

**The University of New Mexico**  
**Physical Plant Department**  
**October 28, 2003**

**Antennas and Related Equipment: Installation Guidelines**

The following is offered as guidance to vendors and to campus providers who are seeking to develop sites on the University of New Mexico campus for communication antennas and related equipment. Prepared by the Physical Plant Department (PPD), these guidelines address issues under our purview, such as: access, utility connection, site impact, and etc. It represents one of four review components to develop sites on campus. Other UNM departments involved include: Facility Planning, Telecommunications, and the Campus Police. The Department of Facility Planning, the Campus Planning Committee, the Real Estate Office, Administration, and the Physical Plant Department will make final approval.

Items listed in these guidelines should be addressed in the preparation of the preliminary plans. All guidelines may not be applicable in all cases, and some installations may require specific review for site-specific requirements. In most cases, the following criteria should be followed:

**General:**

All projects are to be permitted through the State of New Mexico Construction Industries Division (CID). All plans shall be prepared to meet CID requirements for review and permitting.

Licensed and insured contractors shall perform all work, with appropriate certified workers. Separate permits for mechanical, plumbing, electrical, low voltage, etc. shall be secured for each project.

Preliminary site investigations shall be scheduled with the appropriate Physical Plant maintenance manager. Access to secured areas, such as roofs, electrical closets, and etc. shall be provided by the PPD manager.

Where required, the manager will request that the Physical Plant Engineering and Construction Division provide guidance for utility connections, system design, and etc.

As part of the preliminary site investigation, items such as delivery of components to the site via cranes, elevators, and etc., should be discussed. PPD recommendations should be included on the final drawings to be issued to the contractors.

It shall be the responsibility of the vendor and their contractors to repair, replace, or otherwise make whole to any damages caused to the site (buildings, utility distribution systems, or any university property associated with the project). Fees may be assessed for interruption of utilities, which cause delay of normal university activities.

**Site:**

A site map indicating the building location on campus and the site location(s) on or within the building must be included in the construction documents. Crane positioning, existing utility interference problems, etc. should be noted.

As-built plans shall be drawn by the vendor's designer and shall include all features to which the PPD will need access for maintenance (i.e., roof drains, roof-mounted mechanical and electrical equipment, filter banks, roof hatches, and etc.). The plans should indicate parapet wall heights and proximity to the vendor's equipment.

If the contractor requires a grade level construction yard, the area manager, in conjunction with UNM's Parking and Transportation Services, will make specific recommendations for location, length of time, usage fees, and etc.

**Structural:**

The vendor shall investigate, via research of existing drawings and/or site verification, the suitability of the structural system to sustain the weight of all equipment and building materials to be installed. Wind loads for all equipment shall be calculated to determine safe attachment of all new equipment to roof, walls, parapets, etc. Where necessary, such structural analysis and design, shall be performed by a licensed structural engineer and incorporated into the construction documents.

**Roofs, Decks, Weather Proof Membranes:**

For installations on existing roofs, the plans shall indicate protection of roof surfaces during periods of construction/installation.

The plans shall also address the methodology for preventing leaks that may result from vendor installations, and for allowing future reproofing of areas in, around, and under vendor installed equipment.

For warranty assurance, any roof repairs or reroofing required as a result of vendor installations or related work, shall be performed only by a Physical Plant referred roofing contractor.

**Architectural:**

Layout of all new equipment shall consider safety of all workers during and after the construction. Adequate clearance from edges of roofs, existing and installed equipment, skylights, roof hatches, etc., must be maintained. Height of components on antennas shall be above the adjacent surface, at a level to reassure injury prevention.

Details indicating method of attachment for all vendor installed equipment shall be indicated in the plans and reflect actual site conditions and building construction that is pertinent to mounting details. See “Structural” section for additional information.

In instances where the equipment will require construction of an enclosure, in an area generally visible by the public, the method of construction should be compatible to adjacent construction. Construction shall also be suited to the durability required for the specific site.

**Mechanical:**

In cases where HVAC installations for heating and/or cooling need to be made, such installations shall be “free-standing” from the building mechanical system. Existing utilities, such as natural gas and electrical, may be extended for the vendors use. Such use shall be evaluated for its impact on existing system capabilities and if allowed will be fully metered and charged.

In cases where the vendor installs HVAC equipment, all maintenance and repair of such equipment shall be the responsibility of the vendor and their assigned contractors.

**Security:**

Keys to access restricted PPD areas; such as roofs, mechanical rooms, electrical closets, etc., will not be issued, except as required for a period of construction. Access to sites shall be provided by PPD personnel, or by the Campus Police.

Keys to vendor constructed secured equipment rooms and areas shall be Sargent-manufactured as specified by the PPD, and will be keyed to allow emergency access by Physical Plant personnel or by Campus Police.

**Electrical:**

All projects shall have preliminary load information (voltage, phase, peak capacity, typical capacity) for all required equipment provided to the Physical Plant Department electrical engineer. Normally, the load must be configured to be 3-phase. The electrical engineer will determine the equipment electrical service method/tie-in point.

A contractor, provided and installed meter on the main electrical service to the equipment, shall meter electrical service. The meter shall be E-Mon Corporation P-Con, 3-Phase, KWH. No exceptions. Provided with pulse module (for the purpose of future remote data gathering of KWH and KW demand information via the nearest buildings' EMCS panel). Provide conduit stubout from the meter to the nearest buildings' EMCS panel. The electrical meter must be in a location readily accessible by Physical Plant Department utilities personnel.

In the event that emergency electrical power is required for any vendor-installed equipment, the vendor must provide any such emergency power. No connection to UNM emergency electrical power will be allowed. Individual installations requiring emergency power will need to be evaluated on a case-by-case basis for method of generation.