ELECTRICAL NOTES:

1. BREAKERS SHALL HAVE "AIC" RATING GREATER THAN THE FAULT CURRENT. ELECTRICAL CONTRACTOR IS TO CONTACT POWER COMPANY FOR AVAILABLE FAULT CURRENT. SERIES RATING IS PERMISSIBLE.

2. FUSES IN SERVICE DISCONNECTS SHALL BE CURRENT LIMITING TYPE.

3. COORDINATE ALL HVAC WIRING WITH MECHANICAL CONTRACTOR.

4. EMERGENCY LIGHTING AND EXIT SIGNS TO BE CONNECTED AHEAD OF ANY SWITCHING.

5. WIRE TO BE TYPE THWN (EXTERIOR) AND TYPE THHN (INTERIOR) OR APPROVED EQUAL.

6. COORDINATE LOCATION OF ALL DEVICES AND MOUNTING HEIGHTS OF RECEPTACLES WITH OWNER.

7. ALL ELECTRICAL COMPONENTS ARE TO BE UL LISTED.

8. LOW VOLTAGE CABLE, SUCH AS COMMUNICATION AND SIGNAL WIRE, SHALL BE PLENUM RATED AND SHALL BE LISTED AND LABELED AS SUCH.

9. EQUIPMENT GROUND CONDUCTOR TO BE PROVIDED IN ACCORDANCE WITH NEC SECTION 250.

10. ALL INTERIOR WIRING TO BE RUN IN EMT UNLESS OTHERWISE APPROVED BY ENGINEER. MC CABLE MAY BE USED FOR LIGHTING FIXTURE WHIPS AND WHERE CONCEALED AND APPROVED BY OWNER.

11. BATHROOM EXHAUST FANS ARE TO BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR. FANS TO BE WIRED BY ELECTRICAL CONTRACTOR.

12. ALL EXTERIOR LIGHTING TO BE WIRED THROUGH A LIGHTING CONTACTOR AND CONTROLLED BY A PHOTOCELL AND TIMECLOCK.

13. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CONDUIT AND EQUIPMENT WITH ALL OTHER TRADES PRIOR TO BEGINNING INSTALLATION TO AVOID CONFLICTS AND INTERFERENCE WITH OTHER TRADES.

14. FINAL UTILITY CONNECTIONS (GAS, ELECTRIC, WATER, ETC.) TO EQUIPMENT SHALL BE MADE BY THE CONTRACTOR INSTALLING THE EQUIPMENT REQUIRING THE UTILITIES.

15. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THERE IS NO INTENT TO INDICATE ALL FITTINGS REQUIRED. GENERALLY, CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO AND PLUMB WITH WALL CONSTRUCTION.

16. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS OF WALL AND PARTITIONS AND FOR PARTITION THICKNESS AND CONSTRUCTION MATERIALS.

17. THE FIRE ALARM CONTROL PANEL CIRCUIT SHALL BE DEDICATED FOR FACP POWER ONLY AND THE CIRCUIT BREAKER SHALL BE LABELED IN RED "FIRE ALARM CIRCUIT".

18. FIRE ALARM CIRCUIT BREAKER SHALL BE ACCESSIBLE TO AUTHORIZED PERSONNEL ONLY BY MEANS OF A LOCKABLE BREAKER, LOCKABLE PANEL DOOR, OR LOCKABLE ELECTRICAL ROOM.

19. THE LOCATION OF THE FIRE ALARM CONTROL PANEL (FACP) CIRCUIT BREAKER SHALL BE PERMANENTLY IDENTIFIED AT THE FACP.

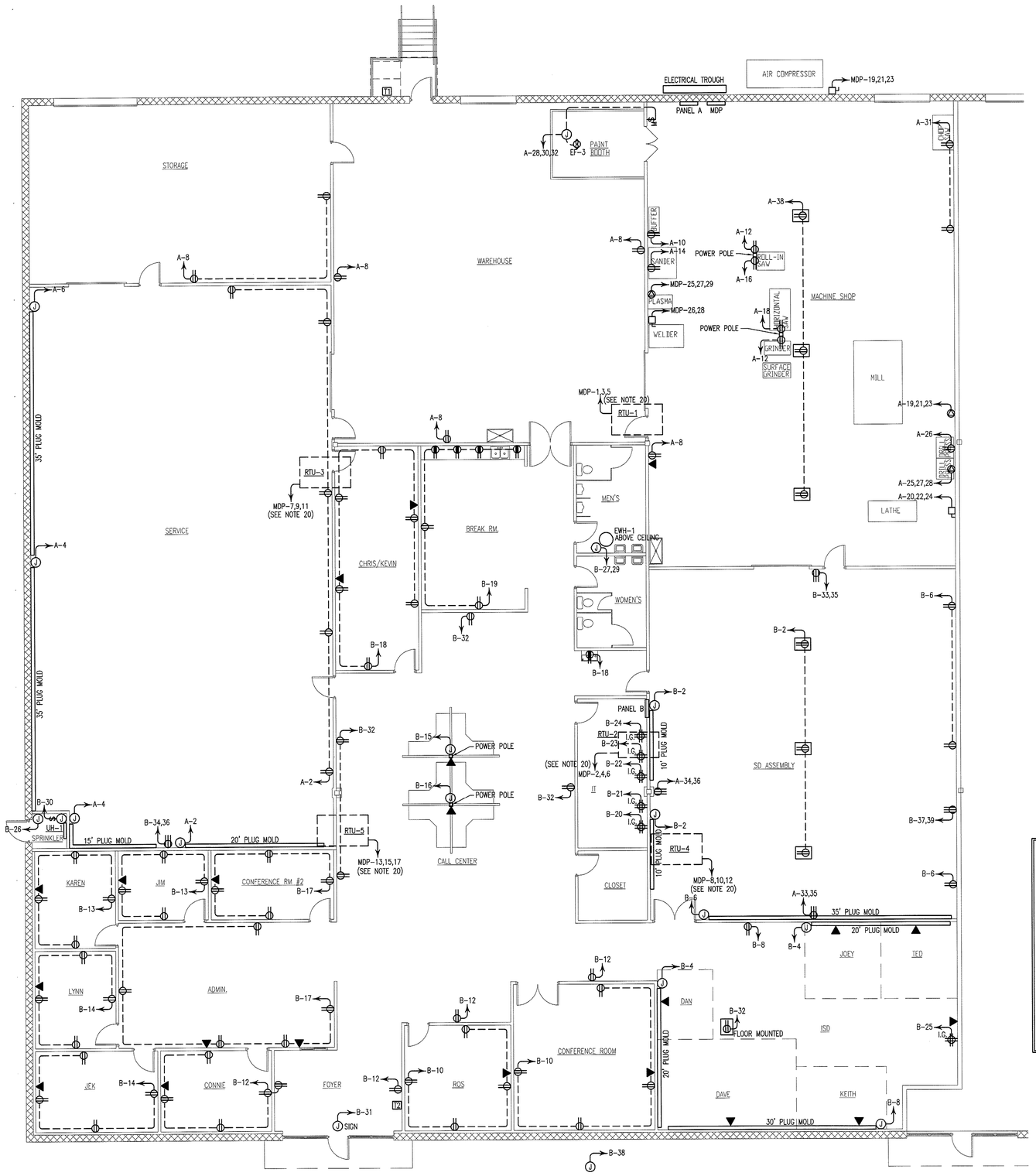
20. ROOF TOP UNITS ARE TO BE EQUIPPED WITH ON-BOARD BREAKER AND CONVENIENCE RECEPTACLES. COORDINATE WIRING REQUIREMENTS WITH MECHANICAL CONTRACTOR.

21. ELECTRICAL POWER REQUIREMENTS FOR HVAC EQUIPMENT ARE BASED ON MANUFACTURER'S PUBLISHED DATA. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND/OR MECHANICAL CONTRACTOR TO CONFIRM ELECTRICAL REQUIREMENTS HAVE NOT CHANGED DUE TO EQUIPMENT SUBSTITUTIONS OR OTHER CHANGES PRIOR TO PROVIDING FINAL BID AND PRIOR TO PURCHASING PANELS, CIRCUIT WIRING AND CIRCUIT BREAKERS SERVING HVAC EQUIPMENT.

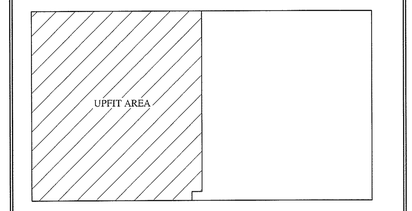
22. COORDINATE LOCATIONS, POWER REQUIREMENTS, AND PLUG CONFIGURATIONS FOR ALL EQUIPMENT WITH OWNER PRIOR TO CONSTRUCTION.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
⊖	120V DUPLEX RECEPTACLE
⊖	120V DUPLEX RECEPTACLE GROUND FAULT INTERRUPTER
⊖ W.P.	120V DUPLEX RECEPTACLE GROUND FAULT INTERRUPTER WEATHER PROOF
⊖	208V/1ø RECEPTACLE
⊖	120V DUPLEX RECEPTACLE CEILING MOUNTED
⊖ I.G.	120V QUAD RECEPTACLE ISOLATED GROUND
□	UNFUSED DISCONNECT
▶	TELE/DATA OUTLET
△	208V/3ø RECEPTACLE
$M	MOTOR RATED SWITCH
J	JUNCTION BOX
▭	PANEL
T1	TWO-WAY COMMUNICATION PANEL, W/BATTERY BACK-UP, CORNELL #A-4104 OR EQUAL
T2	TWO-WAY COMMUNICATION STATION, CORNELL #4101 OR EQUAL



1 / E-1 ELECTRICAL PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN

Alamance Consulting Engineers
961-F Burlington Ave.
Gibsonville, N.C. 27249
Phone: (336) 449-4558
Fax: (336) 449-5732

J.D. Skidmore, Inc.
General Contractor
Post Office Box 19328
Greensboro, N.C. 27419
Ph: (336) 292-1088
Fax: (336)294-2859

TENANT UPFIT FOR:
J.A. KING
Greensboro, North Carolina

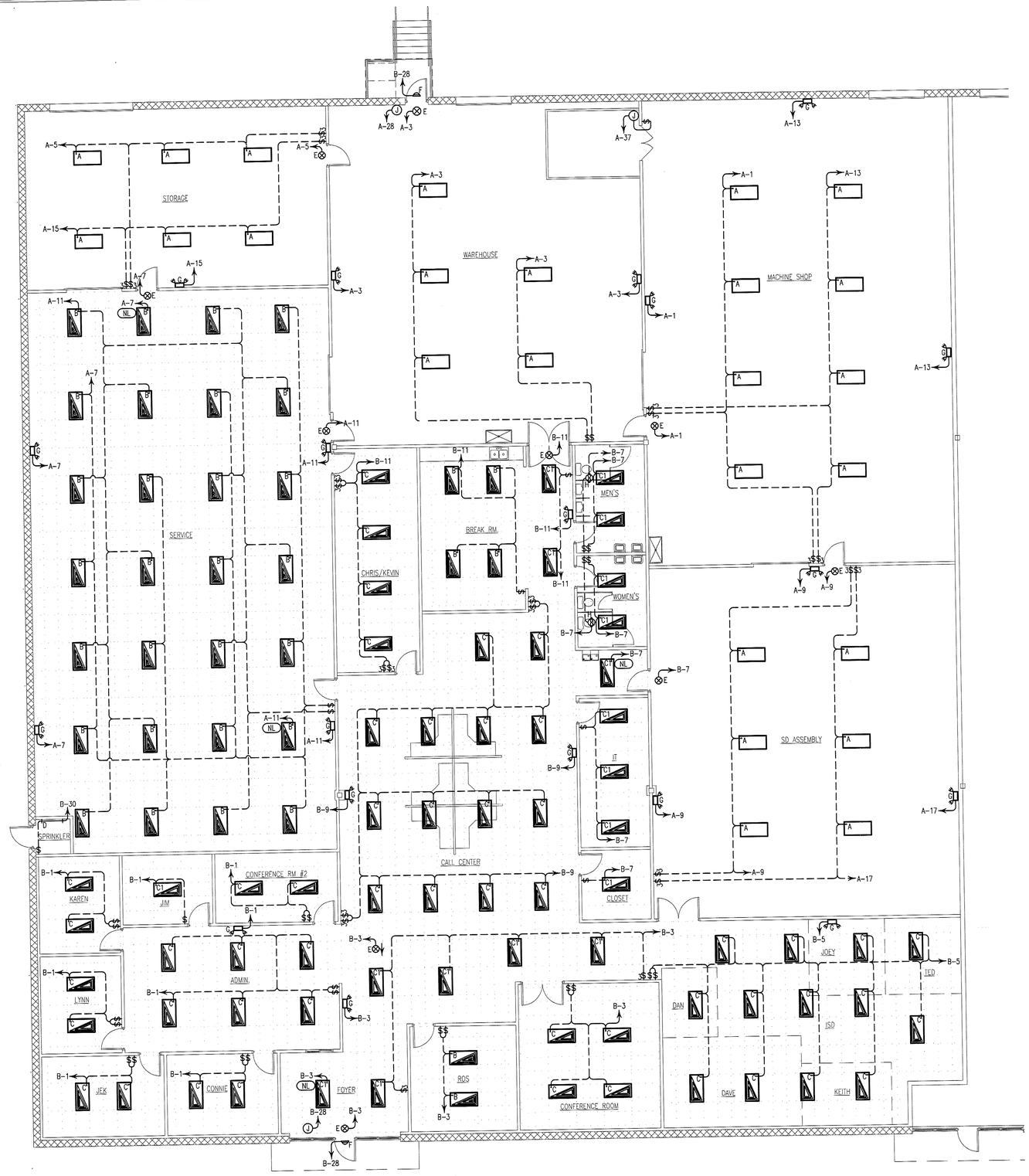
DRAWING NAME
ELECTRICAL PLAN

NORTH CAROLINA PROFESSIONAL SEAL 25043 ENGINEER KEVIN WHITT

DRAWN	MJW
CHECKED	KW
DATE	6/1/09
SCALE	AS NOTED
JOB NO.	9024
SHEET	E-1

LIGHTING LEGEND

MARK	SYMBOL	DESCRIPTION
A		2'x4' SUSPENDED HIGH BAY FLUORESCENT, 6-TUBE, HO T-5 LAMPS, ELECTRONIC BALLASTS, 324W
B		2'x4' LAY-IN FLUORESCENT, 4-TUBE, WITH ACRYLIC LENS, T-8 LAMPS, ELECTRONIC BALLASTS, 128W
C		2'x4' LAY-IN FLUORESCENT, 3-TUBE, WITH ACRYLIC LENS, T-8 LAMPS, (1) 2 LAMP AND (1) 1 LAMP ELECTRONIC BALLASTS, 96W
C1		2'x4' LAY-IN FLUORESCENT, 3-TUBE, WITH ACRYLIC LENS, T-8 LAMPS, 3-LAMP ELECTRONIC BALLAST, 96W
D		36" STANDARD STRIPLIGHT, 1-LAMP, 25W (LITHONIA MODEL #S125120GEB10TS OR EQUAL)
E	⊗	EXIT SIGN WITH BATTERY BACK-UP
F		DECORATIVE EXTERIOR EMERGENCY LIGHT, TWO 6W XENON LAMPS, W/HIGH-TEMPERATURE NICKEL-CADMIUM BATTERY, LITHONIA #AFN-W-EXT
G		EMERGENCY LIGHT WITH BATTERY BACK-UP
H		BATHROOM EXHAUST FAN/LIGHT COMBO SEE EXHAUST FAN SCHEDULE FOR SPECIFICATIONS
--	NL	DENOTES UNSWITCHED NIGHT LIGHT
--	$	SINGLE POLE WALL SWITCH
--	$3	THREE WAY WALL SWITCH
--	$$	SINGLE POLE TANDEM WALL SWITCHES 1 SWITCH – 1 LAMP BALLAST 1 SWITCH – 2 LAMP BALLAST
--	3$$3	THREE WAY TANDEM WALL SWITCHES 1 SWITCH – 1 LAMP BALLAST 1 SWITCH – 2 LAMP BALLAST



1 LIGHTING PLAN
E-2 SCALE: 1/8" = 1'-0"

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE

PRESCRIPTIVE ☒ PERFORMANCE ☐ ENERGY COST BUDGET ☐

PROVIDE A STANDARD RISER DIAGRAM WHICH INDICATES DESIGNATED POINTS FOR CHECK METERING. PROVIDE A STANDARD PANEL SCHEDULE DESCRIPTION WHICH IDENTIFIES DIFFERENT ENDUSE LOADS.

LIGHTING SCHEDULE (OFFICE AREAS)

LAMP TYPE REQUIRED IN FIXTURE	FLUORESCENT/FLUORESCENT
BALLAST TYPE USED IN FIXTURE	ELECTRONIC/ELECTRONIC
NUMBER OF LAMPS IN FIXTURE	3/2
NUMBER OF BALLASTS IN FIXTURE	2/2
TOTAL WATTAGE PER FIXTURE	96/128
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED	1.0 W/SQ. FT. VS 1.1 W/SQ. FT.

LIGHTING SCHEDULE (WORK AREAS)

LAMP TYPE REQUIRED IN FIXTURE	FLUORESCENT (HO)
BALLAST TYPE USED IN FIXTURE	ELECTRONIC
NUMBER OF LAMPS IN FIXTURE	4
NUMBER OF BALLASTS IN FIXTURE	2
TOTAL WATTAGE PER FIXTURE	216
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED	1.1 W/SQ. FT. VS 1.7 W/SQ. FT.

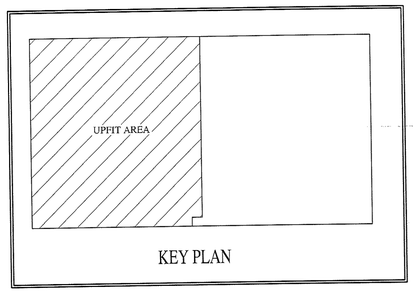
EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)

MOTOR HORSEPOWER	N/A HP
NUMBER OF PHASES	$
MINIMUM EFFICIENCY	%
MOTOR TYPE	
#OF POLES	

DESIGNER STATEMENT:

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF NORTH CAROLINA STATE BUILDING CODE.

* EXTERIOR LIGHTS MUST HAVE MINIMUM EFFICACY OF 45 W/LUMEN.



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Alamance Consulting Engineers
961-F Burlington Ave.
Gibsonville, N.C. 27249
Phone: (336) 449-4558
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J.D. Skidmore, Inc. General Contractors
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Greensboro, N.C. 27419
Ph.: (336) 292-1088
Fax: (336)294-2959

TENANT UPFIT FOR:
J.A. KING
Greensboro, North Carolina

DRAWING NAME: LIGHTING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25043 KEVIN BENGE

DRAWN: MJW
CHECKED:
DATE: 4/1/09
SCALE: AS NOTED
JOB NO.: 9024
SHEET: E-2

MDP

208/120V, 3Ø, 4W — 600A M.L.O. / 600A BUS

POLE NO.	BRKR NO.	TRIP AMPS	BRKR POLES	WIRE	COND	SERVES	LOAD VA A∅	LOAD VA B∅	LOAD VA C∅	POLE NO.	BRKR NO.	TRIP AMPS	BRKR POLES	WIRE	COND	SERVES
1	1	60	3	4	1"	RTU-1	6317			2	2	45	3	6	3/4"	RTU-2
3	3	–	–	–	–	↓	3543	6317		4	4	–	–	–	–	↓
5	5	–	–	–	–	↓		3543	6317	6	6	–	–	–	–	↓
7	7	60	3	4	1"	RTU-3	5128		3543	8	8	50	3	6	3/4"	RTU-4
9	9	–	–	–	–	↓	3927	5128		10	10	–	–	–	–	↓
11	11	–	–	–	–	↓		3927	5128	12	12	–	–	–	–	↓
13	13	60	3	4	1"	RTU-5	5128		3927	14	14	200	3	3/0	2"	PANEL A
15	15	–	–	–	–	↓	15064	5128		16	16	–	–	–	–	↓
17	17	–	–	–	–	↓		15778	5128	18	18	–	–	–	–	↓
19	19	30	3	10	1/2"	COMPRESSOR	2522		14866	20	20	200	3	3/0	2"	PANEL B
21	21	–	–	–	–	↓	14645	2522		22	22	–	–	–	–	↓
23	23	–	–	–	–	↓		16322	2522	24	24	–	–	–	–	↓
25	25	30	3	10	1/2"	PLASMA	3122		15483	26	26	100	2	1	1-1/4"	WELDER
27	27	–	–	–	–	↓	5720	3122		28	28	–	–	–	–	↓
29	29	–	–	–	–	↓		5720	3122	30	30					
31	31									32	32					
33	33									34	34					
35	35									36	36					
37	37									38	38					
39	39									40	40					
41	41									42	42					
						CONNECTED V.A. PER PHASE	65,116	67,507	60,036							
						TOTAL AMPERES PER PHASE	543	563	500							

PANEL A

208/120V, 3Ø, 4W — 200A M.L.O. / 200A BUS

POLE NO.	BRKR NO.	TRIP AMPS	BRKR POLES	WIRE	COND	SERVES	LOAD VA A∅	LOAD VA B∅	LOAD VA C∅	POLE NO.	BRKR NO.	TRIP AMPS	BRKR POLES	WIRE	COND	SERVES
1	1	20	1	12	1/2"	LIGHTING	1371			2	2	20	1	12	1/2"	RECEPTACLES/PLUG MOLD
3	3	20	1	12	1/2"	LIGHTING	1620	1745		4	4	20	1	12	1/2"	RECEPTACLES/PLUG MOLD
5	5	20	1	12	1/2"	LIGHTING		1800	997	6	6	20	1	12	1/2"	RECEPTACLES/PLUG MOLD
7	7	20	1	12	1/2"	LIGHTING	1917		1260	8	8	20	1	12	1/2"	RECEPTACLES
9	9	20	1	12	1/2"	LIGHTING	1080	1097		10	10	20	1	12	1/2"	BUFFER
11	11	20	1	12	1/2"	LIGHTING		1656	1917	12	12	20	1	12	1/2"	GRINDER
13	13	20	1	12	1/2"	LIGHTING	1396		1236	14	14	20	1	12	1/2"	SANDER
15	15	20	1	12	1/2"	LIGHTING	1656	1022		16	16	20	1	12	1/2"	ROLL-IN SAW
17	17	20	1	12	1/2"	LIGHTING		1608	1022	18	18	20	1	12	1/2"	HORIZONTAL SAW
19	19	20	3	12	1/2"	MILL	584		1584	20	20	30	3	10	1/2"	LATHE
21	21	–	–	–	–	↓	2005	584		22	22	–	–	–	–	↓
23	23	–	–	–	–	↓		2005	584	24	24	–	–	–	–	↓
25	25	20	3	12	1/2"	DRILL PRESS	432		2005	26	26	20	1	12	1/2"	DRILL PRESS
27	27	–	–	–	–	↓	874	432		28	28	30	3	10	1/2"	PAINT BOOTH EXHAUST FAN
29	29	–	–	–	–	↓		709	432	30	30	–	–	–	–	↓
31	31	20	1	12	1/2"	RECEPTACLES	1220		709	32	32	–	–	–	–	↓
33	33	30	2	10	1/2"	RECEPTACLE	709	1560		34	34	30	2	10	1/2"	RECEPTACLE
35	35	–	–	–	–	↓		1560	1560	36	36	–	–	–	–	↓
37	37	20	1	12	1/2"	PAINT BOOTH LIGHTING	200		1560	38	38					
39	39									40	40					
41	41									42	42					
						CONNECTED V.A. PER PHASE	15,064	15,778	14,866							
						TOTAL AMPERES PER PHASE	126	131	124							

PANEL B

208/120V, 3Ø, 4W — 200A M.L.O. / 200A BUS

POLE NO.	BRKR NO.	TRIP AMPS	BRKR POLES	WIRE	COND	SERVES	LOAD VA A∅	LOAD VA B∅	LOAD VA C∅	POLE NO.	BRKR NO.	TRIP AMPS	BRKR POLES	WIRE	COND	SERVES
1	1	20	1	12	1/2"	LIGHTING	1732			2	2	20	1	12	1/2"	RECEPTACLES/PLUG MOLD
3	3	20	1	12	1/2"	LIGHTING	1260	1316		4	4	20	1	12	1/2"	PLUG MOLD
5	5	20	1	12	1/2"	LIGHTING		1440	1298	6	6	20	1	12	1/2"	RECEPTACLES/PLUG MOLD
7	7	20	1	12	1/2"	LIGHTING	1053		1800	8	8	20	1	12	1/2"	RECEPTACLES/PLUG MOLD
9	9	20	1	12	1/2"	LIGHTING	1260	1444		10	10	20	1	12	1/2"	RECEPTACLES
11	11	20	1	12	1/2"	LIGHTING		1440	1163	12	12	20	1	12	1/2"	RECEPTACLES
13	13	20	1	12	1/2"	RECEPTACLES	1440		1440	14	14	20	1	12	1/2"	RECEPTACLES
15	15	20	1	12	1/2"	RECEPTACLES	1440	1080		16	16	20	1	12	1/2"	RECEPTACLES
17	17	20	1	12	1/2"	RECEPTACLES		1440	1620	18	18	20	1	12	1/2"	RECEPTACLES
19	19	20	1	12	1/2"	RECEPTACLES	1080		1260	20	20	20	1	12	1/2"	RECEPTACLES
21	21	20	1	12	1/2"	RECEPTACLES	360	360		22	22	20	1	12	1/2"	RECEPTACLES
23	23	20	1	12	1/2"	RECEPTACLES		360	360	24	24	20	1	12	1/2"	RECEPTACLES
25	25	20	1	12	1/2"	RECEPTACLES	360		360	26	26	20	1	12	1/2"	F.A.C.P. 🔒
27	27	30	2	10	1/2"	WATER HEATER 🔒	500	2250		28	28	20	1	12	1/2"	EXTERIOR LIGHTING
29	29	–	–	–	–	↓		200	2250	30	30	20	1	12	1/2"	UNIT HEATER (UH-1)
31	31	20	1	12	1/2"	SIGN 🔒	1200		500	32	32	20	1	12	1/2"	RECEPTACLES
33	33	30	2	10	1/2"	RECEPTACLE	900	1560		34	34	30	2	10	1/2"	MATERIAL TESTER
35	35	–	–	–	–	↓		1872	1560	36	36	–	–	–	–	↓
37	37	30	2	10	1/2"	RECEPTACLE	1560		1872	38	38	20	1	12	1/2"	HOT BOX
39	39	–	–	–	–	↓	500	1560		40	40					
41	41									42	42					
						CONNECTED V.A. PER PHASE	14,645	16,322	15,483							
						TOTAL AMPERES PER PHASE	122	136	129							

🔒 – DENOTES BREAKER LOCK-OUT

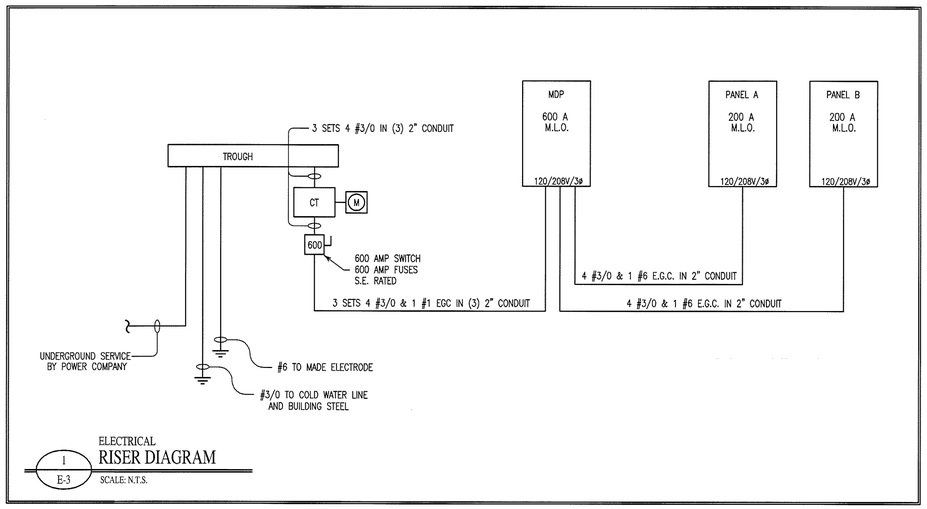
🔓 – DENOTES LOCK-ON BREAKER

LOAD CALCULATION SUMMARY

ITEM	TOTAL VA	(X) D.F.	VA
LIGHTS	17,844	125 (%)	22,305
RECEPTACLES ** (FIRST 10,000 @ 100%)	10,000	100 (%)	10,000
(REMAINDER @ 50%)	29,300	50 (%)	14,650
HVAC *	72,125	100 (%)	72,125
SHOP EQUIPMENT	52,243	125 (%)	52,243
SIGN	1,200	125 (%)	1,500
WATER HEATER	4,500	125 (%)	5,625
TOTAL	187,212	–	178,448
TOTAL AMPS = VA/(208 x$\sqrt{3}$) = 495			

* NOTE: NAME PLATE RATING INCLUDES 125% DIVERSITY FACTOR.

** NOTE: RECEPTACLES ARE CALCULATED PER NEC TABLE 220.44



ELECTRICAL RISER DIAGRAM

1 / E-3

SCALE: N.T.S.

Alamance Consulting Engineers
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Gibsonville, N.C. 27249
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TENANT UPFIT FOR: J.A. KING

Greensboro, North Carolina

DRAWING NAME: ELECTRICAL DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 25043 ENGINEER G. KEVIN BENGE

DRAWN: MJW

CHECKED: KBK

DATE: 4/1/09

SCALE: AS NOTED

JOB NO.: 9024

SHEET: E-3