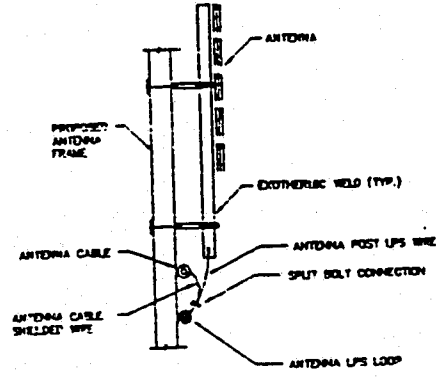
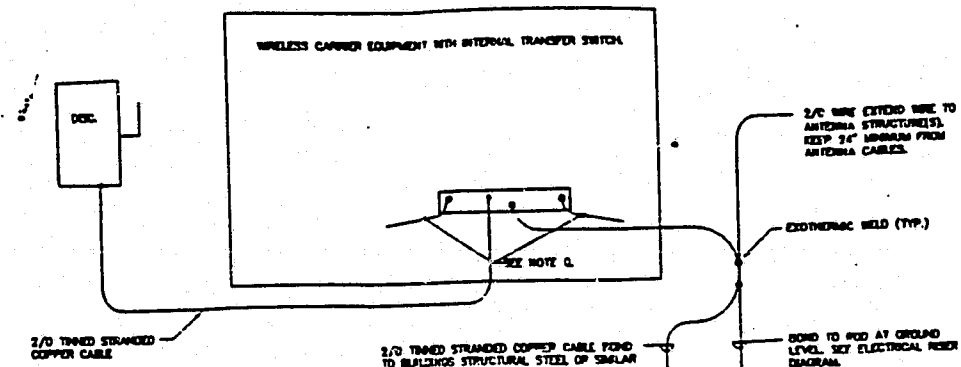


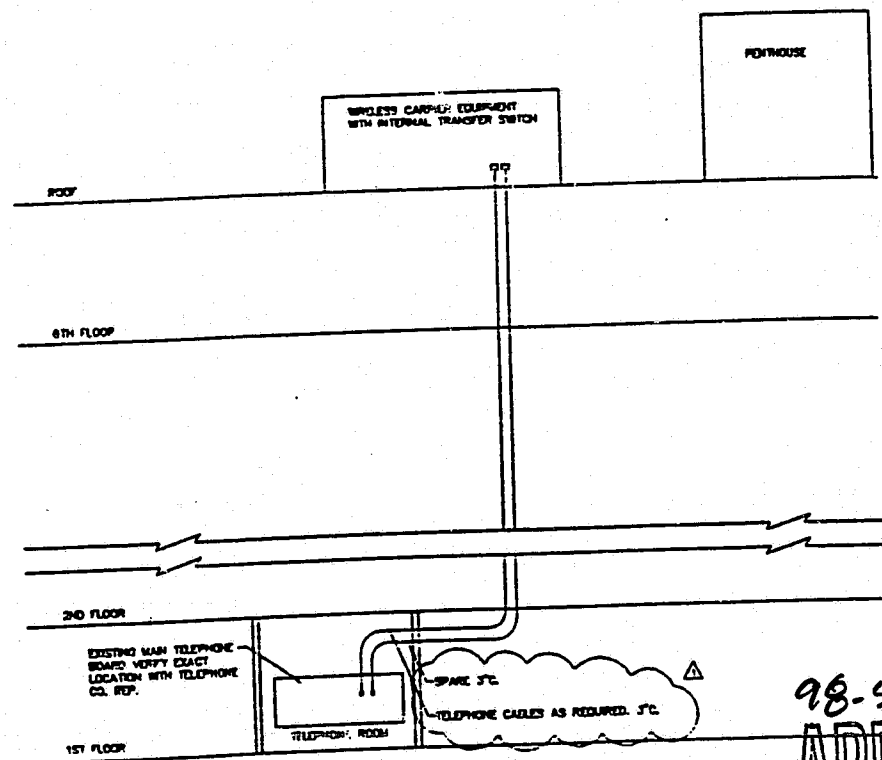
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NTS



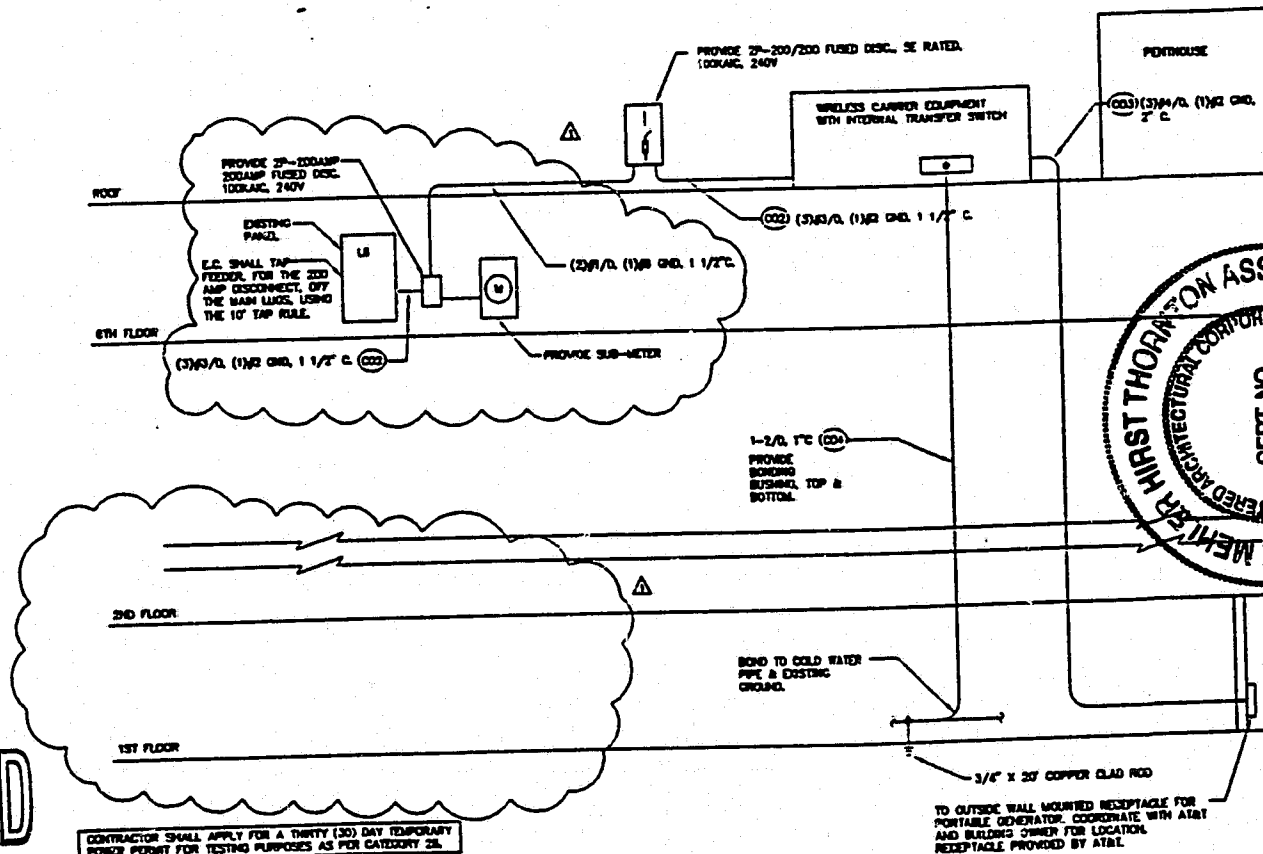
POLE ANTENNA LPS DETAIL  
FRAME MOUNTED  
NTS



EQUIPMENT LPS DETAIL  
NTS

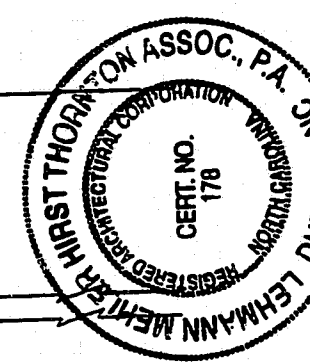


TELEPHONE RISER DIAGRAM  
NTS



ELECTRICAL RISER DIAGRAM  
NTS

98-SP-144-R  
**APPROVED**  
PJS 9-4-98  
TM 9-4-98



**ELECTRICAL NOTES:**

1. GENERAL
  - A. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL AND LABOR FOR A COMPLETE ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS. ITEMS NOT SHOWN BUT OBVIOUSLY NECESSARY FOR A COMPLETE SYSTEM SHALL BE INCLUDED.
  - B. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS.
  - C. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRIC CODE AND THE LOCAL BUILDING CODES. ALL COMPONENTS SHALL BE U.S. APPROVED.
  - D. THE CONTRACTOR SHALL, BEFORE SUBMITTING HIS BID, VISIT THE JOB SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, NO ALLOWANCE OF ADDITIONS TO THE CONTRACT WILL BE MADE FOR FAILURE OF THE CONTRACTOR TO VISIT THE SITE.
  - E. EXACT LOCATION OF EQUIPMENT SHALL BE COORDINATED WITH AT&T, THE BUILDING OWNER AND OTHER TRADES.
  - F. WHERE EQUIPMENT IS SPECIFIED BY MANUFACTURER AND TYPE, SUBSTITUTION SHALL ONLY BE MADE WITH THE APPROVAL OF THE ENGINEER. PLEASE FOR CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS. PLEASE FOR CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS. PLEASE FOR CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS. PLEASE FOR CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS. PLEASE FOR CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED MATERIALS.
  - G. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH DANNY HARRIS (919-487-8800). E.C. SHALL GIVE DANNY 2 DAYS NOTICE BEFORE STARTING ANY WORK.
2. SCOPE OF WORK
  - A. THE CONTRACTOR SHALL PROVIDE ALL ELECTRICAL WIRING AND EQUIPMENT UNLESS OTHERWISE INDICATED. MAIN COMPONENTS ARE AS FOLLOWS:
    1. PROVIDE ELECTRICAL SERVICE AS INDICATED ON THE DRAWINGS.
  - B. PROVIDE SERVICE EQUIPMENT MOUNTED IN EXISTING ELECTRICAL ROOM AS INDICATED ON THE DRAWINGS.
  - C. PROVIDE TELEPHONE CONDUIT WITH PULL WIRE AND CABLE AS INDICATED ON DRAWINGS.
  - D. COORDINATE ELECTRICAL SERVICE WITH SPAL CONTACT REPRESENTATIVE PRIOR TO CONSTRUCTION.
  - E. COORDINATE TELEPHONE SERVICE WITH BELL SOUTH CONTACT REPRESENTATIVE PRIOR TO CONSTRUCTION.
  - F. INSTALL WIRE AND CONDUIT AS INDICATED. PROVIDE CABLE SUPPORTS AS INDICATED.
  - G. PROVIDE GROUNDING AND LIGHTNING PROTECTION SYSTEM AS INDICATED.
  - H. RESTORE ALL AREA'S TO ORIGINAL CONDITION AFTER INSTALLATION OF CONDUIT.
  - I. CONTRACTOR SHALL CLEARLY LABEL, DISCONNECTS AND OTHER RELATED GEAR.
  - J. AT THE TIME OF PLAN PERMITTING, CONTRACTOR SHALL APPLY FOR A THIRTY (30) DAY TEMPORARY POWER POINT FOR TESTING PURPOSES.
- 3.0 CONDUIT
  - A. CONDUIT SIZES AS SHOWN ON THE DRAWINGS ARE A MINIMUM. THE CONTRACTOR MAY INCREASE AS REQUIRED FOR EASE OF PULLING.
  - B. CONDUIT TYPES AS FOLLOWS:
    1. CONCEALED CONDUIT IN WALLS OR ABOVE GRADE MAY BE ENT.
  - C. ALL EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE DIPPED GALVANIZED STEEL. CONDUITS SHALL HAVE BURS REMOVED WITH A REAMER. CONDUITS ENTERING CABINETS SHALL HAVE LOCK NUTS WEDGE AND GUT UNLESS ENTRANCE IS THROTTLED. UNLESS ISOLATED BUSINGS SHALL BE USED ON ALL CONDUIT TERMINATIONS.
  - D. FLEX CONDUIT SHALL BE LIQUID TIGHT FLEXIBLE METALLIC CONDUIT.
  - E. NO CONDUIT SHALL BE INSTALLED IN LIFE SAFETY AREAS SUCH AS STAIRWAYS.
  - F. CONDUIT ROUTES ARE SCHEDULED. FIELD VERIFY ROUTE BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND BUILDING OWNER.
- 4.0 CONDUCTORS
  - A. CONDUCTORS SHALL BE STRANDED TYPE WITH 70 DEGREE C RISE INSULATION.
  - B.0 GROUNDING
    - A. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS AND AS REQUIRED BY THE NATIONAL ELECTRIC CODE AND RADIO EQUIPMENT MANUFACTURER.
    - B. ALL RACEWAYS REQUIRE GROUNDING CONDUCTORS. BONDING CONDUCTORS THROUGH THE RACEWAY SYSTEM SHALL BE CONTINUOUS FROM MAIN SWITCH GROUND BUSES TO PANEL, GROUND BARS, AND FROM PANEL SWITCH GROUND BUSES TO PANEL, GROUND BARS, MOTORS, LIGHTS, ETC. GROUNDING BARS TO BRANCH CIRCUIT OUTLETS, MOTORS, LIGHTS, ETC. REGARDLESS OF WHETHER CONDUIT RUNS SHOW GROUND CONDUCTOR ON THE DRAWINGS.
    - C. A ROOF TOP GROUNDING SYSTEM SHALL BE PROVIDED/INSTALLED AS PER AT&T SPECIFICATIONS CHAPTER 5 (SPECIAL SITUATIONS).

**LIGHTNING PROTECTION SYSTEM (LPS) NOTES:**

- 1.0 LIGHTNING PROTECTION SYSTEM
  - A. ALL CONNECTIONS TO LIGHTNING PROTECTION SYSTEM SHALL BE MADE IN LINE WITH BONDING NOMINAL 1/2" RADIUS IN THE DIRECTION OF CURRENT FLOW. T-CONNECTIONS WILL NOT BE ALLOWED.
  - B. ALL BONES IN WIRING SHALL BE NOMINAL 1/2" RADIUS USE STANDOFFS AT BUILDING CORNERS IF REQUIRED.
  - C. ANTENNA CABLES SHALL BE BONDED AT EACH END. FURS GREATER THAN 150' SHALL BE SPACED TOWARDS THE MIDDLE OF LENGTH. COORDINATE LOCATION WITH AT&T PROJECT MANAGER.
  - D. APPROX. EVERY 4 FEET SECURE BOND WIRE TO ROOF WITH APPROVED ADHESIVE CABLE HOLDER EQUAL TO THOMPSON NO. 733.
  - E. WHEN APPLICABLE, CONTRACTOR SHALL BOND AT&T FRAMES TO EACH OTHER AND TO THE LIGHTNING PROTECTION SYSTEM.
  - F. CAD WELD EACH WIRE TO COPPER BUS.
  - G. CONTRACTOR SHALL BOND STRUCTURAL STEEL FROM TWO OPPOSITE SIDES TO 2/0 STRAND COPPER BARS. CONTRACTOR SHALL TEST TO ENSURE THE STRUCTURAL STEEL HAS LESS THAN 25 OHM RESISTANCE TO GROUND. COORDINATE WITH AT&T'S PROJECT MANAGER.
  - H. CONTRACTOR SHALL CONFIRM LIGHTNING PROTECTION LAYOUT WITH AT&T'S PROJECT MANAGER PRIOR TO INSTALLATION.

**480V LOAD CALCULATION**

| DESCRIPTION                             | KVA            |
|---|----------------|
| EXISTING LOAD (CONTRACTOR SHALL VERIFY) | 828            |
| EXISTING LOAD x 125%                    | 1035           |
| PROPOSED LOAD                           | 90             |
|   | NEW TOTAL LOAD |
|   | 1088           |
|   | NEW TOTAL AMPS |
|   | 1308           |
| LOAD AT 480V                            |                |
|   | 3000           |
| EXISTING SERVICE SIZE                   |                |

CONTRACTOR SHALL PROVIDE A 30 RECORDING AMPMETER FOR 30 DAYS W/VA PER NEC 220-35. CONTRACTOR SHALL SUBMIT TO ENGINEER (POWER) THE MAXIMUM RECORDED VALUE OF HIGHEST AMP LOAD. THE EXISTING MAXIMUM DEMAND SHALL BE MULTIPLIED BY 125%. THE NEW LOAD SHALL BE ADDED TO THE MAXIMUM LOAD x 125%. THIS NEW TOTAL VALUE SHALL BE LESS THAN SIZE OF THE AMP RATING OF THE SOURCE. DO NOT BEGIN WORK UNTIL THESE REQUIREMENTS ARE MET.

**AT&T**  
Wireless Services  
City of Raleigh  
North Carolina

**ELECTRICAL PLAN AND DETAIL**

RA-094  
REGENCY PARK  
CARY, NORTH CAROLINA

DOCUMENT NO. 071505.40

E-1

**PROPERTY OWNER**  
3300 Regency Parkway, Suite 6  
Cary, North Carolina 27511  
Attn: Dennis Mackey (919) 487-8800

**DEVELOPER**  
AT&T Wireless Services  
301 Atlantic Avenue, Suite 121  
Cary, North Carolina 27511  
(919) 752-1441

**SITE ADDRESS**  
Regency Park Corporation  
3300 Regency Parkway  
Cary, North Carolina 27511

**POWER COMPANY**  
Charlotte Power & Light Company  
P.O. Box 1771  
Charlotte, NC 28202-1771  
Attn: Customer Service Center (919) 487-8800

**BUILDING DEPARTMENT**  
Town of Cary Department of Public Works  
P.O. Box 8026  
Cary, North Carolina 27513

**TELEPHONE COMPANY**  
Bell South  
618 South Main Street, Suite 404  
Raleigh, North Carolina 27602  
Attn: Business Department (919) 770-0000

DATE: 5/25/97  
DESIGNED: NTS  
DRAWING CHECKED: BR

REVISIONS:  
9/10/98

**Kimley-Horn and Associates, Inc.**  
Lehmann Member of the Thornton Associates  
Professional Engineering Firm  
P.O. Box 33068  
Raleigh, North Carolina 27636-  
(919) 677-2000

Robert J. Beall  
6/10/98

**FOR CONSTRUCTION**