

General Information

Site Clearing

Clear/grub/strip of trees, roots and vegetation that portion of the site to receive landscaping and improvements. Remove roots to a minimum depth of 24". No onsite burning is allowed unless approved by Owner. Trees/vegetation to remain shall be adequately fenced and otherwise protected from damage by construction operations.

If good friable top soil exists on site, strip this material to a depth of 4" and stockpile for reuse in areas to receive grass and other landscaping. Top soil to be free of significant vegetation, rocks or other deleterious materials.

Topsoil

Topsoil shall be a natural, fertile, friable soil, possessing characteristics of representative productive soils in the vicinity. It shall be obtained from approved naturally well-drained areas. Only the top 12" (inches) of earth shall be removed and used. It shall not be excessively acid or alkaline or contain toxic substances, which may be harmful to the plant growth. Topsoil shall be without admixture of subsoil and shall contain a minimum of lumps, stones, stumps, roots, or similar substances 1" (inch) or more in diameter, quality to be determined by Physical Plant Department or its representative. Topsoil shall not be collected from sites that are infected with a growth of, or the reproductive parts of, noxious weeds (Nut Sedge, Johnson grass, and Bermuda grass). Topsoil shall not be stripped, collected, or deposited while wet. It is the responsibility of the Contractor to furnish the location where the topsoil is to be obtained to FPC Project Manager or its representative in writing, as well as a one gallon sample of such soil.

Grading

Slopes of planted areas should allow easy maintenance. Turf areas shall have a slope of no more than 3:1 and no less than 1 percent. A 2 percent minimum slope is desirable. Areas with slopes greater than 3:1 must be terraced to produce the appropriate grade.

Existing trees and other plant material to be preserved shall be indicated on the grading plan. Where trees are to be preserved no grading or paving of the existing grade within the drip line is allowed.

Slopes for walkways shall comply with Texas Accessibility Standards

Compact per the requirements of the Geotechnical Engineer or as a minimum compact the top 6" of all subgrade to receive embankment or paving/structural improvements to a minimum of 95% maximum density as per ASTM D-698. Open area embankment shall be placed in maximum 12" lifts and compacted to a minimum of 90% maximum density as per ASTM D-698.

Structural embankment shall be compacted per the requirements of the Geotechnical Engineer or as a minimum compact in maximum 8" lifts to a minimum of 95% ASTM D-698. Backfill around structures shall be placed uniformly and only after the elements of the structure have attained the required strength to resist the soil pressure.

Select fill where required shall be a material available in the general area of the project (if possible) having a plasticity index (PI) ranging from 7 to 15, a liquid limit of 35 or less and being free from organic matter, large rocks or other deleterious materials.

Excavation, Trenching and Backfilling for Utilities

Excavation/trenching and backfilling operation shall be coordinated such that no more than 200 linear feet of trench is open at any one time. Backfilling is to be scheduled so there is a minimum amount of open excavation left during hours of no work. All open excavation shall be barricaded during hours that contractor is not on site. The open ends of all utility lines shall be temporarily sealed at the end of the working day.

Adequate measures shall be taken to prevent runoff water from entering the trench without damage to surrounding facilities/properties.

De-watering systems shall be provided as required for excavation/backfill activities and to allow installation of utility lines and embedment envelope on dry stable trench bottom. Discharge from the de-watering system shall be directed to drainage facilities of adequate capacity in a manner that will not damage or interfere with the use of adjoining facilities/properties. De-watering systems shall be provided at no additional cost to the Owner.

The embedment zone for a utility line extends from 6" below the bottom of a utility line to 12" above its top. Embedment material for water and sanitary sewer PVC lines shall be clean sand. Embedment material for storm sewer RCP lines is fine gradation gravel with maximum diameter of 3/4". Embedment material for pre-insulated thermal utility piping is sharp sand. Electrical duct bank is typically encased in red concrete and installed on the undisturbed trench bottom. High water table elevations may necessitate the use of an alternate embedment material and different embedment zone dimensions.

Backfill above the embedment zone for trenches in open areas shall be native material compacted in maximum 12" lifts to 90% maximum density as per ASTM D-698. Backfill above the embedment zone for trenches in areas under existing or proposed pavement or ground supported structures shall be cement stabilized sand (1 1/2 sacks of cement per cubic yard of sand) compacted in maximum 8" lifts. Consolidation of trench backfill to bed pipe utilities using flooding/jetting is allowed but remaining backfill of trench shall be completed using compaction method.

An excavation/trench safety program shall be implemented which complies with OSHA trench safety standards, Subpart P. A trench safety plan shall be prepared and sealed by a Texas Professional Engineer and submitted to the Owner prior to the start of construction.

Lime Stabilization

If lime stabilization is required, refer to Division 32, Site Paving section.

Termite Treatment

When soil treatment is required all products used for the treatment of termites shall display labels bearing Environmental Protection Agency approvals and shall be mixed and applied in accordance with directions on the label.

Void Space Below Grade Beams

Provide soil retainers at face of grade beams below grade to form a void of sufficient depth to prevent expansion of earth to cause pressure on bottom of beams.