

### III. EARTHWORK

#### A. For Roads and Streets

A Geo-Technical Engineer shall be obtained in order to prepare a soils report for use; and, the values used shall not be less than that listed below.

Excavation shall be performed in accordance with all applicable State, County and City regulations. Blasting will not be permitted.

All streets and roads shall be graded so that the entire right-of-way can be constructed to the required cross section. Before grading is started the entire right-of-way shall be first cleared of all stumps, roots, brush and other objectionable materials, along with all trees and other topographic features, not intended for preservation.

The stumps, boulders, and other obstructions shall be removed to a minimum of four (4) feet below existing grade when encountered and scarified to a depth of twelve (12) inches below the sub grade.

Stump holes and trenches must be carefully backfilled and tamped. Heavy sod and all soft, yielding or otherwise unsuitable materials must be removed and replaced with acceptable fill material.

Suitable materials from roadway cuts may be used in the construction of fills, approaches, or at other places as needed. The fill shall be spread in layers and compacted. Compacted layers shall not be more than six (6) inches thick. The top twelve (12) inches of soil in both cut and fill sections shall have a dry weight density of at least equal to ninety-five (95) percent of that obtained by The Modified Proctor Density.

Grading must progress so as to insure good drainage and prevent formation of depressions where water may collect. When the natural solid cannot be made stable enough to support construction traffic, subgrade modification shall be accomplished. The subgrade shall have provisions to intercept groundwater from springs and seepage plains that prevent saturation of the subgrade. The finished subgrade shall be true to grade, free from roots, and uniformly firm. All disturbed areas outside the paved roadway and/or curb and gutter shall be stabilized with seed and mulch per FDOT standards.

All underground utilities crossing paved streets shall be installed prior to final grading. Electrical and telephone cables crossing public streets shall be placed in adequately sized conduits.

**B. For Utility Work**

**1. General**

All excavation shall be performed in accordance with all applicable State, county and city regulations. All trench excavations shall conform to the requirements of the Occupational Safety and Health Administration – “Construction Standards for Excavations”.

**2. Existing Facilities**

Adequate measures shall be taken to provide for the protection of all existing structures and utilities, both above and below ground, and the City shall be held harmless against damage and claims for damage resulting from construction activity. The contractor performing the work shall be responsible for **ALL** utility locations and shall have, on the job site, a current utility location as provided for by Sunshine State One Call of Florida at 1-800-432-4770.

**3. Maintenance of Traffic**

Effective barricades, danger signals and signs shall be erected and maintained in locations where necessary for the protection of the work and public safety. Barricades or obstructions, which encroach on, or are adjacent to, public right-of-way, shall be provided with lights which shall be kept burning at all times between sunset and sunrise. All work shall conform to all State, County and City work zone safety requirements and/or per FDOT standards. Watchmen and flagmen shall be provided if necessary. Work shall be arranged to minimize disturbance to normal pedestrian and vehicular traffic.

**4. Construction Streets, Right-of-Way and Easements**

All obstructions along pipe lines and street right-of-way shall be removed and the area cleared as specified to provide adequate space for the work and for control stakes and hubs. Work shall be limited to the area of the street, right-of-way or easement. Survey reference points and benchmarks shall not be disturbed.

## **5. Pavement Removal and Replacement**

The Contractor shall saw cut and remove all concrete and asphalt street and alley pavement along straight lines and for such width only as is necessary for the excavation of the trench or for new road construction. Existing pavement removed, disturbed or destroyed by the pipe construction work shall be repaired or replaced by methods and materials which will provide a before construction commenced. Pavement to be removed shall be saw cut 6-12 inches wider than the actual trench on each side. Minimum pavement repair (including any damaged, disturbed or destroyed pavement) shall consist of six inches of 3000 psi concrete and one and one half inches compacted thickness of Type S-I asphaltic concrete conforming to the latest edition of Florida Department of Transportation "Uniform Minimum Standards for Design, Construction & Maintenance for Streets & Highways". Concrete shall be placed upon compacted backfill and the street or alley then opened to traffic after adequate curing. Until the surfacing material is placed, the surface of the trench shall be maintained in smooth riding condition with all potholes and depressions filled. Paving work shall not commence until heavy equipment is permanently removed from work area and pipework is tested and acceptable. See Figure II – 11 – 12 & 13.

## **6. Sidewalk, Driveway and Curb and Gutter Replacement**

Existing sidewalks and paved driveways, including curbs and gutter, removed, disturbed or destroyed by construction shall be replaced or repaired. The finished work shall be equal or superior in all respects to the original. Stone, shell or slag driveways shall be repaired or replaced in the same manner. All concrete sidewalks, driveways, curbs and gutters shall be saw cut in a straight line. Sidewalks shall be replaced joint to joint. Fiber expansion joints to be used on both ends and at all cold joints. Driveways to be replaced full width of driveway and not less than 4' feet in length at the option of the City of Milton. Continuous pours require expansion joints at 50' intervals. Any concrete replacement or addition will use fiber expansion joint. Expansion joint required at the beginning and the end of a radius or any change of direction. Curb and gutter shall be replaced joint to joint. Fiber expansion joints to be used on c

concrete for sidewalks, driveways and curb and gutter shall be 3000 psi. Sidewalks shall be four inches thick.

## **7. Excavations for Pipework**

All excavations shall be made along straight lines by open cut unless otherwise directed by the City Manager or his/her designee. Holes for pipe bells shall be hand excavated to ensure that the pipe rests upon the bottom of the trench for its entire length. If the bottom of the excavation is found to contain any material that cannot be excavated to provide a uniform bearing surface, the material shall be removed to a depth of at least six inches below established bottom grade and backfilled to grade with thoroughly compacted sand.

Excavated material to be used for backfill shall be neatly deposited at the sides of the trenches where space is available. Where stockpiling of excavated material is required, the Contractor shall obtain the sites to be used and maintain operations to provide for natural drainage and not present an unsightly appearance. No excavated material shall be placed on private property not owned by the Developer.

All disturbed areas are to be seeded and mulched per FDOT standards or upon approval of the Public Works Director otherwise stabilized to prevent erosion.

## **8. Dewatering for Pipework**

Dewatering, if required, shall be continued during construction to keep the ground water below the level of the backfill at all times until the backfill is completed. Well point holes shall not be placed in existing pavement without written approval from the City Manager or his/her designee.

## **9. Backfilling Trenches**

The initial backfill shall be carefully deposited on both sides of the pipe at the same time in well compacted six inch layers of a density not less than 95 percent of the Modified Proctor Density until enough has been placed to provide a cover of one foot above the bell of the pipe. The remainder of the trench shall be backfilled in well-compacted 12-inch layers under roadways and well-compacted 24-inch layers elsewhere. Backfill shall be compacted to a density not less than 95 percent of the Modified

Proctor elsewhere, with approved mechanical tampers to the top of the trench. The top materials shall be used last and the surface of the trench restored to its original elevation. Under no condition is construction debris to be included with the backfill. Excavated material consisting of muck, mud, clay or other unstable material may not be utilized in the backfill. All disturbed areas are to be seeded and mulched Per FDOT standards unless an alternative method of stabilization is approved by the Public Works director. See Figure II – 14.