

**10. Switchyards and Substations.** The Introduction (Chapter 1) for these design data collection guidelines contains additional information concerning: preparing a design data collection request, design data collection requirements, and coordinating the design data collection and submittal.

**A. General Map Showing:**

- (1) A key map locating the general map area within the State.
- (2) The proposed site or sites.
- (3) Existing towns, highways, roads, railroads, power facilities, township, range, and section lines.
- (4) The direction of proposed transmission lines or transformer circuits entering the yard.

Generally a map made from or prepared on a current USGS topographic map (7½-minute quad sheet) will be adequate.

**B. Aerial Photograph.** Aerial photographs of the proposed site area is desirable in color, if available.

**C. Foundation Data.** A brief description of foundation conditions, adequate to determine the type of excavation and allowable bearing capacities that will be encountered.

**D. Electrical Data.** For design of most substations, it will be sufficient to specify only supply and output voltage, number of connecting transmission line at each voltage, capacity of the facility in kilovoltamperes and type of operation (attended, unattended, or supervisory control). For more complex structures, the requesting office should consult with the designing office for specific details needed.

**E. Building Facilities.** State the need for service and maintenance buildings. State operating functions to be controlled from the building.

**F. Environmental Considerations.** Comment should be included on any ecological, aesthetic, or other environmental aspects peculiar to the location which would affect the layout and cost, including present and future use of adjoining lands.

**G. Site Security.** Many Reclamation projects may require a security risk assessment. The need for a site-specific security risk assessment should be considered for feasibility designs where an assessment may impact the field cost estimate and for specifications designs. Specific issues to consider are contained in Section 14 of Chapter 7 – Site Security and Public and Worker Safety. If

assistance is required to determine specific design data needs, contact the Office of Security, Safety and Law Enforcement. Where design data and designs include site-specific security assessment, compliance with Reclamation Manual DM Part 444 – Physical Protection and Facility Security, Chapters 1 and 2 is required.