

GENERAL NOTES

ARE CLEANED AND THEN INSULATED USING TWO (2) LAYERS OF "SCOTCHFIL" BRAND ELECTRICAL INSULATION PUTTY AND "SCOTCHFIL" BRAND ELECTRICAL INSULATION PUTTY AND COVERED BY TWO (2) HALF-LAPPED LAYERS OF "SCOTCH 88" OR PLYMOUTH SLIPNOT GRAY VINYL PLASTIC ELECTRICAL TAPE.

F. SWAB CONDUITS FREE OF MOISTURE, DIRT AND GREASE BEFORE PULLING WIRE. CARE SHALL BE EXERCISED WHILE INSTALLING WIRE IN CONDUITS SO THAT CONDUCTOR INSULATION WILL NOT BE INJURED. NO OILS, GREASE OR COMPOUNDS OTHER THAN IDEAL "WIRE LUBE", "YELLOW 77", OR EQUAL U.L. APPROVED WIRE PULLING LUBRICANTS SHALL BE USED FOR PULLING IN ANY CONDUCTORS.

G. WHERE BRANCH CIRCUIT WIRING OR CONTROL WIRES ENTER PANELBOARDS, JUNCTION OR DEVICE BOXES, FIXTURES, CONTROL ENCLOSURES OR PILOT DEVICES, EACH WIRE SHALL BE IDENTIFIED WITH A T&B TYPE WM VINYL WIRE MARKER. WIRE IDENTIFICATION SHALL BE IN ACCORDANCE WITH CB DESIGNATIONS AND NOTE 28B PAGE 35-F/101, CUSTOM PUMP CONTROL PANEL.

H. THE AMPACITY OF ALL WIRE SHALL BE AT LEAST AS GREAT AS THE RATING OF THE FUSE OR CIRCUIT BREAKER ON THE LINE SIDE OF THE WIRE. NOTE THE SMALLER PROTECTIVE DEVICE REQUIRED BY CODE WHEN MORE THAN THREE CONDUCTORS ARE PLACED IN A RACEWAY.

I. ALL CONNECTIONS ARE TO BE MADE USING PRESSURE TYPE TERMINALS. WHERE CONNECTIONS ARE TO BE MADE TO DEVICES OR EQUIPMENT UNDER SCREW HEADS ONLY, INSTALL INSULATED CRIMP TYPE SPADE CLIPS ON THE WIRE ENDS BEFORE THE CONNECTIONS ARE MADE. DEVICES SHALL NOT BE USED AS THROUGH CONNECTION POINTS. WHERE THROUGH CIRCUITS ARE INVOLVED THEY SHALL BE SPLICED IN THE BOX AND A PIGTAIL CONNECTED TO THE DEVICE. CONNECTORS SHALL CONTAIN ONLY ONE (1) WIRE UNLESS THEY ARE LISTED FOR MULTIPLE CONDUCTORS.

J. ALL MAKE-UP CONNECTIONS TO FLUORESCENT LIGHTING FIXTURES SHALL BE DUAL RATED TYPE THHN-THWN, OR THW, RATED 90°C.

K. WIRE COLOR CODE:

1. THE FOLLOWING COLOR CODE SHALL BE USED:

	120/208 VOLT	277/480 VOLT
PHASE WIRES	BLACK	RED
NEUTRAL	WHITE	GRAY
EQUIPMENT GROUND	GREEN	GREEN

ALL CONTROL CIRCUITS SHALL BE PINK.

2. CONDUCTORS NO. 6 AWG OR SMALLER SHALL HAVE INSULATION COLORED AS NOTED ABOVE.

3. CONDUCTORS LARGER THAN #6 AWG SHALL HAVE INSULATION COLORED AS NOTED ABOVE OR COLORED TAPE, MINIMUM SIZE 1/2 INCH, WRAPPED TWICE AROUND AT THE FOLLOWING POINTS:

- AT EACH TERMINAL
- AT EACH CONDUIT ENTRANCE
- AT INTERVALS NOT MORE THAN 12 INCHES APART IN ALL BOXES, PANEL TUBS, SWITCHBOARDS, ETC.

4. EQUIPMENT GROUNDING CONDUCTORS LARGER THAN #6 AWG SHALL BE GREEN, BARE OR GREEN TAPE APPLIED IN A CONTINUOUS WRAP WHERE VISIBLE AT PANELS AND JUNCTION BOXES, ETC.

20. WIRING DEVICES

A. FURNISH AND INSTALL ALL WIRING DEVICES WHERE SHOWN ON THE DRAWINGS.

B. WIRING DEVICES SHALL BE FURNISHED IN STRICT ACCORDANCE WITH THE CATALOGUE NUMBERS AND MANUFACTURERS LISTED IN THE SCHEDULE WHICH FOLLOWS. OTHER SPECIAL PURPOSE DEVICES SHALL BE AS SPECIFIED ON THE DRAWINGS.

1. DUPLEX GROUNDING TYPE RECEPTACLE - 15 AMP, 125 VOLT

HUBBELL - 5252
ARROW HART - 5252
P & S - 5252

2. SINGLE POLE SWITCHES - 20 AMP, 120/277 VOLT

HUBBELL - 1221
ARROW HART - 1991
P & S - 20AC1

3. DOUBLE POLE SWITCHES - 20 AMP, 120/277 VOLT

HUBBELL - 1222
ARROW HART - 1992
P & S - 20AC2

4. 3-WAY SWITCHES - 20 AMP, 120/277 VOLT

HUBBELL - 1223
ARROW HART - 1993
P & S - 20AC3

21. IDENTIFICATION NAMEPLATES

A. EACH PIECE OF SERVICE EQUIPMENT AND INDIVIDUAL SWITCHES, ALL DISCONNECTS, STARTERS, ALL POWER AND LIGHTING PANELS, ETC., SHALL BE IDENTIFIED ON THE FRONT COVER OR TRIM WITH ITS NAME AND/OR DESIGNATION NUMBER OR LETTER AS SHOWN ON THE DRAWINGS AND WITH THE VOLTAGE AVAILABLE WITHIN THE PANEL, AS INDICATED ON THE FOLLOWING EXAMPLES:

MOTOR CONTROL CENTER MCC#2
480/277 VOLT, 3 PHASE, 4-WIRE

PANEL BA
120/208 VOLT, 3 PHASE, 4-WIRE

PUMP #1

B. IDENTIFICATION SHALL BE IN THE FORM OF LAMINATED PLASTIC NAMEPLATES, BLACK FACE, WITH THE LETTERS ENGRAVED INTO THE WHITE BACKGROUND, MINIMUM 1/4" HIGH. PLATES SHALL BE SECURED TO EACH PIECE OF EQUIPMENT WITH SCREWS. NO "DYMO" OR SIMILAR TAPE TYPE LABELS WILL BE ALLOWED.

22. LIGHTING FIXTURES

A. ALL LIGHTING FIXTURES ARE INDICATED ON THE DRAWINGS WITH AN IDENTIFYING LETTER AND NUMBER, I.E., S-1, C-2, R-5, ETC. REFER TO THE FIXTURE SCHEDULE IN THESE SPECIFICATIONS WHICH IDENTIFIES THE FIXTURE IN ACCORDANCE WITH LETTER AND NUMBER AND INDICATES THE TYPE OF MOUNTING OF THE FIXTURE IN ACCORDANCE WITH THE ABBREVIATIONS BELOW.

B. ALL BALLASTS OF NEW FLUORESCENT FIXTURES SHALL BE CBM AND U.L. APPROVED AND OF THE HPF TYPE. THEY SHALL BE SOUND RATED "A", CLASS P PREMIUM RATED, INTERNALLY PROTECTED WITH AUTOMATIC RESET AND AS MANUFACTURED BY THE UNIVERSAL COMPANY, GENERAL ELECTRIC OR ADVANCE COMPANY.

C. ALL MERCURY VAPOR AND METAL HALIDE BALLASTS SHALL BE CONSTANT WATTAGE, HIGH POWER FACTOR TYPE. ALL SHALL HAVE FUSED PRIMARIES, AND SHALL BE AS MANUFACTURED BY GENERAL ELECTRIC, ADVANCE COMPANY, WESTINGHOUSE OR WIDELITE.

D. ALL LAMP HOLDERS INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE FURNISHED COMPLETE WITH NEW LAMPS OF THE SIZE INDICATED ON THE FIXTURE SCHEDULE. ALL FLUORESCENT LAMPS SHALL BE COOL WHITE.

E. ALL LAMPS SHALL BE IN WORKING ORDER AT THE TIME OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND ENGINEER.

FIXTURE SCHEDULE ABBREVIATIONS

NOTE: FIXTURE NUMBER, LETTER PREFIX INDICATES TYPE OF MOUNTING AS FOLLOWS:

C - CEILING MOUNTED;	W - WALL MOUNTED;
R - CEILING RECESSED;	CV - COVE MOUNTED;
UC - UNDER CABINET;	GR - GROUND MOUNTED;
S - STEM SUSPENDED;	P - POST;
WR - WALL RECESSED;	H - MOUNTED IN HOOD;
RF - ROOF MOUNTED;	* - INDICATES 277V. BALLAST

23. MOTOR AND EQUIPMENT WIRING

A. PROVIDE POWER AND CONNECT ALL MOTORS AND MOTOR DRIVEN EQUIPMENT SHOWN ON THE PLANS.

B. FURNISH, INSTALL AND CONNECT ALL OVER CURRENT AND/OR DISCONNECT MEANS AS REQUIRED BY THE NATIONAL ELECTRIC CODE.

C. MOTORS AND MOTOR DRIVEN EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY OTHERS. MOTOR STARTERS, CONTROLLERS AND CONTROL DEVICES OTHER THAN DEVICES AND STARTERS FOR CONTROLLERS, FURNISHED AS PART OF PACKAGED EQUIPMENT, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR, EXCEPT AS OTHERWISE NOTED.

SEE
MOTOR CONTROL CENTER SECTION #29 OF THIS SPECIFICATION.

D. INSTALL AND WIRE ALL MOTOR CONTROL EQUIPMENT PER WIRING DIAGRAMS AND INSTRUCTIONS FURNISHED TO HIM, INCLUDING INTERLOCK WIRING BETWEEN EQUIPMENT.

E. MOTOR AND EQUIPMENT LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. OBTAIN EXACT LOCATIONS FOR THE EQUIPMENT TO BE FURNISHED.

24. GROUNDING

A. ALL ENCLOSURES AND NON-CURRENT CARRYING METALS EXCEPT SERVICE ENTRANCE EQUIPMENT SHALL BE GROUNDED THROUGH A GROUNDED CONDUIT SYSTEM. WHERE A SEPARATE GROUNDING CONDUCTOR MAY BE CALLED FOR IT SHALL BE SIZED IN ACCORDANCE WITH NEC TABLE 250-95 EXCEPT NOT SMALLER THAN #12 FOR POWER AND LIGHTING CIRCUITS AND #14 FOR CONTROL CIRCUITS. ALL GROUND CONDUCTORS SHALL BE GREEN, OR AS SPECIFIED UNDER "WIRE AND WIRING METHODS".

B. ALL CONDUITS ENTERING SWITCHBOARDS AND MOTOR CONTROL CENTERS SHALL BE BONDED TOGETHER WITH #1 AWG WIRE BY A T & B SERIES 3870 BONDING AND GROUNDING BUSHING. THESE SHALL THEN BE BONDED TO THE GROUND BUS IN THE EQUIPMENT ITEM.

C. CONDUIT SYSTEMS SHALL BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS SHALL BE CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METALS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS.

D. ALL RECEPTACLES SHALL BE BONDED TO THE CONDUIT SYSTEM USING A BONDING JUMPER BETWEEN THE OUTLET BOX AND THE RECEPTACLE GROUNDING TERMINAL. METAL TO METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE MOUNTED BOXES OR FLUSH TYPE BOXES.

E. ALL FLEXIBLE CONDUIT SHALL BE JUMPERED WITH A GROUND CONDUCTOR.

F. MOTOR TERMINAL BOXES SHALL BE GROUNDED BY THE USE OF A MANUFACTURER-SUPPLIED GROUND LUG OR BY DRILLING AND TAPPING A HOLE FOR A GROUND SCREW. REMOVE PAINT PRIOR TO MAKING THE CONNECTION. DO NOT DRILL EXPLOSION PROOF BOXES OR EQUIPMENT.

G. LIGHTING FIXTURES SHALL BE GROUNDED BY THE USE OF A MANUFACTURER-SUPPLIED GROUND LUG OR PIGTAIL OR BY THE USE OF GROUND CLIPS FASTENED ON BARE METAL THAT IS FREE OF PAINT.

H. ALL SOLITARY GROUND CONDUCTORS SHALL BE RUN IN SCHEDULE 80 PVC NON-METALLIC CONDUIT. SOLITARY GROUND CONDUCTORS SHALL NOT BE PLACED THROUGH METALLIC SLEEVES OR CONDUITS AND SHALL NOT BE COMPLETELY ENCIRCLED BY METALLIC HANGERS OR SUPPORTS.