PLUMBING ABBREVIATIONS

A/E	ARCHITECT / ENGINEER
AD	AREA DRAIN/ACCESS DOOR
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AG	AIR GAP
AP	ACCESS PANEL
AS	AUTOMATIC SPRINKLER
ASD	ADJUSTABLE SPEED DRIVES
ASD	AUTOMATIC SPRINKLER DRAIN
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF ECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASR	AUTOMATIC SPRINKLER RISER
AV	ACID VENT
AW	ACID WASTE
BFP	REDUCED PRESSURE BACKFLOW PREVENTER
BHP	BREAK HORSEPOWER
BSP	BLACK STEEL PIPE
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CELSIUS
CA	COMPRESSED AIR
CGA	COMPRESSED GAS ASSOCIATION
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
CV	CONTROL VALVE
DCW	DOMESTIC COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY
DI	DEIONIZED WATER
DN	DOWN
DOE	DEPARTMENT OF ENERGY
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWR	DRINKING WATER RETURN
DWS	DRINKING WATER SUPPLY
DWV	DRAIN WASTE VENT
EL	ELEVATION
EMCS	ENERGY MONOSERRAT AND CENTRAL SYSTEM
EPA	ENVIROMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
ESC	ESCUTCHEON
ESH	EMERGENCY SHOWER
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
EWS	EYE WASH STATION
EWS/SH	EYE WASH/DRENCH SHOWER
EX	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FCW	FILTERED COLD WATER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT (HOSE) CONNECTION
FM	FLOW METER
FOP	FUEL OIL PUMP
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FS	FLOOR SINK
FS	FLOW SWITCH
FU	FIXTURE UNITS
GAL	GALLON
GCO	GRADE CLEANOUTS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GRS	GAS REGULATOR STATION
GT	GREASE TRAP
GVTR	GAS VENT THROUGH ROOF
GWH	GAS FIRED WATER HEATER
H&CW	HOT AND COLD WATER
HB	HOSE BIBB
HD	HUB DRAIN
HEX	HEAT EXCHANGER
HP	HORSEPOWER
HS	HAND SINK
HST	HOT WATER STORAGE TANK (DOMESTIC)
HWB	HOT WATER BOILER
HWCP	HOT WATER CIRCULATING PUMP
HWP	HOT WATER PUMP
HYD	HYDRANT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
ICW	INDUSTRIAL COLD WATER
IHW	INDUSTRIAL HOT WATER
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
IRW	IRRIGATION WATER
IW	INDIRECT WASTE
IWH	INSTANTANEOUS WATER HEATER
IWR	INDUSTRIAL WATER RETURN
IWS	INDUSTRIAL WATER SUPPLY
KW	KILOWATT
KWH	KILOWATT-HOUR
L/S	LITER PER SECOND
LA	LABORATORY AIR
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LCW	LABORATORY COLD WATER
LHW	LABORATORY HOT WATER
LNG	LIQUID NATURAL GAS
LOX	LIQUID OXYGEN
LV	LABORATORY VACUUM
LW	LOW WATER
M	METER
MA	MEDICAL AIR
MAV	MANUAL AIR VENT
MBH	1000 BTUH
MED	MEDICAL
MER	MECHANICAL EQUIPMENT ROOM
MH	MANHOLE
MOU	MEMORANDUM OF UNDERSTADING
MSB	MOP SERVICE BASIN
MV	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM.	NOMINAL
NPW	NON POTABLE WATER
NTS	NOT TO SCALE
O2	OXYGEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OR	OPERATING ROOM
OVFL	OVERFLOW
PDI	PLUMBING AND DRAINAGE INSTITUTE
PG	PRESSURE GAGE
PP	PLUMBING PUMP
PPM	PARTS PER MILLION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ATMOSPHERE
PSIG	POUNDS PER SQUARE INCH GAGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PW	POTABLE WATER
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RL	ROOF LEADER
RP	RECIRCULATION PUMP
RO	REVERSE OSMOSIS WATER
ROR	REVERSE OSMOSIS WATER RETURN
RWL	RAIN WATER LEADER
SAN	SANITARY SEWER
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SCFM	STANDARD CUBIC FOOT/MINUTE
SCW	SOFTENED COLD WATER
SDMH	STORM DRAIN MANHOLE
SMH	SANITARY MANHOLE
SP	SUMP PUMP
SPR	SPRINKLER LINE
SQFT/SF	SQUARE FEET
SS	STAINLESS STEEL
ST	STORAGE TANK
SW	STORM WATER
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TSTAT	THERMOSTAT
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
TYP	TYPICAL
IPC	INTERNATIONAL PLUMBING CODE
PA	PASCAL
PD	PRESSURE DROP OR DIFFERENCE
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VCO	VACUUM CLEANER OUTLET
VP	VACUUM PUMP
VS	VENT STACK
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WG	WATER GAGE
WH	WALL HYDRANT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTER
WL	WATER LINE
WM	WATER METER
WPD	WATER PRESSURE DROP
WS	WASTE STACK
WSFU	WATER SUPPLY FIXTURE UNITS
YCO	YARD CLEANOUT
YH	YARD HYDRANT

GENERAL NOTES (TYPICAL ALL SHEETS)

- PLUMBING CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND/OR REQUIREMENTS, INCLUDING HEALTH CODES AND BUILDING OWNER.
- ALL EXISTING PIPING SHOWN ON DRAWINGS IS SCHEMATIC AND IS BASED ON EXISTING RECORD DRAWINGS PROVIDED BY THE OWNER AND DO NOT REFLECT EXACT EXISTING CONDITIONS. CONTRACTOR TO FIELD VERIFY EXACT DEPTH AND/OR LOCATIONS ON JOB SITE. CONTRACTOR SHALL REROUTE NEW WORK TO ACCOMMODATE EXACT LOCATIONS OF EXISTING UTILITIES, STUBOUTS AND/OR CONNECTIONS.
- CUTTING AND PATCHING OF FLOORS, WALLS, CEILING, ETC., REQUIRED IN STRICT ACCORDANCE WITH THE RULES AND REGULATIONS OF THE ARCHITECT'S AND/OR LANDLORD'S REQUIREMENTS.
- COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.
- ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY CONTRACTOR.
- INSTALL ELASTOMERIC JOINT SEALER AROUND ALL PIPES PASSING THRU INTERIOR NON-RATED CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS. FOR FIRE RATED INTERIOR CONCRETE AND MASONRY WALLS, GYPSUM- BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS SEAL ALL PIPES. INSTALL FIRESTOP MATERIALS IN ALL GAPS PRIOR TO SEALANT APPLICATION. INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL EQUIPMENT BY OTHERS. VERIFY CONNECTIONS SIZES AND REQUIREMENTS.
- PIPING ROUTED BELOW COUNTER IN CABINETS SHALL BE ROUTED AS NOTED. NOT TO INTERFERE WITH DRAWERS, SHELVES, EQUIPMENT, ETC., AND SUPPORT FROM BACK WALL OF CABINET.
- PLUMBING CONTRACTOR SHALL BID AND SCHEDULE ALL CORE DRILLING AND HAMMER DRILLING FOR AFTER BUSINESS HOURS OR AS DIRECTED BY THE V.A.
- PLUMBING CONTRACTOR SHALL SCAN FLOOR UTILIZING GROUND PENETRATING RADAR PRIOR TO ANY CORE DRILLING OR SAW CUTTING OF SLAB AND SHALL VERIFY PLACEMENT WITH BUILDING OWNER'S REPRESENTATIVE PRIOR TO DRILLING.
- UPON REQUEST FOR ELECTRONIC FILES, CONTRACTOR SHALL FILL OUT, SIGN AND RETURN ELECTRONIC MEDIA RELEASE FORM FROM ENGINEER AND PROVIDE PAYMENT FOR FEES STIPULATED ON ELECTRONIC MEDIA RELEASE FORM. UPON RECEIPT OF COMPLETED RELEASE FORM AND PAYMENT, ELECTRONIC MAY BE RELEASED.
- CONNECTIONS TO EXISTING BUILDING UTILITIES ARE REQUIRED AS INDICATED WHICH ARE OUTSIDE THE PROJECT SCOPE AREA. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXACT POINTS OF CONNECTION AND ROUTING TO THESE SERVICES AS WELL AS COORDINATING ACCESS TO THESE AREAS WITH VA PERSONNEL. CONTRACTOR SHALL MINIMIZE DISRUPTION TO VA OPERATIONS AND SHALL OBTAIN WRITTEN APPROVAL OF VA PERSONNEL FOR ROUTING. GRANTING ACCESS AND TIMES SHALL BE WHOLLY AT THE DISCRETION OF VA PERSONNEL.
- VERIFY UTILITY REQUIREMENTS OF ALL OWNER FURNISHED EQPT & INSTALL IN ACCORDANCE WITH ALL EQPR. MFGR REQUIREMENTS.

GENERAL PLUMBING SYMBOLS

- DIRECTION OF PIPE PITCH (DOWN)
- DIRECTION OF FLOW
- REDUCER OR INCREASER
- TOP CONNECTION, 45° OR 90°
- BOTTOM CONNECTION, 45° OR 90°
- SIDE CONNECTION
- CAPPED OUTLET
- RISE OR DROP IN PIPE
- UNION
- PIPE UP
- PIPE DOWN
- POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
- STRAINER WITH BLOW DOWN VALVE
- THERMOMETER
- PRESSURE GAGE
- CLEAN OUT
- FINISH FLOOR CLEAN OUT
- WALL CLEAN OUT

PLUMBING VALVE SYMBOLS

- GATE VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- BALL VALVE
- MODULATING CONTROL VALVE
- CIRCUIT SETTER VALVE

DRAWING SYMBOLS

- 2 / PL105 — DETAIL NUMBER; DRAWING NUMBER WHERE DRAWN
- A / PL105 — SECTION LETTER; DRAWING NUMBER WHERE SHOWN
- 26–P 3 — BUILDING NO. WHERE EQUIPMENT IS LOCATED. EQUIPMENT ABBREVIATION (PUMP) PUMP NO.3 IN BUILDING NO.26 TYPICAL UNIT NO.

PLUMBING PIPING SYMBOLS

COLD WATER	CW	DOMESTIC COLD WATER, COLD WATER
HOT WATER	HW	DOMESTIC HOT WATER, HOT WATER
HOT WATER RETURN	HWR	DOMESTIC HOW WATER RETURN, HOT WATER RETURN
SANITARY VENT	V	VENT (SANITARY)
SANITARY WASTE	W	SOIL, WASTE, OR SANITARY SEWER
SANITARY WASTE, BELOW GRADE	W	SANITARY SEWER, BELOW GRADE
COMPRESSED AIR	CA	

WATER SOFTENER SCHEDULE

MARK NO.	MANUFACTURER	MODEL	INLET WATER GRAINS	DISCHARGE WATER GRAINS	OPERATING PRESSURE PSIG	DESIGN (EACH UNIT) DESIGN FLOW GPM	DELTA P PSIG	CONTINUOUS FLOW, GPM	DELTA P PSIG	PEAK FLOW GPM	DELTA P PSIG	REGEN TIME MIN	BACKWASH FLOW GPM	RECOND WATER GALLONS	RESIN QUANTITY CU FT	UNIT CAPACITY kgr @105 # SALT	ELECTRICAL VOLT	Ø	HZ	NOTES
WS-1	CULLIGAN	CMT-150PF	14	<1	30-120	28	3.4	59	15	76	25	76	8	272	5	150	120	1	60	1 THRU 5

NOTES:
1. AUTOMATIC DUPLEX PROGESSIVE/WATER METER/DEMAND SYSTEM WITH (2) 18"x67" POLYESTER RESIN TANK AND (1) 24"DIA x 40" PLASTIC BRINE TANK.
2. SYSTEM TO BE COMPLETE WITH PRESSURE VESSELS, SOFTENING RESIN, CONTROL VALVES, BRINE MAKER AND ELECTRONIC CONTROLLER. SYSTEM SHALL INCLUDE A TOP MOUNTED CONTROL VALVE, WITH AN UPPER DISTRIBUTION SINGLE POINT DISTRIBUTOR SYSTEM. CONTROLS SHALL BE FULLY AUTOMATIC MICROPROCESSOR BASED WITH A CONTROLLER THAT SEQUENCES ALL STEPS OF AUTOMATIC REGENERATION.
3. TOTAL SYSTEM CAPACITY OF 152 GPM AT 15 PSIG WITH GRAIN REDUCTION TO <1 WITH DAILY USAGE ESTIMATED AT 3000 GALLONS.
4. PIPE WITH BYPASS PER MANUFACTURER REQUIREMENTS, RE: DETAIL.
5. MOUNT ON 4" CONCRETE PAD.

PLUMBING PUMP SCHEDULE

MARK NO.	MANUFACTURER	MODEL	USE	TYPE	PUMP TYPE	STAGES	FLOW (CFM)	OPERATING PRESSURE (FT.)	RPM	ELECTRICAL VOLT	Ø	HZ	HP	NOTES
1-AC-1	ATLAS COPCO	SF-1-6 + 116AFF MONO	LAB CONTROL AIR	TANK MOUNTED	OIL FREE SCROLL	ONE	20	116	2450	460	3	60	7 1/2	1,2

NOTES:
1. FLOOR MOUNTED SIMPLEX PUMP WITH FULL FEATURE CONFIGURATION COMPLETE WITH TEFC MOTOR, 59 dB, # 272L 72 GALLON ASME CODE HORIZONTAL TANK, #CD-5 DUAL CARTRIDGE DESICCANT DRYER, MANUAL AND ELECTRONIC AUTO DRAINER, UNIT MOUNTED CONTROL PANEL WITH DISCONNECT SWITCH, OPERATING AND SAFETY CONTROLS, STATUS AND INDICATOR LIGHTS, INTEGRATED AFTER FILTER, LOOSE PREFILTER, PILOT AND CONTROL VALVES, SILENCER
2. MOUNT ON 4" CONCRETE PAD AND ISOLATORS.

WATER HEATER SCHEDULE (ELECTRIC)

MARK NO.	MANUFACTURER	MODEL NO.	TANK LINING	TANK CAPACITY (GAL)	RECOVERY (GPH @ 90 F)	INPUT (KW)	THERMAL EXPANSION TANK MODEL NO.	ELECTRICAL VOLT	Ø	HZ	NOTES
1-DWH-1	AO SMITH	DSE-120-60	GLASS	120	254	60	DETA 30	480	3	60	1,2,3,4

NOTES:
1. PROVIDE WITH ANODE,HIGH TEMPERATURE CUTOFF, TEMPERATURE AND PRESSURE RELIEF VALVE AND DRAIN.
2. PROVIDE WITH ASME CODE 15 GALLON BLADDER THERMAL EXPANSION TANK, WATTS MODEL SCHEDULED WITH WATTS SCV SERVICE CHECK VALVE.
3. 125 PSI ASME CODE HEATER CONSTRUCTION.
4. MOUNT ON 4" CONCRETE PAD.

*HEATING KW IS NET CAPACITY AT VOLTAGE AND PHASE INDICATED.

BRANCH FIXTURE SCHEDULE

PLUMBING FIXTURE OR ITEMS	DRAIN-WASTE-SOIL-VENT TRAP	ARM	VERT	HORIZ	VENT	COLD WATER SUPPLY	BRANCH	HOT WATER SUPPLY	BRANCH	NOTES
WATER CLOSET (FLUSH VALVE)	INT	3	4	4	2	1	1 1/4	-	-	
URINAL	2	2	2	2	1 1/2	3/4	3/4	-	-	
LAVATORY	1 1/2	1 1/2	1 1/2	2	1 1/2	1/2	1/2	1/2	1/2	
SINK	1 1/2	1 1/2	2	2	1 1/2	1/2	1/2	1/2	1/2	1
DRINKING FOUNTAIN	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1/2	1/2	-	-	
SERVICE SINK	3	3	3	3	1 1/2	1/2	1/2	1/2	1/2	
SHOWER	2	2	2	2	1 1/2	1/2	1/2	1/2	1/2	1
2" FLOOR/EQMT DRAIN	2	2	2	2	1 1/2	-	-	-	-	1
3" FLOOR/EQMT DRAIN	3	3	3	3	1 1/2	-	-	-	-	1
HOSE BIB	-	-	-	-	-	3/4	3/4	-	-	

NOTES: 1. REFER TO DRAWINGS AND/OR SPECIFICATIONS FOR FIXTURES DESIGNATED AS ADA COMPLIANT

AIR COMPRESSOR SCHEDULE

MARK NO.	MANUFACTURER	MODEL	USE	TYPE	PUMP TYPE	STAGES	FLOW (CFM)	OPERATING PRESSURE (FT.)	RPM	ELECTRICAL VOLT	Ø	HZ	HP	NOTES
1-AC-1	ATLAS COPCO	SF-1-6 + 116AFF MONO	LAB CONTROL AIR	TANK MOUNTED	OIL FREE SCROLL	ONE	20	116	2450	460	3	60	7 1/2	1,2

NOTES:
1. FLOOR MOUNTED SIMPLEX PUMP WITH FULL FEATURE CONFIGURATION COMPLETE WITH TEFC MOTOR, 59 dB, # 272L 72 GALLON ASME CODE HORIZONTAL TANK, #CD-5 DUAL CARTRIDGE DESICCANT DRYER, MANUAL AND ELECTRONIC AUTO DRAINER, UNIT MOUNTED CONTROL PANEL WITH DISCONNECT SWITCH, STARTER,OPERATING AND SAFETY CONTROLS, STATUS AND INDICATOR LIGHTS, INTEGRATED AFTER FILTER, LOOSE PREFILTER, PILOT AND CONTROL VALVES, SILENCER.
2. MOUNT ON 4" CONCRETE PAD AND SPRING ISOLATORS.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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VA EASTERN KANSAS HEALTH CARE SYSTEM

Dwight D. Eisenhower VA Medical Center
Leavenworth
Colmery-O'Neil VA Medical Center
Topeka

VA | U.S. Department of Veterans Affairs

Drawing Title: PLUMBING- SYMBOLS AND SCHEDULES	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: LDR / Drawn By: DMB	Drawing No. PG1-300
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 30 Of 44

VA Department of Veterans Affairs

Time: 10:49:16 AM
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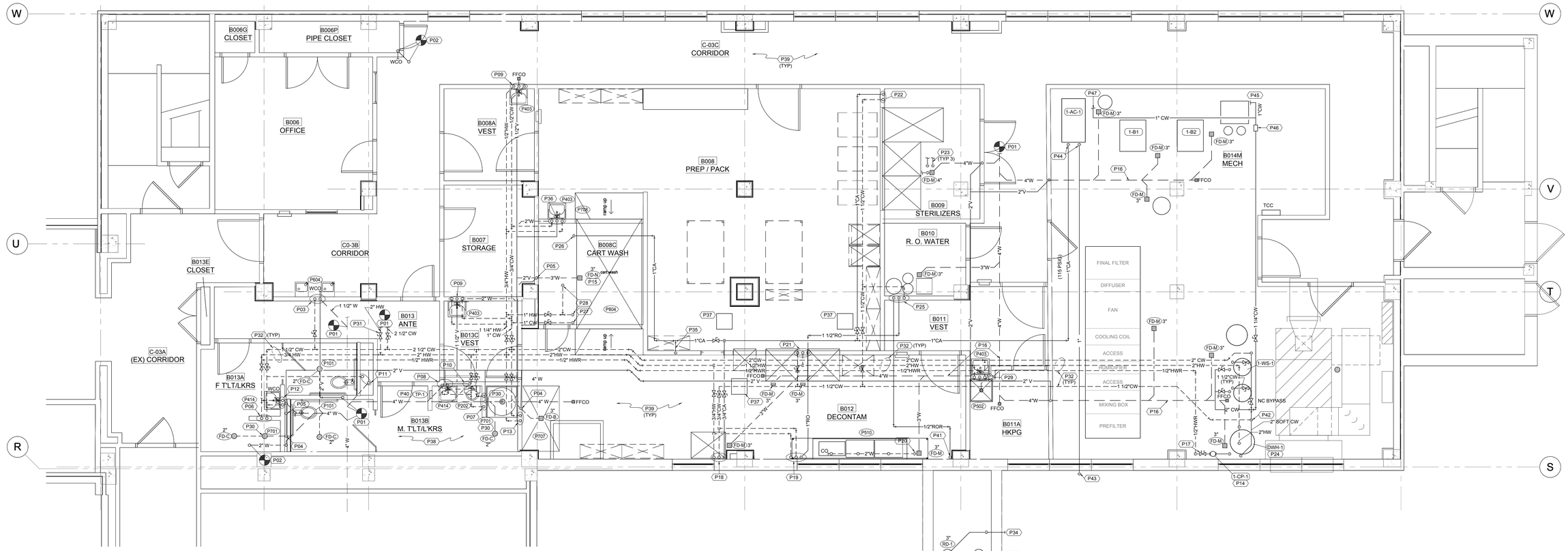

BASEMENT FLOOR PLAN-PLUMBING

SCALE: 1/4" = 1'0"

N

M## FLOOR PLAN NOTES

1. EXTEND PIPING IN CRAWL SPACE AND CONNECT TO EXISTING UTILITY SERVICE. FIELD VERIFY EXACT LOCATION, SIZE, AND ELEVATION.
2. OFFSET PIPING AS REQUIRED BY NEW CHASE LOCATION.
3. 1/2" CW FROM BELOW TO DRINKING FOUNTAIN, 1 1/2" WASTE DOWN, 1 1/2" VENT UP.
4. 1 1/2" VENT UP.
5. 2" VENT UP.
6. 1/2" CW AND HW FROM BELOW TO SHOWER.
7. 1/2" CW AND HW FROM BELOW TO SHOWER, 1 1/2" VENT UP.
8. 1/2" CW AND HW FROM BELOW TO LAVATORY, 1/2" CW TO TRAP PRIMER VALVE..
9. 1/2" CW AND HW FROM BELOW TO SINK, 2" WASTE DOWN, 1 1/2" VENT UP.
10. 3/4"CW FROM BELOW TO URINAL, 2" WASTE FROM DOWN, 1 1/2" VENT UP.
11. 1" CW FROM BELOW TO WATER CLOSET, 2" VENT UP.
12. 1 1/4" CW AND 1/2" HW FROM BELOW, 1" CW TO WATER CLOSET, 1/2" CW AND HW TO LAVATORY, 1 1/2" WASTE DOWN, 1 1/2" VENT UP.
13. 1"CW AND HW TO MIXING VALVE FROM BELOW, 1 1/4" TEMPERED WATER TO EMERGENCY SHOWER / EYE WASH
14. DOMESTIC CIRCULATION PUMP. RE: DETAIL.
15. LOCATE AS DIRECTED BY CART WASH MFGR.
16. COMBINATION WASTE AND VENT SYSTEM.
17. CALIBRATED BALANCE VALVE, SET AT 2 GPM.
18. 1/2" CW AND HW FROM BELOW AND 1/2" CA DOWN TO CAVI-WAVE ULTRASONIC CLEANER WITH SHUTOFF VALVES, UNIONS AND INLET STRAINERS. PROVIDE CW AND HW BACKFLOW PREVENTERS AND 30 PSIG COMPRESSED AIR REGULATOR.
19. 1/2" CW AND HW FROM BELOW AND 1/2" RO WATER DOWN AND OVER BELOW WINDOWS TO SINK. PROVIDE WITH BRAIDED STAINLESS STEEL FLEX HOSES FOR CONNECTION TO RELOCATED ADJUSTABLE HEIGHT SINK. PIPE RO WATER TO NEW POLYPROPYLENE FINAL RINSE OUTLET WITH PURITY LIGHT. EXTEND 1/2" ROR OVER TO RETURN RISER.
20. INDIRECT WASTE TO FLOOR DRAIN.
21. 1-1/4" CW AND HW FROM BELOW AND 1-1/4" RO WATER DOWN. PROVIDE 35 GPM CW AND HW THERMOSTATIC MIXING VALVE WITH 120F 1-1/4" DISCHARGE, DISCHARGE TEMPERATURE GAGE, INLET CHECK STOPS AND OUTLET SHUTOFF VALVE. 3/4" CW, HW AND RO WATER TO EACH WASHER. PROVIDE CW AND HW WITH SHUTOFF VALVE, BACKFLOW PREVENTER, STRAINER AND 70 PSIG REGULATOR. PROVIDE INDIRECT WASTE FULL SIZE FROM EACH WASHER TO FLOOR DRAIN. COORDINATE DROP LOCATION WITH PASS THRU WINDOW(S). PROVIDE 3/4" CW, HW, AND RO WATER VALVE AND CAP FOR FUTURE WASHER.
22. 1 1/2" CW FROM BELOW , 1" CW TO EACH STERILIZER. PROVIDE SHUTOFF VALVES, UNIONS AND STRAINER FOR EACH SERVICE TO MACHINES. PROVIDE CW BACKFLOW PREVENTER, PROVIDE 50 PSIG REGULATOR.
23. INDIRECT WASTE AND RELIEF VALVE DISCHARGE TO FLOOR DRAIN. PIPE PER MANUFACTURER'S RECOMMENDATIONS.
24. ELECTRIC WATER HEATER, RE: DETAIL.
25. 3/4" CW FROM BELOW WITH SERVICE VALVE, UNION, STRAINER AND 45 PSIG REGULATOR, 3/4" RO WATER AND RO WATER RETURN DOWN TO RO GENERATOR WITH SERVICE VALVES. PROVIDE RO AND RO RETURN PIPING FROM GENERATOR TO STORAGE TANK. PIPE DRAINS FULL SIZE INDIRECTLY TO FLOOR DRAIN. ALL MACHINE PIPING TO BE PER MANUFACTURER'S REQUIREMENTS.
26. 3/4" CA DOWN TO CART WASHER WITH SHUTOFF VALVE, UNION AND 100 PSIG REGULATOR. PIPE PER MANUFACTURER'S REQUIREMENTS.
27. 3/4" CW FROM BELOW TO HOSE BIBB.
28. 3/4" HW FROM BELOW TO CART WASHER WITH SHUTOFF VALVE, UNION, STRAINER AND BACKFLOW PREVENTER. PIPE PER MANUFACTURER'S REQUIREMENTS.
29. 3/4" CW AND HW FROM BELOW, 1/2" CW AND HW TO EACH FIXTURE, 2" WASTE DOWN, 1 1/2" VENT UP AND 1 1/2" VENT DOWN.
30. DRAIN INTEGRAL WITH SHOWER.
31. DOMESTIC HW BACKUP CROSS TIE, WITH NORMALLY CLOSED VALVE.
32. ROUTE ALL CW, HW AND HWR PIPING IN CRAWL SPACE BELOW UNLESS OTHERWISE NOTED.
33. TERMINATE OVERFLOW DRAIN HIGH WITH 3" DOWN SPOUT NOZZLE.
34. 3" STORM DRAIN DOWN, TERMINATE ABOVE GRADE WITH DOWN SPOUT NOZZLE.
35. 1/2" CA DOWN TO WALL OUTLET, LOCATED AS DIRECTED BY THE VA. OUTLET STYLE AND CONFIGURATION AS DIRECTED. PROVIDE REGULATOR AS REQUIRED BY THE VA.
36. 3/4" CW AND HW FROM BELOW, 1/2" CW AND HW TO SINK AND EYE WASH MIXING VALVE, 1/2" TEMPERED WATER TO EYE WASH.
37. CEILING ACCESS DOOR FOR VALVE AND/OR DAMPER ACCESS. RE: MECHANICAL DRAWINGS FOR DAMPER LOCATIONS.
38. DELETE FIXTURES, ROUGH IN AND CAP ONLY ALL PLUMBING IN MEN'S RESTROOM B-013B UNDER DEDUCT ALTERNATE #2.
39. FIELD LOCATE, VERIFY AND PROTECT ALL ACTIVE PIPING RISERS THAT MUST REMAIN IN SERVICE FOR FLOORS ABOVE.
40. 1/2" CW TO EACH RESTROOM FLOOR DRAIN.
41. 1/2" RO RETURN UP.
42. 1-1/2" CW DOWN WITH SHUTOFF IN RISE.
43. 1" COMPRESSED AIR INTAKE ASSEMBLY WITH SCREEN.
44. CONNECT WITH FLEXIBLE STAINLESS STEEL HOSE WITH UNION ENDS AND SHUTOFF VALVE ON COMPRESSED AIR PIPING AT COMPRESSOR.
45. 1" CW DOWN, CONNECT TO BOILER FEEDWATER SYSTEM WITH PRESSURE REGULATOR AND TO BLOWDOWN SEPARATOR.
46. REDUCED PRESSURE BACK FLOW PREVENTER.
47. 1" CW DOWN AND CONNECT TO BLOW DOWN SEPARATOR.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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VA EASTERN KANSAS HEALTH CARE SYSTEM

Dwight D. Eisenhower VA Medical Center
Leavenworth
Colmery-O'Neil VA Medical Center
Topeka

VA | U.S. Department of Veterans Affairs

Drawing Title:	BASEMENT PLAN-PLUMBING
Scale:	
Approved:	
Project Title:	RELOCATE STERILE PROCESSING SERVICE
Building Number:	1
Checked By:	LDR
Drawn By:	DMB
Location:	Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS
Date:	01/20/17
Project No.	589A5-15-117
Drawing No.	PP1-100
Dwg.	31 Of 44

VA Department of Veterans Affairs

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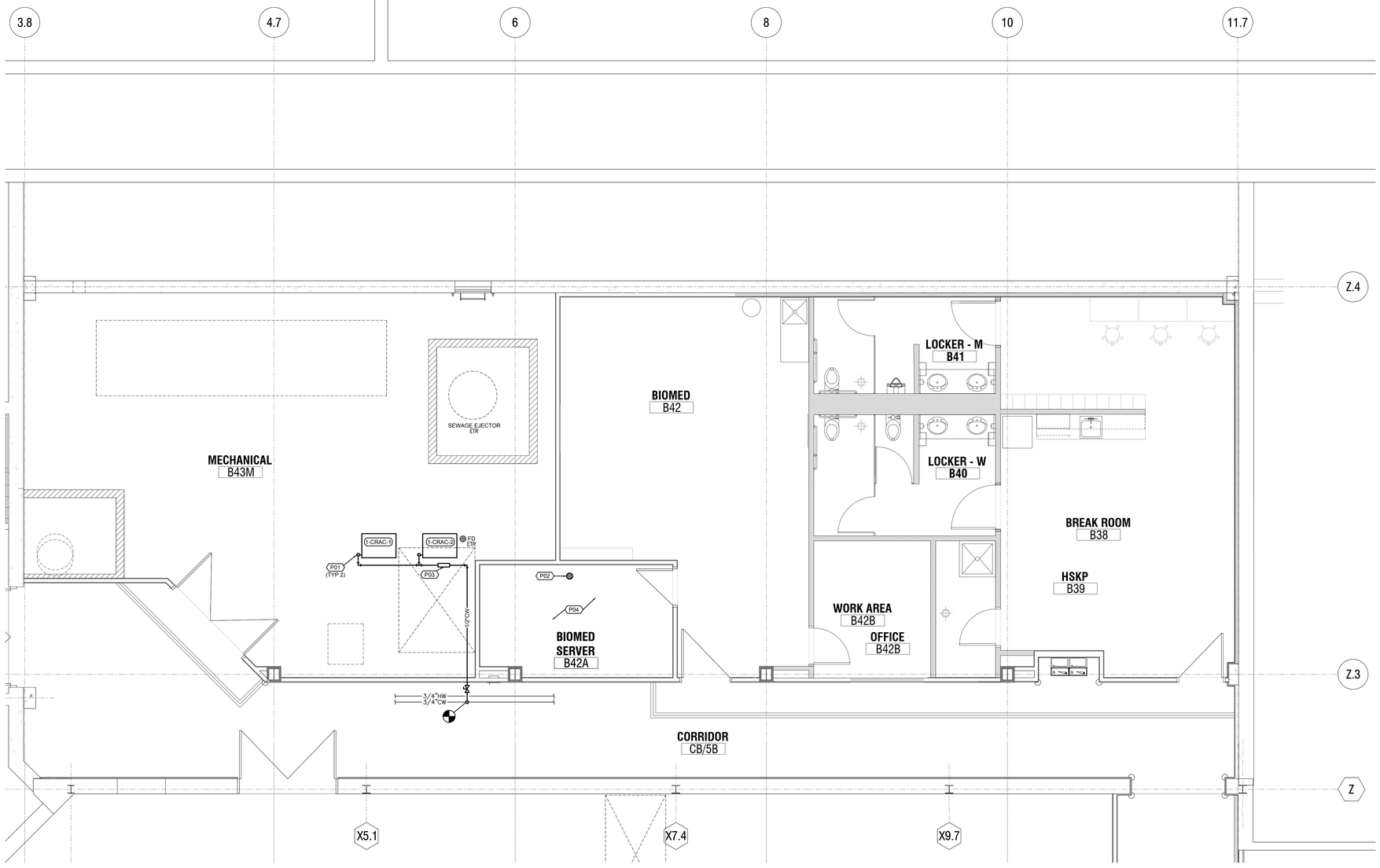

PARTIAL BASEMENT FLOOR PLAN-PLUMBING

SCALE: 1/4"=1'-0"

N

P## FLOOR PLAN NOTES

1. 1/2" CW DOWN TO HUMIDIFIER CONNECTION FOR CRAC UNIT WITH SHUTOFF VALVE.
2. REMOVE EXISTING FLOOR DRAIN, CAP WASTE, AND PATCH FLOOR.
3. REDUCED PRESSURE BACKFLOW PREVENTER. PIPE DRAIN TO FLOOR DRAIN.
4. OMIT ALL PLUMBING WORK ASSOCIATED WITH BIOMED SERVER ROOM B42A AS PART OF DEDUCT ALTERNATE 1.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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VA EASTERN KANSAS HEALTH CARE SYSTEM

Dwight D. Eisenhower VA Medical Center
Leavenworth
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Topeka

VA | U.S. Department of Veterans Affairs

Drawing Title: BASEMENT PLAN-PLUMBING	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: LDR	Drawn By: DMB
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Drawing No. PP1-101
			Dwg. 32 Of 44

VA Department of Veterans Affairs

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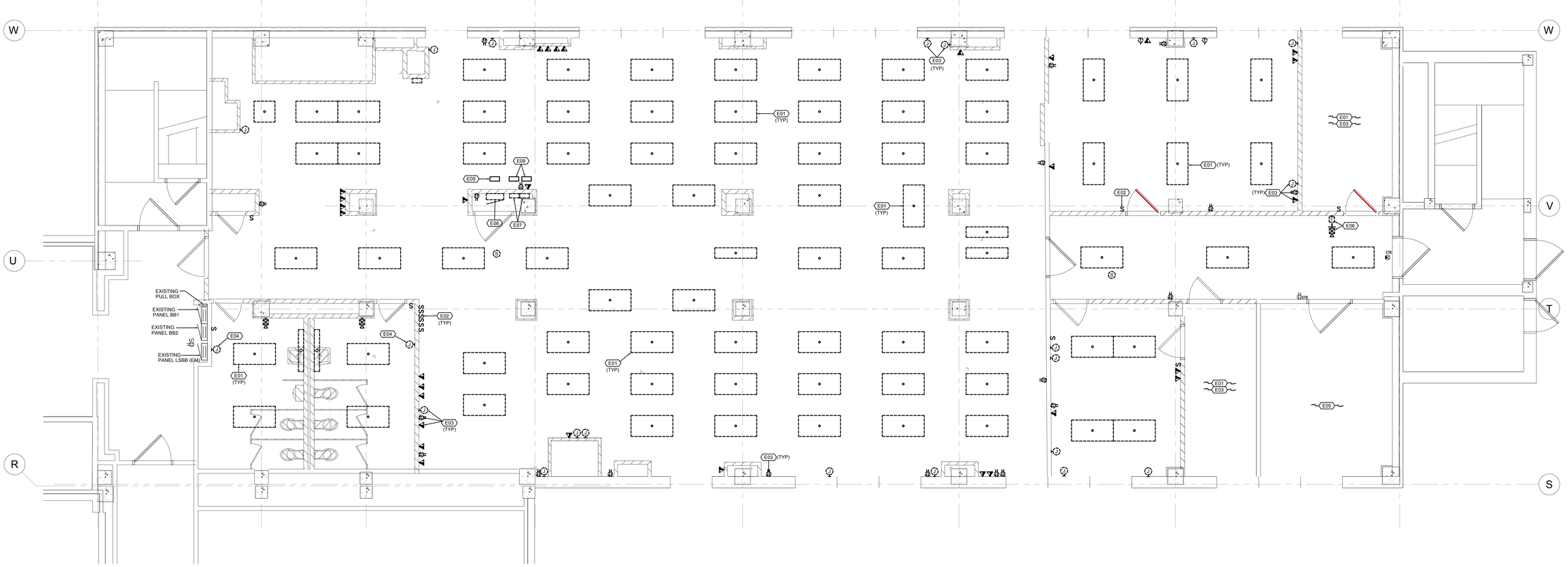
File Path



BASEMENT FLOOR PLAN-ELECTRICAL DEMOLITION

SCALE: 1/4" = 1'0"

N

E## FLOOR PLAN NOTES

1. EXISTING LIGHT FIXTURE TO BE DISCONNECTED AND REMOVED. REMOVE ALL CONDUIT AND WIRING BETWEEN FIXTURES AN BACK TO POINT OF ORIGIN.
2. EXISTING LIGHT SWITCH TO BE DISCONNECTED AND REMOVED. REMOVE ALL CONDUIT AND WIRING BETWEEN SWITCH AND LIGHT FIXTURES.
3. EXISTING WIRING DEVICE (RECEPTACLE, V/D OUTLET, JUNCTION BOX, ETC.) TO BE DISCONNECTED AND REMOVED. REMOVE ALL CONDUIT AND WIRING BETWEEN FIXTURES AND BACK TO POINT OF ORIGIN.
4. EXISTING HAND DRYER TO BE DISCONNECTED AND REMOVED. REMOVE ALL CONDUIT AND WIRING BACK TO POINT OF ORIGIN.
5. EXISTING LIGHT FIXTURES. WIRING DEVICES AND EQUIPMENT IN THIS ROOM ARE ETR.
6. EXISTING FIRE ALARM DEVICES TO BE DISCONNECTED AND RELOCATED. SEE NEW WORK PLAN.
7. EXISTING JUNCTION BOXES TO BE REMOVED. REMOVE EXISTING CONDUIT AND WIRING BACK TO ABOVE CEILING OR BELOW FLOOR IN CRAWL SPACE AND REROUTE CONDUIT AND WIRING TO NEW JUNCTION/SPLICE BOXES.
8. EXISTING PANEL ENCLOSURE USED FOR SPLICE BOX TO BE REMOVED. EXISTING CONDUIT AND WIRING BACK TO ABOVE CEILING AND BELOW FLOOR IN CRAWL SPACE AND REROUTE CONDUIT AND WIRING TO NEW JUNCTION/SPLICE BOXES.
9. NEW JUNCTION/SPLICE BOXES, NEMA 1 ENCLOSURE INSTALLED ABOVE LAY-IN CEILING AND BELOW FLOOR IN CRAWL SPACE. SPLICE WIRES IN NEW JUNCTION/SPLICE BOXES AS REQUIRED FOR RELOCATION AND EXTENSION OF EXISTING CIRCUIT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT SIZE OF CONDUIT AND WIRE REQUIRED FOR CIRCUIT RELOCATION.

No.	Description	Date
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Drawing Title: BASEMENT PLAN-ELECTRICAL DEMOLITION	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: / Drawn By:	Drawing No. ED1-100
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 33 Of 44

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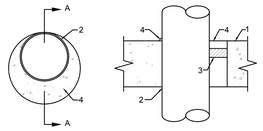


SECTION A-A

SYSTEM NO. 49

F RATINGS - 2 AND 3 HR. (SEE ITEM 2A)

T RATING - O HR.

1.) FLOOR OR WALL ASSEMBLY - MINIMUM 4 1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM DIAMETER OF CIRCULAR THROUGH OPENING IS 22 1/2". SEE CONCRETE BLOCK (CAZT) CATEGORY IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A.) STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOMINAL 12" DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2" FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL.

2.) PIPE OR CONDUIT - NOMINAL 20" DIAMETER (OR SMALLER) SCHEDULE 10S (OR HEAVIER) STEEL PIPE. NOMINAL 6" DIAMETER (OR SMALLER) RIGID STEEL CONDUIT. NOMINAL 6" DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE. NOMINAL 4" DIAMETER. (OR SMALLER) CAST IRON PIPE OR NOMINAL. 4" DIAMETER. (OR SMALLER) STEEL EMT. MAXIMUM ONE PIPE OR CONDUIT PER THROUGH OPENING. MAXIMUM ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING IS ZERO IN (POINT CONTACT). PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

2A.) STEEL VENT DUCT - (NOT SHOWN) - AS AN ALTERNATE TO THE PIPE OR CONDUIT, NOMINAL 4" DIAMETER (OR SMALLER) NO. 28 GAUGE (OR HEAVIER) GALVANIZED STEEL VENT DUCT MAY BE USED IN THROUGH OPENINGS OF FLOOR ASSEMBLIES PROVIDED MAXIMUM ANNULAR SPACE DOES NOT EXCEED 7/8". WHEN STEEL VENT DUCT IS USED, F RATING IS 2 HRS.

3.) PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOMINAL 1" THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET. MINERAL-WOOL BATT OF GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAXIMUM PIPE SIZE IS 10" DIAMETER AND WHEN MAXIMUM ANNULAR SPACE IS 1" OR LESS, A MINIMUM 1" THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OR MINERAL-WOOL BATT PACKING MATERIAL MAY BE RECESSED MINIMUM 1/2" FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF WALL.

4.) FILL, VOID OR CAVITY MATERIALS* -CAULK- APPLIED TO FILL THE ANNULAR SPACE TO THE MINIMUM THICKNESS SHOWN IN THE FOLLOWING TABLE:

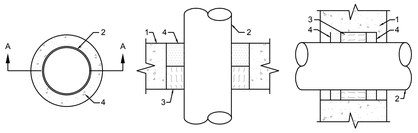
MAXIMUM PIPE DIAMETER. (IN.)	MAXIMUM ANNULAR SPACE (IN.)	PACKING MATERIAL TYPE (a)	MINIMUM CAULK THICKNESS (IN.)
10	1	BR, CF, GF or MW	1/2 (b)
10	1	CF or MW	1/2 (C)
20	2 1/2	BR, CF, GF or MW	1 (b)

(a.) BR = POLYETHYLENE BACKER ROD.
CF = CERAMIC FIBER BLANKET.
GF = GLASS FIBER INSULATION.
MW = MINERAL-WOOL BATT.
(b.) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACE OF WALL.
(c.) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACE OF WALL.

* BEARING THE UL CLASSIFICATION MARKING

1 CONCRETE WALL FIRE STOPPING DETAIL

NO SCALE



SECTION A-A
(FLOOR ASSEMBLY)

SECTION A-A
(WALL ASSEMBLY)

SYSTEM NO. CAJ1012

(FORMERLY SYSTEM NO. 129)

F RATINGS - 1 HR.

T RATING - 0 HR.

1.) FLOOR OR WALL ASSEMBLY - MINIMUM 5" THICK REINFORCED NORMAL WEIGHT (100 - 150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAXIMUM DIAMETER OF OPENING IS 6". SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2.) THROUGH PENETRANTS - ONE METALLIC PIPE OR CONDUIT TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOMINAL ANNULAR SPACE OF 3/4" IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:
A. STEEL PIPE - NOMINAL 4" DIAMETER (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE
B. CONDUIT - NOMINAL 4" DIAMETER (OR SMALLER) ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.

3.) PACKING MATERIAL - MINIMUM 3" THICKNESS OF MINIMUM 4.4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. PACKING MATERIAL TO BE CENTERED IN WALL'S MID-DEPTH AND RECESSED TO ALLOW FOR INSTALLATION OF FILL MATERIAL.

4.) FILL, VOID OR CAVITY MATERIAL* - SEALANT OR FOAM - MINIMUM 1/2" THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR. IN WALL, FILL MATERIAL TO BE APPLIED ON EACH SIDE OF PACKING MATERIAL. FOAMED SILICONE TO BE INSTALLED AS DESCRIBED IN THE MANUFACTURER'S APPLICATION INSTRUCTIONS AT A DENSITY OF 14 PCF MINIMUM TO 21 PCF MAXIMUM. THE THICKNESS OF FILL MATERIAL IS DEPENDENT UPON THE TYPE OF FILL MATERIAL AS SHOWN IN THE TABLE BELOW.

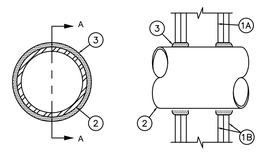
FILL MATERIAL IDENTIFICATION	MINIMUM THICK OF FILL MATERIAL. (IN.)
TYPE FS FOAM	1
TYPE FS SEALANT OR FS SEALANT SL	1/2

DOW CORNING CORP. - TYPES FS SEALANT, FS SEALANT SL (FLOOR ONLY) OR FS FOAM

* BEARING THE UL CLASSIFICATION MARKING.

2 GYPSUM/STUD WALL FIRE STOPPING DETAIL

NO SCALE



SECTION A-A

SYSTEM NO. WL1001

(FORMERLY SYSTEM NO. 147)

F RATINGS - 1,2,3 AND 4 HR. (SEE ITEM 2 & 3)

T RATINGS - 0,1,2,3 AND 4 HR. (SEE ITEM 3)

1.) WALL ASSEMBLY - THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX. 2 HR. FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN. 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX. 24 IN O.C.
B. WALLBOARD, GYPSUM *-NOM 1/2 OR 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 13-1/2 IN.

2.) PIPE OR CONDUIT - NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE, NOM 6 IN. DIAM (OR SMALLER) STEEL CONDUIT, NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR TYPE L OR (OR HEAVIER) COPPER TUBING OR NOM 1 IN. DIAM (OR SMALLER) FLEXIBLE STEEL CONDUIT. WHEN COPPER PIPE OR FLEXIBLE STEEL CONDUIT IS USED, MAX F RATING OF FIRESTOP SYSTEM (ITEM 3) IS 2 HR. STEEL PIPES OR CONDUITS LARGER THAN NOM 4 IN. DIAM MAY ONLY BE USED IN WALLS CONSTRUCTED USING STEEL CHANNEL STUDS. A MAX OF ONE PIPE OR CONDUIT IS PERMITTED IN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE INSTALLED NEAR CENTER OF STUD CAVITY WIDTH AND TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.

3.) FILL, VOID OR CAVITY MATERIAL *-CAULK-CAULK FILL MATERIAL INSTALLED TO COMPLETELY FILL ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND GYPSUM WALLBOARD AND WITH A MIN. 1/4 IN. DIAM BEAD OF CAULK APPLIED TO PERIMETER OF PIPE OR CONDUIT AT ITS EGRESS FROM THE WALL. CAULK INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRE-STOP SYSTEM IS DEPENDENT UPON THE TYPE OF SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

MAX PIPE OR CONDUIT DIAM IN.	ANNULAR SPACE IN	F RATING HR	T RATING OR
1	0 TO 3/16	1 OR 2	0+, 1 OR 2
1	1/4 TO 1/2	3 OR 4	3 OR 4
4	0 TO 1/4	1 OR 2	0
6	1/4 TO 1/2	3 OR 4	0
12	3/16 TO 3/8	1 OR 2	0

+ WHEN COPPER PIPE IS USED, T RATING IS 0 HR.
MINNESOTA MINING & MFG. CO.-TYPE CP-25 S/L, CP-25 N/S, CP-25 WB, CP-25 WB+

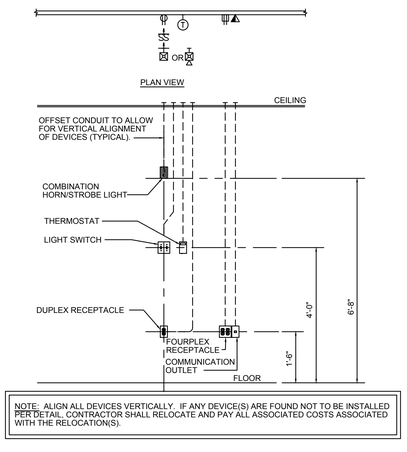
* BEARING THE UL CLASSIFICATION MARKING.

GENERAL NOTES (TYPICAL ALL SHEETS)

- REFER TO ARCHITECTS REFLECTED CEILING PLANS FOR EXACT PLACEMENT OF LIGHT FIXTURES, SPEAKER AND F.A. DEVICES IN THE CEILING SYSTEM.
- REFER TO ARCHITECTURAL PLANS FOR DETAIL OF ALL CONDUIT THRU ROOF PENETRATIONS.
- ALL JUNCTION BOXES FOR RECEPTACLES SHALL BE EVENLY SPACED ALONG WALL.
- INSTALL BLANK COVERPLATE ON ALL OPEN OR ABANDONED DEVICE BOXES. VERIFY COLOR WITH ARCHITECT.
- WIRING TO BE REMOVED BACK TO THE NEAREST DEVICE TO REMAIN. WIRING SHALL NOT BE TAKEN PAST THE FIRST JUNCTION BOX BEFORE THE PANELBOARD.
- ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY THE CONTRACTOR.
- NEW CIRCUITRY SHOWN FOR NEW POWER AND LIGHTING IS DIAGRAMMATIC AND IS INTENDED TO SHOW WHICH DEVICES ARE TO BE GROUPED ON INDIVIDUAL CIRCUITS.
- PROVIDE UPDATED, TYPEWRITTEN PANELBOARD DIRECTORY FOR EACH PANELBOARD WHICH CIRCUITS HAVE BEEN ADDED TO OR MODIFIED.
- CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100AMPS.
- SUPPORT ALL LIGHT FIXTURES WITH A MINIMUM OF (4) 12 GA. HANGER WIRES TO STRUCTURE ABOVE.
- CONNECT EXIT AND EMERGENCY LIGHTS TO HOT LEG, NOT SWITCH LEG.
- DISCONNECTS FOR MECHANICAL EQUIPMENT ARE PROVIDED BY OTHERS. UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL FOLLOW THE FOLLOWING GUIDE LINES;
  - a. MAXIMUM OF 16A PER 20A/1P CIRCUIT BREAKER.
  - b. WHERE ACCEPTABLE INSTALL SWITCHES UNDER COMMON FACE PLATE.
  - c. CONTRACTOR SHALL INSTALL FIRE ALARM DEVICES THAT COMPLIES WITH APPLICABLE CODES. INCLUDING BUT NOT LIMITED TO THE NFPA, UL, ADA.
  - d. CONTRACTOR SHALL COMPLY WITH THE NEC OR ANY OTHER CODES HAVING JURISDICTION.
- ALIGN ALL WIRING DEVICES IN VERTICAL ALIGNMENT. IF ANY DEVICE(S) ARE FOUND NOT TO BE INSTALLED PER DETAIL CONTRACTOR SHALL RELOCATE AND PAY ALL ASSOCIATED COSTS ASSOCIATED WITH THE RELOCATION(S).
- MEANS OF EGRESS TO BE ILLUMINATED AT NOT LESS THAN 1 FOOTCANDLE AT THE FLOOR. CONTRACTOR SHALL PROVIDE AND INSTALL IF NECESSARY ADDITIONAL EMERGENCY FIXTURES IF NECESSARY TO MEET THE REQUIRED READINGS.
- PROVIDE FIRE STOP ON ALL PIPING AT WALL PENETRATIONS PER LOCAL CODE REQUIREMENTS. METHOD OF FIRE STOP SHALL MEET WALL RATING. RE: ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED WALLS. PROVIDE FIRE CAP HOUSING FOR ALL FIXTURES THAT PENETRATE FIRE RATED CEILINGS.
- CONDUIT SHALL BE USED FOR CONDUCTORS WHERE REQUIRED BY N.E.C.
- OUTLETS INSTALLED IN FIRE RATED ASSEMBLES SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24".
- CONTRACTOR SHALL CALCULATE VOLTAGE DROP AND SIZE WIRE ACCORDINGLY. PER N.E.C.
- PROVIDE 3'-0" CLEARANCE IN FRONT OF DISCONNECTS UNITS.
- CONTRACTOR SHALL PROVIDE FIRE RATED ENCLOSURES AROUND ALL ROUGH-IN BOXES, PANELS ETC. THAT ARE LOCATED IN FIRE RATED WALLS AND SHALL FIRE CAULK ALL OPENING IN RATED ASSEMBLES PER MANUFACTURERS RECOMMENDATIONS PER FIRE RATED ASSEMBLES.
- WHERE MORE THAN ONE SWITCH IS INDICATED ON DRAWINGS SIDE BY SIDE, CONTRACTOR SHALL INSTALL SWITCHES UNDER ONE COMMON FACE PLATE.
- UPON REQUEST FOR ELECTRONIC FILES, CONTRACTOR SHALL FILL OUT, SIGN AND RETURN ELECTRONIC MEDIA RELEASE FORM FROM ENGINEER AND PROVIDE PAYMENT FOR FEES STIPULATED ON ELECTRONIC MEDIA RELEASE FORM. UPON RECEIPT OF COMPLETED RELEASE FORM AND PAYMENT, ELECTRONIC FILES WILL BE RELEASED.
- CONTRACTOR SHALL PROVIDE HIS/HER OWN SUPPORTING OF CABLING FROM STRUCTURE ABOVE, I.E. TEMPERATURE CONTROL WIRING, SECURITY CONTROL WIRING, FIRE ALARM CONTROL WIRING, OR ANY OTHER WIRING CONTAINING VOLTAGE. CONTRACTOR SHALL NOT RUN PARALLEL WITH OR BE SUPPORTED BY ANY UTP, COAX OR VIDEO CABLING (CABLES INDICATED ON TECHNOLOGY DRAWINGS). IF CABLES ARE FOUND TO BE SUPPORTED WITH THESE CABLES, CONTRACTOR SHALL REMOVE CABLES, REROUTE AND RE-SUPPORT AT THERE OWN EXPENSE. IF UTP CABLES ARE DAMAGED WHILE EITHER INSTALLING OR REMOVING SUCH CABLES, THE CONTRACTOR(S) THAT DID SUCH DAMAGED SHALL COVER COST TO REPLACE CABLES AT THERE OWN EXPENSE.
- REFERENCE EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION REQUIREMENTS TO ALL EQUIPMENT LISTED ON THIS SHEET.
- FIRE ALARM CONTRACTOR TO MAKE FINAL CONNECTION TO FAN POWERED BOXES RELAY FOR AUTOMATIC SHUT DOWN UPON ACTIVATION OF FIRE ALARM SYSTEM.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE RECONNECTION OF ALL EXISTING ELECTRICAL LOADS, WHICH ARE TO REMAIN, TO NEW ELECTRICAL DISTRIBUTION SYSTEM.
- MULTI-WIRE BRANCH CIRCUITS SERVING FURNITURE SHALL HAVE DEDICATED NEUTRALS AND SHALL BE TERMINATED ON SEPARATE NEUTRAL BUSES WITHIN FURNITURE SYSTEM.
- WHERE THE DRAWINGS INDICATE DEDICATED CIRCUITRY WITH NO SHARED NEUTRALS, THE CONTRACTOR SHALL NOT INSTALL MULTI-WIRE BRANCH CIRCUITS WITH A COMMON NEUTRAL.
- DRAWINGS INDICATE DEDICATED CIRCUITS WITH NO SHARED NEUTRALS. IF CONTRACTOR HAS OWNER'S PERMISSION, MULTI-WIRE BRANCH CIRCUITS MAY SHARE A COMMON NEUTRAL. WHEN THIS OCCURS, THE CONTRACTOR SHALL FURNISH AND INSTALL A MANUFACTURED BREAKER HANDLE-TIE (NOT COPPER WIRE, NAIL, ETC.) BETWEEN THE SHARED BREAKERS (MAXIMUM OF 3 SHARED PHASES PER NEUTRAL, CAN ONLY SHARE NEUTRAL BETWEEN 15 OR 20 AMP RATED BREAKERS) FOR SIMULTANEOUS BREAKER TRIP OF SINGLE PHASE LOADS, TO MEET NFPA, NEC REQUIREMENTS. NO EXCEPTIONS: DO NOT SHARE NEUTRAL WHERE OUTLETS INDICATED WITH A 'D' FOR DEDICATED CIRCUIT.

ELECTRICAL SYMBOLS

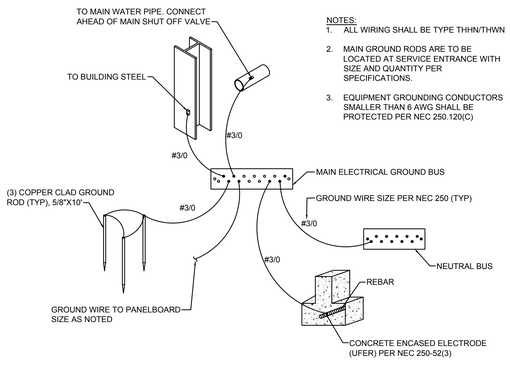
- BRANCH CIRCUIT HOMERUN. LINES INDICATE NUMBER OF CIRCUITS, NEUTRAL, AND SWITCH LEG CONDUCTORS. ONE SEPARATE GREEN GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH HOMERUN, NOT SHOWN
- PANELBOARD CABINET, SURFACE MOUNTED
- RECEPTACLE, DUPLEX
- RECEPTACLE, DUPLEX ON EMERGENCY POWER
- RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
- RECEPTACLE, QUADRAPLEX
- OUTLET, COMBINATION TELEPHONE/DATA COMMUNICATION
- $# SWITCH (# SUBSCRIPT AS INDICATED BELOW):
  BLANK = SINGLE POLE — 2 = DOUBLE POLE
  3 = THREE-WAY — 4 = FOUR-WAY
  D = DIMMER — K = KEY OPERATED
  LV= LOW VOLTAGE — P = WITH PILOT LIGHT
  LM= LOW VOLTAGE MASTER — RC= REMOTE CONTROL
  PB= PUSH BUTTON STATION — WP= WEATHER PROOF
  T = TIMER OPERATED — Mo= OCCUPANCY SENSOR
- A — 2x4 LIGHT FIXTURE, RECESSED LED, 610x1220mm (2'x4'); LETTER INDICATES TYPE.
- A — 2x2 LIGHT FIXTURE, RECESSED LED, 610x1220mm (2'x4'); LETTER INDICATES TYPE.
- A — 2x4 LIGHT FIXTURE, LED EMERGENCY; LETTER INDICATES TYPE.
- A — 2x2 LIGHT FIXTURE, LED EMERGENCY; LETTER INDICATES TYPE.
- B — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 305x1220mm (1'x4'); LETTER INDICATES TYPE.
- EXIT SIGN, WALL MOUNTED WITH DIRECTIONAL ARROWS AND FACES AS SHOWN
- ALARM, HORN/LIGHT, ONE ASSEMBLY
- ALARM, LAMP LIGHT, SIGNAL LIGHT, STROBE
- S X — SPEAKER, CEILING MOUNTED, "X" INDICATES THE TYPE, PROVIDE SCHEDULE ON LEGEND
- R/T HD — DETECTOR, HEAT; LETTER INDICATES AS FOLLOWS:
  R/T = COMBINATION — F = FIXED TEMPERATURE RISE
  R/C = RATE COMPENSATION — R = RATE OF
- H — DETECTOR; LETTER INDICATES AS FOLLOWS:
  BLANK = SMOKE DETECTOR
  H = HEAT SMOKE
  I = IONIZATION SMOKE
  P = PHOTOELECTRIC SMOKE
  IH = IONIZATION AND HEAT SMOKE
  IP = IONIZATION AND PHOTOELECTRIC SMOKE
  PH = PHOTOELECTRIC AND HEAT SMOKE
  IPH = IONIZATION, PHOTOELECTRIC, AND HEAT



NOTE: ALIGN ALL DEVICES VERTICALLY. IF ANY DEVICE(S) ARE FOUND NOT TO BE INSTALLED PER DETAIL, CONTRACTOR SHALL RELOCATE AND PAY ALL ASSOCIATED COSTS ASSOCIATED WITH THE RELOCATION(S).

3 TYPICAL WALL MOUNTING DEVICE DETAIL

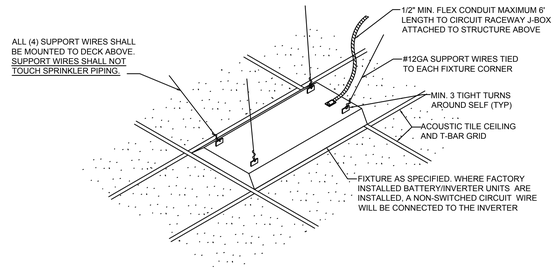
NO SCALE



NOTES:
1. ALL WIRING SHALL BE TYPE THHN/THWN
2. MAIN GROUND RODS ARE TO BE LOCATED AT SERVICE ENTRANCE WITH SIZE AND QUANTITY PER SPECIFICATIONS.
3. EQUIPMENT GROUNDING CONDUCTORS SMALLER THAN 6 AWG SHALL BE PROTECTED PER NEC 250.120(C)

4 MAIN SERVICE ENTRANCE GROUNDING DETAIL

NO SCALE



5 LIGHT FIXTURE MOUNTING AND BRACING DETAIL

NO SCALE

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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VA EASTERN KANSAS HEALTH CARE SYSTEM

Dwight D. Eisenhower VA Medical Center
Leavenworth
Colmery-O'Neil VA Medical Center
Topeka

VA | U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL DETAILS	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: / Drawn By:	Drawing No. EG1-500
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 34 Of 44

VA Department of Veterans Affairs

Time: 10:49:16 AM
File name: 160825 10103 16 Topeka VA Relocate Sterile Processing-Project File _sarah.www
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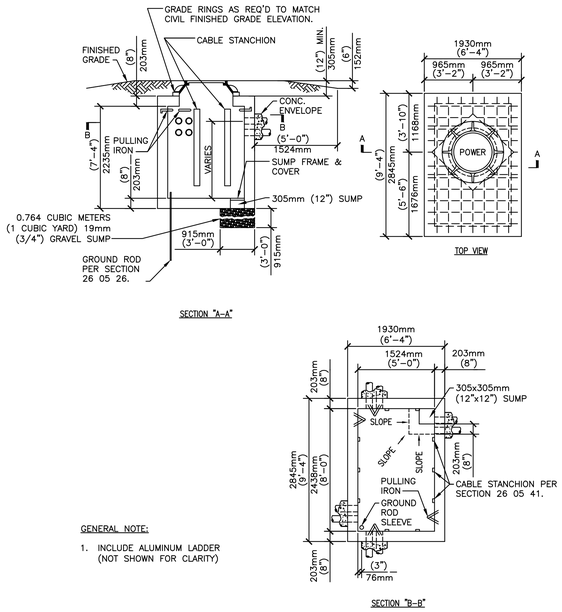
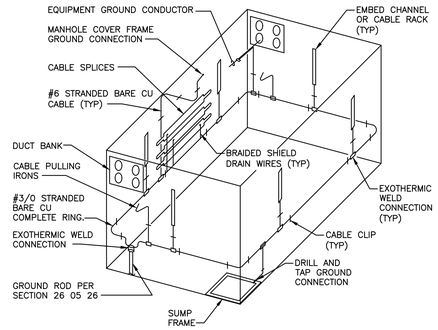


GENERAL NOTE:

1. INCLUDE ALUMINUM LADDER (NOT SHOWN FOR CLARITY)

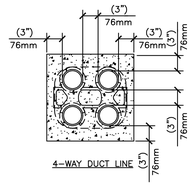
1 POWER MANHOLE DETAIL

NO SCALE



2 MANHOLE GROUNDING DETAILS

NO SCALE

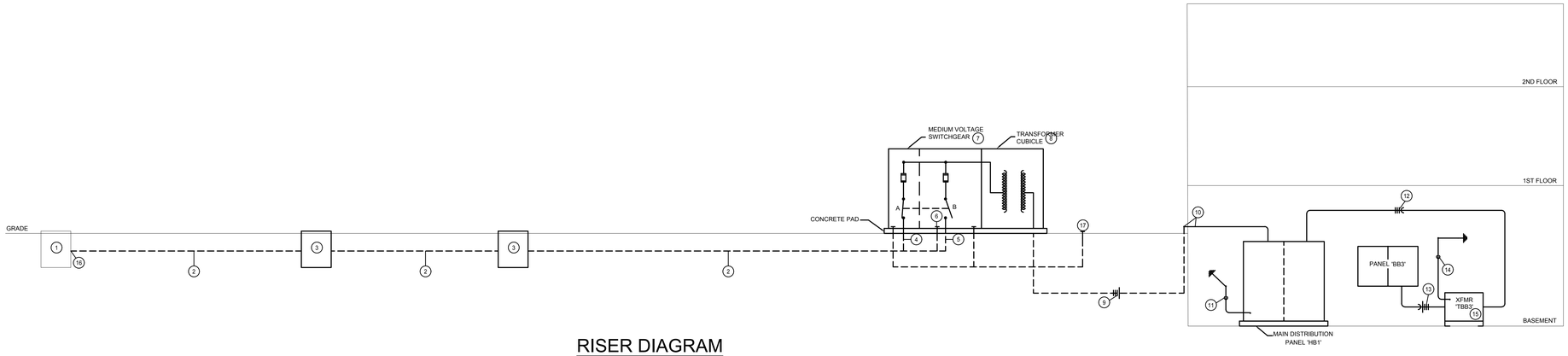


GENERAL NOTES:

1. CONCRETE SHALL BE 2000 P.S.I. @ 28 DAYS, OR AS SPECIFIED.
2. PROVIDE #4 REINFORCING RODS ON TOP AND BOTTOM OF DUCTS WHEN CROSSING OR PLACED IN ROADWAYS.
3. MINIMUM COVER TO TOP OF ENVELOPE SHALL BE 610mm (24") OR AS OTHERWISE SPECIFIED IN SECTION 26 05 41.
4. PROVIDE MINIMUM 152mm (6") SPACE BETWEEN POWER AND TELECOMMUNICATION DUCTS. INCREASE SIZE AS REQUIRED.
5. INNERDUCT QUANTITY AND SIZE AS INDICATED ON PLANS.

3 DUCT BANK DETAILS

NO SCALE



RISER DIAGRAM

NO SCALE

RISER NOTES

1. EXISTING PRIMARY SERVICE CABLE CONCRETE MANHOLE WITH LOOP 'A' AND LOOP 'B' CABLES. MANHOLE LOCATED ON WEST SIDE OF MAIN HOSPITAL BUILDING. SEE SITE PLAN.
2. (3) 4" PVC CONDUITS INSTALLED IN CONCRETE ENCASED DUCT BANK. (1) CONDUIT FOR LOOP 'A' CABLES, (1) CONDUIT FOR LOOP 'B' CABLES, AND (1) CONDUIT FOR SPARE. PROVIDE (3) 15KV PRIMARY SERVICE CABLES (#2/AL) IN CONDUIT FOR LOOP 'B'.
3. NEW PRIMARY SERVICE CABLE CONCRETE MANHOLE FOR LOOP 'A', LOOP 'B' CABLES, AND SPARE CONDUIT. SEE SITE PLAN.
4. (1) 4" PVC CONDUIT WITH (3) 15KV PRIMARY SERVICE CABLES (#2/AL) FOR LOOP 'A' CABLES.
5. (1) 4" PVC CONDUIT WITH (3) 15KV PRIMARY SERVICE CABLES (#2/AL) FOR LOOP 'B' CABLES.
6. STUB SPARE CONDUIT UP IN CUBICLE.
7. MEDIUM VOLTAGE SWITCHBOARD WITH (2) FUSIBLE SWITCHES. (1) SWITCH FOR LOOP 'A' AND (1) SWITCH FOR LOOP 'B'. SWITCHES SHALL BE INTERLOCKED SO THAT WHEN SWITCH 'A' IS CLOSED THEN SWITCH 'B' IS CLOSED SWITCH 'A' IS OPEN. SWITCHES 'A' AND 'B' CANNOT BE CLOSED AT THE SAME TIME. NEMA 3R ENCLOSURE. PROVIDE (3) 70A FUSES FOR HV SWITCH 'A' AND (3) 70 AMP FUSES FOR SWITCH 'B'.
8. TRANSFORMER SHALL BE 1000KVA, 12,470 VOLTS, DELTA PRIMARY-480Y/277 VOLT, 3 PHASE, 4 WIRE SECONDARY. NEMA 3R ENCLOSURE.
9. (4) SETS OF 3" PVC CONDUITS WITH 4-#350KCMIL IN EACH. CONDUITS SHALL BE CONCRETE ENCASED.
10. PROVIDE 'LB' ON EACH CONDUIT. CORE DRILL WALL AS REQUIRED FOR CONDUIT INSTALLATION. CAULK AND SEAL WATERTIGHT. ROUTE CONDUITS OVERHEAD (ABOVE CEILING) TO PANEL 'HB1'.
11. SERVICE GROUNDS. SEE DETAILS
12. 1"C, 3-#4 AND 1-#6 GROUND WIRE.
13. 3"C, 4-#1/0 AND 1-#6 GROUND WIRE.
14. 1-#6 GROUND WIRE. CONNECT TO BUILDING STEEL.
15. 45 KVA TRANSFORMER, 480 VOLT DELTA PRIMARY 208Y/120 VOLT, 3 PHASE, 4 WIRE SECONDARY. INSTALL ON CONCRETE PAD.
16. STUB SPARE CONDUIT UP IN CUBICLE. CAP CONDUIT.
17. (2) 4" PVC CONDUITS STUBBED UP AND CAPPED FOR FUTURE USE.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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Building Key Plan:

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VA EASTERN KANSAS HEALTH CARE SYSTEM

Dwight D. Eisenhower VA Medical Center
Leavenworth
Colmery-O'Neil VA Medical Center
Topeka

VA | U.S. Department of Veterans Affairs

Drawing Title: ELECTRICAL DETAILS

Project Title: RELOCATE STERILE PROCESSING SERVICE

Date: 01/20/17

Project No. 589A5-15-117

Scale:

Building Number: 1

Checked By:

Drawn By:

Drawing No. EG1-501

Dwg. 35 Of 44

Approved:

Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS

VA Department of Veterans Affairs

Time: 10:49:16 AM
File name: 160625 10103316 Topeka VA Relocate Sterile Processing-Project File _sarah.www

File Path

NEW PANELBOARD HB1 SCHEDULE

SERVICE: 480/277 VOLT , 3 - PHASE , 4 - WIRE
AMP FRAME: 1200 AMP
MAINS: MCB / 1200 AMP MAIN BREAKER WITH FEED THROUGH LUGS
MOUNTING: SURFACE
RATING: 42000 A.I.C.
LOCATION: MECH RM B014M

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	NOTE NO.	REV NO.
		1								2									
		3	BOILER 1-B1	3	300				180	4	WATER HEATER 1-DWH-1	3	100				60		
		5								6									
		7								8									
		9	CART WASHER	3	150				90	10	SPARE	3	100						
		11								12									
		13								14									
		15	1-AHU-1	3	40				17.4	16	1-EF-1	3	15				3.6		
		17								18									
		19								20									
		21	1-AC-1	3	20				9.1	22	BOILER 1-B2	3	300				180		
		23								24									
		25								26									
		27	1-CAV-1	3	20				10	28	1-CAV-4	3	15				8		
		29								30									
		31								32									
		33	1-CAV-2	3	25				15	34	1-CAV-5	3	15				6		
		35								36									
		37								38									
		39	1-CAV-3	3	30				16	40	1-CAV-6	3	20				10		
		41								42									

NEW PANELBOARD HB1 SCHEDULE SECTION 2

SERVICE: 480/277 VOLT , 3 - PHASE , 4 - WIRE
AMP: AMP
WITH FEED THROUGH LUGS
MOUNTING: SURFACE
RATING: 42000 A.I.C.
LOCATION: MECH RM B014M

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	NOTE NO.	REV NO.
		43	1-CAV-7	1	20	3				44									
		45	1-CAV-8	1	15		1			46	TRSF 'TBB3'	3	70				23.37		
		47	1-CAV-9	1	15			2		48									
		49								50									
		51	SMALL STERILIZER PUMP	3	15				0.35	52	LARGE STERILIZER PUMP	3	15				7.5		
		53								54									
		55								56									
		57	LARGE STERILIZER PUMP	3	15				7.5	58	SPARE	3	20						
		59								60									
		61								62									
		63	SPARE	3	20					64	SPARE	3	30						
		65								66									
		67	PROVISION							68	PROVISION								
		69	PROVISION							70	PROVISION								
		71	PROVISION							72	PROVISION								
		73	PROVISION							74	PROVISION								
		75	PROVISION							76	PROVISION								
		77	PROVISION							78	PROVISION								
		79	PROVISION							80	PROVISION								
		81	PROVISION							82	PROVISION								
		83	PROVISION							84	PROVISION								
			TOTAL:	3	1	2	345.35				TOTAL:	0	0	0	298.5				
												3	1	2	345.4				
											KVA / PHASE TOTAL:	3	1	2	643.8				
											AMP / PHASE TOTAL:	269.0	261.7	265.4					

NOTES:

REV:

GENERAL NOTES:
A CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR & CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100 AMPS
B PROVIDE MAIN CIRUIT BREAKER WITH BUILT IN GFCI PROTECTION.

TOTAL CONNECTED LOAD:	649.82	KVA
TOTAL CONNECTED CURRENT:	781.61	AMPS
LIGHTS @ 125%:	0.00	KVA
RECEPTACLES @ 100%:	0.00	KVA
RECEPTACLES @ 50%	0.00	KVA
LARGEST MOTOR LOAD @ 125%:	21.75	KVA
CONTINUOUS LOAD @ 125%:	4.50	KVA
OTHER AND NON-CONTINUOUS LOADS @ 100%:	105.35	KVA
TOTAL DEMAND LOAD:	670.35	KVA
POWER FACTOR:	0.95	% PF
TOTAL DEMAND CURRENT:	848.77	AMPS

NEW PANELBOARD EB1 SCHEDULE

SERVICE: 208/120 VOLT , 3 - PHASE , 4 - WIRE
AMP FRAME: 100 AMP
MAINS: MLO
MOUNTING: SURFACE
RATING: 22000 A.I.C.
LOCATION: MECH ROOM B43M

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	NOTE NO.	REV NO.
		1	REC-BIOMED SERVER	1	20	0.8				2	REC-BIOMED SERVER	1	20	0.8					
		3	REC-BIOMED SERVER	1	20		0.8			4	REC-BIOMED SERVER	1	20		0.8				
		5	REC-BIOMED SERVER	1	20			0.8		6	REC-BIOMED SERVER	1	20			0.8			
		7	REC-BIOMED SERVER	1	20	0.8				8	TL-REC-BIOMED	2	30	1.5					
		9	REC-BIOMED SERVER	1	20		0.8			10					1.5				
		11	REC-BIOMED SERVER	1	20			0.8		12	TL-REC-BIOMED	2	30			1.5			
		13	SPARE	1	20					14				1.5					
		15	SPARE	1	20					16	SPARE	2	30						
		17	SPARE	1	20					18									
		19	SPARE	1	30					20	PROVISION								
		21	SPARE	1	20					22	PROVISION								
		23	SPARE	1	20					24	PROVISION								
		25	PROVISION							26	PROVISION								
		27	PROVISION							28	PROVISION								
		29	PROVISION							30	PROVISION								
			TOTAL:	1.6	1.6	1.6	0				TOTAL:	3.8	2.3	2.3	0.0				
												1.6	1.6	1.6	0.0				
											KVA / PHASE TOTAL:	5.4	3.9	3.9	0.0				
											AMP / PHASE TOTAL:	45.0	32.5	32.5					

NOTES:

REV:

GENERAL NOTES:
A CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR & CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100 AMPS

TOTAL CONNECTED LOAD:	13.20	KVA
TOTAL CONNECTED CURRENT:	36.64	AMPS
LIGHTS @ 125%:	0.00	KVA
RECEPTACLES @ 100%:	10.00	KVA
RECEPTACLES @ 50%	1.60	KVA
LARGEST MOTOR LOAD @ 125%:	0.00	KVA
CONTINUOUS LOAD @ 125%:	0.00	KVA
OTHER AND NON-CONTINUOUS LOADS @ 100%:	0.00	KVA
TOTAL DEMAND LOAD:	11.60	KVA
POWER FACTOR:	0.95	% PF
TOTAL DEMAND CURRENT:	33.89	AMPS

NEW PANELBOARD BB3 SCHEDULE

SERVICE: 208/120 VOLT , 3 - PHASE , 4 - WIRE
AMP FRAME: 200 AMP
MAINS: MCB / 150 AMP MAIN BREAKER WITH FEED THROUGH LUGS
MOUNTING: SURFACE
RATING: 22000 A.I.C.
LOCATION: MECH RM B014M

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	NOTE NO.	REV NO.
		1	REC-STORAGE	1	20	0.7				2	REC-PREP/PACK	1	30	0.72					
		3	REC-PREP/PACK	1	20		0.5			4	REC-PREP/PACK	1	30		0.36				
		5	REC-PREP/PACK	1	20			0.5		6	REC-PREP/PACK	1	30			0.36			
		7	REC-PREP/PACK	1	20	0.5				8	REC-PREP/PACK	1	30	0.5					
		9	REC-PREP/PACK	1	20		0.5			10	REC-GENERAL	1	20		0.9				
		11	REC-PREP/PACK	1	20			0.5		12	REC-GENERAL	1	20			0.9			
		13				1				14	REC-GENERAL	1	20	0.9					
		15	STERALIZER CONTROLS	3	20		1			16	REC-GENERAL	1	20		0.9				
		17						1		18	PASS THRU DRYER	1	20			1.5			
		19	SPARE	1	20					20	SPARE	1	20						
		21	SPARE	1	20					22	SPARE	1	20						
		23	SPARE	1	20					24	SPARE	1	20						
		25								26									
		27	SPARE	3	30					28	SPARE	3	40						
		29								30									
		31								32									
		33	WASHER/DRYER	3	40				9.6	34	SONIC CLEANER	3	60				10		
		35								36									
		37								38									
		39	WASHER/DRYER	3	40				9.6	40	CART WASHER	3	50				11.3		
		41								42									

NEW PANELBOARD BB3 SCHEDULE SECTION 2

SERVICE: 208/120 VOLT , 3 - PHASE , 4 - WIRE
AMP: AMP
MOUNTING: SURFACE
RATING: 22000 A.I.C.
LOCATION: MECH RM B014M

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	NOTE NO.	REV NO.
		43	REC-GENERAL	1	20	0.9				44	DOOR CONTROL	1	20	0.75					
	1	45	HEAT TRACE	1	20		1.5			46	1-CP-1	1	20		0.2				
		47	TEMP CONTROL	1	20			0.5		48	1-WS-1 AND 1-WS-2	1	20			2.5			
		49								50	1-CAV-1 THRU 1-CAV-9	1	20	0.55					
		51	SPARE	3	20					52	MOTORIZED DAMPERS	1	20		0.8				
		53								54	SPARE	1	20						
	1	55	R/O SYSTEM	1	20	0.5				56	SPARE	1	20						
	1	57	R/O SYSTEM	1	20		0.5			58	SPARE	1	20						
		59	R/O SYSTEM	2	20			1		60	SPARE	1	20						
		61				1				62	SPARE	1	20						
		63	PUMP 1-P1	1	20		0.6			64	SPARE	1	20						
		65	CHEMICAL FEED	1	20			0.4		66	SPARE	1	20						
		67	SPARE	1	20					68	PROVISION								
		69	SPARE	1	20					70	PROVISION								
		71	SPARE	1	20					72	PROVISION								
		73	PROVISION							74	PROVISION								
		75	PROVISION							76	PROVISION								
		77	PROVISION							78	PROVISION								
		79	PROVISION							80	PROVISION								
		81	PROVISION							82	PROVISION								
		83	PROVISION							84	PROVISION								
			TOTAL:	4.6	4.6	3.9	19.2				TOTAL:	3.42	3.16	5.26	21.3				
												4.6	4.6	3.9	19.2				
											KVA / PHASE TOTAL:	8.02	7.76	9.16	40.5				
											AMP / PHASE TOTAL:	104.3	102.1	113.8					

NOTES:
1 PROVIDE TYPE GFCI CIRCUIT BREAKER.

REV:

GENERAL NOTES:
A CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR & CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100 AMPS

TOTAL CONNECTED LOAD:	65.44	KVA
TOTAL CONNECTED CURRENT:	181.64	AMPS
LIGHTS @ 125%:	0.00	KVA
RECEPTACLES @ 100%:	10.00	KVA
RECEPTACLES @ 50%	0.57	KVA
LARGEST MOTOR LOAD @ 125%:	0.00	KVA
CONTINUOUS LOAD @ 125%:	6.88	KVA
OTHER AND NON-CONTINUOUS LOADS @ 100%:	4.05	KVA
TOTAL DEMAND LOAD:	23.37	KVA
POWER FACTOR:	0.95	% PF
TOTAL DEMAND CURRENT:	68.28	AMPS

NEW PANELBOARD UPS-B1 SCHEDULE

SERVICE: 208/120 VOLT , 3 - PHASE , 4 - WIRE
AMP FRAME: 100 AMP
MAINS: MCB / 100 AMP MAIN BREAKER
MOUNTING: SURFACE
RATING: 22000 A.I.C.
LOCATION: MECH ROOM B43M

REV NO.	NOTE NO.	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	CRT#	LOAD DESCRIPTION	BRKR P	BRKR AMP	LOAD KVA A	LOAD KVA B	LOAD KVA C	LOAD KVA 3PH	NOTE NO.	REV NO.
		1	REC-BIOMED SERVER	1	20	0.8				2	REC-BIOMED SERVER	1	20	0.8					
		3	REC-BIOMED SERVER	1	20		0.8			4	REC-BIOMED SERVER	1	20		0.8				
		5	REC-BIOMED SERVER	1	20			0.8		6	REC-BIOMED SERVER	1	20			0.8			
		7	REC-BIOMED SERVER	1	20	0.8				8	TL-REC-BIOMED	2	30	1.5					
		9	REC-BIOMED SERVER	1	20		0.8			10					1.5				
		11	REC-BIOMED SERVER	1	20			0.8		12	TL-REC-BIOMED	2	30			1.5			
		13	SPARE	1	20					14				1.5					
		15	SPARE	1	20					16	SPARE	2	30						
		17	SPARE	1	20					18									
		19	SPARE	1	30					20	PROVISION								
		21	SPARE	1	20					22	PROVISION								
		23	SPARE	1	20					24	PROVISION								
		25	PROVISION							26	PROVISION								
		27	PROVISION							28	PROVISION								
		29	PROVISION							30	PROVISION								
			TOTAL:	1.6	1.6	1.6	0				TOTAL:	3.8	2.3	2.3	0.0				
												1.6	1.6	1.6	0.0				
											KVA / PHASE TOTAL:	5.4	3.9	3.9	0.0				
											AMP / PHASE TOTAL:	45.0	32.5	32.5					

NOTES:

REV:

GENERAL NOTES:
A CONTRACTOR TO REFERENCE BRANCH CIRCUIT COPPER CONDUCTOR & CONDUIT SIZING CHART FOR SIZING OF BRANCH CIRCUITS AND OR FEEDERS AT OR BELOW 100 AMPS

TOTAL CONNECTED LOAD:	13.20	KVA
TOTAL CONNECTED CURRENT:	36.64	AMPS
LIGHTS @ 125%:	0.00	KVA
RECEPTACLES @ 100%:	10.00	KVA
RECEPTACLES @ 50%	1.60	KVA
LARGEST MOTOR LOAD @ 125%:	0.00	KVA
CONTINUOUS LOAD @ 125%:	0.00	KVA
OTHER AND NON-CONTINUOUS LOADS @ 100%:	0.00	KVA
TOTAL DEMAND LOAD:	11.60	KVA
POWER FACTOR:	0.95	% PF
TOTAL DEMAND CURRENT:	33.89	AMPS

BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART*

OVERCURRENT PROTECTION DEVICE RATING (AMPS)	REQUIRED CONDUCTOR SIZE	EQUIPMENT GROUNDING CONDUCTOR SIZE	SINGLE PHASE 2 WIRE + GND. CONDUIT SIZE	SINGLE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 3 WIRE + GND. CONDUIT SIZE	THREE PHASE 4 WIRE + GND. CONDUIT SIZE
15	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"
20	12 AWG	12 AWG	3/4"	3/4"	3/4"	3/4"
25	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
30	10 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
35	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
40	8 AWG	10 AWG	3/4"	3/4"	3/4"	3/4"
45	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"
50	6 AWG	10 AWG	3/4"	3/4"	3/4"	1"
60	4 AWG	10 AWG	1"	1"	1"	1-1/4"
70	4 AWG	8 AWG	1"	1"	1"	1-1/4"
80	3 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"
90	2 AWG	8 AWG	1"	1-1/4"	1-1/4"	1-1/4"
100	1 AWG	8 AWG	1-1/4"	1-1/2"	1-1/2"	1-1/2"

* = UNLESS OTHERWISE NOTED ON THE DRAWINGS.
* = UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL BRANCH CIRCUITS AND FEEDERS TO BE PROVIDED WITH A NEUTRAL WIRE.
* = ALL CONDUCTORS SIZED ON THE POWER RISER DIAGRAM OR IN BRANCH CIRCUIT CONDUCTOR TABLE ARE BASED ON 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY OR CABLE. CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE NEC IF 4 OR MORE CONDUCTORS ARE PLACED IN A RACEWAY OR CABLE.

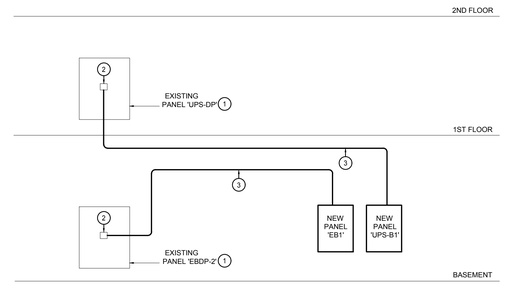
LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	LAMPS	WATTS / VOLTS	DESCRIPTION	NOTES
A	COLUMBIA LTG LSTE-24-35ML-G-MPO-E-U OR EQUAL WILLIAMS, DAY-BRITE	4,818 LUMENS/ 35K/LED	50 120	2x4 RECESSED LED TROFFER, PERFORATED CENTER BASKET, METAL IFERF WITH OVERLAY, MEDIUM LUMEN OUTPUT, FIXED OUTPUT DRIVER, BAKED WHITE ENAMEL FINISH	
B	NEW STAR LTG SCS-24-HA-OA/IE-L3-35-1-B-UN OR EQUAL FAIL-DAFE, LC DOANE	LED/35K	100 120	2x4 SURFACE MOUNTED LED CLEAN ROOM FIXTURE, ALUMINUM HOUSING, ALUMINUM OVERLAP FRAME, EXTRUDED ALUMINUM INSERT IP65, 125" PRISMATIC POLYCARBINATED LENS, EXTRUDED SILICONE GASKETS, WHITE ANTIMICROBIAL POWDER COAT FINISH.	
C	NEW STAR LTG SCS-14-HA-OA/IE-L2-35-1-B-UN OR EQUAL WILLIAMS, DAY-BRITE	LED/35K	50 120	SIMILAR TO TYPE 'B' EXCEPT FIXTURE IS 1x4	
D	COLUMBIA LTG LCL-4-35ML-E-U-PAT OR EQUAL WILLIAMS, DAY-BRITE	5,000 LUMEN/ 35K/LED	48 120	1x4 SURFACE MOUNTED LED FIXTURE, 125 THICK ACRYLIC LENS, MEDIUM LUMENS, FIXED OUTPUT DRIVER, BAKED WHITE ENAMEL FINISH.	
E	COLUMBIA LTG LSTE-22-35ML-G-MPO-E-U OR EQUAL WILLIAMS, DAY-BRITE	3,395 LUMEN/ 35K/LED	40 120	SIMILAR TO TYPE 'A' FIXTURE, EXCEPT FIXTURE IS 2x2.	
X	EXTRONIX #VEX-U-BP-AC-WH OR EQUAL SURE-LITES, CHLORIDE	LED	3 120	LED EXIST SIGN, RED LETERS, WHITE HI-TEMP THERMOPLATIC HOUSING, ARROW(S) AS INDICATED, LESS BATTERY.	

SPECIFIC NOTES:
1

SUBSTITUTION NOTES:
THE LIGHTING DESIGN FOR THIS PROJECT IS BASED UPON THE MANUFACTURERS SPECIFIED. IF AN ADDITIONAL SUBSTITUTION IS DESIRED BY THE CONTRACTOR, A SUBSTITUTION REQUEST SUBMITTAL MUST BE PROVIDED AS FOLLOWS:
S1. SUBSTITUTION REQUEST MUST BE RECEIVED BY THE ENGINEER IN WRITING 10 DAYS PRIOR TO BID. FAILURE TO SUBMIT CONSTITUTES A GUARANTEE TO SUPPLY THE SPECIFIED FIXTURES.
S2. INFORMATION IS TO BE SUPPLIED COMPARING PHOTOMETRY, (WITH FLOOR PLANS INDICATING POINT BY POINT CALCULATIONS) DIMENSIONS, MATERIAL COMPOSITION, FINISH, VISUAL APPEARANCE AS WELL AS THE "CONTRACTOR NET" PRICING. SAMPLES ARE TO BE PROVIDED UPON REQUEST.
S3. GREAT CARE, TIME AND EXPENSE HAVE BEEN USED TO PROVIDE OUR CLIENT WITH THE LIGHTING AND CONTROLS SYSTEM. THEREFORE, FOR EACH AND EVERY TYPE OF FIXTURE OFFERED AS AN UNSOLICITED ALTERNATE, A $500.00 FEE WILL BE CHARGED TO THE CONTRACTOR FOR REVIEW OF THE ALTERNATE FIXTURE. THIS CHARGE IS IN NO WAY A GUARANTEE OF APPROVAL, BUT IS SOLELY TO COMPENSATE THE ENGINEER FOR TIME SPENT VALIDATING EQUALITY AND COMPATIBILITY WITH THE PROJECT REQUIREMENTS. THIS REIMBURSEMENT MUST BE RECEIVED BY THE ENGINEER PRIOR TO ANY REVIEW COMMENCING.
S4. PACKAGING OF LIGHT FIXTURES WILL NOT BE CONSIDERED OR APPROVED.
S5. MANUFACTURER'S REPRESENTATIVE AGENTS SHALL BE ALLOWED TO OFFER MIN-LOT PRICING FOR SPECIFIED LIGHTING FIXTURES.
S6. LIGHTING CONTROLS PRICING SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PRICING. ANY LIGHTING CONTROLS PRICING THAT IS SUBMITTED WITH LIGHT FIXTURE PRICING (UNIT OR MINI-LOT) WILL BE IMMEDIATELY REJECTED IN ITS ENTIRETY.

GENERAL NOTE:
G1. ELECTRICAL CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING ANY LIGHT FIXTURES.
G2. ELECTRICAL CONTRACTOR SHALL COORDINATE DIMMING DRIVERS/BALLASTS WITH DIMMING SWITCHES/SYSTEMS AND SHALL INCLUDE ALL REQUIRED CONTROL WIRING.



PARTIAL EM/UPS RISER DIAGRAM

NO SCALE

ⓧ RISER NOTES

1. PANEL IS RATED 400A, 120/208V, 3ϕ, 4W. PANEL IS MANUFACTURED BY SQUARE D.
2. PROVIDE/INSTALL (1) NEW 100A/3P CIRCUIT BREAKER IN EACH PANEL.
3. 1 1/4"C, 4-#3 AND 1-#8 GROUND WIRE.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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VA EASTERN KANSAS HEALTH CARE SYSTEM
Dwight D. Eisenhower VA Medical Center
Leavenworth
Colmery-O'Neil VA Medical Center
Topeka

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Drawing Title: ELECTRICAL SCHEDULES
Project Title: RELOCATE STERILE PROCESSING SERVICE
Date: 01/20/17
Project No. 589A5-15-117
Scale:
Building Number: 1
Checked By:
Drawn By:
Drawing No. EG1-600
Approved:
Location: Colmery O'Neil VA Medical Center, 2200 Gage Blvd. ,Topeka,KS
Dwg. 36 Of 44
VA Department of Veterans Affairs

Time 10:49:16 AM
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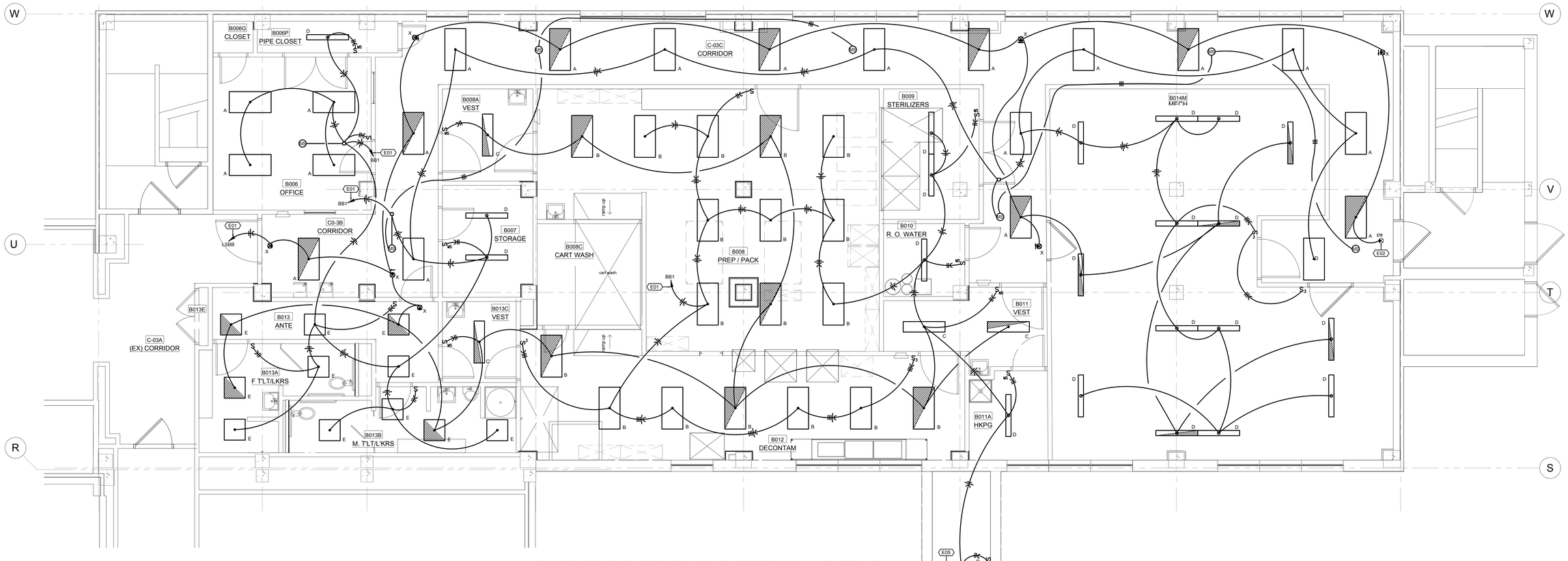
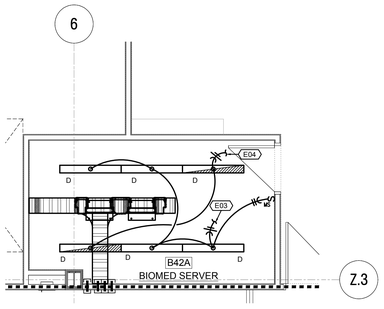


BASEMENT FLOOR PLAN-ELECTRICAL LIGHTING

SCALE: 1/4" = 1'0"



ENLARGED BIO-MED SERVER ROOM - B42A

SCALE: 1/4"=1'-0"

GENERAL NOTE

- ALL PENETRATION OF WALLS AND CEILINGS SHALL BE SEALED AIR TIGHT IN THE PREP-PACK AREA, DECONTAMINATION ROOM AND ANTE ROOMS.

E## FLOOR PLAN NOTES

1. ROUTE HOMERUN TO PANEL INDICATED AND CONNECT TO SPARE 20A/1P CIRCUIT BREAKER MADE AVAILABLE DUE TO DEMOLITION.
2. EXISTING EXIT LIGHT SHALL BE DISCONNECTED FROM EXISTING EM LIGHTING CIRCUIT AND RECONNECTED TO NEW CIRCUIT INDICATED.
3. CONNECT TO NORMAL POWER LIGHTING CIRCUIT IN THIS AREA FOR 120V TO FIXTURES.
4. CONNECT TO EMERGENCY POWER LIGHTING CIRCUIT IN THIS AREA FOR 120V TO FIXTURES.
5. FIXTURE SHALL BE WALL MOUNTED ABOVE DOOR. INSTALL WITH TOP 8" AFF.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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Drawing Title: BASEMENT PLAN-ELECTRICAL LIGHTING	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: / Drawn By:	Drawing No. EL1-102
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 37 Of 44

VA Department of Veterans Affairs

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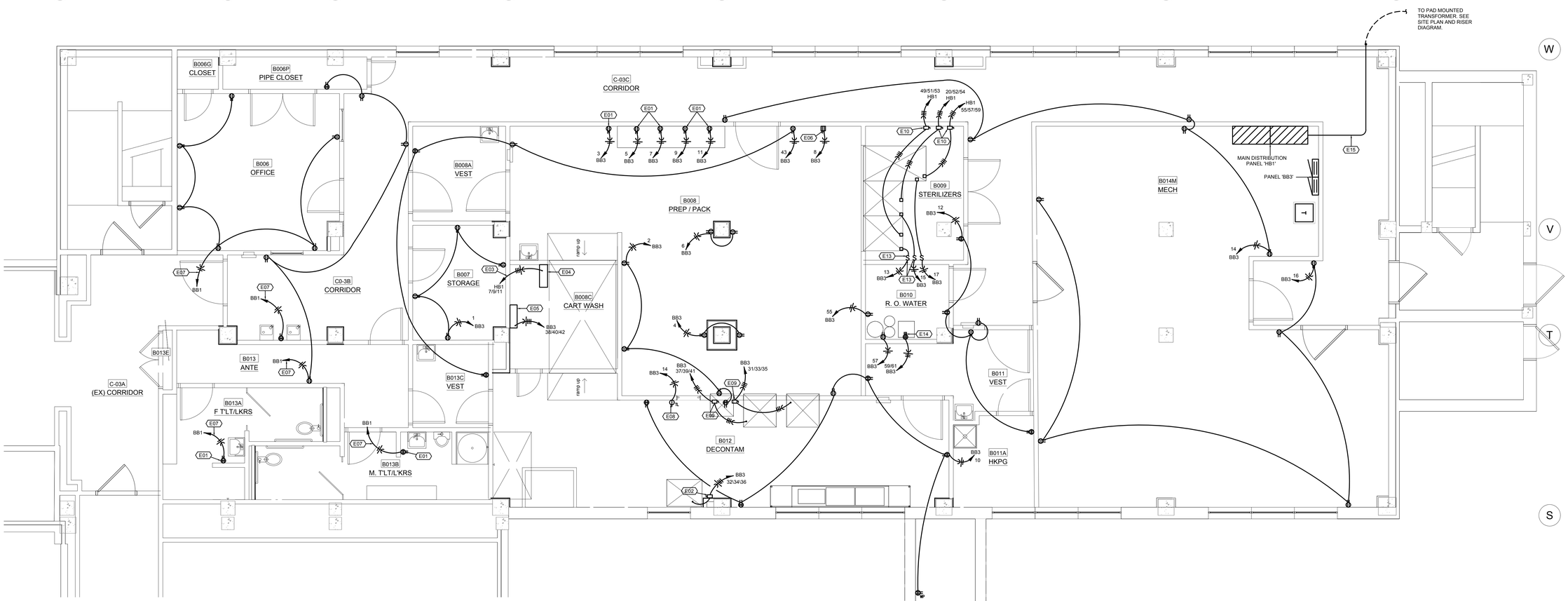
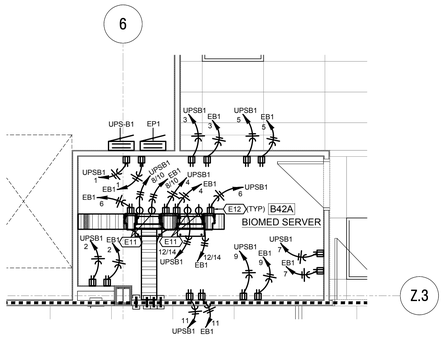


BASEMENT FLOOR PLAN-ELECTRICAL POWER

SCALE: 1/4" = 1'0"



ENLARGED BIO-MED SERVER ROOM - B42A

SCALE: 1/4"=1'-0"

GENERAL NOTE

- ALL PENETRATION OF WALLS AND CEILINGS SHALL BE SEALED AIR TIGHT IN THE PREP-PACK AREA, DECONTAMINATION ROOM AND ANTE ROOMS.
- ELECTRICAL CONTACTOR SHALL REFER TO TECHNOLOGY DRAWINGS ET1-100 AND ET1-101 FOR ADDITIONAL ELECTRICAL ROUGH-IN WORK FOR CONDUIT AND OUTLET BOXES.

E## FLOOR PLAN NOTES

1. INSTALL OUTLET BOX FOR WIRING DEVICE WITH TOP 48" AFF.
2. 60A/3P/SN FUSED NEMA 3R DISCONNECT SWITCH WITH (3) 60A FUSES.
3. 1 1/2"C, 4-#1/0 AND 1-#6 GROUND WIRE.
4. CART WASH 480VOLT CONTROL PANEL WITH CART WASHER.
5. CART WASH 208VOLT CONTROL PANEL WITH CART WASHER.
6. INSTALL OUTLET BOX FOR WIRING DEVICE WITH TOP 8'-0" AFF.
7. ROUTE HOMERUN TO PANEL INDICATED AND CONNECT TO 20A/1P SPARE CIRCUIT BREAKER MADE AVAILABLE DUE TO DEMOLITION.
8. 20A, 120V, 2POLE, 3WIRE SINGLE GROUNDING TYPE TWIST LOCK RECEPTACLE, NEMA L5-20R.
9. 60A/3P FUSED NEMA 3R DISCONNECT SWITCH WITH (3) 40A FUSES.
10. 30A/3P,NON-FUSED NEMA 3R DISCONNECT SWITCH. INSTALL RECEP WITH TOP 5'-0" AFF.
11. 30A, 250V, 2POLE, 3WIRE SINGLE TWIST LOCK GROUNDING TYPE RECEPTACLE,, NEMA L14-30R.
12. WIRING DEVICES SHALL BE INSTALLED ON RACK. COORDINATE WITH OWNER.
13. 20A/1P, HORSEPOWER RATED TOGGLE SWITCH WITH WEATHERPROOF COVERPLATE. INSTALL WITH TOP 5'-0" AF.
14. 20A, 125/250V, 3POLE, 4WIRE SINGLE GROUNDING TYPE TWIST LOCK RECEPTACLE, NEMA L14-20R.
15. SECONDARY SERVICE CONDUCTORS. SEE RISER DIAGRAM.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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Colmery-O'Neil VA Medical Center
Topeka

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Drawing Title: BASEMENT PLAN-ELECTRICAL POWER	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: / Drawn By:	Drawing No. EP1-101
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 38 Of 44

VA Department of Veterans Affairs

Time: 10:49:16 AM
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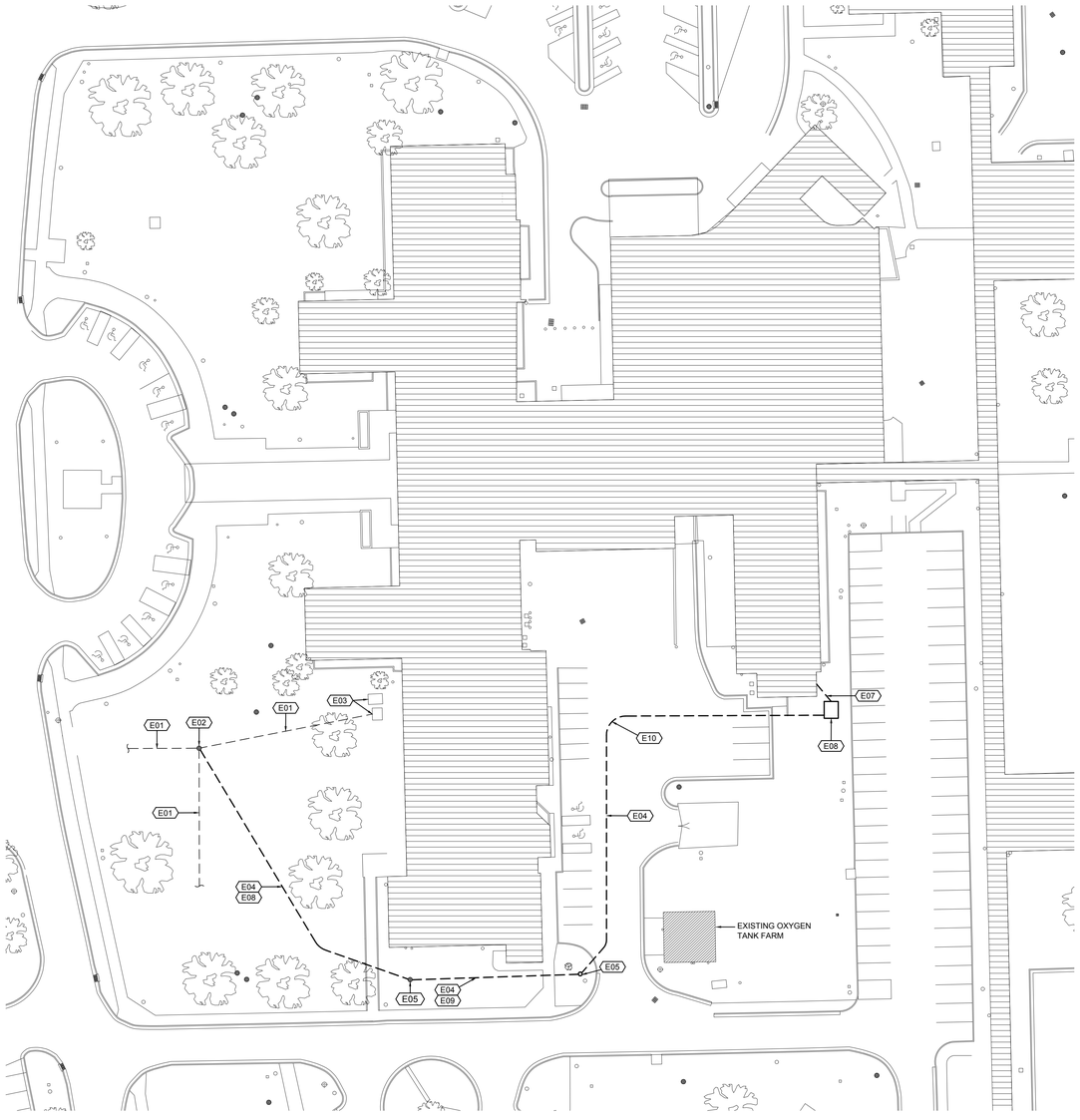

SITE PLAN-ELECTRICAL

SCALE: 1"= 30'

N

E## FLOOR PLAN NOTES

1. EXISTING CONCRETE ENCASED DUCT BANK WITH PRIMARY SERVICE CABLES FOR PRIMARY LOOP 'A' AND PRIMARY LOOP 'B' TO REMAIN.
2. EXISTING PRIMARY ELECTRICAL SERVICE MANHOLE TO REMAIN.
3. EXISTING HV SWITCH AND TRANSFORMER TO REMAIN.
4. NEW PRIMARY SERVICE CONCRETE ENCASED DUCT BANK WITH (3) 4" PVC CONDUITS (1) CONDUIT FOR PRIMARY LOOP 'A' HV CONDUCTORS, (1) CONDUIT FOR PRIMARY LOOP 'B' HV CONDUCTORS, AND (1) CONDUIT IS SPARE. SEE DUCT BANK DETAIL. DUCT BANK SHALL BE INSTALLED WITH TOP MINIMUM OF 24" BELOW FINISH GRADE.
5. NEW PRIMARY ELECTRICAL SERVICE MANHOLE. SEE DETAIL.
6. NEW HV SWITCH FOR PRIMARY LOOPS 'A' AND 'B' WITH NEW 1000 KVA, 12470 VOLT DELTA PRIMARY. TRANSFORMER WITH 480Y/277 VOLT, 3 PHASE, 4 WIRE SECONDARY. INSTALL ON CONCRETE PAD.
7. SECONDARY SERVICE CONDUCTORS TO PANEL 'HB1'. SEE RISER DIAGRAM.
8. SPLICE NEW HV CONDUCTORS TO EXISTING HV CONDUCTORS FOR PRIMARY LOOPS 'A' AND 'B'. COORDINATE WITH COR BEFORE ANY SERVICE SHUT DOWN FOR SPLICING OF HV CONDUCTORS.
9. THE PATH OF THE NEW DUCT BANK CAN BE MODIFIED MINIMALLY BY THE CONTRACTOR TO AVOID TREE "DRIP LINES".
10. PROVIDE 48" SWEEPING RADIUS ELBOWS.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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Drawing Title: SITE PLAN-ELECTRICAL	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By:	Drawn By:
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Drawing No. ES1-101
			Dwg. 39 Of 44

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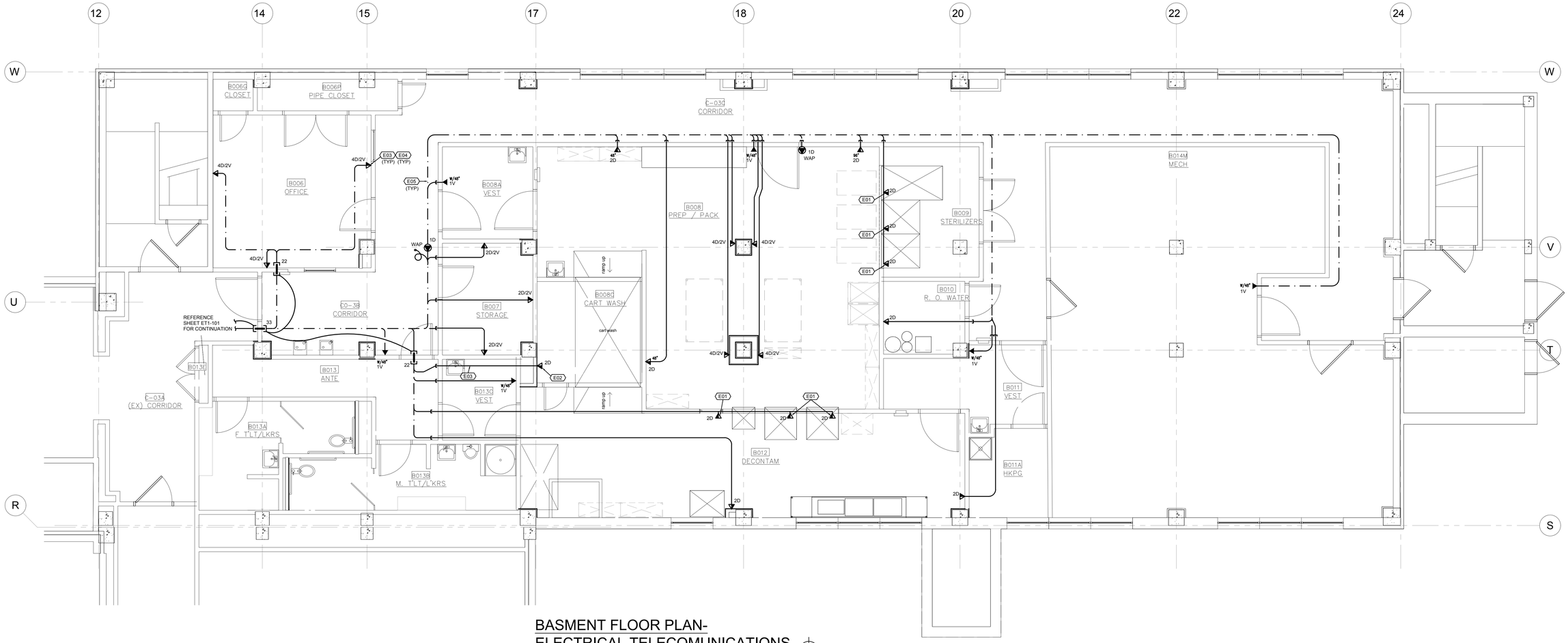
Time: 10:49:16 AM
File name: 160825 1010316 Topeka VA Relocate Sterile Processing-Project File _sarah.vwxw

File Path



BASMENT FLOOR PLAN- ELECTRICAL TELECOMUNICATIONS

SCALE: 1/4"=1'-0"

GENERAL NOTES (TYPICAL ALL 'T' SHEETS)

- CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY AND MAY NOT SHOW EXACT ROUTING REQUIRED. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL CONDUIT INSTALLED FOR TELECOMMUNICATIONS USAGE UNLESS OTHERWISE NOTED.
- ALL LOCATION ARE ROUGHED IN BY OTHERS (E.C). TECHNOLOGY CONTRACTOR SHALL PROVIDE AND INSTALL ALL FACE PLATES, MODULAR JACKS, CABLES, CABLE SUPPORTS, LABELS FOR CABLES AND ANY OTHER ITEMS NOTED ON DRAWINGS THAT IS NOT BEING PROVIDED BY OR INSTALLED BY OTHERS.
- PROVIDE FIRE STOP ON ALL PIPING AT WALL AND FLOOR PENETRATIONS PER LOCAL CODE REQUIREMENTS. METHOD OF FIRE STOP SHALL MEET WALL/FLOOR RATING. RE: ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED WALLS. ALL SLEEVES THROUGH RATED WALLS SHALL UTILIZE EZ PATH PRODUCT, OR EQUAL. UNLESS NOTED OTHERWISE.
- OUTLETS INSTALLED IN FIRE RATED ASSEMBLES SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24".
- PROVIDE BONDING JUMPERS BETWEEN ALL CABINET/RACK AND SECTIONS OF CABLE TRAY UNLESS SYSTEM IS UL LISTED AND APPROVED AS A COMPLETE GROUNDED SYSTEM.
- CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS PRIOR TO INSTALLATION.
- PROVIDE LABELING FOR ALL GROUND WIRE AT EVERY TERMINATION POINT AND LABEL GROUND BAR.
- CABLES SHALL BE BUNDLED WITH LIKE COLOR AND SHALL BE SECURED AND TIED IN A NEAT AND ORDERLY MANNER.
- CONTRACTOR SHALL REFERENCE ARCHITECTURAL DRAWINGS FOR WALLS THAT ARE CONSTRUCTED FROM FLOOR TO STRUCTURE. CONTRACTOR SHALL MINIMIZE HOLE PENETRATION AND CONSOLIDATE CABLES INTO ONE PENETRATION. AFTER INSTALLATION CONTRACTOR SHALL SEAL HOLE AIR TIGHT.
- LEAD ON-SITE PROJECT LOW VOLTAGE CONTRACTOR SHALL HAVE A CURRENT BISCI MEMBER AND BE RCDD CERTIFIED.
- ALL LOW VOLTAGE CONTRACTORS WORKING ON SITE SHALL BE MANUFACTURER CERTIFIED AS LISTED IN THE SPECIFICATIONS AND IN GOOD STANDING FOR A MINIMUM OF 2 YEARS.
- CONTRACTOR SHALL PROVIDE HIS/HER OWN SUPPORTING OF CABLING FROM STRUCTURE ABOVE, I.E. TEMPERATURE CONTROL WIRING, SECURITY CONTROL WIRING, FIRE ALARM CONTROL WIRING, OR ANY OTHER WIRING CONTAINING VOLTAGE. CONTRACTOR SHALL NOT RUN PARALLEL WITH OR BE SUPPORTED BY ANY UTP, COAX OR VIDEO CABLING (CABLES INDICATED ON TECHNOLOGY DRAWINGS). IF CABLES ARE FOUND TO BE SUPPORTED WITH THESE CABLES, CONTRACTOR SHALL REMOVE CABLES, REROUTE AND RE-SUPPORT AT THEIR OWN EXPENSE. IF UTP CABLES ARE DAMAGED WHILE EITHER INSTALLING OR REMOVING SUCH CABLES, THE CONTRACTOR(S) THAT DID SUCH DAMAGED SHALL COVER COST TO REPLACE CABLES AT THEIR OWN EXPENSE.
- CONTRACTOR TO MATCH EXISTING VA STANDARDS AND MANUFACTURERS TYPES FOR VOICE, DATA AND FIBER OPTIC CABLING.

TECHNOLOGY SYMBOLS

	CABLE-TRAY (SIZE AND TYPE AS NOTED)
	FIBER CABLE ROUTING
	HORIZONTAL UTP CAT.6 COPPER CABLE ROUTING
XD/XV	LOW VOLTAGE OUTLET, NUMBER OF CABLES AS NOTED ON PLANS, ROUGH IN BY E.C. (X=NUMBER, D=DATA BLUE CABLE, V=VOICE WHITE CABLE). E.C. INSTALL DOUBLE GANG BOX WITH SINGLE GANG PLASTER RING. INSTALL 1" CONDUIT STUBBED UP OUT OF TOP OF BOX TO ABOVE AN ACCESSIBLE CEILING. +1'-6" AFF OR AS NOTED. WHERE CABLES EXCEED 4, PROVIDE DOUBLE GANG PLASTER RING.
W	WALL MOUNTED LOW VOLTAGE OUTLET, (1) VOICE WHITE CABLE, UNLESS NOTED OTHERWISE, ROUGH IN BY E.C. E.C. INSTALL DOUBLE GANG BOX WITH SINGLE GANG PLASTER RING. INSTALL 1" CONDUIT STUBBED UP OUT OF TOP OF BOX TO ABOVE AN ACCESSIBLE CEILING. +1'-6" AFF OR AS NOTED.
WAP	WIRELESS ACCESS POINT (EQ. BY OWNER) INSTALLED BY CONTRACTOR. PROVIDE (1) DATA BLUE CABLE.
XX	UNLESS NOTED OTHERWISE, LOW VOLTAGE EZ-PATH OR EQUAL CONDUIT SLEEVE SIZE AS NOTED. PROVIDE AND INSTALL SLEEVE ABOVE CEILING FOR CABLE-PASS THRU FOR LOW VOLTAGE CABLES USAGE (UTP, COAX & FIBER) ONLY. XX= SIZE OF SLEEVE, REFERENCE TYPICAL THROUGH THE WALL FIRE STOPPING DETAIL
EC	ELECTRICAL CONTRACTOR (WORK DONE BY)
TC	TECHNOLOGY CONTRACTOR (WORK DONE BY)

GENERAL NOTE

- ALL PENETRATION OF WALLS AND CEILINGS SHALL BE SEALED AIR TIGHT IN THE PREP-PACK AREA, DECONTAMINATION ROOM AND ANTE ROOMS.

E## FLOOR PLAN NOTES

1. OUTLET LOCATED ABOVE EQUIPMENT. INSTALL PER MANUFACTURERS RECOMMENDATION.
2. ROUGH-IN LOCATION INSTALL PER MANUFACTURERS RECOMMENDATION.
3. ROUGH-IN FOR LOW VOLTAGE DEVICE PROVIDED BY AND INSTALLED BY ELECTRICAL CONTRACTOR, CONDUIT SIZE 1" UNLESS NOTED OTHERWISE.
4. PROVIDE FACEPLATE AND JACKS PER SPECIFICATIONS.
5. HORIZONTAL UTP CABLE PATHWAY ABOVE ACCESSIBLE CEILING, REFERENCE SPECS FOR CABLE TYPE. INSTALL J-HOOKS AS REQUIRED PER SPECIFICATIONS.
6. FIRE RATED EZ-PATH CABLE SLEEVE, SIZE AS NOTED. REFERENCE DETAIL ON SHEET ET1-B-200.
7. INSTALL #6 GREEN INSULATED GROUNDING CONDUCTOR. WHERE MORE THAN ON SLEEVE IS GROUPED TOGETHER, INSTALL GROUND WIRE TO EACH DEVICE.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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VA EASTERN KANSAS HEALTH CARE SYSTEM

Dwight D. Eisenhower VA Medical Center
Leavenworth
Colmery-O'Neil VA Medical Center
Topeka

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			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: / Drawn By:	Drawing No. ET1-100
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 40 Of 44

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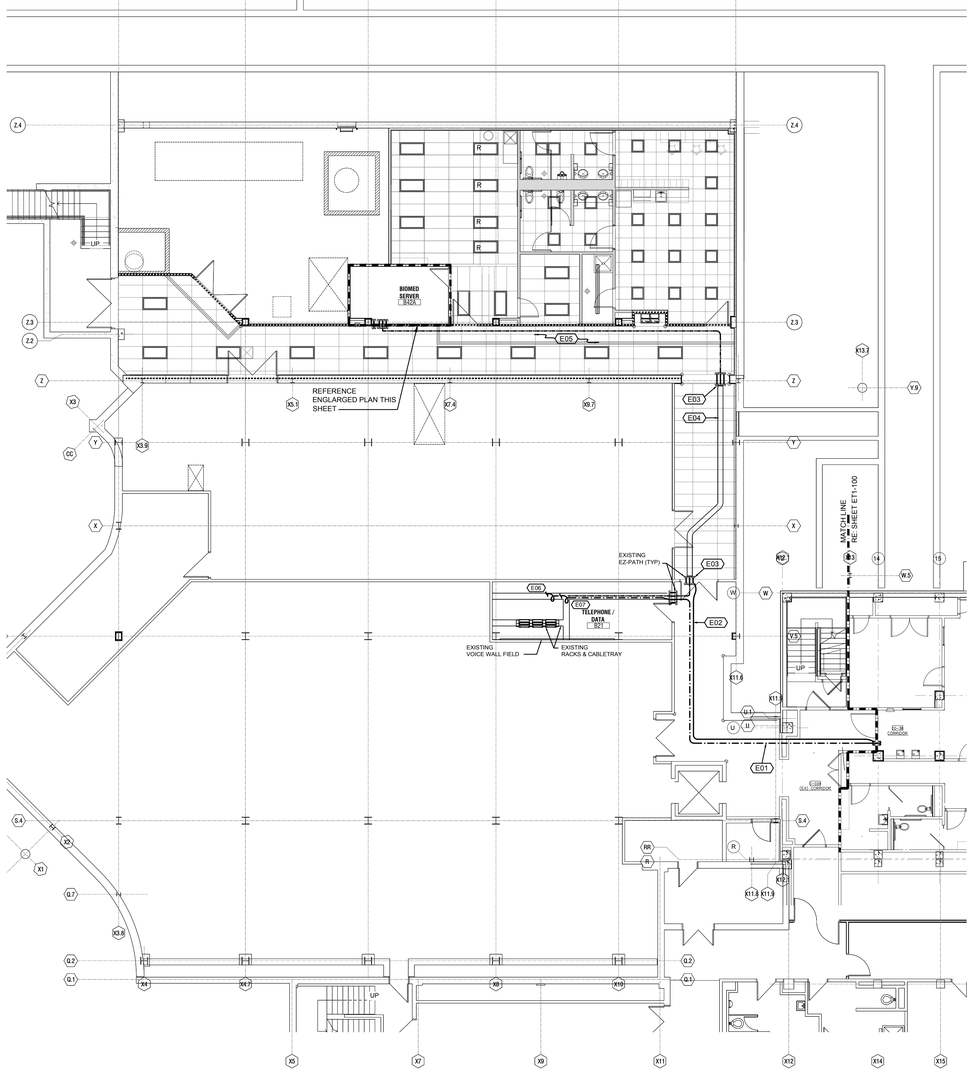
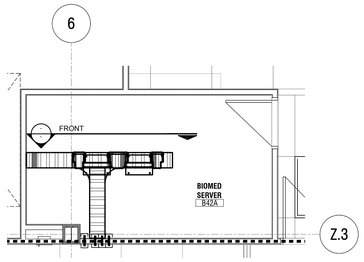


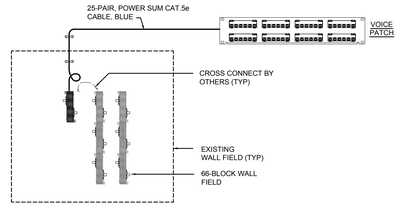
BASEMENT FLOOR PLAN

SCALE: 1"-10'-0"



ENLARGED BIO-MED SERVER ROOM - B42A

SCALE: 1/4"=1'-0"



COPPER RISER DIAGRAM

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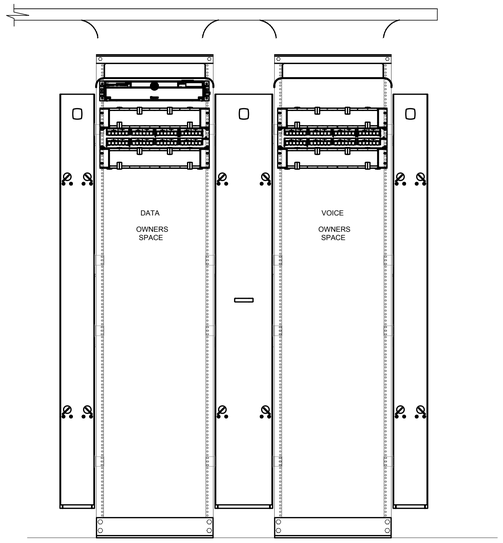
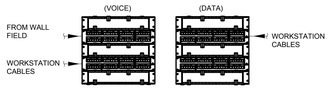


BIOMED SERVER B42A RACK ELEVATION

SCALE: 3/8"=1'-0"

E## FLOOR PLAN NOTES

1. HORIZONTAL UTP CABLE PATHWAY ABOVE ACCESSIBLE CEILING. REFERENCE SPECS FOR CABLE TYPE. INSTALL J-HOOKS AS REQUIRED PER SPECIFICATIONS.
2. INSTALL #6 GREEN INSULATED GROUNDING CONDUCTOR. WHERE MORE THAN ON SLEEVE IS GROUPED TOGETHER, INSTALL GROUND WIRE TO EACH DEVICE.
3. EXISTING FIRE RATED EZ-PATH CABLE SLEEVE.
4. INSTALL NEW FIBER WITHIN EXISTING CABLETRAY ABOVE CEILING.
5. INSTALL NEW FIBER CABLE ON EXISTING J-HOOKS DOWN CORRIDOR.
6. PROVIDE AND INSTALL FIBER CABLE FROM B21 TO B42A, TERMINATE ON EXISTING FIBER RACK MOUNTED CABINET IN B21, AND NEW FIBER CABINET IN B42A. COORDINATE WITH I.T. SERVICES.
7. TERMINATE NEW CABLES ON EXISTING RACK. PROVIDE AND INSTALL:
   A. (2) 2RU 48-PORT VOICE PATCH PANEL
   B. (1) 2RU 48-PORT DATA PATCH PANEL
   C. (5) HORIZONTAL WIRE MANAGERS



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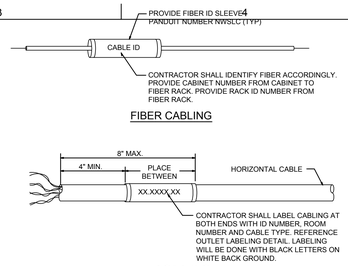

1 CABLE IDENTIFICATION DETAIL
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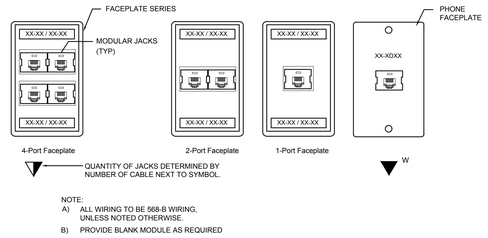
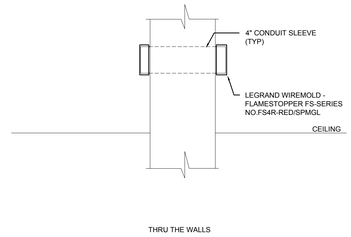


NOTE:
A) ALL WIRING TO BE 568-B WIRING, UNLESS NOTED OTHERWISE.
B) PROVIDE BLANK MODULE AS REQUIRED

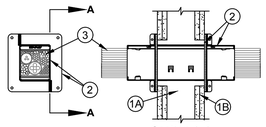
2 TELECOMMUNICATIONS OUTLET DETAIL
NO SCALE



3 TYPICAL CONDUIT SLEEVE ASSIGNMENT
NO SCALE

System No. W-L-3390

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating – 1, 2, 3 or 4 Hr (See Item 1)	F Rating – 1, 2, 3 or 4 Hr (See Item 1)
T Ratings – 0, 1, 1–1/2 and 2 Hr (See Item 3)	FT Ratings – 0, 1, 1–1/2 and 2 Hr (See Item 3)
L Rating At Ambient – Less than 1 or 2.3 CFM/Device Module (See Item 3)	FH Rating – 1, 2, 3 or 4 Hr (See Item 1)
L Rating At 400 F – Less than 1 or 2.3 CFM/Device Module (See Item 3)	FTH Ratings – 0, 1, 1–1/2 and 2 Hr (See Item 3)
	L Rating At Ambient – Less than 1 or 2.3 CFM/Device Module (See Item 3)
	L Rating At 400 F – Less than 1 or 2.3 CFM/Device Module (See Item 3)



Section A-A

1. **Wall Assembly -** The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300, V300, U400, V400 or W400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
   A. **Studs -** Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board* -** Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in wall to be 6 in. (152 mm) diam or max 4-1/8 in. (105 mm) by 4-3/4 in. (121 mm).
   The hourly F and FH Ratings are dependent upon the hourly rating of the wall in which it is installed.
2. **Firestop Device* -** The firestop device module consists of a 4 by 4-5/8 by 14 in. (102 by 118 by 356 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device and the periphery of the opening shall be min 0 in. (0mm, point contact) to max 5/8 in. (16 mm). Firestop device module secured in place by means of split steel restraint plates installed with gasketing material supplied with product. Split steel restraint plates installed on both sides of the wall and secured to firestop device module with steel set screws. The firestop device module is to be installed with its ends projecting an equal distance beyond each surface of the wall assembly.
   SPECIFIED TECHNOLOGIES INC - EZ PATH Series 44+ Fire Rated Pathway
2A. **Firestop Device* - Extension Module -** (Optional, Not Shown) - Module attached to ends of firestop device (Item 2) to increase its length to facilitate installation in thicker walls. Each module consists of a 4 by 4-5/8 by 6 in. (102 by 118 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module secured in place by means of steel plates installed with gasketing material supplied with product. Steel plates installed on both sides of wall and secured to each device or extension module by means of steel set screws provided with plates. Firestop device and extension module assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
   SPECIFIED TECHNOLOGIES INC - EZ PATH Series 44+ Extension
3. **Cables -** Within the loading area for the firestop device module, the loose or grouped cables may represent a 0 to 100 percent visual fill. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
   Cables - Estimated. Consult Manufacturer for 80% fill ratio based on Cable being installed:
   A. Series 22 - Max 25 pair +/-
   B. Series 33 - Max 120 pair +/ -
   C. Series 44+ - Max 268 pair +/-
   D. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing having a max diam of 5/8 in. (16 mm).
   E. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
   For 1 hr rated walls, the T, FT and FTH Ratings are 0. For 2, 3 and 4 hr rated walls, when Item 3A, 3B, 3C, 3D or 3E is used, the T, FT and FTH Ratings are 1 hr. When Item 3F or 3G is used, the T, FT and FTH Ratings are 1-1/2 Hr. When Item 3H is used, the T, FT and FTH Ratings are 2 Hr. When Item 3I is used, the T, FT and FTH Ratings are 3/4 Hr. When device is empty, the T, FT and FTH Ratings are o for 1 hr rated walls and 1-1/2 Hr for 2, 3 and 4 hr rated walls.
   •Bearing the UL Listing Mark
   * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

STI
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Created or Revised: January 23, 2014
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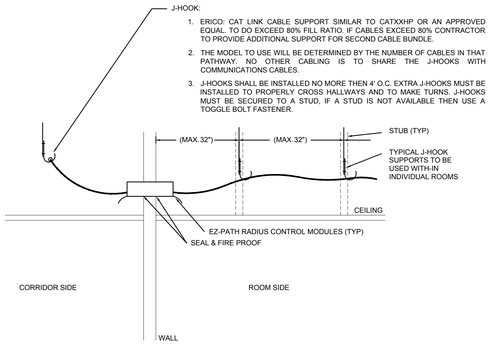
c UL us W-L-3390
PAGE 1 OF 2

7 TYPICAL THROUGH THE WALL FIRE STOPPING DETAIL
NO SCALE



4 TYPICAL THRU WALL CONDUIT SLEEVE
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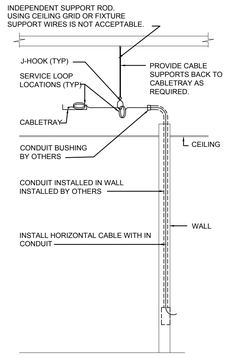

5 TYPICAL WALL DEVICE INSTALLATION DETAIL
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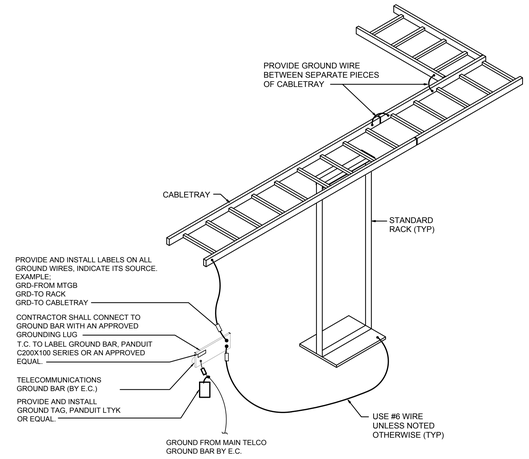

NOTE: CONTRACTOR SHALL ATTACH GROUND WIRE TO EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS

6 TYPICAL EQUIPMENT GROUNDING DETAIL
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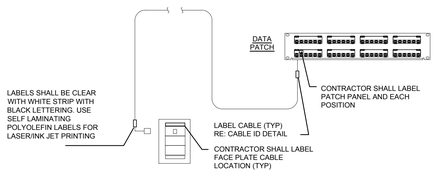

8 TYPICAL CABLE LABEL LOCATION DETAIL
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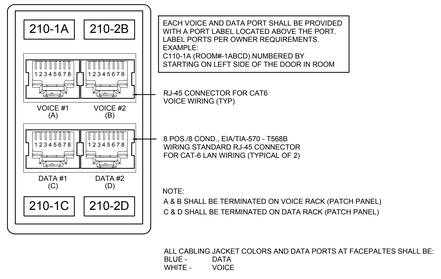
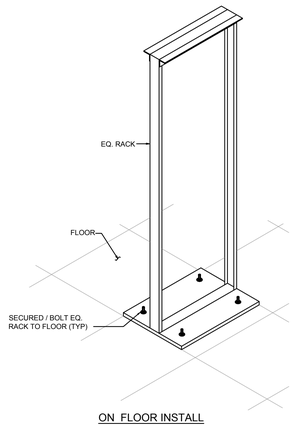


NOTE:
A & B SHALL BE TERMINATED ON VOICE RACK (PATCH PANEL)
C & D SHALL BE TERMINATED ON DATA RACK (PATCH PANEL)

ALL CABLING JACKET COLORS AND DATA PORTS AT FACEPALTES SHALL BE:
BLUE - DATA
WHITE - VOICE

9 TELECOMMUNICATIONS OUTLET LABELING DETAIL
NO SCALE



ON FLOOR INSTALL

10 TYPICAL FLOOR MOUNTED RACK DETAIL
NO SCALE

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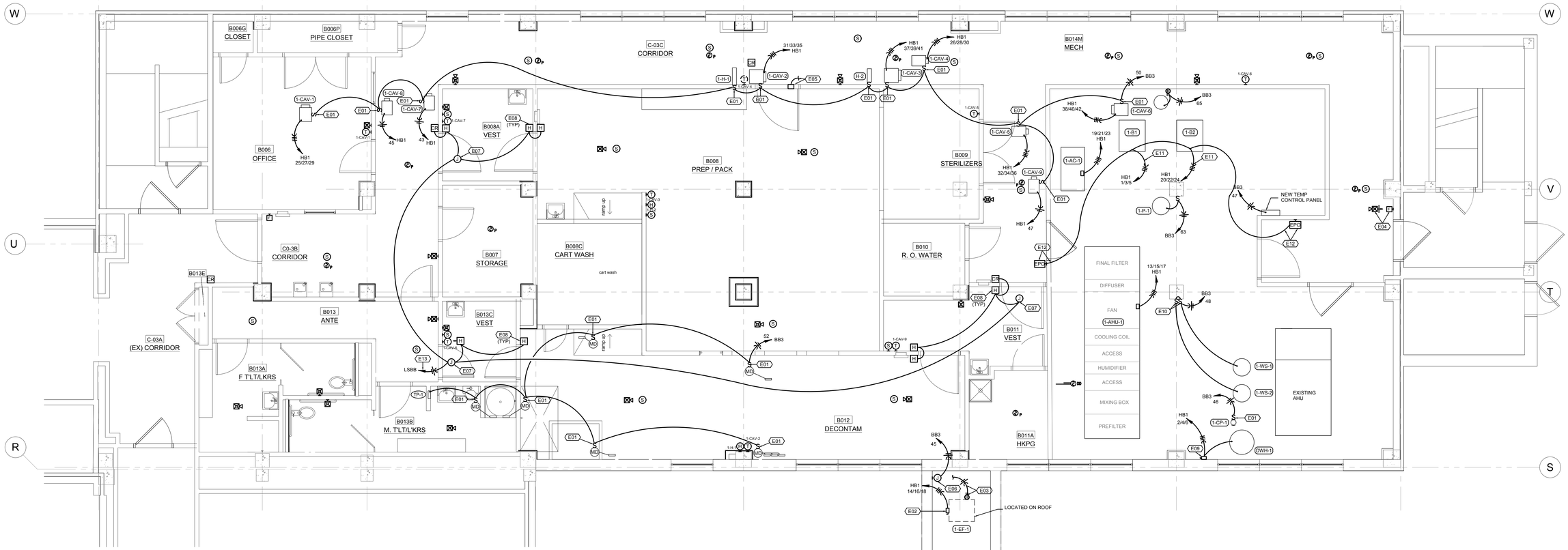

PARTIAL BASEMENT FLOOR PLAN-ELECTRICAL SYSTEMS

SCALE: 1/4"=1'-0"

N

GENERAL NOTE

- ALL PENETRATION OF WALLS AND CEILINGS SHALL BE SEALED AIR TIGHT IN THE PREP-PACK AREA, DECONTAMINATION ROOM AND ANTE ROOMS.
- DUCT HEATERS, AHU, AIR COMPRESSOR AND EF ARE PROVIDED WITH BUILT-IN DISCONNECT SWITCH.

E## FLOOR PLAN NOTES

1. 20A/1P HORSEPOWER RATED TOGGLE SWITCH FOR DISCONNECTING MEANS.
2. DISCONNECT SWITCH/STARTER FURNISHED WITH UNIT.
3. INSTALL WP/GFI RECEPTACLE ON SIDE OF UNIT. CONNECT TO NEAREST 120VOLT NORMAL POWER RECEPTACLE CIRCUIT.
4. NEW LOCATION OF RELOCATED FIRE ALARM DEVICE. RECONNECT TO EXISTING SYSTEM AS REQUIRED FOR PROPER OPERATION.
5. DOOR SHALL BE INTERLOCKED WITH FIRE ALARM SYSTEM SO THAT UPON ACTIVATION OF SYSTEM DOOR LOCK SHALL AUTOMATICALLY RELEASE.
6. JUNCTION BOX FOR CONNECT TO HEAT TRACE TABLE. MAKE ALL CONNECTIONS REQUIRED FOR PROPER OPERATION.
7. JUNCTION BOX FOR 120 VOLT CONNECTION FOR DOOR CONTROLLERS.
8. HANDS-FREE DETECTION DEVICE TO AUTOMATICALLY OPERATE DOORS, DOORS SHALL BE INTERLOCKED SO THAT ONLY (1) DOOR CAN BE OPENED AT A TIME. WIRE SO THAT DOOR CAN ONLY OPEN AFTER THE OTHER DOOR IS CLOSED.
9. 100A/3P, NON-FUSED, NEMA 1.
10. REMOTE CONTROL SWITCHES FOR WATER SOFTENER. SWITCHES ARE PROVIDED WITH UNIT.
11. 3"C, 3-#350KCMIL & 1-#4 GROUND WIRE.
12. EMERGENCY POWER OFF (EPO) PUSHBUTTON FOR BOILER SHUTDOWN WIRE SO THAT UPON ACTIVATION OF WITHER SWITCH THE POWER TO BOTH BOILERS SHALL BE DISCONNECTED.
13. ROUTE HOMERUN TO PANEL INDICATED AND CONNECT TO EXISTING 20A/1P SPARE CIRCUIT BREAKER MADE AVAILABLE DUE TO DEMOLITION.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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VA EASTERN KANSAS HEALTH CARE SYSTEM

Dwight D. Eisenhower VA Medical Center
Leavenworth
Colmery-O'Neil VA Medical Center
Topeka

VA | U.S. Department of Veterans Affairs

Drawing Title: BASEMENT PLAN-ELECTRICAL SYSTEMS	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: / Drawn By:	Drawing No. EY1-100
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 43 Of 44

VA Department of Veterans Affairs

Time: 10:49:16 AM
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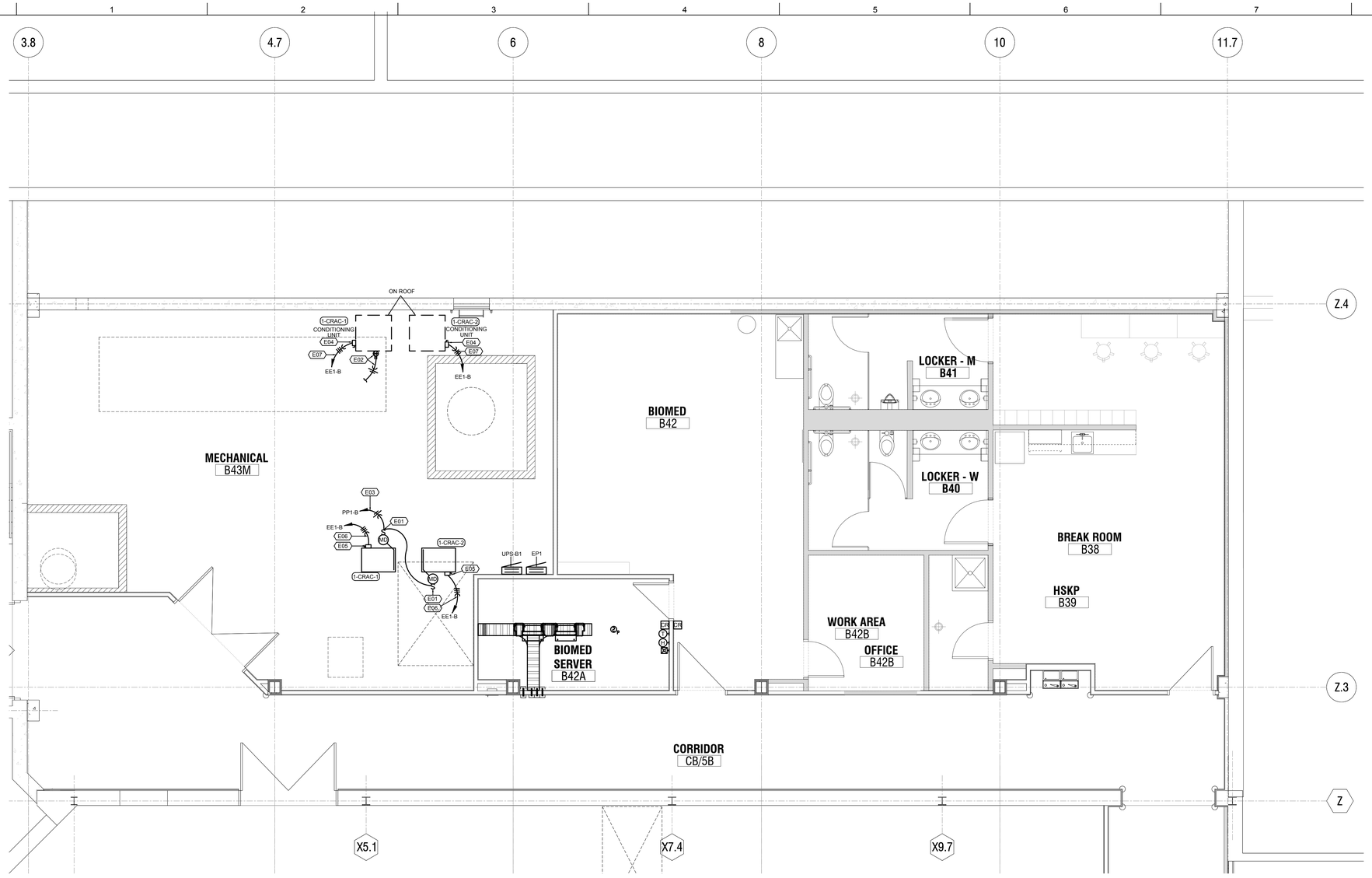

PARTIAL BASEMENT FLOOR PLAN-ELECTRICAL SYSTEMS

SCALE: 1/4"=1'-0"

N

E## FLOOR PLAN NOTES

1. 20A/1P HORSEPOWER RATED TOGGLE SWITCH FOR DISCONNECTING MEANS.
2. PROVIDE WP/GFI RECEPTACLE ON UNIT. CONNECT TO NEAREST 120VOLT NORMAL POWER CIRCUIT.
3. ROUTE HOMERUN TO PANEL INDICATED AND CONNECT TO SPARE 20A/1P CIRCUIT BREAKER.
4. 30A/3P NON-FUSED NEMA 3R DISCONNECT SWITCH.
5. DISCONNECT SWITCH FURNISHED WITH UNIT.
6. ROUTE HOMERUN TO PANEL INDICATED AND PROVIDE/INSTALL (1) NEW 90A/3P CIRCUIT BREAKER IN EXISTING SPACE FOR EACH HOMERUN INDICATED. ONLY (1) OF THE UNITS CAN RUN AT A TIME.
7. ROUTE HOMERUN TO PANEL INDICATED AND PROVIDE/INSTALL (1) NEW 15A/3P CIRCUIT BREAKER IN EXISTING SPACE FOR EACH HOMERUN INDICATED. ONLY (1) OF THE UNITS CAN RUN AT A TIME.

No.	Description	Date
01	95% Submittal	5/20/16
02	100% Submittal	8/16/16

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Drawing Title: BASEMENT PLAN-ELECTRICAL SYSTEMS	Project Title: RELOCATE STERILE PROCESSING SERVICE		Date: 01/20/17
			Project No. 589A5-15-117
Scale:	Building Number: 1	Checked By: LDR / Drawn By: DMB	Drawing No. EY1-101
Approved:	Location: Colmery O'Neil VA Medical Center 2200 Gage Blvd. ,Topeka,KS		Dwg. 44 Of 44

VA Department of Veterans Affairs

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