

DIVISION THIRTY ONE - EARTHWORK

311100 - SELECTIVE CLEARING

- A. Existing Plantings Identification: The University will designate which trees, shrubs and other plantings are to be preserved, transplanted or removed. Coordinate with the University Project Manager and University Landcare.
- B. Removal of Organic Soil: Organic soil and sod shall be stripped from areas to be occupied by buildings, walks, drives and other paved areas. All unused material shall be legally removed from university property as verified with the owner's representative and University Landcare.

312000 – EARTH MOVING

- A. For new work: sufficient geotechnical data must be obtained to determine subsurface conditions adequately before Contract documents are issued for bid. The Architect of Record and the Contractor shall notify the University Project Manager if professional geotechnical services are required.
- B. Change Orders related to removals: for unsuitable soil, foundation depth, etc., will not be approved, unless unit prices for these items have been established in the Contract documents.
- C. Water control: The Contractor shall prevent surface water and subsurface, or groundwater, from entering excavations, ponding on prepared subgrades, or flooding the project site and surrounding areas.
- D. Notifications: The Contractor shall notify the Architect of Record, University Building Code Division and the University Project Manager when excavations reach required subgrade for inspection.

313000 - EXCAVATING, BACKFILLING AND COMPACTING

- A. It is the experience at the University that construction activities or the previous use of a site may result in drainage problems. For example, subsoil under plantings and lawn on a former parking lot can become so compacted that the water does not drain through the soil. The A/E shall specify how to prepare the subsoil so water drains and does not perch below the topsoil.
- B. The University shall retain an independent testing agency to conduct percolation tests to verify that water drains from the soil. Specifications for the tests are as follows: Drill a 4-inch diameter hole to a depth of 24 inches; pour 6 inches of gravel into the hole and cover it with water. Allow the water to drain for one hour and refill the entire hole with water. To pass the test, the water must drain out at the rate of 1 inch per hour or faster. If hardpan zones are encountered while drilling, a second test using a 4-inch diameter tube shall be conducted to verify vertical drainage.
- C. All finished grades shall direct surface water away from buildings and structures.
- D. All site low points shall be designed with a drain connected to a storm water system and not to sanitary sewer systems.

- E. Turf areas shall have a slope of no more than 3:1 for ease of maintenance. Slopes greater than 3:1 must be retained with a wall or planted with ground covers or otherwise constructed to control erosion.
- F. Existing Grade: areas within 'tree drip lines' shall protected as directed by University Landcare and shall not be re-graded, paved or otherwise disturbed without prior approval of University Landcare.
- G. Swales And Open Drainage Courses: shall be graded with a minimum slope of 1% to prevent standing water.
- H. Topsoil: Before topsoil is placed in landscaped areas, specify scarifying the upper 18 inches of the sub-grade.
- I. Finish Grading for Landscaped Areas: Specify 6-inch depth of topsoil for lawn areas and 18-inch depth for planting beds. To provide a transition layer that facilitates drainage, blend the first 2 inches of topsoil into the rough sub-grade material by rototilling. To avoid compaction of the soil under lawns and plantings, perform finish grading and planting work when soil is dry.
- J. Removal of Excess Material: All excess material shall become the contractor's property. Excess material shall be legally removed from University property.
- K. Soil Materials: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- L. Preparation: Provide contractor direction to protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- M. Dewatering: Provide contractor direction to prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.
- N. Explosives: Use of explosives is prohibited.
- O. Field Quality Control Testing Agency: University will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.

END OF SECTION 313000