

Since noise is a more direct measure of what is perceived by the subscriber (as opposed to bit error rate), it is probably a good idea to at least state a noise objective at this stage of planning. However, as digital links are becoming more prevalent in rural subscriber access systems, bit error rate objectives should also be addressed.

### **7.5 Allowable Loss**

Allowable loss is the amount of attenuation permitted between the exchange and the subscriber. The objective for this must be extracted from reference equivalents of the fundamental transmission plan (see Figure 7.3).

The maximum allowable loss in the subscriber network ranges typically from 6 to 8 dB. For long loops, it may be impractical to meet the loss objective. Therefore a second, less stringent objective should be derived for use on a case-by-case basis. This relaxed objective could be as high as 10 to 12 dB, depending on other national network factors such as the number of 4-wire switches in the hierarchy.

### **7.6 Frequency Response**

Frequency response is an important network parameter. However, in the subscriber loop, frequency response performance may be relaxed from the stringent requirements applied to long-distance transmission facilities.

In the subscriber loop, good cable design practice should be followed for voice-frequency cable plant. When low-cost subscriber multiplex or carrier systems are used, the frequency response should be specified corresponding to the available state of the art for these classes of systems.