Earthwork

NOTE: This is a new section, which includes content from previous sections of the KU Design Standards, along with appropriate revisions and updates. Significant revisions or additions to the previous standards are highlighted in italics.

GENERAL

Designers shall verify that all applicable portions of these standards are incorporated into the project’s design, drawings, specifications and final construction. Requests for variances from these standards shall be submitted in writing to the DCM Project Manager, using the KU Standards Variance Request Form found in Appendix A1.1, for review and written approval or rejection as indicated on the form.

RELATED DOCUMENTS & REQUIREMENTS

Refer to the following for requirements that also apply to work of this section.

- **Division 1 - General Requirements**: Refer to sections regarding construction testing and field quality control requirements. Also contains additional information re: information that KU can furnish and the consultant’s obligations to field-verify existing conditions.
  - Unless directed otherwise, the Owner shall separately contract for quality control testing during construction.
  - Quality Control Testing of Sewer Lines: Video scans of sewer systems may be arranged for by the Owner, if appropriate.

- **Campus Landscape Master Plan**: All projects shall be designed and constructed to be consistent with the Campus Landscape Master Plan.
  - Current editions of this document can be viewed at the KU-DCM website: [http://www.dcm.ku.edu/](http://www.dcm.ku.edu/)

SITE CLEARING - 311000

Stripping and Stockpiling: Indicate the area of site to be stripped and note to salvage all removed topsoil for re-use onsite, or as shown or as designated by Owner.

- Identify the area for stockpiling on the drawings.

EARTHMOVING - 312000

Geotechnical Engineering Report: Project Designer shall edit applicable specification sections to incorporate or reflect contents of this report, shall note that the entire report is available for review at the Owner or Architect’s office, and shall note that this information is included for reference and general information only.

- Designers shall NOT simply reference the geotechnical report and indicate that the Contractor is to comply with the report recommendations. These reports often contain
optional or analytical statements, which require the Designer to evaluate and select the most appropriate actions.

- Designers are required to include appropriate and specific details and specification requirements regarding the geotechnical report's recommendations in the bid documents for each project.

- Soil Borings shall be copied and bound into the project manual as an appendix at the end of the Division Two specifications.

**Fill Materials:** If onsite material is not available in sufficient quantity, Contractor shall purchase and haul in approved off-site materials. *All fill materials shall be approved by the Engineering Geologist.*

**Backfill:**

- Backfill compaction work shall follow the recommendations of the Engineering Geologist, as required for each site and soil, site and climatic conditions.

- Under Slabs & Walks: Only granular fills will be allowed beneath walks or slabs-on-grade. Sand is explicitly prohibited for use as a fill material.

- Backfill behind walls shall be free-draining crushed limestone, wrapped with an acceptable, permeable geotextile fabric, topped with an 18” deep compacted soil cap.

- Drainage fill shall be a washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100% passing a 1 1/2” sieve and not more than 5% passing a No. 4 sieve.

**Piping Trench Backfill:** Use CS-1 materials (pea gravel is acceptable, but NOT sand), or other materials as directed by the Engineering Geologist.

- Backfill in utility trenches where rollers cannot reach shall be compacted with power tampers in 6-inch (maximum) layers to meet specified type of compaction.

  - **Primary Electrical Trenches:** Conduits serving underground primary electrical lines shall be encased in concrete, tinted red at the batching plant, prior to backfill. Backfill above the concrete encasement shall comply with other provisions of this section.

**Topsoil:** Include the following in the contract documents:

- Topsoil must be of good quality, friable loam, free of extraneous material and plant growth, and shall not consist of more than 30% clay.

- Minimum of six inches (6”) of topsoil shall be spread in all designated or disturbed areas.

- All areas to receive topsoil that are densely compacted, glazed or "hard-panned," shall be roughed-up or scarified prior to topsoil placement.

**Excess Cut Materials:** Haul and dispose excess cut materials at off-site locations, per governing regulations, unless onsite locations are made available by the University.

**TERMITE CONTROL – 313116**

Termite control treatments shall be provided under all slab-on-grade construction. *Provide certifications of application treatment to DCM Project Manager.*