PLAN SYMBOLS

(ALL SYMBOLS LISTED MAY NOT PERTAIN TO EVERY PROJECT)

LIGHTING

- NIGHT LIGHTING FIXTURE (UNSWITCHED) AND/OR LIGHTING FIXTURE ON EMERGENCY CIRCUIT
- SURFACE MOUNTED LIGHTING FIXTURE, SIZE VARIES (REFER TO LIGHTING FIXTURE SCHEDULE)
- RECESSED LIGHTING FIXTURE, SIZE VARIES (REFER TO LIGHTING FIXTURE SCHEDULE)
- SURFACE CEILING MOUNT LIGHTING FIXTURE
- RECESSED CEILING MOUNT LIGHTING FIXTURE
- WALL MOUNT LIGHTING FIXTURE
- SPOT OR FLOODLIGHT FIXTURE
- CEILING MOUNT EXIT SIGN, ILLUMINATED (DIRECTIONAL ARROWS AS INDICATED)
- WALL MOUNT EXIT SIGN, ILLUMINATED (DIRECTIONAL ARROWS AS INDICATED)
- EMERGENCY LIGHTING BATTERY UNIT (UNIT MOUNTED LAMPS AS SHOWN)
- REMOTE EMERGENCY LIGHTING HEAD (NUMBER OF LAMPS AS SHOWN)
- LIGHTING FIXTURE MOUNTED ON POLE
- PHOTOCELL, MOUNT AT ROOF LINE FACING NORTH, U.N.O.

WIRING DEVICES

- S – SINGLE POLE SWITCH
- S_2 – DOUBLE POLE SWITCH
- S_3 – THREE-WAY SWITCH
- S_4 – FOUR-WAY SWITCH
- S_D – DIMMER SWITCH
- S_K – KEY OPERATED SWITCH, SINGLE POLE U.N.O.
- S_{MC} – MOMENTARY CONTACT SWITCH
- S_{MD} – MOTION DETECTOR MODULE WITH HAND-OFF-AUTO (DELAY SET @ 10 MINUTES U.N.O.)
- S_P – SWITCH WITH PILOT LIGHT
- S_{PB} – SWITCH WITH PUSH BUTTON
- S_S – SINGLE POLE SWITCH
  o = CONTROLS FIXTURES WITH SAME LETTER DESIGNATION (TYP. FOR ALL SWITCHES ABOVE)
- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
  GFI = GROUND FAULT INTERRUPTER
  C = MOUNT DEVICE ABOVE COUNTER
  TL = TWIST LOCKING
  WP = WEATHERPROOF
  +48 = MOUNTING HEIGHT A.F.F.
  CR = CORROSION RESISTANT
  T = TABLETOP MOUNTED RECEPTACLE
  TVSS = TRANSIENT VOLTAGE SURGE SUPPRESSER
  E = CONNECT TO EMERGENCY CIRCUIT
  ISO = ISOLATED GROUND
- DUPLEX RECEPTACLE, SPLIT WIRED
- QUAD-RECEPTACLE (DOUBLE DUPLEX)
- FLOOR OUTLET SIMPLEX RECEPTACLE
- FLOOR OUTLET DUPLEX RECEPTACLE
- SURFACE MOUNTED RACEWAY WITH DEVICES AS SHOWN
- SINGLE SPECIAL-PURPOSE RECEPTACLE RECEPTACLE TO MATCH EQUIPMENT (COORDINATE WITH OWNER)
- DUPLEX SPECIAL-PURPOSE RECEPTACLE
- SPECIAL-PURPOSE CONNECTION OR PROVISION FOR CONNECTION
- CLOCK/CLOCK RECEPTACLE
- CONNECTOR BODY ON CORD REEL
- COMPUTER SERVICE DROP
- TELE/POWER POLE
- DATA OUTLET, PROVIDE CONDUIT TO DESIGNATED LOCATION, U.N.O.
- TELEPHONE OUTLET, PROVIDE CONDUIT TO DESIGNATED LOCATION, U.N.O.
  P = PAYPHONE
  W = WALL HUNG
  C = MOUNT DEVICE ABOVE COUNTER
  WP = WEATHERPROOF
  +48 = MOUNTING HEIGHT A.F.F.
- INTERCOM STATION
- TELEPHONE FLOOR OUTLET
- DATA FLOOR OUTLET
- TEL – TELEPHONE TERMINAL CABINET
- MICROPHONE OUTLET
- FLOOR MOUNTED MICROPHONE OUTLET
- SPEAKER (CEILING MOUNTED)
- SPEAKER (WALL MOUNTED)
- HORN TYPE SPEAKER
- TV – TELEVISION OUTLET
- CEILING FAN CONNECTION

PLAN SYMBOLS CONT.

(ALL SYMBOLS LISTED MAY NOT PERTAIN TO EVERY PROJECT)

DISTRIBUTION & MOTOR CONTROL

- T – POWER TRANSFORMER
- SURFACE MOUNTED PANELBOARD (SEE PANEL SCHEDULE)
- RECESSED PANELBOARD (SEE PANEL SCHEDULE)
- S_T – MANUAL MOTOR STARTER, SINGLE POLE WITH OVERLOADS
  P = PILOT LIGHT
  H0A = H-O-A SELECTOR SWITCH
- S_{T3} – MANUAL MOTOR STARTER, THREE POLE WITH OVERLOADS
- S_M – MANUAL MOTOR STARTER, SINGLE POLE WITHOUT OVERLOADS
  P = PILOT LIGHT
  H0A = H-O-A SELECTOR SWITCH
- S_{M3} – MANUAL MOTOR STARTER, THREE POLE WITHOUT OVERLOADS
- CONTACTOR, TYPE AS NOTED BELOW
  TC = TIME CLOCK TC# X = BUILDING DESIGNATION
  LC = LIGHTING CONTACTOR T = TIMER
- MAGNETIC MOTOR STARTER
- MOTOR STARTER, COMBINATION WITH DISCONNECT SWITCH FUSED OR NON-FUSED AS INDICATED
- MOTOR STARTER, COMBINATION WITH MOTOR CIRCUIT PROTECTOR
- DISCONNECT SWITCH, FUSED OR NON-FUSED AS INDICATED, 3P-30A U.N.O.
- PUSHBUTTON CONTROL STATION
  ST = START LOS = STOP W/ LOCKOUT DEVICE
  SP = STOP ROL = REMOTE-OFF-LOCAL
  P = PILOT LIGHT H0A = HAND-OFF-AUTO
  SS = SELECTOR (ON/OFF) EM = EMERGENCY OFF/STOP
- FS – CONTROL SWITCH DEVICE
  LS = FLOAT/LEVEL SWITCH ZS = LIMIT SWITCH
  QS = TIME SWITCH PS = PRESSURE SWITCH
  PE = PNEUMATIC/ELECTRIC SWITCH EP = ELECTRIC/PNEUMATIC SWITCH
  PT = PRESSURE TRANSMITTER FS = FLOW SWITCH
  NS = MOISTURE DETECTION SWITCH OS = TORQUE SWITCH
  TS = TEMPERATURE SWITCH
  NOTE: THE ABOVE DEVICES MAY BE PART OF AN ASSEMBLY PROVIDED BY VENDOR. REFER TO POINT LIST & CIRCUIT SCHEDULE FOR SPECIFIC INFORMATION.
- FIELD INSTRUMENT (REFER TO POINT LIST AND CIRCUIT SCHEDULE FOR DEVICE TYPE AND IDENTIFICATION; IF APPLICABLE)
- ELECTRIC MOTOR
  F = FRACTIONAL HORSEPOWER
- SV – SOLENOID VALVE
- ELECTRIC UNIT HEATER
- M – DAMPER MOTOR
- T – THERMOSTAT
- HEAT TRACE WITH THERMOSTAT
- J – JUNCTION BOX, SIZE AS REQUIRED FOR CONNECTION OF DEVICE IF NOTED.
- D – DROP CORD, VERIFY CONNECTION WITH EQUIPMENT
- H – DOOR HEATER
- ELECTRIC MOTOR OPERATED VALVE
- MH – MANHOLE
- H – HANDHOLE
- CP BP – DEVICE DESIGNATOR
- 1 – PLAN KEY NOTES
- 412 – DISCONNECT LABEL, REFER TO DISCONNECT SCHEDULE
- A126-2 – EQUIPMENT IDENTIFICATION NUMBER, REFER TO EQUIPMENT SCHEDULE IF APPLICABLE
- ZZ – RACEWAY, MANHOLE AND HANDHOLE SEGMENT DESIGNATION REFER TO EQUIPMENT SCHEDULE IF APPLICABLE
  - LETTER = DUCTBANK SECTION
  - NUMBER = JUNCTION BOX, MANHOLE, OR HANDHOLE
  - Z=PROPOSED, X=EXISTING, U=UTILITY
  - A-Y = BUILDING/AREA DESIGNATOR

CIRCUITING

- WIRING CONCEALED IN WALL OR CEILING IN FINISHED AREAS; EXPOSED IN UNFINISHED AREAS
- WIRING CONCEALED IN WALL OR CEILING IN FINISHED
- CONDUIT CAPPED
- CONDUIT UP
- CONDUIT DOWN
- CONDUIT BROKEN FOR CLARITY
- EMERGENCY LIGHTING WIRING, 12 VOLT DC U.N.O.
- LP1 – BRANCH CIRCUIT HOMERUN(S) TO MCC, PANELBOARD OR CONTROL PANEL
  * FLOAT/LEVEL SWITCH NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS
  * NUMERALS INDICATE MCC, PANELBOARD OR CONTROL PANEL
- CABLE TRAY
- DASH MARKS INDICATE UNSWITCHED CIRCUIT
- GROUND ROD, 3/4"øx10'-0" LONG. COPPERCLAD STEEL U.N.O.. (ALL CONNECTIONS EXOTHERMICALLY WELDED)
- GROUND, UFER GROUND U.N.O. AS LISTED BELOW: (ALL CONNECTIONS EXOTHERMICALLY WELDED)
  D = DRIVEN GROUND ROD
- CONDUIT SEAL-OFF FITTING
- CONTINUATION CONNECTION ON COMMON SHEET
- CONTINUATION CONNECTION ON OTHER SHEET, SHEET AS INDICATED
- 003-A – CIRCUIT DESCRIPTOR TO DIFFERENTIATE MULTIPLE CIRCUITS IN ONE AREA
- A2 – CONDUIT & WIRE DESIGNATION (REFER TO WIRE KEY WITH PANELBOARD SCHEDULES)

PLAN SYMBOLS CONT.

(ALL SYMBOLS LISTED MAY NOT PERTAIN TO EVERY PROJECT)

FIRE ALARM SYSTEM

- FCP – FIRE ALARM CONTROL PANEL
- FAAP – FIRE ALARM & SECURITY CONTROL PANEL (COMBINED)
- I – ADDRESSABLE MONITOR MODULE
- Z – ADDRESSABLE CONTROL ZAM
- S – SMOKE DETECTOR
- H – HEAT DETECTOR (RATE OF RISE W/ 135° FIXED)
- H 190° – HEAT DETECTOR (RATE OF RISE W/ 190° FIXED)
- D – DUCT SMOKE DETECTOR
- MD – MAGNETIC DOOR HOLDER
- FS – WATER FLOW SIGNAL UNIT
- PIV – POST VALVE INDICATING UNIT
- VTS – FIRE ALARM & SECURITY CONTROL PANEL (COMBINED)
- FIRE ALARM AUDIO HORN/VISUAL STROBE
- A – AUDIBLE DEVICE
- V – VISUAL STROBE
- FP – VISUAL STROBE
- BELL

SECURITY SYSTEM

- SAP – SECURITY ALARM PANEL
- KP – KEY PAD
- DC OH – DOOR SECURITY CONTACT
  OH = OVERHEAD DOOR TYPE
- SECURITY AUDIBLE ALARM
- W – WINDOW SECURITY CONTACT
- C – SECURITY CAMERA
- MD – MOTION DETECTOR- UNIDIRECTIONAL
- MD – MOTION DETECTOR- OMNIDIRECTIONAL

INSTRUMENTATION SYSTEMS

- LSL IRS – INSTRUMENTATION, CONTROL, OR POWER DEVICE DESIGNATOR- REFER TO POINT LIST AND CIRCUIT SCHEDULE; IF APPLICABLE
- LD – LEAK DETECTOR

NURSE CALL SYSTEMS

- N – SINGLE PATIENT STATION WITH CORDSET
- N_D – DUTY STATION
  S = STAFF STATION
  SA = STAFF ASSIST STATION
  DSS = DIRECT STATION SELECTOR CONSOLE
  NCS = NURSE CONTROL STATION WITH LCD DISPLAY
- E – EMERGENCY PULLCORD STATION
- N – DOME LIGHT WITH RED AND WHITE LENS
- N_W – DOME LIGHT WITH WHITE LENS
  R = DOME LIGHT WITH RED LENS
- N_T – LOCAL TONE UNIT
- Z – ZONE LIGHT WITH WHITE AND RED LENS
- NCE_A – DUAL NURSE CALL CABINET; FLUSH MOUNT
- NCE_B – SINGLE NURSE CALL CABINET; FLUSH MOUNT
- VC – VOLUME CONTROL
- AMP – AMPLIFIER

SINGLE-LINE DIAGRAM SYMBOLS

(ALL SYMBOLS LISTED MAY NOT PERTAIN TO EVERY PROJECT)

- NEMA SIZE – MOTOR STARTER, FULL VOLTAGE NON-REVERSING
- NEMA SIZE – MOTOR STARTER, FULL VOLTAGE REVERSING
- NEMA SIZE – MOTOR STARTER, FULL VOLTAGE TWO-SPEED
- NEMA SIZE – RV – MOTOR STARTER, REDUCED VOLTAGE
- AFD – ADJUSTABLE FREQUENCY DRIVE CONTROLLER
- DR 5IN/5IN – RESIDUAL GROUND INSTANTANEOUS AND TIME OVERCURRENT RELAY (GROUND FAULT PROTECTIVE RELAY)
- DR 50/51 – INSTANTANEOUS AND TIME OVERCURRENT RELAY
- DR 47 – PHASE REVERSAL RELAY
- NEMA SIZE – OR AMPERAGE – MAGNETIC CONTACTOR
- TRIP POLES – MOLDED CASE CIRCUIT BREAKER 3-POLE, UNO
- RATING POLES MCP – MOLDED CASE CIRCUIT BREAKER 3-POLE, UNO
- RATING POLES MCS – MOLDED CASE SWITCH 3-POLE, UNO
- RATING POLES – DISCONNECT SWITCH 3-POLE, UNO
- FUSE
- ATS – TRANSFER SWITCH
  ATS = AUTOMATIC
  MTS = MANUAL
- X – SQUIRREL CAGE MOTOR
  X = HORSEPOWER
- X – SQUIRREL CAGE MOTOR
  X = HORSEPOWER
- T? – POWER TRANSFORMER
  T? = SEE TRANSFORMER SCHEDULE
- CURRENT TRANSFORMER (CT)
- POTENTIAL TRANSFORMER (PT)
- AS AM – AMMETER & SWITCH
- VS VM – VOLTMETER & SWITCH
- KWH – KILOWATT-HOUR METER
- M – UTILITY METER, COORDINATE WITH UTILITY
- DELTA
- WYE
- WYE WITH CENTER GROUND
- ZZZ – ELECTRICAL NODE, REFER TO FAULT CURRENT CALCULATIONS
- TVSS – TRANSIENT VOLTAGE SURGE SUPPRESSER
- LIGHTNING ARRESTOR
- D – APPROVED GROUNDING ELECTRODE CONNECTION
  D = DRIVEN
- DISCONNECT DEVICE (BUS STAB)
- XX – POWER FACTOR CAPACITOR
  XX = KVAR VALUE
- P – PUSHBUTTON CONTROL STATION
  ST = START ROL = REMOTE-OFF-LOCAL
  SP = STOP H0A = HAND-OFF-AUTO
  P = PILOT LIGHT EM = EMERGENCY OFF/STOP
  SS = SELECTOR (ON/OFF)
- FS – CONTROL SWITCH DEVICE
  LS = FLOAT/LEVEL SWITCH ZS = LIMIT SWITCH
  QS = TIME SWITCH PS = PRESSURE SWITCH
  PE = PNEUMATIC/ELECTRIC SWITCH EP = ELECTRIC/PNEUMATIC SWITCH
  PT = PRESSURE TRANSMITTER FS = FLOW SWITCH
  NS = MOISTURE DETECTION SWITCH OS = TORQUE SWITCH
  TS = TEMPERATURE SWITCH
- TB TB TB – BUSWAY
- MV CIRCUIT BREAKER, DRAWOUT
- ST EB – VSI/VAC CIRCUIT INTERRUPTER
- K K – KEY INTERLOCK
- A2 – CONDUIT & WIRE DESIGNATION (REFER TO WIRE KEY WITH PANELBOARD SCHEDULES)

ELEMENTARY DIAGRAM SYMBOLS

(ALL SYMBOLS LISTED MAY NOT PERTAIN TO EVERY PROJECT)

- CROSSING OF CONDUCTORS – NO CONNECTION
- CONNECTION OF CONDUCTORS
- GROUND
- CONTROL CIRCUIT TRANSFORMER SECONDARY
- FUSE
- THERMAL OVERLOAD RELAY
- CIRCUIT BREAKER
- INDICATING LAMP
  R = RED W = WHITE
  G = GREEN B = BLUE
  A = AMBER
- RELAY – MAGNETIC COIL
  C = CONTACTOR (HP RATED) R = CONTROL RELAY
  F = 2-SPEED STARTER- FAST S = 2-SPEED STARTER- SLOW
  L = LIGHTING CONTACTOR T = TIMING RELAY
  M = MOTOR STARTER
- XXX – SOLENOID
- N.O. – NORMALLY OPEN CONTACT
- N.C. – NORMALLY CLOSED CONTACT
- XXX (NOTC) – NORMALLY OPEN TIMED CLOSE (ON DELAY)
- XXX (NOTO) – NORMALLY OPEN TIMED OPEN (OFF DELAY)
- XXX (NCTO) – NORMALLY CLOSED TIMED OPEN (ON DELAY)
- XXX (NCTC) – NORMALLY CLOSED TIMED CLOSE (OFF DELAY)
- HAND AUTO – SELECTOR SWITCH, TWO POSITION, MAINTAINED
  X = CLOSED CONTACT
  O = OPEN CONTACT
  SRT = SPRING RETURN TO CENTER
  (TYP. FOR ALL SELECTOR SWITCHES AND PUSHBUTTONS)
- OFF HAND AUTO – SELECTOR SWITCH, THREE POSITION, MAINTAINED
  X = CLOSED CONTACT
  O = OPEN CONTACT
- XXX – SWITCH, SINGLE THROW
- XXX – SWITCH, DOUBLE THROW
- XXX – PUSHBUTTON, NORMALLY OPEN
- XXX – PUSHBUTTON, NORMALLY CLOSED
- XXX – PUSHBUTTON WITH MUSHROOM HEAD OPERATOR
- XXX – PRESSURE SWITCH
- XXX – TEMPERATURE SWITCH
- XXX – LIQUID LEVEL SWITCH
- XXX – FLOW SWITCH
- XXX – LIMIT SWITCH – NORMALLY CLOSED

TYP. FOR ALL SWITCHED ABOVE:
- XXX – NORMALLY OPEN – CLOSES RISING
- XXX – NORMALLY OPEN –(HELD CLOSED) CLOSES RISING
- XXX – NORMALLY CLOSED – OPENS RISING
- XXX – NORMALLY CLOSED – (HELD OPEN) OPENS RISING

- MCC EXTERNAL TERMINATION POINT
- CONTROL PANEL EXTERNAL TERMINATION POINT
- XXX – HORN

SCHEMATIC SYMBOLS

- PS – PRESSURE SWITCH
- XT – AUTOMATIC TRANSFER AND ALTERNATION CONTROL
- REG – PRESSURE REGULATOR (100 PSI INPUT, 40 PSI OUTPUT, FILTER, DRIPWELL & ADJUSTMENT NUT)
- BALL CHECK VALVE
- SV – SOLENOID VALVE
- SV – THREE-WAY SOLENOID VALVE
- NEEDLE VALVE
- BALL VALVE
- PRESSURE RELIEF VALVE
- G2 – 2 1/2" PRESSURE GAUGE 0-100 PSI
- G1 – 4" PRESSURE GAUGE 0-50 FEET (FLUSH MOUNT ON FRONT OF CONTROL PANEL)
- ROTO METER
- AIR LINE
- ELECTRICAL WIRING

ABBREVIATIONS

(FOR ADDITIONAL DISTRIBUTION SYSTEM ABBREVIATIONS, SEE PANELBOARD & MCC SCHEDULE IN SPECIFICATIONS)

AFF –	ABOVE FINISHED FLOOR
AFG –	ABOVE FINISHED GRADE
ATS –	AUTOMATIC TRANSFER SWITCH
BFF –	BELOW FINISHED FLOOR
BFG –	BELOW FINISHED GRADE
CR –	CORROSION RESISTANT
C&T –	COMPUTER AND TELEPHONE PARTITION CONNECTION
DC –	DOOR CONTACTS (CONDUIT & PULL WIRE ONLY)
DH –	DUCT HEATER
DL –	DOCK LEVELER
DM –	DAMPER MOTOR
DS –	DISCONNECT SWITCH
EC –	ELECTRICAL CONTRACTOR
EDC –	ELECTRIC DUCT COIL
EMT –	ELECTRIC METALLIC TUBING
FV –	AUTOMATIC FLUSH VALVE
GC –	GENERAL CONTRACTOR
GFI –	GROUND FAULT INTERRUPTER, 5 MA (U.N.O.)
GH –	DOOR GASKET AND WINDOW HEATER
HP –	HEAT PUMP
IMC –	INTERMEDIATE METAL CONDUIT
IR –	INFRARED HEATER
MCC –	MOTOR CONTROL CENTER
MDP –	MAIN DISTRIBUTION PANEL
MH –	MOUNTING HEIGHT
MOD –	MOTOR OPERATED DAMPER
N.T.S. –	NOT TO SCALE
OD –	OVERHEAD DOOR
OE –	OVERHEAD ELECTRIC
OT –	OVERHEAD TELEPHONE
PVC –	SCHEDULE 40 PVC
RA –	RESCUE ASSISTANCE
RAC –	RIGID ALUMINUM CONDUIT
RGS –	RIGID GALVANIZED STEEL
STP –	SHIELDED TWISTED PAIR, #16 AWG
TL –	TWIST LOCK
UE –	UNDERGROUND ELECTRIC
UH –	UNIT HEATER
U.N.O. –	UNLESS NOTED OTHERWISE
UT –	UNDERGROUND TELEPHONE
VR –	VEHICLE RESTRAINT
EWC –	WATER COOLER (ELECTRIC)
WH –	WATER HEATER
WP –	WEATHERPROOF
WPB –	WEATHER-PROOF & CORROSION RESISTANT
XP –	EXPLOSION PROOF
Y0 –	WYE TO DELTA

GENERAL NOTES:

1. REFER TO THE AREA CLASSIFICATION TABLE FOR ENVIRONMENTAL CONDITIONS, HAZARDOUS CONDITIONS AND NEMA CLASSIFICATIONS AS AFFECTS MATERIAL TYPES FOR ALL EQUIPMENT, ENCLOSURES, DEVICES, PANELBOARDS, DISTRIBUTION EQUIPMENT, MOTORS, CONDUIT AND RACEWAY SYSTEMS.
2. REFER TO THE EQUIPMENT IDENTIFICATION CRITERIA TABLE ON DRAWING E101 FOR ELECTRICAL EQUIPMENT IDENTIFICATION METHOD.
3. REFER TO DRAWING E100 FOR TRANSFORMER SCHEDULE AND DISCONNECT SWITCH SCHEDULE.
4. REFER TO DRAWING E300 FOR LIGHTING FIXTURE SCHEDULE.
5. POWER WIRING IS IDENTIFIED IN THE FOLLOWING WAYS:
   A) POWER WIRING AND CONDUIT FOR MOTORS FED FROM MCC'S ARE SCHEDULED ON THE MCC SCHEDULES ON DRAWING E100. REFER TO HOMERUNS ON PLANS FOR MCC DESIGNATION.
   B) POWER WIRING AND CONDUIT FOR EQUIPMENT FED FROM CONTROL PANELS ARE SHOWN ON THE DRAWINGS. REFER TO HOMERUNS ON PLANS FOR CONTROL PANEL DESIGNATION, CONDUIT SIZE AND WIRE SIZE/QUANTITY.
   C) POWER WIRING AND CONDUIT FOR DEVICES AND EQUIPMENT FED FROM PANELBOARDS ARE SCHEDULED ON THE PANELBOARD SCHEDULES ON DRAWING E100. REFER TO HOMERUNS ON PLANS FOR PANEL DESIGNATION.
   D) IN LIEU OF SHOWING HOMERUNS ON PLANS, AN EQUIPMENT IDENTIFICATION NUMBER MAY BE GIVEN ON THE PLANS. THE MCC OR PANELBOARD FROM WHICH IT IS FED, ALONG WITH ADDITIONAL INFORMATION, WILL THEN BE GIVEN IN THE ELECTRICAL EQUIPMENT SCHEDULE ON DRAWING E101.
   * CONDUIT SIZING SHALL BE 3/4" MINIMUM U.N.O. NO MORE THAN ONE POWER CIRCUIT SHALL OCCUPY A COMMON CONDUIT U.N.O.
   * POWER CONDUCTORS SHALL NOT OCCUPY COMMON RACEWAY WITH CONTROL OR SIGNAL WIRING.
   * REFER TO HOMERUNS ON PLANS FOR POWER SOURCE, CONTROL PANEL DESIGNATION.
   * REFER TO DRAWING E100 FOR PANELBOARD SCHEDULES AND WIRE SIZING TABLE.
6. UNDERGROUND DUCT BANKS ARE SHOWN ON SITE DRAWINGS TO DEPICT SIZE AND QUANTITY OF CONDUITS ONLY. PRECISE ROUTING AND DESTINATIONS SHALL BE BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE ADDITIONAL CONDUITS, JUNCTION BOXES, MANHOLES AND HANDHOLES REQUIRED FOR ROUTING CIRCUITS FROM DUCTBANK ENDPOINTS TO INDIVIDUAL EQUIPMENT.
7. UNDERGROUND DUCTBANKS SHALL BE ENCASED IN CONCRETE IN ACCORDANCE WITH THE AREA CLASSIFICATION TABLE, UNLESS SPECIFICALLY NOTED OTHERWISE.
8. ALL GROUNDING SHALL BE AS PER NEC AND AS INDICATED ON THE DETAIL, "TYPICAL GROUNDING WIRING". CARE SHALL BE EXERCISED TO INSURE THAT THE ONLY CONNECTION BETWEEN THE EQUIPMENT GROUNDING CONDUCTOR AND THE GROUNDED PHASE CONDUCTOR (SYSTEM NEUTRAL) IS AT THE BONDING JUMPER AT THE SERVICE ENTRANCE OR AT THE POINT OF ORIGIN OF EACH SEPARATELY DERIVED SERVICE (EXCEPT AS PROVIDED IN NEC 250-32 (B)(2)).
9. ALL CONDUIT ROUTING FOR EXTERIOR LIGHTING AND EXTERIOR RECEPTACLES SHALL BE ROUTED INSIDE BUILDING, PENETRATING EXTERIOR OF WALL AT EACH LIGHTING FIXTURE/DEVICE, UNLESS NOTED OTHERWISE. CONDUIT SHALL NOT BE INSTALLED ON THE EXTERIOR OF BUILDING.
10. FOR ALL ROTATING EQUIPMENT, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A HORSEPOWER-RATED DISCONNECT SWITCH WITHIN SIGHT OF THE EQUIPMENT. FOR MOTORS SUPPLIED BY A VARIABLE-FREQUENCY DRIVE, PROVIDE A SET OF PILOT-DUTY AUXILIARY CONTACTS IN THE DISCONNECT SWITCH WHICH OPERATES PRIOR TO THE OPERATION OF THE MAIN CURRENT-CARRYING CONTACTS, WIRED TO DE-ENERGIZE THE DRIVE. PROVIDE TWO (2) #14 CONDUCTORS FOR SHUT-DOWN CONTROL OF THE VFD.
11. FOR ALL DISCONNECTABLE EQUIPMENT, THE CONTRACTOR MAY, AT HIS OPTION, SUBMIT AN ALTERNATE BID BY WHICH HE WILL PROVIDE A SWITCH-RATED PLUG AND RECEPTACLE DECONTACTOR BY THE MELTRIC CORPORATION IN LIEU OF A NEMA-RATED LOCKING PLUG AND RECEPTACLE. (IF USING A DECONTACTOR, THE SEPARATE DISCONNECT SWITCH SHALL BE ELIMINATED.) IF DISCONNECT IS BETWEEN A VFD AND MOTOR, PROVIDE AUXILIARY CONTACT AS NOTED ABOVE.
12. CIRCUIT DESCRIPTORS ARE PROVIDED ON THE PLANS AS A CONCISE IDENTIFICATION METHOD TO DISTINGUISH BETWEEN MULTIPLE CIRCUITS WITHIN A GIVEN AREA. CIRCUIT DESCRIPTORS SHALL NOT BE UTILIZED AS THE DESCRIPTION ON THE PANELBOARD CIRCUIT CARD OR THE FINAL AS BUILT DRAWINGS. THE CONTRACTOR SHALL COORDINATE PRECISE CIRCUIT DESCRIPTIONS WITH THE OWNER/ENGINEER AND PROVIDE DETAILED CIRCUIT DESCRIPTIONS ON THE AS BUILT PANELBOARD SCHEDULES.
13. THE ENGINEER MUST REVIEW ANY DEVIATION THAT IS BEING CONSIDERED IN PLACEMENT OF ELECTRICAL PANELBOARDS FROM THAT SHOWN ON THE DRAWINGS. CHANGES IN FEEDER LENGTH WILL CHANGE THE AVAILABLE FAULT CURRENT WHICH MAY REQUIRE DIFFERENT, PERHAPS MORE EXPENSIVE, CIRCUIT BREAKERS.

ELECTRICAL DRAWING LIST

E001 – SYMBOLS & LEGENDS
E100 – SINGLE-LINE DIAGRAM & SCHEDULES
E101 – SCHEDULES SHEET
E200 – ELECTRICAL SITE/ OVERALL PLAN
E300 – FIRST FLOOR LIGHTING PLAN
E301 – SECOND FLOOR & PENTHOUSE, LIGHTING & POWER PLANS & DOCK HEAT TRACE PLAN
E400 – FIRST FLOOR POWER PLAN
E500 – ELECTRICAL DETAILS

AREA CLASSIFICATION TABLE

ID	Location Information Description	Temp	Area Classification	Equipment / Lighting Fixture	Encl. NEMA	Conduit & Box Type:	Notes
	Below Grade / In-slab	N/A	Outdoor/ Heavy Duty	N/A	N/A	PVC or RGS	1
	Bldg Exterior, Roof (AFG)	N/A	Outdoor/ Light Duty	Outdoor Raintight	3R	PVC or Aluminum	2
101	Receiving Bay	Heated, ventilated	Wet/ Corrosive/Food/GFI	Corrosion Resistant	4X	PVC coated RGS	2, 4
102	Unisex Toilet	Air Conditioned	Dry/ Light Duty	Indoor/Dry	1	EMT	
103	Electrical Room	Heated, ventilated	Dry/ Light Duty	Indoor/Dry	1	EMT	
104	Computer Room	Air Conditioned	Dry/ Light Duty	Indoor/Dry	1	EMT	
105	Coordinator's Office	Air Conditioned	Dry/ Light Duty	Indoor/Dry	1	EMT	
106	+35F Cooler	+35F	Wet/ Heavy Duty	Wet Location	4X	Note 3	2
107	Tank Alcove	+35F	Wet/ Corrosive/Food/GFI	Corrosion Resistant	4X	PVC coated RGS	2, 4
201	Conveyor Mezzanine	+35F	Wet/ Heavy Duty	Wet Location	4X	Note 3	2
202	Test Office	Air Conditioned	Dry/ Light Duty	Indoor/Dry	1	EMT	
203	Walkway	Heated, ventilated	Dry/ Light Duty	Indoor/Dry	1	EMT	
204	Vestibule	Ambient	Dry/ Medium Duty	Indoor/Dry	1	Note 3	2
205	Unisex Toilet	Air Conditioned	Dry/ Light Duty	Indoor/Dry	1	EMT	
301	+35F Penthouse	+35F	Dry/ Medium Duty	Indoor/Dry	1	Note 3	2
"A"	Stair "A"	Heated, ventilated	Dry/ Light Duty	Indoor/Dry	1	EMT	

NOTE 1: Encasement as follows:
Under buildings, roadways & parking, encased in reinforced concrete.
Under sidewalks, encased in concrete.
Under Lawn: single ducts, no encasement; multiple ducts, stone encasement.
NOTE 2: Receptacles shall be GFI, with covers rated for "Wet when in Use"
NOTE 3: All raceway below 10' AFF shall be RGS or IMC. Raceway above 10' AFF may be EMT.
NOTE 4: Exposed conduit shall be mounted on stainless steel standoffs.

FACILITIES DESIGN

FACILITIES DESIGN, INC.
3904 Abel Drive
Columbia, Pennsylvania 17512
Phone: (717) 285-9442
Fax: (717) 285-3102
Email: info@facilitiesdesign.com
Web: www.facilitiesdesign.com
C.A. NUMBER: 2003118F

Engineering Design Services
Architectural Engineering
Building
Foundation ■ Structural
Plumbing ■ HVAC ■ Fire Protection
Central Refrigeration ■ Thermal Storage
Lighting ■ Power Distribution ■ Controls
Thermal Insulation
Materials Handling

Project Services
Project Planning ■ Project Management
Master Planning
Feasibility Studies
Material Handling Systems Studies

–	–	–
–	–	–
–	–	–
–	–	–
–	–	–
–	–	–
–	–	–
–	–	–
0	08/29/03	ISSUED FOR BIDDING
A	07/31/03	ISSUED FOR OWNER REVIEW

REVISIONS

This drawing and all information contained herein, remains the property of FACILITIES DESIGN, INC. All rights are expressly reserved and this drawing may not be reproduced in whole or in part without the express written consent of FACILITIES DESIGN, INC.

Do not scale drawing. Contractor shall verify all dimensions and conditions prior to construction. Any discrepancies shall be reported to FACILITIES DESIGN, INC. prior to construction for resolution.

PROJECT MANAGER: M.S.M.
DESIGNED BY: C.E.H.
DRAWN BY: M.R.L.
CHECKED BY: M.D.H./W.R.S.
SEAL:

PROJECT:

NEW MILK COOLER

Oakhurst DAIRY

364 FORREST AVENUE
PORTLAND, MAINE 04101

PROJECT NUMBER: **2003.1141.0**

DATE: **AUGUST 29, 2003**

DRAWING TITLE: **SYMBOLS & LEGENDS**

DRAWING NUMBER: **E001**
REVISION: **0**

F:\DATA\2003\1141\dwg\elec\1141E001.dwg, 09/22/2003 12:20:38 PM, mrl