ELECTRICAL NOTES

1. ELECTRICAL DRAWINGS ARE DIAGRAMMATICAL ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DEVICES AND LIGHTING FIXTURE LOCATIONS.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND LOCAL APPLICABLE CODES.
3. ALL WIRING SHALL BE COPPER CONDUCTORS. ALUMINUM AND ALUMINUM ALLOY ARE NOT ACCEPTABLE.
4. ALL WIRING UNLESS OTHERWISE NOTED ON DRAWINGS SHALL BE A MINIMUM #12 AWG.
5. ALL ELECTRICAL COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
6. ALL WIRING #10 OR SMALLER SHALL BE TYPE THHN OR THWN SOLID OR STRANDED UNLESS OTHERWISE NOTED ON DRAWINGS.
7. ALL WIRING #8 OR LARGER SHALL BE TYPE THHN OR THWN STRANDED UNLESS OTHERWISE NOTED ON DRAWINGS.
8. ALL WIRING FOR SITE LIGHTING INSTALLED IN PVC CONDUIT #10 OR SMALLER SHALL BE TYPE THWN OR THW.
9. ALL WIRING TO EXTERIOR EQUIPMENT THAT IS EXPOSED TO DAMPNESS SHALL BE TYPE THWN OR THW.
10. ALL CONDUIT INSTALLED INDOORS SHALL BE "EMT" UNLESS OTHERWISE NOTED ON DRAWINGS. FLEXIBLE METALLIC CONDUIT MAY BE INSTALLED IN HUNG CEILING.
11. ALL WIRING OUTDOORS SHALL BE IN R.G.S. CONDUIT OR PVC APPROVED FOR PURPOSE.
12. WHERE CONTRACTOR COMBINES MULTIPLE CIRCUITS IN ONE CONDUIT, HE SHALL INSTALL ALL HOMERUN, BRANCH AND FEEDER WIRING IN ACCORDANCE WITH N.E.C. 310 AND N.E.C. CHAPTER NINE, REGARDING DERATING ON CONDUCTOR AMPACITIES, ALLOWABLE CONDUIT FILL AND MC CABLE BUNDLING.
13. ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL JUNCTION AND PULL BOXES ABOVE CEILING WITH THE PANELBOARD AND BRANCH CIRCUIT NUMBER MARKED ON COVER PLATE. A TYPEWRITTEN DIRECTORY SHALL BE PROVIDED FOR ALL NEW PANELBOARDS.
14. ALL EQUIPMENT AND DEVICES SHALL BE UL LISTED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. AT COMPLETION OF WORK, CONTRACTOR SHALL CLEAN ALL EQUIPMENT AND PAINT ALL SURFACES WHICH WERE DAMAGED DURING INSTALLATION WITH APPROPRIATE COLOR TO MATCH FINISH.
15. MC CABLES SHALL BE PROPERLY SECURED WITH UL LISTED SUPPORTS.
16. ALL THE CIRCUITING SHOWN IS DIAGRAMMATICAL, CONTRACTOR SHALL PROVIDE JUNCTION AND PULL BOXES AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.
17. ALL CONDUITS SHALL BE SIZED IN ACCORDANCE WITH N.E.C. UNLESS SHOWN LARGER ON DRAWINGS. HOWEVER, NO CONDUIT SHALL BE LESS THAN ½" U.O.N.
18. ALL CONDUIT EXPOSED TO THE WEATHER SHALL BE STANDARD WALL RIGID GALVANIZED STEEL CONDUIT OR GALVANIZED TYPE IMC, UNLESS OTHERWISE NOTED.
19. ALL ELECTRICAL EQUIPMENT REMOVED TO BE TURNED OVER TO THE OWNER OR DISPOSED OF BY THE OWNER'S DIRECTION.
20. COORDINATE CONNECTION TO HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR.
21. LIGHTING FIXTURES SHALL BE MOUNTED ON CEILING GRID SYSTEMS UTILIZING METHODS OF ATTACHMENT IN ACCORDANCE WITH N.E.C. ARTICLE 410-16 AND UL REQUIREMENTS.
22. CONNECTION TO MOTOR TERMINAL BOXES, SOLENOIDS AND ANY OTHER DEVICES HAVING ADJUSTABLE MOUNTING FACILITIES OR WHICH ARE SUBJECT TO VIBRATION SHALL BE MADE IN LIQUID TIGHT METALLIC FLEXIBLE CONDUIT. A BONDING JUMPER SHALL BE PROVIDED WHENEVER A FLEXIBLE CONDUIT IS EMPLOYED.
23. THE DIRECTION ON ROTATION OF ALL MOTORS SHALL BE VERIFIED. BEFORE TESTING FOR ROTATION, ALL COUPLINGS SHALL BE DISCONNECTED TO PREVENT DAMAGE TO DRIVEN EQUIPMENT.
24. UNISTRUT SUPPORTS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WALL MOUNTED ELECTRICAL EQUIPMENT IS SHOWN ON DRAWINGS.
25. ALL PANELS AND FEEDERS SHALL BE TESTED FOR PROPER OPERATION.
26. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO INSTALL ALL ASSOCIATED CONTROL WIRING, (INCLUDING FIRE ALARM WIRING) AND POWER WIRING FOR ALL MECHANICAL EQUIPMENT BEING INSTALLED.
27. ALL WORK AND DEVICES LOCATED IN AREAS OUTSIDE THE STRUCTURE TO BE WEATHERPROOF.
28. ALL FIRE ALARM WIRING AND RACEWAYS SHALL BE RUN AS APPROVED BY FIRE MARSHALL. FIRE ALARM CABLE SHALL BE 150° C, TEFLON JACKETED, PLENUM RATED. SIZE AS REQUIRED BY MANUFACTURER.
29. COORDINATE LOCATION OF ALL TEL/DATA/TV OUTLETS WITH OWNER.
30. ALL NEW FIRE ALARM DEVICES SHALL BE OF SAME MANUFACTURER AS EXISTING DEVICES. UPGRADE FIRE ALARM PANEL HARDWARE AND SOFTWARE TO ACCEPT NEW DEVICES.
31. SUBMIT LIGHTING FIXTURE CUTS FOR APPROVAL TO ARCHITECT.

GENERAL NOTES

1. CIRCUIT NUMBERS ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR MAY USE DIFFERENT CIRCUITS IN SAME PANEL.
2. CONTRACTOR MAY COMBINE NEW AND EXISTING OUTLETS AND FIXTURES ON SAME CIRCUIT WHERE REQUIRED AFTER DEMOLITION, WITHOUT OVERLOADING THE EXISTING CIRCUITS.
3. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND NOTE ALL ADDITIONS, DELETIONS, PROPOSED CHANGES, ETC. IN BID DOCUMENTS.

GSA NO. ____ REV. NO. ____ DATE ____

PANEL LOCATION: NEW PANEL 'GA' LUNCH/TRAINING ROOM
BUILDING FED FROM FEEDER SIZE: DIST PANEL 'DP'

120/208 VOLTS, 3 PHASE, 4 WIRE
MOUNTING: ☐ SURFACE ☐ FLUSH
COPPER BUS ONLY
⋈ DENOTES GFI C.B. REQ'D.

MAINS
BUS 100 AMPS _____ AIC
☐ LUGS ONLY ■ MCB BUS AMPS
FEED: ☐ TOP ☐ BOTTOM

CIR NO.	EQUIPMENT SERVED	FDR. SIZE WIRE	GND	I.G.	BREAKER AMPS	POLES	LOAD KVA CB	BB	AB	PHASE	LOAD KVA AB	BB	CB	BREAKER AMPS	POLES	FDR. SIZE WIRE	GND	I.G.	EQUIPMENT SERVED	CIR NO.
1	RECEPTACLES	12	12	–	20	1			0.8	A	0.5			20	1	12	12	–	RECEPTACLES	2
3	RECEPTACLES	12	12	–	20	1		0.8		B		0.5		20	1	12	12	–	RECEPTACLES	4
5	RECEPTACLES	12	12	–	20	1	0.8			C			0.5	20	1	12	12	–	RECEPTACLES	6
7	RECEPTACLES	12	12	–	20	1			0.8	A	1.0			20	1	12	12	–	WASHER	8
9	RECEPTACLES	12	12	–	20	1		0.8		B		1.5		20	1	10	10	–	DRYER J.B.	10
11	RECEPTACLES	12	12	–	20	1	0.8			C			1.5	–	–	–	–	–		12
13	VENDING MACHINE	12	12	–	20	1			1.0	A	1.0			20	1	12	12	–	FAN EF-1	14
15	VENDING MACHINE	12	12	–	20	1		1.0		B				20	1	12	12	–	LIGHTING	16
17	VENDING MACHINE	12	12	–	20	1	1.0			C				20	1	12	12	–	LIGHTING	18
19	VENDING MACHINE	12	12	–	20	1			1.0	A				20	1	12	12	–	LIGHTING	20
21	THRU THE WALL	10	10	–	30	2		1.7		B				20	1	–	–	–	SPARE	22
23	HEAT PUMP	–	–	–	–	–	1.7			C						–	–	–		24
25	SPARE	–	–	–	20	1				A						–	–	–		26
27		–	–	–						B						–	–	–		28
29		–	–	–						C						–	–	–		30

PANEL SHALL BE EQUIPPED WITH BUSES FOR ALL CB'S AND SPACES SHOWN
☐ 200% NEUTRAL BUS
☐ ISOLATED GROUND BUS
■ GROUND BUS

LINE TOTAL	
TOTAL CONN. KVA	
TOTAL CONN. AMPS	
SPARE CAP. %	
TOTAL LOAD AMPS	
DIVERSIFIED AMPS	

REMARKS

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	MFR. AND CAT. NO.	VOLT	SYSTEM INCAND	FLUOR	HID	NO.	LAMP WATTS	MOUNTING SURF.	RECESS	WALL	OTHER	INPUT WATTS	MAXIMUM FIXTURE WATTS	NOTES	DESCRIPTION	FIXTURE TYPE SPECIFIED BY	REMARKS
A	-LIGHTOLIER DPSG18LP-232	120		●		3	40W T-8		◆			120	120	①②	– FLUORESCENT 2'x4' RECESSED PARABOLIC-18 CELL LOUVERS	–	TO MATCH EXISTING
B	-LIGHTOLIER DPS2G19LS-260	120		●		3	20W T-8		◆			60	60	①②	– FLUORESCENT 2'x2' RECESSED PARABOLIC-9 CELL LOUVERS	–	TO MATCH EXISTING
C	-LIGHTOLIER CCL-U-6132B	120		●		1	26W TTT		◆			30	30	①②	-RECESSED FLUORESCENT DOWNLIGHT 6' DIAMETER	–	TO MATCH EXISTING
D	-HALO-171PS	120	●			1	40W A19		●			40	40	①②	-SHOWER LIGHT WITH OPAL LENS APPROVED FOR WET LOCATION	–	–
F	-STDNLO WP-250-MA FS-TP-1-P110A	120			●	1	250	●				300	300	①②	-WALL MOUNTED METAL HALIDE W.P. PRISMATIC LENS	–	–
X	-CRESCENT CP-RW2-E	120			●	–	LED	●		●		25	25	①②	-EMERGENCY EXIT LIGHT WITH BATTERY BACKUP	–	TO MATCH EXISTING
G	-CRESCENT SBT-217-1K2Y	120		●		2	20W T-8	●				50	50	①②	-SURFACE 8'x24' FLUORESCENT WRAP AROUND LENS	–	–

NOTES:
① LIGHTING FIXTURE TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
② ALL LAMPS TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.

LOW VOLTAGE WIRING NOTES
(TELEPHONE, DATA, TV, AUDIO, ETC.)

1. CONTRACTOR SHALL COORDINATE ALL LOW VOLTAGE CABLE INSTALLATION, JUNCTION BOXES, RACKS, POWER REQUIREMENTS, ETC. WITH OWNER'S LOW VOLTAGE VENDOR AND WITH OWNER'S FACILITIES DEPARTMENT.
2. DATA/TELEPHONE WIRING SHALL BE BELDEN NO. 1583A CAT. 5E CABLE. (NO SUBSTITUTIONS ALLOWED) DATA CABLE SHALL HAVE GRAY COLOR INSULATION, TELEPHONE CABLE SHALL HAVE BLUE COLOR INSULATION.
3. DATA CABLES SHALL BE TERMINATED IN CAT. 5E RATED PATCH PANELS IN BASEMENT VAULT ROOM. DATA SHALL TERMINATE IN A CAT. 5E RATED JACK IN A MODULAR PLATE. VOICE CABLE TERMINATIONS MAY SHARE THE SAME PLATE WHERE FEASIBLE.
4. TELEPHONE (VOICE) CABLES SHALL TERMINATE IN TYPE 110 STYLE PUNCH BLOCKS IN BASEMENT VAULT ROOM AND TERMINATE IN AT LEAST CAT. 3 RATED JACKS IN MODULAR PLATES IN JUNCTION BOXES OR WHERE FEASIBLE SHARE THE MODULAR PLATE WITH DATA CABLE.
5. VOICE TERMINATION BLOCKS AND DATA TERMINATIONS PATCH PANELS SHALL BE OF RACK MOUNTED CONFIGURATION.
6. VOICE CABLES SHALL HAVE WRITTEN PROOF OF PERFORMANCE FOR CORRECT TERMINATIONS AT BOTH ENDS AND DATA CABLES SHALL HAVE WRITTEN PROOF OF PERFORMANCE AT CAT 5E SPECIFICATIONS.
7. CABLES AND JACKS SHALL BE CLEARLY MARKED AT BOTH ENDS.
8. A SPREAD SHEET OR EQUIVALENT MATRIX SHALL BE SUPPLIED LISTING CABLE TYPE AND TERMINATION NUMBERS AT BOTH ENDS.
9. ELECTRICAL CONTRACTOR SHALL PROVIDE TWO SETS OF QUAD OUTLETS GFI TYPE. CONNECT EACH QUAD OUTLET ON A SEPARATE 20A CIRCUIT WITH INDIVIDUAL NEUTRAL AND GROUND TO SPARE CIRCUITS IN PANEL LP-B IN BASEMENT. PROVIDE NEW 1P-20A 4B (2#12+1#12 G).

MOUNTING HEIGHTS (U.O.N.)

TOP OF PANELS	6'-0" AFF
TOP OF DISCONNECT SWITCH	5'-6" AFF
RECEPTACLES, TEL-OUTLETS, TV OUTLETS, ETC	1'-6" U.O.N.
MANUAL STATIONS	4'-0" AFF
FIRE ALARM HORN/STROBES	6'-8" AFF MAX OR 6" BELOW CEILING WHICHEVER IS LOWER
LIGHT SWITCHES	42" AFF

SYMBOL LIST AND ABBREVIATIONS

- CEILING MOUNTED FIXTURE
- 'c' FLUORESCENT FIXTURE. TYPE AS NOTED
- 'D' WALL MOUNTED INCANDESCENT OR METAL HALIDE FIXTURE
- J JUNCTION BOX
- H#7 HOME RUN TO PANEL AND CIRCUIT SHOWN 2#12 + 1#12 GND -¾"C MIN.
- EXIT LIGHT FIXTURE WITH BATTERY
- EMERGENCY EXIT LIGHT WITH BATTERY AND TWO HEADS
- EMERGENCY BATTERY PACK W/ 2 HEADS-25W EACH CONNECTED TO UNSWITCHED CIRCUIT
- F CEILING EXHAUST FAN
- DUPLEX RECEPTACLE - 125V 20A 2P 3W
- QUAD RECEPTACLE - 125V 20A 2P 3W
- DUPLEX RECEPTACLE - GFI TYPE
- QUAD RECEPTACLE - GFI TYPE
- S SINGLE POLE TOGGLE SWITCH - 20A 125V
- S_T SWITCH WITH THERMAL OVERLOAD - 20A 125V
- S_3 THREE WAY SWITCH
- S_4 FOUR WAY SWITCH
- DISCONNECT SWITCH - RATING AS SHOWN 30A 250V 2P MIN.
- (S) FIRE ALARM SMOKE DETECTOR
- (H) FIRE ALARM HEAT DETECTOR
- (M) FIRE ALARM CARBON MONOXIDE DETECTOR
- F MANUAL PULL STATION
- H COMBINATION HORN/STROBE
- S STROBE
- RA REMOTE ANNUNCIATOR
- TV TV OUTLET
- TC TIME CLOCK
- AFF ABOVE FINISHED FLOOR
- (1) SHEET NOTE
- (M) METER & METER PAN.
- M MOTOR WITH H.P. INDICATED
- U.O.N. UNLESS OTHERWISE NOTED
- LC LIGHTING CONTACTOR
- PB PUSH BUTTON
- S_J SUBSCRIPT DENOTES FIXTURE SWITCHED
- J JUNCTION BOX WIRED FOR FUTURE LIGHT FIXTURE
- DUPLEX RECEPTACLE WITH ISOLATED GROUND 20A-125V-2P-3W+I.G.
- (R) REMOVE EXISTING FIXTURE/DEVICE/EQUIPMENT
- (E) EXISTING FIXTURE/DEVICE TO REMAIN
- (ER) EXISTING FIXTURE/DEVICE TO BE RELOCATED
- (RE) RELOCATED DEVICE OR FIXTURE
- NL FIXTURE OR LAMP ON NIGHT LIGHT CIRCUIT
- TELEPHONE OUTLET
- DATA OUTLET
- M MICROPHONE INPUT

REVISIONS AND NOTES:
1. 11/16/04 ADD POWER IN VESTIBULE 115
2. 01/18/05 GENERAL

Joseph B. McHugh, P.E.

CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ARCHITECT.

THIS DOCUMENT IS A COPYRIGHT PROTECTED INSTRUMENT OF SERVICE, PROPERTY OF C.E.HOUGH ASSOCIATES AND IS LICENSED FOR USE IN THE TITLED PROJECT ONLY. REPRODUCTION OR USE OF THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION FROM C.E.HOUGH ASSOCIATES IS PROHIBITED AND WILL BE PROSECUTED UNDER APPLICABLE LAWS.
© 2004 - C.E.HOUGH ASSOCIATES

HOUGH
C.E. HOUGH ASSOCIATES
ARCHITECTS
PAOLI EXECUTIVE CAMPUS II
PAOLI, PA 19301-5552

SYMBOLS_NOTES_SCHEDULES
PROPOSED FOR_ADMINISTRATION_BUILDING
EAST_GOSHEN_TOWNSHIP MUNICIPAL_COMPLEX
PAOLI_PIKE
EAST_GOSHEN_TOWNSHIP

☐ PRELIMINARY
☐ FOR BIDDING
☐ FOR CONSTRUCTION

PROJECT:
DATE:
SCALE: 1/8"=1'0"
DRAWN:
PLOT DATE:
CAD FILE:

DRAWING No.
E.0B