

SECTION H - MINIMUM STANDARDS & REQUIREMENTS FOR ENGINEERING PLANS

The following standard notes shall be included on Engineering Plan applications submitted for review and approval:

1. FDOT Roadway and Traffic Design Standards, latest edition, shall apply to the design and construction of facilities on this set of engineering plans, unless specifically noted or detailed otherwise.
2. FDOT Standard Specifications for Road and Bridge Construction, latest edition, shall apply to the design and construction of facilities on this set of engineering plans, unless specifically noted or detailed otherwise.
3. The FHA Manual of Uniform Traffic Control Devices (MUTCD), latest edition, and the Palm Beach County Typical T-P-99-001 shall apply to the design and construction of pavement markings, signing, PRM's, and geometrics on this set of engineering plans, unless specifically noted or detailed otherwise.
4. Traffic control devices (signs, signals, markings, etc.) shall be in accordance with FHA Manual of Uniform Traffic Control Devices (MUTCD), latest edition, unless specifically noted or detailed otherwise.
5. All cleared materials including mulched materials, shall be removed from site prior to the performance of any excavation, fill or grading earthwork on site. Under no circumstances shall any such materials be buried on site. Should applicant desire to utilize certain cleared and mulched materials as admixture to soils to create landscape berm areas, the applicant shall seek and secure the express consent of the Town Engineer and the Natural Resources Program Supervisor for such allowance. With limited exceptions for documented extenuating circumstances, the adding or mixing of organic content of soils shall not exceed 10%, as determined by ASTM D2974. The permittee, at its sole expense, may be requested by the Town to perform this test, at any time during the clearing operation, to ascertain the organic content of the soils remaining. Any mixing of organic materials into soils shall be performed so as to establish a uniformly mixed final soil condition.
6. Except for those locations to be preserved, and pursuant to all other conditions designated and/or imposed by Natural Resources, the site shall be fully and completely cleared of all deleterious and/or organic materials, which may include the necessity for root raking and/or excavation of a layer(s) of earth, to a sufficient depth, so as to remove all such materials. All such materials shall be legally disposed of off site, with said disposal being performed promptly. Longer term storage of these materials will require containers to be used in accordance with Town Code requirements. Upon completion and prior to commencement of any other permitted site development work, inspection(s) shall be requested by the permittee for sufficiency of this organic material removal work. Said inspections shall be requested performed by Town Staff including representatives of the Building Division for structure areas, and the Engineering Division and Natural Resources Coordinator for other site areas. Permittee shall request these inspections by the Town's representative(s) immediately upon completing the site clearing work. For large

projects, said clearing can be performed in explicitly designated and field located phased areas proposed by applicant and as accepted by the Town's representatives.

7. Muck & Peat – If muck and peat are identified within rights of way, easements, or other areas that will be developed with roads, alleys, parking sidewalks, or similar “horizontal” improvements, said material shall be removed (to 10 feet outside of the developed areas) and said material shall be disposed of off-site, and clean granular compacted backfill used to replace the removed material.
8. If hardpan layer material is encountered in a location with a proposed swale or detention-retention areas, the hardpan material shall be removed and replaced with clean granular compacted backfill.
9. Minimum backfill, subgrade, and base rock compaction (density) requirements are defined below.
 - a. Backfill within street or alley right of way shall be shall be compacted to 98% of maximum density as determined by AASHTO T-180.
 - b. Backfill within areas that will not be improved with streets, alleys, parking areas, sidewalks, structures, etc., shall be compacted to a minimum of 93% of maximum density as determined by AASHTO T-180. Landscape berm and retention-detention area fill shall be compacted to a minimum of 91% of maximum density as determined by AASHTO T-180.
 - c. Utility trench backfill shall be compacted to 98% of maximum density as determined by AASHTO T-180.
 - d. Subgrade material (minimum of 12 inches) for sidewalks, asphalt paths, roads, alleys, etc., shall be compacted to 98% of maximum density as determined by AASHTO T-180.
 - e. Base material for roads, asphalt paths, alleys, etc., shall be compacted to 98% of maximum density as determined by AASHTO T-180.
10. Town of Jupiter Engineering Division Standards for Asphalt & Backfill Placement, Density & Thickness Testing and soil Stabilization Requirements:
 - a. Typical backfill lifts shall not exceed 12 inches. Thicker lifts are acceptable provided:
 - 1) An alternative placement and compaction methodology is prepared and submitted for review by Town Engineering and Stormwater Department Staff. Methodology shall define maximum lift thickness, equipment to be used for compaction, rolling pattern and number of passes, and other applicable information.
 - 2) Alternative method is performed on a test strip/area and densities are verified for full depth of lift via dig down and nuclear density testing for each 12 inches.

- b. Vertical distribution of density testing - Nuclear density compaction tests are to be taken on every lift placed (12" maximum thickness), starting with the soil at the springline of utility or at base of any structure, and proceeding upward to grade, at the locations defined in Item 3 below. If thicker lifts are approved and implemented, density testing shall be performed via "dig downs" to sufficient depth to test each 12 inches for the full thickness of lift.
- c. Soil stabilization - The soils in the Jupiter area require proper soil stabilization mix designs and stringent quality control of field mixing application of the design mix in order to obtain an effective stabilized soil, particularly if lime sludge material is used. Construction specifications should require that the soil be sampled and mix design(s) prepared and tested by a testing lab. The mix design should be specified or otherwise administered closely during field installations or construction, including performance of frequent LBR tests. Stabilized subgrade shall, at a minimum, be tested to meet a minimum of LBR 40 value, in addition to FBV 75.
- d. Horizontal distribution of density testing - Density testing shall be performed at the following minimum locations/horizontal spacing per the vertical distribution noted in Item 2 above:
 - 1) Pipe trenches - Tests shall be performed at randomly selected locations within each 300 foot interval (maximum) along the length of a pipe installation, and between each set of structures separated by less than 300 feet. At least one test shall be performed for every 12 inches, starting with the first test performed at springline (covering the 12" layer below springline elevation).
 - 2) Structures - Tests shall be performed at each manhole or drainage structure. At least one test shall be performed for every 12 inches, starting with the first test performed at base of structure (covering the 12" layer below base elevation). Tests should alternate from corner to corner or side to side around structure with each 12 inch increment.
 - 3) Subgrade - Tests shall be performed at randomly selected locations within each 300 foot interval (maximum) along the length of roadway, sidewalk or pathway, and every 6000 square feet of parking area.
 - 4) Base Rock - Tests shall be performed at randomly selected locations within each 300 foot interval (maximum) along the length of roadway, sidewalk or pathway, and every 6000 square feet of parking area.
 - 5) Road Crossings - Tests shall be performed for each 12 inch lift within any open cut road crossing location.

- e. Asphalt - Roadway and parking area asphalt shall be tested to meet a minimum of 94% of the maximum laboratory density for the asphalt mix design. Testing may be done by core sampling or nuclear gauge density testing. For roadway asphalt, testing shall be at maximum 300 linear foot and 6000 square foot intervals. For parking areas, density testing shall be based on maximum 6000 square foot intervals. Should density testing indicate failure to meet the 94% minimum density, then additional localized testing will be required around the failure location to determine the extent of deficient asphalt density or to determine that the failure was a localized specific condition only. The Town reserves the right to request additional testing based on physical observation of the asphalt installation or surface conditions. Core samples will be required to substantiate the specified compacted asphalt thickness has been constructed. For roadways, the Town reserves the right to request rolling straightedge testing on the travel lanes, in accordance with FDOT Specifications.