

## SECTION A1000

### FOUNDATION SYSTEMS

06/02

#### PART 1 - GENERAL

##### 1.1 SYSTEM DESCRIPTION

Foundation systems include all substructure elements supporting the facility and its equipment.

##### 1.2 SYSTEM REQUIREMENTS

a. Provide foundation for the facility using the foundation investigations [ that have been outlined in soils boring logs and test reports, entitled \_\_\_\_\_, that were performed by \_\_\_\_\_. ] [ that are outlined in a soils report provided by the Design-Build Contractor and/or the Design-Build Contractor's Architect/Engineer of Record ( AEDOR ). ] [ The soils borings and test reports are attached to Part 5 of this RFP. If it is determined that the existing soils report does not contain enough information and additional foundation recommendations are needed, it is the responsibility of the contractor to obtain geotechnical recommendations from a licensed professional geotechnical engineer as necessary for the design and construction of the facility. ] Foundation systems shall be designed for the soils conditions and load bearing characteristics identified by the soils report.

b. The Foundation Systems for the Facility shall also be designed and constructed for seismic, wind, live and gravity loads in accordance with the Southwest Division "Technical Guidance for Foundation System Design and Construction", which may be viewed at the following website:

[SWDIV Foundation Systems Technical Guide](#)

c. The specified design codes shall be compared to local building codes and the more conservative requirements shall be used.

##### 1.3 CRITERIA

a. The design shall incorporate universally accepted construction procedures developed through sound and prudent engineering judgement.

b. The function and occupancy of the facility are described in Section 00912 of the RFP - "Facility Functional Requirements". The seismic use group and corresponding performance level will be:

Seismic Use Group	Performance Level
[ I Standard Occupancy Structure	Life Safety ]
[ II Special Occupancy Structure	Safe Egress ]
[ IIIH Hazardous Facility	Safe Egress ]
[ IIIIE Essential Facility	Immediate Occupancy ]

The foundation design shall provide sufficient support to the superstructure systems [ including special features to resist the effects of liquefaction ] to meet the specified seismic performance level. Total settlement and differential settlement must be accounted for in the foundation design, regardless of the seismic group.

c. The specified design codes used for design of foundations systems shall be compared to local building codes and the more conservative requirements shall be used.

## **PART 2 - SYSTEM COMPONENTS**

### **2.1 STANDARD FOUNDATIONS ( A1010 )**

a. Foundations shall consist of [ reinforced concrete footings, grade beams, or pile caps ][ , reinforced concrete or reinforced masonry walls or piers. Piles, if required, shall be [ prestressed concrete ][ , steel ][ , concrete filled steel ][ or treated timber ].

b. The use of fly ash and blast furnace slag in concrete shall be maximized, but shall not exceed 25% and 50%, respectively, by weight of total cementitious material.

c. Reinforcing steel shall contain a minimum of 30%-recycled steel.

d. Apply termiticide to soil material that will be covered by or lie immediately adjacent to the building so as to provide a protective barrier against subterranean termites. Only termiticides bearing current registration by the EPA shall be used. Comply with 7 USC Section 136 for requirements on contractor's licensing, certification, and record keeping.

e. Timber structural foundation materials will not be permitted [ except for treated timber piles ].

## **PART 3**

Not Used.

**- - END OF SECTION - -**