

SECTION 022040
STREET EXCAVATION

1. DESCRIPTION

This specification shall govern all work for Street Excavation, which is all excavation of the lines and grades of the proposed roadbed to include at least 1' behind the curb, as required to complete the project.

2. CONSTRUCTION METHODS

(A) Stripping and Excavation

Strip the top 6" in all areas that will underlay proposed compacted fill, curbs (to at least 1' beyond the proposed back of curb), base, or pavement, by removing all humus, vegetation and other unsuitable materials. Unless otherwise noted, remove existing trees, shrubs, fences, curb, gutter, sidewalk, drives, paving, pipe and structures and other items within the graded area which interfere with new construction of finished grading.

All suitable excavated materials shall be utilized, insofar as practicable, in constructing the required roadway sections or in uniformly widening embankments, flattening slopes, etc., as directed by the OAR, provided that the material meets the requirements for roadway embankment as specified in Article 3 below. Unwanted or unsuitable roadway excavation and roadway excavation (cut) in excess of that needed for construction (fill) shall become the property of the Contractor to be disposed of by him outside the limits of the right-of-way at a location suitable to the OAR. "Unsuitable" material encountered below subgrade elevation in roadway cuts, when declared unwanted by the OAR, shall be removed and hauled off and replaced as directed by the OAR with suitable material from the roadway excavation or with other suitable or select material as required by the plans and specifications.

Maintain moisture and density until covered and protected by the subbase or base course. Remove soft or wet areas found at any time, replace with suitable material, and recompact (especially utility trenches). Moisture and density requirements extend 12" into the subgrade per pay item '12" Compacted Pavement Subgrade' or similar item.

(B) Subgrade Preparation

That area shown on the drawings for street construction, to include at least one foot behind the proposed back of curb, shall be cut to grade, scarified to a depth not less than 6", or as otherwise indicated on the drawings, and compacted to 95% Standard Proctor density (ASTM D698) to within 0 to +3% of optimum moisture. The section may be accepted if no more than 1 in 5 of the most recent moisture or density tests is beyond $\pm 1\%$ deviation from the required moisture or density requirements. Irregularities exceeding 1/2" in 16' shall be corrected. Soft areas found at any time shall be removed, hauled off, and replaced with suitable material and compacted (especially at

utility trenches). The correct moisture density relationship shall be maintained until the subgrade is protected by the base and/or subsequent pavement course. Excessive loss of moisture shall be prevented by sprinkling, sealing, or covering with a subsequent layer. Should the subgrade, due to any reason or cause, lose the required stability, density, or moisture before it is protected by placement of the next layer, it shall be re-compacted and refinished and retested at the expense of the Contractor until acceptable to the City.

(C) Curb Backfill and Topsoil (Sidewalks, Parkways, Islands, etc.)

Fill and compact areas behind curbs and adjacent to sidewalks and driveways within 48 hours after completion of concrete work. The top 6" (where disturbed by construction or where unsatisfactory material is exposed by excavation) of finish earth grade shall be clean excavated material or topsoil capable of supporting a good growth of grass when fertilized and seeded or sodded. It shall be free of concrete, asphalt, shell, caliche, debris and any other material that detracts from its appearance or hampers the growth of grass. Topsoil shall meet the requirements specified in City Standard Specification Section 028020 "Seeding".

(D) Matching Grades at Right-of-Way Line

Finish grade at the property line shall be as shown on the drawings. The OAR may require a reasonable amount of filling on private property where the sidewalk grade is above the property elevation. Use suitable material from the excavation. Unless otherwise directed, cuts at right-of-way lines shall be made at a slope of three horizontal to one vertical (3:1) or flatter.

(E) Drainage

During construction, the roadbed and ditches shall be maintained in such condition as to ensure proper drainage at all times, and ditches and channels shall be so constructed and maintained as to avoid damage to the roadway section.

All slopes which, in the judgment of the OAR, require variation, shall be accurately shaped, and care shall be taken that no material is loosened below the required slopes. All breakage and slides shall be removed and disposed of as directed.

(F) Uniform Pavement Construction

Pavement sections are to be constructed in a uniform manner that is full width of the roadway and not in narrow strips, to include subgrade and base sections, which should always be full width sections. Half street construction shall only be allowed with prior permission that is generally required only to preserve continuous traffic access. The subgrade and base sections shall each be constructed in a uniform and monolithic manner to the full roadway width, except when specifically approved otherwise for purposes of allowing for continuous vehicle access during reconstruction of an existing roadway or in cases where the available ROW prohibits full street construction.

3. SELECTION OF ROADBED MATERIALS

Where shown on the plans, Select Material shall be utilized to improve the roadbed, in which case the work shall be performed in such manner and sequence that suitable materials may be selected, removed separately, and deposited in the roadway within limits and at elevations required. Material used for roadway embankment shall meet the requirements of City Standard Specification Section 022100 "Select Material."

4. GEOGRID

If indicated on the drawings, geogrid shall be placed in the base layer according to the pavement details to provide a mechanically-stabilized aggregate base layer within the pavement structure. Geogrid shall be "Tensar TX5 Triaxial Geogrid", or pre-approved equivalent. Use (and approval) of a different product must be supported by documentation showing that the alternate pavement section will meet or exceed the required number of 18-kip equivalent single axle loads (ESAL) and structural number (SN) over the stated pavement design life, and the pavement design must be sealed and signed by a Texas professional engineer. Documentation must also include the structural design value used for the geogrid structural contribution, based on and supported by validated test data. Alternate pavement designs shall utilize the same structural design values for other pavement structural components (HMAC, base, sub-base) as used in the original pavement design, and the pavement designs must be approved by the OAR and the geotechnical consultant.

Contractor shall take care to protect geogrid from damage. Overlap edges of geogrid in accordance with the manufacturer's recommendations, but not less than 12". Do not drive tracked equipment directly on the geogrid. Provide at least 6" of compacted aggregate base material over the geogrid before driving any tracked equipment over the geogrid area. Standard highway-legal rubber-tired trucks may drive over the geogrid at very slow speeds (less than 5 mph). Avoid turns and sudden starts and stops when driving on the geogrid. Any damaged geogrid shall be replaced by the Contractor at no additional cost to the City. Proper replacement shall consist of replacing the affected area adding 3' of geogrid in each direction beyond the limits of the affected area.

5. MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, street excavation shall be measured and paid for by the square yard to the limits shown on the drawings including excavation for street transitions and including to 1' behind the proposed back of curb. Payment shall be full compensation for furnishing all labor, materials, tools, equipment, borrow material and incidentals necessary to complete the work.

Unless otherwise specified on the Bid Form, any existing pavement to be removed which is beyond the limits of excavation for the proposed street footprint (to 1' behind the proposed back of curb) shall be subsidiary to the bid item for Clear ROW.

Unless otherwise specified on the Bid Form, compacted subgrade shall be measured and paid for by the square yard to the limits shown on the drawings, to include 1' behind the proposed back of curb. Payment shall be full compensation for furnishing all labor, materials, tools, equipment,

borrow material and incidentals necessary to complete the work.

Unless otherwise specified on the Bid Form, geogrid shall be measured and paid for by the square yard to the limits shown on the drawings, excluding overlaps. Payment shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

All work required for disposing of waste, including hauling will not be paid for directly but shall be considered subsidiary to the various contract items.