ELECTRICAL SYMBOLS AND ABBREVIATIONS

(SOME SYMBOLS MAY NOT BE APPLICABLE TO THIS PROJECT)

SYMBOLS

GENERAL

- MOTOR
- CONTROLLER TO BE FURNISHED UNDER DIVISION 15 AND INSTALLED UNDER DIVISION 16
- COMBINATION CONTROLLER, DISCONNECT FURNISHED UNDER DIVISION 15, INSTALLED BY DIVISION 16.
- DISCONNECT SWITCH
- MAGNETIC MOTOR STARTER
- COMBINATION MOTOR STARTER/DISCONNECT SWITCH
- G — GROUNDING REFERENCE POINT (GROUNDING STRAP OR BRAID).
- JUNCTION BOX, CEILING MOUNTED
- JUNCTION BOX, WALL MOUNTED
- PC — PHOTO CELL
- R — RELAY
- TC — TIME CLOCK
- C — CONTACTOR
- BELL
- BUZZER
- CEILING MOUNTED CLOCK
- WALL MOUNTED CLOCK
- WALL MOUNTED DOUBLE FACE CLOCK–HEIGHT AS DESIGNATED BY ARCHITECT
- HORN
- TRANSFORMER AS INDICATED
- ATS — AUTOMATIC TRANSFER SWITCH
- EQUIPMENT CONNECTION
- 2 — KEYED NOTE NO. 2
- CH– — MECHANICAL EQUIPMENT DESIGNATION. REFER TO MECHANICAL EQUIPMENT SCHEDULES.

LUMINAIRES

- A, a — FLUORESCENT FIXTURE, CEILING OR WALL MOUNTED SUBSCRIPT INDICATES ASSOCIATED SWITCHING. CAPITAL LETTER INDICATES FIXTURE TYPE.
- A, a, S — "S" INDICATES SLAVE FIXTURE WITH NO BALLAST ASSEMBLY.
- INCANDESCENT OR H.I.D. FIXTURE CEILING MOUNTED
- INCANDESCENT OR H.I.D. FIXTURE WALL MOUNTED
- INCANDESCENT OR H.I.D. WALLWASH FIXTURE CEILING MOUNTED. ARROW INDICATES DIRECTION OF WASH
- EXIT LIGHT, CEILING MOUNTED WITH ARROWS AS INDICATED ON DRAWINGS
- EXIT LIGHT, WALL MOUNTED WITH ARROWS AS INDICATED ON DRAWINGS
- FIXTURE CONNECTED WITH ONE BALLAST CONNECTED TO BATTERY BACK UP. DUAL-LITE #UFO-2EI, SELF-DIAGNOSTIC, 900 LUMENS. BATTERY UNIT IS CONNECTED WITH UNSWITCHED PHASE CONDUCTOR
- EMERGENCY LIGHT, BATTERY TYPE WITH CHARGER
- REMOTE MOUNTED EMERGENCY LIGHT, CONNECTED TO BATTERY WITH CHARGER
- B — SYMBOL IDENTIFYING FIXTURE TYPE. ALL FIXTURES THIS ROOM ARE FIXTURE TYPE INDICATED INSIDE UNLESS INDIVIDUALLY MARKED
- POLE MOUNTED LUMINAIRE (AREA CUT OFF TYPE)
- FLOOD LIGHT. ARROW INDICATES AIMING DIRECTION.
- TRACK LIGHT WITH HEADS AS INDICATED

RACEWAYS

- CONDUIT CONCEALED IN WALL OR CEILING WITH ONE PHASE, NEUTRAL AND GROUND CONDUCTOR UNLESS OTHERWISE NOTED
- CONDUIT UNDER FLOOR OR CAST IN STRUCTURE WITH ONE PHASE, NEUTRAL AND GROUND CONDUCTOR UNLESS OTHERWISE NOTED.
- SWITCH LEG
- P1A–2,4,6 — BRANCH CIRCUIT HOMERUN SUBSCRIPT "P1A" INDICATES PANEL AND 2,4,6 INDICATES BREAKER POSITION. 3/4"C. 2#12 AND 1#12 GND. MIN.
- MULTI–OUTLET ASSEMBLY AS SPECIFIED.
- T — TELEPHONE/DATA/TELEVISION, AS REQUIRED.
- BUS DUCT WITH OVERCURRENT FEEDER DEVICE AS AS SPECIFIED.

PANEL AND RELATED ITEMS

- PANELBOARD (SEE SCHEDULE), SURFACE MOUNTED.
- PANELBOARD (SEE SCHEDULE), FLUSH MOUNTED.
- SWBD — SWITCHBOARD OR DISTRIBUTION BOARD
- MCC — MOTOR CONTROL CENTER
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR.
- PLYWOOD TELEPHONE BACKBOARD

OUTLETS

- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- WP, GFI — DUPLEX RECEPTACLE GFI=GROUND FAULT INTERRUPTING WP=WEATHERPROOF
- DOUBLE DUPLEX (QUADRUPLEX) RECEPTACLE
- RED DUPLEX RECEPTACLE WITH RED COVERPLATE, FACTORY LABELED "EMERGENCY" AND CIRCUIT NUMBER.
- FLUSH FLOOR OUTLET, UNLESS OTHERWISE NOTED, WITH DUPLEX POWER, SINGLE DATA AND SINGLE TELEPHONE.
- SPECIAL PURPOSE OUTLET AS DESIGNATED
- C — CLOCK OUTLET MOUNTED AT 7'–6" AFF UNLESS NOTED
- TELEPHONE OUTLET IN WALL 18" AFF; 3/4"C. TO ABOVE ACCESSIBLE CEILING.
- FLOOR TELEPHONE OUTLET
- TELEVISION OUTLET
- P — PAYPHONE OUTLET IN WALL 30" AFF; 3/4"C. W/ PULL CORD TO TELEPHONE BOARD.
- DATA OUTLET IN WALL 18" AFF; 3/4"C. TO ABOVE ACCESSIBLE CEILING.

SWITCHES

- SINGLE POLE SWITCH, LOWERCASE SUBSCRIPT INDICATES ASSOCIATED CIRCUITRY
- 2 — DOUBLE POLE SWITCH
- 3 — THREE–WAY SWITCH
- 4 — FOUR–WAY SWITCH
- K — KEY OPERATED SWITCH
- P — SWITCH WITH PILOT LIGHT IN HANDLE (ON LIGHTED UNLESS OTHERWISE NOTED)
- WP — WEATHERPROOF SWITCH
- M, MT — MANUAL MOTOR STARTER SWITCH (T=THERMAL OVERLOAD SIZED FOR MOTOR)
- I — INCANDESCENT DIMMER SWITCH WATTAGE RATING AS NOTED.
- DLV — DIMMER SWITCH FOR MR16 INCANDESCENT LIGHTS
- DF — FLUORESCENT DIMMER SWITCH, NUMBER OF LAMPS AS NOTED.
- EP — EXPLOSION PROOF SWITCH
- T — TIMER SWITCH
- 3, D, X — MULTIPLE SWITCHES, GANGED.
- IR — WALL SWITCH INFRARED (WATT STOPPER #WS277 OR EQUAL)
- PB — PUSHBUTTON
- CEILING MOUNTED ULTRASONIC MOTION SENSOR.

P.A./INTERCOM

- IC — REMOTE INTERCOM STATION
- ICM — INTERCOM MASTER STATION
- S — SPEAKER, CEILING MOUNTED WITH BACKBOX AND GRILLE. SEE SPECIFICATIONS.
- S — SPEAKER, WALL MOUNTED.
- AMP — AMPLIFIER AND ASSOCIATED TUNERS, MIXERS, ETC., AS REQUIRED. REFER TO DETAILS AND SPECIFICATIONS.
- M — MICROPHONE JACK

FIRE ALARM

- FIRE ALARM CONTROL PANEL — FACP
- REMOTE FIRE ALARM ANNUNCIATOR — ANN
- MANUAL PULL STATION 48" AFF — F
- SMOKE DETECTOR; DASHED INDICATES BELOW RAISED FLOOR — SD SD
- SMOKE DETECTOR, DUCT MOUNTED — SD D
- TEST SWITCH/REMOTE STATUS INDICATOR — T
- HEAT DETECTOR — H
- FS — FLOW SWITCH, FURNISHED UNDER DIV. 15 INSTALLED BY DIV. 16.
- TS — TAMPER SWITCH, FURNISHED UNDER DIV. 15, INSTALLED BY DIV. 16.
- PS — PRESSURE SWITCH, FURNISHED UNDER DIV. 15, INSTALLED BY DIV. 16.
- AV 1 — FIRE ALARM AUDIO–VISUAL ANNUNCIATOR, SUBSCRIPT INDICATES INTENSITY OF STROBE. 1=15 CANDELA, 3=30 CANDELA
- V 1 — VISUAL ANNUNCIATOR, SUBSCRIPT INDICATES INTENSITY OF STROBE. 1=15 CANDELA, 3=30 CANDELA.
- DH — MAGNETIC DOOR HOLDER
- PJ — FIRE FIGHTERS PHONE JACK

SITE UTILITY

- MH#1 — MANHOLE NUMBER 1; CMH–INDICATES COMMUNICATIONS MANHOLE.
- PB — PULLBOX OR HANDHOLE AS SPECIFIED ON DRAWINGS AND SPECIFICATIONS.
- PP — POWER POLE WITH DOWN GUY
- POLE MOUNTED TRANSFORMERS
- TB — TELEPHONE TERMINAL BOX
- AP — AERIAL PRIMARY
- AS — AERIAL SECONDARY
- AT — AERIAL TELEPHONE; CATV = CABLE TELEVISION.
- UP — UNDERGROUND PRIMARY
- US — UNDERGROUND SECONDARY
- UT — UNDERGROUND TELEPHONE/COMMUNICATIONS

SECURITY

- SECURITY PANEL — SEC
- DOOR CONTACT — DC
- TV — CCTV CAMERA WITH FIXED WIDE ANGLE LENS WALL MOUNTED TO SET CAMERA 6" BELOW CEILING.
- TV PTZ — CCTV CAMERA; PT=PAN AND TILT; Z=ZOOM LENS
- TV WP — EXTERIOR CAMERA IN WEATHERPROOF ENCLOSURE WITH ANTI–FOG HEATERS.
- DL — DOOR LOCK
- CR — CARD READER ACCESS
- D — DURESS PUSHBUTTON
- KP — KEYPAD

DISTRIBUTION

- MOLDED CASE CIRCUIT BREAKER
- DRAWOUT POWER CIRCUIT BREAKER AIR, VACUUM OR SF6 AS SPECIFIED.
- DISCONNECT SWITCH
- FUSIBLE DISCONNECT SWITCH
- TRANSFORMER
- SHEILDED ISOLATION TRANSFORMER
- VM — VOLTMETER
- AM — AMMETER
- VS — VOLTMETER SELECTOR SWITCH
- AS — AMMETER SELECTOR SWITCH
- ST — SHUNT TRIP
- M — CT AND METER

ABBREVIATIONS

A	AMPERE(S)
AC	ABOVE COUNTER
A/C	AIR CONDITIONING
AIC	AMPERE INTERRUPTING CAPACITY
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL , ALUM	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CKT	CIRCUIT
COND	CONDUCTOR
CPU	CENTRAL PROCESSING UNIT
CT	CURRENT TRANSFORMER
DCP	DATA COLLECTION PANEL
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DWGS	DRAWINGS
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING
EQMT	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXP	EXPLOSION PROOF
EXTG	EXISTING
F/A , F.A.	FIRE ALARM
FLUOR	FLUORESCENT
FN	FULL NEUTRAL
FT	FEET, FOOT
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRD	GALVANIZED RIGID STEEL
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HOA	HAND OFF AUTOMATIC
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HZ	HERTZ
ID	INSIDE DIAMETER
IMC	INTERMEDIATE STEEL CONDUIT
IN	INCHES
INCD	INCANDESCENT
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAC	KILOVOLT AMPERE CAPACITIVE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LPS	LOW PRESSURE SODIUM
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MFG	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
MTG	MOUNTING
MV	MERCURY VAPOR
MW	MICROWAVE
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NF	NONFUSIBLE
NL	NIGHT LIGHT
NO	NORMALLY OPEN
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OH	OVERHEAD
P	POLE
PA	PUBLIC ADDRESS
PB	PUSHBUTTON
PBX	PRIVATE BUILDING EXCHANGE
PC	PULL CHAIN
P/C	PHOTO CELL
PDP	POWER DISTRIBUTION PANEL
PH , ø	PHASE
PNL	PANELBOARD
PVC	POLYVINYL CHLORIDE
QTZ	QUARTZ
PSI	POUNDS PER SQUARE INCH
PWR	POWER
REFR	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL
RMC	RIGID METAL CONDUIT
S	SECURITY
SC	SPLIT CIRCUIT
SCC	STATUS COMMAND CENTER
SN	SOLID NEUTRAL
SQFT.	SQUARE FOOT
SW	SWITCH
SWBD	SWITCHBOARD
TC	TIME CLOCK
TELE	TELEPHONE
TSTAT	THERMOSTAT
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT(S)
VEND	VENDING
VP	VAPOR PROOF
W	WIRE , WATT(S)
WP	WEATHERPROOF
XFMR	TRANSFORMER
XPD	TRANSPONDER
Y	WYE
Z	IMPEDANCE
Δ	DELTA
1P	ONE POLE
2P	TWO POLE
3P	THREE POLE

SYMBOL		DESCRIPTION	DATE	APPROVAL

REVISIONS

Drawn by: G. CRAWL

COORDINATION

Engr:

Design and Construction:

APPROVAL:

Director of Facilities — date

Director of Operations — date

HEADQUARTERS AIR FORCE SERVICES AGENCY

Title:

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ELEC. SYMBOLS AND ABBREVIATIONS

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