



UP-FIT PLANS FOR:
T&L COATS
BUILDING #2
COATS, NORTH CAROLINA

REVISIONS
NO. _____

REVISIONS
NO. _____

Cruse And Associates, P.A.
414 E. Margaret St.
Durham, North Carolina 27604
PHONE: (919) 882-5102
FAX: (919) 882-5102
LICENSE NO.: C-1721

THESE DOCUMENTS ARE INSTRUMENTS OF SERVICE AND AS SUCH THESE DRAWINGS, DESIGNS, AND DESIGN CONCEPTS PRESENTED REMAIN THE PROPERTY OF THE ENGINEER. PUBLISHED OR DUPLICATED DRAWINGS OR DESIGNS ONLY WITH THE WRITTEN PERMISSION OF THE ENGINEER.
DATE 12-19-22
DRAWN BY BAM
JOB NO. 22-60
SHEET NO. E-3 OF 4

TENANT 2
PANEL: B SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: NQOD MOUNTING: FLUSH
ENCLOSURE: NEMA 1 ϕ 1 SHORT CIRCUIT RATING: 22K
MAIN M.L.O TOP FEED BOTTOM FEED COPPER BUS GROUND BAR KIT NEUTRAL BAR KIT

NOTE:
VERIFY AIC RATING WITH UTILITY COMPANY BEFORE ORDERING PANELS.

TENANT 3
PANEL: C SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: NQOD MOUNTING: FLUSH
ENCLOSURE: NEMA 1 ϕ 1 SHORT CIRCUIT RATING: 22K
MAIN M.L.O TOP FEED BOTTOM FEED COPPER BUS GROUND BAR KIT NEUTRAL BAR KIT

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
40.0		1	2	60	AIR HANDLING UNIT #2	o	HEAT PUMP UNIT # 2	40	2	2	21.3	
	40.0	3										21.3
6.0		5	1	20	OFFICE 1 RECEPTACLES	o	STORAGE RECEPTACLES	20	1	6	6.0	
	6.0	7	1	20	OFFICE 2 RECEPTACLES	o	BUILDING SIGN	20	1	8		5.0
7.5		9	1	20	OPEN FLOOR AREA RECEPTS.	o	AHU CONV. RECEPTACLE	20	1	10	1.5	
	7.5	11	1	20	OPEN FLOOR AREA RECEPTS.	o	HEAT PUMP CONV. RECEPT.	20	1	12		1.5
4.9		13	1	20	FRONT AREA LIGHTING	o	OFFICE AREA LIGHTS	20	1	14	2.4	
	X	15	1	20	SPARE	o	POINT OF USE WATER HEATER	40	2	16		30.0
X		17	1	20	SPARE	o				18	30.0	
X	X	19	1	20	SPARE	o	SPARE	20	1	20		X
X		21	1	20	SPARE	o				22	X	
X	X	23	1	20	SPARE	o	SPARE	20	1	24		X
X		25	1	20	SPARE	o				26	X	
X	X	27	1	20	SPARE	o	SPARE	20	1	28		X
X		29	1	20	SPARE	o				30	X	
X	X	31	1	20	SPARE	o	SPARE	20	1	32		X
X		33	1	20	SPARE	o				34	X	
X	X	35	1	20	SPARE	o	SPARE	20	1	36		X
X		37	1	20	SPARE	o				38	X	
X	X	39	1	20	SPARE	o	SPARE	20	1	40		X
X		41	1	20	SPARE	o				42	X	

L1 = 119.6 A
L2 = 111.3 A

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
40.0		1	2	60	AIR HANDLING UNIT #3	o	HEAT PUMP UNIT # 3	40	2	2	21.3	
	40.0	3								4		21.3
6.0		5	1	20	OFFICE 1 RECEPTACLES	o	STORAGE ROOM RECEPTACLES	20	1	6	6.0	
	6.0	7	1	20	OFFICE 2 RECEPTACLES	o	BUILDING SIGN	20	1	8		5.0
7.5		9	1	20	OPEN FLOOR AREA RECEPTS.	o	AHU CONV. RECEPTACLE	20	1	10	1.5	
	7.5	11	1	20	OPEN FLOOR AREA RECEPTS.	o	HEAT PUMP CONV. RECEPT.	20	1	12		1.5
4.9		13	1	20	FRONT AREA LIGHTING	o	OFFICE AREA LIGHTS	20	1	14	2.4	
	X	15	1	20	SPARE	o	POINT OF USE WATER HEATER	40	2	16		30.0
X		17	1	20	SPARE	o				18	30.0	
X	X	19	1	20	SPARE	o	SPARE	20	1	20		X
X		21	1	20	SPARE	o				22	X	
X	X	23	1	20	SPARE	o	SPARE	20	1	24		X
X		25	1	20	SPARE	o				26	X	
X	X	27	1	20	SPARE	o	SPARE	20	1	28		X
X		29	1	20	SPARE	o				30	X	
X	X	31	1	20	SPARE	o	SPARE	20	1	32		X
X		33	1	20	SPARE	o				34	X	
X	X	35	1	20	SPARE	o	SPARE	20	1	36		X
X		37	1	20	SPARE	o				38	X	
X	X	39	1	20	SPARE	o	SPARE	20	1	40		X
X		41	1	20	SPARE	o				42	X	

L1 = 119.6 A
L2 = 111.3 A

FEEDER SCHEDULE

UNIT	FEEDERS	FUSED DISCONNECT	CONDUIT
AHU-1,2,3,4	(2)#6CU,(1)#8CU GND	60	3/4"
HP-1,2,3,4	(2)#10CU,(1)#12CU GND	60	3/4"
P.O.U. HEATER	(2)#10CU,1#10CU GND	60	3/4"

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE:

ENERGY CODE: PRESRIPTIVE PERFORMANCE
ASHRAE 90.1: PRESRIPTIVE PERFORMANCE
REFER TO DRAWINGS FOR RISER DIAGRAM AND PANEL SCHEDULES
LIGHTING SCHEDULE
LAMP TYPE REQUIRED IN FIXTURE: SEE SCHEDULE
NUMBER OF LAMPS IN FIXTURE:
BALLASTS TYPE USED IN FIXTURE:
NUMBER OF BALLASTS IN FIXTURE:
TOTAL WATTAGE PER FIXTURE:
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED:
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED:
ADDITIONAL PRESCRIPTIVE COMPLIANCE
506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT
506.2.2 REDUCED LIGHTING POWER DENSITY
506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS
506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING
506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY
506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEMS

TENANT 1
ELECTRICAL LOAD CALCULATIONS
1750 SQUARE FEET VA
NONCONTINUOUS LOADS:
36 RECEPTACLES @ 180 VA EA. 6480
1ST 10000 REMAINDER @ 50% 0
TOTAL 6480
CONTINUOUS LOADS:
GENERAL LIGHTING LOAD VA/SQ. FT. 1.3 2275
1750 SQ. FT. 2275 X 1.25 2844
AIR HANDLING UNIT 9600
HEAT PUMP UNITS 5112
EQUIPMENT: 10176
25% OF LARGEST MOTOR 822
GRAND TOTAL 35034
146 AMPS @ 120/240V, 1 ϕ , 60HZ

TENANT 2 AND 3
ELECTRICAL LOAD CALCULATIONS
1750 SQUARE FEET VA
NONCONTINUOUS LOADS:
24 RECEPTACLES @ 180 VA EA. 4320
1ST 10000 REMAINDER @ 50% 0
TOTAL 4320
CONTINUOUS LOADS:
GENERAL LIGHTING LOAD VA/SQ. FT. 1.3 2275
1750 SQ. FT. 2275 X 1.25 2844
AIR HANDLING UNIT 9600
HEAT PUMP UNITS 5112
EQUIPMENT: 7800
25% OF LARGEST MOTOR 822
GRAND TOTAL 30498
127 AMPS @ 120/240V, 1 ϕ , 60HZ

TENANT 4
ELECTRICAL LOAD CALCULATIONS
1750 SQUARE FEET VA
NONCONTINUOUS LOADS:
25 RECEPTACLES @ 180 VA EA. 6120
1ST 10000 REMAINDER @ 50% 0
TOTAL 6120
CONTINUOUS LOADS:
GENERAL LIGHTING LOAD VA/SQ. FT. 1.3 2275
1750 SQ. FT. 2275 X 1.25 2844
AIR HANDLING UNIT 9600
HEAT PUMP UNITS 5112
EQUIPMENT: 10656
25% OF LARGEST MOTOR 822
GRAND TOTAL 35154
146 AMPS @ 120/240V, 1 ϕ , 60HZ

TENANT 1
PANEL: A SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: NQOD MOUNTING: FLUSH
ENCLOSURE: NEMA 1 ϕ 1 SHORT CIRCUIT RATING: 22K
MAIN M.L.O TOP FEED BOTTOM FEED COPPER BUS GROUND BAR KIT NEUTRAL BAR KIT

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
40.0		1	2	60	AIR HANDLING UNIT #1	o	HEAT PUMP UNIT # 1	40	2	2	21.3	
	40.0	3								4		21.3
4.5		5	1	20	WAREHOUSE RECEPTACLES	o	OFFICE 4 RECEPTACLES	20	1	6	6.0	
	6.0	7	1	20	OFFICE 3 RECEPTACLES	o	BUILDING SIGN	20	1	8		5.0
6.0		9	1	20	OFFICE 2 RECEPTACLES	o	AHU CONV. RECEPTACLE	20	1	10	1.5	
	7.5	11	1	20	BREAKROOM RECEPTACLES	o	HEAT PUMP CONV. RECEPT.	20	1	12		1.5
6.0		13	1	20	OFFICE 1 RECEPTACLES	o	SPARE	20	1	14	X	
	7.5	15	1	20	CONFERENCE ROOM RECEPTS.	o	POINT OF USE WATER HEATER	40	2	16		30.0
7.5		17	1	20	LOBBY RECEPTACLES	o				18	30.0	
	3.0	19	1	20	COUNTER RECEPTACLE	o	OFFICE LIGHTING	20	1	20		6.2
3.0		21	1	20	COUNTER RECEPTACLE	o	WAREHOUSE LIGHTING	20	1	22	4.0	
	13.8	23	1	20	GARAGE DOOR OPENER	o	SPARE	20	1	24		X
X		25	1	20	SPARE	o				26	X	
X	X	27	1	20	SPARE	o	SPARE	20	1	28		X
X		29	1	20	SPARE	o				30	X	
X	X	31	1	20	SPARE	o	SPARE	20	1	32		X
X		33	1	20	SPARE	o				34	X	
X	X	35	1	20	SPARE	o	SPARE	20	1	36		X
X		37	1	20	SPARE	o				38	X	
X	X	39	1	20	SPARE	o	SPARE	20	1	40		X
X		41	1	20	SPARE	o				42	X	

L1 = 129.8 A
L2 = 141.3 A

TENANT 4
PANEL: D SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: NQOD MOUNTING: FLUSH
ENCLOSURE: NEMA 1 ϕ 1 SHORT CIRCUIT RATING: 22K
MAIN M.L.O TOP FEED BOTTOM FEED COPPER BUS GROUND BAR KIT NEUTRAL BAR KIT

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
40.0		1	2	60	AIR HANDLING UNIT #4	o	HEAT PUMP UNIT #4	40	2	2	21.3	
	40.0	3								4		21.3
6.0		5	1	20	WAREHOUSE RECEPTACLES	o	DRINKING FOUNTAIN	20	1	6	5.6	
	6.0	7	1	20	WAREHOUSE RECEPTACLES	o	BUILDING SIGN	20	1	8		5.0
3.0		9	1	20	COUNTER RECEPTACLE	o	AHU CONV. RECEPTACLE	20	1	10	1.5	
	9.0	11	1	20	OFFICE 2 RECEPTACLES	o	HEAT PUMP CONV. RECEPT.	20	1	12		1.5
9.1		13	1	20	WAREHOUSE LIGHTING	o	OFFICE AREA LIGHTS	20	1	14	3.1	
	3.0	15	1	20	LOBBY 1 RECEPTACLES	o	POINT OF USE WATER HEATER	40	2	16		30.0
4.5		17	1	20	LOBBY RECEPTACLES	o				18	30.0	
	4.5	19	1	20	LOBBY CASEWORK RECEPTS.	o	LOBBY TELEVISION	20	1	20		5.0
13.8		21	1	20	OVERHEAD DOOR OPENER	o	SPARE	20	1	22	X	
X		23	1	20	SPARE	o				24	X	
X	X	25	1	20	SPARE	o	SPARE	20	1	26		X
X		27	1	20	SPARE	o				28	X	
X	X	29	1	20	SPARE	o	SPARE	20	1	30		X
X		31	1	20	SPARE	o				32	X	
X	X	33	1	20	SPARE	o	SPARE	20	1	34		X
X		35	1	20	SPARE	o				36	X	
X	X	37	1	20	SPARE	o	SPARE	20	1	38		X
X		39	1	20	SPARE	o				40	X	
X	X	41	1	20	SPARE	o	SPARE	20	1	42		X

L1 = 137.9 A
L2 = 125.3 A