

**ELECTRICAL SPECIFICATIONS AND DESIGN CRITERIA**

**PERMITS, LICENSES AND INSPECTION FEES**

WORK SHALL BE DONE IN STRICT ACCORDANCE WITH ALL LOCAL, COUNTY AND STATE CODES AND ALL APPLICABLE LAWS, RULES AND REGULATIONS COVERING THE INSTALLATION OF THE ELECTRICAL SYSTEMS. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES AS REQUIRED FOR THE INSTALLATION OF ELECTRICAL SYSTEMS.

**BIDS AND SUBSTITUTES**

ALL BIDS SHALL BE BASED STRICTLY ON THE BASIS OF THE SPECIFICATIONS. ANY REQUESTS FOR SUBSTITUTIONS SHALL BE ATTACHED TO THE BID FORM ON THE LETTERHEAD STATIONERY OF THE BIDDER AND SUCH REQUESTS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

THIS CONTRACTOR SHALL BEAR THE COST OF ANY EXTRA COSTS INCURRED IN SUB-CONTRACTS, GENERAL CONTRACTS, ETC. WHICH RESULT FROM EQUIPMENT SUBSTITUTIONS.

**SHOP DRAWINGS AND MATERIAL LIST**

THIS CONTRACTOR SHALL SUBMIT WITHIN TEN DAYS FROM THE DATE OF THE CONTRACT A COMPLETE LIST OF ALL MATERIAL AND EQUIPMENT HE PROPOSED TO USE IN THE INSTALLATION. AFTER APPROVAL OF THIS LIST BY THE ENGINEER, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, SIX (6) COPIES OF SHOP DRAWINGS AND DESCRIPTIVE LITERATURE OF ALL EQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT. DRAWINGS SHALL STATE CAPACITIES, SIZES, ETC. OF ALL EQUIPMENT AND SHALL BE CERTIFIED.

ALL SHOP DRAWINGS AND DATA MUST BE IN THE ENGINEER'S OFFICE NOT LATER THAN THIRTY DAYS FROM THE DATE OF THE CONTRACT AND IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN LIAISON AND TRACE THIS MATERIAL THROUGH THE ENGINEER'S OFFICE DELIVERY DATES WILL BE A CONSIDERATION IN THE APPROVAL OF EQUIPMENT AND MATERIAL.

EACH SHOP DRAWING, CATALOG CUT AND/OR SPECIFICATION SHEET SHALL BE MARKED WITH THE NAME AND LOCATION OF THE PROJECT.

ALL DRAWINGS SHALL BE SUBMITTED AT ONE TIME IN A SUITABLE BINDER WITH SHEETS PERMANENTLY ATTACHED. EACH ITEM SHALL BE CLEARLY IDENTIFIED AS TO TYPE, SIZE, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF DIMENSIONS, OPERATIONS, ETC.

IN THE EVENT OF APPROVAL OF SUBSTITUTION, APPROVAL WILL BE FOR ARRANGEMENT OF DESIGN ONLY AND THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF DIMENSIONS, OPERATIONS, ETC.

**MATERIALS**

ALL MATERIALS, EQUIPMENT, AND DEVICES INSTALLED AND /OR FURNISHED UNDER THIS SECTION SHALL BE NEW AND OF THE BEST QUALITY AND SHALL BE APPROVED BY THE AUTHORITIES, AGENCIES AND THE UNDERWRITERS LABORATORIES.

ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL REGULATIONS, LAWS, AND ORDINANCES WHICH MAY BE APPLICABLE.

**WARRANTY**

THE CONTRACTOR SHALL GUARANTEE THE INSTALLATION AGAINST DEFECTIVE WORKMANSHIP AND MATERIALS FOR ONE YEAR FROM DATE OF ACCEPTANCE OR CERTIFICATE OF FINAL INSPECTION AND APPROVAL BY THE INSPECTION AUTHORITIES HAVING JURISDICTION. ANY EQUIPMENT DEFECTIVE DURING THAT PERIOD SHALL BE REPLACED WITHOUT COST TO THE OWNER.

**METHOD**

ALL WIRING SHALL BE COPPER AND INSTALLED IN A CONTINUOUS SYSTEM OF CONDUIT AND BOXES. USE NO KNEEWAYS SHALLER THAN 1/2 INCH. UNDERGROUND CONDUITS MAY BE RIGID PVC, HOWEVER, CONDUITS ABOVE GRADE SHALL BE RIGID STEEL. EMT MAY BE USED IN CONCRETE SLABS ABOVE VAPOR BARRIER AND INSIDE BUILDINGS, BACKFILL TRENCHED UNDER PAVED AREAS WITH COMPACTED GRANULAR BACKFILL.

**GROUNDING**

GROUND ALL ELECTRICAL SYSTEMS COMPLETELY AND EFFECTIVELY, AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.

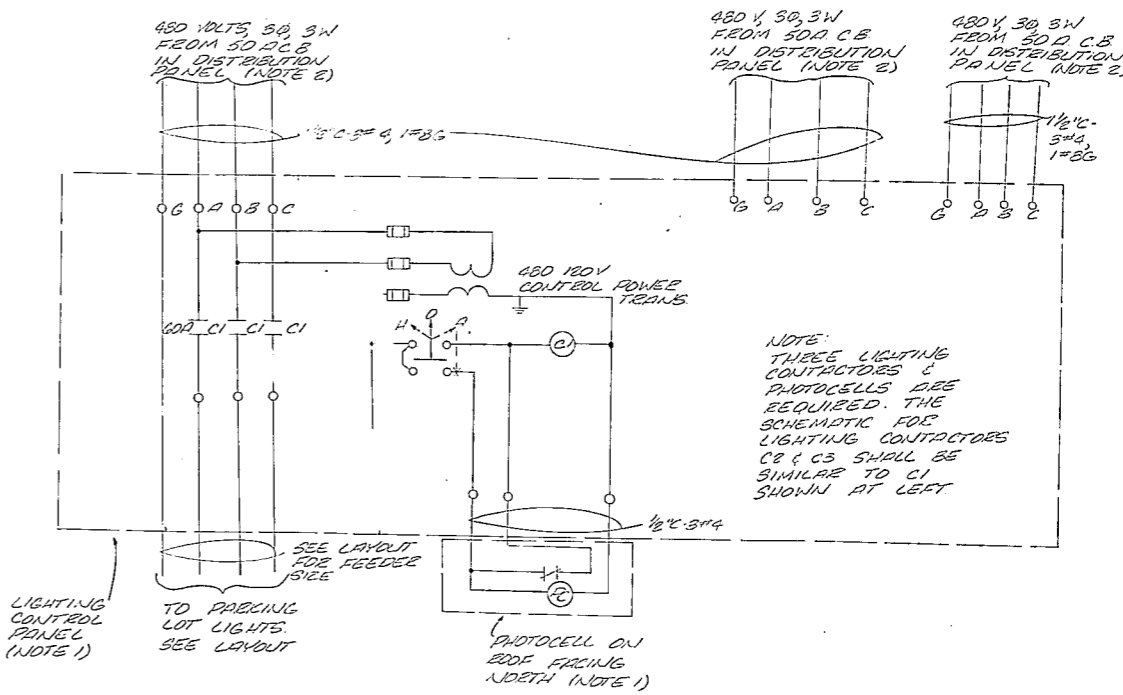
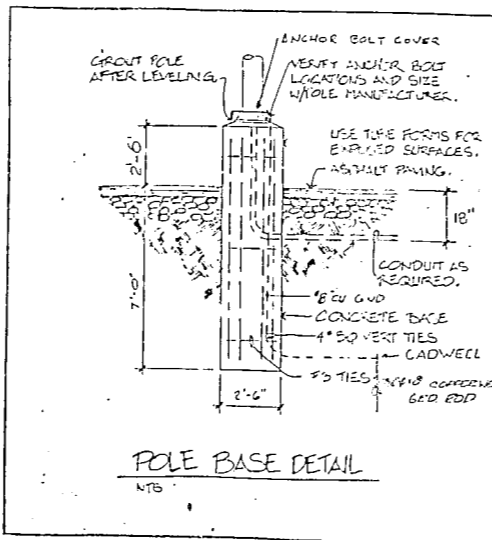
**NOTES:**

1. PROVIDE LIGHTING CONTROL PANEL CONSISTING OF THREE 60A, 3 POLE CONTACTORS, CONTROL POWER TRANSFORMERS AND TERMINAL BLOCKS FOR FIELD WIRING. THE PANEL SHALL BE NEMA-3 ENCLOSURE, ANTI-GLI LIGHT GRAY ENAMEL FINISH, HINGED PADLOCKABLE DOOR WITH "HAND-OFF-AUTO" SELECTOR SWITCHES MOUNTED ON THE DOOR. PROVIDE ENGRAVED LAMINATED PLASTIC IDENTIFICATION NAMEPLATES ON THE DOOR. INSTALL THE PANEL INSIDE THE BUILDING AT A LOCATION DESIGNATED BY THE OWNER. INSTALL PHOTOCELLS ON ROOF. SEAL ROOF PENETRATION. FIELD ROUTE CONDUIT TO PHOTOCELL.
2. PROVIDE FEEDER CONDUIT/CABLES FROM DISTRIBUTION PANEL DESIGNATED BY THE OWNER.

LIGHTING FIXTURE SCHEDULE			LAMP DATA		
PLAN MARK	MANUFACTURER AND CATALOG NUMBER	ACCESSORIES OR REMARKS	NO. OF LAMPS	LAMP ORDERING NUMBER	TOTAL FIX. WATTAGE
A	HCGRAW EDISON (2) #FRJ2855-480	SEE NOTES 1, 2 & 5	2	LU1000	2180
B	HCGRAW EDISON #FRJ2855-480	SEE NOTES 2, 4 & 5	1	LU1000	1090

**LIGHTING FIXTURE ELECTRICAL NOTES:**

1. K-W INDUSTRIES POLE RTSR40-9.0-11-P-26S. POLES AND ARMS SHALL BE PRIME COATED IN THE FACTORY AND FINISHED IN THE FIELD BY THE CONTRACTOR WITH TWO COATS OF SEMI-GLOSS ENAMEL TO MATCH FIXTURES. CUT MAST ARMS SO FIXTURE SLIPFITTERS MOUNT HORIZONTALLY.
2. ORIENT LUMINAIRES FOR BEST COVERAGE.
3. ALL LUMINAIRES SHALL HAVE 0 DEG. BALLAST AND PLASTIC LAMP SLEEVES.
4. K-W INDUSTRIES POLE RTSR40-9.0-11-P-16S. POLES AND ARMS SHALL BE PRIME COATED IN THE FACTORY AND FINISHED IN THE FIELD BY THE CONTRACTOR WITH TWO COATS OF SEMI-GLOSS ENAMEL TO MATCH FIXTURES. CUT MAST ARMS SO FIXTURE SLIPFITTERS MOUNT HORIZONTALLY.
5. ALL LUMINAIRES SHALL BE PROTECTED WITH BUSS TYPE HED WATERPROOF FUSEHOLDERS AND TYPE RTR FUSES WITH 100,000 A. INTERRUPTING CAPACITY SIZED IN ACCORDANCE WITH THE BALLAST MANUFACTURER'S RECOMMENDATION AND INSTALLED BY THE CONTRACTOR.



DATE	DESCRIPTION

DESIGNED: \_\_\_\_\_  
 DRAWN: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_

**LOWE ENGINEERS, INC.**

**PARK 'N FLY**  
 RALEIGH-DURHAM AIRPORT  
 TOWN OF CARY, NORTH CAROLINA

**LIGHTING DETAILS**

PROJ. NO.: 887C  
 DATE: MAY 1990  
 SCALE: AS SHOWN  
 DWG. NO.: E2