

## ABBREVIATIONS

ADO	AUTOMATIC DOOR OPENER
AF	AMPERE FRAME
AFF	ABOUT FINISHED FLOOR
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
C	BARE COOPER
CNC	CONDUIT
CB, C/B	CIRCUIT BREAKER
CKT BKR	
CKT	CIRCUIT
CCTV	CLOCK CIRCUIT T.V.
CLG	CEILING
DB	DIRECT BURIAL
EC	EMPTY CONDUIT
EQ	EQUIPMENT GROUND
EX	EXISTING
EX	EXPANSION JOINT
EXP, XP	EXPLOSION PROOF
EMERG	EMERGENCY
ELEC	ELECTRIC
EW	ELECTRIC WATER COOLER
ESM	ELECTRIC STRIP MOLD
FI	FIRE ARM
FACP	FIRE ALARM CONTROL PANEL
FI	FILM ILLUMINATOR
FCU	FAN COIL UNIT
FIXT	FIXTURE
FLUOR	FLUORESCENT
FSS	FUSE SAFETY SWITCH
FSCP	FLAME SAFEGUARD CONTROL PANEL
G, GND	GROUND
GEN	GENERATOR
GTD	GENERATOR TRANSFER DEVICE
CTB	GROUND TERMINAL BOX
GFI	GROUND FAULT INTERRUPTER
HOA	HAND OFF AUTOMATIC
HP	HORSE POWER
HV	HIGH VOLTAGE
INCAND	INCANDESCENT
J	JUNCTION BOX
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LTS	LIGHTS
LTG	LIGHTING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION
MCC	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MGT HGT	MOUNTING HEIGHT
MFSS	NON-FUSED SAFETY SWITCH
P	POLE
PB	PULL BOX
PBPB	PREFABRICATED BEDSIDE
	PATIENT POWER UNIT
PNL	PANEL
POD	POWER OPERATED DAMPER
PTRV	POWER TYPE ROOF VENTILATION
PWR	POWER
RECEPT	RECEPTACLE
RGIP	REMOTE GROUND INDICATOR PANEL
SECT	SECTION
SG	SIGNAL
SS	SAFETY SWITCH
STA	STATION
TEL	TELEPHONE
TV	TELEVISION
UH	UNIT HEATER
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTAGE
VAP	VAPOR PROOF
W	WIRE
WP/	WITH
WT	WEATHER PROOF
WT	WATER TIGHT
TRMR	TRANSFORMER

## SYMBOLS - RECEPTACLES

⊖ DUPLEX RECEPTACLE OUTLET ("HOSPITAL GRADE"), 20A, 120V..  
WALL MOUNTED AT 18" AFF U.O.N.


⊕ QUADRAPLEX RECEPTACLE (HOSPITAL GRADE), 20A, 120V..  
WALL MOUNTED AT 18" AFF U.O.N.

⊖ SINGLE RECEPTACLE OUTLET, SPECIAL PURPOSE TYPE, AS NOTED  
20A, 120V, WALL MOUNTED AT 18" AFF U.O.N.

DUPLEX RECEPTACLE OUTLET 20A, 120V.. ("HOSPITAL GRADE")  
WALL MOUNTED AT 19" AFF U.O.N. - HEAD WALL LOCATIONS

## RECEPTACLE SUFFIXES

ST	"ST" INDICATES "SAFETY TYPE" RECEPTACLE OUTLET.
GFI	"GFI" INDICATES GROUND FAULT CIRCUIT INTERRUPTOR PROTECTION
E	RECEPTACLE OUTLET ON EMERGENCY CIRCUIT - 20A NITC 18" [460mm] ABOVE U.O.N. WITH 1/4" [6.5mm] "EMERGENCY" ENGRAVED LETTERS FILLED WITH WHITE ENAMEL SUBSCRIPT "P" INDICATES RECEPTACLE WITH INTERNAL NEON LIGHT.
+	COUNTER TOP MOUNTED DEVICE, (6" ABOVE COUNTER WITHOUT A BACK-SPLASH, 8" ABOVE A COUNTER W/ BACK-SPLASH). COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL PLANS.
TV	TV RECEPTACLE, INSTALLED WITH CATV CONNECTION UNDER SINGLE PLATE. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.

 ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" (610 MM) CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" (1100 MM) AFF TO CENTERLINE OF STRIP BOX OR AS INDICATED.

SYMBOLS  
ELECTRICAL SYMBOLS  
ELECTRICAL POWER SYMBOLS  
SYMBOLS - GENERAL

CLG. WALL. DESCRIPTION

JB, MTG HGT 1'-6" A.F.F. TO CENTERLINE OF BOX U.O.N.

BRANCH CKT CONCEALED IN CLG OR WALL.

UNDERGROUND ELECTRICAL LINE.

No. OF CKTS. IN CONDUIT

HOME RUN TO PANEL-ARROWHEADS INDICATE CIRCUITS.

WIRE INDICATED ARE NEUTRAL AND THREE HOT LEGS (A DIFFERENT PHASE FOR EACH CIRCUIT) MAXIMUM THREE CIRCUITS PER CONDUIT. ALL CIRCUITRY SHALL ALSO CONTAIN AN INSULATED GROUNDING CONDUCTOR (NOT SHOWN WITH TICK MARKS). WHEN A SINGLE GROUND, NEUTRAL AND PHASE CONDUCTOR (SINGLE PHASE L-N CIRCUITS) ARE INSTALLED, TICK MARKS INDICATING WIRE TYPES ARE NOT SHOWN.

CONDUCTORS SHALL BE #12 AWG IN 3/4" CU ON

PHASE CONDUCTORS

NEUTRAL

GROUNDING

(M)

MOTOR VALUE INSIDE INDICATES HORSEPOWER VALUE




(VFD)

VARIABLE FREQUENCY DRIVE, WITH BUILT-IN DISCONNECT SWITCH.

(DS)

DISCONNECT SWITCH

## SYMBOLS - PANELBOARD

	PANELBOARD - NORMAL PWR
	PANELBOARD - CRITICAL POWER
	PANELBOARD - LIFE SAFETY PWR

## LOW VOLTAGE SYMBOLS

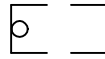
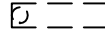










SYMBOLS - TELEPHONE SYSTEM  
SYMBOLS - GENERAL

- ▶ DATA AND TELEPHONE OUTLET (WALL MTD.TYPE), W/ BACK BOX AND EC STUBBED UP TO 4" ABOVE FINISHED CLG, INCLUDING DRAG LINE. MTG HGT 18" A.F.F. -U.O.N. 1 VOICE CABLE 4PAIR UTP CAT 5 AND 2 DATA CABLE 4PAIR UTP CAT 5.
- ▶ PHONE OUTLET (WALL MTD.), W/ BACK BOX AND EC STUBBED UP TO 4" ABOVE FINISHED CLG, INCLUDING DRAG LINE. MTG HGT 18" A.F.F. -U.O.N. 1 VOICE CABLE 4PAIR UTP CAT 5.
- ▷ DATA OUTLET (WALL MTD.), W/ BACK BOX AND EC STUBBED UP TO 4" ABOVE FINISHED CLG, INCLUDING DRAG LINE. MTG HGT 18" A.F.F. -U.O.N. DATA CABLE 4PAIR UTP CAT 5.
- ◎ CEILING DATA OUTLET W/ BACK BOX AND INCLUDING DRAG LINE. DATA CABLE 4PAIR UTP CAT 5.

## DATA AND TELEPHONE OUTLETS SUFFIX

2 A NUMBER INDICATES NUMBER OF CONNECTIONS PER OUTLET.

## DEMOLITION SYMBOLS

	2'x4' FLUORESCENT FIXTURE – RECESSED MOUNTED.
	1'x4' FLUORESCENT FIXTURE – SURFACE OR RECESSED MOUNTED.
	2'x4' FLUORESCENT FIXTURE – RECESSED MOUNTED, EMERGENCY SUPPLY.
	CLEAN, RECEPTACLE OUTLET.
	DUPLEX TYPE, RECEPTACLE OUTLET.
	SWITCH.
	CEILING JUNCTION BOX
	GROUNDING RECEPTACLE, LOCKING TYPE
	NURSE CALL DOME–LIGHT (SINGLE LIGHT).
	NURSE CALL DOME–LIGHT (DUAL LIGHT).
	TELEPHONE OUTLET 18" AFF – U.O.N
	RELAY FOR LIGHTING CONTROL

## SYMBOLS - ACCESS CONTROL SYSTEM

EPB	EMERGENCY PANIC BAR
CR	CARD READER MTD 48" AFF
DC	DOOR CONTACT
ES	ELECTRIC STRIKE
REX	REQUEST TO EXIT (MUSHROOM PUSH BUTTON TYPE)
ADO T	WALL SWITCH FOR DOOR OPENER, SQUARE/ROUND PUSH PLATE WITH PICTOGRAM AND TEXT "PUSH TO OPEN".

## SYMBOLS - POWER RISER DIAGRAMS

xxx A

A

xxx A

xxx A

A

xxx A MLD

FSS FM FZ

xxx KVA U1/U2 VOLTS

MOLDED CASE CIRCUIT BREAKER SYMBOL, WITH XXX RATING IN AMPS.

PANELBOARD MAIN BREAKER. XXX IS MAIN BREAKER RATING IN AMPERES. "A" IS PANEL NAME.

ENCLOSED MAIN CIRCUIT BREAKER, RATED AS SAFETY SWITCH OR PULL-OUT DISCONNECT. XXX IS MAIN BREAKER RATING IN AMPERES.

PANELBOARD MAIN LUGS ONLY TYPE. XXX IS RATING IN AMPERES FOR THE BARS INSIDE THE PANEL. "A" IS PANEL NAME.

FUSED SAFETY SWITCH OR PULL-OUT DISCONNECT, FM IS FRAME RATING, FZ IS FUSE RATING IN AMPERES.









TRANSFORMER. XXX IS RATING IN KVA, U1/U2 IS PRIMARY/SECONDARY VOLTAGE IN VOLTS.

## ELECTRICAL LIGHTING SYMBOLS

## SYMBOLS - LIGHTING LUMINARE FIXTURES

NOTE:

LIGHTING CONTROLS: UPPER CASE LETTERS (F-XX) ADJACENT TO FIXTURE DENOTES FIXTURE TYPE, LOWER CASE LETTER INDICATES CONTROLLING SWITCH, LIGHTING SUFFIXES "C" - CRITICAL BRANCH SUPPLIED, "LS"-LIFE SAFETY BRANCH SUPPLIED.

	2'x2' FLUORESCENT FIXTURE, CEILING SURFACE MOUNTED, NORMAL POWER SUPPLY, U.O.N. BY A SUFFIX.
	2' x 2' FLUORESCENT FIXTURE, CEILING RECESSED MOUNTED, NORMAL POWER SUPPLY, U.O.N. BY A SUFFIX.
	2' x 2' FLUORESCENT FIXTURE, CEILING RECESSED MOUNTED, CRITICAL POWER SUPPLY.
	2' x 2' FLUORESCENT FIXTURE, CEILING RECESSED MOUNTED, LIFE SAFETY POWER SUPPLY.
	CEILING RECESSED DOWNLIGHT, SYMETRIC LIGHT DISTRIBUTION, NORMAL POWER SUPPLY U.O.N. BY A SUFFIX.
	STRIP LIGHT, 4' LONG, NORMAL POWER SUPPLY U.O.N. WITH A SUFFIX.
	PATIENT BED POSITION LIGHT, UP/DOWN LIGHTING DISTRIBUTION, 3' LONG WITH 4 POSITION PULL CHAIN SWITCH, 6' AFF MOUNTED U.O.N.
	WALL MOUNTED LED LIGHTING FIXTURE, UP LIGHT, ARCHITECTURAL SCONCE LIGHTING SYSTEM WITH MOUNTING TRUCK SYSTEM, JUMPER CABLE AND LED POWER SUPPLY AS REQUIRED.

## LIGHTING SUPPLY CIRCUIT SUFFIX (FOR DOWNLIGHTS)

C        EMERGENCY – CRITICAL BRANCH POWER SUPPLY.

LS       EMERGENCY – LIFE SAFETY BRANCH POWER SUPPLY.

## SYMBOLS - SWITCHES FIXTURES

NOTE:

**DESCRIPTION**






NORMALLY MTG HGT FOR THE FOLLOWING SWITCHES SHALL BE 40" AFF, U.O.N. IN ELECTRICAL CLOSET, MECHANICAL ROOMS, MTD SHALL BE 54" AFF.

LOWER LETTER SUFFIXES IDENTIFIES LIGHTING FIXTURE(S) CONTROLLED BY THE SWITCH, IF THE FIXTURE(S) HAS/HAVE THE SAME DESIGNATION LETTER(S).






S	SINGLE POLE, ONE WAY, WALL MOUNTED LIGHTING SWITCH, 20A, 277V AC.
S <sub>3</sub>	SINGLE POLE, THREE-WAY, WALL MOUNTED LIGHTING SWITCH, 20A, 277V AC.
S <sub>4</sub>	SINGLE POLE, FOUR-WAY, WALL MOUNTED LIGHTING SWITCH, 20A, 277V AC.
S <sub>IS</sub>	LOW VOLTAGE (24V AC) WALL OCCUPANCY SENSOR, INFRARED SENSOR TYPE, WITH BUILT-IN MANUAL OVERRIDE SWITCH.
S <sub>DM</sub>	SINGLE POLE DIMMER SWITCH, 3-WAY CONTROLLABLE, 600VA U.O.N.
S <sub>AD</sub>	SINGLE POLE ACCESSORY DIMMER, 3-WAY CONTROLLABLE, 600VA U.O.N.
S <sub>JD</sub>	SINGLE POLE, JAMB DOOR LIGHTING SWITCH, 20A, 277V AC.

Ⓟ CEILING MOUNTED JUNCTION BOX POWER PACK FOR LIGHTING CONTROL - SEE DETAIL DRAWING.

Ⓟ CEILING MOUNTED JUNCTION BOX WITH AN AUXILIARY RELAY PACK FOR LIGHTING CONTROL - SEE WIRING DETAIL DRAWING.

 WALL MOUNTED EXIT LIGHT  
 CEILING MOUNTED DIRECTED  
EXIT LIGHTS  
 DUPLEX  
RECEPTACLE  
 GROUND FAULT  
DUPLEX RECEPTACLE  
 RECEPTACLE SGL 208V

## FIRE ALARM DEVICES

	FIRE ALARM PULL STATION
	SMOKE DETECTOR
	FIRE ALARM HORN/STROBE
	FIRE ALARM STROBE
	FIRE ALARM LOCAL ANNUNCIATION (CONFIRM LOCATION WITH FIRE ALARM CONTROL PANEL)

ALL FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH THE EXISTING CAMPUS-WIDE VA COMPLEX FIRE ALARM SYSTEM (NEW TECH). WIRING, TIE-IN, AND PROGRAMMING SHALL BE PERFORMED BY THE CAMPUS WIDE FIRE ALARM CONTRACTOR AND WHO SHALL BE PAID AS PART OF THIS PROJECT. COORDINATE WITH CONTRACTING OFFICER TECHNICAL REPRESENTATIVE (COTR) FOR ADDITIONAL DETAILED INFORMATION.

**FACP** FIRE ALARM CONTROL PANEL

Rev	Explanation & Initials	Date

Professional Seal		

Drawing Title
Electrical - Symbols, Notes, & Abbreviations
Approved:
Approved:

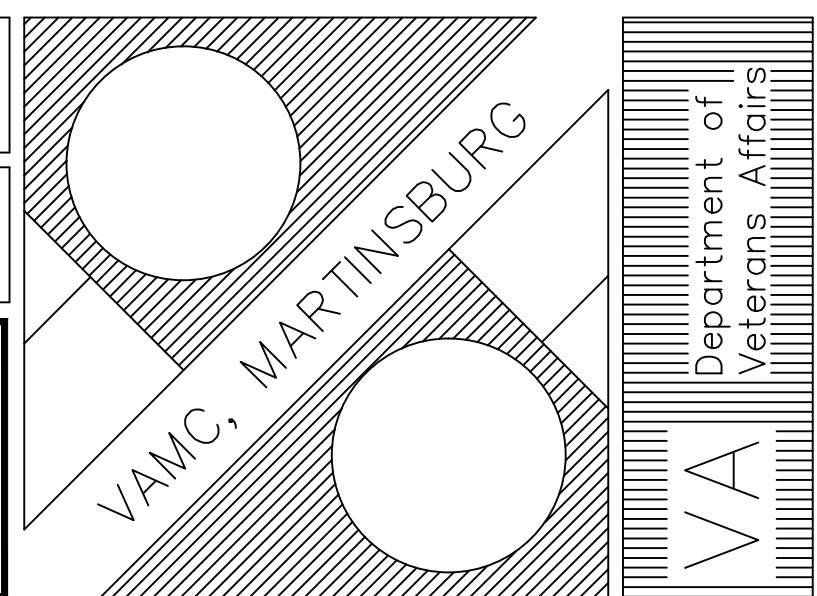
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Building 302B Renovations		
Building Number	Checked	Drawn
302B	-	SP
Location		
VAMC, MARTINSBURG WV		

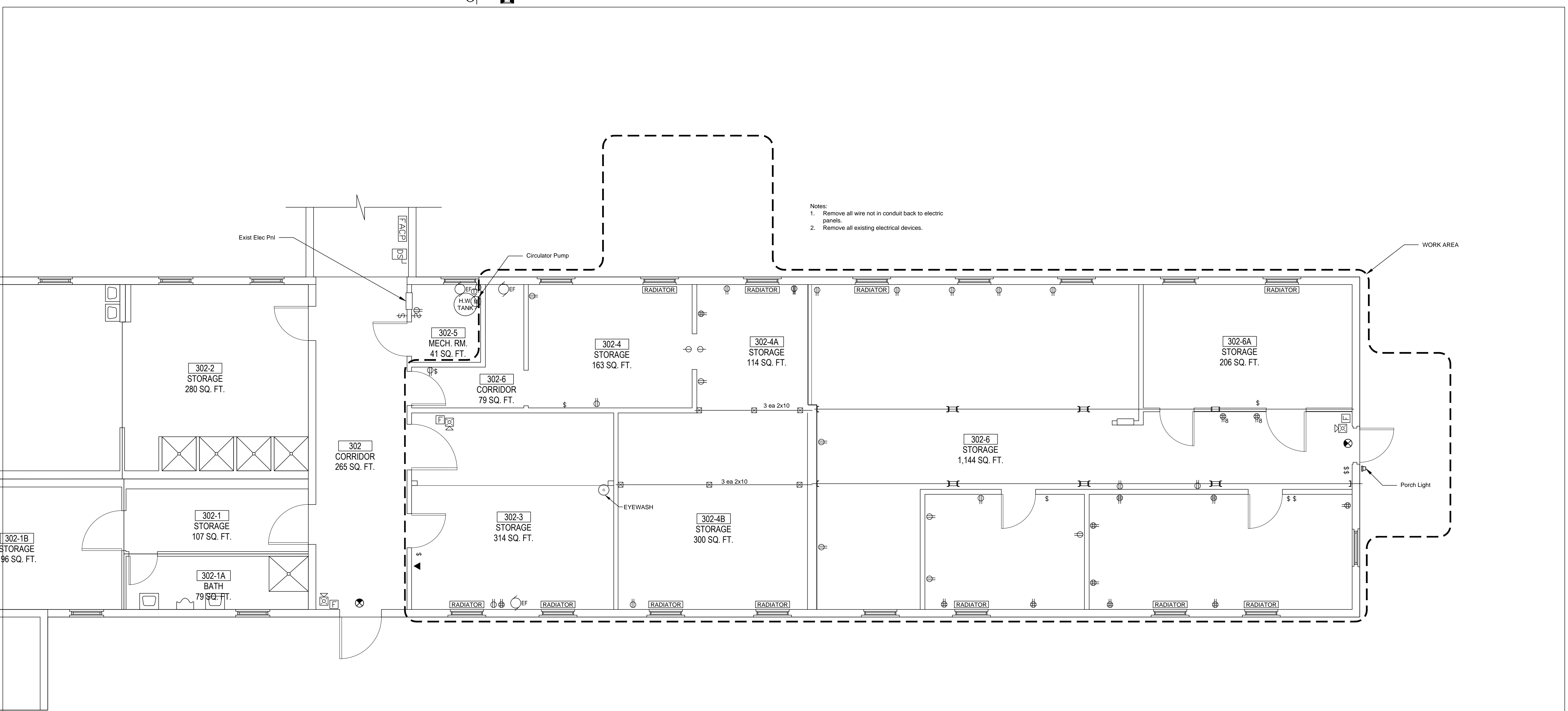
Date  
06/13/2011

Project No.  
613-11-143

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1 Floor Plan - Existing  
1/4" = 1' 0"

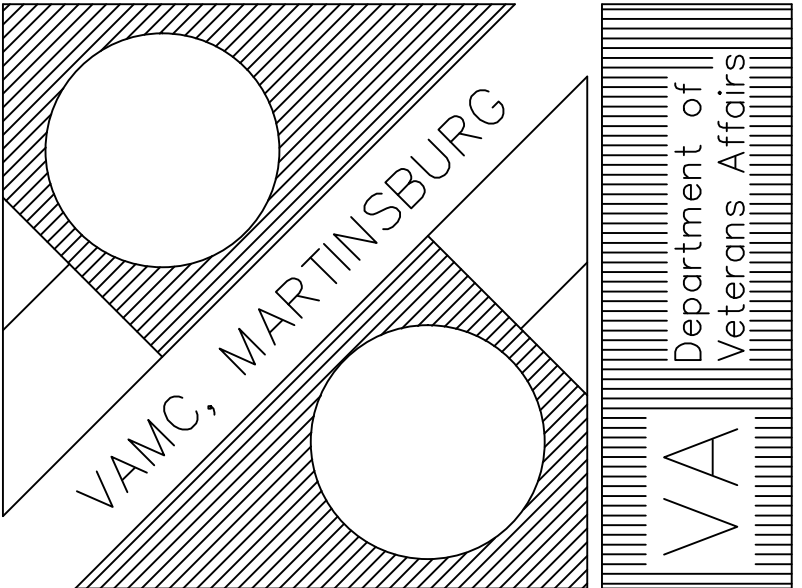
Rev	Explanation & Initials	Date

Professional Seal		

Drawing Title
Electrical Existing/Demolition
Approved:
Approved:

Project Title		
Building 302B Renovations		
Building Number	Checked	Drawn
302B	-	SP
Location		
VAMC, MARTINSBURG WV		

Date
06/13/2011
Project No.
613-11-143
ED 101
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PANEL: PP-1		ENCLOSURE: NEMA 1				LOCATION: 302B																			
(NEW)		MOUNTING: Recessed																							
Ckt	DESCRIPTION	CB	POLE	PH	NEU	GRD	COND	VOLT	VA	PH	VA	COND	GRND	NEU	PH	POLE	CB	DESCRIPTION	Ckt						
1	Lighting	20	1							A						1	20	Lighting	2						
3	Receptacles, 302-6K	20	1							B						1	20	Receptacles 302-6L	4						
5		30	2							C						1	20	Receptacles 302-6J	6						
7										A						1	20	Receptacles 302-6E, 6H	8						
9	Receptacles 302-6I	20	1							B						1	20	Receptacles 302-6D	10						
11	Receptacles, Hall	20	1							C						1	20	Receptacles 302-Hall	12						
13	Receptacles, 302-6E, 6G	20	1							A									14						
15	Lighting	20	1							B					3	**	A/C Outside Unit		16						
17	Receptacles, 302-6M	20	1							C									18						
19	Copier	20	1							A									20						
21	Fan FF-2	20	1							B					3	**	A/C Inside Unit		22						
23	Instant. Water Heater	50	2							C						1	20	(Spare)	24						
25										A						1	20	(Spare)	26						
27	(Spare)	20	1							B						1	20	(Spare)	28						
29	(Spare)	20	1							C						1	20	(Spare)	30						
31	Blank Space									A								Blank Space	32						
33	"									B								"	34						
35	"									C								"	36						
37	"									A								"	38						
39	"									B								"	40						
41	"									C								"	42						
FED FROM DIST PANEL						CONNECTED VA								CONNECTED AMPS				WIRES BASED ON 75° C RATED CU							
AT XFMR F						CONNECTED VA								CONNECTED AMPS				ADJUST IF 60° C TERMINALS OR AL USED							
						CONNECTED VA								CONNECTED AMPS				** CIRCUITS FOR A/C UNITS TO BE SIZED BASED ON							
						TOTAL CONNECTED VA								AVG CONNECTED AMPS				MANUF. RATED LOAD CURRENT AT AND RECOMMENDED							
																		MAXIMUM OVERCURRENT PROTECTION							

302-MDP (Existing)		100 A		FRAME 3PH		4W	208Y/120 VOLT		100		MLO	PANEL	BOARD		AIR:		14KA	
Ckt1	DESCRIPTION	CB	POLE	PH	NEU	GRD	COND	VA	PH	VA	COND	GRND	NEU	PH	POLE	CB	DESCRIPTION	Ckt
1	A/C Shop	20	2												1	20	(New) Lights 302B-03, 04	2
3	"														1	20	SPARE	4
5	Outside Lights			1											1	20	S' Wall Shop Recep	6
7	Wash & OR4 Lts														1	20	Hall Lts 302	8
9	N Wall Shop Recep			1											1	20	Tunnel Lts	10
11	Shop Fan for Htr			1											1	20	"	12
13	Water Heater			2											)		SPARE	14
15	"														3	100	-- SPARE	16
17	(New) Rm 302-4 Recep			1											)		/ SPARE	18
19	(New) Rm 302-3 Recep			1														20
21	Blank Spaces																Blank Spaces	22
23	"																"	24
25	"																"	26
27	"																"	28
29	"																"	30
31	"																"	32
33	"																"	34
35	"																"	36
37	"																"	38
39	"																"	40
41	"																"	42
FED FROM DIST PANEL AT XFMR F						CONNECTED VA		A		CONNECTED AMPS						WIRES BASED ON 75° C RATED CU ADJUST IF 60° C TERMINALS OR AL USED		
						CONNECTED VA		B		CONNECTED AMPS								
						CONNECTED VA		C		CONNECTED AMPS								
						TOTAL CONNECTED VA				AVERAGE CONNECTED AMPS								

Rev	Explanation & Initials	Date

Professional Seal

Drawing Title

## Electrical Schedules

Approved:

Approved:

Project Title

## Building 302B Renovations

Building Number

302B

Location

VAMC, MARTINSBURG WV

Date

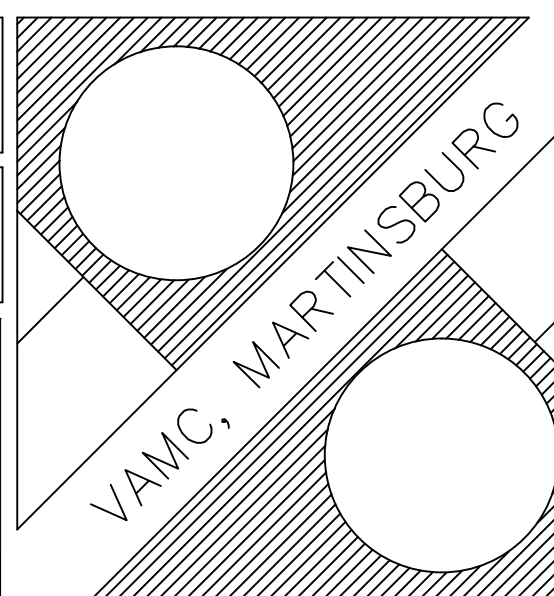

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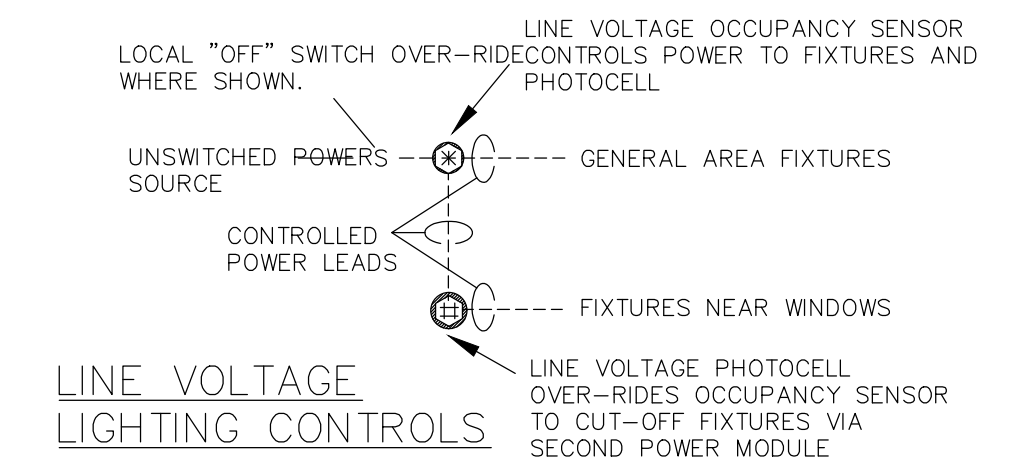
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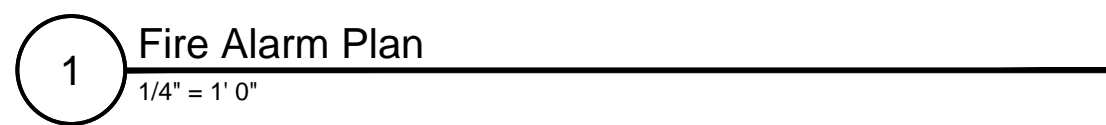
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Department of  
Veterans Affairs



- \$ WALL MOUNTED SYSTEM CUT-OFF SWITCH.



FIRE ALARM CIRCUITS SHALL BE CONNECTED TO EXISTING FIRE ALARM CONTROL PANEL SFACP 7.