FIRE ALARM NOTES

1. A CORRIDOR, ROOM, OR ADJACENT SPACE WITH TWO OR MORE VISIBLE NOTIFICATION APPLIANCES WITHIN THE FIELD OF VIEW SHALL FLASH IN SYNCHRONIZATION.
2. FIRE ALARM SYSTEM AND COMPONENTS SHALL MEET THE FOLLOWING CODES:
   A. NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEM.
   B. NFPA 14 - STANDARD FOR THE INSTALLATION OF STANDPIPE SYSTEM.
   C. NFPA 20 - STANDARD FOR THE INSTALLATION OF FIRE PUMP.
   D. NFPA 70 - NATIONAL ELECTRIC CODE.
   E. NFPA 72 - NATIONAL FIRE ALARM CODE.
   F. NFPA 90A - STANDARD FOR INSTALLATION OF AIR CONDITIONING.
   G. NFPA 101 - LIFE SAFETY CODE.
   H. VA STANDARDS.
   I. ANSI S3.41 AUDIBLE EMERGENCY EVACUATION SIGNAL.
3. FIRE ALARM SYSTEM SHALL COMPLY WITH FACTORY MUTUAL RESEARCH CORPORATION (FM).
4. ALL FIRE ALARM CABLING SHALL BE IN CONDUIT. CONDUIT SHALL BE FACTORY PAINTED RED.
5. THE CONTRACTOR IS RESPONSIBLE FOR TESTING THE EXISTING FIRE ALARM SYSTEM IN THE AREA OF WORK AND ADJACENT AREAS FULLY. PRIOR TO THE START OF WORK, ANY DEFICIENCIES OR NON-OPERATION OF COMPONENTS OF THE FIRE ALARM SYSTEM SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER AT THAT TIME. UPON COMPLETION OF WORK, THE AFFECTED AREA OF WORK AND ADJACENT AREAS SHALL AGAIN BE FULLY TESTED 100%. ANY PORTION OF THE FIRE ALARM SYSTEM WHICH IS NON-FUNCTIONAL OR NON-COMPLIANT WITHIN THE AREA OF WORK OR ADJACENT SPACES AT THAT TIME SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
6. *THE CONTRACTOR SHALL SUBMIT THE FIRE ALARM DRAWINGS TO THE STATE OF* INDIANA FOR APPROVAL PRIOR TO SUBMITTING TO THE VA.

GENERAL NOTES

1. ALL ELECTRICAL DEVICES, FIXTURES, EQUIPMENT AND FEEDERS SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, THE MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES, ALL APPLICABLE LOCAL AND STATE CODES, AMERICAN DISABILITIES ACT AND WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND VA STANDARDS.
2. PROVIDE ADDITIONAL SUPPORT FOR DEVICES, FIXTURES, EQUIPMENT AND FEEDERS WHERE THE BUILDING CONSTRUCTION IS NOT SUITABLE FOR DIRECT MOUNTING.
3. FIRESTOP, DRAFTSTOP, SMOKESTOP AND/OR PROTECT THE ANNULAR SPACE AROUND ALL PENETRATIONS THROUGH WALLS, PARTITIONS, FLOORS, CEILING, AND ROOFS IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, UL LISTING REQUIREMENT AND THE APPLICABLE BUILDING CODES. REFER TO THE ARCHITECTURAL DRAWINGS AND THE OWNER'S EXISTING AS-BUILT/RECORD DRAWINGS, VERIFY CONSTRUCTION RATINGS AND PROVIDE PENETRATION ASSEMBLIES SUITABLE FOR PARTICULAR CONSTRUCTION.
4. VERIFY CEILING SYSTEMS AND PROVIDE MOUNTING ACCESSORIES, TRIMS AND ALL REQUIRED MOUNTING HARDWARE TO SUIT THE PARTICULAR INSTALLATION.
5. PROTECT EXISTING UNDERGROUND AND BUILDING INTERIOR UTILITIES DURING CONSTRUCTION.
6. BRANCH CIRCUIT CONDUCTORS SHALL BE 12 AWG MINIMUM.
7. COORDINATE ANY AND ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION SO AS TO AVOID CONFLICT DURING CONSTRUCTION.
8. ALL PANELS SHALL HAVE TYPED, COMPLETED DIRECTORIES INDICATING EQUIPMENT SERVED AND ROOM NUMBER (AS INDICATED ON FINAL BUILDING ROOM SIGNAGE) OF EQUIPMENT LOCATION, OR SPARE, OR SPACE.
9. MANUFACTURER'S NAME AND MODEL NUMBER ARE GIVEN FOR DESCRIPTIVE PURPOSES, TO INDICATE A QUALITY STANDARD AND ARE NOT INTENDED TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DEEMED EQUAL AND APPROVED BY THE VA COR AND ARCHITECT/ENGINEER SHALL BE ACCEPTED.
10. ALL FEEDERS AND CIRCUITRY SHALL BE TORQUED PER THE PANEL, BREAKER, AND/OR PARTICULAR EQUIPMENT MANUFACTURER'S SPECIFICATIONS.
11. CIRCUITRY TO SWITCHES, RECEPTACLES, AND ALL OTHER DEVICES SHALL BE TERMINATED ON THE DEVICE'S SCREW TERMINALS.
12. MOUNTING HEIGHTS INDICATED ARE TO CENTER OF DEVICE, OUTLET, FIXTURE, OR EQUIPMENT UNLESS NOTED OTHERWISE.
13. ALL WIRE TERMINATIONS SHALL BE RATED FOR 75 DEGREE C.
14. ALL CONDUCTORS SHALL HAVE THHN/THWN INSULATION, UNLESS OTHERWISE NOTED.
15. ALL CONDUIT SHALL BE EMT UNLESS OTHERWISE NOTED.
16. ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES AND EQUIPMENT SHALL BE LABEL LISTED BY AN APPROVED THIRD PARTY TESTING AGENCY.
17. ALL CONDUITS, JUNCTION BOXES, PULL BOXES AND WIRES SHALL BE LABELED.
18. ALL TESTING SHALL BE BY AUTHORIZED FACTORY STAFF ON SITE AND A FULL REPORT SHALL BE SUBMITTED 7 DAYS AFTER THE TEST.
19. ALL SHUT DOWNS SHALL BE SUBMITTED 2 WEEKS IN ADVANCED FOR COR APPROVAL.
20. THE CONTRACTOR SHALL CHECK NORMAL AND EMERGENCY POWER PHASES PRIOR TO RE-ENERGIZING THE ELECTRICAL SYSTEM (ALSO, CHECK MOTOR ROTATIONS IN BOTH SYSTEMS).
21. UNO, HEIGHTS AFF OR AFG ARE TO BOTTOM OF FIXTURE.

ABBREVIATIONS

A	AMP
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPS INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
C	CONDUIT
cd	CANDELA
CKT	CIRCUIT
CU	COPPER
D	DEEP
DACT	DIGITAL ALARM COMMUNICATOR TERMINAL
DED	DEDICATED CIRCUIT
EG	EQUIPMENT GROUND
EMT	ELECTRICAL METALLIC TUBING
EX	EXISTING
EXT	EXTERIOR
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM REMOTE ANNUNCIATOR
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METAL CONDUIT
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H	HIGH
HP	HORSEPOWER
IBC	INTERNATIONAL BUILDING CODE
IG	ISOLATED GROUND
KW	KILOWATT
MBJ	MAIN BONDING JUMPER
MC	METAL-CLAD CABLE
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MM	MULTIMODE
MOCP	MAXIMUM OVERCURRENT PROTECTION
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NTS	NOT TO SCALE
OC	ON CENTER
OIT	OFFICE OF INFORMATION & TECHNOLOGY
P	PHASE
PAMN	PUBLIC ADDRESS AND MASS NOTIFICATIONS SYSTEM
PC	PHOTOCELL
R	RELOCATED
SM	SINGLE MODE
SPD	SURGE PROTECTION DEVICE
TCL	TOTAL CONNECTED LOAD
TDL	TOTAL DEMAND LOAD
TTB	TELECOM TERMINATIONS BOARD
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTED POWER SUPPLY
W	WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER

ELECTRICAL LEGEND

- S — SINGLE POLE SWITCH, MOUNTED 44" AFF UNO
  MODIFIERS FOR SWITCHES:
  3 = THREE WAY
  4 = FOUR WAY
  DM = DIMMER SWITCH
  OC = OCCUPANCY SENSOR
- DUAL-TECHNOLOGY, CEILING MOUNTED, LOW VOLTAGE OCCUPANCY SENSOR
- OCCUPANCY SENSOR SWITCHPACK, WIRE PER MANUFACTURER'S RECOMMENDATIONS.
- 120V DUPLEX RECEPTACLE, MOUNTED 18" AFF UNO
  MODIFIERS FOR RECEPTACLES:
  GFI = GROUND FAULT CIRCUIT INTERRUPTER.
  WP = WEATHERPROOF
- 120V SIMPLEX RECEPTACLE, MOUNTED 18" AFF UNO
- 120V QUAD RECEPTACLE, MOUNTED 18" AFF UNO
- 220V DUPLEX RECEPTACLE, MOUNTED 18" AFF UNO
- TELCO OUTLET MOUNTED 18" AFF UNO
- DATA/TELCO OUTLET MOUNTED 18" AFF UNO
- PC — PHOTOELECTRIC CELL
- J — JUNCTION BOX
- FUSED DISCONNECT
- UNFUSED DISCONNECT
- PB — PUSH BUTTON
- WIRING SYSTEM-BRANCH OR FEEDER CIRCUIT
- WIRING SYSTEM-SWITCHED BRANCH OR FEEDER CIRCUIT

BRANCH OR FEEDER CIRCUIT HOMERUN TO PANELBOARD, SWITCHBOARD, MOTOR CONTROL CENTER. SUBSCRIPT DENOTES PANELBOARD, SWITCHBOARD, MOTOR CONTROL CENTER, AND OVERCURRENT PROTECTION DEVICE NUMBER.

- HOMERUN - 120V OR 277V
- HOMERUN - 208/240V OR 480V

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
	FIRE ALARM SPEAKER/STROBE LIGHT-WALL MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" AND NOT GREATER THAN 96" AFF.
	FIRE ALARM STROBE LIGHT-WALL MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" AND NOT GREATER THAN 96" AFF.
	FIRE ALARM SPEAKER-WALL MOUNTED SUCH THAT THE DEVICE IS NOT LESS THAN 80" AND NOT GREATER THAN 96" AFF.
	FIRE ALARM STROBE LIGHT-CEILING MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 10'-0" AFF.
	FIRE ALARM SPEAKER/STROBE LIGHT-CEILING MOUNTED SUCH THAT THE ENTIRE LENS IS NOT GREATER THAN 10'-0" AFF.
F	MANUAL FIRE ALARM PULL STATION TO BE LOCATED WITHIN 5 FT OF THE EXIT DOORWAY OPENING. MIN 42" AFF, MAX 48" AFF.
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANNUNCIATOR
	SMOKE DETECTOR
	HEAT DETECTOR
	SMOKE DUCT DETECTOR
FS	FLOW SWITCH
TS	TAMPER SWITCH
FAB	FIRE ALARM BOOSTER PANEL
FAP	FIRE ALARM TRANSPONDER PANEL

LIGHT FIXTURE SCHEDULE

SYMBOL	LABEL	TYPE OF LAMP	DRIVER	WATTS/ FIXTURE	VOLTAGE	DESCRIPTION	MANUFACTURER/CATALOG NUMBER
	A	LED 9000 LUMENS 80 CRI 4000K	1	98	120	15" X 22" LED HIGH BAY WITH SEMI-DIFFUSE ACRYLIC LENS, MEDIUM DISTRIBUTION; WHITE FINISH; MOUNTED AT 13'-6" AFF	LITHONIA # IBH-9000LM-SD080-MD-XXX-GZ10-40K-80CRI-WH OR APPROVED EQUAL
	B	20 LED 3,851 LUMENS 4000K 70 CRI	2 700mA	47	120	CLASSIC ARCHITECTURAL LED TRAPEZOID WALL SCONCE WITH TYPE IV DISTRIBUTION AND PHOTOCELL	LITHONIA # WST LED-2-700mA-SR4-XXX-PE OR APPROVED EQUAL
	EXC	LED	---	3.3	120	LED EMERGENCY EXIT SIGN/LIGHTS COMBO WITH DIRECTIONAL INDICATOR	LITHONIA MODEL# LHQM OR APPROVED EQUIVALENT

NOTES:
1. CATALOG PART NUMBERS SHOWN ARE FOR DESCRIPTIVE AND QUALITY STANDARDS ONLY, NOT TO BE USED FOR ORDERING WITHOUT VERIFICATION. ENGINEER SHALL NOT BE RESPONSIBLE FOR MISMATCHED OR INACCURATE PART NUMBERS.
2. CONTRACTOR TO PROVIDE LIGHT FIXTURE SHIELDS AS REQUIRED TO PREVENT LIGHT POLLUTION OVER PROPERTY LINE.

PANEL 'GDP-2A'

LOAD SERVED	KVA / Phase A	B	C	CKT BRKR	CKT NO	NEUTRAL A B C	CKT NO	CKT BRKR	KVA / Phase A	B	C	LOAD SERVED
	0.00	---	---		1		2		0.00	---	---	
SPACE	---	0.00	---	---	3		4	---	---	0.00	---	SPACE
	---	---	0.00		5		6		---	---	0.00	
	0.00	---	---		7		8		0.00	---	---	
SPACE	---	0.00	---	---	9		10	---	---	0.00	---	SPACE
	---	---	0.00		11		12		---	---	0.00	
	0.00	---	---		13		14		0.00	---	---	
ATS #11	---	0.00	---	3P-400	15		16	3P-400	---	0.00	---	ATS #12
	---	---	0.00		17		18		---	---	0.00	
	0.00	---	---		19		20		0.00	---	---	
ATS #13	---	0.00	---	3P-400	21		22	3P-400	---	0.00	---	SPARE
	---	---	0.00		23		24		---	---	0.00	
	0.00	---	---		25		26		0.00	---	---	
SPARE	---	0.00	---	3P-200	27		28	3P-200	---	0.00	---	SPARE
	---	---	0.00		29		30		---	---	0.00	
	0.00	---	---		31		32		0.00	---	---	
SPARE	---	0.00	---	3P-100	33		34	3P-100	---	0.00	---	SPARE
	---	---	0.00		35		36		---	---	0.00	
	0.00	---	---		37		38		0.00	---	---	
SPARE	---	0.00	---	3P-100	39		40	3P-100	---	0.00	---	SPARE
	---	---	0.00		41		42		---	---	0.00	
SUB TOTAL	0.00	0.00	0.00						0.00	0.00	0.00	SUB TOTAL
									0.00	0.00	0.00	TOTAL

C/B TEMP. 75 C. RATING 120 208 V 3 PH 4 WIRE
MOUNTING SURFACE

ISOLATED GROUND BUS		YES	X NO
MAIN CIRCUIT BREAKER	X	YES	NO
SERVICE ENTR. RATED		YES	X NO

MINIMUM AIC (K AMPS) 100
MCB RATING 800A
BUS RATING 800A
NEUTRAL RATING 100%

LOAD TYPE		CONNECTED KVA A	B	C	NEC DEM FACTOR	DEMAND KVA A	B	C
GENERAL LIGHTING		0.00	0.00	0.00	125%	0.00	0.00	0.00
GENERAL USE		0.00	0.00	0.00	<=10 KVA @100%	0.00	0.00	0.00
RECEPT					>10KVA @50%	0.00	0.00	0.00
MOTORS AND	LARGEST	0.00	0.00	0.00	125%	0.00	0.00	0.00
EQUIPMENT	ALL OTHERS	0.00	0.00	0.00	100%	0.00	0.00	0.00
WATER HEATERS		0.00	0.00	0.00	125%	0.00	0.00	0.00
FIX. ELEC. SPACE HEAT		0.00	0.00	0.00	100%	0.00	0.00	0.00
DEDICATED RECEPT		0.00	0.00	0.00	100%	0.00	0.00	0.00
SIGN		0.00	0.00	0.00	125%	0.00	0.00	0.00
TOTAL KVA PER PHASE		0.00	0.00	0.00		0.00	0.00	0.00
TOTAL DEMAND AMPERES PER PHASE						0	0	0
PANEL / FEEDER (TOTAL KVA)								0.00
(TOTAL KVA) X 1000 = TOTAL AMPS VOLTS X 1.732								0

NOTES:
1. ALL MOTOR CIRCUIT BREAKERS SHALL BE HACR RATED.
2. PROVIDE POWER LOGIC METER, SEE E-604 FOR MORE INFO.

PANEL '10LP-1'

LOAD SERVED	KVA / Phase A	B	CKT BRKR	CKT NO	NEUTRAL A B	CKT NO	CKT BRKR	KVA / Phase A	B	LOAD SERVED
ROOF HP-1	3.00	---	2P-40	1		2	1P-20	1.00	---	LIGHTING
	---	3.00		3		4	1P-20	---	0.80	GFI RECEPT
OVERHEAD COIL DOOR	0.85	---	1P-20	5		6	1P-20	0.72	---	RECEPT
SPARE	---	0.00	1P-20	7		8	1P-20	---	0.85	OVERHEAD COIL DOOR
SPARE	0.00	---	1P-20	9		10	1P-20	0.00	---	SPARE
SPARE	---	0.00	1P-20	11		12	1P-20	---	0.00	SPARE
SPARE	0.00	---	1P-20	13		14	1P-20	0.00	---	SPARE
SPARE	---	0.00	1P-20	15		16	1P-20	---	0.00	SPARE
SPARE	0.00	---	1P-20	17		18	1P-20	0.00	---	SPARE
SUB TOTAL	3.85	3.00						1.72	1.65	SUB TOTAL
								5.57	4.65	TOTAL

C/B TEMP. 75 C. RATING 120 240 V 1 PH 3 W
MOUNTING SURFACE

ISOLATED GROUND BUS		
MAIN CIRCUIT BREAKER	X	
SERVICE ENTR. RATED	X	

MINIMUM AIC (K AMPS) 10
MCB RATING 60A
BUS RATING 100A
NEUTRAL RATING 100%

LOAD TYPE		CONNECTED KVA A	B	NEC DEM FACTOR	DEMAND KVA A	B
GENERAL LIGHTING		1.00	0.00	125%	1.25	0.00
GENERAL USE				≤10 KVA @100%	0.72	0.80
RECEPT		0.72	0.80	>10KVA @50%	0.00	0.00
MOTORS AND	LARGEST	0.85	0.85	125%	1.06	1.06
EQUIPMENT	ALL OTHERS	0.00	0.00	100%	0.00	0.00
DEDICATED RECEPT		0.00	0.00	100%	0.00	0.00
SIGN		0.00	0.00	125%	0.00	0.00
FIX ELEC. SPACE HEAT		3.00	3.00	100%	3.00	3.00
TOTAL KVA PER PHASE		5.57	4.65		6.03	4.86
TOTAL DEMAND AMPERES PER PHASE					50	41
PANEL / FEEDER (TOTAL KVA)						10.90
(TOTAL KVA) X 1000 = TOTAL AMPS VOLTS						45

100% CONSTRUCTION DOCUMENTS

Revisions:	Date

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Drawing Title: ELECTRICAL AND FIRE ALARM NOTES, ABBREVIATIONS, AND LEGENDS

Approved: Project Director

Project Title: REPLACE MAIN ELECTRICAL TO OUT-BUILDINGS

Location: FORT WAYNE, IN

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Dwg. 27 of 48

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

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