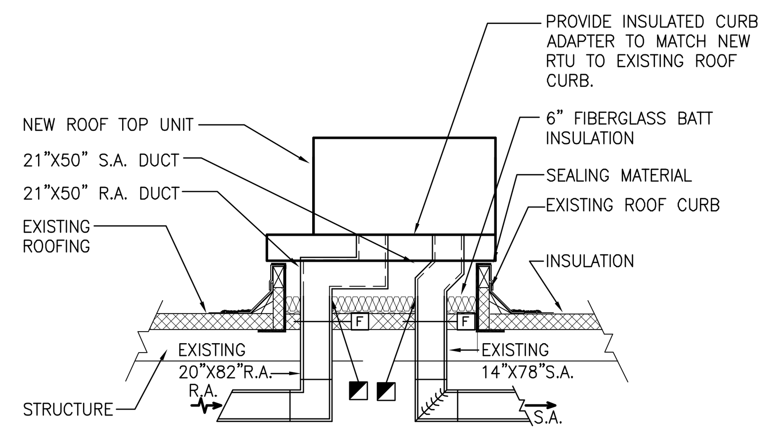
ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.

COOLING COIL SCHEDULE

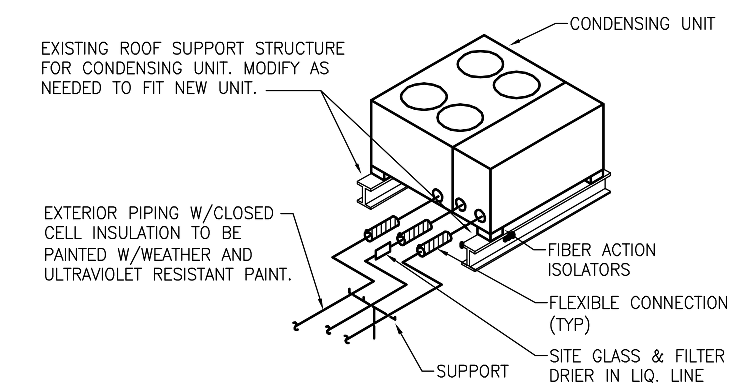
MECHANICAL REQUIREMENTS

DESIG	SERVES	MANUFACT. DESIG.	TYPE	CLG CFM	ENT AIR DB	ENT AIR WB	LVG AIR DB	LVG AIR WB	APD	MBH	FINS / IN.	ROWS	SUCTION TEMP.	REF.	FACE VEL.	MECH REMARKS
CC-1	AHU-1	AAON	DX	12,000	95.0	65.0	55.6	50.6	0.43	476.8	14	6	45.0	R-410A	390	1

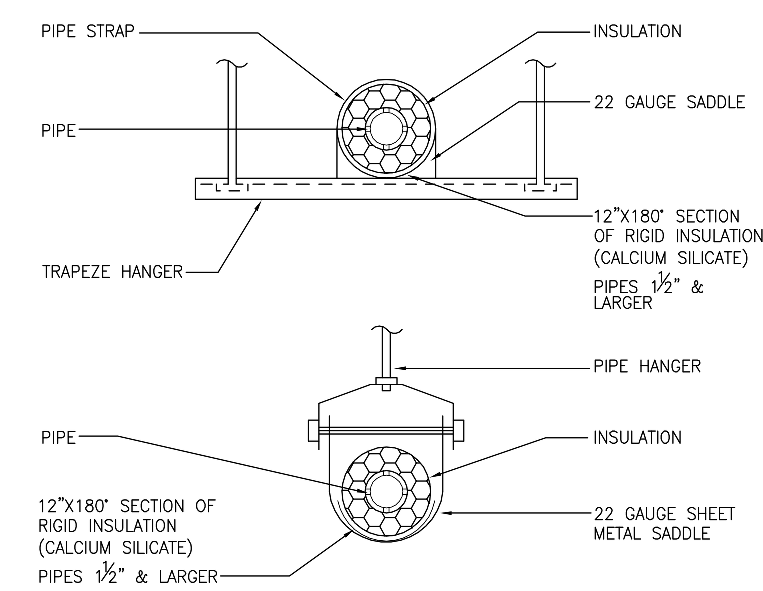
MECH REMARKS:
1. CUSTOM FABRICATED COIL TO FIT EXISTING AHU COOLING COIL CASING. FIELD VERIFY ALL DIMENSIONS.



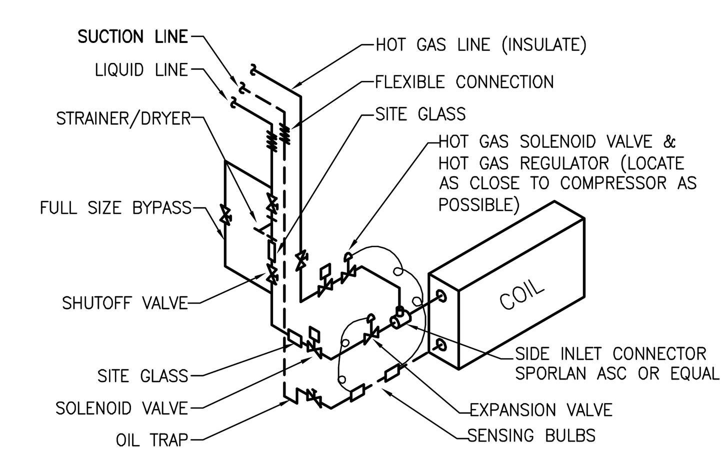
C5 ROOFTOP UNIT
SCALE: NONE



C7 CONDENSING UNIT PIPING
SCALE: NONE



D7 HANGER & INSULATION SADDLES
SCALE: NONE



F7 DX COIL PIPING
SCALE: NONE

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TEBBEN SOUTH DAKOTA
DATE: 9/21/2012

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TSP PROJECT #04121053
To Solve. To Excel. Together.

Drawing Title: BUILIDING-146 SCHEDULES-DETAILS

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 146

Drawing Number: 146-MH-05

Dwg. 14 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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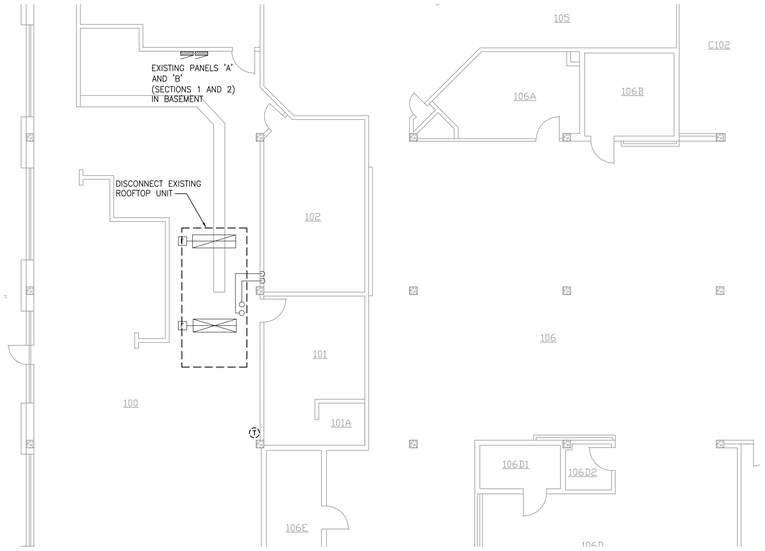
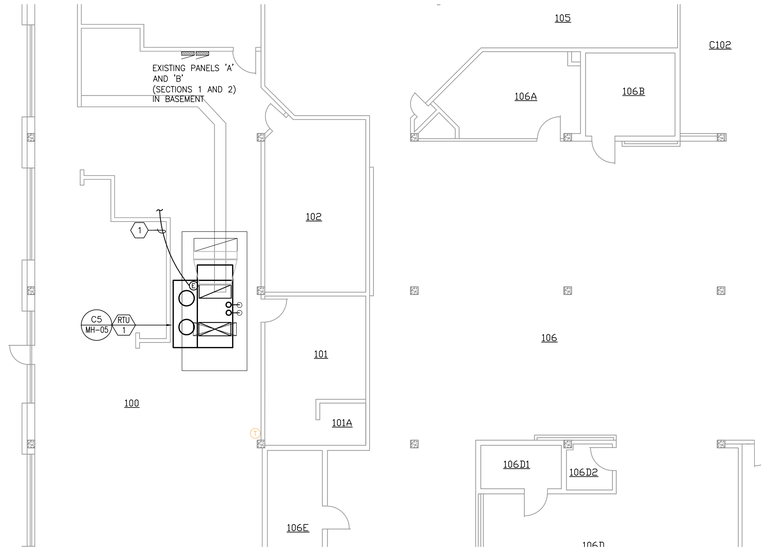


C1 FIRST FLOOR ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

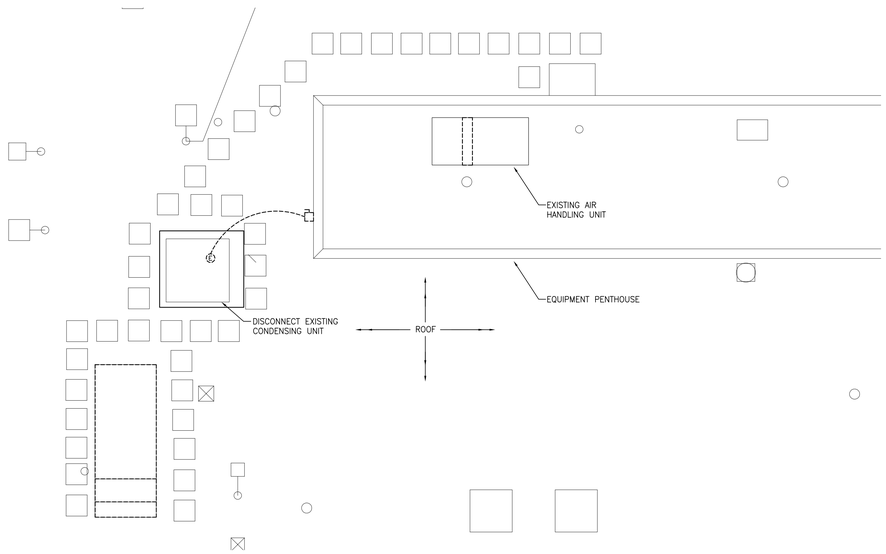
PLAN NORTH



C5 FIRST FLOOR ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

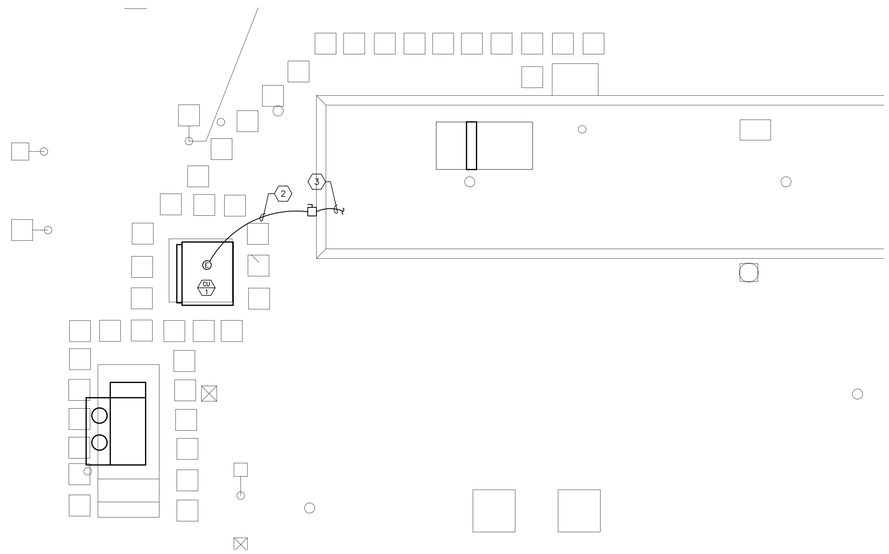
PLAN NORTH



E1 ROOF ELECTRICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"

PLAN NORTH



E5 ROOF ELECTRICAL PLAN

SCALE: 1/8" = 1'-0"

PLAN NORTH

SHEET GENERAL NOTES

A. ROOFTOP UNIT SHALL SHUT DOWN UPON SENSING SMOKE IN RETURN AIR SYSTEM PER INTERNATIONAL MECHANICAL CODE. INTERLOCK WITH EXISTING FIRE ALARM SYSTEM FOR SHUT DOWN. PROVIDE ALL COMPONENTS NECESSARY FOR PROPER OPERATION.

SHEET KEYNOTES

1. DISCONNECT EXISTING ROOFTOP UNIT CIRCUIT AND EXTEND CIRCUIT TO NEW ROOFTOP UNIT. CONNECT NEW ROOFTOP UNIT RTU-1 TO NEW 125A/3-POLE CIRCUIT BREAKER IN EXISTING PANEL 'B' LOCATED IN BASEMENT. REMOVE EXISTING CIRCUIT BREAKER IN PANEL 'B' PREVIOUSLY SERVING OLD RTU.
2. DISCONNECT EXISTING CONDENSING UNIT CIRCUIT AND EXTEND CIRCUIT TO NEW CONDENSING UNIT. CONNECT NEW CONDENSING UNIT CU-1 TO BRANCH CIRCUIT PREVIOUSLY SERVING CONDENSING UNIT.
3. INTERCEPT EXISTING CIRCUIT PREVIOUSLY SERVING CONDENSING UNIT.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.

KEYPLAN

SCALE: NTS

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 6729 DARRELL L. BREN STATE OF SOUTH DAKOTA DATE: 09-13-12

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TSP PROJECT #04121053

Drawing Title	BUILDING 146 - ELECTRICAL PLANS
Approved Project Director	
Project Title	DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT
Location	FORT MEADE, SD
Date	09-21-2012
Checked	DLB
Drawn	JNK
Project Number	568-12-111
Building Number	146
Drawing Number	146-EP-01
	Dwg. 15 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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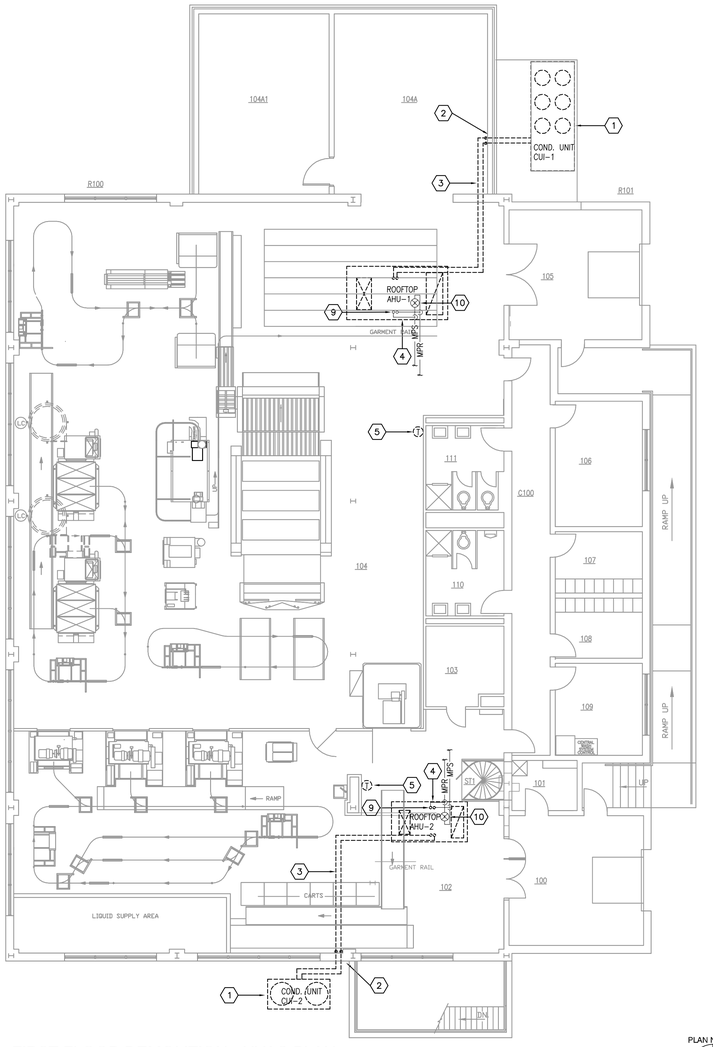
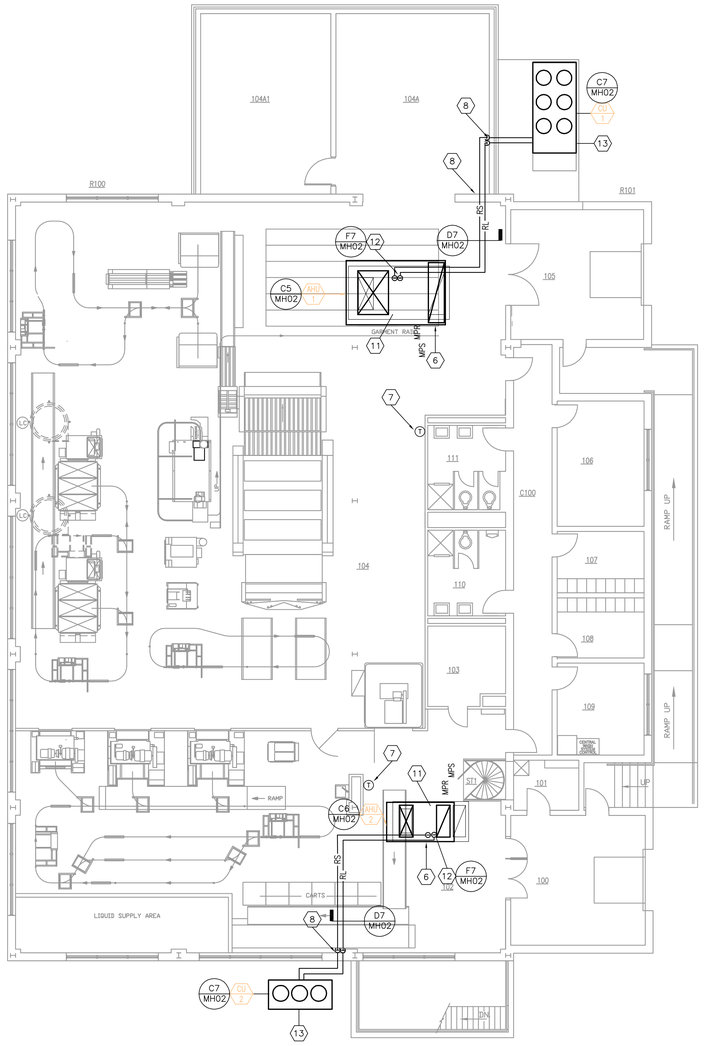


A1 FIRST FLOOR DEMOLITION - HVAC PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH



A3 FIRST FLOOR - HVAC PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH

A1 EXISTING ROOFTOP AHU-1
SCALE: NONE

A1 EXISTING ROOFTOP AHU-2
SCALE: NONE

A1 EXISTING CONDENSING UNIT CU-1
SCALE: NONE

A1 EXISTING CONDENSING UNIT CU-2
SCALE: NONE

GENERAL NOTES

A. REFRIGERANT PIPING SIZE SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER.

B. REFRIGERANT EXPOSED TO WEATHER SHALL BE HAVE P.V.C. JACKET INSTALLED OVER THE INSULATION. (P.V.C. JACKET TO BE U.V. RESISTANT.)

C. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

D. COORDINATE DISRUPTION OF SERVICE WITH OWNER.

SHEET KEYNOTES

1. REMOVE AIR COOLED CONDENSING UNIT AND RELATED REFRIGERANT PIPING AND TEMPERATURE CONTROLS.
2. REMOVE REFRIGERANT PIPING THRU THE WALL.
3. REMOVE REFRIGERANT PIPING INSIDE THE BUILDING.
4. REMOVE ROOFTOP AHU WITH STEAM HEATING AND DX COOLING COILS AND RELATED PIPING. ROOF CURB TO REMAIN.
5. REMOVE THERMOSAT CONTROL FOR CONDENSING UNIT AND ROOFTOP AIR HANDLING UNIT.
6. PROVIDE INSULATED CURB ADAPTER TO MATCH NEW ROOFTOP AHU UNIT TO EXISTING ROOF CURB. INSTALL NEW ROOFTOP UNIT AND MAKE NEW DUCT, PIPING AND CONTROL CONNECTIONS.
7. INSTALL NEW THERMOSTAT CONTROL FOR NEW ROOFTOP UNIT WHERE EXISTING THERMOSAT IS REMOVED.
8. INSTALL NEW REFRIGERANT PIPING THRU HOLE WHERE PIPING IS REMOVED. SEAL AREA AROUND PIPING AIR TIGHT.
9. 2" MED. PRESS. STEAM AND 1 1/4" MED. PRESS. CONDENSATE PIPING TO REMAIN. DISCONNECT AT COIL CONNECTIONS ABOVE ROOF.
10. END OF MAIN STEAM TRAP TO REMAIN.
11. MAKE NEW 2" MPS AND 1 1/4" MPR PIPING CONNECTIONS TO ROOFTOP AHU. CONNECT TO EXISTING PIPING RISERS.
12. MAKE NEW REFRIGERANT PIPING CONNECTIONS TO NEW ROOFTOP AHU.
13. LOCATE NEW CONDENSING UNIT ON CONCRETE EQUIPMENT PAD WHERE OLD CONDENSING UNIT IS REMOVED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3610 STEVEN M. TOBIAS SOUTH DAKOTA
DATE: 9/21/2012

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TSP PROJECT #041210S3

Drawing Title: BUILDING-147 FIRST-FLOOR-HVAC-PLAN

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 147

Drawing Number: 147-MH-01

Dwg. 16 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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ROOFTOP AIR HANDLING UNIT SCHEDULE

GENERAL INFORMATION													MECHANICAL REQUIREMENTS – STEAM HEATING COIL										DX COOLING COIL									ELECTRICAL REQUIREMENTS											
UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	CFM	O.A. CFM	TOTAL SP (IN)	ESP (IN)	RPM	HP	WHEEL SIZE (IN)	WHEEL TYPE	FILTERS	FACE AREA	TYPE	ROWS	FINS /IN.	FACE VEL. FPM	EAT (DEG. F)	LAT (DEG. F)	APD (IN)	STM. PRESS.	CAPACITY MBH	FACE AREA	TYPE	ROWS	FIN SERIES	EAT DB/WB	LAT (DEG. F)	APD (IN)	SUCT. TEMP. F	CAPACITY MBH	REFRIG. TYPE	MECH. REMARKS	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	STARTER TYPE	STARTER SIZE	STARTER LOCATION	STARTER CNTRL. DVC.	STARTER AUX.	STARTER BY	CONTROL	DISCONNECT TYPE	DISCONNECT BY	ELEC. REMARKS
AHU-1	ROOF	LAUNDRY 100	AAON RND-8-0-A402-CHM	10900	4690	3.00	2.00	1450	7.5	27	BI	MERV-8	18.75	5JA	1	12	537	35	100.0	0.19	30	765.2	31.80	DX	6	14	89.3/87.0	55.0	0.34	45	451.2	R-410A	1,2,3,4,5	208/3	32	#6	FVNR	1	AT UNIT	–	2 NC, 2 NO	DIV 16	TCC	–	DIV 16	E1
AHU-2	ROOF	SORTING 105	AAON RNC-8-0-A402-CHM	4460	4460	2.50	2.00	1400	3.0	24.5	BI	MERV-8	7.28	5JA	1	12	222	-20	80.0	0.21	30	481.7	19.50	DX	6	14	86.7/64.1	55.0	0.19	45	190.8	R-410A	1,2,3,4,5	208/3	14	#12	FVNR	0	AT UNIT	–	2 NC, 2 NO	DIV 16	TCC	–	DIV 16	E1

MECH. REMARKS:
1. UNIT SHALL BE HORIZONTAL DRAW THROUGH, LOW PRESSURE.
2. UNIT SHALL BE COMPLETE WITH MIXING BOX, FACE AND BYPASS DAMPERS, ACCESS SECTIONS INCLUDING ACCESSIBLE PIPING VESTIBULE.
3. FILTERS SHALL BE THROW AWAY, 2" OR 4" THICK, MINIMUM 30% EFFICIENCY BASED ON DOP METHOD, APD= 0.50 (MAXIMUM).
4. UNIT SHALL BE SEALED AND INSULATED FOR OUTDOOR INSTALLATION ON A ROOF CURB.
5. SCHEDULED STEAM PRESSURE IS UPSTREAM OF CONTROL VALVE. SIZE STEAM COIL AT 5 PSIG STEAM PRESSURE.

ELEC. REMARKS:

E1. PROVIDE A FULL VOLTAGE, NON-REVERSING COMBINATION STARTER/DISCONNECT SWITCH IN NEMA 3R ENCLOSURE. STARTER SHALL BE EQUIPPED WITH TWO NORMALLY OPEN AND TWO NORMALLY CLOSED AUXILIARY CONTACTS. INTERLOCK WITH EXISTING TEMPERATURE CONTROLS AND FIRE ALARM SYSTEM.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

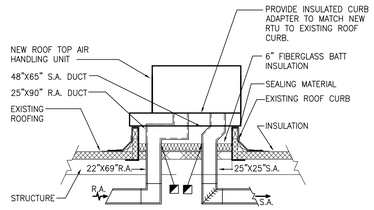
ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.

AIR COOLED CONDENSING UNIT SCHEDULE

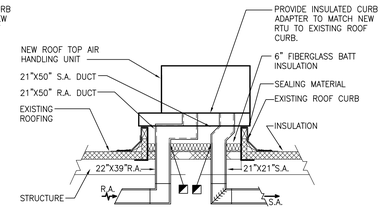
MECHANICAL REQUIREMENTS															ELECTRICAL REQUIREMENTS											
UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	COOLING CAP. MBH	TONS	TOTAL WATTS	AMB. TEMP. (DEG. F)	SUCT. TEMP (DEG. F)	EER	COND. FAN	COMP.	REF. CKT.	REFRIGERANT TYPE	MECH REMARKS	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	STARTER TYPE	STARTER SIZE	STARTER LOCATION	STARTER CNTRL. DVC.	STARTER AUX.	STARTER BY	CONTROL	DISCONNECT TYPE	DISCONNECT BY	ELEC REMARKS
CU-1	GROUND	AHU-1	MCQUAY RCS-040D	444.7	37.5	51,604	95	45		4	4	2	R-410A	1,2,3	208/3	159	EXISTING	IN UNIT	–	–	–	–	MC	TCC	NFD	EC	E1
CU-2	GROUND	AHU-2	MCQUAY RCS-20F	259.4	21.6	21,700	95	45		3	2	1	R-410A	1,2,3	208/3	83	EXISTING	IN UNIT	–	–	–	–	MC	TCC	NFD	EC	E1

MECH REMARKS:
1. SINGLE POINT POWER CONNECTION.
2. WITH COIL GAURDS.
3. VERIFY EXISTING TEMPERATURE CONTROLS AND CONNECT TO NEW EQUIPMENT.

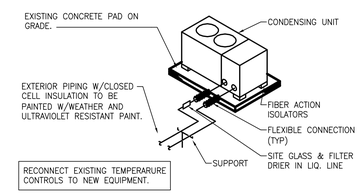
ELEC REMARKS:
E1. PROVIDE A 200A, HEAVY DUTY, NON-FUSED DISCONNECT IN NEMA 3R ENCLOSURE.



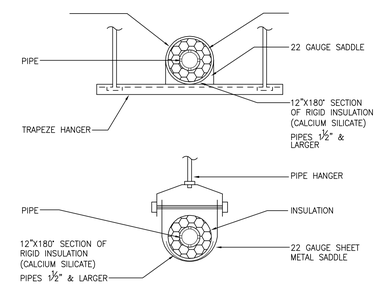
C5 ROOFTOP AIR HANDLING UNIT - 1
SCALE: NONE



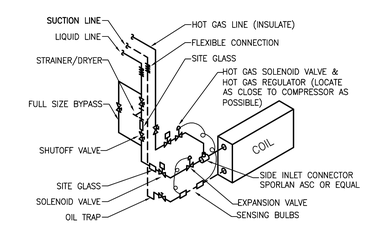
C6 ROOFTOP AIR HANDLING UNIT - 2
SCALE: NONE



C7 CONDENSING UNIT PIPING
SCALE: NONE



D7 HANGER & INSULATION SADDLES
SCALE: NONE



F7 DX COIL PIPING
SCALE: NONE

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TESCHER SOUTH DAKOTA
DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #041121053

Drawing Title: BUILDING-147 SCHEDULES-DETAILS

Approved Project Director:

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 147

Drawing Number: 147-MH-02

Dwg. 17 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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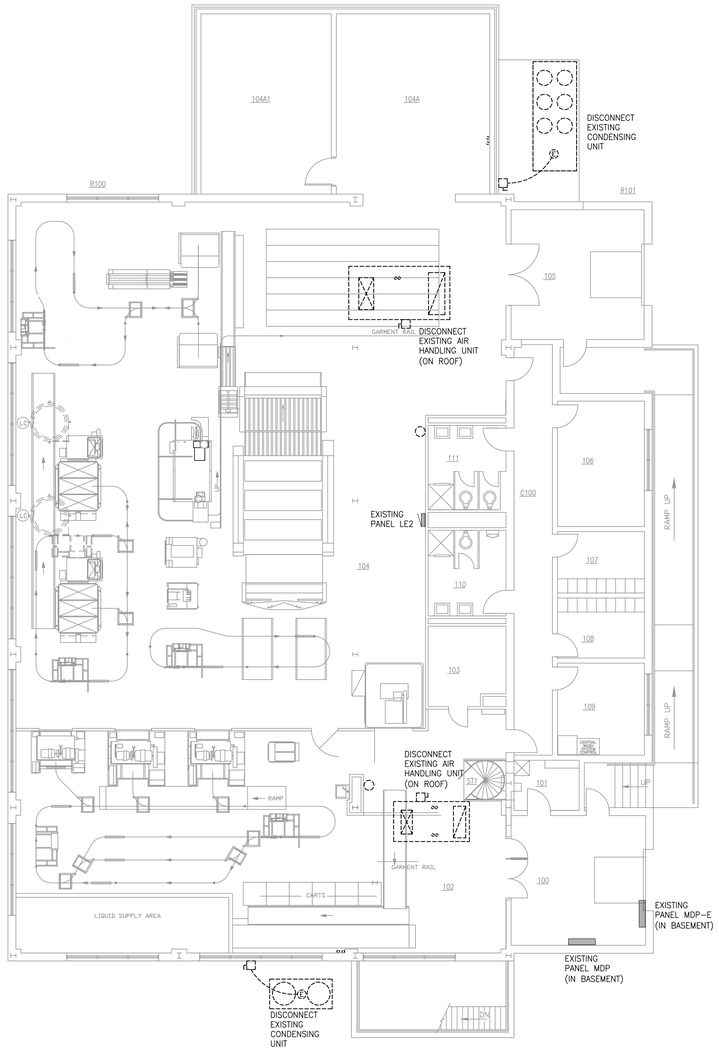
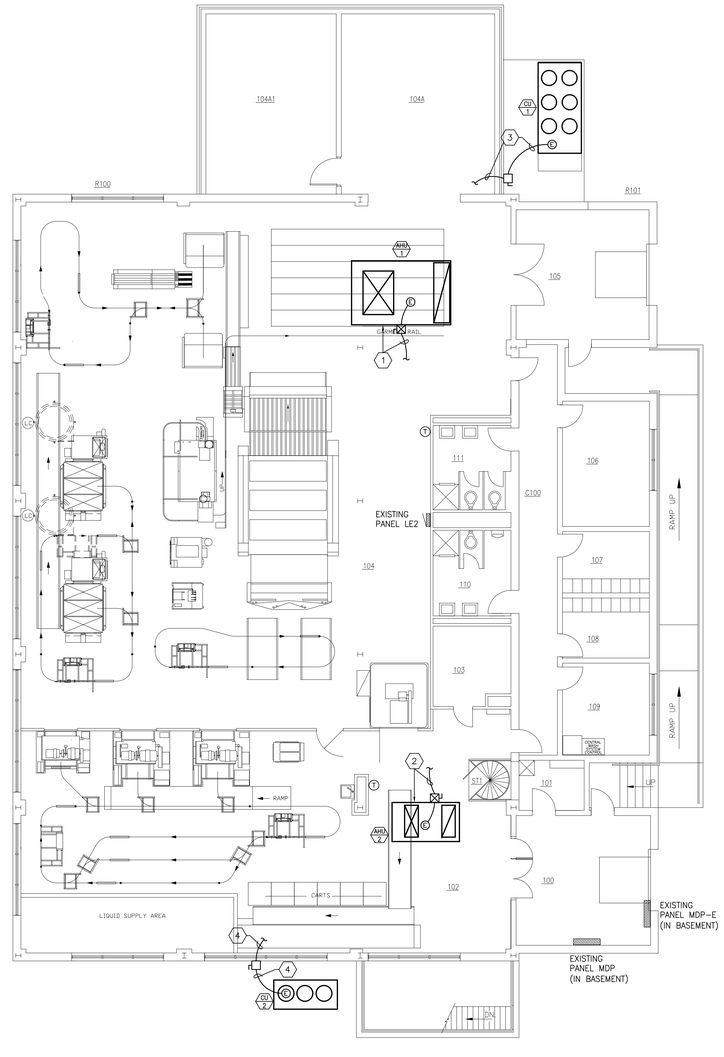


E1 FIRST FLOOR ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



E3 FIRST FLOOR ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

SHEET GENERAL NOTES

A. ROOFTOP AIR HANDLING UNITS SHALL SHUT DOWN UPON SENSING SMOKE IN RETURN AIR SYSTEM PER INTERNATIONAL MECHANICAL CODE. INTERLOCK WITH EXISTING FIRE ALARM SYSTEM FOR SHUT DOWN. PROVIDE ALL COMPONENTS NECESSARY FOR PROPER OPERATION.

SHEET KEYNOTES

1. CONNECT NEW AIR HANDLING UNIT TO EXISTING 50A, 3-POLE CIRCUIT BREAKER IN EXISTING PANEL LE2.
2. CONNECT NEW AIR HANDLING UNIT TO NEW 20A, 3-POLE CIRCUIT BREAKER IN EXISTING PANEL LE2. REMOVE EXISTING BREAKER SERVING OLD AIR HANDLER AND SALVAGE TO OWNER.
3. CONNECT NEW CONDENSING UNIT CU-1 TO A NEW 175A, 3-POLE CIRCUIT BREAKER IN EXISTING MDP. REMOVE BREAKER PREVIOUSLY SERVING OLD CONDENSING UNIT AND SALVAGE TO OWNER. RE-USE EXISTING CIRCUIT CONDUCTORS AND EXTEND AS NEEDED.
4. CONNECT NEW CONDENSING UNIT CU-2 TO A NEW 110A, 3-POLE CIRCUIT BREAKER IN EXISTING MDP. REMOVE BREAKER PREVIOUSLY SERVING OLD CONDENSING UNIT AND SALVAGE TO OWNER. RE-USE EXISTING CIRCUIT CONDUCTORS AND EXTEND AS NEEDED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 6729 DARRELL L. BREN DATE: 09-13-12

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TSP PROJECT #04121053

Drawing Title: BUILDING 147 - ELECTRICAL PLANS	Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT		Project Number: 568-12-111
Approved: Project Director	Location: FORT MEADE, SD		Building Number: 147
	Date: 09-21-2012	Checked: DLB / Drawn: JNK	Drawing Number: 147-EP-01
			Dwg. 18 of 24

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

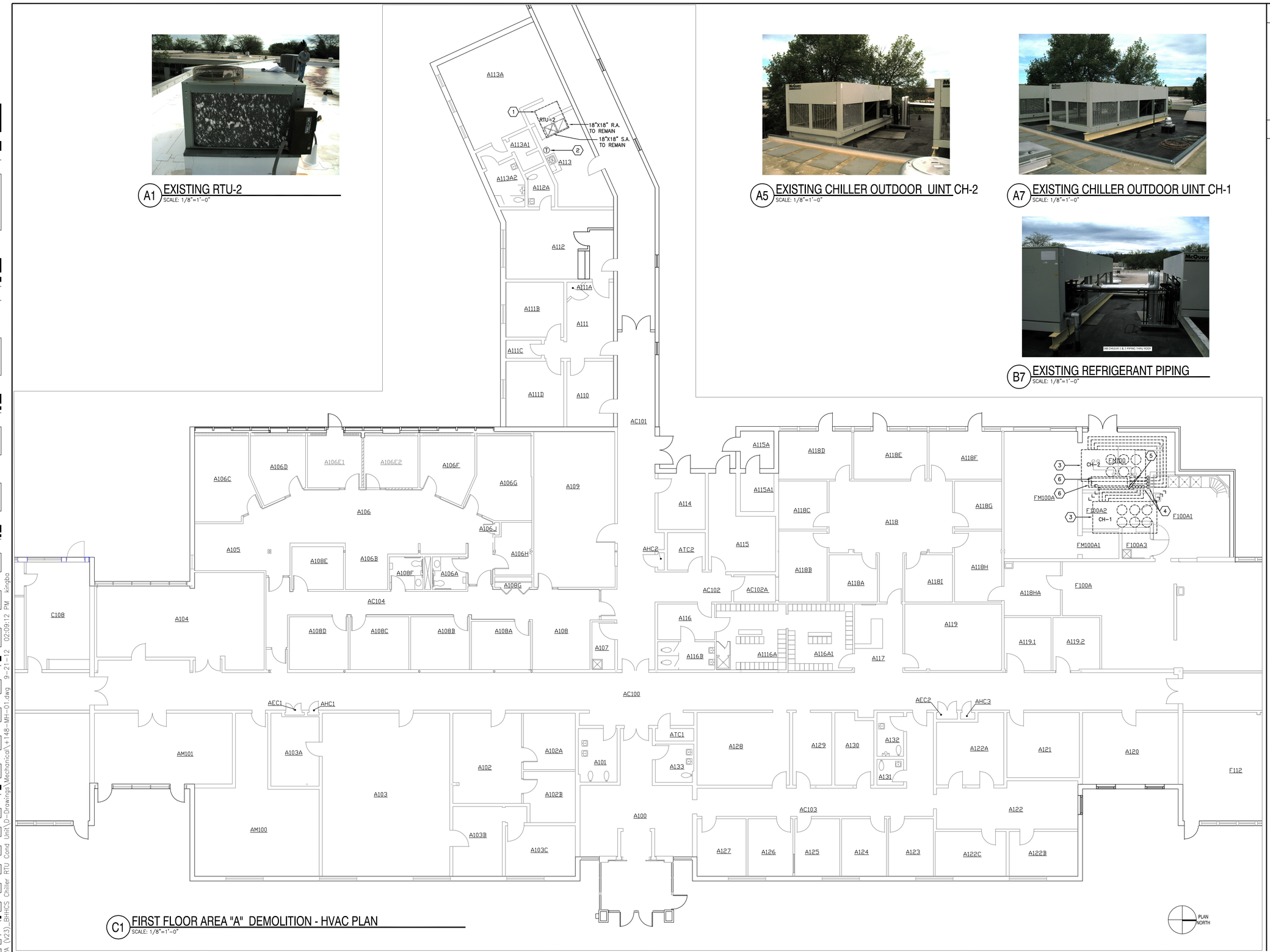
C:\2012\04121053 Dept of VA (V23) BHHCS Chiller RTU Cond Unit\D-Drawings\Electrical\147-EP-01.dwg 9-21-12 01:38:26 PM kingbo

A1 EXISTING RTU-2
SCALE: 1/8"=1'-0"

A5 EXISTING CHILLER OUTDOOR UINT CH-2
SCALE: 1/8"=1'-0"

A7 EXISTING CHILLER OUTDOOR UINT CH-1
SCALE: 1/8"=1'-0"

B7 EXISTING REFRIGERANT PIPING
SCALE: 1/8"=1'-0"



C1 FIRST FLOOR AREA "A" DEMOLITION - HVAC PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES

A. COORDINATE DISRUPTION OF SERVICE WITH OWNER

SHEET KEYNOTES

1. REMOVE PACKAGED ROOFTOP HVAC UNIT. DISCONNECT DUCTS AND CONTOLS. ROOF CURB TO REMAIN.
2. REMOVE THERMOSTAT CONTROL FOR ROOFTOP UNIT. NEW THERMOSTAT TO BE INSTALLED IN THE SAME LOCATION.
3. REMOVE AIR COOLED CONDENSING UNIT AND RELATED REFRIGERANT PIPING AND TEMPERATURE CONTROLS. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
4. REMOVE REFRIGERANT PIPING THRU THE ROOF. OPENINGS IN THE ROOF MAY BE REUSED FOR NEW REFRIGERANT PIPING.
5. REMOVE REFRIGERANT PIPING INSIDE THE BUILDING. PIPING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
6. REMOVE EVAPORATOR TUBE BUNDLE AND RELATED REFRIGERANT PIPING. PIPING SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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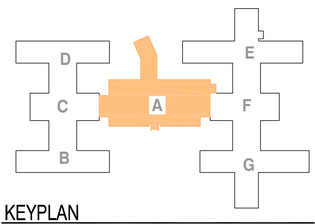

KEYPLAN
SCALE: NTS

Revisions	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TESDAHL SOUTH DAKOTA
DATE: 9/21/2012

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TSP PROJECT #04121053

Drawing Title: BUILDING-148 AREA"A"-DEMOLITION-HVAC-PLAN

Approved Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date	Checked	Drawn
09-21-2012	SMT	RAK

Project Number: 568-12-111

Building Number: 148

Drawing Number: 148-MH-01

Dwg. 19 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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C1 FIRST FLOOR AREA "A" - HVAC PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES

A. REFRIGERANT PIPING SIZE SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER.

B. REFRIGERANT EXPOSED TO WEATHER SHALL BE HAVE P.V.C. JACKET INSTALLED OVER THE INSULATION. (P.V.C. JACKET TO BE U.V. RESISTANT.)

C. VERIFY EXISTING AHU CAPACITY AND DIMENSIONS FOR NEW EVAPORATOR COIL.

D. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

E. COORDINATE DISRUPTION OF SERVICE WITH OWNER.

SHEET KEYNOTES

1. PROVIDE INSULATED CURB ADAPTER TO MATCH NEW ROOFTOP UNIT TO EXISTING ROOF CURB. INSTALL NEW ROOFTOP UNIT AND MAKE NEW DUCT AND CONTROL CONNECTIONS.
2. INSTALL NEW THERMOSTAT CONTROL FOR NEW ROOFTOP UNIT WHERE EXISTING THERMOSAT IS REMOVED.
3. INSTALL AIR COOLED CONDENSING UNIT WHERE EXISTING UNIT IS REMOVED. PROVIDE NEW REFRIGERANT PIPING AND TEMPERATURE CONTROLS. EXISTING ROOF SUPPORTS SHALL BE REUSED AND ADDED TO FOR NEW CONDENSING UNIT.
4. INSTALL REFRIGERANT PIPING THRU THE ROOF. EXISTING ROOF OPENINGS MAY BE REUSED FOR NEW REFRIGERANT PIPING. SEAL OPENING AROUND NEW PIPING AIRTIGHT.
5. INSTALL REFRIGERANT PIPING INSIDE THE BUILDING. EXISTING HANGERS AND SUPPORTS MAY BE REUSED FOR NEW REFRIGERANT PIPING.
6. INSTALL NEW EVAPORATOR TUBE BUNDLES WHERE EXISTING TUBE BUNDLES ARE REMOVED. PROVIDE NEW REFRIGERANT PIPING CONNECTIONS TO THE TUBE BUNDLES.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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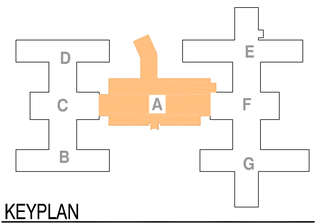

KEYPLAN
SCALE: NTS

Revisions	Date

CONSULTANTS:

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TSP PROJECT #04121053

Drawing Title: BUILDING-148 AREA"A"-HVAC-PLAN

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date	Checked	Drawn
09-21-2012	SMT	RAK

Project Number: 568-12-111

Building Number: 148

Drawing Number: 148-MH-02

Dwg. 20 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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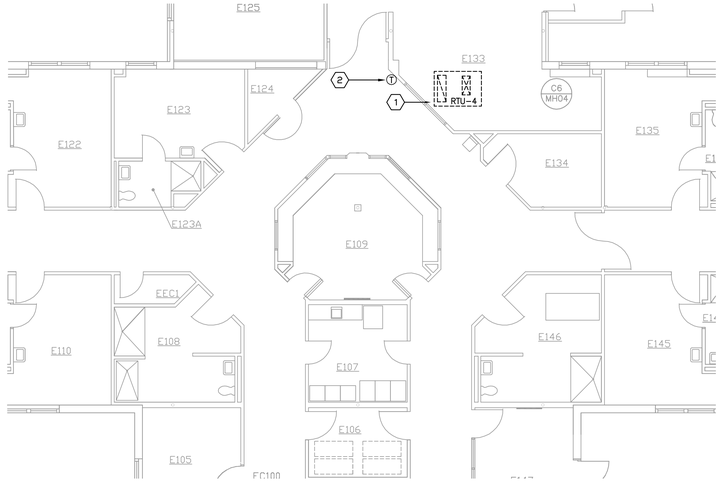
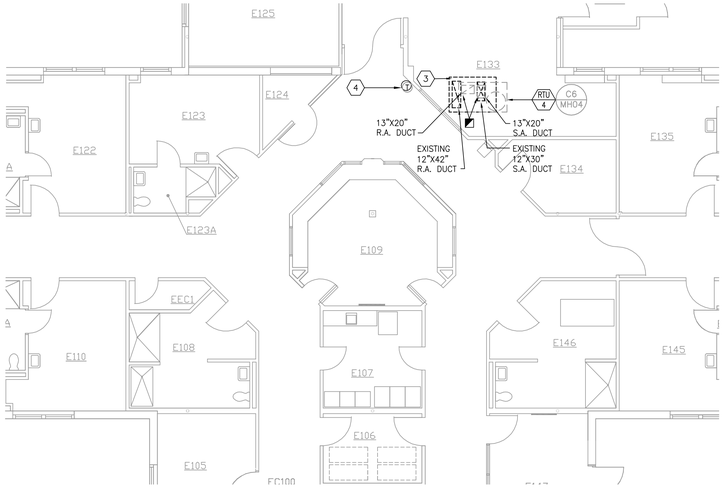
B1 EXISTING ROOFTOP UNIT RTU-4
SCALE: 1/8"=1'-0"



B3 FIRST FLOOR DEMOLITION AREA "E" - HVAC PLAN
SCALE: 1/8"=1'-0"

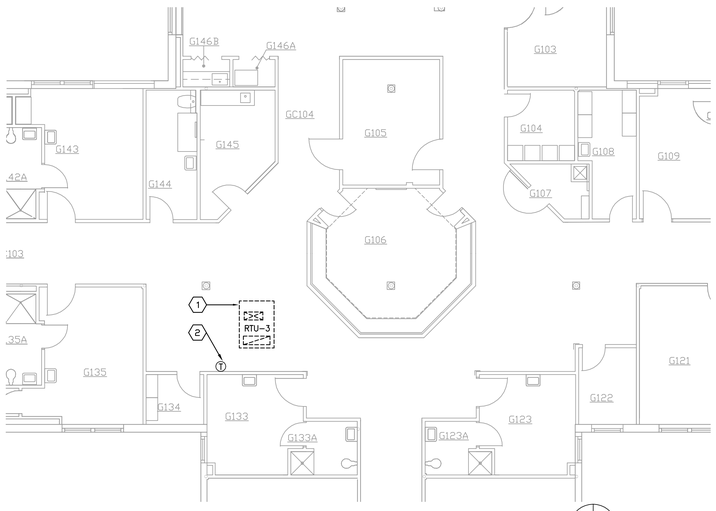
PLAN NORTH



B6 FIRST FLOOR AREA "E" - HVAC PLAN
SCALE: 1/8"=1'-0"

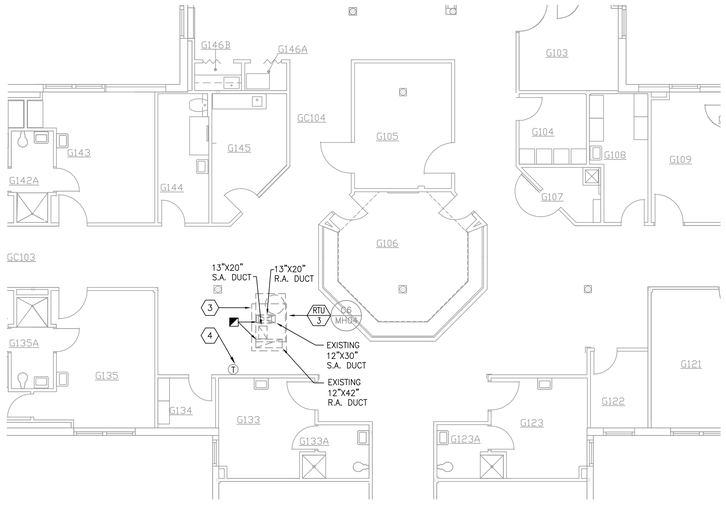
PLAN NORTH

E1 EXISTING ROOFTOP UNIT RTU-3
SCALE: 1/8"=1'-0"



E3 FIRST FLOOR DEMOLITION AREA "G" - HVAC PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH



E6 FIRST FLOOR AREA "G" - HVAC PLAN
SCALE: 1/8"=1'-0"

PLAN NORTH

GENERAL NOTES

A. VERIFY ALL EXISTING TEMPERATURE CONTROLS. RECONNECT EXISTING CONTROLS TO NEW EQUIPMENT.

B. COORDINATE DISRUPTION OF SERVICE WITH OWNER.

SHEET KEYNOTES

1. REMOVE PACKAGED ROOFTOP HVAC UNIT. DISCONNECT DUCTS AND CONTOLS. ROOF CURB TO REMAIN.
2. REMOVE THERMOSTAT CONTROL FOR ROOFTOP UNIT. NEW THERMOSTAT TO BE INSTALLED IN THE SAME LOCATION.
3. PROVIDE INSULATED CURB ADAPTER TO MATCH NEW ROOFTOP UNIT TO EXISTING ROOF CURB. INSTALL NEW ROOFTOP UNIT AND MAKE NEW DUCT AND CONTROL CONNECTIONS.
4. INSTALL NEW THERMOSTAT CONTROL FOR NEW ROOFTOP UNIT WHERE EXISTING THERMOSAT IS REMOVED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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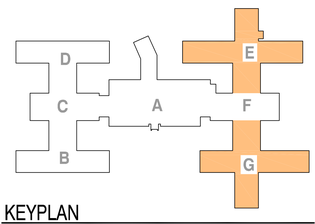

KEYPLAN
SCALE: NTS

Revisions:	Date

CONSULTANTS:

LICENSED PROFESSIONAL ENGINEER REG. NO. 3510 STEVEN M. TUCKER SOUTH DAKOTA
DATE: 9/21/2012

ARCHITECT/ENGINEERS:

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TSP PROJECT #041121053

Drawing Title: BUILDING-148 AREA-"E"-AND-AREA-"G"-HVAC-PLAN

Approved Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 148

Drawing Number: 148-MH-03

Dwg. 21 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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ROOF TOP UNIT SCHEDULE

MECHANICAL REQUIREMENTS																					ELECTRICAL REQUIREMENTS											
GENERAL INFORMATION						SUPPLY FAN				COOLING SECTION														STARTER							DISCONNECT		
UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	OUTSIDE AIR MIN %	OUTSIDE AIR CFM	CFM	EXT. SP (IN.)	RPM	HP	CAPACITY TONS	CAPACITY MBH	NET SENS. MBH	NET LAT. MBH	EER	REFRIGERANT	AMBIENT (DEG. F)	COMP. NO.	COMP. HP	COND. NO.	COND. FAN HP	CURB HGT IN. ABV ROOF	MECH REMARKS	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	TYPE	SIZE	LOCATION	CNTRL. DVC.	AUX.	BY	CONTROL	TYPE	BY	ELEC REMARKS
RTU-2	ROOF	A-113	MCQUAY MPS-004 BYCL00D	15	240	1600	0.5	1075	3/4	4	48.0	356.0	124.0	11.4	R-410A	95	1	4	1	1/3	18	1	208/3	23.0	23	INTEGRAL		IN UNIT			MC	TCC	INTEGRAL	MC	
RTU-3	ROOF	G-114	MCQUAY MPS-003 BYCL00D	15	180	1200	0.5	1075	1/2	3	354.0	262.0	92.0	11.4	R-410A	95	1	3	1	1/3	18	1	480/3	11.0	19	INTEGRAL		IN UNIT			MC	TCC	INTEGRAL	MC	
RTU-4	ROOF	EC-5	MCQUAY MPS-003 BYCL00D	15	180	1200	0.5	1075	1/2	3	354.0	262.0	92.0	11.4	R-410A	95	1	3	1	1/3	18	1	208/3	19.0	19	INTEGRAL		IN UNIT			MC	TCC	INTEGRAL	MC	

MECH REMARKS:
1. PROVIDE WITH FACTORY MOUNTED ELECTRICAL DISCONNECT.
2 PROVIDE PROGRAMMABLE THERMOSTAT.
3. VERIFY AND RECONNECT EXISTING TEMPERATURE CONTROLS TO NEW EQUIPMENT.

ELEC REMARKS:
E1.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

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AIR COOLED CHILLER WITH REMOTE EVAPORATOR SCHEDULE

MECHANICAL REQUIREMENTS														ELECTRICAL REQUIREMENTS											
																STARTER							DISCONNECT		
UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	COOLING CAP. MBH	TONS	POWER KW	AMB. TEMP. (DEG. F)	SUCT. TEMP (DEG. F)	EER	COND. FAN	COMP.	REF. CKT.	REFRIGERANT TYPE	MECH REMARKS	VOLT/PH	MIN. CKT. AMP	WIRE SIZE	TYPE	SIZE	LOCATION	CNTRL. DVC.	AUX.	BY	CONTROL	TYPE	BY	ELEC REMARKS
CH-1	ROOF	EV-1	MCQUAY AGZ110DB	1273.2	106.1	130	95	45	9.8	8	6	2	R-410A	1,2,3,4	460/3	221	EXISTING	IN UNIT					MC	TCC	INTEGRAL	MC	
CH-2	ROOF	EV-2	MCQUAY AGZ070DB	769.2	64.1	79	95	45	9.7	8	4	2	R-410A	1,2,3,5	460/3	138	EXISTING	IN UNIT					MC	TCC	INTEGRAL	MC	

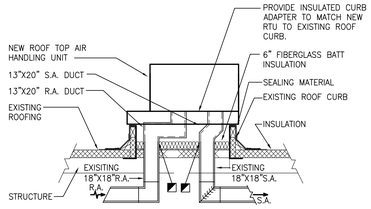
MECH REMARKS:
1. HOT GAS BYPASS.
2. SINGLE POINT POWER CONNECTION WITH FACTORY WIRED ELECTRICAL DISCONNECT
3. WITH COIL GAURDS.
4. VERIFY AND RECONNECT ALL EXISTING TEMPERATURE CONTROLS TO NEW EQUIPMENT.

ELEC REMARKS:
E1.

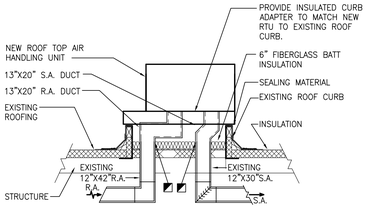
SPLIT-SYSTEM CHILLER EVAPORATOR SCHEDULE

MECHANICAL REQUIREMENTS														
					EVAPORATOR									
UNIT NO.	LOCATION	SERVES	MANUFACTURER & MODEL#	TONS	GPM	EWT (DEG. F)	LWT (DEG. F)	WPD (FT)	WATER PASSES	NO. CKTS.	SUCT. TEMP.	INLET/ OUTLET (IN.)	% PROP. GLYCOL.	REFRIGERANT	MECH REMARKS
EV-1	FM-100A	CU-1	MCQUAY ACH-5000DQ-142H	106.1	220	55	45	6	3	2	38	3	50%	R-410A	1,2
EV-2	FM-100A	CU-2	MCQUAY ACH-5000DQ-82H	64.1	205	52	45	6	3	2	38	3	50%	R-410A	1,2

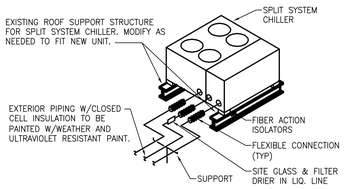
MECH. REMARKS:
1. BRAZED PLATE TYPE EVAPORATOR.
2. PROVIDE INSULATED JACKET.
3. VERIFY AND RECONNECT ALL EXISTING TEMPERATURE CONTROLS TO NEW EQUIPMENT.



C5 ROOFTOP UNIT - 1 OR 2
SCALE: NONE

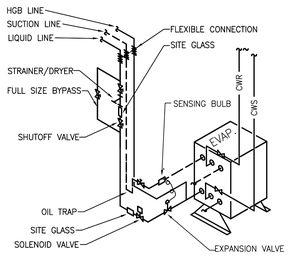


C6 ROOFTOP UNIT - 3 OR 4
SCALE: NONE



(ONE OF TWO CIRCUITS SHOWN)

C7 SPLIT SYSTEM CHILLER PIPING
SCALE: NONE



(ONE OF TWO CIRCUITS SHOWN)

F7 REMOTE EVAPORATOR DETAIL.
SCALE: NONE

Revisions	Date

CONSULTANTS:

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DATE: 9/21/2012

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TSP PROJECT #04121053

Drawing Title: BUILDING-148 SCHEDULES-DETAILS

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: SMT | Drawn: RAK

Project Number: 568-12-111

Building Number: 148

Drawing Number: 148-MH-04

Dwg. 22 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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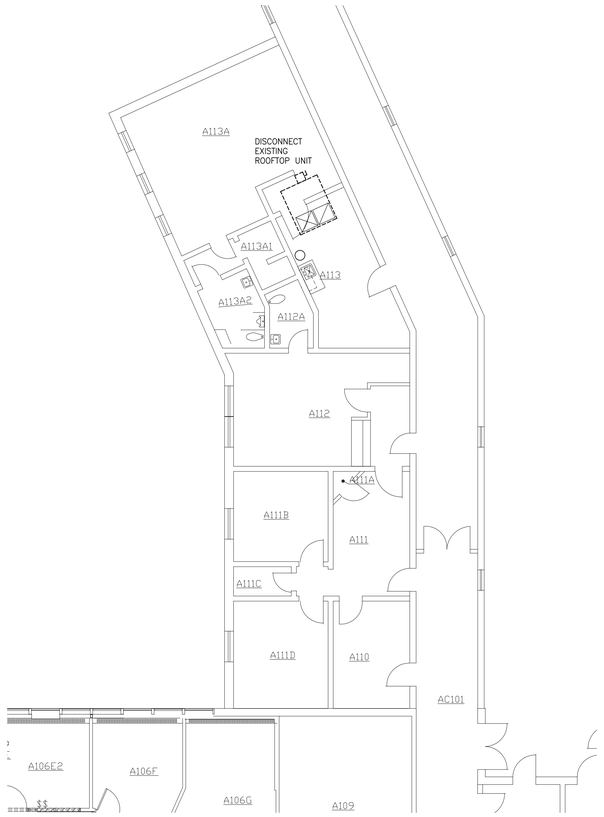
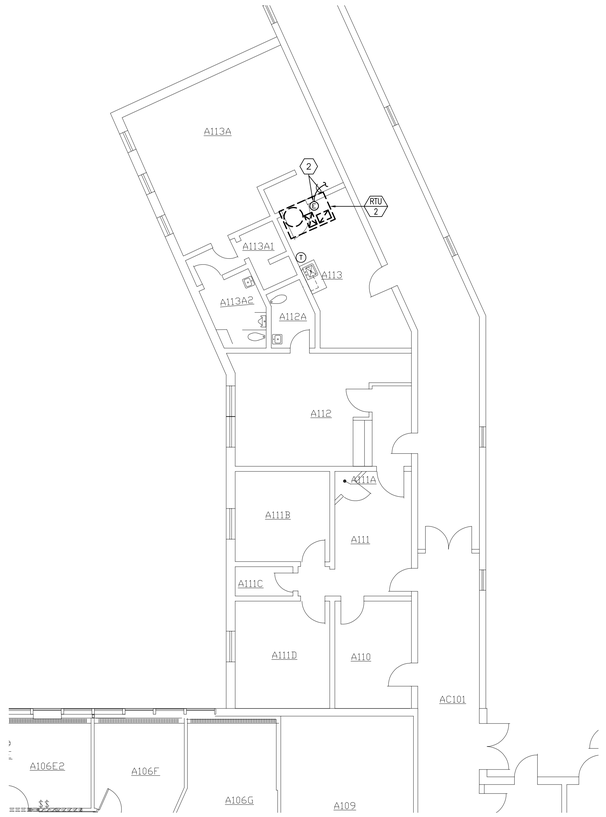


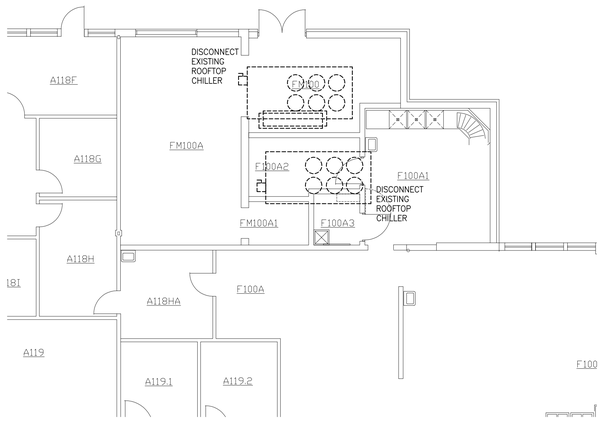
D2 AREA 'A' ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



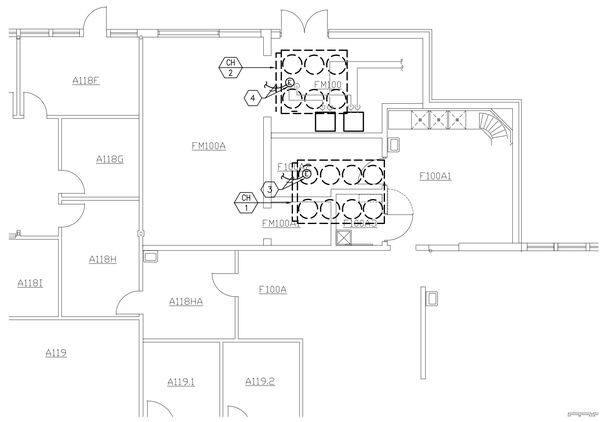
D5 AREA 'A' ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



F2 AREA 'A' ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



F5 AREA 'A' ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

SHEET GENERAL NOTES

A. ROOFTOP UNIT SHALL SHUT DOWN UPON SENSING SMOKE IN RETURN AIR SYSTEM PER INTERNATIONAL MECHANICAL CODE. INTERLOCK WITH EXISTING FIRE ALARM SYSTEM FOR SHUT DOWN. PROVIDE ALL COMPONENTS NECESSARY FOR PROPER OPERATION.

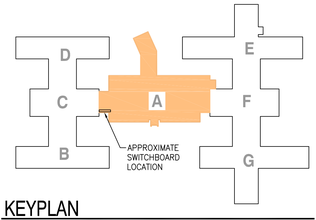
SHEET KEYNOTES

1. NEW ROOFTOP UNIT 1. CONNECT TO NEW 40A, 3-POLE CIRCUIT BREAKER IN EXISTING PANEL A. REMOVE BREAKER IN PANEL A SERVING OLD RTU. RE-USE EXISTING CIRCUIT CONDUCTORS AND EXTEND AS NEEDED.
2. NEW ROOFTOP UNIT 2. CONNECT TO A NEW 35A, 3-POLE CIRCUIT BREAKER IN EXISTING PANEL A. REMOVE BREAKER IN PANEL A SERVING OLD RTU. RE-USE EXISTING CIRCUIT CONDUCTORS AND EXTEND AS NEEDED.
3. NEW CONDENSING UNIT 1. CONNECT TO EXISTING 250A, 3-POLE CIRCUIT BREAKER IN EXISTING SWITCHBOARD (REFERENCE KEY PLAN FOR APPROXIMATE SWITCHBOARD LOCATION). RE-USE EXISTING CIRCUIT CONDUCTORS AND EXTEND AS NEEDED.
4. NEW CONDENSING UNIT 2. CONNECT TO NEW 150A, 3-POLE CIRCUIT BREAKER IN EXISTING SWITCHBOARD (REFERENCE KEY PLAN FOR APPROXIMATE SWITCHBOARD LOCATION). REMOVE BREAKER PREVIOUSLY SERVING CHILLER LOAD TO ACCOMMODATE NEW BREAKER. RE-USE EXISTING CIRCUIT CONDUCTORS AND EXTEND AS NEEDED.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.



KEYPLAN
SCALE: NTS

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER
STATE OF SOUTH DAKOTA
6729
DARRELL L. BREN
DATE: 09-13-12

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TSP PROJECT #04121053

Drawing Title: BUILDING 148 - AREA 'A' ELECTRICAL PLANS

Approved: Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: DLB | Drawn: JNK

Project Number: 568-12-111

Building Number: 148

Drawing Number: 148-EP-01

Dwg. 23 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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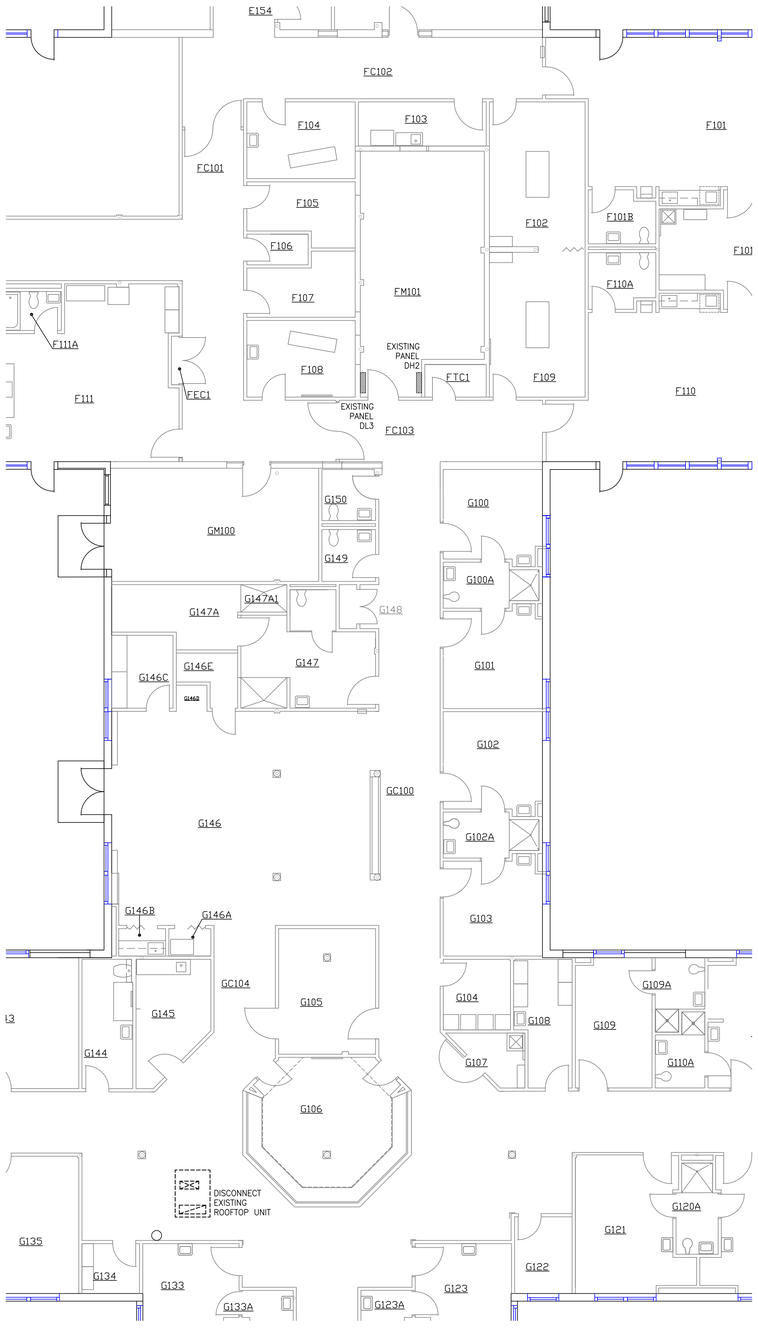
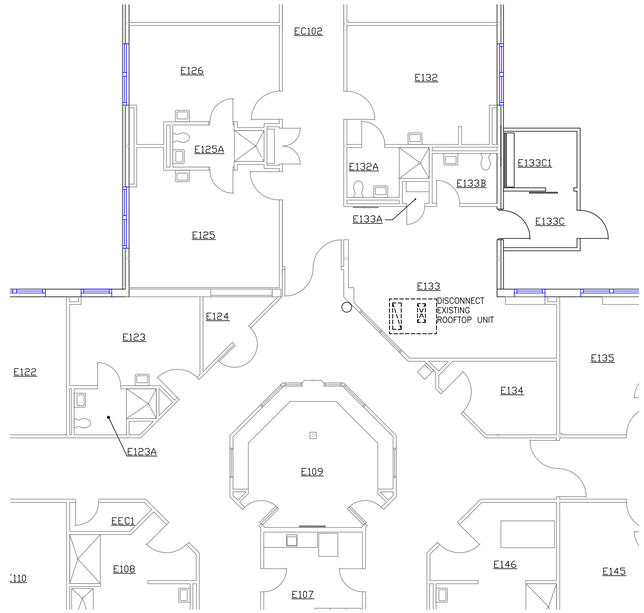


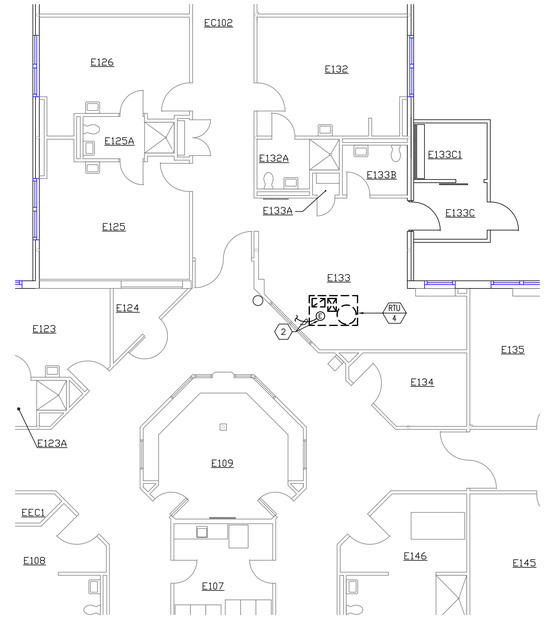
F1 AREA 'G' ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



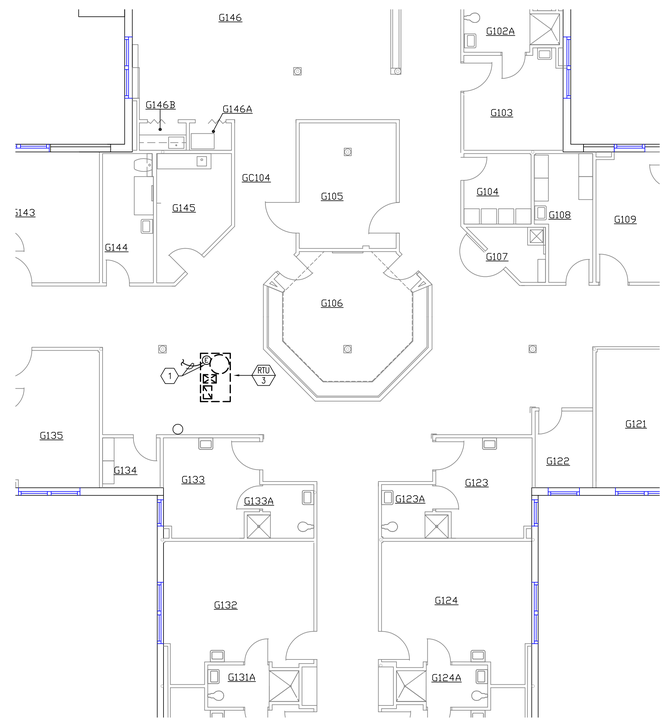
B4 AREA 'E' ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



B6 AREA 'E' ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH



F6 AREA 'G' ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"

PLAN NORTH

SHEET GENERAL NOTES

A. ROOFTOP UNIT SHALL SHUT DOWN UPON SENSING SMOKE IN RETURN AIR SYSTEM PER INTERNATIONAL MECHANICAL CODE. INTERLOCK WITH EXISTING FIRE ALARM SYSTEM FOR SHUT DOWN. PROVIDE ALL COMPONENTS NECESSARY FOR PROPER OPERATION.

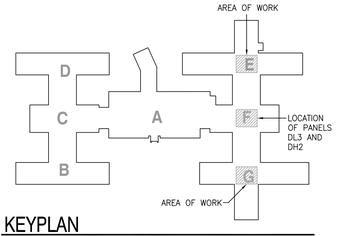
SHEET KEYNOTES

1. NEW ROOFTOP UNIT 3. CONNECT TO EXISTING 15A, 3-POLE CIRCUIT BREAKER IN EXISTING PANEL DH2 PREVIOUSLY SERVING OLD RTU IN SAME LOCATION. RE-USE EXISTING CIRCUIT CONDUCTORS AND EXTEND AS NEEDED.
2. NEW ROOFTOP UNIT 4. CONNECT TO A NEW 25A, 3-POLE CIRCUIT BREAKER IN EXISTING PANEL DL3. REMOVE BREAKER IN PANEL DL3 SERVING OLD RTU. PROVIDE FOUR #10 CU AND ONE #10 CU GROUND IN EXISTING CONDUIT FROM PANEL DL3 TO NEW RTU.

DISRUPTION OF SERVICES AND ACCESSIBILITY NOTES:

DISRUPTION OF SERVICES: ALL AREAS SERVED BY H.V.A.C. EQUIPMENT ARE OCCUPIED DAILY. ROOF OPENINGS SHALL NOT BE LEFT OPEN OVER NIGHT. PERMANENT EQUIPMENT SHALL BE SET IN PLACE IMMEDIATELY AFTER THE EXISTING EQUIPMENT IS REMOVED. CONTRACTOR SHALL ANTICIPATE SOME AFTER HOURS AND WEEKEND WORK. ADVANCE WORK AND PREPARATION WILL BE PERFORMED BY THE CONTRACTOR TO KEEP DISRUPTION OF SERVICES TO A MINIMUM. A CONSTRUCTION SCHEDULE SHALL BE PROVIDED TO THE OWNER. REPLACEMENT SCHEDULE SHALL BE CLOSELY COORDINATED WITH THE OWNER NO LESS THAN (2) WEEKS IN ADVANCE. NO WORK SHALL BE PERFORMED PRIOR TO APPROVAL BY THE OWNER.

ACCESSIBILITY OF VALVES AND CONTROLS: ALL VALVES AND CONTROLS SHALL BE LOCATED AND INSTALLED FOR EASE OF MAINTENANCE AND ACCESS. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE INSTALLING ALL VALVES AND CONTROLS.



KEYPLAN
SCALE: NTS

Revisions:	Date

CONSULTANTS:

REGISTERED PROFESSIONAL ENGINEER REG. NO. 6739 DARRELL L. BREN DATE: 09-13-12

ARCHITECT/ENGINEERS:

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TSP PROJECT #04121053

To Solve. To Excel. Together.

Drawing Title: BUILDING 148 - AREA 'E' AND 'G' ELECTRICAL PLANS

Approved Project Director

Project Title: DEPT. OF V.A. (V23) BHHCS CHILLER, RTU, COND. UNIT REPLACEMENT

Location: FORT MEADE, SD

Date: 09-21-2012 | Checked: DLB | Drawn: JNK

Project Number: 568-12-111

Building Number: 148

Drawing Number: 148-EP-02

Dwg. 24 of 24

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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